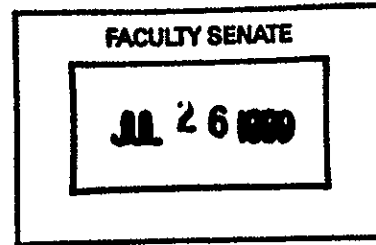


# 93008



ec S. Green  
C. McCoy

Executive Vice President and Provost

MEMORANDUM

July 21, 1999

CDFHI

To: Dr. Luis Glaser  
Executive Vice President and Provost

From: Dr. Steven G. Ullmann <sup>SGU</sup>  
Vice Provost for Faculty Affairs  
and University Administration, and  
Dean of The Graduate School

Re: Epidemiology Ph.D.

Luis, regarding a memo dated July 19, 1999 to Clyde McCoy requesting that a three year progress report on the Ph.D. program in Epidemiology be provided via the Graduate Council to the Faculty Senate. The Epidemiology Program did provide a three year report. The report was approved unanimously by the Graduate Council and forwarded to David Wilson, Chair of the Faculty Senate, on December 11, 1997. A copy of the memo is enclosed.

SGU:rb  
memo-epi

enclosure

Post-it* Fax Note	7671	Date	5/27	# of pages	2
To	Steve Green		From	Provost	
Co./Dept.			Co.		
Phone #			Phone #		
Fax #	5515		Fax #		

P.O. Box 248033  
Coral Gables, Florida 33124-4628  
305-284-3356  
Fax: 305-284-6758



cc d. Glaser  
S. Hayes

Executive Vice President and Provost

MEMORANDUM

July 26, 1999

To: Dr. Luis Glaser  
Executive Vice President and Provost

From: Dr. Steven G. Ullmann *ju*  
Professor and Vice Provost for Faculty Affairs  
and University Administration, and  
Dean of The Graduate School

Re: Physical Therapy Ph.D.

Luis, regarding a memo dated July 19, 1999 to Sherrill Hayes requesting that a three year progress report on the Ph.D. program in Physical Therapy be provided via the Graduate Council to the Faculty Senate. The Physical Therapy Program did provide a three year report. The report was approved unanimously by the Graduate Council and forwarded to David Wilson, Chair of the Faculty Senate, on March 19, 1997. A copy of the memo is enclosed.

SGU:rb  
memo-pt

enclosure



## MEMORANDUM

March 19, 1998

TO: Dr. David L. Wilson, Chair  
Faculty Senate

FROM: Steven G. Ullmann, Interim Dean  
The Graduate School *SGU*

SUBJECT: Three-year Progress Report for the Ph.D. Program in Physical Therapy  
Five-Year BS/MS Programs - College of Engineering

A three-year progress report for the Ph.D. Program in Physical Therapy was presented to Graduate Council at its March 18<sup>th</sup> meeting (copy enclosed). The report was unanimously approved by Council members.

A five-year BS/MS Program proposal (copy attached) for the College of Engineering was presented to Council by Dr. Lewis Temares, Dean of the College of Engineering. The proposal was unanimously approved.

SGU:nb

## Enclosures

Copy to:

Dr. L. Glaser, Provost  
Dr. L. Temares, Dean  
College of Engineering

Graduate School  
P.O. Box 248125  
Coral Gables, Florida 33124-2220  
305-284-4154  
Fax 305-284-5441



MEMORANDUM

December 11, 1997

TO: David Wilson, Chair  
Faculty Senate

FROM: Steven G. Ullmann, Interim Dean JU  
The Graduate School

SUBJECT: Epidemiology Ph.D. Program 3-year Review

The Department of Epidemiology presented to Graduate Council the attached 3-year report on their Ph.D. program. After discussion with Council members and Dr. Edward Trapido, Director of the program, the report was approved unanimously by Graduate Council.

SGU:nb  
Enclosure

Copy to:

- Dr. Luis Glaser, Provost
- Dr. Edward J. Trapido
- Dr. Clyde B. McCoy
- Mrs. Ana Godur

Post-it® Fax Note	7671	Date	7/27	# of pages	2
To	STEVE GREEN	From	Provost		
Co./Dept.		Co.			
Phone #		Phone #			
Fax #	5515	Fax #			

Graduate School  
P.O. Box 248125  
Coral Gables, Florida 33124-2220  
- 305-284-4154  
Fax 305-284-5441

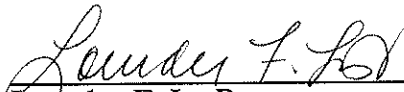
**CERTIFIED EXTRACT OF MINUTES**

I, the undersigned, Secretary of the **UNIVERSITY OF MIAMI**, a non-profit corporation duly organized and existing under the laws of the State of Florida, hereby **CERTIFY** that the following is a true and correct copy of a certain resolution passed by the Executive Committee of the Board of Trustees of the said corporation, in accordance with the Bylaws at and recorded in the minutes of a meeting of the said Executive Committee duly held on October 18, 1994, and not subsequently rescinded or modified:

**ACTION:** Upon a motion duly made, seconded and passed unanimously, the Executive Committee of the University of Miami Board of Trustees approved the establishment of a Ph.D. Degree in Epidemiology, Department of Epidemiology, School of Medicine.

**ACTION:** Upon a motion duly made, seconded, and passed unanimously, the Executive Committee of the University of Miami Board of Trustees approved the establishment of a Ph.D. Degree in Physical Therapy, Division of Physical Therapy, School of Medicine.

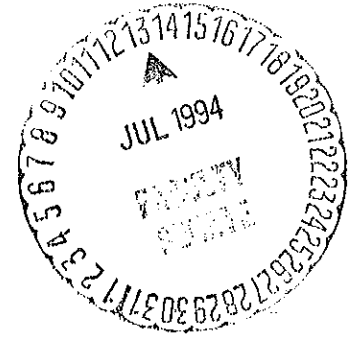
**IN WITNESS WHEREOF**, I have hereunto set my hand and affixed the seal of the said corporation this 9th day of November, 1994, at Coral Gables, Dade County, Florida.

  
\_\_\_\_\_  
Lourdes F. La Paz  
Secretary of the University


(Corporate Seal)



MEMORANDUM



TO: President Edward T. Foote II

FROM: Kamal Yacoub   
Chair, Faculty Senate

DATE: May 17, 1994

SUBJECT: Faculty Senate Legislation #93008(B) -  
Establishment of the Ph.D. Degree in Epidemiology

The Faculty Senate, at its meeting of April 25, 1994, voted to approve Faculty Senate Legislation #93008(B) - Establishment of the Ph.D. Degree in Epidemiology.

As with all new Ph.D. programs, the Senate requires that the Program Director submit a progress report to the Senate, through the Graduate Council, in three years. Particular focus on the status of students in the program and the progress of the faculty towards tenure should be noted in the report.

This legislation is now forwarded to you for your action.

KY/b


Attachment

cc: Provost Luis Glaser  
Associate Dean Hecker, Graduate School  
Dean Bernard Fogel, School of Medicine  
Dr. Edward Trapido, Director of the Program

CAPSULE: Faculty Senate Legislation #93008(B) -  
Establishment of the Ph.D. Degree in Epidemiology

RESPONSE BY THE PRESIDENT:

DATE: 7/12/84

APPROVED: Yes 

OFFICE OR INDIVIDUAL TO IMPLEMENT OR PUBLISH: Provost

EFFECTIVE DATE OF LEGISLATION: \_\_\_\_\_

NOT APPROVED AND REFERRED TO: \_\_\_\_\_

REMARKS (IF NOT APPROVED): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_




Executive Vice President and Provost

MEMORANDUM

May 11, 1994

TO: Dr. Kamal Yacoub  
 Chairman, Faculty Senate

FROM: Luis Glaser  
 Executive Vice President  
 and Provost



SUBJECT: Senate Approval of the Ph.D. Programs in Epidemiology and Physical Therapy

I believe that Dr. Hecker has informed you that at its March 1 meeting, the Graduate faculty approved the actions of the Graduate Council regarding these two programs. In light of that action, which none of us were aware of, including me, even though I attended the March 1 meeting in part, but at a later time, I presume that the actions of the Senate regarding these programs will be amended so that they are in fact fully approved by the Senate, subject to a report to be presented to the Senate in three years.

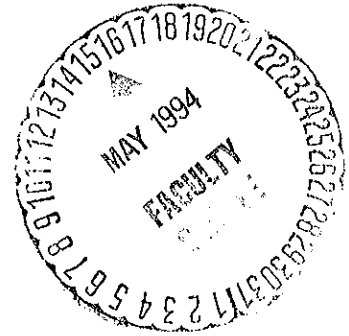
I would appreciate clarification of this so that we can inform the directors of these programs, as well as Tarek Khalil, as appropriate.

Thank you for your help.

LG:tmp *Luis,* The above information was brought to my attention  
 few days ago. I agree fully with you. Legislation will  
 be forwarded to the President in few days without any conditions. Thanks

*Kamal Yacoub*  
 5-16-94





Executive Vice President and Provost

MEMORANDUM

May 11, 1994

TO: Dr. Kamal Yacoub  
Chairman, Faculty Senate

FROM: Luis Glaser  
Executive Vice President  
and Provost

A handwritten signature in black ink, appearing to be "Luis Glaser", written over the printed name.

SUBJECT: Senate Approval of the Ph.D. Programs in Epidemiology  
and Physical Therapy

I believe that Dr. Hecker has informed you that at its March 1 meeting, the Graduate faculty approved the actions of the Graduate Council regarding these two programs. In light of that action, which none of us were aware of, including me, even though I attended the March 1 meeting in part, but at a later time, I presume that the actions of the Senate regarding these programs will be amended so that they are in fact fully approved by the Senate, subject to a report to be presented to the Senate in three years.

I would appreciate clarification of this so that we can inform the directors of these programs, as well as Tarek Khalil, as appropriate.

Thank you for your help.

LG:tmp



To: Members of the Faculty Senate  
From: Dr. Edward Trapido *ET*  
Re: PhD Program in Epidemiology  
Date: TUE April 19, 1994 (12:50pm)

Enclosed are responses to the requests of the Faculty Senate, which reviewed the Ph.D. program in epidemiology in a "first reading" on March 21st.

1. Review of other statistical courses offered at the U.M. Dr. Judy Bean, Professor of Epidemiology and Head of the Division of Biostatistics in the Department of Epidemiology and Public Health has reviewed the course material from statistical courses offered by the Departments of Psychology and Biology. While there is some overlap of basic descriptive and inferential statistics, our Biostatistics 501 and 502 (Biostatistics I and II) offer additional topics. Statistical Methods in Epidemiology (EPH 603) cover different material.
  
2. Curricula are provided on the following pages:  
Biostatistics 501 (Level I)  
Biostatistics 502 (Level II)  
Statistical Methods in Epidemiology I (EPH 603)  
Statistical Methods in Epidemiology II (Not Yet Assigned a Course Number)  
Cancer Epidemiology (Not Yet Assigned a Course Number)
  
3. A complete listing of courses is also provided.

## **EPH - 501:            MEDICAL BIOSTATISTICS - AUDIENCE AND OBJECTIVES**

### **Intended Audience:**

The course material emphasizes problem-solving and is intended for graduate students in the GPPH Program and other health professions or biological sciences.

### **Course Objectives:**

Technical and scientific literature in the health and life sciences is becoming increasingly quantitative. Thus, the primary objective of this course is to provide a broad introduction to fundamental biostatistical concepts and procedures. Most of the material relates to the design, analysis and interpretation of clinical and laboratory studies and the following main types of problems will be discussed.

Problems concerned with:

1. Examination, summarization and presentation, both graphically and numerically, of results in a single sample of counts or measurements.
2. Comparisons of two samples.
3. Association of variables, including two-way cross classifications.

After completing the course, the students should be able to:

1. Understand the very basic role of statistics in research.
2. Select appropriate statistical methods for most data sets.
3. Demonstrate an understanding of the logical foundation for commonly used basic statistical inferential procedures.
4. Perform basic statistical analyses commonly used in biomedical investigations.
5. Use SAS to perform basic statistical analyses, and interpret SAS output for many commonly used statistical procedures.
6. Evaluate most statistical analyses reported in the medical and health care literature.

**EPH-501: MEDICAL BIostatISTICS - Fall Semester, 1993**

- Text Book:** Shott S  
Statistics for Health Professionals  
Philadelphia, Pennsylvania: W.B. Saunders Company, 1990.
- Recommended:** Remington RD and Schork MA.  
Statistics with Applications to the Biological and Health Sciences  
(2nd Ed., 1985)  
Englewood Cliffs, New Jersey: Prentice Hall, Inc.
- Cody RP and Smith JR  
Applied Statistics and the SAS Programming Language (2nd Ed., 1987)  
New York, New York: North-Holland
- Time and Place:** Thursdays 12:30 - 2:00 P.M. and 2:15 - 3:15 P.M.  
1005 Daughtry Building
- Saturdays: Time and Place to be arranged after classes start
- Instructor:** Orlando Gomez, M.Sc., Ph.D.  
Associate Professor  
705D Dominion Tower; (305) 547-4008
- Readings:** Students will be responsible for reading the material assigned for each class period before the corresponding lecture.
- Computer:** Students are encouraged to devote as much time as necessary for the timely completion of their computer assignments.
- Homework:** There will be approximately one homework assignment per week that must be handed in on the due date.  
Late assignments will not be graded.
- Evaluation:**
- |            |       |
|------------|-------|
| Homework   | : 40% |
| Midterm I  | : 15% |
| Midterm II | : 15% |
| Final      | : 30% |
- Office Hours:** By appointment

**EPH-501: MEDICAL BIostatISTICS - Fall Semester, 1993  
COURSE OUTLINE**

<b>DATE</b>	<b>TOPIC</b>
Aug. 26	Introduction Experimental Design Descriptive vs. Inferential Statistics Measures of Central Tendency and Dispersion <b>Readings: Text Chapter 1, Sections 2.1 through 2.3, and class notes</b>
Sept. 2	Descriptive Statistics: Frequency Distributions Graphs: Histograms, Frequency Polygons, Cumulative Frequency Polygons, Computer Histograms <b>Readings: Text Sections 2.4 through 2.8 and class notes</b>
Sept. 9	Probability, Conditional Probability, Sensitivity and Specificity Exercises on Probability <b>Readings: Text Sections 3.1 through 3.5 and class notes</b>
Sept. 16	Bayes Theorem, Bayes Theorem and Sensitivity and Specificity Random Variables: Distribution and Independence Gaussian Distribution Use of Gaussian Tables <b>Readings: Text Sections 3.6, 3.7 and 4.1 through 4.4, and class notes</b>
Sept. 23	Distributions: Binomial and Poisson Use of Binomial and Gaussian Tables Gaussian Approximation to Binomial <b>Readings: Text Sections 4.5 and class notes</b>
Sept. 30	Samples: Definitions, Sample Selection Sampling Distributions of Sample Means The Central Limit Theorem <b>Readings: Text Chapter 5 and class notes</b>

- Oct. 2** Introduction to the VAX:  
 Login procedure,  
 Use of the Editor,  
 Computing with SAS  
**Readings: Cody and Smith: Chapter 1 and Computer materials**
- Oct. 7** Point and Interval Estimation for:  
 Proportions, Difference of Indep. Proportions  
 Means, Difference of Indep. Means  
 Difference of paired means  
**Readings: Text Chapter 6 and class notes**
- Oct. 9** Descriptive Statistics and Bar Graphs in SAS  
**Readings: Cody and Smith: Chapter 2 and Computer materials**
- Oct. 14** Midterm 1  
 Hypothesis Testing: Proportions  
 Hypothesis Testing: Difference of Independent Proportions  
 Alpha and Beta Errors, p-value  
**Readings: Textbook Chapter 7 and class notes**
- Oct. 21** Hypothesis Testing: Means  
 Hypothesis Testing: Difference of independent means  
 Hypothesis Testing: Difference of paired means  
 Alpha and Beta Errors, p-value  
**Readings: Textbook Chapter 7 and class notes**
- Oct. 23** Formats, Labels, and Chi-square analysis in SAS  
**Readings: Cody and Smith Chapter 3**
- Oct. 28** Power and Sa Size Calculations: C.I. approach  
 Power and Sa Size Calculations: Hypothesis testing approach  
**Readings: Class notes, Textbook Appendices A and B**
- Nov. 4** Analysis of Frequency Data: Use of the Chi-square Table  
 Several independent proportions  
 Contingency Tables, Paired proportions  
**Readings: Textbook Chapter 10, Intro and Sections 10.1 through 10.4**

- Nov. 6** Hypothesis Testing for Two Groups using SAS  
**Readings: Cody and Smith Chapter 5**
- Nov. 11** Midterm 2 Part 1: In Class  
 Part 2: Due Nov. 18, 1993 at 12:30 P.M.
- Correlation Analysis  
 Simple Linear Regression, Residual Analysis  
**Readings: Textbook, Chapter 12**
- Nov. 13** Regression and Correlation in SAS  
**Readings: Cody and Smith Chapter 4**
- Nov. 18** Correlation Analysis  
 Simple Linear Regression, Residual Analysis  
**Readings: Textbook, Chapter 12**
- Dec. 2** Non-parametric Statistics:  
**Readings: Textbook Ch 11, Except Sections 11.4 and 11.5**
- Dec. 9** Final Exam  
 Part 1: In class, 12:30 - 1:30 P.M.  
 Part 2: Due in Instructor's Office on or before Dec. 13, 1993 at 12:00 Noon

BIostatistics 502

Spring, 1994

1:30 P.M. - 4:00 P.M.

Wednesday

DATE	TOPIC	REFERENCE
Jan. 19	Single linear regression	Chapters 4, 5 and material from <u>Applied Regression</u> Analysis by Draper & Smith
Jan. 26	Single linear regression	Chapters 6, 7
Feb. 2	Multiple regression	Chapters 8, 9
Feb. 9	Multiple regression	Chapters 10, 11
Feb. 16	Dummy variables and regression diagnostics	Chapter 14, Chapters 4 & 5 in Glantz and Slinker's book
Feb. 23	TEST	
March 2	Review of test and other topics in regression	Chapters 13 & 16 Chapter 6 in Glantz and Slinker's book
March 9	Completely randomized design	Chapter 17
March 16	SPRING BREAK	
March 23	Randomized block design	Chapter 18
March 30	Factorial experiments	Chapter 19 plus material from other books



<u>DATE</u>	<u>TOPIC</u>	<u>REFERENCE</u>
April 6	TEST	
April 13	Review of test and factorial experiments	Chapters 15 and 20 Chapter 9 in Glantz and Slinker's book
April 20	Poisson and logistic regression	Chapter 21
April 27	Logistic regression and analysis of categorical data	Chapters 21 and 22
May 4	TEST	

**STATISTICAL METHODS IN EPIDEMIOLOGY**  
**EPH 603**

**TIME:** Tuesday from 4:00 p.m. to 5:40 p.m. \*  
August 31 - December 14, 1993

**LOCATION:** Daughtry Building, Room 1005

**CREDITS:** Two

**INSTRUCTORS:** Judy A. Bean, Ph.D.

**TEXTBOOK:** J.J. Schlesselman. Case-Control Studies: Design, Conduct, Analysis. Oxford University Press, 1982.

\* Joint Sessions with Advanced Applied Epidemiology will have a different time.

# STATISTICAL METHODS IN EPIDEMIOLOGY

## EPH 603

**COURSE DESCRIPTION:** This course will deal primarily with statistical methods utilized in epidemiologic studies. Statistical methodologic issues covered include: partitioning a chi-square statistic, testing for trends in proportions, determination of inter-rater reliability, calculation of sample sizes, sampling designs and analysis of stratified data. Concepts of cumulative incidence sampling and incidence density sampling as well as incidence rates, relative risks and odd ratios will be presented.

**OVERALL OBJECTIVE:** At the end of the course, the student will be able to make inferences from the data collected in an epidemiologic study.

**GENERAL INFORMATION:** In order to understand the concepts and methods presented, the students must be proficient in the fundamentals of epidemiology and biostatistics. This course will require knowledge of probability, the binomial, normal, t, F, and chi-square distributions, and of linear regression and correlation. The student should also be familiar with various epidemiologic designs such as cohort, cross-sectional, and case-control designs. Course prerequisites are EPH 501 and EPH 521. Highly recommended is EPH 502 and knowledge of UM computing facilities.

### **CONDUCT OF THE COURSE:**

Format - The course will include lectures and group discussions.

Assignments - Students will be responsible for completing exercises and required readings. Students are expected to discuss these materials in class.

Examinations - There will be two examinations.

**GRADING:**

Students will be evaluated in three areas:

- a. Quality of classroom participation (10%)
- b. Exercises (40%)
- c. Examinations (50%)

**STATISTICAL METHODS IN EPIDEMIOLOGY  
EPH 603**

<u>DATE</u>	<u>TOPIC</u>
Aug. 31	Review of confidence intervals and p-value
Sept. 7	Cross-Sectional Studies/Sampling Designs *
14	Basic Concepts
21	Basic Concepts
28	Basic Concepts
Oct. 5	Confounding/Effect Modification * (Dr. Lora Fleming)
12	Matching/Standardization of Rates
19	Standardization of Rates
26	Sample Size Determination *

Nov. 2	Analysis of Epidemiologic Data *
9	Analysis of Epidemiologic Data *
16	Ethical Issues in Epidemiologic Research * (Dr. Kenneth Goodman)
23	Clinical Trial Study Design * (Dr. Richard Donahue)
30	Comparison of Proportions
Dec. 7	Special Topics

\* These are joint sessions with Advanced Applied Epidemiology. Joint classes are tentatively scheduled to run from 2:30 p.m. to 4:15 p.m.

# STATISTICAL METHODS IN EPIDEMIOLOGY

## EPH 603

- I. Review of Statistical Inference
  - A. Introduction
  - B. Hypothesis Testing
    - 1. Level of significance and power
    - 2. p-value
  - C. Examples of Hypothesis Testing
    - 1. Two-sample t test
    - 2. 2 X 2 Table
    - 3. R X C  
Contingency Table
  - D. Confidence Intervals
- II. Cross-Sectional Studies and Sampling
  - A. Introduction
  - B. Frames
    - 1. Types of Frames
    - 2. Problems with Frames
  - C. Sample Designs
    - 1. Simple Random Sample
    - 2. Stratified Random Sample
    - 3. Cluster Sample
    - 4. Complex Designs
  - D. Estimates of Parameters
- III. Basic Concepts in the Assessment of Risk
  - A. Review of Cohort and Case-Control Designs
  - B. Incidence and Prevalence Measures
    - 1. Proportions, Rates and Ratios
    - 2. Incidence
    - 3. Cumulative Incidence
    - 4. Incidence Density
    - 5. Prevalence Measures
  - C. Measures of Association

- C. Measures of Association
  - 1. Incidence Density Ratio
  - 2. Relative Risk
  - 3. Estimation of Relative Risk from Case-Control Studies
  - 4. Difference Measures
  - 5. Attributable Risk and Related Measures

IV. Confounding/Effect Modification  
Guest Lecturer

V. Matching

- A. Principles of Matching
- B. Overmatching
- C. Alternatives of Matching
- D. Effectiveness of Matching

VI. Standardization of Rates

- A. Indirect Standardization
- B. Direct Standardization
- C. Standard Errors of Rates
- D. SMR, PMR

VII. Sample Size Determinations

- A. Sample Size and Power for Case-Control Unmatched Studies
- B. Sample Size and Power with Multiple Controls per Case
- C. Smallest Detectable Relative Risk
- D. Cohort Studies

VIII. Analysis of Epidemiologic Data

- A. Analysis of Crude Data
  - 1. Person-Time Data
  - 2. Count Data



B. Analysis of Stratified Data

1. General Principles
2. Peron-Time Data
3. Count Data
4. Matched Analysis

IX. Clinical Trial Study Design

Guest Lecturer

X. Comparison of Proportions

- A. Partitioning of a Chi-Square Statistic
- B. Trends in Proportions: Samples  
Quantitatively Ordered
- C. Trends in Proportions: Samples  
Qualitatively Ordered

Statistical Methods in Epidemiology <i>II</i> Judy Bean, Ph.D.	
Session	Topic
1	Kappa Statistics
2	Testing for Trends in Proportions
3	Life Tables
4	Survival Analyses
5	Logistic Regression
6	Poisson Regression
7	Log Linear Models
8	Clusters

Cancer Epidemiology: Proposed Syllabus Edward J. Trapido, Sc.D.	
Session	Topic
1,2	Introduction to Cancer Epidemiology, Causes of Cancer, Clinical Trials, Cancer Control
3	Cancer in Florida: Descriptive Epidemiology; Worldwide Geographic Epidemiology; Cancer Registries
4	Breast Cancer: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues, Mammography
5,6	Prostate and Lung Cancers: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues; Exercise in Lung Cancer and Smoking
7	Colon Cancer, Skin Cancer: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues
8,9	Cancers of the Uterine Corpus and Uterine Cervix, Ovarian Cancer: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues; Exercise in Ovarian Cancer
10	Environmental and Occupational Cancers; Hematologic Tumors; Exercise on Vinyl Chloride and Cancer
11	Planning a Program in Cancer Service or Research: A Prioritization
12	Exam

**LIST OF ALL COURSES  
IN THE  
GRADUATE PROGRAMS IN PUBLIC HEALTH (GPPH)**

**EPH 501 BIOSTATISTICS I** (4 cr.): Introduction to probability and statistics including descriptive statistics, tests of hypothesis, regression analysis, contingency tables, nonparametric tests and life tables. Students will gain hands-on experience in the analysis of medical data using several computer systems and at least one of the different statistical packages such as: BMDP, SAS, PSTAT, SYSTAT, and Minitab. (CORE)

**EPH 502 BIOSTATISTICS II**(3 cr.): Continuation and elaboration of EPH 501. Includes design of factorial experiments, analysis of variance and variance components, multiple linear regression, life tables. *Prerequisite: EPH 501 or permission of instructor.* (CORE)

**EPH 520 HEALTH EDUCATION AND BEHAVIOR** (3 cr.): Educational processes with special emphasis on the social and cultural determinants of health behavior, health education as a process of social change, and community based health education organizations. (CORE)

**EPH 521 FUNDAMENTALS OF EPIDEMIOLOGY** (3 cr.): Principles and methods of epidemiology. Descriptive epidemiology, environmental and other risk factors; detection of outbreaks, basic demography, etiologic studies. (CORE)

**EPH 541 INTEGRATED ASPECTS OF ENVIRONMENTAL HEALTH** (3 cr.): Interdisciplinary scope of environmental health problems. Development of a practical, dynamic model for integrating fundamental concepts from a variety of environmental disciplines. (CORE)

**EPH 542 MEDICAL TOXICOLOGY** (3 cr.): Provides an integrated approach to human and environmental health effects in conjunction with toxicologic mechanisms of disease and monitoring. This course was developed for the advanced student with an interest in environmental and occupational health. Lectures and discussions will focus on groups of toxins, considering their toxic health effects on humans and the environment. In addition, where relevant, a broad range of topics will be discussed using specific examples, including: monitoring, environmental and occupational regulation, different forms of pollution, engineering and industrial hygiene, risk assessment, and prevention. *Prerequisite: EPH 541 or permission of the instructor.*

**EPH 561 PUBLIC HEALTH NUTRITION** (2 cr.): Epidemiology classification of nutrition risk factors and their amelioration through public health measures. Emphasis on nutritional assessment and education of large population groups. Some discussion of nutritional deficiencies and excesses in relation to disease.

**EPH 571 MATERNAL AND CHILD HEALTH** (3 cr.): Preventive and therapeutic concepts pertinent to the reduction of morbidity and mortality among mothers and their children. *Prerequisite: EPH 521 or permission of the instructor.*

**EPH 581 FIELD APPLICATIONS IN PUBLIC HEALTH** (1-4 cr.): Subject matter offering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title "Advanced Topics". *Prerequisite: Core requirements for MPH program or permission of instructor.*

**EPH 600 RESEARCH SEMINAR** (2 cr.): Prepares students for designing the public health project; writing scientific articles or technical reports based on the project; presenting the project to an audience of peers; and critiquing design and presentation of colleagues projects. *Prerequisite: At least 12 EPH credits to include EPH 501 and EPH 521. (CORE)*

**EPH 602 ISSUES IN INTERNATIONAL HEALTH** (3 cr.): Main issues in the provision of health care internationally; determinants of health improvement and issues of planning; morbidity and mortality-prevention, control, and eradication programs; housing, water, sanitation, nutrition, food production and distribution; population and family planning; international organizations in health care; technology transfer; economics and politics of health care.

**EPH 603 STATISTICAL METHODS IN EPIDEMIOLOGY** (2 cr.): Advanced statistical methods used in analyzing data from epidemiologic investigations. Topics to be included are: Mantel-Haenszel chi-square, interaction, standardization of rates, incidence density, logistics regression, and other special topics. *Prerequisite: EPH 501 and 521.*

**EPH 604 CLINICAL TRIALS** (3 cr.): Planning, design, analysis and data management for clinical therapeutic and prophylactic trials. Illustrations by case examples. *Prerequisite: permission of the instructor.*

**EPH 610 APPLIED EPIDEMIOLOGY AND SURVEILLANCE OF AIDS/HIV DISEASES**

(3 cr.): Students in the course will be provided with an overview of the epidemiology of AIDS/HIV disease and will then precede to design a national surveillance system for AIDS, conduct serologic testing for HIV infection, implement a national surveillance system for HIV infection, design and conduct sentinel surveillance studies, establish control programs (e.g. a national strategy to protect the blood supply), and implement primary prevention education. *Prerequisite: EPH 501 and EPH 521.*

**EPH 620 CARDIOVASCULAR DISEASE EPIDEMIOLOGY AND PREVENTION (2 cr.):**

The purpose of the course is to teach and train students in the area of epidemiology and prevention of cardiovascular diseases. Cardiovascular diseases, especially coronary heart disease and cerebrovascular disease, are the leading causes of morbidity and mortality among adults in the U.S. population. Therefore, knowledge in the epidemiology and prevention of these diseases is essential for those working in the area of public health. *Prerequisite: EPH 501 and EPH 521 or permission of the instructor.*

**EPH 621 CHRONIC DISEASE EPIDEMIOLOGY (3 cr.):** The major chronic diseases (e.g. Heart Disease, Cancer, diabetes). Their population impact, and methods of prevention. Specialized problems associated with chronic disease studies. *Prerequisite: EPH 521.*

**EPH 622 INFECTIOUS DISEASE EPIDEMIOLOGY AND CONTROL (3 cr.):** Surveillance, investigation, control and problems related to infectious diseases. *Prerequisite: EPH 501 and EPH 521.*

**EPH 624 ADVANCED APPLIED EPIDEMIOLOGY (3 cr.):** Principles and methods of analytic studies including case-control, cohort, and clinical trials. Emphasis on quantitation of influences of chance, evaluation cause-effect relationships. *Prerequisites: EPH 501 and EPH 521.*

**EPH 631 PUBLIC HEALTH ADMINISTRATION (3 cr.):** An overview of the historical background, philosophy and purpose of public health. Relationship between government, law and public health. Organization, management and intergovernmental relationships of public health agencies in the United States at the federal, state and local level. Basic principles of management, decision making and prioritizing in public health. Overview of programs and services provided by health organizations with emphasis on current health issues and problems. (CORI)

**EPH 645 BEHAVIORAL EPIDEMIOLOGY** (3 cr.): A sub-discipline of epidemiology with a principal focus on lifestyle behaviors that are health-enhancing or health-compromising. With a focus on health behavior rather than disease endpoints, behavioral epidemiology has a primary prevention orientation. This course will explore epidemiologic approaches to description/intervention upon dietary behaviors, exercise, substance use behaviors (cigarettes, alcohol, illicit drugs), and sexual behaviors. *Prerequisite: EPH 521 and permission of the instructor.*

**EPH 680 PRACTICAL FIELD EXPERIENCE** (1-6 cr.): Practical field experience for MPH students, e.g. an internship with a physician, public health department, clinic, school system, Health Center, an ongoing epidemiological project. *Prerequisite: Core requirements for MPH program.*

**EPH 681 ADVANCED TOPICS** (1-4 cr.): Subject matter offering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title "Advanced Topics". *Prerequisite: Core requirements for MPH program.*

**EPH 682 ADVANCED INDIVIDUAL STUDY** (1-3 cr.): Individual work on a special project under faculty guidance. *Prerequisite: Permission of the directing faculty member and the Director of Graduate Programs.*

**EPH 699 PUBLIC HEALTH PROJECTS** (1-3 cr.): Research and/or design projects. Individual investigation of current public health problems. Required by all MPH students. *Prerequisite: candidacy and completion of the core requirements. (CORE)*

**EPH 725 CONTINUOUS REGISTRATION - MASTER'S STUDY** (0 cr.): Used to establish residence for MPH students who are preparing for project presentation. Credit not granted. Regarded as full time residence.

Revised 3/5/93



To: Members of the Faculty Senate  
From: Dr. Edward Trapido  
Re: PhD Program in Epidemiology  
Date: MON March 7, 1994 (1:53pm)

I would like to take this opportunity to respond to the Graduate Council's report on the proposal to establish a Ph.D. program in Epidemiology. Please also note a letter from Dr. Rubin dealing with space and financial considerations.

Responses to the "five points":

1. The stipend has been raised to \$15,000.
2. Students will have access to the Biostatisticians within the Department of Epidemiology and Public Health's Division of Biostatistics. Students will be required to take courses that are currently offered in the Division of Biostatistics in our department. They will also be encouraged to take courses elsewhere in the University, on related issues (e.g., they should consider taking existing courses in Design and Analysis, Multivariate Methods, Clinical Decision Analysis, Mathematical Statistics, and Health Sciences Information Systems).

Most other doctoral programs in Epidemiology do not require Ph.D. students to take courses in Mathematical Statistics. In the context of offering a Ph.D. within a School of Medicine, we will train students who are likely to be involved in clinical research. It is most important that our students gain a thorough understanding of applied biostatistics. We believe that the current course availability, within and outside the Department, will provide appropriate training.

3. The Department is working with Dr. Rubin on finding consolidated space for the Department, on the medical campus. Dr. Prineas has reviewed plans with Dr. Rubin for one possibility, but that was off-campus. Off-campus space is not optimal for maintaining and increasing interactions with our basic science and clinical research colleagues. A letter from the Dean provides additional information on space considerations.

Department of Epidemiology and Public Health (R-669)  
Daughtry Building  
P.O. Box 016069, Miami, Florida 33101  
Location: 1029 N.W. 15 Street, Miami, Florida 33136  
Telephone: (305) 547-6972 Fax: (305) 547-5544



4. We are in agreement with the requirement for added classroom space. However, the Ph.D. program will actually enroll only three students in each year. Thus, for the immediate future, our classroom space requirements will not exceed the existing MPH classroom program space.
  
5. There are a large number of outside electives that will be worked into individually tailored programs. Clearly, the availability of current courses is one of the strengths of putting this program at UM. Yet, the inclusion of specific electives should depend on the area(s) of interest and background of the students. (i.e., if the student is a physician, he/she may already have taken certain biomedical courses). For example, a student with an interest in cancer epidemiology, who is not a physician, might be encouraged to take courses in Pathobiology, Radiation Health, and Health Sciences Information Systems. If a student was interested in cardiovascular epidemiology, psychosocial epidemiology, infectious disease epidemiology, his/her electives would naturally change.



Vice Provost for Research and Deputy Dean for Research and Graduate Studies  
P.O. Box 016960 (R64), 1600 N.W. 10 Avenue, Miami, Florida 33101

M E M O R A N D U M

TO: The Subcommittee, Epidemiology Ph.D. Review  
Drs. N. Ehrhardt, Marine Biology; G. Grotendorst,  
Cell Biology; S. Hsia, Dermatology; G. Ironson,  
Psychology; G. Warheit, Sociology; J.F. Woessner,  
Biochemistry; and F. Huijing, Biochemistry,  
Faculty Senate Representative

FROM: Dr. Robert W. Rubin *R.W.R.*  
Vice Provost and Deputy Dean

SUBJ: Support for New Ph.D. Program in Epidemiology

DATE: February 28, 1994

This is to respond to the concerns raised by the review committee concerning institutional support for this new program. In particular, the issue of space was raised.

The institution has created over 40,000 new square feet of research space for the exclusive use of the department since Dr. Prineas' arrival. This multimillion dollar commitment was in addition to the million plus dollars a year that we have put into the yearly departmental budget. This resource commitment will continue and expand as the department expands.

More specifically, I can and will make available to the Department a classroom large enough for 50 participants. In addition we plan to consolidate the entire department (less outreach and assessment space) at the Medical Center at our administrative complex planned for the space now occupied on track 5 by the Daughtry Building and surrounding parking.

Further, the new Ph.D. program will be afforded 100% tuition waivers for all participants and stipend support commensurate with that provided by other departments. I hope that this explanation of our intentions is sufficient. Thank you.

Administrative Offices  
Suite 1148  
(305) 547-5706  
Fax: (305) 547-3549

Graduate Studies  
Suite 1070  
(305) 547-6406  
Fax: (305) 547-3593

Research Administration  
Suite 1149  
(305) 547-6232  
Fax: (305) 548-4611

To: Members of the Faculty Senate  
From: Dr. Edward Trapido  
Re: PhD Program in Epidemiology  
Date: Monday, Mar 7, 1994 (2:00pm)

#### **PURPOSE AND GOALS.**

The University of Miami seeks to create a doctoral degree program in Epidemiology, within the Department of Epidemiology and Public Health, at the School of Medicine. The purpose of the degree is to provide advanced study and research training in Epidemiology. Primarily, the program will be geared towards students who have completed the now terminal degree offered at the University of Miami, a Masters of Public Health. Other students possessing a Master's Degree in a related discipline, or another graduate medical degree (such as an M.D., D.O, or R.N.), will be eligible for admission, as will selected post Baccalaureate students. It is the goal of the program to prepare these students to take the large number of available research positions in academic institutions, governmental and voluntary agencies, or in the corporate sector.

The University of Miami has the potential to be one of the leading institutions in Epidemiologic training. Traditional epidemiology was concerned with elucidating the distribution and determinants of disease, particularly those of a communicable nature. With prevention, control and better treatment of the common infectious illnesses, the concentration on transmissible diseases was largely supplanted by chronic disease epidemiology in the 1960s and 1970s. The emergence of new infectious diseases in the 1980's and 1990's (particularly retroviral related diseases), resulted in a recrudescence of etiologic, preventive and clinical epidemiologic research in both disease domains. Finally, the health of an aging population, in an era of increasing health technology with its consequent demand for services, has resulted in a surge in health care expenditures. These latter developments have resulted in additional research opportunities in conditions such as Alzheimer's Disease, and heightened the need for both evaluation of health services and clinical interventions, and for community prevention trials.

Each of these endeavors is underway at the University of Miami, involving faculty from the Department of Epidemiology and Public Health. These research activities have the potential for offering students a remarkable opportunity for developing and refining their research skills in epidemiology.

Because of its location in South Florida, the University of Miami offers outstanding opportunities for epidemiologic studies. As the gateway to Latin America, the population of South Florida is a fertile ground for studying differences in disease rates and risks among a variety of racial and ethnic subgroups. In this changing mixture of people, opportunities for examining differences in group exposures, and how they relate to occurrence, diagnosis, survival, and mortality can be studied more effectively than where the population is static.

Classic clues to disease etiology have come from "migrant studies," conducted, for example, among Asians moving to Hawaii and California, as they change their lifestyle

exposures (but, of course, retain their genetic backgrounds). The potential for comparable studies is largely untapped in South Florida.

Furthermore, since the greater Miami-Ft. Lauderdale area is the "gateway" to the Caribbean, and Central and South America, diseases which are largely uncommon to the bulk of the rest of the continental United States, are imported into South Florida, and hence, are not rare in Miami. An example of this are the diseases associated with HTLV-1, with its endemic focus in the Caribbean basin, and the resurgence of tuberculosis. The proximity of nearby, endemic foci have resulted in South Florida having the largest number of cases of HTLV-1 associated disease in the United States, making it ripe for the epidemiologic research activities of faculty and Ph.D. students.

Besides the ethnic mix in South Florida, the older age distribution of the population affords other unique opportunities for epidemiologic research. In addition to the diseases mentioned above, the major causes of mortality in the U.S. (such as cancer, and cardiovascular disease), and morbidity (such as rheumatoid arthritis) may better be able to be studied in South Florida than in much of the nation, because of adequate numbers of affected individuals to study. The opportunities for learning about the risk factors for occurrence of these diseases, and developing and testing interventions to prevent them, delay their onset, and treat them, need to be maximized in this region.

Several other critically important issues in health and disease make South Florida an excellent training ground for future, Ph.D. level epidemiologists. These include the high prevalence of substance abuse, with its associated health/disease sequelae, and unique environmental exposures, such as excessive sunlight.

Finally, South Florida is known for its subtropical treasures and resources. It relies heavily on its tourist industry for economic survival. To serve the needs of this environment, and the millions of people who reside and visit here, epidemiologists with appropriate research training are needed to help assess and maintain a safe and healthy environment. For example, University of Miami epidemiologists have worked with the Water Planning Board of Metro-Dade County, the Metro-Dade Fire Department, Florida Power and Light, and with local residents' concerns about environmental causes of increased breast cancer occurrence. City planning departments, educational programs, and public health departments utilize epidemiologists who provide information on issues that effect growth and development of natural land resources and people throughout the state.

#### **DEMAND AND JOB MARKET: WHAT ELSE EXISTS IN FLORIDA**

Three major universities have medical schools to educate physicians - the University of Miami, the University of Florida at Gainesville, and the University of South Florida, in Tampa. Courses in epidemiology and training in research methodology are important components to medical education.

There are no Ph.D. programs in Epidemiology in this part of Florida, and only a single program elsewhere in the state, at the University of South Florida, in Tampa. That program currently has approximately 14 Ph.D. students. The University of Miami Ph.D. program is expected to draw students from current M.P.H. students, the pool of former graduates of the M.P.H. program who reside in South Florida, other students and employees with M.P.H. or equivalent degrees from other Universities, health department personnel, persons finishing their college or graduate degrees in South Florida, non-local students interested in the issues and diseases described above, students from Latin America and the Caribbean. Many physicians from Central and South America as well as other foreign countries also have a desire to come to the University of Miami for training and study.

The opportunities for Ph.D. level employment in Epidemiology are many. For example, in the most current issue of the "Epidemiology Monitor," there were 63 available positions for individuals holding a Ph.D. in Epidemiology.

#### PHYSICAL RESOURCES

The following table summarizes the space of the Department of Epidemiology and Public Health.

<b>SPACE ALLOCATION OF DEPARTMENT, UNDER CONTROL OF CHAIR</b>	
<b>Location</b>	<b>Square Footage</b>
<b>Dominion Tower, 7th Floor</b>	<b>5,218</b>
<b>Dominion Tower, 4th Floor</b>	<b>1,585</b>
<b>Dominion Tower, 2nd Floor</b>	<b>1,192</b>
<b>HERS Clinic</b>	<b>1,178</b>
<b>Daughtry Building, 1st and 2nd Floors</b>	<b>6,128</b>
<b>Grove Forest Plaza</b>	<b>2,400</b>
<b>Trailers</b>	<b>2,020</b>
<b>South Campus Building C</b>	<b>2,511</b>
<b>Rosentel Room 2052 A</b>	<b>454</b>
<b>Jackson Memorial Hospital Ambulatory Care Center</b>	<b>238</b>
<b>TOTAL</b>	<b>22,924</b>
<b>SPACE UTILIZATION</b>	
<b>Office, Office Service</b>	<b>14,379</b>
<b>Non-Classroom Laboratory</b>	<b>1,592</b>
<b>Classroom</b>	<b>973</b>
<b>Treatment</b>	<b>406</b>
<b>Lounge</b>	<b>274</b>
<b>Conference Room</b>	<b>530</b>

**THE BIOSTATISTICS DIVISION OF THE DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH**

The Biostatistics Division of the Department of Epidemiology and Public Health is located in the main campus of the University of Miami School of Medicine. The Staff of the Biostatistics Division presently consists of four PhD biostatisticians, a clinical

professor, a systems/database manager, two programmers, and a data-entry operator.

The computer/communications hardware consists of AT&T's 6386E Workgroup Station, a SUN 3/60 workstation, AT&T 6386 desktop stations linked through Starlan 10 networking, all integrated by AT&T's Unix operating system and its communication utilities. Development and applications software is based on an industry-standard relational database management system (RDBMS), INFORMIX-SQL, with its database programming language. This environment provides a uniform interface to the users and for system administration.

Our computers are also linked to the Information Systems Network wide-area network. This configuration provides flexible access to most of the computer resources throughout the University. Our networking configuration permits us to utilize remote file sharing and distributed databases where file systems and databases are extended over a network of computers and disc storage. We have 19,200 baud modems for remote access over the telephone lines.

Our software includes the following in four essential components: development, communications, statistical and clinical epidemiology applications. Our development system allows data management statements to be embedded in the C programming language. It combines procedural (programming) statements with certain non-procedural functions, such as menus, screen management, and reports. It also provides customized data management and analysis, and interfaces data entry databases to several statistical packages, including SAS, PSTAT, and BMDP.

Unix provides a powerful and widely used communications utility, UUCP, used to support several national and international networks, including USENET, ARPANET, BITNET, INTERNET, and ATMAIL. The combination of UUCP and an SQL-based set of database commands is used to manage remote data entry into distributed databases. In addition, we have numerous statistical tools allowing us to develop subroutine libraries and create algorithms not available in application software.

#### **PROPOSED SCHEDULE OF COURSE OFFERINGS**

The course offerings have been designed to follow from the material mastered in the MPH program. Students will be required to either have taken the Masters Degree Core Courses, or their equivalents, or pass a competency exam based on their material. In the doctoral program, a set of core courses will be required, which focus on both methodological and substantive epidemiology. These will be followed by a set of elective courses offered within the departments, as well as approved electives offered in other departments. The choice of electives will be made in conjunction with the student advisor, in line with the plans or areas of specialization of the candidate. For example, a

**doctoral student interested in cancer would be encouraged to take the course in clinical trials and environmental/occupational epidemiology, and depending on his/her background, courses in pathology, physiology, oncology, or molecular biology.**

**At least one year of residence (2 consecutive semesters), will be required, beyond the Master's level. Twenty-four hours in doctoral program courses will be required, 12 hours of elective courses, and 24 hours of dissertation (no more than 12 per semester, six in summer session). Written and oral qualifying examinations will be scheduled a minimum of one year completion of graduate level courses, with questions covering Epidemiology, Biostatistics, and one other relevant, approved, substantive area (e.g, cancer pathology, radiation, computer science). After successful completion of the exam, course work requirements will be completed, and then students will enroll in "research in residence." At the termination of the program, there will be a formal thesis presentation.**



<b>Doctoral Degree Requirements</b>			
<b>Course</b>	<b>Required or Elective</b>	<b>Offered</b>	<b>Credits</b>
<b>Advanced Applied Epidemiology</b>	<b>Required</b>	<b>Fall</b>	<b>3</b>
<b>Cancer Epidemiology</b>	<b>Required</b>	<b>Fall</b>	<b>3</b>
<b>Cardiovascular Disease Epidemiology</b>	<b>Required</b>	<b>Spring</b>	<b>3</b>
<b>Infectious Disease Epidemiology</b>	<b>Required</b>	<b>Fall</b>	<b>3</b>
<b>Behavioral Epidemiology</b>	<b>Required</b>	<b>Spring</b>	<b>3</b>
<b>Public Health Nutrition</b>	<b>Required</b>	<b>Spring</b>	<b>3</b>
<b>Statistical Methods in Epidemiology I</b>	<b>Required</b>	<b>Fall</b>	<b>3</b>
<b>Statistical Methods in Epidemiology II</b>	<b>Required</b>	<b>Spring</b>	<b>3</b>
<b>Qualifying Examinations</b>			
<b>Biostatistics II</b>	<b>Department Elective</b>	<b>Spring</b>	<b>3</b>
<b>Applied Epidemiology and Surveillance of AIDS/HIV Diseases</b>	<b>Department Elective</b>	<b>Spring</b>	<b>3</b>
<b>Clinical Trials</b>	<b>Department Elective</b>	<b>Fall</b>	<b>3</b>
<b>Environmental and Occupational Epidemiology</b>	<b>Department Elective</b>	<b>Fall</b>	<b>3</b>
<b>Doctoral Dissertation</b>	<b>Required</b>	<b>Both</b>	<b>24</b>
<b>Thesis Defense</b>			
<b>Total</b>			<b>60</b>

**BUDGETARY CONSIDERATIONS: UPDATED Friday, Mar 4, 1994 (4:33pm)**

NAME	BASE	EFF	SALARY	%FB	FRINGE	TOTAL YEAR 1	TOTAL YEAR 2	TOTAL YEAR 3
<b>Staff</b>								
Director	75,000	25%	19,500	30.0%	5,850	25,350	26,567	27,840
Program Coordinator	30,000	50%	15,600	33.5%	5,226	20,826	21,821	22862.86
Computer Programmer	26,588	50%	38,000	33.5%	6365	25365	26583	27859
Sr. Staff	16,991	25%	4,418	33.5%	1,480	5,898	6,179	6474.381
<b>SUB-TOTAL</b>			<b>58518</b>			<b>77439</b>	<b>81150</b>	<b>85035</b>
<b>GRADUATE ASSISTANTS</b>								
Three per year						45000	45000	45000
<b>SUB-TOTAL</b>						<b>45000</b>	<b>45000</b>	<b>45000</b>
<b>SUPPLIES</b>								
Clerical Supplies \$40/FTE/Mo						960	1498	1557.92
Instructional Supplies/books \$50/stud/mo						3600	5400	7200
<b>SUB-TOTAL</b>						<b>4560</b>	<b>6898</b>	<b>8757.92</b>
<b>EQUIPMENT</b>								
Office								
2 files year 1 and 1 file years 2 & 3 each						1200	600	600
3 desks 30x60						1860	0	0
3 swivel chairs						990	0	0
6 side chairs						435	0	0
3 computers 486 & accessories						9000	0	0
1 laser printer						750	0	0
1 overhead projector						340	0	0

<b>BUDGETARY CONSIDERATIONS: UPDATED Friday, Mar 4, 1994 (4:33pm)</b>								
NAME	BASE	EFF	SALARY	%FB	FRINGE	TOTAL YEAR 1	TOTAL YEAR 2	TOTAL YEAR 3
1 slide projector						585	0	0
1 Video recorder & monitor						750	0	0
Laboratory								
<b>SUB-TOTAL</b>						<b>15910</b>	<b>600</b>	<b>600</b>
<b>TRAVEL</b>								
1 trip director for recruitment						1000	1000	1000
2 trips for 2 teaching faculty to Scientific meetings						4000	4000	4000
2 trips for students for training & presentation of research						2000	2000	2000
<b>TOTAL</b>						<b>7000</b>	<b>7000</b>	<b>7000</b>
<b>OTHER</b>								
Rent (\$27/sq ft for 800 sq ft)						21600	22464	23362.56
Library searches						2000	2080	2163.2 2
Honorariums						6000	6240	6490
Computer time						2000	2080	2163.2
Slides preparation						3000	3120	3245
Accreditation						3000	3120	3244.8
Advertisement						1000	1040	1081.6
Publication/printing						6500	6760	7030.4
\$30/instrument/mo for 3 phones, 2 lines ea)						1440	1497.6	1557.504
Telephone (long distance)						500	520	540.8
Postage						750	780	811.2
Photocopying						3000	3120	3244.8
<b>SUB-TOTAL</b>						<b>50790</b>	<b>52821.6</b>	<b>54935.1</b>

**BUDGETARY CONSIDERATIONS: UPDATED Friday, Mar 4, 1994 (4:33pm)**

NAME	BASE	EFF	SALARY	%FB	FRINGE	TOTAL YEAR 1	TOTAL YEAR 2	TOTAL YEAR 3
<b>TOTAL DIRECT COSTS</b>						200699	193470	201328
<b>TOTAL</b>			595496.6					

**Faculty Senate Legislation #93004(B) -  
Repeal of Faculty Senate Legislation #87028(B)**

The Chair reviewed the supporting documentation of the proposed legislation to disestablish the Guidance Center as an academic unit. It was *moved* and seconded to approve the proposal. The *motion carried*.

**Proposal for a Ph.D. program in Physical Therapy (first reading)**

Professor Warren presented the proposal for its first reading and distributed a caveat to the recommendation of the review committee. The Director of the Program, Dr. Sherrill Hayes, responded to questions from the Senate relating to the possibility of a deficit in the department budget which might impact on the general University budget, possible coordination between the program and the School of Nursing. Dr. Hayes also answered questions about the program faculty, curriculum, the stipends to be offered students, and the nature of the scholarly field of endeavor. She stated that there are only ten existing Ph.D. programs in the country. However, faculty in the proposed Ph.D. program have their degrees mostly in the basic sciences, epidemiology, neuroscience, neuropsychology and higher education administration. Following discussion, it was suggested that, at a subsequent time, the issue of graduate stipends should be examined.


**Proposal for a Ph. D. program in Epidemiology (first reading)**

Professor Warren introduced Professor Trapido, Director of the Program, Professor Donohue and Professor Prineas, Chair of the Department of Epidemiology to answer questions from the Senate. He then presented a summary of the proposed program. Professor Green suggested that the Departments of Mathematics and Biology be contacted, prior to the next reading, with regard to including a biostatistics or mathematical statistics course in the curriculum. He said that this concern was expressed by the outside reviewers and the Graduate Council. The issue of space fragmentation was addressed by Professor Prineas who said that the class space is adequate although scattered and there are sufficient computer facilities for each graduate student to have a work station. In response to a query about whether this program, or the Public Health program in general, coordinated with the Health Administration in the School of Business Administration, Vice Provost Ullmann said that it is not at this time but does not preclude some affiliation in the future. It was suggested that the doctoral degree existing courses and course number and the proposed courses, along with an abbreviated syllabus, be provided for the next reading of the proposal. Professor Ladner noted that ARPANET is no longer available as a computer network.



MEMORANDUM

TO: Dr. Sherrill Hayes, Director, Division of Physical Therapy  
Dr. Edward Trapido, Professor, Department of Epidemiology and Public Health  
Dr. Marvin Dawkins, Director, Caribbean, African and Afro-American Studies  
Dr. Gordon Browning, Professor, Department of Foreign Languages and Literatures

FROM: Kamal Yacoub   
Chair, Faculty Senate

DATE: March 16, 1994

SUBJECT: Faculty Senate Meeting

This is to advise you that your name is listed on the agenda of the upcoming meeting of the Faculty Senate on Monday, March 21 at 3:00 p.m. in the Faculty Club, 1550 Brescia Avenue.

You are invited to join us and participate in presenting your proposed departmental program or your committee report and answering questions from the floor.

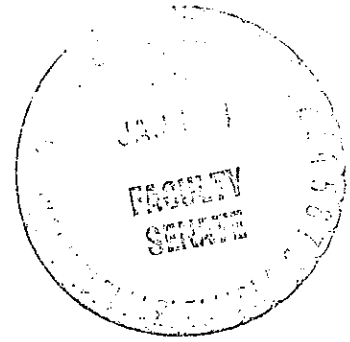
Attached is a copy of our agenda with estimated time for each item. You are welcome to join us at 3:00 p.m. However, if you cannot be there that early, please make sure you are there at least 15 minutes before the estimated time for your report.

Thank you for your cooperation.

KY/b

Attachment

cc: Provost Glaser, Dean Murfin, Dean Pfister,  
Vice Provost Rubin, Professor Mark Brown



MEMORANDUM

January 26, 1994

TO: Dr. Kamal Yacoub, Chairman  
Faculty Senate and Government

FROM: Jo Anne K. Hecker, Interim Dean  
The Graduate School

SUBJECT: Proposal for Epidemiology Ph.D. Program

The Graduate Council unanimously approved the proposed Ph.D. program in Epidemiology at the January 25, 1994 meeting.

I am enclosing a copy of the proposal for your action. Copies of the faculty c.v.'s are in the Graduate School. I am also enclosing a copy of the report submitted by the external reviewers and a report prepared by the Committee on Programs and Degrees.

A handwritten signature in cursive script, appearing to read "Jo Anne K. Hecker".

JKH:nb  
Enclosures

Copy to: Dr. Ronald Prineas, Chair  
Dr. Edward Trapido, Program Coordinator  
Department of Epidemiology and Public Health  
Dr. Robert Rubin, Deputy Dean  
School of Medicine



## SUBCOMMITTEE REPORT ON THE PROPOSED PH.D. IN EPIDEMIOLOGY

To review the proposed Ph.D. in Epidemiology an expanded Programs and Degrees Subcommittee was designed to include sufficient faculty who would represent the program in the social as well as the biological sciences. The committee included representatives from marine biology, cell biology and anatomy, biochemistry, psychology, sociology, and a special representative from the Faculty Senate (from Biochemistry).

The subcommittee met with the departmental principals and again with the external reviewers: Dean Raymond Greenberg, Emory, and Dr. Donald Hoover, Johns Hopkins University, during their visit on November 22-23, 1993. Following the receipt of the report from the reviewers, the committee met again on January 13, 1994 to draft the following recommendations for the Graduate Council.

For a number of reasons the subcommittee was very positive in recommending this program for adoption. The faculty in the Department of Epidemiology were judged to be competent and extremely well funded with research monies. Because of the ethnically diverse resident population in Miami, this setting provides a unique opportunity for cross-cultural investigations, as well as for the effects of migration on disease occurrence. The elderly population in South Florida also makes it an ideal setting for the study of the diseases of aging.

Sufficient numbers of high-quality students should also be available for the program. The reviewers state:

...in a very short time it [the program] will be able to attract a larger number of qualified students than the current faculty size could support.

The reviewers agreed that the employment market for doctoral epidemiologists is excellent at the federal, state and local levels, in universities, hospitals and in industry. They noted that:



Recent national surveys have identified epidemiology as one of the priority areas for present and future health-training needs.

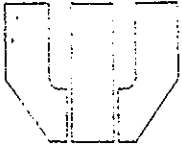
Additionally, the curriculum for the program as proposed was acceptable, although the reviewers recommended that some (two to four) classes be taken outside the department, such as "radiation science, oncology, mathematical statistics, etc."

The subcommittee recommends adoption of the Ph.D. program in epidemiology but wishes to relay a number of concerns that must be dealt with in the first few years of the program.

1. Assistantships should be raised from \$12,000 to \$15,000 each to remain in line with the other Ph.D. programs at the UM medical school.
2. The Ph.D. students will require a mechanism for consultation in statistical methods and computer applications early on.
3. The subcommittee concurs with the assessment of the external reviewers that there is too much fragmentation of space. The departmental facility must be consolidated in one or, at best, two sites.
4. The program will need a class seminar room and access to a classroom large enough for 50 participants in the near future.
5. Departmental advisors should seriously consider building into each doctoral student's program several courses as electives from outside the department.

The reviewers noted that there are a limited number of Ph.D. programs in epidemiology within medical schools such as is planned here. However, when comparing this proposed program with four other medical school programs, the reviewers note that the University of Miami has a larger student applicant pool and student body, an average-size faculty, and an above-average level of NIH grant support than four other prominent programs based within medical schools. They, and the committee, conclude that the University of Miami can offer a Ph.D. program in epidemiology that meets or exceeds the standards of the existing programs in schools of medicine.

N. Ehrhardt, Marine Biology & Fisheries  
G. Grotendorst, Cell Biology  
S. Hsia, Biochemistry  
G. Ironson, Psychology  
G. Warheit, Sociology  
J.F. Woessner, Biochemistry  
F. Huijting, Biochemistry, Faculty Senate Rep.



EMORY UNIVERSITY SCHOOL OF PUBLIC HEALTH  
and  
CENTER FOR INTERNATIONAL HEALTH

1599 Clifton Road, N.E.

Atlanta, Georgia 30329

Office of the Dean

(404) 727-8720  
FAX (404) 727-9853

December 2, 1993

Jo Anne K. Hecker, PhD  
Interim Dean, Graduate School  
University of Miami  
P. O. Box 248125  
Coral Gables, Florida 33124-2220

Dear Dr. Hecker:

You will find enclosed a copy of the report of the external review committee for the proposed PhD program in Epidemiology at the University of Miami. Dr. Hoover and I shared the writing task and the contents of this document reflect our joint opinions about the program. As you can tell from the report, we see great prospects for this educational program, and if it is implemented, we expect that it will reflect favorably upon the Department of Epidemiology and Public Health, the Graduate School, and the School of Medicine.

Dr. Hoover and I have taken the liberty of suggesting some areas in which we believe that the proposal could be enhanced. We hope that these suggestions are seen as constructive, and should in no way detract from the obvious merits of the proposal as presented. If there are any areas that we have not covered, or if our report is unclear in any respect, please do not hesitate to contact us.

You will also find enclosed my receipts and travel expense report for the trip. Your assistance in processing the reimbursement would be greatly appreciated. In closing, let me express my appreciation for your efforts in organizing and hosting this visit. It was a pleasure to visit the University of Miami and I wish you well in your further program development.

Sincerely,

Raymond S. Greenberg, MD, PhD  
Dean

Enclosures

REPORT OF THE EXTERNAL REVIEW TEAM FOR THE PROPOSED  
PHD PROGRAM IN EPIDEMIOLOGY

**Introduction**

The purpose of this report is to summarize the findings of a site visit for the proposed PhD program in Epidemiology at the University of Miami. The site visitors, Donald Hoover, PhD (Johns Hopkins University) and Raymond Greenberg, MD, PhD (Emory University), had the opportunity to meet with key administrators, faculty and students during their visit to campus on November 22 and 23, 1993. In addition, the reviewers were provided with pertinent written documentation about the proposed educational program, following the standard format of the University of Miami's Guidelines for Submitting a Proposal for a New Graduate Program. For the purposes of clarity and consistency, the present report is organized into sections specified within those guidelines.

**1. Rationale**

The Department of Epidemiology and Public Health is located within the School of Medicine of the University of Miami. The Medical School, known for some time as a center of clinical excellence, has gained increasing stature in the research arena. One of the important contributors to the growing research effort has been the Department of Epidemiology and Public Health, which has experienced an unprecedented recent growth in the size of its faculty. Through a combination of external recruitments and

## Review of Proposed Epidemiology PhD

internal transfers from other departments, the Department has achieved a critical mass of investigators in several key research areas, including cardiovascular disease, HIV, health behavior, substance abuse, nutrition, and statistical methods.

The recent growth in the number of Epidemiology and Public Health faculty members has enabled the Department to expand not only its research agenda, but also its educational offerings. The student body of the existing Master of Public Health (MPH) program has been enhanced over time, in terms of both quantity and quality. Even as new elective courses have been added, a demand has arisen for a more advanced level of training within the Department.

Several features make the University of Miami particularly attractive for the development of a PhD program in epidemiology. First, the resident population of the greater Miami area is ethnically diverse, providing a unique opportunity for cross-cultural investigations. Many of the residents are recent immigrants to the United States, which affords an opportunity to evaluate the effects of migration on disease occurrence. Miami also is geographically proximate to the developing countries of the Caribbean, as well as Central and South America, thereby facilitating research in the domain traditionally referred to as "tropical medicine." Southern Florida also possesses a large elderly population, making it an ideal setting for the study of diseases of aging.

At present, there is no PhD program in epidemiology within Florida, one of the most populous states in the nation. The closest PhD programs in epidemiology are found in Columbia, SC, Atlanta, GA and Birmingham, AL. The School of Public Health at the University of South Florida is relatively small, does not have a strong research base, and does not offer specialized training in epidemiology at the doctoral level. It is conceivable, therefore, that a PhD program at the University of Miami could emerge as a regional leader with a distinctive focus in a relatively short period of time.

Recent national surveys have identified epidemiology as one of the priority areas for present and future health training needs. The employment market for doctoral epidemiologists includes the public sector (primarily at the federal, but also at the state and local levels), universities, and the private sector (e.g., hospitals and manufacturers). Epidemiologists are engaged in a wide range of essential functions, including disease surveillance, etiologic research, disease control initiatives, and health services research.

Epidemiologists often are involved in cross-disciplinary work, bridging to social sciences (e.g., anthropology and sociology), behavioral sciences (e.g., psychology), quantitative sciences (e.g., statistics and computing), clinical sciences (e.g., oncology and cardiology), and biological sciences (e.g., microbiology and immunology). Already, many of these types of collaboration are

evident at the University of Miami. Ideally, the emergence of a new PhD program in epidemiology would serve to enhance these linkages through cross-registration of courses and the creation of dissertation committees that bridge the disciplinary boundaries.

## 2. Physical Resources

The program has adequate resources. Taken as a whole, the libraries, classrooms, faculty and staff offices are adequate for the existing MPH program and anticipated increased enrollment from the PhD program. As the programs grow, accessibility to more classrooms and a larger classroom that can hold more than 50 students will be needed. The computer hardware and software need to be expanded and better linked in a way that will be conducive to educational needs; that is, an operational computer center, dedicated to the proposed program, with a consultant in the facility, needs to be established. Office space for students may need to be located, as well as a common student and/or student faculty lounge, where students can meet. One current limitation is overdispersion of the physical facilities. The department is located at nine different sites, often separated by substantial geographic distances. This arrangement operates against a sense of "unified program" for the students. While consolidation of the facilities is thus important, this should be done at a location within the medical complex. To separate students and faculty from colleagues in clinical and basic sciences departments will hinder

both the collaborative research of the Epidemiology and Public Health faculty and PhD students and limit the opportunity for needed interdisciplinary education for the students. The University, Medical School, and department officials are aware of this situation.

### 3. Curriculum

The proposed curriculum was basically sound, but the reviewers have two suggestions. First, almost all of the required and recommended classes are within the department. Since epidemiology is interdisciplinary, there needs to be study (at the graduate level in other departments). Clearly, the departmental faculty are engaged in interdisciplinary research and some MPH students take classes at other departments in the University of Miami and Florida University. We encourage consideration of a minor PhD field, or a tract, in which 2-4 classes outside the department be taken, such as, (but not only) radiation science, oncology, mathematical statistics, etc. Many other PhD programs in epidemiology have a requirement for a minor field. Second, there was some concern that a mathematical statistics class should be required, or at least encouraged, as many of the methods used in epidemiology are based on this theory.

While the departmental faculty clearly has thought through all the programmatic issues, some specifics could be better clarified. For example, they could provide a specific timeline of classes

during the first 3 years, identify specific instructors for the new classes, estimate the total teaching load for each faculty member, and project the potential distribution of graduate students among visitors, i.e., the maximum number each faculty member could take at one time.

#### 4. Faculty

The availability of an enthusiastic and highly supportive faculty with tremendous research initiatives is the strongest predictor of the future success of this proposed PhD program. The faculty of the department have the necessary skills, breadth and experience to organize a PhD program and instruct and advise students. Strengths of the faculty include: (i) most have had direct involvement with PhD programs at other major universities; at least seven have previously advised PhD students; (ii) there is a wide breadth of research and instruction in major epidemiological disciplines, particularly methods, behavior/substance abuse, nutrition and cardiovascular disease.

We concur with the department conclusion that the faculty could be strengthened by additions of cancer epidemiologists and accident and health policy specialists. It should also be noted that there is a substantial number of epidemiologists and biostatisticians in other departments of the Medical School who are qualified to teach and advise PhD students. Utilization of these people in the program would both strengthen interdepartmental



linkages and reduce the burden on the faculty with primary appointments in Epidemiology and Public Health. There are two African-American and one Hispanic faculty members at present. Given the strong Latin-American/Caribbean composition of Miami and the potential to draw foreign students from these regions, consideration should be given to recruiting additional Latino faculty, although the pool is admittedly small.

As with all disciplines, teaching epidemiology/biostatistics classes is time consuming. Furthermore, advising PhD students in epidemiology is time consuming and does not result in an immediate boost to the instructor's research program, as may be the case in other fields. To maintain commitment to the program, it is thus important to reward teaching and advising for promotion and salary raises. The faculty should be made aware of this, i.e., in writing. Institutional funding for this effort also should be provided, since many of the existing faculty are entirely supported by extramural sources for sponsored research.

#### 5. Students

We agree with the department's analysis that they will have an adequate pool of students for the reasons they gave on page 25 of their proposal. While at first the department may have trouble attracting the best students due to the newness of the program, in a very short time it will be able to attract a larger number of qualified students than the current faculty size could support. In

## Review of Proposed Epidemiology PhD

particular, the current Fogarty Program, which sponsors Latin-American students for the MPH, could, if augmented, continue the education of some of these students onto the PhD, producing outstanding graduates who will return to their countries.

We suggest, however, that certain classes be added as prerequisites for admission, as these classes are needed preparation or guarantees of aptitude. In particular, no student should be admitted without previous coursework in the biological sciences, physical sciences, and mathematics. Prior coursework in calculus should be strongly recommended. The specific functions for the proposed teaching assistants should be better spelled out. However, as teaching assistants will greatly improve the existing MPH program, it would be desirable for the University of Miami to commit institutional support for a least 3.

### 6. Administration

The principal leadership of the PhD program will come from the program director, presumably Dr. Edward Trapido. It is estimated that the director will have to spend 25 - 35% of his time on this activity, and financial support for this effort should be derived from departmental resources. In the opinion of the reviewers, a concomitant reduction in extramurally funded research will be required for this individual. The reviewers also believe that other key faculty within Epidemiology and Public Health can assist in the governance of the PhD program by serving on an Executive

Committee, following a model already in place for the MPH program. The Executive Committee would develop and implement policies, and the existing Curriculum Committee would review proposed new courses.

The reviewers anticipate that the creation of a PhD program in Epidemiology and Public Health inevitably will increase the administrative demands on the Department. Even at the modest program size proposed, a senior staff administrator will be required to help develop recruitment materials, coordinate the application process, assist with student registration, schedule classes, secure adequate teaching space, advise students, and provide other services as needed. Given the high level of faculty effort already devoted to the research enterprise, it is unlikely that these support functions could be assigned to a faculty member. We recommend, therefore, that a full-time senior program manager be sought. Conceivably, this position could be shared with the MPH program, but discussions with both faculty and students suggested that a person with these skills was not presently in place within the Department.

Based upon observations and discussions at the site visit, a second staff position also is highly recommended. As noted under **Physical Resources**, a computer laboratory is an essential component of epidemiologic training, and may be seen as analogous to bench research space in a basic science doctoral program. At present, the Department has space identified for such a laboratory, but the

laboratory is not fully functional because the appropriate statistical software is not operational. In order to bring this laboratory into operational status, a full-time senior computer specialist is required. This individual would install, debug, update and maintain the appropriate software, load analytical datasets, instruct users, maintain the hardware, schedule the hours of operation, and coordinate repairs. Installation of a local area network also would be desirable, in spite of the fact that it would increase the maintenance workload. The computer specialist who runs this laboratory should be dedicated to this effort and not utilized as a shared resource in support of other operations, such as research projects. Some efficiency can be achieved, however, by having this individual serve the needs of both MPH and PhD student computing. The reviewers believe that the epidemiology student laboratory should be maintained separate from any computing resource for medical students. The software and hardware needs of these user groups are so different as to make any shared facility poorly tailored to the educational requirements of either group.

#### 7. Budget

The proposed budget for this program is modest, but should be adequate for most of the program needs. As noted under the preceding section, however, an additional personnel line for a computer specialist is highly recommended, at an estimated salary and fringe benefit cost of \$50,000 per year, with the expense

shared equally by the MPH program. The budget as specified also does not include any funding for student stipends. In order to be competitive for the best students, stipends will be required at an estimated cost of \$12,000 per student per year. Once students complete their coursework, however, they can be supported as graduate research assistants on extramurally funded grants at no cost to the program.

#### 8. Comparison to Other Programs

As noted in the department's proposal, there are a limited number of PhD programs in epidemiology within medical schools. A comparison with four such programs at Case Western Reserve University, the University of Southern California, Brown University, and New York University, reveals that the University of Miami has a larger student applicant pool and student body, an average size faculty, and an above average level of NIH grant support. Based upon the information provided, it appears that the University of Miami could offer a PhD program that meets or exceeds the standards of the existing programs in schools of medicine.

#### Additional Comments

We agree very strongly with the proposal that there is a demonstrated need for this PhD in epidemiology in Miami, Florida. Of 57 PhD programs in epidemiology, only one is in Florida, the fourth most populous state. The graduates from the PhD programs in

## Review of Proposed Epidemiology PhD

epidemiology of our schools, Emory and Johns Hopkins, have no trouble finding employment; the problem usually is finishing the degree in time to start the job. This proposed PhD program has a number of easily identifiable strengths:

- The departmental faculty is broad and has several seasoned members familiar with PhD level teaching and advising.
- The faculty has an excellent record of procuring funded research and publishing in prominent journals. The infrastructure for PhD research already has been built.
- The unique demographic composition of Miami (Hispanic, Caribbean and elderly) provides a tremendous resource for epidemiologic research and training.
- Both the Medical School and the University have expressed strong commitment to this program.

### Summary and Recommendations

The external reviewers were favorably impressed with the resources in place at the University of Miami for the development of a PhD program in epidemiology. The Department of Epidemiology and Public Health already has an established MPH program and a demonstrable student demand for more advanced training. Miami provides many unique advantages for epidemiologic research, and the department has developed a strong research base over the past few years. It is anticipated that the creation of a PhD program in

epidemiology will not only strengthen the Department of Epidemiology and Public Health, but also will reinforce its linkages with other departments.

The physical resources for the program should be adequate if the department can find space that provides both convenient access to collaborators and enhanced consolidation of departmental faculty and students. PhD students will require a dedicated computer training laboratory and workspace near the faculty that will supervise their research. The proposed curriculum meets the basic expectations of doctoral training in epidemiology, although syllabi for many of the courses were not yet available. Over time, the department may want to require some exposure to statistical theory, since many epidemiologic approaches require an appreciation of the underlying theory. In addition, with the unique environment of Miami, there would be merit to considering coursework in the areas of ethnicity and disease, and tropical public health. The reviewers felt that the encouragement of students to pursue minor concentration areas would be helpful. For example, statistical methods could serve as a focus of secondary concentration.

The faculty currently in place is adequate to offer this degree program. Although not all aspects of epidemiology are represented (e.g., environmental and occupational health, reproductive health), there is a broad range of specializations present, with particular strength in cardiovascular disease, HIV, health behavior, and nutrition. Based upon experience with the

## Review of Proposed Epidemiology PhD

MPH program, it would appear that an adequate pool of qualified students also will be available for the PhD program. The credentials of the MPH students have improved over the past few years, and it appears that a sizeable proportion of them would be interested and qualified to pursue more advanced training.

It is strongly recommended that a senior administrator should be hired to manage the program and a computer specialist should be sought to oversee the computing laboratory. The budget for the proposed program should be increased to accommodate half of the cost of the computer specialist and stipends for students during their classroom year.

The reviewers left the campus with a strong sense that the proposed PhD program was well justified and would enhance the stature of the Department of Epidemiology and Public Health, as well as the University of Miami. There is a great likelihood for further expansion of the research and teaching programs in Epidemiology and Public Health over the next 5-10 years. With increased size, maturity and reputation, the PhD program will attract better students and will be able to offer more specialized classes and tracts. As is currently happening with the MPH students, many of the PhD graduates will stay at the University of Miami or Miami, further increasing health research planning capacities of the area. Many undergraduate students at the University of Miami who are interested in medicine and public health, as well as medical, nursing, and other students, will take



## Review of Proposed Epidemiology PhD

entry level classes in epidemiology and biostatistics. Other important public health degree programs will be developed from the critical mass of professionals who will be attracted to and developed at the University of Miami.

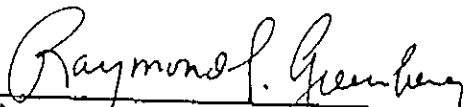
Review of Proposed Epidemiology PhD

This report has been prepared by the undersigned authors and reflects their shared opinions.



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Donald Hoover, PhD



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Raymond S. Greenberg, MD, PhD

**TUE December 14, 1993 (8:06am)**

*Director of Graduate Faculty*

**Jo Anne Hecker, Ph.D.  
Interim Dean, Graduate School  
University of Miami  
P.O. Box 248125  
Coral Gables, FL 33124-2220**

**Dear Dr. Hecker,**

**Thank you for your memorandum of 12/6/93. I would like to respond to the two items that you raised.**

- 1. Ph.D. Program in Tampa**  
**The University of South Florida does grant a Ph.D. in Epidemiology. I called UHF last Friday, and they confirmed this.**
- 2. Budgetary Suggestions:**  
**We will leave the Senior Administrator as a half time person. We feel 50% of one person's time should be adequate, at least until the number of students increases substantially. The Department of Epidemiology and Public Health has just hired a new Senior Department Administrator, who should be able to help with management of the Ph.D. program, if necessary.**

**I have added a 50% computer programmer to the budget, which is reprinted and attached to the application.**

**The graduate student stipends were already included in the budget, as graduate assistantships. At the suggestion of the external reviewers, these have been increased from \$11,000 to \$12,000 per student. Three stipends will be available every year.**

**Thank you for your continuing help.**

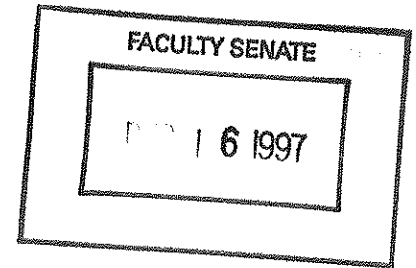
**Sincerely,**

**Edward Trapido, Sc.D.**

BUDGETARY CONSIDERATIONS: UPDATED MON February 21, 1994 (11:36am)								
NAME	BASE	EFF	SALARY	%FB	FRINGE	TOTAL YEAR 1	TOTAL YEAR 2	TOTAL YEAR 3
<b>Staff</b>								
Director	75,000	25%	19,500	30.0%	5,850	25,350	26,567	27,840
Program Coordinator	30,000	50%	15,600	33.5%	5,226	20,826	21,821	22,862.86
Computer Programmer	26,588	50%	38,000	33.5%	6365	25365	26583	27859
Sr. Staff	16,991	25%	4,418	33.5%	1,480	5,898	6,179	6474.381
<b>SUB-TOTAL</b>			<b>58518</b>			<b>77439</b>	<b>81150</b>	<b>85035</b>
<b>GRADUATE ASSISTANTS</b>								
Three per year						45000	45000	45000
<b>SUB-TOTAL</b>						<b>45000</b>	<b>45000</b>	<b>45000</b>
<b>SUPPLIES</b>								
Clerical Supplies \$40/FTE/Mo						960	1498	1557.92
Instructional Supplies/books \$50/stud/mo						3600	5400	7200
<b>SUB-TOTAL</b>						<b>4560</b>	<b>6898</b>	<b>8757.92</b>
<b>EQUIPMENT</b>								
Office								
2 files year 1 and 1 file years 2 & 3 each						1200	600	600
3 desks 30x60						1860	0	0
3 swivel chairs						990	0	0
6 side chairs						435	0	0
3 computers 386 & accessories						15000	0	0
1 laser printer						750	0	0
1 overhead projector						340	0	0

BUDGETARY CONSIDERATIONS: UPDATED MON February 21, 1994 (11:36am)								
NAME	BASE	EFF	SALARY	%FB	FRINGE	TOTAL YEAR 1	TOTAL YEAR 2	TOTAL YEAR 3
1 slide projector						585	0	0
1 Video recorder & monitor						750	0	0
Laboratory								
SUB-TOTAL						21910	600	600
TRAVEL								
1 trip director for recruitment						1000	1000	1000
2 trips for 2 teaching faculty to Scientific meetings						4000	4000	4000
2 trips for students for training & presentation of research						2000	2000	2000
TOTAL						7000	7000	7000
OTHER								
Rent (\$27/sq ft for 800 sq ft)						21600	22464	23362.5 6
Library searches						2000	2080	2163.2 2
Honorariums						10000	10400	10816
Computer time						2000	2080	2163.2
Slides preparation						5000	5200	5408
Accreditation						3000	3120	3244.8
Advertisement						1000	1040	1081.6
Publication/printing						6500	6760	7030.4
\$30/instrument/mo for 3 phones, 2 lines ea)						1440	1497.6	1557.50 4
Telephones (long distance)						500	520	540.8
Postage						750	780	811.2
Photocopying						3000	3120	3244.8
SUB-TOTAL						56790	59061.6	61424.0 6

BUDGETARY CONSIDERATIONS: UPDATED MON February 21, 1994 (11:39am)								
NAME	BASE	EFF	SALARY	%FB	FRINGE	TOTAL YEAR 1	TOTAL YEAR 2	TOTAL YEAR 3
TOTAL DIRECT COSTS						212699	199710	207817
TOTAL			620226					



MEMORANDUM

December 11, 1997

TO: *David Wilson, Chair  
Faculty Senate*

FROM: *Steven G. Ullmann, Interim Dean JU  
The Graduate School*

SUBJECT: *Epidemiology Ph.D. Program 3-year Review*

*The Department of Epidemiology presented to Graduate Council the attached 3-year report on their Ph.D. program. After discussion with Council members and Dr. Edward Trapido, Director of the program, the report was approved unanimously by Graduate Council.*

*SGU:nb*

*Enclosure*

*Copy to:*

*Dr. Luis Glaser, Provost*

*Dr. Edward J. Trapido*

*Dr. Clyde B. McCoy*

*Mrs. Ana Godur*

# **Ph.D. Program in Epidemiology**

## **Year Three Progress Report**

**Edward J. Trapido, Sc.D.**

**Ph.D. Program Director**

**Clyde B. McCoy, Ph.D.**

**Department Chair**

**Epidemiology and Public Health  
University of Miami School of Medicine**

**November 5, 1997**



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## **Ph.D. Program in Epidemiology**

The document summarizes the Ph.D. Program in Epidemiology, offered within the University of Miami School of Medicine's Department of Epidemiology and Public Health, after the initial three years of operation.

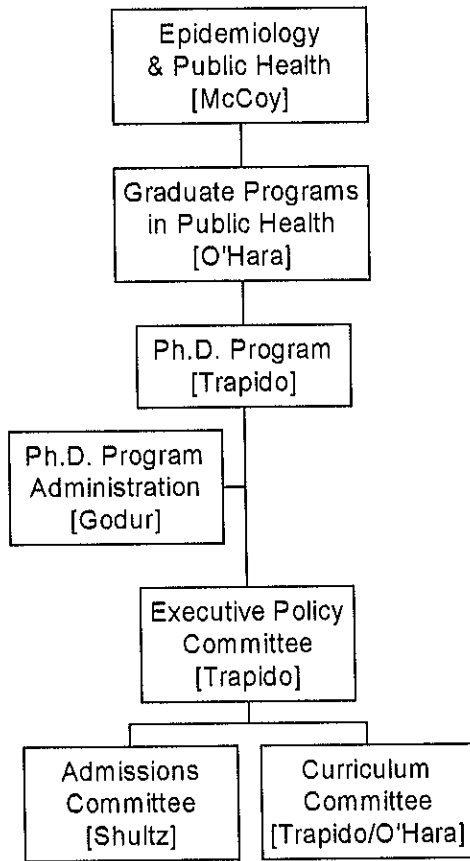
### **Mission of the Ph.D. Program**

The mission of the Ph.D. Program in Epidemiology is to produce highly qualified epidemiologists who can perform as top notch researchers and educators within the context of an evolving field, and in a changing medical and scientific environment.

Since the "market value" of a student graduating with a Ph.D. in Epidemiology from the University of Miami has not yet been tested, the Ph.D. program has been developed so that our students will be more than competitive upon graduation. Therefore, in addition to the usual Ph.D. requirements, we provide students with experience in grant writing, teaching, making public presentations at professional meetings, coursework in biomedical fields [i.e., beyond epidemiology and biostatistics], and mentoring on/assistance with being published in peer reviewed journals.

The Ph.D. Program in Epidemiology provides intensive research training for students with prior training in epidemiology or related disciplines. All Ph.D. students in the program have extensive contact with faculty members, in part because the program is explicitly designed to be small and interactive. The program takes advantage of South Florida's unique opportunities for epidemiologic research, including our ever changing mix of races, ethnicities, and cultures. In fact, many of the departments research efforts could not be conducted elsewhere. Furthermore, since the program is located within the School of Medicine, interactions with basic scientists and clinicians provide opportunities for epidemiologists to develop translational and interdisciplinary research projects and skills. The program is primarily designed for students who have completed a Masters Degree in

**Public Health, a related discipline, or another graduate medical degree (MD, DO, MSN, DVM, etc.).**



**Program Administration**

**The Ph.D. program functions as a component of the Department of Epidemiology and Public Health's Graduate Programs in Public Health [GPPH]. The GPPH is directed by Dr. Peggy O'Hara, and is administered by Ms. Ana Godur, M.P.H., M.P.A. Ms. Godur, a graduate of the Department's Masters in Public Health, is very familiar with all components of our graduate programs, including teaching, advising, and administration. Therefore, in addition to her role as administrator for the MPH program, Ms. Godur serves as the administrator of the Ph.D. program. This arrangement maximizes efficiency and minimizes cost and duplication. In her Ph.D. coordinator role, she reports directly to Dr. Trapido. A summary of the Graduate Programs in Public Health appears in**

**Appendix I.**

**Committee Structure**

**The infrastructure for the Ph.D. program consists of an Executive Policy Committee, an Admissions Committee, and a “shared” Curriculum Committee. The Executive Policy Committee discusses all of the substantive and administrative issues about the program, its teaching, and its students, and is responsible for making all programmatic decisions. Minutes are taken of these meetings, and recommendations are implemented through the Ph.D. program administrator, [Ms. Ana Godur]. The Executive Policy Committee’s**

membership consists of :

**Dr. Trapido, Director of the Ph.D. Program (Committee Chair, and Permanent Member)**

**Dr. Clyde McCoy: Chair of DEPH, (Permanent Member)**

**Dr. Peggy O'Hara: Director of GPPH, (Permanent Member)**

**Dr. James Shultz: Chair of the Ph.D. Admissions Committee, (3 year term)**

**Dr. Judy Bean: Elected Faculty Representative, (3 year term)**

**Ms. Nancy Stein: Ph.D. Student Representative, (2 year term)**

**Ms. Nancy Dgetluck: Ph.D. Student Representative, (2 year term)**

**Ms. Ana Godur: (Permanent, non-voting member)**

#### **Ph.D. Curriculum Committee**

The Ph.D. Program shares a Curriculum Committee with the MPH Program, with the focus alternating between the programs on a monthly basis. A "shared" Committee was established [rather than separate committees for each degree program in the Department] because changes in course content or offerings effect all degree programs. Furthermore, separate Ph.D. and M.P.H. Curriculum Committees [which we initially tried] often resulted in repetitive discussions. However, since the curriculum related needs of the Ph.D. in Epidemiology differ from those of the Masters in Public Health, the "shared" committee alternates its focus between the M.P.H. program and the Ph.D. programs, on a monthly basis. Recommendations for changes in curriculum are made to the Ph.D. Executive Policy Committee, who then acts on the recommendations.

#### **Members of the Curriculum Committee**

**Dr. Peggy O'Hara: Co-Chair (Permanent Member)**

**Dr. Edward Trapido: Co-Chair (Permanent Member)**

**Dr. Eleni Sfakianaki: Department of Health Representative (Permanent Member)**

**Dr. Gary Schwartz: (One Year Term)**

**Dr. Lora Fleming: (Two Year Term)**

**Dr. Bean: (Two Year Term)**

**Ms. Maria Elena Villar: (MPH Representative, One Year Term)**

**Dr. Robert Kirsner: (Ph.D. Representative, One year Term)**

**Ms. Ana Godur: (Permanent, non-voting member)**

#### **Ph.D. Admissions Committee**

The Ph.D. Admissions Committee is charged with reviewing all applications which meet the minimal acceptable criteria for admission, identifying candidates for further consideration, interviewing the prospective students, and making admissions recommendations to the Executive Policy Committee. A summary of the number of application requests, applications reviewed, applicant interviews, applicant acceptances, and enrolled students appears in Appendix II.

**Members of the Admissions Committee are:**

**Dr. James Shultz: Chair [Three Year Term]**

**Dr. Norman Weatherby: [Three Year Term]**

**Dr. Robert Duncan: [Three Year Term]**

**Dr. David Lee: [Three Year Term]**

**Dr. Peggy O'Hara: [Permanent Member]**

**Dr. Clyde McCoy: [Permanent Member]**

**Dr. Edward Trapido: [Permanent Member]**

**Ms. Ana Godur: [Permanent, non-voting member]**

**Students [Please refer to App. III for Student Profiles].**

The program currently has seven Ph.D. students. Of the seven, two have M.D. degrees, and five have prior Master's degrees (from Emory, University of Massachusetts, University of Mexico, University of Miami, and Yale University).

#### **Student Support**

Since we do not have stipends available to the students, all of the students have had to have

some form of external employment. The current status of this is listed below:

Student	Employment
Colon, Hector	Directs a Research Division at the State Drug Abuse Agency in Puerto Rico.
Dgetluck, Nancy	Statistician in a Broward County Community Hospital.
Kirsner, Robert	Dermatologist in the Dept. of Dermatology
Ma, Fanchao	Graduate Assistant in the Department of Epidemiology, Working on a Study of Occupational Health among Firefighters
Lai, Hong	Senior Research Associate in the Department of Psychiatry, Working on the Women's Health Initiative
Reed, Kevin	Research Assistant in the Department of Epidemiology, Working on Early Breast Cancer Detection.
Stein, Nancy	Senior Research Associate with the Florida Cancer Data System.

### Student Handbook

A student handbook has been created for the Ph.D. Program, and appears with a checklist for PhD students, in Appendix IV.

### Requirements for Enrolled Ph.D. Students

The Ph.D. program consists of a minimum of 60 credit hours of coursework which are planned on an individual basis. Formal coursework is expected to be completed within two

years of admission. Each entering student is required to have completed, at a minimum, one course in epidemiology, and two courses in Biostatistics, prior to entering the program. Elective courses are planned individually to meet the needs of a student's particular area of concentration. Ph.D. students are expected to complete 28 credits of core courses in epidemiology and related topics, and at least eight credits of elective courses.

The principal element in the curriculum is the student's research program. Each student will have a Dissertation Advisor and Dissertation Committee. In addition to the doctoral dissertation, students must complete the Comprehensive written and oral examinations and submit a manuscript for publication on an epidemiologic subject.

As part of the professional development of doctoral students, opportunities are made available to provide experience in teaching, grant writing, and scientific presentation.

#### **Courses**

[Please refer to the "Curriculum for Ph.D. in Epidemiology," in Appendix V as well as a complete listing of course offerings in "Course Offerings, Graduate Programs in Public Health" in Appendix VI. This is followed by the Ph.D. Program Plan, which is specifically tied to the course requirements for the Ph.D. program (Appendix VII)].

#### **Prerequisite Courses [Prior to Admission]**

**Medical Biostatistics I, Medical Biostatistics II, Fundamentals of Epidemiology.**

#### **Core Courses**

**Research Seminar, Statistical Methods in Epidemiology I, Statistical Methods in Epidemiology II, Advanced Applied Epidemiology, Survey Methods in Epidemiology, Basic Pathology and Pathophysiology, Cardiovascular Disease Epidemiology, Infectious Disease Epidemiology, Behavioral Epidemiology, Cancer Epidemiology, Grant Writing Seminar.**



**Since the beginning of the program, the following courses have been added, or changed:**

**Added:**

**Cancer Epidemiology**

**Epidemiology of Drug Abuse**

**Ethical Issues in Epidemiology**

**Statistical Methods in Epidemiology I**

**Statistical Methods in Epidemiology II**

**Forensic Epidemiology**

**Basic Pathology and Pathophysiology**

**Survey Methods in Epidemiology**

**Changed:**

**Research Seminar [changed credits]**

**Public Health Nutrition [changed credits]**

**In addition, a journal club has been created, and the departmental seminar series modified to include presentations by Ph.D. students. [After a student completes his/her first year of the program, there is a requirement to give at least one presentation every year in the Departmental seminar series.]**

**Students are also required to teach one session in one course per year.**

**Timeline**

**The timeline for Ph.D. students appears in Appendix VIII. The progress of the students appears in Appendix IX.**

## Evaluation

Evaluation of *students* occurs through coursework, by advisors, and by the Director of the program.

Evaluation of the *program* occurs through faculty and student evaluations of courses, input from Ph.D. student representatives on all Ph.D. committees, discussions with student advisors, and through individual interviews. That is, all Ph.D. students are also interviewed annually, by the Director, for their satisfaction with the program, their advisor, their courses, and their progress.

In addition, the Director, in conjunction with the Curriculum Committee (and a Ph.D. Curriculum Task Force reporting to the Curriculum Committee), reviews the appropriateness of existing courses for Ph.D. students. Suggestions for changes in course requirements have been made, and implemented, as a result of these processes.

Faculty [Please see "Faculty Profile," in App. X].

Sixteen faculty members of the Department are involved in the Ph.D. Program. All of these are members of the Graduate Faculty. Faculty are listed below, with the area they received their training in.

Faculty Member	Terminal Degree In:
Judy Bean, Ph.D.	Biostatistics
Jasenska Demirovic, M.D., Ph.D.	Medicine, Epidemiology
Robert Duncan, Ph.D.	Biostatistics
Lora Fleming, M.D., Ph.D.	Medicine, Epidemiology
Michael French, Ph.D.	Economics

<b>Faculty Member</b>	<b>Terminal Degree In:</b>
<b>Orlando Gomez, Ph.D.</b>	<b>Biometry</b>
<b>David Lee, Ph.D.</b>	<b>Preventive Medicine</b>
<b>Lisa Metsch, Ph.D.</b>	<b>Sociology</b>
<b>Clyde McCoy, Ph.D.</b>	<b>Demography</b>
<b>Peggy O'Hara Murdock, Ph.D.</b>	<b>Education</b>
<b>James Rivers, Ph.D.</b>	<b>Sociology</b>
<b>Gary Schwartz, Ph.D., Ph.D.</b>	<b>Biological Psychology, Epidemiology</b>
<b>James Shultz, Ph.D.</b>	<b>Epidemiology</b>
<b>Selina Smith, Ph.D.</b>	<b>Health Sciences</b>
<b>Edward Trapido, Sc.D.</b>	<b>Epidemiology</b>
<b>Norman Weatherby, Ph.D.</b>	<b>Sociology</b>

All faculty either are partially or entirely responsible for at least one course.

#### **Advisors**

Advisors are initially assigned by the Executive Policy Committee, based on (1) the student's interests being matched to the most appropriate faculty member; (2) time availability of the prospective advisor; (3) current number of Ph.D. and M.P.H. advisees that the faculty member has; (4) willingness of faculty member to perform this role. Both students and advisors are able to request a reassignment if/when that becomes appropriate. A student's employer cannot be his/her advisor, but may serve on his/her thesis committee. Advisors and students are listed below:

<b>Student</b>	<b>Advisor</b>
<b>Colon, Hector</b>	<b>Dr. Norman Weatherby</b>

<b>Student</b>	<b>Advisor</b>
<b>Dgetluck, Nancy</b>	<b>Dr. Judy Bean</b>
<b>Kirsner, Robert</b>	<b>Dr. Robert Duncan</b>
<b>Ma, Fanchao</b>	<b>Dr. Edward Trapido</b>
<b>Lai, Hong</b>	<b>Dr. Edward Trapido</b>
<b>Reed, Kevin</b>	<b>Dr. Jasenka Demirovic</b>
<b>Stein, Nancy</b>	<b>Dr. Gary Schwartz</b>

### **Summary**

**The Ph.D. in Epidemiology has been implemented according to our stated mission and plan. We feel a strong commitment to (1) maintaining the quality of our teaching, (2) keeping a low faculty : student ratio with faculty mentoring, (3) admitting only extremely qualified students, and (4) assuring that our current students achieve their goals and represent the Program and University well. Expansion will be done cautiously, and will depend on our ability to maintain these goals.**

## **List of Appendices**

- I. Graduate Programs in Public Health Bulletin**
- II. Applicant Profile**
- III. Student Profile**
- IV. Student Handbook, Checklist for Doctoral Students**
- V. Curriculum for Ph.D. Students**
- VI. Course Offerings**
- VII. Ph.D. Program Plan**
- VIII. Timeline**
- IX. Progress of Students**
- X. Faculty Profile**

# **I. Graduate Programs in Public Health Bulletin**

## **II. Applicant Profile**

**UNIVERSITY OF MIAMI SCHOOL OF MEDICINE  
DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH  
PHD PROGRAM IN EPIDEMIOLOGY  
APPLICANT PROFILE**

Academic Year	Application Requests	Applications Reviewed	Applicants Interviewed	Applicants Accepted	New Students
1995-96	78	8	5	4	4*
1996-97	89	9	2	2	2
1997-98	32**	11	3	1	1

\* Two students received deferred admissions to Spring 1996

\*\* Application requests received as of November 1, 1997



### **III. Student Profile**

**UNIVERSITY OF MIAMI SCHOOL OF MEDICINE  
DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH  
PHD PROGRAM IN EPIDEMIOLOGY  
PhD STUDENT PROFILE**

<u>NAME/YR. ADMITTED</u>	<u>SEX</u>	<u>ETHNICITY</u>	<u>CREDITS EARNED</u>	<u>CUM. GPA</u>	<u>GRE V</u>	<u>GRE Q</u>	<u>TOEFL</u>	<u>HIGHEST DEGREE</u>
Fangchao Ma (FL 95)	M	Asian	36	3.925	620	690	N/A	M.D. (Tongi - China) MPH (Univ Alabama)
Nancy Stein (FL 95)	F	Caucasian	31	3.806	530	590	N/A	MPH (Yale Univ. )
Robert Kirsner (SP 96)*	M	Caucasian	31	3.777	640	740	N/A	M.D. (Univ. Miami)
Hong Lai (SP 96)*	F	Asian	39	3.643	340	670	N/A	MPH (Univ. Miami)
Hector Colon (FL 96)	M	Hispanic	24	3.750	640	570	N/A	M.A. (Univ. Mexico)
Nancy Dgetluck (FL 96)	F	Caucasian	18	3.683	650	640	N/A	M.S. (Univ. Mass.)
Kevin Reed (FL 97)	M	Black	15 (currently)	N/A	530	510	N/A	MPH (Emory)

\* deferred admission to Spring semester

**IV. Student Handbook,  
Checklist for Doctoral  
Students**

# **STUDENT HANDBOOK**

**1997 - 1998**

## **Ph.D. PROGRAM IN EPIDEMIOLOGY**

Edward Trapido, Sc.D., Director

Ana Godur, M.P.H., M.P.A., Administrator

## **DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH**

Ronald J. Prineas, M.D., Ph.D., Chair

## **UNIVERSITY OF MIAMI SCHOOL OF MEDICINE**

Miami, Florida

- Phone:** (305) 243-6759
- Office Location:** Highland Professional Building; Room 210  
1801 NW 9 Ave  
Miami, FL 33136
- Mailing Address:** Graduate Programs in Public Health  
P.O. Box 016069 (R-669)  
Miami, FL 33101
- Research and  
Graduate Studies:** Rosenstil Medical Science Building; Room 1134  
Maria Zayas, Phone: 243-6406
- Graduate School:** 210 Ferre Building, Coral Gables Campus  
Wanda McSwiney, Phone: 284-4154

rev. 7/97

### **STUDENT RESPONSIBILITIES**

All graduate students at the University of Miami are subject to the general standards and requirements of the University, its various departments, and the specific requirements of the Graduate School. The graduate student is expected to assume the initiative in completing all requirements of the program within the time specified. It is the responsibility of the student to be informed concerning all regulations and procedures required. In no case will a regulation be waived or an exception granted because a student pleads ignorance of the regulation.

### **FACULTY ADVISORS FOR STUDENTS**

Students will be assigned a faculty advisor to assist with the planning of their studies. Prior to registration each semester, students are **required** to obtain their advisor's signature on the registration form.

### **INDIVIDUAL STUDY (EPH 682) AND FIELD EXPERIENCE (EPH 680)**

Before registering for these credits a contract must be completed, approved and signed by the student, faculty supervisor and director of the program. No student will be allowed to register for an individual study or field experience without a completed contract. These forms are included in the orientation package.

The number of credits allotted for an Individual Study will depend on the amount of work to be completed and must be agreed upon by the student, advisor, faculty supervisor, and the director. Credit hours for Field Experience are earned at the rate of **one (1) credit hour for every 2½ hours per week of actual field work based on a 15-week fall or spring semester and 7½ hours of work per week based on a summer session.**

### **READMISSION TO GRADUATE SCHOOL**

**Students who have not been continuously enrolled for regular sessions (excluding summer sessions) must request readmission at least four weeks in advance of registration.** An application for readmission (included in the package) must be completed and approved by the Bursar's office before submitting it to the GPPH office. If additional college work has been taken elsewhere since the last enrollment at the University of Miami, an official transcript of this work will be required.

Admission of a student to the University of Miami for any semester does not imply that such student will be re-enrolled in any succeeding semesters.

## GRADES, QUALITY POINTS, AND CREDITS

Letter grades with corresponding quality points are as follows:

A+	4.0	B-	2.7	D+	0
A	4.0	C+	2.3	D	0
A-	3.7	C	2.0	D-	0
B+	3.3	C-	1.7	E	0
B	3.0				

**S** is the symbol used for an acceptable (**U** is for unacceptable) project, practicum, and internship credit.

**D** and **E** indicate failure and are not acceptable for graduate credit.

**W** indicates a course dropped by permission of the Director and the Dean of the Graduate School prior to the last day for withdrawing from classes as published in the official calendar of the University. Credit can be earned only by successful repetition of the course.

**I** indicates incomplete work in passing status with the instructor's permission to complete the course. An **"I"** will be assigned only if the instructor is satisfied that there are reasonable non-academic grounds for the student's incomplete work. The form "Report on Incomplete Work" (included in the package), which specifies the parameters for making up the incomplete, must be filled out by the instructor. A copy of this will go into the student's file. It is the student's responsibility to find out what work has to be completed to receive credit for the course. An **"I"** which is not removed within one (1) calendar year will **permanently** remain on a student's record even if the course is successfully repeated.

Students who have **two (2) incompletes** (excluding EPH 699) **will not** be allowed to register for additional courses until both incompletes have been satisfactorily completed.

**NG** is a symbol assigned by the Registrar indicating that the instructor has not yet reported the student's grade. For a student to receive credit for the course, the instructor must report a passing grade prior to the student's graduation.

### GRADE POINT AVERAGE (GPA)

An average of B (3.0) is required for a graduate degree, and no **"D"** credit may be counted toward the degree. All work taken as a graduate student will be counted in computing the GPA, including courses graded **"D"**.

The GPA is determined by dividing the total of quality points earned by the total of credits attempted. The symbols **"S"**, **"W"**, and **"I"** are not counted as credits attempted.

Students must continually maintain a GPA of 3.0 over all courses. Any student falling below the required GPA automatically will be placed upon probationary status for one semester or possibly dismissed. Students on probation are not eligible for tuition subsidy. Students who remain on probation for more than one semester are subject to dismissal at the discretion of the executive council. A letter grade of "D" is not acceptable.

### **GRADUATION**

It is the responsibility of the student to apply for graduation either during registration or before the date indicated on the Graduate School calendar. The form is available in the GPPH office. If a student does not graduate on the date for which applied, the student must reapply for graduation.

Graduation ceremonies are held in May only. Those completing degree requirements during the fall or summer sessions may participate in the graduation ceremonies of the previous or following May.

### **STUDENT SERVICES**

#### **Louis Calder Memorial Library**

- 1) Photocopy service is available for students by obtaining a copycard.  
Copycards may be purchased in denominations of 100, 200 and 500 copies.  
Prices are:      \$ 5.50 for 50 copies                      \$20.50 for 200 copies  
                         \$10.50 for 100 copies                      \$50.50 for 500 copies
  
- 2) Circulation of materials is as follows:  
Books, one week, \$1.00 per day overdue fine.  
Reserve material, overnight only, from two hours before closing until 9:00 AM the following morning, \$1.00 per hour overdue fine.  
Current journals (1st floor), non circulation.
  
- 3) Audiovisual aids are available from Medical Audiovisual Services at 243-5530.
  
- 4) Interlibrary loans for students are available for \$2.00 per article or book.

#### **Health Insurance**

Health insurance is **mandatory** for all Ph.D. students. If you do not have health insurance, you must contact Maria Zayas in the Graduate Studies Office at 243-6406 to get information about purchasing health insurance prior to registration.

Dental insurance is also available to students who are interested.

### **Metrorail Passes**

Monthly Metrorail passes are sold to full-time students from the Office of Parking. Students must show that they are registered for 9 or more hours (the pink registration receipt will show this). The passes are usually sold the first week of each month. For more information, contact Daisy at 243-4868.

### **Parking**

Maps of the Medical and Coral Gables campuses are included in the package. There are various lots at the medical campus available for a fee for general use. However, they quickly become full in the morning. Metered parking spaces are also available in various locations. For information on purchasing a monthly parking card, contact Daisy at 243-4868.

### **Graduate School Bulletin**

The Graduate School Bulletin is available in the GPPH office. Students are encouraged to read it. It contains the policies of the Graduate School, descriptions of courses offered, and the services that are available to graduate students; it is published annually.

### **Wellness Center**

The George A. Smathers Wellness Center is a state-of-the-art facility located on the Coral Gables Campus of the University of Miami. The Center provides access to a weight-fitness room, floor hockey/indoor soccer gymnasium, racquetball and squash courts, martial arts room, locker rooms, swimming pool, health/juice bar and lounge, aerobics room, elevated jogging track, and a wellness module.

Full-time graduate students will **automatically** be assessed an \$85 fee for each semester to use the facility. Students will, however, have the ability to waive the fee through Student Account Services each semester that they choose not to utilize the Center.

### **Computer Labs**

The DEPH Computer Lab, which serves as a resource for students, is located in Highland Professional Building Rm. 418A. The Lab has IBM PS/2 386 computers which contain various software programs. From the UMSMST network, the user can connect to the Coral Gables Campus computer system and access the VAX and the software available on these computers such as BMDP and SAS.

The Ungar Computing Center, located at the Coral Gables Campus, also houses computing facilities which consist of 3 computer laboratories with 22 terminals, 36 personal computers and 11 Macintosh computers.



### **Graduate Student Association**

The Graduate Student Association (GSA) serves as a formal channel of communication between graduate students, the faculty, and the administration. The goals of GSA are to create activities commensurate with the interest of all its membership, to act as a vehicle of academic reform, and to represent the views of the graduate student community to all external groups, as well as on University-wide committees. Membership in the GSA is granted to any student at U.M. who is registered for graduate credit. Contact 284-6750 for more details.

### **Biomedical Graduate Student Association**

The Biomedical Graduate Student Association (BGSA) has been established to promote scientific exchange among graduate students in the biomedical sciences, to foster professional development and increase awareness of career options, to facilitate social interactions, and represent the over-all interests of biomedical graduate students to the administration. Contact Hal Skinner at 243-3356 or by E-mail at [hskinner@mednet.med.miami.edu](mailto:hskinner@mednet.med.miami.edu) to get further information.

### **Minority Student Affairs**

Minority Student Affairs (MSA) is committed to developing and administering programs that enhance the education experience of students of color - particularly African Americans, Asian Pacific Americans, Hispanic and Native Americans. MSA's initiatives are academic support services, faculty mentoring, multicultural programs, advising to cultural student organizations, student development programs, and cultural sensitivity training. More information is available by calling 284-2855.

### **International Student Services**

The Department of International Student Services (ISS), located in Building 21-F at the Coral Gables Campus, is dedicated to ensuring that the experience of international students at U.M. is a positive one. ISS offers a comprehensive orientation program at the beginning of each semester. ISS also advises students on personal and academic concerns, appropriate campus and community activities, and offers information regarding on-campus employment authorization. For further information, students are urged to call 284-2928.

### **SPIN Program**

The Graduate School has obtained a comprehensive database, entitled SPIN, that contains over 6000 profiles of funding opportunities. Graduate students are encouraged to take advantage of the program, located in 210 Ferre Building at the Coral Gables Campus. The service can assist students who are searching for funding for scholarships, internships, travel expenses for conferences, etc. To set up an appointment to use the program, please contact the Graduate School at 284-4154.

### **Photocopy Services**

The Park Plaza West Copy Center is available to provide various services for a fee including photocopies, color copies, transparencies, report binding, etc... In addition, many instructors request that their students purchase class readings from the Copy Center to supplement their course.

### **ACCESS CARD & PHOTO ID**

Access cards to enter the Highland Professional Building are provided to all incoming degree-seeking students. These cards are computer coded and should **never** be given to other individuals for their use. Lost or stolen access cards should be reported **immediately** to Security and can be replaced by the student for a \$10 fee. Access cards must be returned to the GPPH office prior to graduation to avoid a hold on the student's diploma. U.M. employees who already possess access cards and are degree seeking students will have their cards updated. All other students should use the telephone outside of the Department to request access to enter the building.

### **MAILBOXES**

The GPPH student lounge (Highland 418B) has established individual mailboxes for all current students. Feel free to use these mailboxes to communicate with fellow students.

### **E-MAIL ACCOUNTS**

All students have free access to E-mail. A form for obtaining an E-mail account is included in this packet. Once you have completed it, stop by Medical Network Services in Dominion Garage and drop it off. They will contact you with your E-mail address.

### **MEDLINE ACCESS**

PhD students have unlimited access to Medline on a yearly basis. Come by the GPPH office to obtain an account with your login and password. These accounts are monitored regularly by Calder Medical Library and passwords should not be shared with **any individual for their use**.

### **STUDENT LOUNGE**

Room 418B in the Highland Building is designated as the Student Lounge. Students are welcome to use the soda machine, coffee machine, and refrigerator. Please be sure to empty the refrigerator of any spoilage in a prompt manner.

### **DEPH SEMINAR SERIES**

The DEPH seminar series offers lectures and seminars with a public health/epidemiologic emphasis to students, faculty, and staff. These seminars are usually scheduled every other Tuesday from 12:00pm - 1:00pm. Information on the seminars, speakers, and location will be posted within the Highland Building as it becomes available.

### **GPPH NEWSLETTER**

The GPPH office publishes a quarterly newsletter that is distributed to all students, faculty, and staff of the department. Important information regarding registration, deadlines, graduation, job opportunities, etc... are contained in the newsletter. It is very important that you take the time to **carefully read** the newsletter to stay in tune with events and deadlines.

### **ADDITIONAL INFORMATION**

If you have ANY questions about material contained in this package or about any other aspect of our Graduate Programs, please do not hesitate to contact our office at 243-6759. We will be more than happy to help you.

# DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH

## FACULTY LIST

Judy A. Bean, MPH, PhD  
Jasenka Demirovic, MD, PhD  
Robert Duncan, PhD  
Lora E. Fleming, MD, MPH  
Michael T. French, PhD  
Orlando Gomez Marin, PhD  
David J. Lee, PhD  
Clyde B. McCoy, PhD  
Lisa R. Metsch, PhD  
Peggy O'Hara, PhD  
James E. Rivers, PhD  
Gary Schwartz, PhD, PhD, MPH  
James M. Shultz, PhD  
Selina Smith, PhD  
Edward J. Trapido, ScD  
Norman L. Weatherby, PhD

## ADJUNCT TEACHING FACULTY

Douglas Feldman, PhD  
Kenneth Goodman, PhD  
Joshua A. Perper, MD, LLB  
Sherri Porcelain, MPH  
Eleni Sfakianaki, MD, MSPH  
Robert Tomchik, MD, MPH

## CHECKLIST FOR DOCTORAL STUDENTS

1. Fulfill all admission requirements for doctoral degree status.
2. Consult applicable section of the Graduate Bulletin you were admitted under -- **OFTEN**
3. Meet **regularly** with your faculty advisor
4. Complete all coursework.
5. Pass all Qualifying or Comprehensive Examinations.
6. Apply for candidacy; forms are available in the Graduate School. You must be admitted to candidacy **at least one semester** before you may graduate. Check with Graduate School Records at 284-4154 for procedure.
7. In consultation with your advisor, choose a Dissertation Committee. Your Dissertation Committee is appointed when you apply for admission to candidacy. It is composed of not less than five members, three of which must be members of the Graduate Faculty. One member must be selected from outside your program or department of concentration, and may, on occasion, be selected from outside the University community. The chair of your committee must be a regular members of the Graduate Faculty.
8. Meet with your Dissertation Committee to get approval of your thesis proposal and your publishable manuscript.
9. Submit your manuscript for publication after it has been approved by your Dissertation Committee.
10. Call or visit the Dissertation Coordinator, 102 Ferre Building, to obtain a pamphlet on the preparation of dissertations.
11. Apply for graduation **early** in the semester in which you intend to graduate. Check the deadline specified in the school calendar to avoid any problems or delays. Students who previously applied for a diploma but did not receive the degree must repeat the application procedure for the diploma.
12. Complete your dissertation to the satisfaction of your Dissertation Committee.

13. Defend your dissertation. Arrange with your committee for the oral defense of your dissertation. The defense should be scheduled well in advance of the deadline date for final submission to the Graduate School. The deadline date is published each semester in the school calendar. See that each committee member has a copy of the dissertation at least two weeks prior to the defense.
14. Obtain two **Certificates of Approval of Defense** to present to your committee along with your signature page at the time of your oral defense. All documents should be signed in **black ink**. Your signature page should be on 25% cotton bond paper. Submit the Certificates of Defense along with your final dissertation, in approved form, to the Graduate School Dissertation Coordinator before the published deadline date.
15. Obtain the **UMI Microfilming Agreement Form** and **Survey of Earned Doctorates** from the Graduate School. These must be completed and submitted with your dissertation by the submission deadline date. You may pay the required **Dissertation Fee of \$125** when you submit your dissertation.
16. The Dissertation Coordinator will be glad to review your dissertation with you in advance of your producing the five required copies. This may avoid multiple reprints for errors in format, pagination, footnotes or bibliography.
17. If you plan to include in your dissertation copies of copyrighted instruments or documents, be sure to acquaint yourself with copyright law and include the necessary letters of permission in your thesis. Booklets on copyright laws are available from the Graduate School.
18. Submit to the Dissertation Coordinator an archive copy on 25% cotton bond or better, plus four additional copies of the dissertation. Each copy should be clearly identified and submitted in a manila envelope with a clasp. You and your chair will each receive one bound copy of your dissertation. The library and your department will each receive one of the other two bound copies.

**V. Curriculum for Ph.D.  
Students**

## **Curriculum for PhD in Epidemiology Department of Epidemiology & Public Health**

### 1. **Overview of Course Work**

- A. In most cases, will take no more than 2 years, but can take up to 4 years per UM policy, with a UM requirement of a minimum of 1 year in fulltime residence and courses;
- B. At least 1 course in area of special interest;
- C. Advisor to approve courses, including those taken outside of UM; per UM Graduate Bulletin, a minimum of 24 credits must be taken at UM;
- D. Per UM Policy, a grade point average of  $\geq 3.0$  with no single grade below a "C" must be maintained;

2. A **Minor/Special Area** is required for each student, to be determined by the student with the assistance of the advisor, not only for Comprehensive Examinations, but also to give identifiable areas of expertise as a desirable and marketable asset interests of the faculty and students

### 3. **PhD Skills/Goals**

- Independent Research (define a research question, population, specific aims, testable hypotheses, strengths & weaknesses, etc)
- Area of Concentration/Expertise
- Writing: Scientific papers, Grants
- Teaching
- Database & Statistical Computing Familiarity
- Data Collection
- Presentation of Scientific Research

### 4. **Core Courses - 28 Credits**

The entering student is assumed to have met all prerequisite coursework (1 course in Epidemiology and 2 courses in Biostatistics) prior to enrolling in the program. The PhD Curriculum Committee and the Advisor of each student will determine a) if additional courses are needed, and b) the acceptance of courses taken at other institutions for credit in the Core.

In the case of a prior master's degree at the University of Miami in which duplication of courses is possible, in particular the MPH, 28 credits must still be taken within the Department of Epidemiology and Public Health beyond those taken in the MPH.



The Core Curriculum consists of the following courses to be offered preferably within the Department of Epidemiology and Public Health:

EPH 600	Research Seminar	3
EPH 603	Statistical Methods in Epidemiology I	3
EPH 605	Statistical Methods in Epidemiology II	3
EPH 624	Advanced Applied Epidemiology	3
EPH 641	Survey Methods in Epidemiology	3
EPH 640	Basic Pathology and Patho-Physiology	3
EPH 620	Cardiovascular Disease Epidemiology*	3
EPH 622	Infectious Disease Epidemiology*	3
EPH 645	Behavioral Epidemiology*	3
EPH 611	Cancer Epidemiology*	3
EPH 681	Grant Writing Seminar	1

\* must register for at least 3 of these 4 courses

5. **Electives - 8 credit minimum**

Students are encouraged (with permission of the Advisor and guidance of the Committee) to take courses outside of the Department to pursue their Concentration Area (eg. Sociology, Psychology, Biochemistry, etc).

6. **Guidelines for Independent Study & Practical Field Experience & In Absentia**

- A. Must have Advisor's review and approval;
- B. Include time/credit guidelines on the Contracts;
- C. Each student must spend at least 2 consecutive semesters beyond the first year's graduate work per UM requirements; Students will be expected to be at UM until completion of the Comprehensive Examinations, with the exception of participation in outside courses and field experiences with permission of their Advisor;

7. **Qualifying Examinations**

- A. The Examination will consist of:
  - Written Core: Epidemiology Section  
Biostatistics Section
  - Oral Special Area: Student Minor
  
- B. The Examination will be constructed as:
  - Core: written examination to be developed by a committee of 4-5 members (with at least 1 biostatistician and 1 epidemiologist); both the epidemiology and biostatistics sections must be taken together; exam will be offered in late summer and will be the same for all PhD candidates

- Minor/Special Area: oral examination to be given by an Examination Committee of 2 experts in addition to the Advisor; the Advisor can be the Chair of the Committee; the Chair must be a member of Faculty of the Department of Epidemiology; must be taken within 3 months of passing the core examination sections. A one page proposal declaring the minor must be submitted and approved by the Executive Policy Committee prior to taking the Comprehensive Core Exam.
- C. These examinations should be taken preferably within 2 years, and no more than 4 years, of starting the PhD Program
- D. Students will receive a Pass or Fail grade on each section and will be judged separately on each of the three areas. If a section is failed, the student will be allowed one opportunity to retake the part that was failed;
- E. After successfully passing all three sections of the examination, the student will be admitted into Candidacy

8. **Advisor and Dissertation Committee**

The qualifications of the Advisor and Committee members are determined by the Executive Committee. The Committee must be formed prior to Written Examinations, as per University Graduate School policy and to facilitate selection of the Concentration area.

- A. After being admitted to Candidacy, the student and their Advisor should form a Dissertation Committee
- See UM Graduate Bulletin Rules;
  - 5 members, including the Advisor, with the Chair a member of the Graduate Faculty and 1 person outside the Department;
  - The Advisor can be the Chair although this is not a requirement; the Chair must be a member of the Faculty of the Department of Epidemiology;
  - 1 member of the Committee must have a PhD in Epidemiology and it is recommended that 1 member be a Biostatistician;
  - 1 member can be outside the School, although this is not a requirement since it imposes a financial and time commitment burden; this person must fill out the Accreditation form;
  - can but does not have to include members of the Special Area Qualifying Examination group;
  - Inclusion of Women and Minority Faculty Members is highly encouraged;
  - A list of the Graduate School Faculty should be made available to the Students;

- B. At least 1 meeting of the entire Dissertation Committee is recommended after reading the written proposal;
  - C. Approval of the Dissertation Committee is needed for the student to proceed with the Dissertation; Students are required to turn in a small thesis proposal (approximately 5 pages) using the guidelines for a grant application to their Dissertation Committee for the committee's review and approval.
  - D. Original data for the dissertation is expected. Secondary data will be acceptable under extenuating circumstances with approval of the Dissertation Committee and the PhD Executive Policy Committee.
9. **Dissertation (EPH 730. Doctoral Dissertation. 1-12 credits/term for a total  $\geq$  24 credits)**  
The Dissertation should be focused on a research question in the selected Concentration Area. The Graduate Studies Bulletin should be consulted with regards to timing and format.
10. **Dissertation Defense**
- A. At least 1 meeting of the entire Dissertation Committee is recommended after reading the written Dissertation;
  - B. The Defense will be open to the entire University Community;
  - C. Questions will come from the Dissertation Committee alone, although the audience can be opened up to the public;
  - D. Approval of the Dissertation Committee is needed for acceptance of the Dissertation;
  - E. In general, the Dissertation should be finished within 6 years of starting the PhD program, although per UM policy, it should take no more than 4 years after admission to Candidacy; students who have a different schedule should be reviewed by the Executive Committee at a regular basis; the UM limit is 8 years from admission into the PhD program.
11. **Manuscript Requirement**  
In addition to a thesis, students are required to submit a manuscript for publication on an epidemiology subject. It will be judged to be publishable by the student's Dissertation Committee and does not necessarily have to be tied to the thesis.
12. **Teaching Requirement**  
All students are expected to teach at least 1 session of 1 course to fulfill the teaching requirement.

13. **Seminar Presentation Requirement**  
After acceptance of the dissertation proposal, each student must make a formal presentation annually at the Departmental Seminar; this presentation can consist of a literature review, on-going or planned research etc.; the Advisor and Director of the PhD Program should attend if possible;
14. **Evaluation**  
Each student should be evaluated at least once annually in writing by the Advisor, with time for discussion of the evaluation in person. The evaluation should be reviewed by the Executive Committee. Evaluation criteria will be based on: course grades, annual presentation, publications, fieldwork, communication abilities (e.g. writing and speaking in English), etc.
15. **Advisors**  
Advisors should be assigned by the Executive Committee initially, and then later chosen by the Student with approval of the Executive Committee prior to setting up the Qualifying Examinations; this reflects the different roles of an Advisor: in the first 1-2 years, primarily course selection and direction while after that expertise in the Special Area is more important;
16. **Presentations & Scientific Meetings**  
Presentation of research at Scientific Meetings should be highly encouraged, as should regular attendance at relevant Scientific Meetings. The PhD Seminar will serve as an excellent setting for practice and feedback prior to formal presentation.
17. **PhD Curriculum Committee**  
Due to overlap of Faculty, courses, and even students, the PhD Curriculum Committee was combined with the MPH Curriculum Committee to form a new DEPH Curriculum Committee. One member of this new committee is a PhD student representative.
18. **University of Miami Graduate Studies Bulletin**  
In addition to the above, all students are responsible for those requirements and regulations specified in the University of Miami Graduate Studies Bulletin, published on an annual basis.

revised 9/97

## **VI. Course Offerings**

**UNIVERSITY OF MIAMI SCHOOL OF MEDICINE**  
**COURSE OFFERINGS**  
**GRADUATE PROGRAMS IN PUBLIC HEALTH**

**EPH 501 BIOSTATISTICS I** (3 cr.): Introduction to probability and statistics including descriptive statistics, tests of hypothesis, regression analysis, contingency tables, nonparametric tests and life tables. Students will gain hands-on experience in the analysis of medical data using several computer systems and at least one of the different statistical packages such as: BMDP, SAS, PSTAT, SYSTAT, and Minitab. *Prerequisite: Ability to use a spreadsheet program on a personal computer.*

**EPH 502 BIOSTATISTICS II**(3 cr.): Continuation and elaboration of EPH 501. Includes design of factorial experiments, analysis of variance and variance components, multiple linear regression, life tables. *Prerequisite: EPH 501 or permission of instructor.*

**EPH 520 HEALTH EDUCATION AND BEHAVIOR** (3 cr.): Educational processes with special emphasis on the social and cultural determinants of health behavior, health education as a process of social change, and community based health education organizations.

**EPH 521 FUNDAMENTALS OF EPIDEMIOLOGY** (3 cr.): Principles and methods of epidemiology. Descriptive epidemiology, environmental and other risk factors; detection of outbreaks, basic demography, etiologic studies. *Prerequisite: permission of instructor.*

**EPH 525 ETHICAL ISSUES IN EPIDEMIOLOGY** (3 cr.): The course identifies and analyzes ethical issues in epidemiologic practice and research. Issues include data acquisition and management, confidentiality, valid consent, advocacy and public policy, subgroup stigma, research sponsorship and conflicts of interest, communication of risk, and international and intercultural difference. *Prerequisite: EPH 501 and EPH 521 or permission of instructor.*

**EPH 541 INTEGRATED ASPECTS OF ENVIRONMENTAL HEALTH** (3 cr.): Interdisciplinary scope of environmental health problems. Development of a practical, dynamic model for integrating fundamental concepts from a variety of environmental disciplines.

**EPH 542 MEDICAL TOXICOLOGY** (3 cr.): Provides an integrated approach to human and environmental health effects in conjunction with toxicologic mechanisms of disease and monitoring. This course was developed for the advanced student with an interest in environmental and occupational health. Lectures and discussions will focus on groups of toxins, considering their toxic health effects on humans and the environment. In addition, where relevant, a broad range of topics will be discussed using specific examples, including: monitoring, environmental and occupational regulation, different forms of pollution, engineering and industrial hygiene, risk assessment, and prevention. *Prerequisite: EPH 541 or permission of the instructor.*

**EPH 561 PUBLIC HEALTH NUTRITION** (2 cr.): Epidemiology classification of nutrition risk factors and their amelioration through public health measures. Emphasis on nutritional assessment and education of large population groups. Some discussion of nutritional deficiencies in relation to disease.

**EPH 571 MATERNAL AND CHILD HEALTH** (3 cr.): Preventive and therapeutic concepts pertinent to the reduction of morbidity and mortality among mothers and their children. *Prerequisite: EPH 521 or permission of the instructor.*

**EPH 581 FIELD APPLICATIONS IN PUBLIC HEALTH** (1-4 cr.): Subject matter offering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title "Advanced Topics". *Prerequisite: Core requirements for MPH program or permission of instructor.*

**EPH 583 AIDS AS A PUBLIC HEALTH ISSUE** (3 cr.): To examine AIDS as a public health issue, including material on HIV epidemiology, etiology, treatments, co-factors, transmission behavioral change, psychological factors, sociocultural factors, political aspects, legal issues, policy formulation, and medical ethics. The course will primarily cover AIDS in North America and Africa, with some attention to other geographical areas.

**EPH 600 RESEARCH SEMINAR** (3 cr.): Prepares students for designing the public health project; writing scientific articles or technical reports based on the project; presenting the project to an audience of peers; and critiquing design and presentation of colleagues projects. *Prerequisite: At least 12 EPH credits to include EPH 501 and EPH 521.*

**EPH 602 ISSUES IN INTERNATIONAL HEALTH** (3 cr.): Main issues in the provision of health care internationally; determinants of health improvement and issues of planning; morbidity and mortality-prevention, control, and eradication programs; housing, water, sanitation, nutrition, food production and distribution; population and family planning; international organizations in health care; technology transfer; economics and politics of health care.

**EPH 603 STATISTICAL METHODS IN EPIDEMIOLOGY I** (3 cr.): Advanced statistical methods used in analyzing data from epidemiologic investigations. Topics to be included are: Mantel-Haenszel chi-square, interaction, standardization of rates, incidence density, logistics regression, and other special topics. *Prerequisite: EPH 501 and 521.*

**EPH 604 CLINICAL TRIALS** (3 cr.): Planning, design, analysis and data management for clinical therapeutic and prophylactic trials. Illustrations by case examples. *Prerequisite: EPH 501 and permission of the instructor.*

**EPH 605 STATISTICAL METHODS IN EPIDEMIOLOGY II** (3 cr.): Continuation and elaboration of EPH 603. Advanced statistical methods used in analyzing data from epidemiologic investigations. Topics to be included are: Kappa statistics, life tables, survival analyses, logistic regression, Poisson regression, log linear models, clusters, meta-analysis, and other special topics. *Prerequisite: EPH 603 and permission of instructor.*

**EPH 610 APPLIED EPIDEMIOLOGY AND SURVEILLANCE OF HIV/AIDS** (3 cr.): Students in the course will be provided with an overview of the epidemiology of HIV/AIDS and will then proceed to design a national surveillance system for AIDS, conduct serologic testing for HIV infection, design and conduct sentinel surveillance studies, establish control programs and implement primary prevention education strategies. *Prerequisite: EPH 501 and EPH 521.*

**EPH 611 CANCER EPIDEMIOLOGY** (3 cr.): This course covers the basic epidemiology of cancer. Major sites and exposures will be stressed, highlighting descriptive, etiologic and preventive aspects. There will be a major course project, and one final exam. *Prerequisite: Permission of instructor*



**EPH 620 CARDIOVASCULAR DISEASE EPIDEMIOLOGY AND PREVENTION** (3 cr.):

The purpose of the course is to teach and train students in the area of epidemiology and prevention of cardiovascular diseases. Cardiovascular diseases, especially coronary heart disease and cerebrovascular disease, are the leading causes of morbidity and mortality among adults in the U.S. population. Therefore, knowledge in the epidemiology and prevention of these diseases is essential for those working in the area of public health. *Prerequisite: EPH 501 and EPH 521 or permission of the instructor.*

**EPH 621 CHRONIC DISEASE EPIDEMIOLOGY** (3 cr.): The major chronic diseases (e.g. Heart Disease, Cancer, diabetes). Their population impact, and methods of prevention. Specialized problems associated with chronic disease studies. *Prerequisite: EPH 521.*

**EPH 622 INFECTIOUS DISEASE EPIDEMIOLOGY AND CONTROL** (3 cr.): Surveillance, investigation, control and problems related to infectious diseases. *Prerequisite: EPH 501 and EPH 521.*

**EPH 624 ADVANCED APPLIED EPIDEMIOLOGY** (3 cr.): Principles and methods of analytic studies including case-control, cohort, and clinical trials. Emphasis on quantification of influences of chance, evaluation cause-effect relationships. *Prerequisites: EPH 501 and EPH 521 or permission of instructor.*

**EPH 625 ADVANCED DEMOGRAPHY** (3 cr.): The course is the study of demography in relation to epidemiology, health and illness; including basic population structure, composition and trends, and population methods and measures. The implications of demographic trends and policies for delivery of public health services are explored. Topics include: population growth, emigration (especially to and from Florida), fertility, and the relation of demography to health and illness. *Prerequisites: EPH 501 and EPH 521 or permission of instructor.*

**EPH 631 PUBLIC HEALTH ADMINISTRATION** (3 cr.): An overview of the historical background, philosophy and purpose of public health. Relationship between government, law and public health. Organization, management and intergovernmental relationships of public health agencies in the United States at the federal, state and local level. Basic principles of management, decision making and prioritizing in public health. Overview of programs and services provided by health organizations with emphasis on current health issues and problems.

**EPH 640 BASIC PATHOLOGY AND PATHO-PHYSIOLOGY** (3 cr.): The course emphasizes basic patho-physiological mechanisms and diseases of particular interest to students of public health. Students will obtain an understanding of basic pathological processes, nomenclature of pathological findings, and common natural and unnatural diseases affecting various body systems. Observations of autopsies and the gross pathology of selected organs are also incorporated in the course. *Prerequisite: EPH 521 and permission of instructor*

**EPH 641 SURVEY METHODS IN EPIDEMIOLOGY** (3 cr.): This course provides a sound understanding of the purposes, varieties, design features, complexity and interpretive intricacies of health survey research. It prepares students to critically evaluate and extract knowledge for published results, to select and work effectively with health survey consultants, and to participate as a junior investigator on health survey research projects. *Prerequisite: EPH 501 and 521 and permission of instructor*

**EPH 645 BEHAVIORAL EPIDEMIOLOGY** (3 cr.): A sub-discipline of epidemiology with a principal focus on lifestyle behaviors that are health-enhancing or health-compromising. With a focus on health behavior rather than disease endpoints, behavioral epidemiology has a primary prevention orientation. This course will explore epidemiologic approaches to description/ intervention upon dietary behaviors, exercise, substance use behaviors (cigarettes, alcohol, illicit drugs), and sexual behaviors. *Prerequisite: EPH 521 and permission of the instructor.*

**EPH 680 PRACTICAL FIELD EXPERIENCE** (1-6 cr.): Practical field experience for MPH students, e.g. an internship with a physician, public health department, clinic, school system, Health Center, an ongoing epidemiological project. *Prerequisite: Core requirements for MPH program.*

**EPH 681 ADVANCED TOPICS** (1-4 cr.): Subject matter offering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title "Advanced Topics". *Prerequisite: Core requirements for MPH program.*

**EPH 682 ADVANCED INDIVIDUAL STUDY** (1-3 cr.): Individual work on a special project under faculty guidance. *Prerequisite: Permission of the directing faculty member and the Director of Graduate Programs.*

**EPH 699 PUBLIC HEALTH PROJECTS** (1-3 cr.): Research and/or design projects. Individual investigation of current public health problems. Required by all MPH students. *Prerequisite: candidacy and completion of the core requirements.*

**EPH 725 CONTINUOUS REGISTRATION - MASTER'S STUDY** (0 cr.): Used to establish residence for MPH students who are preparing for project presentation. Credit not granted. Regarded as full time residence.

**EPH 730 DOCTORAL DISSERTATION** (1-12 cr.): Required of all candidates for the PhD. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of EPH 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examination, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credits stated above.

**EPH 750 RESEARCH IN RESIDENCE** (0 cr.): Used to establish research in residence for the PhD, after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School

Revised 7/97

## **VII. Ph.D. Program Plan**

**University of Miami School of Medicine  
Ph.D. PROGRAM PLAN**

STUDENT NAME: \_\_\_\_\_ STUDENT ID: \_\_\_\_\_

**Prerequisite Courses (or equivalent):**

Medical Biostatistics I  
Medical Biostatistics II  
Fundamentals of Epidemiology

**Core Courses:**

<u>Course #</u>	<u>Course Title</u>	<u>Credits</u>	<u>Sem/Yr</u>	<u>Grade</u>
EPH 600	Research Seminar	3	_____	_____
EPH 603	Statistical Methods in Epidemiology I	3	_____	_____
EPH 605	Statistical Methods in Epidemiology II	3	_____	_____
EPH 624	Advanced Applied Epidemiology	3	_____	_____
EPH 641	Survey Methods in Epidemiology	3	_____	_____
EPH 640	Basic Pathology and Patho-Physiology	3	_____	_____
EPH 620	Cardiovascular Disease Epidemiology*	3	_____	_____
EPH 622	Infectious Disease Epidemiology*	3	_____	_____
EPH 645	Behavioral Epidemiology*	3	_____	_____
EPH 611	Cancer Epidemiology*	3	_____	_____
EPH 681	Grant Writing Seminar	1	_____	_____
		TOTAL 28 credits		

\* must register for at least 3 of these 4 courses

**Elective Courses:**

<u>Course #</u>	<u>Course Title</u>	<u>Credits</u>	<u>Sem/Yr</u>	<u>Grade</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
		TOTAL 8 credits		

**Dissertation (1-12 credits/semester):**

<u>Course #</u>	<u>Course Title</u>	<u>Credits</u>	<u>Sem/Yr</u>
_____	_____	_____	_____
_____	_____	_____	_____
		TOTAL $\geq$ 24 credits	

\*\*\*\*\*

Admission Date \_\_\_\_\_ Faculty Advisor \_\_\_\_\_  
 Graduation Date \_\_\_\_\_ Exit GPA \_\_\_\_\_  
 Name of Publication \_\_\_\_\_  
 Teaching Requirement (1 session of 1 course): Date \_\_\_\_\_ Course Name \_\_\_\_\_  
 Seminar Presentation: Date \_\_\_\_\_ Title \_\_\_\_\_  
 Dissertation \_\_\_\_\_

## **VIII. Timeline**

**University of Miami School of Medicine**  
**PhD in Epidemiology**  
**Timeline for Completion of PhD Requirements**  
[Assumes Fall Semester Entry Into Program]

**Fall Year 1**

Complete core and elective coursework for PhD degree; must be enrolled full-time (min. 9cr)  
Give seminar presentation

**Spring Year 1**

Complete core and elective coursework for PhD degree; must be enrolled full-time (min. 9cr)

**Fall Year 2**

Complete core and elective coursework for PhD degree  
Give seminar presentation  
Identify third area of concentration

**Spring Year 2**

Complete core and elective coursework for PhD degree  
Teach one session of one course

**Summer Year 2**

Pass Comprehensive Exams

**Fall Year 3**

Apply for Admission to Candidacy  
Give seminar presentation  
Choose a Dissertation Committee and obtain their thesis proposal approval  
Begin work on the publishable manuscript [if not finished earlier]  
Register for Dissertation

**Spring Year 3**

Obtain Dissertation Committee approval on the publishable manuscript  
Register for Dissertation  
Meet with Dissertation Coordinator at Graduate School to complete appropriate forms  
Get Dissertation Committee approval for defense of the thesis

**Fall, Spring Year 4**

Work on thesis. Additional 24 credits of dissertation.

**Summer Year 4**

Apply for graduation  
Successfully complete oral defense of thesis  
Submit appropriate forms and copy of dissertation to the Graduate School after the defense

## **IX. Progress of Students**



**Progress of Ph.D. Students**

Name	Fangchao Ma	Nancy Stein	Rob. Kirsner	Hong Lai	Hector Colon	N. Dgetluck	Kevin Reed
Admitted	Fall 1995	Fall 1995	Spring 1996	Spring 1996	Fall 1996	Fall 1996	Fall 1997
Core Courses Completed	✓	✓					
All Courses Completed	✓	✓					
Passed Written Exams	✓	✓					
Selected 3rd Area of Concentration	✓	✓					
Set Up Exam Committee							
Passed Oral Exams							
Admitted to Candidacy							
Declared Thesis							
Thesis Committee Established							

## **X. Faculty Profile**

**UNIVERSITY OF MIAMI SCHOOL OF MEDICINE  
DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH  
PHD PROGRAM IN EPIDEMIOLOGY  
FACULTY PROFILE**

Faculty Name	Graduate Faculty	Academic Rank	Research Areas	EPH Courses Taught	PhD Advisees
Judy Bean, PhD	Yes	Professor	Stat. methods, survey sampling, biostatistics, epi.	501, 521, 603, 624	N. Dgetluck
Jasenska Demirovic, MD, PhD	Yes	Assoc. Prof.	Epi and CVD, aging, women's health issues	521, 620	K. Reed
Robert Duncan, PhD	Yes	Professor	Clinical trials, math. modeling	501, 603, 605	R. Kirsner
Lora Fleming, MD, PhD	Yes	Assoc. Prof.	Occupat'l/env't'l health and epi.	541, 542, 624	----
Michael French, PhD	Yes	Res. Assoc. Prof.	Medical sociology, health economy, sociology & aging	Grad. Business Programs	----
Orlando Gomez, PhD	Yes	Assoc. Prof.	Clinical trials, CVD, epi, women's health	501, 502, 604	----
David Lee, PhD	Yes	Assoc. Prof.	CVD, psychosocial factors and health	621	----
Clyde McCoy, PhD	Yes	Professor	Substance abuse, cancer, AIDS, demography, community health	Guest lectured in EPH 641	----
Lisa Metsch, PhD	Yes	Res. Asst. Prof.	AIDS prevention, substance abuse, epidemiology, aging, maternal and child health	Guest lectured in EPH 520	----
Peggy O'Hara, PhD	Yes	Assoc. Prof.	Health education, behavioral epi, HIV prevention, women's health, smoking prevention	520	----
James Rivers, PhD	Yes	Res. Assoc. Prof.	Substance abuse, program evaluation, geographic info. systems, needs assessments	641	----
Gary Schwartz, PhD, PhD	Yes	Assoc. Prof.	Molecular epi, cancer epi, prostate cancer and Vit. D	521	N. Stein
James Shultz, PhD	Yes	Assoc. Prof.	AIDS, substance abuse, epi, behavioral epi.	600, 645, 610	----
Selina Smith, PhD	Yes	Res. Assoc. Prof.	Minority health, chronic disease, nutrition, cancer, diabetes, CVD, women's health	561	
Edward Trapido, ScD	Yes	Professor	Cancer epi and control, breast cancer, disease surveillance	620	H. Lai F. Ma
Norm Weatherby, PhD	Yes	Res. Assoc. Prof.	Social demography, quantitative and qualitative research methods	625	H. Colon

**Ph.D. Program  
Epidemiology and Public Health**

**July, 1993**

**Edward Trapido, Sc.D.  
Program Coordinator**

**Ronald Prineas, M.D.  
Professor and Chair**

Ph.D. PROGRAM IN EPIDEMIOLOGY

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1. RATIONALE

- a. TITLE OF DEGREE: Ph.D. IN EPIDEMIOLOGY
- b. PURPOSE AND GOALS.

The University of Miami seeks to create a doctoral degree program in Epidemiology, within the Department of Epidemiology and Public Health, at the School of Medicine. The purpose of the degree is to provide advanced study and research training in Epidemiology. Primarily, the program will be geared towards students who have completed the now terminal degree offered at the University of Miami, a Masters of Public Health. Other students possessing a Master's Degree in a related discipline, or another graduate medical degree (such as an M.D., D.O, or R.N.), will be eligible for admission, as will selected post Baccalaureate students. It is the goal of the program to prepare these students to take the large number of available research positions in academic institutions, governmental and voluntary agencies, or in the corporate sector.

The University of Miami has the potential to be one of the leading institutions in Epidemiologic training. Traditional epidemiology was concerned with elucidating the distribution and determinants of disease, particularly those of a communicable nature. With prevention, control and better treatment of the common infectious illnesses, the concentration on transmissible diseases was largely supplanted by chronic disease epidemiology in the 1960s and 1970s. The emergence of new infectious diseases in the 1980's and 1990's (particularly retroviral related diseases), resulted in a recrudescence of etiologic, preventive and clinical epidemiologic research in both disease domains. Finally, the health of an aging population, in an era of increasing health technology with its consequent demand for services, has resulted in a surge in health care expenditures. These latter developments have resulted in additional research opportunities in conditions such as Alzheimer's Disease, and heightened the need for both evaluation of health services and clinical interventions, and for community prevention trials.

Each of these endeavors is underway at the University of Miami, involving faculty from the Department of Epidemiology and Public Health. These research activities have the potential for offering students a remarkable opportunity for developing and refining their research skills in epidemiology.

As the fourth most populous state in the US, with more than 13 million permanent residents, Florida exceeds more than 5% of the United States population. Persons



age 25-44 form the greatest proportion of the age distribution, i.e., 27% of residents. In addition to its full-time residents, Florida has a large population of tourists, military personnel and seasonal residents (snowbirds), who use the state's educational and health-care facilities. Each day Florida has a net gain of nearly 1000 persons, resulting in annual population increase of approximately 350,000 new residents.

Florida has 304 licensed hospitals, and has experienced a 12% increase in the number of hospitals and hospital beds during the past decade. Six public hospitals are located in major urban areas, the largest of these being the Jackson Memorial Medical Center. The Veterans Administration has five acute care hospitals in Florida, with one located in Dade County. Approximately 29,000 physicians provide health care throughout the state.

#### South Florida

Dade County constitutes 17 percent of the state's total population. According to the 1990 census<sup>1</sup>, Dade County has an estimated 1,937,094 persons, a growth of 19.2% since 1980.<sup>2</sup> This makes it not only the largest county in the state, but larger than seventeen states and the District of Columbia, including Alaska, Delaware, Hawaii, Idaho, Maine, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Rhode Island, South Dakota, Utah, Vermont, West Virginia, and Wyoming. Based on 1990 census data, the population of Dade County, is composed predominantly of Hispanics ( $\approx$  49.2 percent), Non-Hispanic Whites ( $\approx$  30.2 percent), and Black, Non-Hispanics ( $\approx$  19.5 percent). An additional 1.5% of the population was classified as "other Non-Hispanic). These represent increases of 64% in the Hispanic population, an increase of 37% among Blacks, and a decrease of 22% of Non-Hispanic Whites, compared to the 1980 census. In addition to this unique racial/ethnic structure of the population, Dade County is also characterized by a large concentration of the elderly. Fourteen percent of Dade County's population is age 65 or older, which represents a small decrease from the 1980 census percentage of 15.7%.<sup>3</sup>

Broward County, immediately north of Dade, constitutes 10.1 percent of the state's total population. Based on 1990 census data, the population of Broward, at 1,255,488, consists of 81.7% Whites, 15.4% Blacks, and 8.6% Hispanics.<sup>4</sup> These represent changes from 4% (in 1980) to 9% Hispanic (in 1990), an increase from 11% to 15% among Blacks, and a decrease from 85% to 76% among Non-Hispanic Whites. The Census also showed that there were 6,777 Black Hispanics in Broward County, and 186,670 Black, non-Hispanics.

The proportion of the population of Broward County that is over age 65 shrunk slightly, from 22.0% in 1980, to 20.8% in 1990. However, in absolute numbers, the

population over age 65 increased by 16.8% in this time period, compared to 6.1% in Dade.

Because of its location in South Florida, the University of Miami offers outstanding opportunities for epidemiologic studies. As the gateway to Latin America, the population of South Florida is a fertile ground for studying differences in disease rates and risks among a variety of racial and ethnic subgroups. In this changing mixture of people, opportunities for examining differences in group exposures, and how they relate to occurrence, diagnosis, survival, and mortality can be studied more effectively than where the population is static.

Classic clues to disease etiology have come from "migrant studies," conducted, for example, among Asians moving to Hawaii and California, as they change their lifestyle exposures (but, of course, retain their genetic backgrounds). The potential for comparable studies is largely untapped in South Florida.

Furthermore, since the greater Miami-Ft. Lauderdale area is the "gateway" to the Caribbean, and Central and South America, diseases which are largely uncommon to the bulk of the rest of the continental United States, are imported into South Florida, and hence, are not rare in Miami. An example of this are the diseases associated with HTLV-1, with its endemic focus in the Caribbean basin, and the resurgence of tuberculosis. The proximity of nearby, endemic foci have resulted in South Florida having the largest number of cases of HTLV-1 associated disease in the United States, making it ripe for the epidemiologic research activities of faculty and Ph.D. students.

Besides the ethnic mix in South Florida, the older age distribution of the population affords other unique opportunities for epidemiologic research. In addition to the diseases mentioned above, the major causes of mortality in the U.S. (such as cancer, and cardiovascular disease), and morbidity (such as rheumatoid arthritis) may better be able to be studied in South Florida than in much of the nation, because of adequate numbers of affected individuals to study. The opportunities for learning about the risk factors for occurrence of these diseases, and developing and testing interventions to prevent them, delay their onset, and treat them, need to be maximized in this region.

Several other critically important issues in health and disease make South Florida an excellent training ground for future, Ph.D. level epidemiologists. These include the high prevalence of substance abuse, with its associated health/disease sequelae, and unique environmental exposures, such as excessive sunlight.

Finally, South Florida is known for its subtropical treasures and resources. It relies

heavily on its tourist industry for economic survival. To serve the needs of this environment, and the millions of people who reside and visit here, epidemiologists with appropriate research training are needed to help assess and maintain a safe and healthy environment. For example, University of Miami epidemiologists have worked with the Water Planning Board of Metro-Dade County, the Metro-Dade Fire Department, Florida Power and Light, and with local residents' concerns about environmental causes of increased breast cancer occurrence. City planning departments, educational programs, and public health departments utilize epidemiologists who provide information on issues that effect growth and development of natural land resources and people throughout the state.

c. DEMAND AND JOB MARKET: WHAT ELSE EXISTS IN FLORIDA

Three major universities have medical schools to educate physicians - the University of Miami, the University of Florida at Gainesville, and the University of South Florida, in Tampa. Courses in epidemiology and training in research methodology are important components to medical education.

There are no Ph.D. programs in Epidemiology in South Florida, and only a single program elsewhere in the state, at the University of South Florida, in Tampa. That program currently has approximately 14 Ph.D. students. The University of Miami Ph.D. program is expected to draw students from

- i. current M.P.H. students,
- ii. the pool of former graduates of the M.P.H. program who reside in South Florida,
- iii. other students and employees with M.P.H. or equivalent degrees from other Universities,
- iv. health department personnel,
- v. persons finishing their college or graduate degrees in South Florida,
- vi. non-local students interested in the issues and diseases described above,
- vii. students from Latin America and the Caribbean. Many physicians from Central and South America as well as other foreign countries have a desire to come to the University of Miami for training and study. The expertise of these specialized graduates in epidemiology is a benefit to public health research and dissemination of information in their home countries,
- viii. students and physicians involved in NIH or ADAMHA training programs (e.g., from the two currently funded Fogarty International Training Program in AIDS at the University of Miami School of Medicine).

The opportunities for Ph.D. level employment in Epidemiology are many. For example, in the most current issue of the "Epidemiology Monitor," there were 63 available positions for individuals holding a Ph.D. in Epidemiology.

In general, recruiting persons with doctoral degrees in Epidemiology to the University of Miami, over the last decade, has been rather difficult. This situation has resulted largely from the intense competition by employers, nationwide, for a limited pool of appropriately trained people, and the absence of an in-house (Ph.D. level) training program to provide such individuals, locally.

- d. RELATIONSHIP TO OTHER FIELDS AND INTERACTIONS WITH DEPARTMENTS: ARE THERE INTERACTIONS WITH OTHER DEPARTMENTS THAT SHOULD BE EXPLORED?

#### RELATIONSHIPS TO OTHER FIELDS

Epidemiology is closely tied with several other fields, including Biostatistics, Public Health, Environmental Health, Pathology, Physiology, Behavioral Medicine, and Demography. Students will be required to take course in Biostatistics, which will provide training in design and analysis of experiments and sample surveys, statistical methods used in epidemiologic studies, principles and concepts of database management, and the conduct of clinical trials. Several of the other disciplines are currently required for the M.P.H. degree at the University of Miami, and therefore would also be required for the Ph.D. While Pathology and Physiology are not strictly required, they will be highly recommended for those students whose academic background is devoid of such course work.

#### RELATIONSHIP TO OTHER DEPARTMENTS

- i. The following departments have relevant courses for students enrolled in the doctoral program in Epidemiology.
- (1) Biochemistry
  - (2) Chemistry (The toxicology laboratory has formed collaborations with other the Department of Chemistry)
  - (3) Computer Information Systems (with Toxicology)
  - (4) Environmental Health and Safety
  - (5) Life Sciences
  - (6) Marine Biology and Marine Science (with the Toxicology laboratory)
  - (7) Mathematics and Computer Science
  - (8) Marine and Atmospheric Science and Marine and Atmospheric Chemistry

- (9) Microbiology and Immunology
- (10) Neurosciences and Neurology (with Toxicology)
- (11) Nursing
- (12) Pathology
- (13) Psychology
- (14) Radiologic Sciences
- (15) Radiology
- (16) Statistics
- (17) Sociology
- (18) Interdepartmental Studies

Students in these departments would benefit from the course work and training within the proposed Ph.D. program.

ii. In addition to these, there are several University or Medical School-wide Centers that offer relevant courses or seminars, as well as opportunities for inter-disciplinary research. Members of the faculty in the Department of Epidemiology and Public Health are currently engaged in collaborative activities with each of these units.

- (1) Sylvester Comprehensive Cancer Center
- (2) Comprehensive Drug Research Center
- (3) Center for Aging

e. RELATIONSHIP TO UNDERGRADUATE AND PROFESSIONAL PROGRAMS:  
IMPLICATIONS OF SERVICE FUNCTIONS TO OTHERS.

The Ph.D. program will build upon the training that the Department of Epidemiology and Public Health currently offers to its Master's Degree students. It will expand its teaching program to provide in-depth training in research methodology and substantive epidemiology, data analysis, design and conduct of clinical trials, and biostatistics.

Many students who are involved in epidemiology doctoral programs have encountered research questions on their jobs or professional activities. Recognizing that Master's level training does not prepare them to mount their own investigations, they need further training, and "hands-on" experience. The combination of advanced course work, plus an approved doctoral project and dissertation, will permit them to become familiar with the process of performing epidemiological research activities.

A major trend in epidemiologic research, as in other medical fields, is to enhance transfer of technology developed in the laboratory setting, to clinical

practice and community applications. Epidemiologic methods provide a key tool in this transfer, through appropriate study design and analysis (e.g., the design of protocols to evaluate new screening methods). Therefore, students trained in basic sciences, such as biochemistry or cell biology, and those trained in clinical disciplines, such as nursing, medicine, and psychology, may also wish to expand their capabilities by taking advanced epidemiology courses.

For other graduate and medical students at the University, there will be benefits from opportunities to participate in seminars, research projects and joint degree programs which are made available to the Ph.D. students. Examples of additional courses would be developed for residents and fellows, and faculty in clinical departments would be those on clinical trials, or on advanced methods in Epidemiology.

For example, personnel from the Department's toxicology laboratories are actively involved in teaching, both in the laboratories, and throughout the University. Within the Dept. of Epidemiology, they teach three Masters of Public Health courses: a core course in Environmental Health, an advanced course in Medical Toxicology, and another course in Advanced Epidemiology. They also teach undergraduates in a new Environmental Sciences major (Chemistry/Toxicology and Environmental Health Sciences). At the South Campus Facility, regular courses are taught to laboratory professionals from Latin America, the Caribbean, Egypt, and Africa, on the analysis of pesticide residues, under funding from USAID. Graduate students from the Rosenstiel School of Marine and Atmospheric Sciences, the Depts. of Engineering and Chemistry, medical students, and undergraduates have studied and worked at the Toxicology Laboratories.

## 1. PHYSICAL RESOURCES

The following table summarizes the space of the Department of Epidemiology and Public Health.

SPACE ALLOCATION OF DEPARTMENT, UNDER CONTROL OF CHAIR	
Location	Square Footage
Dominion Tower, 7th Floor	5,218
Dominion Tower, 4th Floor	1,585
Dominion Tower, 2nd Floor	1,192
HERS Clinic	1,178
Daughtry Building, 1st and 2nd Floors	6,128
Grove Forest Plaza	2,400
Trailers	2,020
South Campus Building C	2,511
Rosenteil Room 2052 A	454
Jackson Memorial Hospital Ambulatory Care Center	238
<b>TOTAL</b>	<b>22,924</b>
SPACE UTILIZATION	
Office, Office Service	14,379
Non-Classroom Laboratory	1,592
Classroom	973
Treatment	406
Lounge	274
Conference Room	530

a. LIBRARY HOLDINGS

See Appendix A (page 86).

b. LABORATORY RESOURCES AND EQUIPMENT: DISCUSS ITS ADEQUACY NOW, AND WITH EXPANDING PROGRAM

DEPH has 22 faculty members, and occupies 6,000 square feet of space in

the Daughtry building, and additional space in the Dominion Towers building on the School of Medicine campus in the Civic Center of the City of Miami. The following sections describe the resources available for research support.

i. MEDICAL SCHOOL/JACKSON MEMORIAL MEDICAL CENTER  
(UM/JMMC)

Jackson Memorial Hospital, which began operations in 1899, has been jointly operated for approximately the past forty years by Dade County, a Public Health Trust, and the University of Miami. Since 1954, the University of Miami School of Medicine has operated under an affiliation agreement to provide medical education, clinical teaching, and research programs at JMH; the facilities are officially known as the University of Miami/Jackson Memorial Medical Center (UM/JMMC). UM/JMMC currently conducts clinical residency programs in 23 specialties with 875 resident physicians. It has been recognized as one of the nation's 25 best hospitals.

(The School of Medicine also has operating and program agreements with nearby Veteran's Administration Medical Center and Cedars Medical Center, as well as with Mount Sinai Medical Center on Miami Beach and other local hospitals. The Department of Epidemiology and Public Health receives some funding from the State of Florida and works in concert with the Public Health educational program at the local state school, Florida International University. Another state school, Florida A&M has its Pharmacy program in Miami, which has a working relationship with UM/JMMC.)

UM/JMMC itself is a large urban tertiary care center serving primarily an indigent, multi-ethnic population. With a capacity of 1,567 beds, it is the second largest hospital in the U.S. and - with 255,639 outpatient visits, 125,274 emergency room visits, 70,000 admissions, and an occupancy rate of 96% (1990) - is the busiest hospital in the country. Over 15,000 newborn deliveries are now provided annually; in 1990, almost one-half of the live births in Dade County occurred at this facility. UM/JMMC provides the region's only Burn and Trauma Centers, the Comprehensive Cancer Center, the only transplant centers for all major organs, one of the nation's most sophisticated centers for the treatment of high risk pregnancies and the region's leading center for rehabilitation medicine. It provides the majority of AIDS/HIV treatment in southern Florida and has been a



leader in clinical research. The UM/JMMC Department of Pathology works closely with the one Medical Examiner Office in the county, whose staff is widely recognized as being among the most expert in drug-related autopsies in the country.

The increasing problems of pregnant addicted women and the exposure of their unborn children are projected to require expanded services in the areas of substance abuse, obstetrics, and neonatology/pediatrics. In addition, teen-age births now constitute 25% of all of the Medical Center's maternity cases and the rate is growing. The young, female, poor, and tertiary health service needs of the region will increase most rapidly. UM/JMMC is the hospital of last resort or first choice for many who can not afford to select from some 37 hospitals in Dade County. Approximately 55% of the patient days provided at JMMC are for local indigent and Medicaid patients.

UM/JMMC Mental Health Services provide a variety of programs (long-term and short-term hospital inpatient, outpatient, and residential treatment) for a variety of mental illnesses including alcohol and drug addiction. The Highland Park Pavilion adds 106 beds complementing the 153 psychiatric beds located within UM/JMMC proper. Highland Park Pavilion is also the site of the 15-bed Maternal Addiction Program, a substance abuse treatment program for pregnant and post-partum women. The MAP works in collaboration with the Medical Center's Prenatal Substance Abuse Clinic (preSAC), which provides obstetrics and interconceptional care to substance abusers. The Department of Psychiatry also provides inpatient and outpatient drug and alcohol treatment services at the Fletcher Addiction Treatment Center which it operates at Mount Sinai Medical Center.

Cedars Medical Center, an affiliated teaching hospital of the UM School of Medicine, has contractual arrangements to provide space or services when they are not available at UM/JMMC. Cedars has a high profile within the non-indigent Hispanic community. Currently, the only NIDA-certified toxicology laboratory in the area is located at Cedars. The Veteran's Administration Hospital provides substance abuse treatment services for eligible patients and has a long history of collaborative research and joint appointments with UM/JMMC.

ii. THE BIOSTATISTICS DIVISION OF THE DEPARTMENT OF  
EPIDEMIOLOGY AND PUBLIC HEALTH

The Biostatistics Division of the Department of Epidemiology and Public Health is located in the main campus of the University of Miami School of Medicine. The Staff of the Biostatistics Division presently consists of four PhD biostatisticians, a clinical professor, a systems/database manager, two programmers, and a data-entry operator.

The computer/communications hardware consists of AT&T's 6386E Workgroup Station, a SUN 3/60 workstation, AT&T 6386 desktop stations linked through Starlan 10 networking, all integrated by AT&T's Unix operating system and its communication utilities. Development and applications software is based on an industry-standard relational database management system (RDBMS), INFORMIX-SQL, with its database programming language. This environment provides a uniform interface to the users and for system administration.

Our computers are also linked to the Information Systems Network wide-area network. This configuration provides flexible access to most of the computer resources throughout the University. Our networking configuration permits us to utilize remote file sharing and distributed databases where file systems and databases are extended over a network of computers and disc storage. We have a 19,200 baud modem for remote access over the telephone lines.

Our software includes the following in four essential components: development, communications, statistical and clinical epidemiology applications. Our development system allows data management statements to be embedded in the C programming language. It combines procedural (programming) statements with certain non-procedural functions, such as menus, screen management, and reports. It also provides customized data management and analysis, and interfaces data entry databases to several statistical packages, including SAS, PSTAT, and BMDP.

Unix provides a powerful and widely used communications utility, UUCP, used to support several national and international networks, including USENET, ARPANET, BITNET, INTERNET, and ATTMAIL. The combination of UUCP and an SQL-based set of database commands is used to manage remote data entry into distributed databases. In addition, we have numerous statistical tools allowing us to develop subroutine libraries and create algorithms not available

in application software.

iii. THE TOXICOLOGY LABORATORIES

The Toxicology laboratories are located in a recently constructed laboratory facility in the South Campus of the University of Miami. A total replacement value of over \$1,000,000 has been placed on the analytical instrumentation which is housed in 4,000 square feet of new laboratory space (dedicated January 1986).

iv. THE NUTRITION LABORATORY

The Nutrition laboratory is located in the Rosensteil Medical Sciences building (RSMB). A total replacement value of \$250,000 has been placed on the analytic instrumentation dedicated to determination of nutritional status of individuals and populations.

c. OFFICE EQUIPMENT

The Department of Epidemiology and Public Health is Equipped with up-to-date photocopying (Xerox) machines, facsimile (FAX) machines, electronic (IBM) typewriters, and several IBM Compatible micro Computers with word processing (Word Perfect), spreadsheet, and other database software, and Laser Printers.

2. CURRICULUM

a. DIVISIONS OF THE DISCIPLINE. DESCRIBE TRACK FOR THE DEGREE.

There will be no Divisions within Ph.D. program in Epidemiology. Courses will be available, within the Department, that provide a strong foundation and applied training in both Epidemiology and Biostatistics.

b. COURSE DESCRIPTIONS: INCLUDE COURSE DESCRIPTIONS AND SYLLABUS.

Descriptions of courses appear in the Appendix, beginning on page 56. Several new courses will be offered, which are needed to provide advanced methodologic and substantive training in Epidemiology.

c. PROPOSED SCHEDULE OF COURSE OFFERINGS

The course offerings have been designed to follow from the material mastered in the MPH program. Students will be required to either have taken the Masters Degree Core Courses, or their equivalents, or pass a competency

exam based on their material. In the doctoral program, a set of core courses will be required, which focus on both methodological and substantive epidemiology. These will be followed by a set of elective courses offered within the departments, as well as approved electives offered in other departments. The choice of electives will be made in conjunction with the student advisor, in line with the plans or areas of specialization of the candidate. For example, a doctoral student interested in cancer would be encouraged to take the course in clinical trials and environmental/occupational epidemiology, and depending on his/her background, courses in pathology, physiology, oncology, or molecular biology.

At least one year of residence (2 consecutive semesters), will be required, beyond the Master's level. Twenty-four hours in doctoral program courses will be required, 12 hours of elective courses, and 24 hours of dissertation (no more than 12 per semester, six in summer session). Written and oral qualifying examinations will be scheduled a minimum of one year completion of graduate level courses, with questions covering Epidemiology, Biostatistics, and one other relevant, approved, substantive area (e.g, cancer pathology, radiation, computer science). After successful completion of the exam, course work requirements will be completed, and then students will enroll in "research in residence." At the termination of the program, there will be a formal thesis presentation.

Doctoral Degree Requirements			
Course	Required or Elective	Offered	Credits
Advanced Applied Epidemiology	Required	Fall	3
Cancer Epidemiology	Required	Fall	3
Cardiovascular Disease Epidemiology	Required	Spring	3
Infectious Disease Epidemiology	Required	Fall	3
Behavioral Epidemiology	Required	Spring	3
Public Health Nutrition	Required	Spring	3
Statistical Methods in Epidemiology I	Required	Fall	3
Statistical Methods in Epidemiology II	Required	Spring	3
Qualifying Examinations			
Biostatistics II	Department Elective	Spring	3
Applied Epidemiology and Surveillance of AIDS/HIV Diseases	Department Elective	Spring	3
Clinical Trials	Department Elective	Fall	3
Environmental and Occupational Epidemiology	Department Elective	Fall	3
Doctoral Dissertation	Required	Both	24
Thesis Defense			
Total			60

ADDITIONAL REQUIREMENTS FOR DOCTORAL STUDENTS, (or demonstrated proficiency), BEYOND EXISTING MPH REQUIREMENTS	Semester Offered
Biostatistics I	Both
Health Education and Behavior	Spring
Fundamentals of Epidemiology	Both
Integrated Aspects of Environmental Health	Fall
Research Seminar	Both
Maternal and Child Health	Spring

- d. TYPE OF TEACHING: INDICATE TYPE OF TEACHING, AND PERCENT IN CLASSROOM, INDEPENDENT ETC.

Didactic Course Presentation. Classes that are required for the Ph.D. program will be presented in formats ranging from didactic lecture styles to interactive seminars. Class size will be the greatest predictor of particular formats.

Research Seminars. Research seminars will be facilitated by faculty, allowing students to present research ideas and hypotheses, research designs, interim results, study abstracts, and rehearsal presentations for scientific meetings. Ph.D. students will be invited to present research seminars at the weekly Department of Epidemiology and Public Health seminar series.

Meeting with Advisors. Ph.D students will meet at least monthly with their faculty graduate faculty advisor. The students may also be involved, for some periods of time, on faculty supported research projects and will have opportunities for more extended and frequent interaction with faculty advisors, preceptors, and mentors.

Scientific Meetings. Ph.D. students will be encouraged to perform research that is publishable and appropriate for presentation in scientific meetings. Therefore, students will have the opportunity to develop formal scientific presentations, rehearse them before seminar groups and/or the faculty seminar, appropriately modify the presentations based on feedback, and

finally present them at scientific meetings.

Teaching Assistantships. Ph.D. students will be provided with the opportunity and expectation to perform teaching assistance in courses taught by Department faculty. Depending on faculty style, students will be provided with the opportunity to teach portions of courses, to present review sessions, and to counsel students on a one-on-one basis.

Research assistantships will be funded through several mechanisms. Some may be supported through National Institutes of Health Training Grants that preclude "employment," but permit ample chance for students to devote major time to research. For others, who do not have the financial support of a training grant, research assistantships may be useful training experiences and essential mechanisms for financial support of the students. In either case, doctoral students will rotate among a series of research projects to have exposure to both infectious and chronic disease epidemiology, etc. This rotation will also provide exposure to a variety of research methods and styles exhibited by the multi-disciplinary faculty of the Department faculty.

Experiential Training. During the course of the Ph.D. program, opportunities will be sought to place Ph.D. students in experiential activities that will permit them to gain hands on applications of epidemiologic study methods. These include hospital record abstracting and patient interviewing, questionnaire design and grant proposal construction, visitation to public health programs and agencies, work on surveillance and disease outbreaks, consultation with a variety of health researchers on design and analysis, and on site intervention activities.

Student Volunteerism. Students are invited to participate in the expanding array of the University's volunteer activities having a public health focus. The Department will continue to serve as a clearinghouse for volunteer activities.

Social Interaction. Efforts will be made to enhance the camaraderie among doctoral students by providing a variety of social and teaching opportunities. These may include informal get-togethers at homes of faculty, social gatherings, retreats, etc.

- e. DESCRIBE ADEQUACY OF CURRICULUM STRUCTURE FOR THE DEGREE PROPOSED, BY:
  - i. COMPARISON WITH OTHER PLACES, DEGREE PROGRAM (see table beginning on page 53)

ii. EVALUATION OF UM'S STRENGTH AND WEAKNESSES

The structure of this Ph.D. program, courses, seminars and research, is the same structure as other Ph.D. programs in Epidemiology. The courses currently offered such as Introduction to Epidemiology, Advanced Methods in Epidemiology, Statistical Methods in Epidemiology, Chronic Disease Epidemiology and Infectious Disease are the same in content as those given in other Ph.D. programs.

The weaknesses of the program are that a large percentage of the faculty are relatively "junior," and some have not been involved with a Ph.D. program in Epidemiology before. Major strengths are the large number of Epidemiologists on the faculty, their diversity, their involvement with clinical and basic science departments, the library, and the amount of ongoing research.

The main change in the curriculum structure will be the development of new courses to be offered in the department. Two new courses will be offered by Dr. Judy Bean, Professor of Biostatistics. Some electives that are already developed will have to be offered on a more routine schedule, because of the increased in number of students. New electives, such as the Cancer Epidemiology, and the Epidemiology of Substance Abuse, are in the process of being created, and will also be offered. While involvement of faculty in advising and thesis work will increase, the number of Ph.D. students is not likely to have a profound impact on these latter work levels.

Members of the faculty and technical staff have made scientific presentations at both national and international meetings and symposia, and sit on NIH ADAMHA study sections and ad-hoc review committees. Many serve as referees for epidemiology journals.

Since 1985, faculty in the Department have produced a total of more than 500 faculty publications.

iii. LIST ANTICIPATED ADDITIONS, CHANGES IN CURRICULAR STRUCTURE, ALONG WITH THE FACULTY INVOLVED IN THAT ITEM

All of the courses that will be available to doctoral students were either in the planning stages for the MPH program, or were offered, but on an "as-needed" basis (except for the Doctoral Dissertation



credits).

Doctoral Degree Course Additions		
Course	Faculty	Offered
Cancer Epidemiology	Trapido	Fall
Cardiovascular Disease Epidemiology	Demirovic	Spring
Infectious Disease Epidemiology	Shultz, Tomchik	Fall
Statistical Methods in Epidemiology I	Bean	Fall
Statistical Methods in Epidemiology II	Bean	Spring
Biostatistics II	Staff	Spring
Doctoral Dissertation	Staff	Both

- f. DESCRIBE COLLOQUIA SERIES, SEMINAR SERIES, CONFERENCES Over the past two years, the following seminars have been conducted. These presentations predominantly are given by Department faculty. Doctoral students will be required to attend the series. In addition, the series will be used as a forum for students to present research projects and doctoral dissertations, as well as a place to rehearse formal presentations produced for outside meetings.

DEPARTMENT OF EPIDEMIOLOGY AND PUBLIC HEALTH  
SEMINAR SERIES

1990

8/24	Dr. Marianna Loor	Drug Testing of Maternity Patients
10/26	Dr. David McCoy	The Role of Alcohol and Tobacco in the Etiology of Human Cancer
11/2	Dr. Laurinus Pierre	The Global Epidemiology of AIDS and HIV

		Diseases: The HIV/AIDS Epidemic in Haiti
11/16	Mr Christopher Dudley	Close Encounters with the Fourth Estate
11/30	Dr Roberto Gutierrez	The Global Epidemiology of AIDS and HIV Diseases: The HIV/AIDS Epidemic in Costa Rica
12/7	Mr. Vernon Appleby	The Global Epidemiology of AIDS and HIV Diseases: Clinical Research Activities of the Comprehensive AIDS Program
12/14	Dr. Ricardo Reyes	The Global Epidemiology of AIDS and HIV Diseases: Clinical Manifestations of AIDS in Developing Nations
1991		
1/10	Dr. Marion Faldas	Health and Educational Services in a Thai Refugee Camp
3/29	Dr. Jeffery Raines	The Evaluation of Male Impotence
4/17	Dr. June Eichner	Apolipoprotein E: A CHD Risk Factor?
5/3	Dr. Lydia Desantis	The Haitian Immigrant: Concepts of Health and Illness Prevention
5/15	Dr. William Beckett	Smoking Cessation: What is Effective?
6/12	Dr. Berta Greif Ferman	Near Drownings in Palm Beach County
6/14	Dr. David Lee	Epidemiology of Blood Pressure in Hispanics
6/21	Dr. Valerie George	Big Eaters, Small Eaters: The Energy Balance Question
9/11	Dr. Robert S. Reneman	The Assessment of Artery Wall Dynamics in Man: Techniques and Clinical Importance
9/17	Dr. Roberto Gutierrez	HIV/AIDS Epidemic among Female Sex Workers

in Honduras: A Cross-Sectional Study

9/27	Dr. Pedro Jose Greer	Homelessness and Health
10/11	Mr. Norm Parsons	University Wellne ss Program
10/18	Dr. Norman Weatherby	Validity of Self-Reported Drug Use
10/25	Dr. Clyde McCoy	Community Intervention for Cancer and AIDS
11/1	Dr. Ed Trapido	Cancer among Hispanics
11/8	Dr. Fan Chen	Dietary Links and Esophageal Cancer in Shenxi, China
11/15	Dr. James Rivers	Community Intervention Services Needs Assessment
11/22	Mr. Jay D. Foster	The Effects of Heavy Metals on Human Health
<b>1992</b>		
3/13	Dr. Jeffery Raines	Fracture Intervention Trial (FIT)
3/16	Dr. Richard S. Hopkins	The Epidemiology of Breast Cancer and Mammography
4/3	Ms. Maggie Ferman	An Exploration of Personal Experiences in Deafness
4/10	Dr. Jeffery Raines	(PREVENT) Perspective Randomized Evaluation of the Vascular Effects of NORVASC Trial
7/15	Ms. Lee Bloomcamp	Invisible Biting Bugs, Paper Mites and Other Mysterious Pests
9/30	Dr. Frank Stitt	An Integrated Computer System for Clinical Epidemiology
10/7	Dr. Fan Chen	Progress on Liver Cancer Research
10/14	Dr. James M. Shultz	Strategies for Blood Donor Recruitment

- 10/21 Ms. Julianne Hernandez Blood Donor Screening
- 10/28 Dr. Doug Feldman AIDS Education among Zambian Adolescents
- 12/2 Dr. Ed Trapido Selected Highlights from FCDS: New Developments
- 12/9 Mr. Dwight Westmoreland Epidemic Intelligence Service (EIS)
- 12/16 Dr. Ying Lu An Introduction of Three Statistical Methods and Their Applications in a Prognostic Study of AIDS

3. FACULTY

Name	Graduate Faculty?	Degree	Rank
Marianna Baum		PhD	Assoc. Prof.
Judy Bean	Yes	PhD	Prof.
Keith Bletzer		PhD	Res. Asst. Prof.
Tom Briggie		PhD	Res. Asst. Prof.
Jasenka Demirovic		MD, PhD	Res. Assoc. Prof.
Richard Donahue		PhD	Asst. Prof.
Robert Duncan	Yes	PhD	Prof.
Lora Fleming		MD	Res. Asst. Prof.
Valerie George		PhD	Res. Assoc. Prof.
Terence Gerace	Yes	PhD	Res. Assoc. Prof.
Orlando Gomez- Marin	Yes	PhD	Assoc. Prof.
David Lee		PhD	Asst. Prof.
Ying Lu		PhD	Res. Asst. Prof.
Jon Mann		PhD	Res. Asst. Prof.

Clyde McCoy		PhD	Prof.
Peggy O'Hara	Yes	PhD	Assoc. Prof.
Ronald Prineas	Yes	MD, PhD	Prof.
Jeffrey Raines	Yes	PhD	Res. Assoc. Prof.
James Rivers		PhD	Assoc. Prof.
Stefan Rose		PhD	Asst. Prof.
Gail Shor-Posner		PhD	Res. Asst. Prof.
James Shultz	Yes	PhD	Asst. Prof.
Frank Stitt		MD	Prof.
Edward Trapido		ScD	Assoc. Prof.
Norman Weatherby		PhD	Res. Asst. Prof.

a. CURRICULUM VITAE, INCLUDING GRADUATE TEACHING EXPERIENCE, GRANTS RECEIVED.

i. DESCRIBE INTERACTION WITH OTHER GRADUATE PROGRAMS- OUTSIDE THESIS AND DISSERTATION COMMITTEES.

Besides dissertation committees, interactions with other graduate programs will occur when students enrolled in the Ph.D. program in Epidemiology take courses in other graduate programs. Post graduate course work in the Medical School, Graduate School, and School of Nursing are likely to be taken by students in doctoral program in Epidemiology. In addition, individual students may have an interest in some of the Master's level courses offered within Public Health on the Florida International University campus.

ii. ADDITIONAL FACULTY. FOR NEW FACULTY- DETERMINE SPECIALIZATIONS DESIRED, DEGREE OF EXPERIENCE DESIRED, SALARY ANTICIPATED.

Additional faculty members to be recruited are:

- iii. In Cancer Epidemiology, an individual with experience in molecular biology.
- iv. In the area of the epidemiology of Avoidable Morbidity (Accidents, Injuries, Suicides, Homicides, Violence)
- v. In the Health Services Research Area, with expertise in an analysis of health care practices and cost/effectiveness studies

Salary ranges for Assistant Professors to Professors are anticipated to range between \$35,000 and \$125,000, depending upon experience.

- b. LIST FACULTY TEACHING EACH COURSE. ESTIMATE TEACHING LOAD FOR EACH MEMBER OF FACULTY WHO WILL BE INVOLVED IN PROGRAM.

The faculty teaching each course are listed below:

Doctoral Degree Requirements		
Course	Instructor	Offered
Advanced Applied Epidemiology	Donahue	Fall
Cancer Epidemiology	Trapido	Fall
Cardiovascular Disease Epidemiology	Demirovic	Spring
Infectious Disease Epidemiology	Tomchik	Fall
Behavioral Epidemiology	Shultz	Spring
Public Health Nutrition	Baum/Shor-Posner	Spring
Statistical Methods in Epidemiology I	Bean	Fall
Statistical Methods in Epidemiology II	Bean	Spring
Qualifying Examinations		
Biostatistics II	Staff	Spring
Applied Epidemiology and Surveillance of AIDS/HIV Diseases	Shultz	Spring
Clinical Trials	Stitt	Fall
Environmental and Occupational Epidemiology	Fleming	Fall
Doctoral Dissertation		Both

Thesis Defense

Electives offered Within the Department	Faculty
Health Education and Behavior	Peggy O'Hara
Applied Epidemiology and Surveillance of AIDS/HIV Diseases	James Shultz
Clinical Trials	Frank Stitt
Environmental/Occupational Epidemiology	Lora Fleming

Electives Recommended in Other Departments
General Physiology
General Pathology
Computer Methods
Epidemiology of Aging
Psychosocial Epidemiology

The estimated teaching level for each member of the faculty involved is one to two courses per year.

- c. INTERACTIONS. CURRENT OR ANTICIPATED COOPERATIVE OR INTERDISCIPLINARY WORK WITHIN UM OR WITH AGENCIES. IS THERE UNTAPPED EXPERTISE?

Because of its location within the Medical School, the University of Miami Ph.D. program in Epidemiology will be one of the few in the nation able to provide students with access to both basic science and clinical departments. In addition, students will be able to capitalize on the strong ties that departmental faculty have with the University's Centers, especially the Comprehensive Drug Research Center, and the Sylvester Comprehensive Cancer Center. Selected faculty can also provide direct access for students developing research on the patient populations within the Jackson Memorial Medical Center and affiliated hospitals, as well as with

community health care centers. Furthermore, faculty and graduates of the department direct major programs in Dade, Broward, and Palm Beach health departments, and are tied with the Department of Health and Rehabilitative Services, in Tallahassee. Such linkages can be tailored to provide opportunities to meet the research and training needs of the students.

It is anticipated that students will take courses within other departments in the Medical School, and within the College of Arts and Sciences (see page 5 for a list of relevant departments, and pages 53 through 55 for a list of course work). For example, "Introduction to Physiology" will be an allowable elective, as would "Social Epidemiology," taught in the Department of Sociology.

#### 4. STUDENTS

##### a. STUDENTS

There are no Ph.D. programs in Epidemiology in South Florida, and only a single program elsewhere in the state, at the University of South Florida, in Tampa. That program currently has fewer than fourteen Ph.D. students. The University of Miami Ph.D. program is expected to draw students from

- i. current M.P.H. students, both at the University of Miami, and at Florida International University
- ii. the pool of former graduates of the M.P.H. program who reside in South Florida
- iii. other students and employees with M.P.H. or equivalent degrees from other Universities
- iv. health department personnel
- v. persons finishing their college or graduate degrees in South Florida
- vi. non-local students interested in the issues and diseases described above,
- vii. students from Latin America and the Caribbean
- viii. physicians from Fogarty International Training programs currently on the University of Miami School of Medicine campus
- ix. students involved in NIH-ADAMHA training grants

The opportunities for employment in Epidemiology still exceeds the available pool of Ph.D. trained students. For example, in the most current issue of the "Epidemiology Monitor," there were 63 available positions for individuals holding a Ph.D. in Epidemiology.

##### b. WHAT WILL DISTRIBUTION OF GRADUATE STUDENTS AND ADVISORS BE?

It is anticipated that the Ph.D. students will be assigned to graduate faculty, based on their background, and interests. Students finishing the Master's Degree in Public



Health program will be given the option of changing their advisor, if adequate justification is presented. Only graduate faculty on tenure lines will be eligible to be advisors.

c. REQUIREMENTS FOR ADMISSION AND RETENTION

GENERAL ADMISSIONS REQUIREMENT:

A B.A. or B.S. degree will be required with a minimum grade point average of 3.0 (on a scale 4.0) and a minimum GRE score of 1050. Although enrollment directly into the Ph.D. program will be possible, decided on individual basis, completion of a M.P.H. or M.S. program will be generally required. The M.S. degree can be in various numerous Health Science fields. If the individual does not have an M.P.H. or M.S. degree, they will be required to complete the courses for the M.P.H. degree offered within the department, first. Students wishing to bypass introductory level courses, by virtue of having taken relevant training at other Universities, will be required to pass a proficiency exam on the course material that will be skipped.

GENERAL RETENTION REQUIREMENTS:

For the student to remain in the program, they must maintain an overall 3.0, on a scale of 4.0. They also must make satisfactory progress towards completion of the degree, as determined by the committee. After completion of course work, the student will take a comprehensive examination.

d. TEACHING ASSISTANTS. NEED FOR AND USE OF TA'S AND RESEARCH ASSISTANTS. INCLUDE NUMBER OF EACH AND STIPENDS.

It is estimated that two teaching assistants will be needed. These will cover the basic fundamentals of epidemiology and biostatistics courses. Roughly five to six research assistants will be needed at a stipend of \$10,000/year plus tuition expenses. One stipend will be derived from the Fogarty International Training in AIDS Epidemiology (Dr. Marianna Baum), funded through 1998.

5. ADMINISTRATION

a. ADMINISTRATIVE INCREMENTS NEEDED

i. ESTIMATE NUMBER OF NEW SECRETARIES, OFFICE EQUIPMENT, SUPPLIES FOR PROGRAM

A three year budget is presented on page 36. One 25% FTE Senior Staff Assistant will be need for clerical operations. The Ph.D. Program Director will require 25% effort, and the Program Coordinator, 50% effort. In addition,

other personnel additions will be the graduate teaching assistants (one in the first year, two thereafter), and the faculty instructor's salaries (each at 5% effort).

ii. ESTIMATE NEED FOR ADDED TRAVEL AND OTHER FUNDS

See attachment beginning on page 36.

b. ADMINISTRATION AND ACADEMIC DIRECTION

i. RELATED TO DAILY ADMINISTRATIONS OF PH.D. PROGRAM

The Ph.D program will be directed, on a daily basis, by the Director of the Ph.D. Graduate program. In turn, the Director reports to the Department Chair, Dr. Ronald Prineas. The Ph.D. Graduate Program Director will be assisted by an Administrative Assistant, who will perform the majority of the routine administrative responsibilities needed to carry out the program. Fiscal management of the program will be under the direction of Ms. Anne Roberts, who is currently responsible for such activities in the Department.

ii. RELATED TO MAKING POLICY DECISIONS ABOUT ACADEMIC ISSUES, INCLUDING WHAT IS IN THE PROGRAM, HOW FACULTY ARE CHOSEN FOR INVOLVEMENT

Within the Department of Epidemiology and Public Health, there are three committees that currently handle policy decisions that would be relevant to the doctoral degree program. These are (1) the Curriculum Committee, (2) the Executive Training Committee, and (3) the Executive Committee of the Faculty. In addition to these, the Director of the Program would have the rest of the graduate faculty, within the Department, to help with policy decisions.

The Director of the Ph.D. Doctoral Program will meet with representatives from these three committees, and the Department Chair, on a monthly basis, to set policy.

There are already members of the graduate faculty within the Department. The requirements to be a member of the graduate faculty are demonstration of ability to conduct research, publish papers in peer reviewed publications, and teach. Individuals are selected and voted upon by current members of the graduate faculty. Only graduate faculty in tenured or tenure track positions will serve as advisors and on thesis committees.

6. COMPARISON WITH OTHER ESTABLISHED PROGRAMS

There are approximately 70 programs in the United States, Canada, and the United Kingdom that offer post-graduate degree programs in Epidemiology. Eliminating those that are part of public Universities, those that situated within Schools of Public Health, those that offer the degree in Veterinary Epidemiology, and those that offer only Master's Degree programs, four schools remain (please see Table 1 for a listing of all schools. Underlined Schools are "comparable").

The comparable schools, (i.e., who offer a Ph.D. in Epidemiology, within a Medical School Department of Epidemiology or equivalent department), in a private University, are:

The University of Southern California  
New York University  
Case Western Reserve University  
Brown University.

Universities Offering Degrees in Epidemiology: Reasons for (Non)-Comparability With the University of Miami (Comparable Programs are Underlined)					
School	Public	Vet Med	No PhD	School of Publ. Health	Out of Country
Boston University				■	
<u>Brown</u>					
<u>Case Western Reserve</u>					
Colorado State		■			
Columbia				■	
Cornell			■		
Emory				■	
Florida International University			■		
Georgetown			■		
George Washington U			■		
Harvard				■	
Johns Hopkins				■	
Laval					■
Leeds University					■
London School of Hygiene					■
Loma Linda				■	
McGill					■
McMaster					■
Medical University of South Carolina	■				
Medical College of Wisconsin			■		
New Jersey Grad Prog in P.H.	■				
New York Medical College			■		
<u>New York University</u>					
Ohio State	■				
Purdue		■			
Queen's University at Kingston					■
Rutger	■				

Universities Offering Degrees in Epidemiology: Reasons for (Non)-Comparability With the University of Miami (Comparable Programs are Underlined)					
School	Public	Vet Med	No PhD	School of Publ. Health	Out of Country
San Diego State				■	
SUNY	■			■	
Texas A&M		■			
Tulane				■	
U Alabama			■		
U British Columbia					■
U Calgary					■
U California	■				
U Cincinnati	■				
U Colorado	■				
U Connecticut	■				
U Dublin					■
U Guelph					■
U Hawaii	■				
U Illinois, Chicago	■				
U Iowa	■				
U Kansas Med Ctr	■				
U Kentucky	■				
U Lowell			■		
U Manchester					■
U Manitoba					■
U Maryland	■				
U Mass.				■	
U Michigan	■				
U Minnesota	■				
U North Carolina	■				
U Oklahoma Health Science Center	■				
U Pennsylvania			■		
U Pittsburgh				■	

Universities Offering Degrees in Epidemiology: Reasons for (Non)-Comparability With the University of Miami (Comparable Programs are Underlined)					
School	Public	Vet Med	No PhD	School of Publ. Health	Out of Country
U Puerto Rico	■				
U Rochester			■		
U South Carolina	■				
U South Florida	■				
<u>U Southern California</u>					
USUHS	■				
U Texas					
U Toronto					■
U Virginia	■				
U Western Ontario					■
U Washington				■	
U Wisconsin	■				
Virginia Commonwealth	■				
Wake Forest			■		
Yale				■	

Table 2 shows an extensive list of comparison items for these programs.

Table 2. Doctoral Degree Granting Institutions for Comparison to University of Miami Date Printed: July 17, 1993 1:28pm (Saturday)					
	NAME OF UNIVERSITY				
	Univ. of Miami	Case Western	U.S.C.	Brown	NYU
City	Miami	Cleveland	L.A.	Providence	Manhattan
Academic Unit	School of Medicine	School of Medicine	Dept Preventive Med	Dept of Community Health	School of Medicine
Type of Institution	Private	Private	Private	Private	Private
Department or Division	Epi & PH	Epi & Bio	Div of Biometry	Division of Bio and Med	Dept Env Medicine, Lab of Bios and Epi
Degrees	MPH	MS, PhD	MD/PhD MS	MS, PhD	MS, PhD
Enrolled/ Accepted/ Applied	29/45/64	9/18/24	10/16/30	5/6/8	NA/14/24
Total Library Holdings	1615000	1600000	1800000	2500000	2500000
Number of NIH Funded Grants or Contracts in FY '92	15	14	2	4	18
Tuition	606/credit	550/credit; 6,000 per semester	477/unit; 7,100 (15-18 credits)	14,000	not available
Areas of Concentration	Epidemiology	Biostatistics, Clinical Decision Analysis, Epidemiology	Biometry, Epidemiology	Epidemiology	not available
Number of Credits Needed	60	72	60	16-18 courses	72 credits
Full Time Faculty	22	16	36	9	40
Contact	Ronald Prineas	Paul Jones, David Hom	Stanley Azen	Vincent Mor	Arthur Upton, Morton Lippman
Phone	305-547-5544	216-368-3197	213-342-2000	401-863-3172	212-263-6500
Full time Students	20	22	33	7	58
Full time Faculty	14	16	36	9	52

Journal/Periodical	University				
	Univ. of Miami	Case Western	U.S.C.	Brown	NYU
American Journal of Epidemiology	■	■	■	■	■
American Journal of Preventive Medicine	■				
American Journal of Public Health	■	■	■	■	■
American Statistician	■			■	■
Annals of Epidemiology	■				
American Review of Public Health					
Biometrika		■			■
Biometrics	■	■		■	■
British Medical Journal	■	■	■	■	■
Canadian Journal of Public Health		■			■
Cancer Causes and Control	■				
Cancer Epidemiology, Biomarkers and Prevention	■				■
Cancer Prevention					■
Cancer	■	■	■	■	■
Community Dentistry and Oral Epidemiology		■			■
Clinical Epidemiology Newsletter					
Communicable Disease Report (CDR)	■				
Epidemiologic Reviews	■	■	■	■	■
Epidemiologia e Prévencione					
Epidemiology	■		■		
Epidemiology and Infection	■	■		■	■
Ethnicity and Disease					
Epidemiology Monitor					
European Journal of Epidemiology					



Journal/Periodical	University				
	Univ. of Miami	Case Western	U.S.C.	Brown	NYU
European Journal of Public Health					
Genetic Epidemiology	■	■			
Infection Control and Hospital Epidemiology		■			■
International Journal of Epidemiology	■	■		■	■
Journal of the American Medical Association	■	■	■	■	■
Journal of the American Statistical Association	■			■	■
Journal of Clinical Epidemiology	■	■	■	■	■
Journal of Community Health	■	■	■	■	■
Journal of Epidemiology and Community Health	■	■		■	■
Journal of the National Cancer Institute	■	■	■	■	■
Journal of Pharmacoepidemiology					
Monthly Vital Statistics Reports	■	■		■	■
Morbidity and Mortality Weekly Reports	■	■	■	■	■
New England Journal of Medicine	■	■	■	■	■
Neuroepidemiology					
Paediatric & Perinatal Epidemiology					
Post Marketing Surveillance-An International Journal on Pharmacoepidemiology					
Preventive Medicine	■	■		■	■
Public Health Reports	■	■	■	■	■
Revue D'Epidemiologie et de Sante Publique					
Science	■	■	■	■	■
Lancet	■	■	■	■	■
South African Journal of Epidemiology and Infection					

Journal/Periodical	University				
	Univ. of Miami	Case Western	U.S.C.	Brown	NYU
<b>TOTAL</b>	<b>29</b>	<b>25</b>	<b>15</b>	<b>22</b>	<b>28</b>

7. BUDGET:

a. REVENUE: Please refer to a letter from Dr. Robert Rubin, Vice Provost for Research, in Appendix B, which explains issues related to tuition. No student tuition is charged for any Ph.D. program in the medical school.

b. EXPENSES

						TOTAL YEAR 01	TOTAL YEAR 02	TOTAL YEAR 03
NAME	BASE	EFF	SALARY	%FB	FRINGE			
<b>Staff</b>								
Director	75,000	25%	19,500	30.0%	5,950	25,350	26,567	27,840
Program Coordinator	30,000	50%	15,000	33.5%	5,228	20,228	21,821	22,962.88
Sr. Staff	16,991	25%	4,418	33.5%	1,480	5,898	6,179	6474.381
<b>SUB-TOTAL</b>		1.00	39517.66		12555.92	52073.58	54567.5	57177.63
<b>GRADUATE ASSISTANTS</b>								
Year 1 - 1 graduate assistant						11000		
Year 2 & 3 - 2 graduate assistants each							22000	22000
<b>SUB-TOTAL</b>						11000	22000	22000
<b>SUPPLIES</b>								
Clerical Supplies @40/FTE/Mo						960	1498	1557.92
Instructional Supplies/books @50/stud/mo						3600	5400	7200
<b>SUB-TOTAL</b>						4560	6998	8757.92
<b>EQUIPMENT</b>								
Office								
2 files year 1 and 1 file years 2 & 3 each						1200	600	600
3 desks 30x60						1880	0	0
3 swivel chairs						990	0	0
6 side chairs						435	0	0
3 computers 386 & accessories						15000	0	0

		TOTAL YEAR 01	TOTAL YEAR 02	TOTAL YEAR 03
1 laser printer		750	0	0
Audio/visual				
1 overhead projector		340	0	0
1 slide projector		585	0	0
1 Video recorder & monitor		750	0	0
Laboratory				
computers for teaching available 7th floor Dominion Towers		0	0	0
<b>SUB-TOTAL</b>		<b>21910</b>	<b>600</b>	<b>600</b>
<b>TRAVEL</b>				
1 trip director for recruitment		1000	1000	1000
2 trips on rotating bases and needs bases for 2 teaching faculty to Scientific meetings		4000	4000	4000
2 trips for students for training & presentation of research		2000	2000	2000
<b>Total</b>		<b>7000</b>	<b>7000</b>	<b>7000</b>
<b>OTHER</b>				
Rent (@27/sq ft for 800 sq ft)		21600	22484	23362.56
Library searches		2000	2080	2163.2
Honorariums		10000	10400	10816
Computer time		2000	2080	2163.2
Slides preparation		5000	5200	5408
Accreditation		2000	2120	2244.8
Advertisement		1000	1040	1081.6
Publication/printing		6500	6760	7030.4
Phones (@15/incoming line, @30/instrument/mo for 3 phones, 2 lines ea)		1440	1497.6	1557.504
Telephone (long distance)		500	520	540.8
Postage		750	780	811.2
Photocopying		2000	2120	2244.8
<b>SUB-TOTAL</b>		<b>56790</b>	<b>59061.6</b>	<b>61424.06</b>

						TOTAL YEAR 01	TOTAL YEAR 02	TOTAL YEAR 03
Total Direct Costs						153333.6	150127.1	156959.6
Modified Direct Costs						0		
Indirect Costs						0	0	0
TOTAL COSTS						153333.6	150127.1	156959.6
TOTAL GRANT AMOUNT REQUESTED		\$460,420						

c. BUDGET JUSTIFICATION

Director - 25% - The director will be responsible for the establishment of the program and the overall quality of curriculum, candidates and accreditation

Program Coordinator - 50% - The program coordinator will be responsible for the day to day operations of the program and the adherence to University policy during the establishment of this program as well as after the program is underway.

Sr. Staff Assistant - 25% - The Sr. staff assistant will type and prepare all necessary forms and reports under the direction of the Director and Program Coordinator.

Graduate Assistants - We are requesting funding for 1 graduate assistant in year 1 and 2 in each of ensuing years.

Supplies are figured at \$40 per fulltime staff and graduate assistant equivalent per month. Instructional supplies and books are figured at the rate of \$50 per student per month.

In order to establish this program it will necessary to provide 1 desk, 1 swivel chair and 2 side chairs, and 1 computer per staff member. In addition to these, 2 file cabinets will be needed in the first year and 1 file cabinet each year afterwards. One laser printer will be networked to serve the entire staff. For teaching purposes the following will be required. 1 overhead projector, 1 slide projector, 1 video recorder and monitor. Computers for teaching are available on the 7th floor of Dominion Towers and are provided by the department for this purpose.

Travel - 1 trip per year is requested for the director for the purposes of recruitment. 2 trips on a rotating bases and needs bases are requested for 2 teaching faculty to Scientific meetings to network and update information bases. 2 trips per year for students for the purposes of training and presentations of research as well as information gathering is requested.

Other -

Rent is requested at \$27 per square foot for an estimated 800 square feet. This is requested because of the limited available space on the Medical Campus.

8. OTHER

a. ADDITIONAL FACILITIES, INCLUDING COMPUTER RESOURCES

i. TOXICOLOGY LABORATORIES

The Toxicology Laboratories of the Department of Epidemiology and Public Health of the University of Miami School of Medicine are located on the South Campus Facility. These laboratories have recently been reorganized to address not only research but also community toxicology needs. There are three branches which are inter-connected by personnel and research interests, but which concentrate on separate areas of toxicology utilizing separate laboratory facilities as described below:

- (1) Experimental Laboratory
- (2) Forensic Laboratory
- (3) Occupational/Environmental Laboratory

The Experimental Laboratory is primarily concerned with developing and validating new methodologies for the toxicologic investigations performed by the other two laboratories, and in some cases, in elaborating new therapeutic modalities. The Forensic Laboratory is focused on the analyses of fluids for street drugs of abuse such as cocaine and ethanol. Finally, the Occupational/ Environmental Laboratory specializes in the analysis of human and environmental specimens for pesticides and metals.

Present research projects include: subclinical neurologic effects in Fumigator Workers (NIOSH), metals uptake and soils in the Dominican Republic (USAID), and subclinical health effects of methyl mercury in the Everglades (ATSDR). Submitted and future projects include: pesticide levels in the brains of Parkinson's and Alzheimer's Disease as well as other environmental causes of Parkinson's Disease, and subclinical health effects in Wood Treatment Workers, and patterns of drug abuse by the homeless. This research is supported and furthered by the Experimental Laboratory. Present funding sources include: Dade County (Dept of Environmental Resource Management), State of Florida (Dept of Environmental Resources and Dept of Health and Human Resources), NIOSH, US AID, and ATSDR. Both the Forensic and Occupational/Environmental Laboratories are involved in the medico-legal aspects of their analyses, ranging from DUI/DRE to Workers Compensation and Tort litigation.

The Laboratory works on chemicals and residue analyses, national human monitoring programs, assessment of occupational exposure to volatile organic chemicals, quick response to acute poisoning incidents, water analyses for organic carcinogens, and the development of new or improved analytical procedures including several air, blood and tissue-sampling (exposure assessment) techniques and methodologies. Originally, the primary directive of the Laboratory was the identification of pesticides in water, food and soils. The work has included, under continuing US Agency for International Development (AID) sponsorship, offering two training courses per year in pesticide analysis to qualified individuals from countries with established US AID programs. The Laboratory was selected as the United States collaborating center for the WHO and Pan American Health Organization in a worldwide quality assurance pesticide analysis program.

Over the past several years, the laboratory has expanded its work in the areas of Toxicology and Environmental Health. It has become involved in the identification of unknown organic components collected from toxic waste dump sites and the study of their metabolic fate. In addition, the Laboratory has collaborated in a project with Research Triangle Park analyzing diesel fumes (the pyrolysis products of combustion). The laboratory has been involved in the study and development of three new forms of chemotherapy (5-fluoro-2-deoxycytidine, 5-chloro-2-deoxycytidine, and 5-trifluoromethyldeoxycytidine), including sole responsibility for the advanced studies relating to the pharmacokinetics and the elucidation of the primary metabolic pathways. At present, the Laboratory is beginning a project with members of the Faculty of the Rosenstiel School of Marine and Atmospheric Sciences (University of Miami) to analyze metals, polyaromatic hydrocarbons, pesticides and other contaminants in stationary marine samples for environmental monitoring. In addition, the laboratory has just initiated a project with US AID and Prairie View Texas A & M University to evaluate the levels of four metals in the hair of residents of the Dominican Republic and their relationship with metals uptake into indigenous plants consumed in the diet. The laboratory has also completed a pilot study of fumigators exposed to methyl bromide and sulfuryl fluoride, and possible subclinical neurologic effects.

ii. THE COMPREHENSIVE DRUG RESEARCH CENTER

Clinical and research faculty and staff affiliated with the Comprehensive Drug Research Center (CDRC) have experience conducting clinical trial protocols and other research in toxicology (from urine, blood, and/or hair specimen), pharmacology, neurology, psychiatry, pathology, and molecular virology. For example, they also conduct screening and testing for drug use, sexually-transmitted diseases, HIV and other infectious and viral diseases in CDRC community outreach-monitoring-follow-up

studies of drug users. Their established toxicology and viral immunodiagnostic laboratories, as well as shared and common equipment facilities, use instruments and procedures approved by the National Institutes of Health, the Public Health Service, the Centers for Disease Control, the State of Florida, and the University of Miami's Health, Environment, and Biosafety Committees.

CDRC researchers also have available the services of the Toxicological Laboratory at the Dade County Medical Examiner (ME) Department for both basic science research and routine toxicological screening. Since 1985, many studies of the metabolism and pharmacology of cocaine, alcohol and other drugs, including innovative studies of cocaethylene and its effects, have been conducted in this laboratory, resulting in numerous publications and presentations. There is a long-standing professional and contractual relationship among the ME Office and staff, University of Miami researchers in general and substance abuse specifically, as well as with UM/JMMC clinical services, especially the emergency rooms and trauma center. State-of-the-art equipment currently includes Finnigan ITS40 and 4510 gas chromatograph-mass spectrometers.

In addition, CDRC researchers have at their disposal the services and equipment of the Viral Immunodiagnostic and Research Laboratory, under the direction of Dr. P. Shapshak, for the conduct of HIV and HTLV-I/II testing. This laboratory consists of two fully-equipped facilities, a P-3 virus laboratory and a molecular biology laboratory. The laboratory staff of five technicians and post-doctoral fellows is fully qualified to do HIV testing for p24 antigen and for Western Blot, and to isolate HIV by coculture techniques.

The CDRC currently maintains a sera bank of over 10,000 specimens, a "brain bank" of post-mortem brain tissue specimen from decedents who had been using cocaine at the point of death, and a placenta bank containing specimen collected from cocaine-using women who gave birth at UM/JMMC. Appropriate human subjects' approvals and protections to safeguard client/patient and worker safety and client confidentiality are always taken.

### iii. COMPUTER RESOURCES

Hardware Hardware consists consist of a hierarchy of networked hardware, integrated by AT&T's Unix operating system and its communication utilities. This environment provides a uniform interface to the users and for system administration. The network levels are as follows:

1. School of Medicine fiberoptic backbone: the department has direct access to all of the facilities provided by the School of Medicine's AT&T campus network. This network provides synchronous or asynchronous communication through a



packet switching protocol that is a subset of the X.25 protocol. Both STARLAN-10 and TCP/IP are supported. See "Network Connectivity" for more details.

2. Division or project servers: the department currently uses a client-server model of computing, with "workgroup" systems (WGS's) acting as servers to local area networks with clients of personal computers and character-based (i.e. non-graphic) terminals).
3. Desktop or laptop personal computers: Each workgroup system can support desktop or "lap-top" portable computer systems, allowing the coordination of office automation tasks, data entry, or other computing. Both the workgroup and portable systems are based upon the current industry standard Intel 80386 processor, and Unix System V/386. All software is totally compatible using the Application Binary Interface (ABI) of System V/386. The local area network can use STARLAN-10, based on twisted-pair wiring, or ETHERNET, based on coaxial cable. Currently the LAN supports 12 UNIX workstations, 16 personal computers, 42 terminals, and two Toshiba-5100 lap-tops (running Unix System V and MS-DOS).
4. Statistical work-stations: The workgroup server also supports a sub-network of statistical work-stations. A SUN SPARCstation 1 is designated as the server of this sub-network, with a SUN 3/60 and another SPARCstation 1 as clients. Each is configured for statistical analysis with P-STAT, SAS, BMDP, S-PLUS (a statistical programming language), CART (a new regression program), and |STAT, a suite of statistical programs in C for Unix. The latter two are also available on the division server.

#### Network Connectivity

The department uses the fiber optic-based campus network as its high speed backbone. AT&T STARLAN-10 provides the basis for local area networks. High speed (19,200 baud) and medium speed (2400 baud) error correcting modems provide connectivity for locations which do not have physical access to the fiber optic network. TCP/IP is also used to connect heterogeneous machines, and to create subnetworks.

#### Wide Area Network

At present peer-to-peer communications are carried out using TCP/IP. This allows for the support of heterogeneous databases over the network.

#### Department Local Area Network (LAN)

The STARLAN-10 network is a 10 Mbit/second local area network that can connect a variety of devices using unshielded twisted-pair wire, transceiver cable and optical fiber as the network media. The DEPH system presently supports 15 PC-AT compatible machines equipped with a STARLAN-10 Network PC Network Access Unit (NAU), and PC client software to send and receive information over the network. Since STARLAN is a network with a flexible star topology, various departments on the medical campus can link to the network through one or more hub devices. The hubs serve as gateways to that department's resources. PC's and file servers at specific sites also exchange local information through the hubs. The STARLAN network hubs are the conduit for exchanging information locally within the department, and for exchanging information across departments on the medical campus. Within the department PC network information is routed to three file servers, the AT&T 6386E and two AT&T 6386/33 WGS's, through four network hub devices. The AT&T units contains server software that allows it to make resources such as printers and disk space available to local PC's and to other systems in other departments. AT&T Mail PMX/TERM and AT&T/STARMAIL software interface with the networking software so that electronic mail messages can be exchanged. PC users unfamiliar with the UNIX operating system are able to create, store to and retrieve information from the hard disks of the primary server using familiar MS-DOS commands, or they can use the KERMIT terminal emulation package provided with the networking software to log in to an account on the UNIX system and run applications. This configuration provides addition to allowing file and record locking on remote files. Careful attention to preserving the UNIX file system semantics ensures that existing binary applications, which use standard system locking and systems call, can make use of network resources without special knowledge of where the resources reside. By extending the notion to the UNIX "mount" procedure, RFS allows a subtree of a server machine to be logically added to the local file tree of a client machine. A message protocol, based on the UNIX system call interface, is used to communicate resource requests between the machines. The client and server machines employ a reliable virtual circuit-style transport to transfer these messages. By adhering to a standard transport service interface accessed via the STREAMS mechanism, RFS can operate over a wide variety of commercially available protocols without modification.

The University's Central Computer Facility's IBM 9021-580 has 128 megabytes of main memory, 151.5 gigabytes of mass storage, and MVS and VM/CMS operating systems. Its DEC VAX cluster has two VAX 4000-600 central processors with 64 megabytes of memory, 12.3 gigabytes of storage, and the VMS operating system. Both mainframes have 1600/6250 bpi tape drives and printing capabilities.

Computing facilities in the Department of Epidemiology and Public Health consist of workgroups of over 120 networked 80x86 personal computers, character-based (i.e.

non-graphic) terminals, and a classroom of 20 IBM personal computers dedicated for educational use. Specialized capabilities such as a digital scanner, high-speed printing, and high-resolution graphics are available. The workgroups are integrated by AT&T's Unix SystemV /Release 4 using departmental UNIX servers, including two AT&T 6386/33 Model S, one AT&T 6386/25, one AT&T 6386 Model E, two Sun Sparcstation 1+ systems, and one Sun Sparcstation 3/60. These servers have over 5 gigabytes of disk storage, a 1600/6250 bpi tapedrive, and 8mm DAT backup facilities.

#### Remote File Sharing

Remote File Sharing (RFS), one of the networking facilities added by AT&T to UNIX System V in release 3.0 (SVR3), is used to tightly couple shared databases, applications and devices. RFS adds a new dimension to the user computing environment by providing transparent access to remote files. RFS allows access to all file types, including special devices and "named pipes", in addition to allowing file and record locking on remote files. Careful attention to preserving the UNIX file system semantics ensures that existing binary applications, which use standard system locking and systems call, can make use of network resources without special knowledge of where the resources reside. By extending the notion to the UNIX "mount" procedure, RFS allows a subtree of a server machine to be logically added to the local file tree of a client machine. A message protocol, based on the UNIX system call interface, is used to communicate resource requests between the machines. The client and server machines employ a reliable virtual circuit-style transport to transfer these messages. By adhering to a standard transport service interface accessed via the STREAMS mechanism, RFS can operate over a wide variety of commercially available protocols without modification.

#### Software Modules for Multi-user Departmental Computing

A standard suite of application software modules have been identified to meet the computing needs of the department. These modules, in general, work well together, so that to the user a single environment is simulated.

#### Uniplex II Plus

Uniplex is an office automation product. Its features include a menu-driven interface to application programs such as a word-processor, spreadsheet, databases, screen builders and report writers. It also contains personal options such as time management, mail, personal organizer, and card index. Utilities include printing and listing of files, file management and system administration. Uniplex has a high level of integration and a consistent set of commands. It is possible to cut and paste from one application to another. Uniplex provides a transparent interface to INFORMIX or ORACLE database management systems. The ability to link the output of an SQL query from the database into the spreadsheet has been used to set up a real-time

patient reporting system. Uniplex is very easy to configure and modify, since most of its commands, messages, and menus are driven from editable ASCII tables.

#### Database Tools

These include the INFORMIX-SQL DBMS, INFORMIX-ESQL/C, and INFORMIX-4GL (C compiler and interpreted version). These tools require no further description, and have been chosen because INFORMIX has emerged as the de facto standard for database management. An application development system has been developed which serves as a front-end to INFORMIX software. We also have been doing development with the INFORMIX Rapid Development System (IRDS) and Interactive Debugger. This holds promise for portable run-time software, since the "pseudo-code" generated by IRDS will run on any machine that supports IRDS, even if it does not have the compiler. The p-code takes longer to load, is about 30% slower to execute, but the development time is greatly reduced, and the load modules are smaller. We propose to perform prototyping using IRDS, and to save C compilation till later in the development process. Two newer products, INFORMIX-STAR and INFORMIX-NET allow a database to be physically distributed across different machines on the network, using either TCP/IP or STARLAN-10 as the transport layer. This will allow for a much more sophisticated topology to be designed than either the older central model or the use of physically separated PC's.

#### P-STAT Statistical Package

While no single statistics package contains all of the features that users may want or need, the P-STAT statistical package offers flexible file maintenance and data display features, cross tabulation, and numerous statistical procedures. In addition to the functions which P-STAT supports directly, it also provides a gateway to a number of other packages. For this reason, P-STAT will be the primary statistical package supported across all machines. P-STAT can be used as batch program or interactively (it has always been interactive). A command line editor is available for editing errors, and this editor can be used to import or export batch files to and from the interactive environment. P-STAT also has a menu-driven mode, similar to that of Uniplex. In this mode a command line is built up from menu selections, and the resulting commands saved into a stack for future use. The package is very easy to learn in this mode, since there is also an on-line help file available.

#### Database Development Software

The META database development tool provides customized data management and analysis. "META" databases contain knowledge about data. The META database allows the creation of a data dictionary for the documentation and creation of a new, customized, database. The META database produces a table of contents of the new database and all field attributes. It also:

- (1) Builds a schema for each file and a new database.

- (2) Creates a customized screen for data input and query which includes data validation, table lookup, and the dynamic joining of multiple files.
- (3) Creates a sorted report for each file or group of files.
- (4) Provides "domain" support, a pool of predefined data types.

### Clinical Epidemiology Software

#### Forms-Driven System

The primary tool is a relational database management system for forms-driven data entry. Special programs have been added to the data-entry system to allow data editing, audit trails, time, date, and user stamping, and distributed data entry. Support for free-text data entry is included, narrative too long to fit easily in a database field. Interfaces exist from the data entry database to several statistical packages, including SAS, PSTAT, and BMDP. The system also contains a standard module for recording and encoding information from medical records relevant to patient follow-up. This module is called the "Problem-Oriented Medical Synopsis" (POMS).

#### The Problem-Oriented Medical Synopsis

The heart of the system for clinical epidemiology is a general purpose database management system for the management of follow-up data from patient medical records and the coding and classification of this information.

#### Coding, Indexing and Classification

Coding databases include, among others:

1. Problem glossary, a list of preferred terms for coding.
2. International Classification of Diseases, Clinical Modification (ICD-9-CM), used for classification of diseases, symptoms, and procedures, and further modified for specific applications.
3. The Systematized Nomenclature of Medicine (SNOMed) for detailed coding of medical content.
4. Current Procedural Terminology (CPT4), a procedure coding system.

#### iv. Electrocardiogram Laboratory (ECG Laboratory)

The DEPH has an ECG laboratory, established in 1989, and modelled on an ECG Laboratory directed by the Chair of DEPH, Dr. Ronald J. Prineas, at the University of Minnesota, School of Public Health from 1973 to 1988.

The mission of the ECG laboratory is to carry out research into abnormalities and

changes in the ECG throughout the life\_span. ECG measurements are incorporated into regression analyses for predicting chronic ischemic heart disease and the effects of hypertension. Studies relating to drug and disease induced cardiac arrhythmias are also carried out. The ECG laboratory provides definitions and measurements of ECG abnormalities for endpoint determination in local, national and international clinical trials and longitudinal observational studies of ischemic heart disease, hypertension and aging. The ECG laboratory, thus, also serves as an ECG reading center for multicenter clinical trials. Protocols for ECG data acquisition, quality control and statistical analysis are established.

The methods of ECG measurement differ from those of clinical practice and employ measurement systems such as The Minnesota Code and The Novacode, in addition to continuous measurement of selected wave form parameters.

Equipment and staff:

The ECG Reading Center occupies multiple offices (450 square feet) with lamps, visual measuring loupes and rulers, lockable storage space, computer terminals and printers, facsimile machine, telephones, computer modems, and digital ECG acquisition and transmission electrocardiographs. The ECGRC is staffed by the Associate Director (Dr. Z.M. Zhang), a Supervisor (Ms. J. Chang) and trained ECG coder technicians. The ECGRC is housed on the fourth floor of Dominion Tower on the University of Miami School of Medicine campus - DEPH, Miami, Florida. The Director of the ECGRC, Dr. Prineas, has offices and a conference room in a nearby (200 yards) building (the Daughtry Building) on the School of Medicine campus. The ECGRC is serviced by the Department of Epidemiology and Public Health's UNIX based AT&T computer system that has hard wired connections to all department computers and to the main frame VAX and IBM computers on the Coral Gables University of Miami main campus. All databases are safeguarded by the use of confidential, restricted entry codes. All major statistical and data base management programs are available within the DEPH computer system. The computer system is maintained by a separate group of faculty and staff of the Information and Systems Committee within the Department.

Dr. Prineas is a former Director of the Minnesota ECG Coding Center. He is first author of the Minnesota Code Manual of Electrocardiographic Findings. Dr. Zhu-Ming Zhang has been Associate Director of the Miami ECG Coding Center for 2 years. She has conducted independent research into ECG LVH criteria and is highly trained for Minnesota Code and Novacode coding and training. Ms. Jeannie Chang has been Supervisor of the Miami ECG Coding Center for one year and has almost completed her MPH degree. She is trained in the requisite ECG procedures needed for the ECG Laboratory. In addition, varying number of trained, part time ECG coding technicians (who are often University of Miami students from other disciplines) assist with the work of the laboratory.

Past and Current Studies:

While Director of the ECG Coding Laboratory, Division of Epidemiology, University of Minnesota School of Public Health 1973 to 1988, the following multicenter studies were under the direction of Dr. Prineas as Principal Investigator for all except B-HAT (Co-Principal Investigator) and thus many databases are available for further analysis and research.

- 1) The Coronary Drug Project (CDP)
- 2) The Beta-Blocker Heart Attack Trial (BHAT)
- 3) The Hypertension Detection and Follow-up Program (HDFP)
- 4) CDP Aspirin Study
- 5) Persantin Aspirin Study (PARIS)
- 6) PARIS II
- 7) The Visual ECG Coding Center for the Multiple Risk Factor Intervention Trial (MRFIT)
- 8) DCCT - an ongoing multicenter diabetes trial
- 9) ETDRS - an ongoing multicenter trial for diabetes
- 10) Pilot Study (4 centers) For the Systolic Hypertension in the Elderly Program (SHEP)
- 11) SHEP II
- 12) Visual Coding Center for ARIC (NHLBI natural history study)
- 13) A score of other smaller national and international studies

Currently the ECG Laboratory codes ECGs and is contributing to research for the following NHLBI and industry supported studies:

- 1) The Sodium and Potassium Intervention Study in Children (NaKS)
- 2) The Prevention of High Blood Pressure in Children (PHBPC)
- 3) The MIDAS Study
- 4) The PLAC II Study
- 5) The Rancho Bernado Study

Teaching and Student Resource

Extensive databases and hard copy ECGs from past and ongoing clinical trials and observational studies provides students with extensive materials for original research into population electrocardiography - an intimate part of cardiovascular disease epidemiological research. Thus, the ECG laboratory provides materials and faculty and staff for training PhD candidates in cardiovascular disease research and databases for PhD thesis work.

- v. The U/M Diagnostic Vascular Laboratory will be located in the 1st floor of the Diabetic Research Institute which is scheduled to open February 15, 1993. The Laboratory will have 2 examining rooms and an administrative area. The total area is approximately 500 square feet. Patients for this facility will use the standard DRI

patient waiting area. Files will be stored in the DRI Records Room.

The Laboratory will be staffed by a full-time Vascular Technologist and rotating Cardiology fellows. Full-time faculty will include Dr. Jeff Raines as Director and Dr. Ronald Goldberg as Associate Director. The facility will have the capabilities of performing a wide spectrum of noninvasive vascular studies. This will include upper and lower extremity arterial evaluations, upper and lower extremity venous evaluations, extracranial evaluations, and male impotence studies.

One examining room will be primarily used for extremity evaluations and will include a Pulse Volume Recorder and treadmill. Doppler ultrasound will also be used in this area. The second examining area will be used primarily for extracranial arterial studies and imaging of both the extracranial territories and the extremities. We have a state-of-the-art Duplex Imaging System. Extracranial functional capabilities include the measurement of ophthalmic artery pressure, carotid audiofrequency analysis, and cerebral Doppler evaluations of the supraorbital and vertebral territories.

Patients will be accepted from within our medical center and from the community at large. Of particular interest, we will be seeing patients from the diabetic and lipid disorder clinics and from the diabetic foot clinic.

- vi. The Nutrition Laboratory located in the Rosensteil Medical Science Building focuses on determination of nutritional status in individuals and populations. Students will have opportunity to participate in epidemiological studies and clinical trials that involve investigations of nutritional status as a cofactor in infectious and chronic diseases. Facilities are available to determine body composition, plasma levels of nutrients utilizing biochemical methodology, clinical signs and symptoms of malnutrition, and dietary intake. Currently, three NIH-funded grants are carried out in these facilities, with instruction available in various aspects of protocol development, participant recruitment, conduct of the studies, as well as data analyses and interpretation. The staff includes Dr. Marianna K. Baum, Director, Dr. Gail Shor-Posner, Associate Director, Dr. Jose Quesada, Coordinator, and other research and laboratory personnel.

b. TRAINING GRANT

Dr. Marianna Baum holds a training grant titled "International Training in AIDS Epidemiology." This grant was awarded by the Fogarty International Training Center, of the NIH. Through this grant, Dr. Baum and colleagues have provided AIDS related training in the epidemiologic, clinical, and laboratory disciplines to government endorsed scholars from developing nations in South and Central American, the Caribbean, and Eastern Europe. In addition, the U.M. faculty have given in-depth courses to more than 2,800 physicians,



laboratory technicians, and health care workers.

The Fogarty-trained scholars have had a profound impact on their home countries, through the development of strategic programs in HIV/AIDS research, detection, prevention, and treatment. The Fogarty program has enhanced knowledge and contributed significantly towards the establishment of a technical infrastructure to control HIV/AIDS in host countries.

The training program at the University of Miami School of Medicine has the following objectives:

- (1) to provide long term epidemiological training for qualified individuals from developing countries leading to an advanced degree and involving afield research project in the trainee's home country
- (2) to train scholars to conduct future international vaccine and drug trials
- (3) to establish the investigative infrastructure necessary for HIV-1 related research through short-term intensive courses
- (4) to provide guidance and advanced research training, and
- (5) to promote and expand collaborative training and epidemiological research between scientists/clinicians in developed and lesser-developed nations.

The training will facilitate the ability of scientists/clinicians in developing countries to deal effectively with the AIDS epidemic and create the necessary foundation to minimize/halt the spread of the retroviral epidemic. The Fogarty award runs through 8/31/98.

## 9. APPENDICES

- a. COURSE DESCRIPTIONS (see page 56)
- b. CVs
- c. LIST OF CURRENTLY ENROLLED STUDENTS IN EPIDEMIOLOGY AND PUBLIC HEALTH

### GRADUATE PROGRAMS IN PUBLIC HEALTH CURRENTLY ENROLLED STUDENTS AS OF JANUARY 13, 1993 SPRING SEMESTER

#### Student

1. Belmar, Patricia
2. Block, Adam
3. Carrillo, Lillian
4. Churchill, Shervin

5. Cohen, Marcy
6. Crout, John
7. Eugene, Ariol
8. Faldas, Marion
9. Garsik, Daryl
10. Hamilton, Kara Lyn
11. Kornfeld-Franco, Julie
12. Lafontant, Ludovic
13. Lai, Hong
14. Lam, Merina
15. Lu, Kristyina
16. Malka, Benjamin
17. Martin, Myra
18. Mavunda, Kunjana
19. Messick, Barbara
20. O'Sullivan, Marjorie
21. Pall, Lorraine
22. Peterson, Lynae
23. Raymond, Andrea
24. Riefkohl, Gloria
25. Rodriguez, Rosa
26. Salvati, Lisa
27. Schoenike, Steve
28. Thomas, Nancy
29. Thompson, Leslie
30. Trach, Natalie
31. Tuchel, Tammy
32. Vicaria, Maureen
33. Wallis, Denise
34. Welcom, Adele
35. Wells, M Cristina

- d. LIST OF OTHER POTENTIAL STUDENTS (WHO HAVE INDICATED AN INTEREST, AN ALREADY HAVE A MASTER'S DEGREE IN RELEVANT AREA)

Approximately 12 inquiries per year are received concerning a Ph.D. program. No itemized list of such students is available.

- e. LIST OF UM SERIAL HOLDINGS RELATED TO EPIDEMIOLOGY (see page 33)
- f. COMPARISON OF COURSE CURRICULUM

Printed: July 17, 1993 1:28pm (Saturday)  
Edward Trapido, Sc.D.

**Ph.D. in Epidemiology**

Course	Course Number	University Courses					
		Miami	U.S.F.	C. Western	Brown	U.S.C.	N.Y.U.
Computer Methods	1.	■	■	■		■	
Intro to Epid	2.	■	■	■	■	■	
Advanced Epid	3.	■		■	■	■	
Biostat 1	4.	■	■	■	■	■	■
Biostat 2	5.	■	■	■			
Health Education and Behavior	6.	■					
Infectious Disease Epi	7.	■	■	■			
Chronic Disease Epi	8.	■	see 21, 22, 23, 24, 28	■	■		
Maternal and Child Health	9.	■	■				
Medical Toxicology	10.	■					
Functions of P.H. Labs	11.		■				
P.H. Administration	12.	■	■				
Data Analysis	13.				■	■	
Design and Analysis	14.	MAS 603. Design of Experiments			■	■	
Student Presentation Seminars	15.					■	
Statistical Problem Solving, Consulting	16.					■	
Advanced Research Methods	17.	see 3	■		■	■	
Clinical Trials	18.	■	■	■	■	■	
Survival Analysis	19.		■	■			
Multivariate Methods	20.	g628, MAS 601: Applied Regression Anal, PSY 632	■	■		■	■
Cardiovascular Epi	21.	Being Developed	■	■			
Aging Epi	22.	660 Social Gerontology. psy 642 Advanced Adult Psychopathology	■	■	■		
Psychosocial Epi	23.	■ and see # 6, also Soc 620, 632	■		■	■	
Cancer Epi	24.	Being Developed	■			■	■
Epi of Major P.H. Diseases	25.	■	■				
Public Mental Health Epi	26.		■				
Environmental Epi	27.		■		■		■
Occupational Epi	28.	■	■				

Course	Course Number	University Courses					
		Miami	U.S.F.	C. Western	Brown	U.S.C.	N.Y.U.
AIDS Epi	29.	■	■				
International Health	30.	■					
Applied Epi and Surveillance of AIDS/HIV	31.	■					
Public Health Nutrition	32.	■	■				
Field Methods	33.	■	■	■			
Field Experience	34.	■	■				
Protocol Writing	35.		■				
Case Control Studies	36.		■	■			
Cohort Studies	37.		■	■			
Advanced Topics	38.	■	■	■		■	
Advanced Individual Study	39.	■	■	■	■	■	
P.H. Projects	40.	■	■	■			
Thesis	41.	■. required for Ph.D. only	■	■		■	■
Investigation of Disease Outbreaks	42.	■	■				
Nonparametric Methods	43.			■		■	
Time Series	44.	g526				■	
Advanced Statistical Computing	45.					■	
Sample Surveys	46.					■	
Factor Analysis	47.					■	
Analytic Chemistry of Environmental Contaminants	48.						■
Radiation Hygiene	49.						■
Environmental Radioactivity	50.						■
Radiological Physics	51.	■ g500,501					■
Current Probs. in Env. Health	52.						■
Dosimetry	53.						■
Aerosol Science	54.						■
Environmental Carcinogenesis	55.						■
Environmental Hygiene Measurements and Lab	56.		■				■
Genetic Toxicology	57.						■
Air Pollution Transport	58.		■				■
Biomechanics	59.						■
Ergonomics	60.						■

Course	Course Number	University Courses					
		Miami	U.S.F.	C. Western	Brown	U.S.C.	N.Y.U.
Radiation Health	61.	g610	■				■
Radiobiology	62.	g617,627					■
Environmental Contamination	63.						■
Toxicity of Metals and Trace Elements	64.						■
Neurobehavioral Toxicology	65.						■
Systemic Toxicology	66.						■
Aquatic Toxicology	67.	g607	■				■
Decision Support Systems	68.			■			■
Clinical Decision Analysis	69.	being developed		■			■
Theory, Practice of Information Retrieval	70.			■			■
Math Stat	71.	MTH 525, GS25		■			
Population Genetics	72.			■			
Stat Methods in Human Genetics	73.			■			
Methods in Cancer Research	74.			■			
Health Sciences Information Systems	75.	g520-524		■			
Structured Computer Programming	76.	G517		■			
Categorical Data Analysis	77.			■			
Pattern Biology	78.			■			
Radiochemical Analysis	79.			■			■
General and Toxicology Pathology	80.	612 Pathobiology	■				■

Course Descriptions

**LIST OF ALL COURSES  
GRADUATE PROGRAMS IN PUBLIC HEALTH (GPPH)**

**EPH 501 BIOSTATISTICS I** (4 cr.): Introduction to probability and statistics including descriptive statistics, tests of hypothesis, regression analysis, contingency tables, nonparametric tests and life tables. Students will gain hands-on experience in the analysis of medical data using several computer systems and at least one of the different statistical packages such as: BMDP, SAS, PSTAT, SYSTAT, and Minitab. (CORE)

**EPH 502 BIOSTATISTICS II**(3 cr.): Continuation and elaboration of EPH 501. Includes design of factorial experiments, analysis of variance and variance components, multiple linear regression, life tables. Prerequisite: EPH 501 or permission of instructor.

**EPH 520 HEALTH EDUCATION AND BEHAVIOR** (3 cr.): Educational processes with special emphasis on the social and cultural determinants of health behavior, health education as a process of social change, and community based health education organizations. (CORE)

**EPH 521 FUNDAMENTALS OF EPIDEMIOLOGY** (3 cr.): Principles and methods of epidemiology. Descriptive epidemiology, environmental and other risk factors; detection of outbreaks, basic demography, etiologic studies. (CORE)

**EPH 541 INTEGRATED ASPECTS OF ENVIRONMENTAL HEALTH** (3 cr.): Interdisciplinary scope of environmental health problems. Development of a practical, dynamic model for integrating fundamental concepts from a variety of environmental disciplines. (CORE)

**EPH 542 MEDICAL TOXICOLOGY** (3 cr.): Provides an integrated approach to human and environmental health effects in conjunction with toxicologic mechanisms of disease and monitoring. This course was developed for the advanced student with an interest in environmental and occupational health. Lectures and discussions will focus on groups of toxins, considering their toxic health effects on humans and the environment. In addition, where relevant, a broad range of topics will be discussed using specific examples, including: monitoring, environmental and occupational regulation, different forms of pollution, engineering and industrial hygiene, risk assessment, and prevention. Prerequisite EPH 541 or permission of the instructor.

**EPH 561 PUBLIC HEALTH NUTRITION** (2 cr.): Epidemiology classification of nutrition risk factors and their amelioration through public health measures. Emphasis on nutritional assessment and education of large population groups. Some discussion of nutritional deficiencies and excesses in relation to disease. (CORE)

**EPH 571 MATERNAL AND CHILD HEALTH** (3 cr.): Preventive and therapeutic concepts pertinent to the reduction of morbidity and mortality among mothers and their children. Prerequisite: EPH 521 or permission of the instructor. (CORE)

**EPH 581 FIELD APPLICATIONS IN PUBLIC HEALTH** (1-4 cr.): Subject matter offering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title "Advanced Topics". Prerequisite: Core requirements for MPH program or permission of instructor.

**EPH 583 AIDS AS A PUBLIC HEALTH ISSUE** (3 cr.): To Examine AIDS as a public health issue, including material on HIV epidemiology, etiology, treatments, co-factors, transmission, behavioral change, psychological factors, and medical ethics. The course will primarily cover AIDS in North America and Africa, with some attention to other geographical areas.

**EPH 600 RESEARCH SEMINAR** (2 cr.): Prepares students for designing the public health project; writing scientific articles or technical reports based on the project; presenting the project to an audience of peers; and critiquing design and presentation of colleagues projects. Prerequisite: At least 12 EPH credits to include EPH 501 and EPH 521. (CORE)

**EPH 602 ISSUES IN INTERNATIONAL HEALTH** (3 cr.): Main issues in the provision of health care internationally; determinants of health improvement and issues of planning; morbidity and mortality-prevention, control, and eradication programs; housing, water, sanitation, nutrition, food production and distribution; population and family planning; international organizations in health care; technology transfer; economics and politics of health care.

**EPH 604 CLINICAL TRIALS** (3 cr.): Planning, design, analysis and data management for clinical therapeutic and prophylactic trials. Illustrations by case examples. Prerequisite: permission of the instructor.

**EPH 610 APPLIED EPIDEMIOLOGY AND SURVEILLANCE OF AIDS/HIV DISEASES** (3 cr.): Students in the course will be provided with an overview of the epidemiology of AIDS/HIV disease and will then precede to design a national surveillance system for AIDS, conduct serologic testing for HIV infection, implement a national surveillance system for HIV infection, design and conduct sentinel surveillance studies, establish control programs (e.g. a national strategy to protect the blood supply), and implement primary prevention education. Prerequisite: EPH 501 and EPH 521.



**EPH 621 CHRONIC DISEASE EPIDEMIOLOGY** (3 cr.): The major chronic diseases (e.g. Heart Disease, Cancer, diabetes). Their population impact, and methods of prevention. Specialized problems associated with chronic disease studies. Prerequisite: EPH 521.

**EPH 622 INFECTIOUS DISEASE EPIDEMIOLOGY AND CONTROL** (3 cr.): Surveillance, investigation, control and problems related to infectious diseases. Prerequisite: EPH 501 and EPH 521.

**EPH 624 ADVANCED APPLIED EPIDEMIOLOGY** (3 cr.): Principles and methods of analytic studies including case-control, cohort, and clinical trials. Emphasis on quantitation of influences of chance, evaluation cause-effect relationships. Prerequisites: EPH 501 and EPH 521.

**EPH 631 PUBLIC HEALTH ADMINISTRATION** (3 cr.): An overview of the historical background, philosophy and purpose of public health. Relationship between government, law and public health. Organization, management and intergovernmental relationships of public health agencies in the United States at the federal, state and local level. Basic principles of management, decision making and prioritizing in public health. Overview of programs and services provided by health organizations with emphasis on current health issues and problems. (CORE)

**EPH 645 BEHAVIORAL EPIDEMIOLOGY** (3 cr.): A sub-discipline of epidemiology with a principal focus on lifestyle behaviors that are health-enhancing or health-compromising. With a focus on health behavior rather than disease endpoints, behavioral epidemiology has a primary prevention orientation. This course will explore epidemiologic approaches to description/ intervention upon dietary behaviors, exercise, substance use behaviors (cigarettes, alcohol, illicit drugs), and sexual behaviors. Prerequisite: EPH 521 and permission of the instructor.

**EPH 680 PRACTICAL FIELD EXPERIENCE** (1-6 cr.): Practical field experience for MPH students, e.g. an internship with a physician, public health department, clinic, school system, Health Center, an ongoing epidemiological project. Prerequisite: Core requirements for MPH program.

**EPH 681 ADVANCED TOPICS** (1-4 cr.): Subject matter offering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title "Advanced Topics". Prerequisite: Core requirements for MPH program.

**EPH 682 ADVANCED INDIVIDUAL STUDY (1-3 cr.):** Individual work on a special project under faculty guidance. Prerequisite: Permission of the directing faculty member and the Director of Graduate Programs.

**EPH 699 PUBLIC HEALTH PROJECTS (1-3 cr.):** Research and/or design projects. Individual investigation of current public health problems. Required by all MPH students. Prerequisite: candidacy and completion of the core requirements. (CORE)

**EPH 710 MASTER'S THESIS (1-6 cr.):** The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/ her advisor. Credit is not awarded until the thesis has been accepted.

**EPH 720 RESEARCH IN RESIDENCE (0 cr.):** Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in EPH 710 (usually six credits). Credit not granted. May be regarded as full time residence.

**EPH 725 CONTINUOUS REGISTRATION - MASTER'S STUDY (0 cr.):** To establish residence for MPH students who are preparing for project presentation. Credit not granted. Regarded as full time residence.

ACTIVE GRANTS

DEPH Faculty Judy Bean/Lora Fleming  
P.I. Daniel Baden (Marine Institute)  
Title NIEHS Marine/Freshwater Biomedical  
Sciences Center Grant/1P30 ES05705-01  
Agency NIEHS 1 P30 ES05705-01  
Dates 08/01/91 - 07/31/96  
12 Month \$184,993  
Indirect \$103,494  
Total DC \$912,433  
Purpose This is a proposal for an Environmental Marine Center to foster collaborative research between RSMAS, and Medical School at the University of Miami.

DEPH Faculty Marianna K. Baum  
P. I. Marianna K. Baum (15%)  
Co-P.I. Gail Shor-Posner (18%)  
Ronald Prineas  
Clyde McCoy  
Title International Training Grant in Epidemiology Related to AIDS  
Agency NIH and Fogarty International Center  
Dates 09/01/93 - 08/31/98  
12 Months \$136,008  
Indirect \$10,880  
Total DC \$2,261,121  
Purpose To train investigators from developing countries in epidemiology, prevention and treatment of HIV-1/AIDS.

DEPH Faculty Marianna K. Baum  
P. I. J. Goodwin  
Co-P.I. Marianna K. Baum (5%)  
Title Beta Carotene Prevention Trial in Head and Neck Cancer  
Agency NCI  
Dates 04/01/93 - 03/31/93  
12 Months \$56,822  
Indirect \$9470  
Total DC \$47,352  
Purpose To test the hypotheses that daily administration of 50 mg beta carotene can lower incidence of treatment failure, in patients with upper aerodigestive tract cancer, by preventing some secondary primary cancers and local recurrences.

DEPH Faculty Marianna K. Baum  
P. I. Karl Goodkin, MD (50%)  
Co-P.I. Marianna K. Baum (5%)  
Title Impact of a Bereavement Support Group in HIV-1 Infection

Agency NIMH  
Dates 12/02/92 - 12/01/96  
12 Months \$470,000  
Indirect \$37,600  
Total DC \$2,000,000  
Purpose To determine the impact of a bereavement support group on psychological distress, immune function and health status in HIV+ and HIV- homosexual men compared to control group.

DEPH Faculty Marianna K. Baum  
P. I. Edwin Olsen (20%)  
Nutrition  
Coordinator Marianna K. Baum (5%)  
Title Miami Area Geriatric Education Center  
Agency HHS  
Dates 09/01/92 - 08/31/95  
12 Months \$416,216  
Indirect \$80,000  
Total DC \$1,000,000  
Purpose To develop education programs, activities and resources and to train faculty and health care professionals in geriatrics and related disciplines.

DEPH Faculty Marianna K. Baum  
P. I. Walter G. Bradley  
Co-Investigator Marianna K. Baum (2% No salary)  
Title Pathogenesis & Cytokines in HIV Sensory Neuropathy  
Agency NIH/NIND  
Dates 04/01/93 - 03/31/93  
12 Months  
Indirect  
Total DC \$336,005  
Purpose To define the pathogenesis of the distal progressive sensory polyneuropathy common in patients with AIDS.

DEPH Faculty Judy Bean  
P.I. Dr. Emmalee Bandstra (Pediatrics)  
Co-P.I.: Dale Chitwood  
Title Neuro developmental Outcome of in Utero cocaine exposure  
Agency NIDA  
Dates 04/01/90 - 03/31/95  
12 Months \$675,049  
Indirect \$1,101,415  
Total DC \$2,773,192  
Purpose: The overall objective of this study is to determine the impact of in utero cocaine exposure upon perinatal outcome and neurodevelopment consequences in the infant. A prospective longitudinal study will be performed to assess neurobehavioral status, neurodevelopmental outcome and auditor function, of 250 cocaine-exposed term infants compared to two groups of control term infants. Future efforts at developing strategies to combat perinatal cocaine use and minimize its impact upon exposed infants should be enhanced by the project.

P.I. Marianna Baum (15%)  
Co-P.I. Ronald Prineas  
Gail Shor-Posner  
Title International Training in AIDS Epidemiology  
Agency NIH and Fogarty International Center  
Dates 09/26/86 - 09/25/93  
12 Months \$350,797  
Indirect \$26,464  
Total DC \$1,640,115  
Purpose: Train Latin American and Caribbean Health Personnel in AIDS treatment related problems.

P.I. Marianna Baum (20%)  
Co-P.I. Gail Shor-Posner (35%)  
Ying Lu 5%  
Title Nutritional Aspects of HIV-1 Infection in IVDU's  
Agency NIMH  
Dates 05/01/92 - 04/31/97  
12 Months \$257,673  
Indirect \$50,073  
Total DC \$1,371,368  
Purpose The goal of this project is to determine the relationship between nutritional status, drug addiction and the development of HIV-1 disease progression in intravenous drug users (IVDUs). The principal hypothesis of the proposed investigation is that nutritional deficiencies influence both the rate and form of disease progression, and thereby contribute to the increased morbidity and mortality observed in HIV-1 infected IVDU's.

P.I. Thomas Briggie 50%  
Co-P.I. Lora Fleming 20%  
Title A Study of the Health Effects of Methyl Bromide and Sulfuryl Fluoride on Structural and Agricultural Applicators  
Agency NIOSH  
Dates 8/1/91 - 1/31/94  
12 Month \$ 81,169  
Indirect \$ 43,831  
Total DC \$262,338  
Purpose Cross sectional study of Methyl Bromide and Sulfuryl Fluoride structural applicators with regards to subclinical neurologic and renal health effects due to occupational exposure to these chemical.

DEPH Faculty Judy Bean

P.I. Richard Bunge (Miami Project)  
Title Study of Cellular Therapy in Chronic Spinal Cord Injury  
Agency NINDS  
Dates 12/01/90 - 11/30/95  
12 Month \$320,213  
Indirect \$14,386  
Total DC \$1,846,740  
Purpose The long-term objective is to improve residual function and to prompt central nervous system regeneration

in regions of chronic spinal cord injury in men. To achieve this, the clinical course after injuries in men will be documented and the pathology and physiology of various injuries will be examined.

P.I. Dale Chitwood  
Co-P.I. Clyde McCoy  
Title Epidemiology of HTLV-III of Intravenous Drug Users  
Agency NIDA-DA03305  
Date 7/1/89 - 6/30/92  
12 Month \$328,901  
Indirect \$583,884  
Total DC \$1,024,358  
Purpose The primary focus of this project is the epidemiologic investigation of the prevalence, incidence, and risk factors for HIV-1 infection, and the mortality associated with this infection among intravenous drug users (IVDUs) who were in drug treatment programs (residential detoxification, methadone maintenance and drug free residential facilities) in South Florida at the time of enrollment in the study. A prospective cohort study design with enrollment in the study. A prospective cohort study design with a nested case control study is being used to accomplish this task.

P.I. Richard Donahue 25%  
Co-P.I. Ronald Prineas(10%) /Orlando Gomez(15%)  
Title Prevention of High Blood Pressure In Children  
Agency NHLBI R01 H06 19877-15  
Dates 03/01/92 - 04/31/95  
12 Months \$320,045  
Indirect \$1,313,734  
Total DC \$1,313,734  
Purpose Individual differences in blood pressure (BP) change and BP elevation may be due in part to differences in the mechanisms regulating BP and BP reactivity. The proposed study will reexamine 817 health men and women aged 18-21 years who have participated in the Minneapolis Children's BP Study since 1978. We will assess the longitudinal predictors of BP and change from childhood to young adulthood. This study will provide valuable insight into mechanisms through which physiologic and biobehavioral factors interact to effect blood pressure regulation.

P.I. Douglas Feldman (60%)  
Co. P.I. Peggy O'Hara (35%)  
Ying Lu (5%)  
Title HIV Risk Reduction among Zambian Adolescent Females  
Agency Dept of Health and Human Services  
Dates 2/1/92 - 1/31/96  
12 Months \$148,194  
Indirect  
Total DC \$641,567  
Purpose To compare HIV-related risk reduction approaches targeting adolescent females in Lusaka, Zambia to determine the more effective method for promoting safer sex practices among them, and to assess the long-term sustainability of the effects of the interventions.

P.I. Terence Gerace (65%)  
Peggy O'Hara (10%)  
Title Fire Firefighters Health Project  
Agency Metropolitan Dade County Association of Fire Fighters  
Dates 06/01/88- 05/30/93  
12 Months \$80,000  
Indirect \$10,000  
Total DC: \$160,000  
Purpose: The aim of this project is to reduce risk factors for coronary heart disease and cancer in fire fighters and paramedics. The project is designed to (1) assess risk factors yearly, (2) provide feedback to fire fighters regarding their risk status, (3) develop and test work-site intervention programs to reduce risk factors, (4) train fire fighters to conduct risk factor reduction programs for co-workers, and (5) study the relationship between psychosocial/biological variables and risk factors.

P.I. Terence Gerace  
Co-P.I. Ronald Prineas (5%)  
Valerie George (100%)  
Title Women's Health Trial: Feasibility in Minority Populations  
Agency National Cancer Institute  
Dates 01/01/92 - 06/30/94  
12 Months \$470,605  
Indirect \$634,362  
Total DC \$1,189,450  
Purpose The aim of this study is to determine whether Cuban-American (50%), and non-Hispanic women will (a) participate in a program to reduce their dietary fats, and (b) be able to reduce dietary fats to 20% of total calories. We will recruit 750 women 50 to 69 years of age who are consuming 68% or more of their calories from fat. Sixty percent will be randomized to an intensive intervention group and 40 % will receive standard guidelines to reduce fats.

P.I. Jon B. Mann (50%)  
Title Biochemical Toxicology & Environmental Fate of Pesticides in Egypt  
Sub-Contract: University of Maryland  
Agency U.S. Department of Agriculture/ Agency for International Development  
Dates 10/01/90 - 09/30/93  
12 Months \$ 74,577  
Indirect \$ 14,203  
Total DC \$142,034  
Purpose This proposal addresses aspects of each of the following: The use of chemical pesticides in pest control programs leads to several potential problems including: excess residues of pesticides and their metabolites in or on food commodities; and pesticide contamination of the environment.

P.I. Clyde B. McCoy  
Title Crack Cocaine and HIV in Miami  
Agency Centers for Disease Control  
Dates 5/1/92 - 4/30/93  
12 Month \$212,995  
Indirect \$42,599

Total DC \$411,638  
Purpose The goal of this project is to determine the relationship between crack-cocaine and the spread of HIV infection.

DEPH Faculty James Rivers/Norman Weatherby  
P.I. Clyde B. McCoy/Dale Chitwood  
Title Prevention of HIV-Related Disease Among High Risk Users.  
Agency NIDA  
Dates 9/1/91 - 8/31/95  
12 Month \$583,064  
Indirect \$281,784  
Total DC \$2,714,909  
Purpose It is the general purpose of this project to initiate a community AIDS risk behaviors surveillance and monitoring system, and to evaluate the effectiveness of an enhanced HIV risk reduction Prevention/Intervention Program (PIP) including booster sessions and skills assessments.

P.I. Richard Donahue (40%)  
Co-P.I. Ronald Prineas  
Title Biobehavior, Ethnicity, Hormones and Blood Pressure  
Agency N.I.H R02 HL 44600-01A10 Support Grant  
Dates 01/01/91 - 12/31/96  
12 Months \$ 286,395  
Indirect \$ 140,354  
Total DC \$1,723,227  
Purpose Ethnic differences in hypertension and hypertension-related diseases may be due to differences in the mechanisms regulating blood pressure (BP) and BP reactivity. This project will examine the relationship between plasma insulin on the one hand and blood pressure (BP) and BP reactivity on the other as a function of obesity, fat distribution, lipoprotein profile, catecholamine concentrations, sodium flux, and ionized calcium concentration. The proposed study will examine 480 healthy men and women aged 25-44 years from three ethnic groups: 1) white non-Hispanics; 2) black non-Hispanics; and 3) white Cuban Americans.

P.I. Ronald Prineas (10%)  
Co-P.I. Orlando Gomez (25%) /Frank Stitt  
Jasenka Demirovic (70%)  
Title Epidemiology of Alzheimer's Disease in Three Ethnic Groups.  
Agency NIA/NIH  
Dates 6/01/92 - 11/30/95  
12 Month \$525,773  
Indirect \$272,497  
Total DC \$2,151,218  
Purpose To analyze cross-sectional and longitudinal data to determine if differences or common risk factors for Alzheimer's disease can be identified between three ethnic groups (Black, Cuban-American and White/Non-Hispanic. This study will estimate the prevalence of Senile Dementia of the Alzheimer's Type (SDAT) among men and women 65 years of age and older, using standard, comparable methodology.



P.I. Ronald Prineas  
Co-P.I. Jeffrey Raines  
Title Fracture Intervention Trial  
Agency Merck  
Dates 10/01/91 - 12/31/96  
12 Months \$111,152  
Indirect \$404,882  
Total DC \$2,429,289  
Purpose To test the effect of alendronate in prevention of osteoporosis and vertebral fractures in 600 post-menopausal women with osteopenia. This is one of 10 national center of an investigator initiated study.

P.I. Jeffrey Raines (5%) Ultrasound Reading Center Consultant  
Title Multicenter Isradipine/Diuretic Atherosclerosis  
Agency Sandoz Research Institute  
Dates 4/29/92 - 3/31/93  
12 Months \$5,892  
Indirect \$1,473  
Total DC \$5,892  
Purpose Carotid plaque progress measure by ultrasound (Calcium Channel Blocker vs Diurectic).

P.I. Jeffrey Raines (15%)  
Title Cholesterol and Recurrent Events (CARE-PILOT)  
Agency Squibb Pharmaceutical  
Dates 09/1/91 - 12/31/94  
12 Month \$17,500  
Indirect \$ 3,500  
Total DC \$127,000  
Purpose Will be responsible for identifying 20 patients for B-scan imaging of their femoral arteries. Repeatability and variability measurements and analysis will be performed. The purpose of this study is to evaluate the repeatability of measuring atherosclerotic plaque in femoral arteries. Femoral artery plaque progress by ultrasound.

P.I. James Rivers  
Title The Miami Coalition for a Drug-Free Community  
Agency The Community Partnership Program  
Dates 10/1/90 - 9/30/95  
12 Month \$ 56,458  
Indirect \$ 9,316  
Total DC \$256,274  
Purpose Evaluation component of the Miami Coalitions Community Partnership program.

P.I. Frank Stitt (20%)  
Co-P.I. Orlando Gomez (20%)

Title Dr. Duncan (10%)  
Neurotrauma Clinical Research Center  
Clinical Epidemiology and Biostatistics Core  
Agency NINDS 1P50 S30291-01  
Dates 9/30/91-4/29/96  
12 Months \$111,601  
Indirect \$ 57,346  
Total DC \$589,439  
Purpose This study proposes a Neurotrauma Clinical Research Center at the U of M/JMH Medical Center which consist of five projects in the clinical and basic science area. To conduct epidemiological studies in head and spinal cord injury using data available from a proposed case registry, and from other sources both within and outside the UM/JMH center.

DEPH Faculty: Edward Trapido (Resource Manager)  
P.I. Azorides Morales  
Title SCCC Core Grant Biostatistics Shared Resource  
Agency NCI -2POCA 14395-15  
Date 9/30/91 - 8/31/95  
12 Month \$141,271  
Indirect \$76,286  
Total DC \$983,098 (Biostat. Portion Only: Entire Grant= \$4,216,839)  
Purpose: This grant provides the funding for activities that support cancer research activities. The SCCC is the only NCI designated comprehensive cancer center in Florida.

P.I. Edward Trapido (10%)  
Title Cancer Information Service-Florida, Georgia, Puerto Rico  
Agency NCI-CO-94388-63  
Date 2/16/90 - 10/15/92  
12 Month \$250,000  
Indirect \$430,575  
Total DC \$921,585  
Purpose: This is the NCI contract for the Cancer Information Service. This CIS provides information and out reach to 22 million persons on all aspects of cancer causes, prevention treatment, early detection, rehabilitation, and psychosocial support.

P.I. Edward Trapido  
Title Florida Hispanic Leadership Initiative in Cancer  
Agency Cedars Foundation  
Date 6/1/93 - 5/30/94  
12 Month \$53,000  
Indirect \$0  
Total DC \$25,000  
Purpose: This grant is for the development, implementation, and evaluation of an intervention designed to increase breast cancer screening among older Latin women in Dade County, FL.

P.I. Ed Trapido  
Title National Hispanic Leadership Initiative in Cancer  
Agency NCI/U. Texas San Antonio, Subcontract

Date 1/1/93 - 9/29/97  
12 Month \$ 75,000  
Indirect \$ 0  
Total DC \$ 486,443  
Purpose This project is a multi center project aimed at developing appropriate intervention strategies to reduce risk behaviors and increase screening behaviors for cancer among Hispanics/Latinos.

P.I. Edward Trapido 5%  
Title Breast Cancer Education Summits at NCI Design. Comp Cancer Ctrs.  
Agency NCI CA-91-27  
Date 1/15/92 - 12/30/93  
12 Month \$25,000  
Indirect \$25,000  
Total DC \$25,000  
Purpose: This grant is for the development, implementation, and evaluation of a Breast Cancer Education Summit. The Summit will target 40 corporations, community agencies or organizations who serve either of two hard-to-reach populations: Hispanics and older women. The content will cover state-of-the art information on breast cancer and early detection, as well as example of "on-site" early breast cancer detection and education programs that have been successfully developed by organizations or corporations. Attendees will develop their own plans and timetables for implementing or enhancing an on-site early breast cancer detection and/or education program, assisted by research oncology nurse facilitators. Analysis will include both process and outcome evaluations.

P.I.: Edward Trapido  
Title: Florida Cancer Data System  
Agency HRS  
Date 7/1/92-6/95  
12 Month \$580,000  
Indirect \$17,000  
Total DC \$1,740,000  
Purpose This is the new contract for the Florida Cancer Data System.

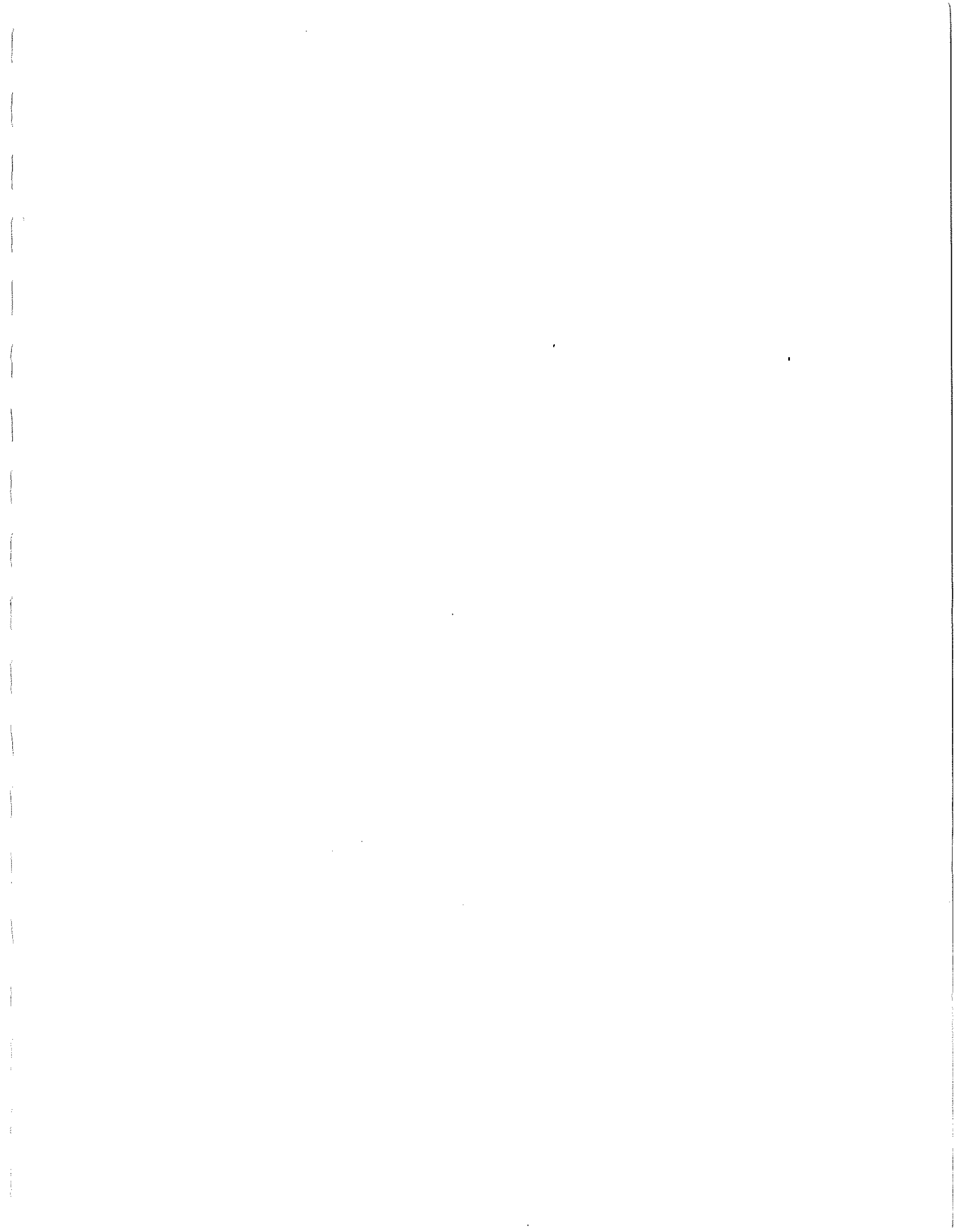
P.I. Norman L. Weatherby  
Title Drugs/Aids Intervention Among Migrant Workers  
Agency NIDA  
Dates 10/1/92 - 09/03/96  
12 Months \$ 551,137  
Indirect \$1,144,961  
Total DC \$2,227,940  
Purpose This study will establish a monitoring/outreach system for accessing populations of migrant seasonal farmworkers and their sexual partners to determine the nature and extent of their drug use and HIV-related risk behaviors as they move within the Eastern United States migratory stream. The study will also determine the extent of the interaction between migrant and seasonal farmworkers within the general community regarding drug use and high-risk sexual behaviors to assess the potential for HIV transmission along the migratory stream. This project will monitor the behaviors of those at -risk seroprevalence areas to those areas that, at present, report low seroprevalence rates.

DEPH Faculty Clyde McCoy  
P.I. Paul Shapshak, PhD.  
Title Replication of HIV-1 in Brain Cells Cultures  
Agency National Institute on Drug Abuse -2R01 DA04787-05  
Dates 9/01/90-08/31/93  
12 Months \$175,000  
Indirect \$521,990  
Total DC \$799,590  
Purpose HIV-1 isolated from AIDS brains are characterized in terms of infectivity and sequence heterogeneity. The drug use status of the tissue assessed in order to ascertain possible effects due to drug use. HIV-1 is detected and virus load is determined in AIDS brain by in situ hybridization and infected cells are characterized by immunohistochemistry.

DEPH Faculty Marianna Baum (0% Consultant)  
P.I. Karl Goodkin, M.D. PhD.  
Title The Impact of a Support Group Intervention for Bereavement Related Distress Immune Function, and Health in HIV-1 Infection  
Agency National Institute of Mental Health  
Dates 7/01/91-06/30/96  
12 Months \$ 350,000  
Indirect \$ 713,919  
Total DC \$1,800,000  
Purpose HIV-1 virus load and AZT resistance of HIV-1 in blood are being determined for HIV-1 seropositive bereaved subjects who are in a psychosocial intervention protocol.

DEPH Faculty Frank Stitt  
P.I.: Debra Mash (Neurology)  
Title: Limbic and Medullary Mechanism in Cocaine-Related Sudden Death  
Agency: NIDA R01 DA06227  
Dates: 5/01/90 -4/31/93  
12 Months: \$143,597  
Indirect: \$241,000  
Total DC: \$482,000  
Purpose: The incidence of cocaine related sudden deaths. Post-mortem studies of the chemo-and pathoarchitecture in brains from victims of cocaine-related death. The proposed anatomical studies may disclose the toxic effects of an neural sites for the action of cocaine in the human brain. These studies may provide a basis for pharmacologically targeting multiple, interactive dysfunctions in the brain in order to halt cocaine abuse in chronic users.

P.I.: Peggy O'Hara (15%)  
Title: Lung Health Study: Early Intervention for Chronic Obstructive Pulmonary Disease (National Coordinator of Behavioral Intervention)  
Sub-Contract: University of Minnesota Lung Study  
Agency: NHLBI  
Dates: 10/1/90 - 9/30/92  
12 Months:  
Indirect:



Total DC:  
Purpose: The aim of this clinical trial is to compare lung function results in smokers who enter an intervention for smoking cessation and bronchodilator therapy and those who receive usual care treatment.

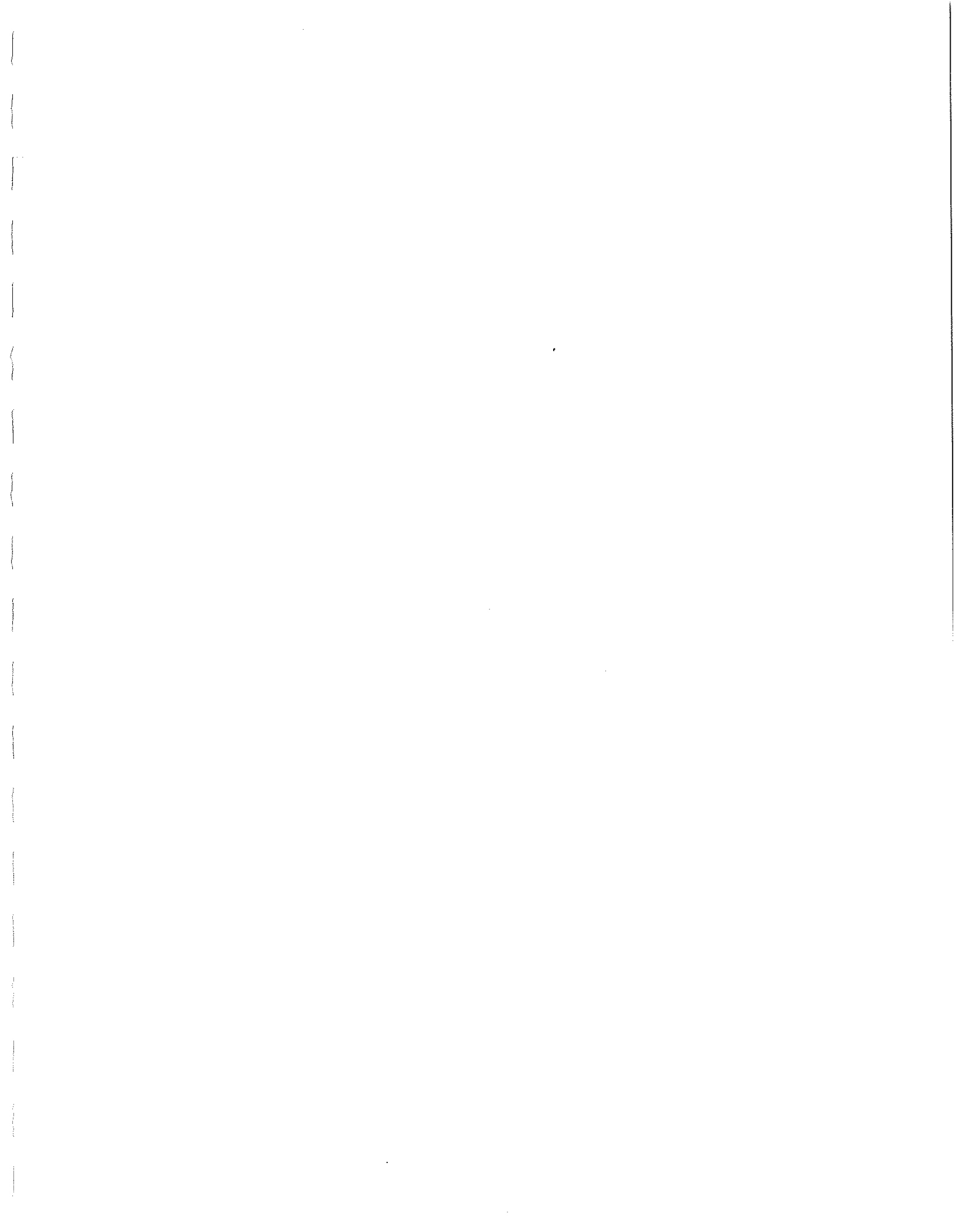
P.I.: J. Page 10%  
Dale Chitwood 10%  
DEPH Faculty: Ying Lu 10%  
Frank Stitt 10%  
Marianna Baum 5%

Title: Some Aspects of Retroviral Infection Among Intravenous Drug Users  
Agency: NIA  
Dates: 3/1/92-2/28/93  
12 Months: \$532,477  
Total DC: \$2,807,652

P.I. Lora Fleming, M.D., M.P.H.  
Thomas Briggle (5%)  
Title Pesticides in Brains of Parkinson and Alzheimer's Disease  
Agency Glaser Foundation (University of Miami)  
Date 7/1/92- 5/31/93  
12 Month \$30,000  
Indirect  
Total DC \$30,000  
Purpose Pesticide measurement in the brains of persons with histories of Parkinson's, Alzheimer's and normal.

P.I. Jeffrey Raines 25%  
Frank Canosa 15%  
Title Prospective Randomized Evaluation of the Vascular Effects of Norvas Trial (PREVENT)  
Agency Bowman Gary School of Medicine/ Pfizer  
Dates: 2/1/92 - 4/30/93  
12 Months: \$122,645  
Total DC: \$661,285  
Purpose: The objectives of this study is to evaluate the effectiveness of amlodipine relative to placebo on the development and progression of atherosclerotic lesions in both the coronary and carotid arteries of patients with coronary artery disease.

P.I. Lora Fleming 15%  
Judy A. Bean 8%  
Title Human Exposure to Mercury Study  
Agency Department of Health and Rehabilitative Services  
Dates 6/1/92 - 2/28/94  
12 Months \$204,595  
Indirect  
Total DC \$403,937  
Purpose A Pilot study of Human Health Effects of Mercury Exposure from Consumption of Fish from the Everglades of Florida



P.I. Lora Fleming, M.D., M.P.H.  
Thomas Briggie (5%)  
Title Brain Content of Pesticides in Parkinson and Alzheimer's Disease  
Agency Glaser (University of Miami)  
Date 7/1/92- 5/31/93  
12 Month \$30,000  
Indirect -0-  
Total DC \$30,000  
Purpose Pesticide measurement in the brains of persons with histories of Parkinson's, Alzheimer's and normal .  
Overlap: None  
Adjustments: None

DEPH Faculty Lilly Mantelle, PhD. (5%)  
P.I. Vincent Falanga (Dermatology)  
Title Stanazolol in the Elderly with Venous Ulcers  
Agency NIH (NIA & NIAMS)  
Dates 09/01/92-06/30/97  
12 Months \$110,574  
Total DC \$956,914  
Indirect  
Purpose: The project is to investigate the role of stanazolol in the treatment of venous ulcers in the elderly. The proposal suggest that this therapy may be helpful because of the fibrinolytic activity of stanazolol as well as its anabolic effect on calf muscle pump action.

P.I. Ronald Prineas 10%  
Title Hormone Replacement Study for Coronary Disease HRS/ECG  
Agency: Weyth Company  
Dates 9/01/92 - 08/30/99  
12 Months \$ 324,475  
Indirect \$ 393,823  
Total DC \$1,581,338  
Purpose A secondary prevention trial for CHD women HRS/ECG

P.I. Jon Bruce Mann  
Title Pesticide Analysis for D.E.R.M.  
Agency: METRO DADE COUNTY  
Dates 11/01/92 - 10/31/95  
12 Months  
Total DC \$450,000  
Purpose Laboratory Service for Pesticide Analyses

P.I.: Jeffrey Raines 5%  
Title: Estratab Study  
Agency: Solvay Pharmaceuticals



Dates: 11/15/92 - 11/14/93  
12 Months: \$51,837  
Total DC: \$51,837  
Purpose: To determine the minimum effective dose of Estratab in the prevention of postmenopausal osteoporosis, to investigate the safety profile of Estratab over a two year period in postmenopausal women.

P.I.: James M. Shultz, Ph.D.  
Title: Blood Donation as a Normative Prosocial Health Behavior: Optimizing Blood Donor Recruitment Among Senior High School Students.

Agency: American Red Cross  
Dates: 7/1/92 - 6/30/93  
12 Months: \$9,293  
Total DC: \$9,293  
Purpose: The South Florida Region (SFR), American Red Cross (ARC) proposes to use behaviorally based strategies to enhance current blood donor recruitment procedures that will increase productivity of high school blood drives conducted in the Dade County Public Schools, Miami Florida

P.I.: James M. Shultz, Ph.D.  
Title: Selection of a Low Risk Blood Donor Population  
Agency: American Red Cross  
Dates: 8/1/92 - 7/31/93  
12 Months: \$15,488  
Total DC: \$15,488  
Purpose:

DEPH Faculty: Judy Bean  
Marianna Baum  
P.I.: Karl Goodwin  
Title: Yale  
Agency:  
Dates: 4/29/92 - 3/31/93  
12 Months: \$56,000  
Total DC: \$56,000  
Purpose:

P.I.: Stefan Rose 60%  
Title: DUI/DRE  
Agency: Metro Dade  
Dates: 10/1/92 - 9/31/93  
12 Months: 200,950  
Total DC: \$160,760  
Indirect: \$ 40,190

PENDING GRANTS

DEPH Faculty Marianna Baum (5%)  
Gail Shor-Posner (15%)  
P.I. W.J. Goodwin (Otolaryngology) 5%  
Title Carotene Prevention Trial  
Agency Yale (Subcontract)  
Dates 4/1/92-3/31/93  
12 Months \$46,372  
Indirect \$ 9,474  
Total DC \$56,846  
Purpose For the beta-carotene chemoprevention trial in early stage head and neck cancer.

P.I.: David Lee 80%  
Title: LDL & HDL Cholesterol and Progression of Coronary Calcification in Employees without Heart Disease  
Agency: American Heart Association  
Dates: 7/1/92-6/30/95  
12 Months: \$64,989  
Total DC: \$194,952  
Purpose: This study will examine the progression of coronary artery calcification (CAC) in sample of 90 participants.

DEPH Faculty Clyde McCoy  
Norman Weatherby  
P.I.: Paul Shapshak (Psychiatry)  
Title: Cocaine/Cocaine/HIV in African-American Women  
Agency: NIDA  
Dates: 4/1/91-3/31/96  
12 Months: \$223,311  
Indirect: \$797,736  
Total DC: \$1,758,118  
Purpose: The influence of cocaine abuse on progression of AIDS disease and on HIV-1 virus load will be followed and the effects of cocaine in vitro will be determined on the HIV-1 replication life cycle. In addition, we proposed to determine the molecular mechanisms of the effects of cocaine and metabolites on HIV-1 replication.

DEPH FACULTY: Judy A. Bean  
P.I. Edward Trapido  
Title Surveillance, Epidemiology and End Results (SEER) Expansion  
Agency NCI-CN-25403-41  
Date 7/1/92 - 6/30/97  
12 Month \$420,955  
Indirect \$1,372,670  
Total DC 2,558,982  
Purpose To provide data on cancer incidence, mortality and survival in the United States.

P.I. Edward Trapido  
Title Cancer Information Service for Florida and Puerto Rico  
Agency NCI CO-33004-63  
Date 10/15/92-10/14/97  
12 Month \$1,000,000  
Indirect \$540,000  
Total DC \$5,000,000  
Purpose This will be the new contract for the Florida Cancer Information Service, which will be a vastly expanded operation.

P.I. Lora Fleming 29%  
Judy A. Bean 10%  
Title: General Mortality & Cancer Incidence in Florida Pesticide Application  
Agency NIOSH Career Development (SERCA)  
Date 07/01/92 - 006/30/96  
12 Month \$50,000  
Total DC \$161,690  
Purpose: The proposed study will be a restropective cohort analysis of the cancer incidence ad a general mortality, with a nested case control study among a cohort of the Florida certified pesticide applicators with occupational pesticide exposure.

P.I.: Peggy O'Hara, Ph.D. (10%)  
Lily Mantelle, Ph.D. (5%)  
Title: Postcessation Weight Gain Among Black Women Smokers  
Agency: Subcontract Family Health Center  
Dates: 3/1/93-9/1/94  
12 Months: \$49,937  
Indirect:  
Total DC: \$76,803  
Purpose: The primary objective is to determine the influence of postcessation weight gain on perceived health benefits and the motivation to quit smoking among black women smokers. The proposals designed as a Phase I Cancer Control Research Study. The information gained from all phases of this study will provide much needed data to develop future proposals on smoking interventions that reduce cancer risk among black women without major weight gain as a result.

P.I.: James M. Shultz, Ph.D.  
Title: Training Program in Drug Use Epidemiology & Prevention Research  
Agency: NIDA  
Dates: 7/1/93-6/30/98  
12 Months: \$310,117  
Indirect:  
Total DC: \$1,550,586  
Purpose: The training program is designed to provide a high-intensity training experience; from the first week of the program, trainees will be engaged in research rotations.

P.I.: Jon B. Mann

Printed: July 17, 1993 1:28pm (Saturday)  
Edward Trapido, Sc.D.

**Ph.D. in Epidemiology**

Title: Thomas Briggie  
Lora Fleming  
Non-Exclusive Laboratory Services for Metropolitan Dade County  
Non-Cost Proposal for Laboratory Testing and Sampling Services for Metro-Dade County  
Agency: Metropolitan Dade County Solid Waste Management  
Dates:  
12 Months:  
Total DC:  
Purpose:

P.I.: Fan Chen, Ph.D. 20%  
Edward Trapido 10%  
Eugene Schiff 5%

Title: Case-Control Study of Liver Cancer in Hispanics

Agency: NCI

Dates: 4/1/93-3/31/97

12 Months: \$164,747

Total DC: \$677,471

Purpose: To identify risk factors for primary hepatocellular carcinoma among Hispanics in Dade County, Florida to determine the reason for elevated incidence among Hispanic men and women as compared to non-Hispanic whites.

P.I.: Peggy O'Hara 40%  
Judy A. Bean 5%  
Lilly Mantelle 15%  
David Lee 10%

Title: Comprehensive Smoking Intervention Program for Women

Agency:

Dates: 4/1/93-3/31/98

12 Months: \$407,993

Total DC: \$2,007,667.00

Purpose: The proposed study is a five year evaluation of a comprehensive smoking. Three hundred twenty five women will be randomized into either the comprehensive program which offers standard behavioral cessation program for women plus pulmonary function and exercise test with counseling, or to a control condition of the standard behavioral condition alone. Weight control is a major component of the standard behavioral cessation program for both groups.

P.I.: Edward J. Trapido ( Regional Coordinator) 10%

Title: National Hispanic Leadership Initiative on Cancer

Agency: Sylvester Comprehensive Cancer Center #CA-92-09/

National Cancer Institute

Dates: 9/1/92-8/31/97  
12 Months: \$135,542  
Total DC: \$742,013  
Purpose: To increase the cancer awareness of the Hispanic community by building a coalition of community organizations, agencies and individuals who can assist with the development of cancer control priorities and writing and distributing Spanish language publications on cancer causes, prevention, early detection, diagnosis, treatment, rehabilitation and counseling.

P.I.: Frank Stitt 30%  
Ying Lu 30%  
G. Dickinson 10%

Title: Drug Treatment Determinants of Outcomes in HIV Infection

Agency: NIH -

Dates: 2/1/93 -1/31/96

12 Months: \$245,067

Total DC: \$746,662

Purpose: The overall aim of this study is to gain greater insight into the time-related course of HIV-infection and its predictors. Specific aims include: (1) the further development and refinement of a severity of illness staging system based on clinical, immunologic and functional status dimensions. Other, cruder, outcomes will include mortality and morbidity (length of hospital stay, readmission, costs). (2) the use of mathematical models of multistate disease, such as stochastic processes or semi-Markov models, and statistical prediction techniques, (3) epidemiological methods to control for confounding and bias from several sources; the analysis of observational data; and analysis of the effect of covariate predictors of outcomes, both fixed, and time-dependent.

DEPH: Judy A. Bean 5%

P.I.: Gaston Zilleruelo 15%

Title: Genetic Linkage Analysis of Renal Agenesis/Dysplasias

Agency:

Dates: 7/1/92 - 6/30/97

12 Months: \$102,783

Total DC: \$575,451

Purpose: The hypothesis to be tested in this proposed study is that the spectrum of anomalies in Renal Agenesis Dysplasias (RAD) derives from a common autosomal dominant genetic defection expressed with variable pertinence.

P.I.: Ying Lu 20%  
Frank Stitt 5%

**Title:** Orlando Gomez 5%  
Retrospective Cohort Study of Neoplasm in HIV Infection  
**Agency:** BRSG Small Grants Program  
**Dates:** 9/1/92 -2/2/93  
**12 Months:** \$14,541  
**Total DC:** \$17,541  
**Purpose:** This proposal aims to perform an analysis of risk factors and survival experience of retrovirus-associated cancers in a retrospective cohort of HIV-positive patients from the Miami Veteran's Affairs Medical Center (VAMC).

**P.I.:** David Lee 25%  
Terence Gerace 2%  
Lily Mantelle 5%  
Ronald Prineas 2%  
**Title:** Coronary Artery Disease Risk Factor Correlates of  
Coronary Calcium Change in Fire Fighters  
**Agency:** American Heart Association  
**Dates:** 7/1/93 - 6/30/95  
**12 Months:** \$39,612  
**Total DC:** \$70,411  
**Purpose:** The proposed research seeks to determine the prevalence and progression of coronary artery calcification in a cohort of fire fighters and paramedics who have been monitored since 1984 for coronary artery disease (CAD) risk factors. Calcification will be measured using non-invasive Ultrafast Computed Tomography (UFCT) in 150 males aged 30-55. In addition, this research will identify CAD risk factor correlates of calcification and determine which risk factors predict 15-month change in calcification. This aims and primary hypotheses to be examined in the proposed research follow.

**P.I.:** Gail Shor-Posner 30%  
**Co. P.I.:** Marianna K. Baum 10% -No salary  
Ying Lu 5%  
**Title:** Zinc Supplements and Immunity in HIV 1 Infection  
**Agency:** American Foundation for AIDS Research  
**Dates:** 9/01/92 - 8/31/93  
**12 Months:** \$49,917  
**Total :** \$ 9,983  
**Total DC:** \$59,00  
**Purpose:** Conduct a clinical trial for six months to determine a zinc dosage that can provide plasma normalization without toxic effects, and to evaluate which dosage of zinc is most effective in improving immune outcome in HIV-1 infected men and women. To provide recommendations for appropriate zinc supplementation

that may prevent and/or alleviate some of the disease progress in sequelae that occur as a result of HIV-1 infection.

P.I.: Ronald Prineas 15% Frank Stitt 10%  
Orlando Gomez 30% Jasenka Demirovic 15%  
Stephen Sevush 10%

Title: Epidemiology of Alzheimer's Disease Supplement  
Agency: NIH  
Dates:  
12 Months: \$109,510  
Total DC: \$1,076,020  
Purpose: This is a supplement to a recently funded proposal entitle " Epidemiology of Alzheimer's Disease in Three Ethnic Groups" (1R01 AG09461-01A2. Data from this study will be merged with data collected from the presently funded project in order to estimate the prevalence of SDAT among men and women 65 years of age and older, using standard, comparable methodology.

P.I.: Marianna Baum 20%  
Gail Shor-Posner 50%  
E. Mantero-Atienza 10%  
Frank Stitt 2.5%  
Ying Lu 20%

Title: Nutrient Supplements and Disease Progression in HIV-1 Infection  
Agency:  
Dates: 7/1/92 - 6/30/97  
12 Months: \$329,798  
Total DC: \$3,312,340  
Purpose: This proposed investigation will examine the feasibility of nutrient supplementation in HIV-1 positive individuals and determine its effectiveness in terms of preventing and/or alleviating some of the disease progression sequelae that occur as a result of HIV-1 infection.

DEPH Faculty: Marianna Baum 10% -(Core Faculty)  
P.I.: E. Olsen, M.D. - Project Director  
Title: Miami Area Geriatric Education Center (MAGEC)  
Agency:  
Dates: 9/1/92 - 8/31/95  
12 Months:  
Total DC: \$415,538  
Purpose:

DEPH Faculty: Judy A. Bean

P.I.: Brenda Martin-Lonsbury  
Title: A Model Program for Screening Hearing in Newborns  
Agency:  
Dates: 4/1/93 -3/31/98  
12 Months:  
Total DC: \$4,997,274  
Purpose: The proposed project is to evaluate otacoustic emission measurement and analysis as a means of screening newborns for hearing disorders, and to assess methodological parameters relevant to the development of a model newborn hearing-screening program.

DEPH Faculty: Lily Mantelle 5% (Statistician)  
Zhi-Ming Li 100% (Research Associate)  
Marianna K. Baum 5% (Senior Collaborator)

P.I.: Michael Peck 20%  
Title: Modulation of Immune Function by Dietary Lipids  
Agency:  
Dates: 4/1/92 -3/31/97  
12 Months: \$62,089  
Total DC: \$539,000  
Purpose: The central hypothesis of this investigation is that specific increases in the eicosanoid production, which result from manipulation of dietary lipids, suppress production of cytokines and impair immune cellary function.

P.I.: Douglas Feldman 30%  
Co-P.I. L. Mantelle 5%  
Title: Rural/Urban Intercultural Variation in Cultural Modeling and Family Support  
Agency: Georgia State University  
Dates: 10/1/92 - 9/31/94  
12 Months: \$113,183  
Total DC: 148,380  
Indirect: 79,828  
Purpose:

Faculty DEPH: Lily Mantelle 20%  
P.I.: Orlando Kirton  
Title: Trauma / Antibiotics  
Agency: Pfizer Pharmaceuticals  
Dates: 9/1/92 - 8/31/97  
12 Months: \$61,918  
Total DC: \$206,461  
Purpose: To compare the safety and therapeutic equivalence of a 24 hour course of ampicillin/sulbactam to that of



a five day course of ampicillin/sulbectam in the prevention of post operative septic complications associated with small bowel, stomach, or colon perforations resulting penetrating abdominal trauma.

P.I.: David Lee  
Title: First Award  
Agency:  
Dates: 7/01/93 - 6/31/95  
12 Months: \$144,472  
Total DC: \$310,948  
Indirect: \$160,091  
Purpose:

P.I.: James Shultz, Ph.D.  
Co-P.I.: Rick Zimmerman, Ph.D. 20%  
Title: Project Blood: A Multi-Ethnic Study of Blood Donor Beliefs, Attitudes, and Recommendations. for Innovation Recruitment of First-Time Blood Donors.  
Agency: American Red Cross  
Dates: 9/1/92 - 8/31/92  
12 Months:  
Total DC:  
Indirect:  
Purpose: It is proposed to ascertain beliefs, attitudes, and recommendations regarding effective strategies for blood donor recruitment in each of 24 segmented donor groups among current ARC-SFR blood donors using separate focus groups for each of these sex, race, age, and donor status defined groups. The results from this study will be used to develop grant support for implementation of these innovation blood donor recruitment strategies targeted to defined segments of the population.

P.I.: Mariannna Baum 25%  
Co-P.I.: Ronald Prineas 10%  
Clyde McCoy 10%  
Gail Shore Posner 25%  
Title: International Training in AIDS Epidemiology  
Agency:  
Dates: 9/01/93 - 8/31/98  
12 Months: \$367,561  
Total DC: \$2,117,414  
Indirect: \$143,707  
Purpose: Continue to train scholar from developing countries in long-term and short term programs in epidemiology of AIDS and related basic and clinical disciplines with emphasis on the long-term program.

P.I.: Clyde McCoy 50%  
Co-P.I.: James Rivers 25%  
Norman Weatherby 20%  
Title: Evaluation of a Community Based Early Detection Program  
Agency: Depart of Health and Human Services  
Dates: 7/01/93 - 6/30/98  
12 Months: \$497,488  
Total DC: \$2,924,239  
Purpose: The Early Detection Program (EDP) in Dade County, florida provide a unique opportunity to evaluate an on-going, community-based, comprehensive breast cancer detection program. Specifically, the study will compare random samples of screenees (selected from the DETECT data base) and non-screenees (selected from Primary Health Care Center (PHCC) intake/medical records.

P.I.: Paul Shapshak Ph.D. 40%  
Co. P.I.: Emilio Mantero 5%  
Title: Replication of HIV in Brain Cell Cultures  
Agency: NIDA  
Dates: 9/01/93 - 8/31/94  
12 Months: \$243,623  
Total DC: \$2,044,960  
Purpose:

P.I.: Judy Bean 10%  
Co P.I.: Karl Klose 10%  
D. Stephens (Research Associate)  
Title: Study of Cellular Therapy in Chronic Spinal Cord Injury Program Project Year 03 (RENEWAL)  
Agency: NINDS  
Dates: 01/01/93 - 12/31/93  
12 Month: \$20,891  
Indirect: \$14,386  
Total DC: \$14,386  
Purpose: The long-term objective is to improve residual function and to prompt central nervous system regeneration in regions of chronic spinal cord injury in men. To achieve this, the clinical course after injuries in men will be documented and the pathology and physiology of various injuries will be examined.

P.I.: Daniel Baden 20%  
Co. P.I.: Lora Fleming 10%  
Judy Bean 15%  
Title: Bio-Markers for Ciguatera as indicator of Exposure

Agency: NIDA  
Dates: 07/01/93 - 06/30/97  
12 Months: \$208,827  
Total DC: \$836,947  
Purpose: Proposed is a study of the toxicokinetics of ciguatera in humans and animals with the express intent of identifying toxin metabolites as biomarkers of exposure and susceptibility. Ciguatera will be induced in rats using oral administration of toxic fish homogenate, followed by measurement of metabolites in serum and urine using a specific enzyme-linked immunoassay.

DEPH: Co.P.I.: Lilly Mantelle 10% (Statistician)  
P.I.: Paul Benke 25%  
Title: Systemic Lupus Erythematosus in the Caribbean  
Agency: NIH - NIAID  
Dates: 07/01/93 - 06/30/96  
12 Month: \$199,770  
Total DC: \$569,358  
Purpose: To examine metabolic and genetic factors that affect systemic lupus erythematosus (SLE) in different ethnic populations in the Caribbean. We will examine metabolic and genetic factors which may predispose patients to the disease and determine whether these differ in various populations. Also determine whether the influence of supplemental vitamins, alcohol and dietary factors and other environmental factors affect the expression of the disease.

DEPH: Lora Fleming 10%  
P.I.: Jorge Rangel  
Title: Catalog of Federal Domestic Assistance No. 93.379  
Agency: Department of Health and Human Services - Training Grant  
Dates: 07/01/93 - 06/30/96  
12 Month: \$49,735  
Total DC: \$140,683  
Purpose:

DEPH: Marianna Baum  
Emmalee Banstra  
Judy Bean  
Dale D. Chitwood  
Clyde McCoy  
Title: International Training Grants in Epidemiology Related to AIDS  
Agency:  
Dates: 09/01/93 - 008/31/98  
12 Month: \$367,561  
Total DC: \$2,261,121  
Purpose: To provide long-term epidemiological training for qualified individuals from developing countries leading

to an advanced degree and involving a field research project in trainees' home country. Train scholars to conduct future international vaccine and drug trials. Establish the investigative infrastructure necessary for HIV-1 related research through short-term intensive courses. Promote and expand collaborative training and epidemiological research between scientists/clinicians in developed and lesser-developed nations. This training will facilitate the ability of scientist/clinicians in developing countries to deal effectively with the AIDS epidemic and create the necessary foundation to minimize/halt the spread of AIDS.

DEPH: Lilly Mantelle 4% (Statistician)  
P.I.: Herbert Lubs  
Title Familial Dyslexia: Genetics, Behavior and Brain Imaging  
Agency NIH  
Dates 7/01/93 - 06/30/98  
12 Month \$1,020,552  
Total DC \$5,342,567  
Purpose:

DEPH: Judy Bean 5% (Bio-statistician)  
P.I.: Bernd-Uwe Sevin 30%  
Title Biology of Primary and Recurrent Ovarian Carcinoma  
Agency NIH - NCI  
Dates 7/01/93 - 06/30/98  
12 Month \$181,140  
Total DC \$1,584,389  
Purpose: The overall goal of this project is to develop an understanding of parameters related to ovarian cancer progression and treatment failure to aid in devising more rational methods for diagnosis and therapy of this disease.

DEPH: James Shultz 5%  
Edward Trapido 5%  
P.I.: Gwendolyn B. Scott  
Title Special Postdoctoral Research Program in AIDS  
Agency NIH - Fogarty International Center  
Dates 7/01/93 - 06/30/98  
12 Month \$277,503  
Total DC \$1,503,047  
Purpose:

P.I.: David J. Lee 20%

Co. P.I.: Orlando Gomez 5%  
Title Epidemiology of Hearing Loss in Hispanics  
Agency NIDCD  
Dates 7/01/93 - 06/30/95  
12 Month \$24,910  
Total DC \$76,748  
Purpose: Provide estimates of the prevalence of hearing loss in Cuban-American, Mexican-American, and Puerto Rican children. Develop a psychosocial and risk factor profile of hearing impaired Hispanic adults and children. Also develop a psychosocial profile hearing impaired Hispanic who use hearing aids.

P.I.: Fan Chen 20%  
Co. P.I.: William Harrington 5%  
Title Small Grants Program for Epidemiology  
Agency NIH  
Dates 06/01/93 - 05/31/94  
12 Month \$76,900  
Total DC \$76,900  
Purpose:

P.I. Douglas Feldman (32.4)  
Co. P.I. Peggy O'Hara (15%)  
Ying Lu (5%)  
Title HIV Risk Reduction Among Zambian Adolescent Females  
Agency Dept of Health and Human Services (RENEWAL)  
Dates 3/1/92 - 2/28/94  
12 Months \$69,457  
Total DC \$100,831  
Purpose: To compare HIV-related risk reduction approaches targeting adolescent females in Lusaka, Zambia to determine the more effective method for promoting safer sex practices among them, and to assess the long-term sustainability of the effects of the interventions.

P.I.: Orlando Gomez 20%  
Title Influence of Insulin on Cardiovascular Risk in Children (Subcontract)  
Agency NIH - University of Minnesota  
Dates 06/01/93 - 05/31/98  
12 Month \$34,521  
Total DC \$186,974  
Purpose:

P.I. Richard Donahue (35%)  
Co-P.I. Ronald Prineas (5%)  
Judy Bean (10%)  
Title Biobehavior, Ethnicity, Hormones and Blood Pressure  
Agency N.I.H R02 HL 44600-01A10 Support Grant  
Dates 01/01/93 - 12/31/93  
12 Months \$471,032  
Total DC \$471,032  
Purpose Ethnic differences in hypertension and hypertension-related diseases may be due to differences in the mechanisms regulating blood pressure (BP) and BP reactivity. This project will examine the relationship between plasma insulin on the one hand and blood pressure (BP) and BP reactivity on the other as a function of obesity, fat distribution, lipoprotein profile, catecholamine concentrations, sodium flux, and ionized calcium concentration. The proposed study will examine 480 healthy men and women aged 25-44 years from three ethnic groups: 1) white non-Hispanics; 2) black non-Hispanics; and 3) white Cuban Americans.

DEPH: Thomas Briggie 20% (Co. P.I.)  
Judy Bean 10 % (Co. P.I.)  
Jon Bruce Mann 25% Research Associate  
P.I.: Juan R. Sanchez-Ramon (Dept. of Neurology)  
Title Environmental Toxins and Parkinson's Disease  
Agency NIEHS  
Dates 07/01/93 - 06/30/98  
12 Month \$171,636  
Total DC \$1,378,446  
Purpose: Test selected pesticides for neurotoxicity to DA neurons in a well characterized primary mesencephalic cell culture model. Also to further test the hypothesis that pesticides measured in human PD brain are related to the pathogenesis of PD.

APPENDIX A. LIST OF LIBRARY HOLDINGS

WA 1 F636P 1958. HISTORY OF FLORIDA PUBLIC HEALTH ASSOCIATION, INC. / PREPARED BY MAY PYNCHON. Pynchon, May. 1805594.

WA 1 R967G 1947. RUSSELL SAGE FOUNDATION, 1907-1946 / BY JOHN M. GLENN, LILIAN BRANDT, F. EMERSON ANDREWS. Glenn, John Mark, 1858-502877.

WA 1 U58W 1951. THE UNITED STATES PUBLIC HEALTH SERVICE, 1798-1950 / BY RALPH CHESTER WILLIAMS. Williams, Ralph Chester, 1888-1068673.

WA 1 W927f 1958. THE FIRST TEN YEARS OF THE WORLD HEALTH ORGANIZATION. World Health Organization. 846935.

WA 1 W927s 1968. THE SECOND TEN YEARS OF THE WORLD HEALTH ORGANIZATION, 1958-1967. World Health Organization. 14490809.

WA 4 A545h 1967. HEALTH PRINCIPLES AND PRACTICE [BY] C.L. ANDERSON. Anderson, C. L. (Carl Leonard), 1901-823321.

WA 4 C593h 1962. HEALTH STUDIES OF HUMAN POPULATIONS. I. AN ILLUSTRATIVE VIEW OF APPLICATIONS [BY] KATHARINE G. CLARK AND VIOLET B. TURNER. II. METHODOLOGY: AN ANNOTATED BIBLIOGRAPHY [BY] GEORGE ST. J. PERROTT AND KATHARINE G. CLARK. Clark, Katharine Goldthwaite Dorr, 1916-2015053.

WA 4 G129L 1969. LEHRBUCH DER HYGIENE; PRAEVENTIVE MEDIZIN: GRUNDLAGEN, UMWELTHYGIENE, EPIDEMIOLOGIE, SOZIALHYGIENE, GESUNDHEITSFURSORGE, PSYCHOHYGIENE, ARBEITSHYGIENE, UNTER MITARBEIT VON R. E. BADER [ET AL.] HRSG. VON H. GARTNER UND H. REPLOH. Gartner, H. (Horst), 1911-14494365.

WA 4 I61t 1912. TRANSACTIONS OF THE FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY : WASHINGTON, SEPTEMBER 23-28, 1912 / PUBLISHED BY THE COMMITTEE ON ORGANIZATION ; ED. BY THE SECRETARY GENERAL. International Congress of Hygiene and Demography (15th : 1912 : Washington, D.C.).

4095382.

WA 4 N532b 1954. BEYOND THE GERM THEORY : THE ROLES OF DEPRIVATION AND STRESS IN HEALTH AND DISEASE / IAGO GALDSTON, EDITOR. New York Academy of Medicine. 349758.

WA 4 N567e 1953. THE EPIDEMIOLOGY OF HEALTH. IAGO GALDSTON, EDITOR. New York Academy of Medicine. 478429.

WA 4 S615h 1968. HEALTH, A QUALITY OF LIFE [BY] JOHN S. SINACORE. Sinacore, John S. 436069.

WA 4 T945p 1952. PERSONAL AND COMMUNITY HEALTH. Turner, C. E. (Clair Elsmere), 1890-1974. 2161125.

WA 4 T945p 1967. PERSONAL AND COMMUNITY HEALTH [BY] C. E. TURNER. Turner, C. E. (Clair Elsmere), 1890-1974. 825154.

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Printed: July 17, 1993 1:28pm (Saturday)  
Edward Trapido, Sc.D.

**Ph.D. in Epidemiology**

0196-6294.



Printed: July 17, 1993 1:28pm (Saturday)  
Edward Trapido, Sc.D.

**Ph.D. in Epidemiology**

APPENDIX B. Letter from Dr. Robert Rubin



Vice Provost for Research and Deputy Dean for Research and Graduate Studies  
P.O. Box 016960 (R64), 1600 N.W. 10 Avenue, Miami, Florida 33101

M E M O R A N D U M

**TO:** Jo Anne Hecker, Interim Dean  
The Graduate School

**FROM:** Robert W. Rubin, Ph.D. *R.W.R.*  
Vice Provost and Deputy Dean

**DATE:** June 24, 1993

**SUBJECT:** Proposal for a new Ph.D. Program from The Department  
of Epidemiology and Public Health

This is to confirm that the School of Medicine is behind this proposal completely and enthusiastically. From the beginning of the search for a new Chair of this increasingly important Department, the School of Medicine has been preparing to develop a new Ph.D. program in Epidemiology. This area has taken on critical importance in the future of the Medical Center. I have read in detail the proposal and approve of it in its entirety as does Dr. Fogel.

You have asked about the budget and I will explain this to you. In Medical Schools, no Ph.D. student pays for tuition. This is true all over the Nation. Thus there will be no revenue from tuition. Personnel costs will be cost shared from departmental accounts. We gain fiscal and research benefits from the research that these students perform with our faculty. This produces new sponsored programs that bring in full indirect costs which pay the tuition and other associated costs of the program, etc.

Therefore, the School of Medicine and the Office of the Provost strongly support this new proposed program. It is central to our future in the medical field. Thank you.

RWR:bis

Administrative Offices  
Suite 1148  
(305) 547-5706  
Fax: (305) 547-3549

Graduate Studies  
Suite 1070  
(305) 547-6406  
Fax: (305) 547-3593

Research Administration  
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(305) 547-6232  
Fax: (305) 548-4611

Printed: July 17, 1993 1:28pm (Saturday)  
Edward Trapido, Sc.D.

**Ph.D. in Epidemiology**

APPENDIX C. Syllabi from Courses to be Newly Offered

Cancer Epidemiology: Proposed Syllabus Edward J. Trapido, Sc.D.	
Session	Topic
1,2	Introduction to Cancer Epidemiology, Causes of Cancer, Clinical Trials, Cancer Control
3	Cancer in Florida: Descriptive Epidemiology; Worldwide Geographic Epidemiology; Cancer Registries
4	Breast Cancer: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues, Mammography
5,6	Prostate and Lung Cancers: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues; Exercise in Lung Cancer and Smoking
7	Colon Cancer, Skin Cancer: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues
8,9	Cancers of the Uterine Corpus and Uterine Cervix, Ovarian Cancer: Descriptive Epidemiology, Risk Factors, Disease Classifications, Diagnosis and Rx, Emerging Issues; Exercise in Ovarian Cancer
10	Environmental and Occupational Cancers; Hematologic Tumors; Exercise on Vinyl Chloride and Cancer
11	Planning a Program in Cancer Service Prioritization
12	Exam

Cardiovascular Disease Epidemiology  
Jasenka Demirovic, M.D., Ph.D.

<u>Date</u>	<u>Topic</u>	<u>Lecturer</u>	<u>Readings</u>
09/01/93	Course Orientation Introduction	J. Demirovic	Chp. I, II, Ref. 3,6,10
09/08/93	Pathophysiology Epi Methods	J. Demirovic	Chp. III Ref. 1,3
09/15/93	CVD - National & International Trends	J. Demirovic	Ref. 4,5,6
09/22/93	Cohort Studies Risk Factors Concept	R. Prineas	Ref. 1,3,7
09/29/93	Blood Pressure	R. Prineas	Chp. 9,10 Ref. 3,10
10/06/93	Cigarette Smoking	P. O'Hara	Chp. 8 Ref. 3
10/13/93	Blood Lipids Coagulation Factors	J. Demirovic	Chp. 4,5,6 Ref. 3,11,16
10/20/93	Mid-Term Exam	-	-
10/27/93	Obesity Diabetes Mellitus	R. Donahue	Ref. 3,12
11/03/93	Physical Activity Psychosocial Factors	D. Lee J. Demirovic	Chp.12, Ref. 3 Chp. 11 Ref. 13,14,15
11/10/93	Nutrition and CVD	V. George	Chp.7, Ref. 3,5
11/17/93	CVD Risk Factors in Women	J. Demirovic	Ref. 9
11/24/93	Guest Lecture	TBA	
12/01/93	Preventive Strategies	J. Demirovic	Chp. 15,16,18 Ref. 2,3,7
12/08/93	Community Programs Clinical Trials	J. Demirovic R. Prineas	Cp.17,20,Ref.17 Ref. 3,7
12/15/93	Student Presentations		-
12/22/93	Final Exam		

EPH Advanced Demography

Dr. Clyde B. McCoy  
Dr. Norman Weatherby  
Dr. H. Virginia McCoy

Course Description

The course is the study of demography in relation to epidemiology, health and illness, including basic population structure, composition and trends and population methods and measures. The implications of demographic trends and policies for delivery of public health services are explored. Topics include population growth, emigration and immigration (especially to and from Florida), fertility mortality, and the relation of demography to health and illness.

Course Objectives

Upon completion of this course the student will be able to:

- A. Compare and contrast the demographic approaches and methods with epidemiology
- B. Compare the demographic transition theory with epidemiologic transition theory.
- C. Compare U.S. population growth patterns with other developed countries and identify the range of consequences of world population growth to health.
- D. Contrast longevity, life span and life expectancy, and survival.
- E. Identify and utilize sources of demographic data in epidemiologic and health studies.
- F. Study patterns of immigration to Florida and understand the impact on the distribution of population and health resources.
- G. Compare the costs and consequences of early and late fertility on health.
- H. Discuss major issues in maternal health and mortality
- I. Identify the causes and consequences of high infant mortality.
- J. Explain opposing views of population policies and their impact on health care.
- K. Describe the demography of the elderly and its impact on health care needs.
- L. Understand demographic methods and be able to calculate demographic measures relative to epidemiology and public health.

Course Structure

The class will meet once per week, for approximately three hours with a brief break after an hour and a half. The class sessions will consist of lectures, discussions, case analysis and class participation. Students will be responsible for the critique and discussion of the readings with the instructor will use the lecture sessions for overview, critical analysis, and evaluation of each topic.

Topics

- 1. Defining Demography, Epidemiology and Population variables and notes
- 2. Demographic transition theory/epidemiology transition theory, population distribution
- 3. Population growth in the world and U.S. current patterns; future population; consequences growth.
- 4. Population size and distribution, age and sex composition; with special attention to census

- 5. utilization and contract to surveys.
- 6. Individual Population Acts (having children, changing residencies, dying)
- 6. Rate Decomposition and Mortality
  - Infant Mortality
  - Socioeconomic and gender differences
  - Mortality and Illnesses
- 7. Fertility: Early fertility/late fertility
  - causes and consequences
- 8. Maternal health and mortality
- 9. Migration, international migration; migration in Florida; migration and health
- 10. Racial, ethnic composition, marital, family, educational and economic characteristic
- 11. Data sources and utilization
- 12. Demography of the elderly
- 13. Elderly demographic data; sources and analysis
- 14. Life expectancy, longevity, life tables and survival analyses
- 15. Population policies in an aging society
  - Age structure and distribution of human resources
  - Family planning
  - Below replacement fertility
- 16. Population resources, environment
- 17. Population planning
- 18. Population estimates and projecting
- 19. Health projections
- 20. Population and contemporary social issues
- 21. Demography; the foundation of all human, social sciences

Epidemiology of Substance Abuse James M. Shultz, M.S., Ph.D.	
Lowinson JH, Ruiz P, and Millman RB (eds.). <u>Substance Abuse: A Comprehensive Textbook</u> . Baltimore, MD. Williams and Wilkins, 1992.	
Session	Topic
1	Epidemiology of Drug Abuse, Disease Impact of Drug Abuse
2	Initiation of Substance Abuse: Age of Onset, Demographic Characteristics, Childhood Antecedents, Covariations of Drug Abuse Behaviors, Role of Gangs and Peer Networks
3	Primary Prevention of Drug Abuse in Youth Populations: Theoretical Models, Methodologic Issue: validity of self report data, School based primary prevention programs, Prevention approaches to high risk and out of school youth, Use of peers and parents in drug abuse prevention programs, Lessons from other youth health promotion research, Case Studies
4	Analysis of Subpopulations: Demographic characteristics of drug abusers, Substance Abuse in men and women; Substance abuse in whites, blacks, and Hispanics
5	Epidemiology of Substance Abuse In Relation to Violence and Injury
6	Epidemiology of Substance Abuse In Relation to Sexually Transmitted Disease
7	Epidemiology of Substance Abuse In Relation to Infectious Diseases
8	Special Populations at Risk: Homeless and Street-based Persons

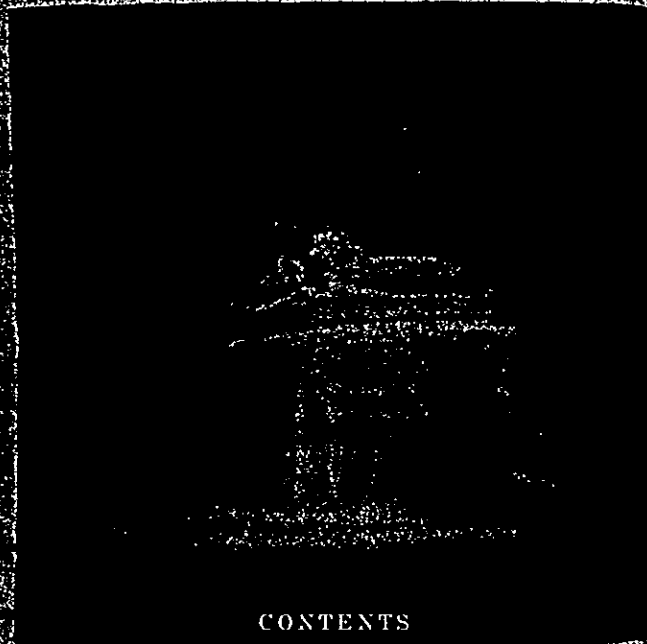


Statistical Methods in Epidemiology Judy Bean, Ph.D.	
Session	Topic
1	Kappa Statistics
2	Testing for Trends in Proportions
3	Life Tables
4	Survival Analyses
5	Logistic Regression
6	Poisson Regression
7	Log Linear Models
8	Clusters



UNIVERSITY  
OF SOUTHERN  
CALIFORNIA

# APPLICATION FOR GRADUATE ADMISSION 1993-1994



## CONTENTS

- Admission from the Dean
- Library and Research Facilities
- Admission Requirements and the Application Process
- Additional Information for Incoming Graduate Students
- Financial Aid
- Employment
- Financial Aid and Employment
- Application of Graduate Admission

A Message from the Dean



The University of Southern California has been described as "a private university with a public trust." We are a large university with the extensive academic and research activity and range of disciplines that characterize major public universities. But as a private university, we also maintain the independence and flexibility that promote innovation and growth.

The fusion of public spirit and independent means generates remarkable opportunities for our students. The information in this application will help you begin to explore these opportunities and discover the breadth of resources available to help you reach your career and personal goals.

As you investigate options and make plans for this next phase of your life, you are probably asking many questions: Is this the right time for me to begin my graduate study? How will I know which institution is best for me? Do I want to live and study in another part of the world? How will I finance my graduate education? This booklet will help you answer some of these questions as well as introduce you to our academic community.

I invite you to explore this community—to begin talking immediately with the staff and faculty who will be partners with you in your particular form of scholarly endeavor. They are your source for information about program content, fellowships and assistantships, and any discipline-related requirements for admission.

We thank you for your interest in the University of Southern California. And I extend to you my best wishes in finding that program which will provide the greatest opportunities for your future.

Barbara Solomon  
*Dean of the Graduate School  
and Vice Provost for  
Graduate and Professional Studies*

# LIBRARY AND RESEARCH FACILITIES

## 2 LIBRARIES

The university library system comprises the central library, 14 specialized subject libraries, and four independent libraries serving the Institute of Safety and Systems Management and the law, medical and dental schools. Together these house more than 2.5 million bound volumes, 37,000 current serials and 2.6 million microforms.

The Edward L. Doheny Jr. Memorial Library contains the university's central collections and services in the humanities and social sciences. Rare books, Special Collections and the American Literature Collection are located in the Special Collections Department. Special services include the Government Documents Department, the main Circulation Department, Interlibrary Loan, the College Library (Commons), the main Reference Center, Doheny Express (the library's document delivery service), the Micrographics Department, and the Periodicals Reading Room.

### Specialized Subject Libraries

The *Accounting Library* supports the accounting curriculum through its special collection of books and periodicals. It also maintains and services extensive loose-leaf services covering both domestic and international taxation.

The *Helen Topping Architecture and Fine Arts Library* maintains periodicals and a collection of monographs on architecture, landscape architecture, art history, painting, sculpture, drawing, printmaking, photography and the decorative arts. USC's collection of historic architectural periodicals is the most extensive in Southern California.

The *Boeckmann Center for Iberian and Latin American Studies* will ultimately house more than 80,000 volumes donated by H.F. Boeckmann III. Located in Doheny Library, the strengths of this important collection primarily focus on Mexico, Central America and Cuba and include the Louis Andrew Murillo Cervantes Collection and the Maximilian Collection.

The *Arnold Schoenberg Institute Archives* house the composer's manuscripts, artifacts and personal library. The institute also maintains a reference library of scores by and books about Schoenberg and his students.

The *Roy P. Crocker Business Library* houses over 100,000 volumes and regularly receives more than 1,800 trade, financial, economics, labor and

general business periodicals and newspapers. The library also has strong collections of annual reports and loose-leaf services in investment and international business.

The *Cinema-Television Library* (in Doheny) contains books, magazines, clipping files of articles, interviews and reviews. The collection also contains scripts, stills, press books, scrapbooks, video cassettes and discs of feature films as well as numerous audio tapes, including more than 700 tapes of speeches given by cinema school guest lecturers. Special archival resources include personal papers and production records of noted film and television producers, directors, writers, actors and composers. Studio resources include materials from 20th Century-Fox, MGM, Universal and the archives of Warner Bros.

The *Emily Stoops and Joyce King Stoops Library of Education* not only contains books and periodicals in areas such as general education, educational psychology, international education, instructional technology, information science and related fields, but also is a depository for the State of California curriculum materials. In addition, the library houses the ERIC microfiche collection, which covers education and related areas.

The *Andrus Gerontology Center Library* is a comprehensive information center housing research materials related to the subject of life-span development and aging. This facility houses monographs, journal subscriptions, reprinted journals and an outstanding microfilm collection of doctoral dissertations from universities throughout the United States.

The *Hancock Library of Biology and Oceanography* primarily serves those engaged in marine and oceanographic research at the graduate level and beyond. The core materials forming the collection were purchased by Captain Allan Hancock in 1944 from the Boston Society of Natural History. Many of the materials date back to as early as 1830, including a number of rare volumes dealing with early scientific expeditions and general natural history.

The *Music Library* (in Doheny) contains books, periodicals, more than 30,000 scores and more than 16,000 sound recordings. Among the library's special collections are the Ingolf Dahl and the Alfred Newman libraries.

The *Hause Philosophy Library* contains volumes ranging from medieval manuscripts and incunabula to the latest works of contemporary philosophers and scholars. The library's general strengths are in metaphysics, epistemology, logic, ethics and the philosophy of religion; and its holdings distinctively reflect the contributions of German philosophy. The 3,500 volume Gomperz collection is an outstanding resource for scholars of European philosophy from about 1700 to 1850.

The *Science and Engineering Library* contains major collections in astronomy, biological sciences, chemistry, engineering, geology, mathematics and physics. Each year, more than 3,000 science periodicals are received. Students, faculty and staff can utilize online search systems for both science and engineering data bases.

The *Social Work Library* houses books and periodicals focusing on the social welfare field. Special collections include the *Trabajadores de la Raza* collection of Chicano materials, uncatalogued master's papers written in the School of Social Work since 1966 and a pamphlet file.

The *Von Klein Smid Library* houses the university's primary international relations, international law, political science, public administration and policy, and urban and regional planning collections. The library collects publications of the United Nations, the International Labor Organization, UNESCO, the Council of Europe, the Food and Agriculture Organization of the UN, the Organization for Economic Co-operation and Development, the World Bank and other international financial agencies, the European Economic Community and the Organization of American States. The Planning Documents Collection contains over 3,000 planning documents and reports from urban and regional planning agencies.

### AFFILIATED LIBRARIES

The *Dental Library* houses one of the West Coast's major dentistry collections. Students can gain access to MEDLINE and other computer-generated bibliographies for a fee.

The *Asa V. Call Law Library* collections include more than 260,000 volumes, 70,000 microform volume equivalents and over 3,200 serial titles.

The *Norris Medical Library*—located on the Health Sciences campus—contains approximately 120,000 volumes and receives more than 2,200 current journals. It houses a collection of video cassettes, tape/slide programs, audio-journals and other media in its Learning Resources Center. The library staff prepares computer-generated bibliographies and provides assistance in the use of indexing and abstract services, and online searches of data bases. Special collections include the Salerno Collegium History of Medicine Library, the Webb Memorial Collection and the Collection of American Indian Ethnopharmacology.

The *Safety and Systems Library* provides reference and interlibrary loan services for students, faculty and safety professionals. The collection has about 7,000 volumes, including basic references and abstracts, and 350 current periodical subscriptions.

### COMPUTER FACILITIES

To serve the information needs of instruction, research and the library system, USC supports computer systems ranging from IBM mainframes and UNIX workstations to a variety of personal computers. These are integrated into USCnet, a cam-

pus-wide network that is linked to the major national networks including Internet, NSFnet and BITnet.

Access to USCnet is through terminals and personal computers distributed across campus. These are located in 15 public facilities, departmental systems and laboratories, modems for off-campus access and facilities in residence halls.

Several terminal rooms housing more than 200 terminals are available to users 24 hours a day, seven days a week. The University Computing Services staff of student consultants and full-time professionals conduct training and user support sessions, maintain documentation and provide for the day-to-day needs of over 6,000 active users.

In addition to USC-owned equipment, students and scholars can connect to the various national super computer centers, communicate through electronic mail with colleagues around the world, or participate in global bulletin boards and discussions. USC provides primary training in the uses of computers and also coordinates programs which allow faculty and students to use the university's volume discount levels on personal purchases of modern computer hardware and software.

## RESEARCH INSTITUTES

The following represent just a few of the more than 100 university institutes and centers in which faculty, research scientists and graduate students engage in basic and applied research.

### *Center for Effective Organizations*

The Center for Effective Organizations (CEO) is a research center in the School of Business Administration. Founded in 1979, it is the original research center of its type, focusing on issues of organizational effectiveness that involve the design and management of business organizations. The center brings together members of the university and corporate communities to jointly explore the pivotal management issues of the day with the objective of bridging the gap between theory and practice and communicating knowledge about how organizations can be effectively managed.

To accomplish this objective, the center conducts action research projects and educational seminars that address current issues of organizational effectiveness and the specific needs of individual corporations. Pioneering research in the areas of compensation, performance management, employee involvement, organization change and design, and work teams has positioned the center as a leading authority in these fields and given us the ability to inform and influence corporate practices. Current work also focuses on the new forms of organization required to meet the challenges of new information technologies, the internationalization of businesses, changing global markets, performance appraisal, reward systems and strategic planning.

The center's research scientists also develop position papers and author publications for the leading academic journals that contribute to the literature on organizational performance.

### *Center for Laser Studies*

The Center for Laser Studies conducts multidisciplinary research in the field of quantum electronics. Center research—which is under government sponsorship and is conducted in collaboration with industry—involves a number of the university's academic departments, including electrical engineering, physics, materials science, aerospace engineering and chemistry. The center's 10 full-time research scientists, two support-staff members, and 25 master's and Ph.D. students are located in the Denny Research Building and use the most modern equipment available, including tunable, ultrafast laser facilities. Current areas of research include optical devices research, including non-linear properties of semiconductors; optical bistability, including non-linear optical processes, photorefractive effects, semiconductor lasers and integrated optics; theoretical studies of squeezed-state light; information theory and optical communication; laser materials interaction, including thermal transport and radiation interaction; optical memories; fiber optic applications to advanced avionics; and optically pumped, solid-state lasers.

### *Center for Photonic Technology*

The Center for Photonic Technology conducts a broad range of investigations into optoelectronic devices and materials. Groups investigating photorefractive materials, spatial light modulators, lasers, detectors and organic materials have all achieved national prominence. The program has developed outstanding expertise in materials growth, whether by molecular beam epitaxy and metallo-organic chemical vapor deposition or by liquid phase epitaxy. The center was recently selected by the U.S. Department of Defense to lead a five-university consortium to lead the National Center for Integrated Photonic Technology.

Formed to explore and establish the ultimate capabilities of photonics technology, the consortium also includes Columbia University, Kent State University, MIT and UCLA.

### *Communications Sciences Institute*

The Communications Sciences Institute (CSI) was formed in 1982 as a research unit within the Department of Electrical Engineering-Systems. The purpose of this organizational move was to facilitate the interaction of communications faculty in Electrical Engineering with governmental and industrial research sponsors, and to simplify the administration of this effort.

Research at CSI is primarily theoretical in nature, complementing the device-oriented work performed in the Electrical Engineering Department's Electrophysics Division, and based on the faculty's

wealth of consulting experience. Areas of expertise span the breadth of communication disciplines, including the design of spread-spectrum communication systems (useful in single channel and multiple-access environments), search and tracking radars, information theory, error-control coding, adaptive array processing, communication networks, optical communications, and VLSI architectures for associated signal processors, as well as the mathematical backgrounds required for this work.

### *Gerontology Research Institute*

The research institute initiates, designs and performs basic research on all aspects of aging. The research institute provides for graduate and post-graduate training in the biological, social and behavioral sciences. Specific areas of study include neurobiology, neurogerontology, neurodegenerative diseases (Alzheimer's disease and Parkinson's disease), physiology of exercise, cognitive aspects of aging, psychophysiology, behavior, social organization and social policy.

### *Information Sciences Institute (ISI)*

Located in Marina del Rey approximately 15 miles from the campus, the institute is a School of Engineering research facility involved in a broad spectrum of information processing research and the development of advanced computer technology and systems. Areas of research and development include artificial intelligence, parallel processing, software production technology, man-machine interface technology, natural language, VLSI, communication and networking, computerized commerce, and computing environments. Closely linked with the computer science and electrical engineering departments, ISI provides a number of research assistantships to graduate students. ISI houses an excellent technical research library, a hardware development lab and a model shop for developing special or experimental equipment in support of institute programs.

### *Institute for the Study of Women and Men*

The Institute for the Study of Women and Men (ISWM) engages in research and outreach activities related to gender studies. It is affiliated with USC's long-standing Program for the Study of Women and Men in Society (SWMS), a multidisciplinary program that focuses on gender in culture and society. SWMS faculty members are drawn from the humanities, social, physical, and natural sciences, arts, communication, and the professional schools of USC. They currently comprise 75 core and extended faculty.

ISWM supports scholarly research, invites speakers to the university, plans conferences and seminars, and develops outreach activities to disseminate gender scholarship to the non-academic community.

*Loker Hydrocarbon Research Institute (LHRI)*

Dedicated to studying the chemistry of hydrocarbons and to related graduate education, the LHRI strives to develop the future practitioners and research leaders in the field. Research is devoted to understanding better the basic chemistry of hydrocarbons, to finding alternate ways to produce them and to studying their transformations and combustion. A new emphasis on the chemistry of polymer is also being developed. Institute laboratories are well equipped with state-of-the-art spectroscopic and analytical instrumentation. Nuclear magnetic resonance, infrared, ultraviolet, visible and mass spectrometers, as well as gas/liquid, high-pressure liquid and gel permeation chromatographs are available. Specialized very-low/very-high pressure reactors, catalytic reactors, and high-purity, enclosed environmental systems are available also.

*Population Research Laboratory*

The Population Research Laboratory emphasizes training and research concerning demographic processes and techniques pertaining to population policy, fertility, and mortality; population distribution including internal and international migration and urbanization; population structure including labor force needs, families and aging populations; and environmental problems, including relations between populations, resources, and pollution.

Examples of current or recent research by affiliated faculty and students include labor force exits of older men in the United States, Los Angeles ethnic communities, immigrant fertility in the United States, occupational prestige in the United States, effects of soap opera on women's status and fertility in India and in Latin America, fertility in the People's Republic of China, health consequences of improved mortality in the United States, premarital pregnancy in the United States, undocumented migrants in the United States, contraceptive use and continuation in Indonesia, small town development in the People's Republic of China, and labor force participation among women in Malaysia. The lab is affiliated with the U.S. Bureau of the Census and the California State Census Data Center and also serves public and private agencies concerned with population problems. Though part of the Sociology Department, the lab works closely with gerontology, economics, political science, medicine, public administration, planning and urban studies, the Social Science Research Institute, and the East Asian Studies Center.

*Program in Neural, Informational, and Behavioral Sciences*

USC's Program in Neural, Informational, and Behavioral Sciences, formed in 1982 as an outgrowth

of research activities in several areas, is a multidisciplinary research and teaching effort aimed at making USC one of the premier centers of neuroscience in the country. It is a multi-track academic research and training program that includes five schools and fifteen departments and is organized around major faculty groups in cellular and molecular neurosciences, systems and behavioral neuroscience, cognitive neurosciences, computational neuroscience and clinical neuroscience. Most faculty have joint appointments, which permits graduate students from different departments and schools to choose research and thesis advisors according to their interests. More than 50,000 square feet of new research space was developed for this program through construction of the Hedco Neurosciences Research Building, which houses research groups from all the tracks in the program. Our neurosciences program is novel and exciting because of its intellectual outreach and its success in building a multi-campus community of researchers from diverse basic and clinical disciplines that offer fresh insights into the complex phenomena of nervous systems.

*Institute for Robotics and Intelligent Systems (IRIS)*

The institute was organized to act as a focal point for research and development in advanced robotics, computer vision, and intelligent machine systems in Southern California. It aims to achieve this objective by performing government and industry-sponsored research, and coordinating a comprehensive educational program. IRIS is sponsored by four departments of the School of Engineering: Computer Science, Electrical Engineering, Industrial and Systems Engineering, and Mechanical Engineering.

The staff of IRIS consists of faculty members of the sponsoring departments of the School of Engineering, faculty in other departments (such as Civil Engineering), graduate students and a limited number of non-faculty professionals.

The activities undertaken by IRIS are concentrated in four major theoretical and applied research areas: (1) computer vision including development of fundamental methods needed for a variety of application tasks; (2) robotics and intelligent machines; (3) systems aspects of automated manufacturing involving a large number of robotic systems; and (4) artificial intelligence, robotics and teleoperators in space.

*Signal and Image Processing Institute (SIPI)*

A research unit of the School of Engineering, the SIPI has significant experimental facilities to support research activities in the areas of digital image processing, digital signal processing, neural networks, fuzzy logic, very-large-scale integration signal processing, image analysis, optical information processing and optical computing. The present facilities include special purpose graphics, and image digitization, display and recording equipment. These systems are connected to several DEC Microvax II computers, Sun workstations and personal computers, and can be accessed from various computer networks. The SIPI facilities also include a photographic laboratory, optical information processing laboratory and video equipment.

*Social Science Research Institute*

In addition to full-time staff researchers, faculty members from computer science, industrial and systems engineering, psychology, sociology and other departments work on institute projects. Doctoral students receive training and financial support through the institute and have access to data files and funded computer time in order to process data for use in personal research projects. Social problems currently under study include deviance, gangs and "crack," criminal justice systems, social categorization and intergroup relations, biological and social etiology of schizophrenia, and inference and decision processes.

RESOURCE SHARING WITH OTHER INSTITUTIONS

An agreement between USC and Hebrew Union College enables graduate students to enroll simultaneously at both institutions and benefit from reciprocal course credit. Faculty from either institution may be invited to serve as thesis or dissertation supervisors, or as members of guidance committees at the other institution.

USC graduate students may complete part of their program at UCLA through cross-registration. Upon approval of the department chairperson, the registrar and the graduate dean, a USC student may take courses at UCLA while enrolled in USC 7006, Off-Campus Studies.

# ADMISSION REQUIREMENTS AND THE APPLICATION PROCESS

The Application for Graduate Admission should be used by applicants to all programs except Dentistry, Law, Medicine, the master's degree programs in the Graduate School of Business Administration and the Doctor of Pharmacy degree program. Applicants to these programs should obtain forms directly from the schools to which they seek admission.

Many academic departments require additional materials for admission. It is important for you to contact your academic department regarding any supplemental applications, specific GRE (Graduate Record Examination) Tests or other examinations required for admission, and departmental assistantship/fellowship opportunities.

## COMPLETING THE APPLICATION

Students must complete all appropriate sections of the enclosed application. Failure to do so may cause delays in the processing of the application.

The university is required to report to the federal government the ethnic origin information requested in question 16 of the application. U.S. citizens or lawfully admitted permanent residents should select the racial/ethnic category with which they most closely identify. International students are reported as a separate category and should select the non-resident alien category (number 5) regardless of their racial/ethnic origin. The five racial/ethnic categories are described as follows:

*Black, non-Hispanic* a person having origins in any of the black racial groups of Africa (except those of Hispanic origins).

*Asian or Pacific Islander* a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or Pacific Islands. This includes people from China, Japan, Korea, the Philippine Islands, Samoa, India and Vietnam.

*Hispanic* a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.

*American Indian or Alaskan Native* a person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

*White, non-Hispanic* a person having origins in any of the original peoples of Europe, North Africa, or the Middle East (except those of Hispanic origin).

Students pursuing graduate degrees must apply for admission to specified programs; graduate applicants cannot be admitted to "undeclared" status. Those who wish to apply simultaneously to two different departments must submit an application form for each program. A photocopy of the enclosed form will suffice for the second application. Students need to submit only one \$50 non-refundable application fee for both applications, however.

Domestic students who are not seeking graduate degrees, but who wish to enroll in graduate-level courses for personal or professional enrichment only, may register in limited student status. Such students do not need to submit applications for admission, but must receive departmental approval and the approval of the Office of the Registrar. Permission to take course work in limited status does not imply or guarantee admission. In most cases, limited status is not available to international students as it does not fulfill student visa requirements. Permission for such enrollment by students on non-resident visas may be granted only by the Office of Graduate and International Admissions.

## APPLICATION FEE

A check or money order for \$50 drawn on a U.S. bank in U.S. currency and made payable to the University of Southern California must accompany the application. This fee is non-refundable. Application fee waivers are granted only under the following circumstances:

- The student is a U.S. citizen or permanent resident.
- The student can demonstrate financial need. Financial need must be verified by a letter from the financial aid office of the last institution attended, and the verification letter must accompany the application.
- The student is currently an admitted USC student or is a USC alumnus or alumna who has not attended any other institution since graduating from USC.
- The student is a full-time USC employee or a dependent of a full-time USC employee.

## FILING THE APPLICATION

Please consult your department for specific application deadlines. Those who apply by February 1, 1993, have the best chances of receiving full consideration for admission decisions and departmental financial assistance, including fellowships and teaching assistantships; however, some departments have earlier or later application deadlines.

Use the envelope included with this application to forward your application for admission to the university. You may also submit your application by using a fax machine; a transmittal form and instructions are included on page 29 of this booklet. Unless otherwise instructed by your department, transcripts and GRE scores should be sent to:

University of Southern California  
Office of Graduate Admissions  
University Park  
Los Angeles, California 90089-0913

Failure to use the above address will result in application processing delays.

## ACADEMIC RECORDS

All applicants for graduate study at USC must have earned baccalaureate degrees from accredited colleges or universities prior to initial enrollment. Each applicant must send to the Office of Graduate Admissions one copy of final, official transcripts from all colleges and universities attended except USC. (Please note that some academic departments may require USC transcripts from applicants who have attended USC.)

## LETTERS OF RECOMMENDATION

If the graduate program to which you are applying requires letters of recommendation, please have them sent directly to your department. Use the transmittal forms on page 21 to help ensure that your letters will be matched up with your application.

## GRADUATE RECORD EXAMINATIONS

Most programs require applicants—including those holding advanced degrees—to submit results of the General Test of the Graduate Record Examination (GRE). (Test scores that are more than five years old at the time of application may not be acceptable.) Individual departments also may require scores from the appropriate Subject Tests as part of the application process or during the first semester of study. Fall 1993 applicants are urged to take the GRE in October 1992. Scores from tests taken any later than December may not reach USC in time to be considered for admission, fellowship and assistantship opportunities. Applicants for the spring semester should take the examination by June. Scores must be available prior to registration.

## ADDITIONAL INFORMATION FOR INTERNATIONAL STUDENTS

Educational Testing Service (ETS) offers special administrations of the GRE in eight large cities in the United States. Additional information may be obtained by calling ETS-LA at (818) 578-1971 or the USC Testing Bureau at (213) 743-7308. Those who have taken the examinations already should write to the Educational Testing Service (Box 995, Princeton, New Jersey 08540) and arrange to have their scores forwarded to USC. (When requesting that scores be sent to USC, students must indicate the university's code number 4852.)

6 Graduate Record Examinations will be administered in the United States during the coming year as follows:

### Nationwide test dates (in the U.S.):

October 10, 1992  
December 12, 1992  
February 6, 1993  
April 17, 1993  
June 5, 1993

### Special test dates at USC:

September 12, 1992  
November 7, 1992  
January 9, 1993  
March 20, 1993  
July 17, 1993  
August 14, 1993

Overseas students may contact the educational attache officer of the American embassy or consulate for information about testing dates outside the United States.

### OTHER ADMISSION TESTS

Some professional programs (listed below) require specialized admission tests instead of, or as an option to, the Graduate Record Examination. You must contact the school for information about these tests and/or other admission criteria.

- Accounting
- Business Administration
- Dentistry—Doctor of Dental Surgery.  
International Student Program
- Law
- Medicine—Doctor of Medicine
- Music—Master of Music Education, Master of Music (no test required)
- Pharmacy—Doctor of Pharmacy (no test required)
- Public Administration—Master of Public Administration, Master of Health Administration, Doctor of Public Administration
- Social Work—Master of Social Work (no test required)
- Urban and Regional Planning—Master of Real Estate Development, Master of Planning, Master of Science in Planning Studies

The University of Southern California has an outstanding record of commitment to international education. From a small presence during our early history, our international enrollment grew to an average of 200 students by the 1930s. After declining international enrollments in the years surrounding World War II, we began rebuilding and in 1951 began providing specialized admission services to international students. By 1964, more than 1,000 international students were enrolled at USC. Today, the Office of Graduate and International Admissions serves thousands of prospective students each year by providing both general and specialized information and by maintaining the expertise necessary to evaluate academic records from the various educational systems around the world. International admissions also issues the required eligibility certificates for students to enter the United States.

For information about admission to USC, contact Office of Graduate and International Admissions  
University of Southern California  
Los Angeles, California 90089-0898  
Telephone (213) 740-7296  
FAX (213) 740-7577

### ADMISSION

International applicants (those who are or will be in the United States on non-immigrant visas) are required to submit the following documents. Additional information may be required by the academic departments.

1. Application for Graduate Admission;
2. \$50 application fee (check or money order) drawn on a U.S. bank in U.S. currency and made payable to the University of Southern California;
3. your scores on all examinations required for admission by your department (e.g. GRE, GMAT, TOEFL, TSE etc.) must be sent to USC by the testing agency;
4. one official copy of academic records\* with certified English translation;
5. documented evidence of financial support;

6. letters of recommendation from former professors sent directly to the appropriate academic department, if requested. All recommendations must be submitted together with English translations. It is also desirable, though not required, to include English resumes of any scholarly publications submitted for consideration.

\*Academic records include year-by-year records from each college or university attended that indicate the number of lecture and laboratory hours devoted each week to each course and the grades received, in addition to official documents indicating degrees awarded with titles and dates conferred.

The Office of International Admissions will provide admitted students with either I-20 or IAP-66 Eligibility Certificates. (International students will not be issued I-20 or IAP-66 certificates and are not permitted to enroll in any courses if they have not been admitted to degree programs or approved non-degree courses of study.)

After receiving the I-20 or IAP-66, each student must apply through a United States Embassy or Consulate for a visa to enter the United States. Any student entering the United States by means of the documents issued by USC must register for the semester to which admission is granted. Failure to register accordingly will disqualify students from re-applying for one year from the semester to which they were admitted, and there is no guarantee that students will be re-admitted.

### ENGLISH LANGUAGE PROFICIENCY

Academic success in the United States depends upon a student's ability to communicate effectively in English. English is the language of instruction at the University of Southern California, so our students must converse in, write and understand English. Furthermore, the receipt of a USC degree signifies that its holder is able to converse in, write and understand English in professional and academic pursuits. Consequently, every effort ought to be made to acquire English proficiency prior to entering the university.

As an initial indication of their English language competence, international applicants to USC graduate programs are urged to submit their scores from the Test of English as a Foreign Language (TOEFL) and Test of Spoken English (TSE). Although submission of these scores is not required as a criterion for admission by the university, academic departments may require them.

With few exceptions, newly admitted international students whose native language is not English must take the International Student English Examination (ISE)—administered by the USC



Testing Bureau—prior to initial registration. International students transferring from other institutions within the United States may be required to sit for the ISE also. An individual's level of achievement on the examination will determine whether or not special courses in English must be taken in the University's American Language Institute either before or during the initial period of study. Graduate students must score a minimum of 525 on the TOEFL to be considered for a departmental waiver from courses in the American Language Institute.

The Educational Testing Service administers the TOEFL in approximately 100 centers outside the United States and in many locations within the country. Applications for the examination can be obtained from the Educational Testing Service, Box 995, Princeton, New Jersey 08540, USA. The Educational Testing Service charges a fee for these examinations.

#### FINANCIAL AID

U.S. government guidelines preclude international students from receiving federal financial assistance through the USC Financial Aid Office. However, international students are eligible for the merit-based fellowships offered through the Graduate School. Many departments also offer departmental awards in the form of fellowships or teaching and research assistantships. (Refer to the section on Financing Graduate Education.)

Competitive candidates for teaching assistantships usually score above 550 on the Test of English as a Foreign Language and are required to score 200 or above on either the Test of Spoken English or the SPEAK examination administered at USC. Since most departments begin making assistantship decisions in February for the fall semester, it is important for students to submit graduate applications by February 1, 1992.

International students should not expect to support themselves through employment while attending the university. The Immigration and Naturalization Service rarely allows international students to work off campus during the course of their studies in the United States. The INS further requires individuals holding student visas to enroll as full-time students with a minimum of eight units per semester for graduate study.

#### FINANCIAL GUARANTEE STATEMENT

The United States government requires all international applicants to provide proof of ability to pay tuition and living expenses before a formal letter of admission—or the forms needed for obtaining a visa—will be issued.

To this end, each applicant relying on personal or family support must furnish, at the time of application, a financial guarantee letter—preferably a bank letter—indicating the sponsor's name, address and source of income. This document must be verified by bank stamp or a United States Consul.

Applicants whose financial support will come from their home governments or other official agencies (e.g. Fulbright, AMIDEAST) must submit similarly appropriate documentation from their sponsors.

#### HEALTH CARE AND INSURANCE

International students must carry health and accident insurance unless sufficient health coverage is provided by their sponsors. The university has the right to determine whether or not the amount of insurance contracted by the student is adequate. Students may obtain medical insurance during registration week.

All students pay a mandatory health fee entitling them to the services of the university health center, which provides a variety of health and counseling services. Students may also purchase medical coverage for family members accompanying them to the United States, and by paying an additional health fee, students may enable their spouses to take advantage of the university health center's services.

#### OFFICE FOR INTERNATIONAL STUDENTS AND SCHOLARS

The Office for International Students and Scholars provides orientation programs and continuing support services for international students. Specially trained professional counselors and student peer counselors are available to advise international students on immigration regulations, academic progress, financial problems, housing and cross-cultural adjustment. Additionally, year-round social and cultural activities are sponsored through this office.

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## HOUSING

## EMPLOYMENT

## FINANCING GRADUATE STUDY

8 University Housing reserves several apartment buildings for graduate students. Housing applications are mailed with the student's official letter of admission; students may not apply for housing prior to being admitted to the university. Because space is assigned on a first-come, first-served basis, graduate students who wish to live in university housing are encouraged to apply for housing as soon as they are admitted.

apartments are furnished and accommodate two to four students. For the 1992-93 school year, studio apartments for individual students ranged from \$497 to \$555; double apartments (one bedroom for two students) ranged from \$302 to \$350; and two-bedroom apartments (for four students) ranged from \$228 to \$334 per person each month. Rent is paid monthly, and in some cases utilities are included.

All graduate housing accommodates single students only. Family student housing is available, but a separate application must be completed. Students may contact the Housing Services Office for a family housing application.

Graduate students who want to live in downtown Los Angeles but also be part of an active community of scholars may apply for housing in the USC Embassy Residential College. Located at 9th Street and Grand Avenue, this historic building is less than 15 minutes away from the University Park campus and primarily houses transfer and graduate students. The college contains a 1,000-seat concert hall, a dining facility, a restaurant, a convenience store, and computer facilities linked to the university library system and the university computer network. Embassy Residential College assignments are made on a selective basis only. To be considered, please contact the Housing Services Office at (213) 740-2543, or the Office of Residential Life at (213) 740-2050.

The Office of Orientation Programs and Information Services provides information about off-campus housing both near campus and in other parts of Los Angeles. You may contact the office at (213) 740-6852.

Many students are employed by the university while pursuing their graduate degrees. Some full-time positions offer tuition benefits to the employee and his or her spouse or dependents. The USC Personnel Office has listings of full- and part-time positions on campus, and the Career Development Center has listings of many full- and part-time, permanent and temporary positions, both on and off campus. While the U.S. Immigration and Naturalization Service seldom allows international students to work off campus, they may apply for positions on campus with the permission of the Office for International Students and Scholars.

Finding financial support for graduate study frequently requires careful planning and considerable initiative. However, there are many resources available at USC to help you through the process.

### QUESTIONS AND ANSWERS

#### *Can I afford to attend USC?*

The cost of graduate education is high regardless of the university you choose. However, financial assistance is available in many forms—tuition support, stipends, loans, installment plans, even housing. Take the time to investigate the types of aid available and you should be able to find one that supplements your own resources and meets your needs. If you plan ahead and are knowledgeable about the various sources of aid, cost should not deter you from choosing USC.

#### *Where can I find help to meet the costs of graduate education?*

Financial support for graduate study at USC is available from many sources. You will need to contact these different sources and file a separate application for each type of financial assistance.

There are three main sources of information about financial aid at USC: (1) your academic department or professional school, (2) the university's financial aid office and (3) the Graduate School. Most graduate departments and professional schools offer fellowship and graduate assistantship opportunities. The USC Office of Graduate Financial Aid administers need-based aid programs and provides information about alternative financing plans. The Graduate School administers several fellowship programs and serves as a resource for information about funding for graduate study from sources outside the university.

Several federal agencies and private foundations offer support for students engaged in research in specific fields of study. In addition, many corporations provide fellowships or tuition reimbursement for their employees.



### How do I know if I'm eligible?

Apply for aid if you think you need it—don't assume you won't qualify. Compared to most undergraduates, graduate students typically have more financial responsibility and frequently have financial resources that may disqualify them for need-based financial aid. However, many forms of aid are based on academic merit or will take into account other factors such as area of study, talent, ethnicity or credit history.

Generally, aid is available only for students admitted to a degree program. Many support programs require full-time enrollment (for graduate students, usually 8 units per semester or registration in designated courses such as thesis supervision). Need-based aid, such as federally supported loans and work-study employment, is available only to citizens and permanent residents of the United States. International students are eligible for most fellowships, scholarships and assistantships.

### How do I apply?

For specific information and applications, contact the various offices administering the aid programs of interest to you. Many funding sources have application deadlines earlier than USC admission and financial aid deadlines, so begin your inquiries early, at least a year before you plan to begin graduate study.

## GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Scholarships and fellowships are available through the Graduate School, the professional schools and various academic departments.

Highly qualified applicants working toward the Ph.D. in any field may apply for All-University Predoctoral Merit Fellowships which support students planning a career in university teaching and research with a \$14,000 stipend and full tuition payment. Fellowships also are available to support full-time research after students have passed qualifying exams. Similar support is set aside for minority students from groups now under-represented in doctoral study.

Awards from the professional schools draw on the special resources of each discipline. For example, architecture students are eligible for student-in-residence fellowships which provide living quarters in the historic Gamble House. Engineering students employed by such Southern California firms as Hughes Aircraft and TRW are eligible for fellowship support provided by their employers.

Usually awarded on a competitive basis to full-time graduate students, fellowships and scholarships require no repayment. By checking the box at the bottom of the application for admission and completing the form on page 23, you will let your academic department know of your interest in such awards.

California residents may apply for California State Graduate Fellowships. Initial application is through completion of questions relating to this fellowship on the Student Aid Application for California (SAAC) which is submitted to the College Scholarship Service. The SAAC forms can be obtained from the USC Financial Aid Office or the California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814.

Graduate assistantship positions are awarded by university departments on the bases of scholastic accomplishment, academic promise and competence. Appointments are made for a maximum of one year at a time. The positions usually require 20 hours of work each week under the supervision of regular USC faculty.

Graduate assistants are usually assigned to one of three types of positions:

*teaching/laboratory assistants* Students are assigned specific duties in assisting the teaching staff of the university, but are not the instructors of record in courses. Duties further the student's own graduate career and development as a researcher, scholar and professional.

*assistant lecturers* Students assist the university in meeting the special instructional needs in the Freshman Writing Program, in language programs in the College of Letters, Arts and Sciences, and in certain other programs approved by the Dean of Graduate Studies. Assistant lecturers are instructors of record in the courses they teach.

*research assistants* Students assist the faculty in research-related tasks that also further their own research directions.

Other assistantship opportunities are available in the American Language Institute, Freshman Writing Program, and the College of Letters, Arts and Sciences. Through the Office of the Vice President for Student Affairs, graduate assistantships are available in the Student Health Center, Residential Life, Student Activities and the Student Conduct Office.

### Outside Agency Awards

Many federal agencies, foundations and corporations offer awards to students. The financial aid office or graduate school of your current university can probably provide you with a list of resources. You may also contact the USC Graduate School for a brochure listing such resources or refer to the following publications:

*Annual Register of Grant Support: A Directory of Funding Sources 1989-90*. 23rd ed. Wilmette, Illinois: National Register Publishing, 1988.

Schlacter, Gail Ann. *The Directory of Financial Aids for Women*. 4th ed. Redwood City, California: Reference Service Press, 1987.

*The Directory of Special Programs for Minority Group Members*. 4th ed. Garrett Park, Maryland: Garrett Park Press, 1986.

*Scholarships, Fellowships and Loans*. Volume 8. Edited by S. Norman and Marie Feingold. Bethesda: Bellman Publishing, 1986.

*The Grants Register 1987-89*. 10th ed. Edited by George Walsh. New York: St. Martin's, 1986.

Some resource books listing sources of graduate study funding are kept in the Graduate School. Students are welcome to use these books. The Reference Department in Doheny Library at (213) 740-4039 also has current editions of these publications.

The Graduate School maintains fellowship files of notices received from many institutions announcing the availability of funding for graduate students. This information is recorded for the Graduate School Fellowship Hotline, then filed in the Graduate School for access by interested students. The 24-hour hotline provides information to students on the availability of funding in specific subject areas. The Fellowship Hotline number is (213) 746-2062. Information is updated as-needed, with the largest flow of new information coming in from August through January.

### Fellowship Searching

USC-affiliated persons can conduct a personalized fellowship search on a database maintained by Stanford University which includes over 2,000 entries. This is a unique, interactive data base which includes information about graduate entry-level fellowships, dissertation fellowships, postdoctoral fellowships, research opportunities and funding for independent projects. The search is cost-free and can be accessed in the Reference Department (Telephone: 213-740-4039) of Doheny Library. To use a larger University of Washington database, contact the Graduate School (Telephone: 213-743-8697) for a mail-in application form.

### Acceptance of Offers of Financial Aid

USC subscribes to the resolution of the U.S. Council of Graduate Schools which sets an April 15 deadline for the offer and acceptance of financial aid.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Name of award	Award amounts	Selection criteria	Eligibility requirements	Additional requirements
All-University Predoctoral Merit Fellowships	stipend awards from \$10,000 to \$14,000 may also include tuition and fees	Academic achievement and additional criteria sometimes established for each award; department recommendation.	for applicants beginning study leading to the Ph.D.; special competition for minority students	Application forms available from the Graduate School must be submitted by February 1, 1993 to the student's academic department for the annual competition held each spring.
California State Graduate Fellowship	award amounts from \$700 to \$6,490 are for tuition and fees only	Selection determined by the California Student Aid Commission on the basis of student's grade point average, graduate admission test scores, family educational background and financial need.	Applicant must be a California resident and must be enrolled full time.	Student Aid Application for California (SAAC) to the College Scholarship Service by February 26, 1993. Applicants must complete all questions relating to this fellowship on the SAAC.
Norman Topping Student Aid Fund	50% of tuition	academic, leadership and service potential; demonstrated financial need	Twenty hours per semester of community or school service required.	Separate application available, from the Director of the Norman Topping Fund, to be submitted by February 10, 1993; complete financial aid application also must be filed.
Graduate Assistantship (Teaching Assistantship, Research Assistantship or Assistant Lecturer)	8-12 units tuition remission per semester, stipend ranging from \$5,039 to \$11,167 per academic year	Scholastic accomplishment, academic promise and competence; positions available based upon departmental need. English fluency required for teaching positions.	Student must be enrolled in USC graduate studies full time.	Apply directly to department appointing assistantship.
Head Resident or Graduate Resident Adviser	room and board plus varying tuition and stipend amounts	management and leadership ability; requires residential or Greek life experience	Student works in undergraduate residence hall or campus fraternity	Apply directly to the USC Office of Residential Life.
Departmental Fellowship	award amounts vary	vary by department	vary by department	Contact major department for more information.

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NEED-BASED FINANCIAL AID

Our Financial Aid Office will work with you to supplement your resources for funding graduate study. Your application for need-based aid enables us to determine your eligibility for student loan programs and college work-study employment. These programs require either a service commitment or repayment. In financial aid information you may receive from the state and federal government, these programs are commonly termed "self-help funds."

To qualify for need-based financial aid, you must be either a citizen or permanent resident of the United States. Permanent residents must submit copies of their alien registration cards or statements of status from the U.S. Department of Immigration.

To receive need-based financial aid, you must be admitted to a program of study at USC leading to

a degree and must be enrolled at least half-time (at least four hours); some awards require full-time enrollment. In addition, you must not be in default on repayment of any student loans and may not owe a refund for federal grant funds to any institution. To remain eligible for aid, you must maintain satisfactory academic progress toward your degree.

The actual offer of need-based assistance is based on both your family's demonstrated financial need and the availability of funds. Demonstrated financial need is the difference between the cost of attending a college or university and the amount you and your family are expected to contribute toward that cost based on our evaluation of the financial aid forms you submit.

Because we use a federally mandated formula to determine the expected family contribution, that contribution generally will be no higher at USC than at other universities. Factors considered in

this calculation include income and assets, the number of family members, and the number of dependents in college. We protect sufficient income to support standard living expenses and reserve a portion of assets for retirement purposes.

If you accept an offer of need-based financial aid and other awards, the level of demonstrated financial need limits the total amount of need-based financial assistance you may receive. Other awards include all university, departmental or outside agency fellowships, assistantships and scholarships. If the amount of demonstrated financial need is equaled or exceeded by other awards, you would not be eligible for need-based financial aid.

Financing plans (the various loan and installment payment programs described in the next section) may be used to assist families in making their expected contributions. Financing plans combined with need-based assistance and other awards may not exceed the cost of attendance.

**ESTIMATED EXPENSES  
ALLOWED  
FOR FINANCIAL AID**

The expenses estimated by the university (and used to calculate financial need) include a student's tuition and fees, books and supplies, room and board and other living expenses. The amount allocated for such expenses as room and board and transportation is based on national and state surveys and does not necessarily reflect the costs actually incurred by students in the Los Angeles area.

The estimated budgets used for need-based financial aid for 1992-93 are:

<i>Direct Educational Expenses</i> <i>(fall and spring semesters only)</i>		
Tuition and fees		\$10,870
Books and supplies		962
<i>Subtotal:</i>		<i>\$11,832</i>
<i>Non-Direct Expenses</i>		
	<i>On Campus</i>	<i>Off Campus</i>
Room and board (nine months)	\$ 6,260	\$ 7,182
Personal/miscellaneous	1,728	1,728
Transportation	1,252	1,362
<i>Subtotal:</i>	<i>\$ 9,240</i>	<i>\$10,272</i>
<b>Total:</b>	<b>\$21,072</b>	<b>\$22,104</b>

The tuition reflects enrollment costs for 8-14 units per semester (16-28 units per year). The rate per unit is \$529 in 1992-93. International students should note that the estimated budget listed above represents costs for nine months of study only. Students who plan to attend school year-round should anticipate higher expenses. Estimated budgets for students in some majors may be higher due to higher tuition, special laboratory or studio supplies fees.

**NEED-BASED FINANCIAL AID**

*Applying for Financial Aid for Fall 93 and Spring 94*

Much of the information needed to establish your eligibility for need-based financial aid is provided by the forms you will submit to the College Scholarship Service. A division of the College Entrance Examination Board, the scholarship service forwards information to the colleges and universities you choose. California residents who are applying for California State Graduate Fellowships must complete the service's Student Aid Application for California (SAAC). Residents of other states should complete the Financial Aid Form (FAF). Either form must be received by the College Scholarship Service no later than February 26, 1993. The code number for selecting USC to receive your financial information is 4852.

If you wish to apply for need-based financial aid, complete the Financial Aid Applicant Profile on page 23 and return it to us by February 26, 1993. Please note that we have included a special envelope to use for this form. The information you will provide on the profile will supplement that forwarded to us by the College Scholarship Service.

By May 1, 1993, the Financial Aid Office must have received signed copies of your (and your parents' and/or spouse's, if appropriate) 1992 federal income tax returns or non-filing statements, which may be obtained from our office.

On page 25, we have provided you with one copy of the financial aid transcript. You must send a copy of this form to each post-secondary school you have attended regardless of whether or not you received financial aid. Completed financial aid transcripts must be received by USC before need-based financial aid can be disbursed to you.

In some cases, we may require additional documents. Please respond promptly to our requests for information to avoid delays in processing your financial aid offer.

*December-January*

Obtain FAF or SAAC forms from your current university or USC to be submitted to the College Scholarship Service after January 1.

*January-February*

Submit your application for admission by February 1. Complete your income tax returns early. This will make completing the SAAC or FAF easier as both require information from your (or your parents') income tax forms.

*February 26*

To receive priority consideration for need-based assistance, (1) your completed SAAC or FAF must be received by the College Scholarship Service no later than February 26 and (2) your completed Financial Aid Applicant Profile must be received by USC no later than February 26. California residents applying for a California State Graduate Fellowship must submit the SAAC form to the College Scholarship Service to be received by February 26 (with appropriate boxes on the form checked).

*March-April*

Submit financial aid transcripts from all previously attended post-secondary institutions whether or not you received financial aid.

*May 1*

The USC Financial Aid Office must have received signed copies of your (and your parents' and/or spouse's, if appropriate) 1992 federal income tax returns or non-filing statements, which may be obtained from our office.

Information about need determination, types of aid awarded and the disbursement process will accompany your offer of financial aid.

Name of award	Type of award	Award amounts	Additional information
College Work-Study	Student earns this award through a federally subsidized work program.	\$800-\$3,500 per year	The student usually works 15-20 hours per week either on campus or for an off-campus, non-profit agency.
Carl Perkins Loan Program (National Direct Student Loan)	low-interest, long-term federal loan	Up to \$2,000 per academic year; cumulative borrowing maximum is \$18,000 including loans obtained as an undergraduate.	Repayment at 5% interest begins nine months after borrower ceases to be enrolled at least half-time.
Stafford Student Loan (formerly Guaranteed Student Loan)	long-term loan through a bank, credit union or other commercial lender, guaranteed by the state or other appropriate agency	Up to \$7,500 per academic year; cumulative borrowing maximum is \$54,750 including loans obtained as an undergraduate.	Requires a separate application, repayment begins six months after borrower ceases to be enrolled full time. The interest rate (for first-time loans) is 8% for the first four years of repayment, rising to 10% in the fifth and subsequent years; the maximum repayment period is 10 years.
Health Profession Student Loan	federally funded loan program available to eligible students in the fields of dentistry, medicine or pharmacy	award amounts vary	The interest rate (which may be deferred while in school) is 5%. Repayment begins 12 months after the borrower ceases to be enrolled at least half-time. All applicants must provide parental information on the SAAC or FAF to be considered for this loan.

## FINANCING OPTIONS

Long-term educational loans may be used to finance some of your educational expenses. To assist those who are not eligible for need-based financial aid, or for those needing assistance in order to fund their family contribution, USC participates in edu-

ational loan programs offered through banks, savings and loan associations, credit unions and other lending institutions. The university also offers installment payment of your educational expenses spread throughout the academic year.

Students in law school or in the health professions (dentistry, medicine, pharmacy and health administration) also may be eligible for special loan programs designed for these fields. Please contact the appropriate department for more information.

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Program name	Amount to borrow	Terms	Additional information
Supplemental Loans for Students	Students may borrow up to \$4,000 per year.	The interest rate is variable, set annually at 3.75% above the one-year Treasury bill rate with a 12% cap. The rate for 1992-93 is 7.51%. Repayment of interest begins 60 days after the check is issued by the bank; full-time students may defer repayment of the principal and interest while in school. The normal repayment period is 10 years.	A separate application is required. In order to be eligible for these supplemental loans, the student must first complete the process for determining need-based eligibility.
Grad Excel	With no co-signer, students may borrow from \$2,000 to \$7,500 per year with a total loan maximum of \$30,000. With a co-signer, students may borrow from \$2,000 to \$20,000 per year with a maximum of \$80,000.	The interest rate is variable and will not exceed the prime rate by more than 2%. Full-time students may defer repayment of principal and/or interest while in school. Guarantee of 5% charged with co-signer; of 8% without a co-signer.	A separate application is required. Student eligibility based on simple credit check. Co-signer must have satisfactory income level and credit history.
USC Payment Plan	Students may spread university charges (e.g. tuition, mandatory fees, lab fees, university housing and food service contracts) over a 10-month period.	This is a simple payment plan and requires no interest payment.	A separate application is required with a \$30 to \$75 non-refundable application fee. Applications for fall semester are available from the USC Cashier's Office. Write USC Cashier, File No. 32237, Los Angeles, CA 90074-2237 or telephone (213) 740-7471.

## FOR FURTHER INFORMATION

Although every effort is made to present the most accurate and up-to-date information, the content of this publication is subject to change due to alterations in federal, state, university or lender policy or procedure. If you have additional questions, please call or write the following offices.

For information about need-based aid and financing options:

Office of Financial Aid  
University of Southern California  
700 Childs Way  
Los Angeles, California 90089-0913  
(213) 740-1111

For information about department and professional school fellowships, scholarships and assistantships, contact the department or school directly. Refer to the correspondence directory at the back of this booklet to find the correct mailing address.



# CHECKLIST FOR ADMISSION AND FINANCIAL AID

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## ADMISSION

- Contact your academic department for information about specific programs and admission requirements, supplemental applications and graduate assistantship and fellowship opportunities. Use the form on page 27.
- Take the GRE General Test and/or any other admission tests (e.g. GRE Subject Test, GMAT, TOEFL) required by your academic department at least two months prior to the filing of your admission application. Request that scores be sent to USC (page 5), use USC's code number 4852.
- Submit the Application for Graduate Admission by February 1, 1993 in the envelope included with this application or via fax machine (use the transmittal form on page 29 of this booklet). Please note that some departments have established different deadlines; these are listed on pages 14-16.
- Submit to your academic department supplemental (departmental) application and materials (e.g. portfolios, writing samples, letters of recommendation), if applicable.
- Send one copy of final, official transcripts from all colleges and universities attended to the USC Office of Graduate and International Admissions. Any transcript sent via fax machine must be followed by an official transcript mailed directly from the university.
- Verify with your department the completeness of your application file after you have received acknowledgement of your application from the graduate admissions office.
- Official admission is granted only by a letter from the USC Dean of Graduate Studies. Correspondence with department chairpersons or individual faculty members does not constitute admission. Your letter of admission will also include an intent to enroll form which should be returned promptly.
- You will receive an application for university housing with your letter of admission. File the housing application as soon as possible if you wish to live in university housing.

## FINANCIAL AID

- Send the Application for Graduate Admission to the USC Office of Graduate and International Admissions.
- Contact your academic department regarding opportunities and application deadlines for graduate assistantships and fellowships.
- File applications for assistantships and fellowships by the deadlines established by the awarding departments. The application deadline for Graduate School fellowships is February 1. To meet that deadline, applicants must have taken the GRE on or before December 14, 1992.
- If you are applying for financial assistance awarded on the basis of financial need (e.g. loans or work-study) or for a California State Graduate Fellowship:
  - Obtain and file the *Student Aid Application for California (SAAC) or Financial Aid Form (FAF)* with the *College Scholarship Service* by *February 26, 1993*.
  - Submit to USC's Financial Aid Office:
    - a completed *Financial Aid Applicant Profile* by *February 26, 1993*;
    - *1992 federal income tax returns*;
    - *financial aid transcripts from all previously attended post-secondary schools (regardless of whether or not you received financial aid)*;
    - *and all other documents requested by the Financial Aid Office*.

If you are admitted to the university and you have applied for need-based aid by completing your financial aid file, your eligibility will be determined, and you may receive an offer of financial assistance from USC's Financial Aid Office.

# GRADUATE PROGRAMS

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Please identify the code number that corresponds to your intended field of study and record the number on the appropriate line in question 20 of the application.

Please note that many programs have deadlines for fellowships and assistantships that are much earlier than the application deadlines listed here. An "na" listed in the deadline column means that students are not admitted to that particular term. An asterisk (\*) means that applications are evaluated continuously. Application deadlines for the spring 1994 semester are available from your department.

Code No.	Program	Admission Application Deadlines		
		Spring 1993	Summer 1993	Fall 1993
<b>Accounting</b>				
14	Accounting (M.Acc.)	10/1	3/1	4/1
469	Business Taxation (M.B.T.)	10/1	3/1	4/1
42	Aerospace Engineering (M.S.)	11/1	3/1	2/15
35	Aerospace Engineering (E.A.E.)	11/1	3/1	2/15
52	Aerospace Engineering (Ph.D.)	11/1	3/1	2/15
91	American Language Institute (non-degree program)	12/27	4/30	3/21
157	Anatomy and Cell Biology (M.S.)	na	na	3/1
161	Anatomy and Cell Biology (Ph.D.)	na	na	3/1
710	Anthropology, Social (Ph.D.)	na	na	1/31
494	Anthropology, Visual (M.A.)	na	na	1/31
903	Applied Biometry and Epidemiology (M.S.)	na	na	3/1
<b>Architecture</b>				
860	Architecture (M.Arch.)	na	na	3/1
861	Building Science (M.B.S.)	na	na	3/1
859	Landscape Architecture (M.L.Arch)	na	na	3/1
794	Architecture/Planning (M.Arch/M.Pl.)	11/1	na	3/1
70	Art History (M.A.)	na	na	2/1
81	Art History (Ph.D.)	na	na	2/1
87	Art History (Museum Studies) (M.A.)	na	na	2/1
892	Art History (Museum Studies) (Certificate)	na	na	2/1
312	Biochemistry (M.S.)	na	na	3/1
315	Biochemistry (Ph.D.)	na	na	3/1
917	Biokinesiology (M.S.)	*	*	*
918	Biokinesiology (Ph.D.)	*	*	*
<b>Biology</b>				
322	Biology (M.S.)	na	na	2/1
334	Biology (Ph.D.)	na	na	2/1
537	Molecular Biology (M.S.)	10/15	na	2/1
545	Molecular Biology (Ph.D.)	10/15	na	2/1
336	Biology (Neurobiology)(Ph.D.)	10/15	na	2/1
392	Biomedical Engineering (M.S.)	12/1	na	7/1
402	Biomedical Engineering (Ph.D.)	12/1	na	7/1
347	Biometry (M.S.)	na	na	3/1
350	Biometry (Ph.D.)	na	na	3/1
495	Business Administration (Ph.D.)	na	na	1/15

Code No.	Program	Admission Application Deadlines		
		Spring 1993	Summer 1993	Fall 1993
43	Chemical Engineering (M.S.)	12/1	5/1	7/1
36	Chemical Engineering (E.Ch.E.)	12/1	5/1	6/1
63	Chemical Engineering (Ph.D.)	12/1	5/1	7/1
64	Chemistry (M.A.)	12/1	na	2/1
77	Chemistry (M.S.)	12/1	na	2/1
88	Chemistry (Ph.D.)	12/1	na	2/1
92	Chemistry (Chemical Physics) (Ph.D.)	12/1	na	2/1
<b>Cinema-Television</b>				
386	Cinema-Television (Critical Studies) (Ph.D.)	11/1	na	12/10
713	Cinema-Television (Film and Literature) (Ph.D.)	11/1	na	12/10
<b>Tracks:</b>				
218	Critical Studies (M.A.)	11/1	na	12/10
280	Peter Stark Motion Picture Producing Program (M.F.A.)	na	na	12/10
253	Production (M.A.)	9/1	na	12/10
267	Production (M.F.A.)	9/1	na	12/10
804	Screenwriting (M.F.A.)	na	na	12/10
601	Civil Engineering (M.S.)	11/1	4/1	7/1
595	Civil Engineering (E.C.E.)	11/1	4/1	7/1
665	Civil Engineering (Ph.D.)	11/1	4/1	7/1
<b>Civil Engineering</b>				
<b>Areas of Emphasis:</b>				
607	Construction Engineering (M.S.)	11/1	4/1	7/1
655	Earthquake Engineering (M.S.)	11/1	4/1	7/1
613	Environmental Engineering (M.S.)	11/1	4/1	7/1
625	Nuclear Engineering (M.S.)	11/1	4/1	7/1
631	Ocean Engineering (M.S.)	11/1	4/1	7/1
619	Soil Mechanics and Foundations (M.S.)	11/1	4/1	7/1
637	Structural Engineering (M.S.)	11/1	4/1	7/1
643	Structural Mechanics (M.S.)	11/1	4/1	7/1
894	Transportation Engineering (M.S.)	11/1	4/1	7/1
649	Water Resources (M.S.)	11/1	4/1	7/1
158	Classics (M.A.)	12/1	na	7/1
162	Classics (Ph.D.)	12/1	na	7/1
511	Communication Arts and Sciences (M.A.)	12/1	5/1	7/1
519	Communication Arts and Sciences (Ph.D.)	12/1	5/1	7/1
207	Communication Theory and Research (Ph.D.)	na	na	2/1
329	Communications Management (M.A.)	12/1	4/1	8/1
320	Comparative Literature (M.A.)	na	na	4/1
323	Comparative Literature (Ph.D.)	na	na	4/1
4	Computer Engineering (M.S.)	10/1	2/1	4/1
15	Computer Engineering (Ph.D.)	10/1	2/1	4/1
674	Computer Science (M.S.)	10/1	2/1	6/1
378	Computer Science (Ph.D.)	10/1	2/1	6/1
623	Craniofacial Biology (M.S.)	10/15	na	6/1
589	Craniofacial Biology (Ph.D.)	10/15	na	6/1
554	East Asian Languages and Cultures (M.A.)	11/15	4/1	4/1
923	East Asian Languages and Cultures (Ph.D.)	11/15	4/1	4/1
559	East Asian Studies (G.Cert.)	11/15	4/1	4/1
84	Economic Developmental Programming (M.A.E.D.P.)	11/15	4/1	6/1
577	Economics (M.A.)	10/15	4/1	4/1
694	Economics (Ph.D.)	10/15	4/1	4/1
<b>Education</b>				
656	Education (Counseling Psychology) (M.S.)	na	na	7/1
661	Education (Counseling Psychology) (Ph.D.)	na	na	1/15
807	Marriage, Family and Child Counseling (M.M.F.C.C.)	11/1	3/1	7/1
239	Teaching English as a Second Language (M.S.)	11/1	3/1	7/1
<b>Tracks:</b>				
203	College Student Personnel Services (M.S.)	11/1	3/1	7/1
632	Curriculum, Teaching and Special Education (M.S.)	11/1	3/1	7/1



Code No.	Program	Admission Application Deadlines		
		Spring 1993	Summer 1993	Fall 1993
638	Curriculum, Teaching and Special Education (Ph.D.)	11/1	3/1	7/1
100	Educational Leadership (Ed.D.)	11/1	3/1	7/1
106	Educational Policy, Planning and Administration (M.S.)	11/1	3/1	7/1
113	Educational Policy, Planning and Administration (Ph.D.)	11/1	3/1	7/1
163	Educational Psychology and Technology (M.S.)	11/1	5/1	7/1
170	Educational Psychology and Technology (Ph.D.)	11/1	3/1	7/1
301	Electrical Engineering (M.S.)	9/1	1/1	2/1
302	Electrical Engineering (E.E.E.)	9/1	1/1	2/1
316	Electrical Engineering (Ph.D.)	9/1	1/1	2/1
324	Engineering Management (M.S.)	12/1	na	7/1
372	English (M.A.)	na	na	4/1
382	English (Ph.D.)	na	na	4/1
675	English (Film and Literature)(Ph.D.)	na	na	4/1
337	Environmental Engineering (M.S.)	12/1	4/1	7/1
400	Engineering (Environmental Engineering)(Ph.D.)	12/1	4/1	7/1
858	Epidemiology (Ph.D.)	na	na	3/1
864	Exercise Science (M.A.)	12/1	5/1	7/1
864	Exercise Science (Ph.D.)	12/1	5/1	7/1
450	Fine Arts (M.F.A.)	na	na	2/1
575	French (M.A.)	11/1	na	4/1
578	French (Ph.D.)	11/1	na	4/1
866	Geography (M.A.)	na	na	7/1
897	Geography (M.S.)	na	na	7/1
895	Geography (Ph.D.)	na	na	7/1
589	Geological Sciences (M.S.)	12/1	na	7/1
599	Geological Sciences (Ph.D.)	12/1	na	7/1
611	German (M.A.)	12/1	5/1	7/1
615	German (Ph.D.)	12/1	5/1	7/1
651	Gerontology (M.S.)	10/15	na	2/15
820	Gerontology (Public Policy) (Ph.D.)	na	na	2/15
633	Gerontology (Certificate)	*	*	*
780	Health Administration (M.H.A.)	12/1	5/1	7/1
134	History (M.A.)	11/1	na	4/1
144	History (Ph.D.)	11/1	na	4/1
712	Human Factors (M.S.)	12/1	5/1	8/1
274	Industrial and Systems Engineering (M.S.)	12/1	5/1	7/1
269	Industrial and Systems Engineering (E.I.S.E.)	12/1	5/1	7/1
285	Industrial and Systems Engineering (Ph.D.)	12/1	5/1	7/1
234	International Public Administration (M.S.)	12/1	5/1	7/1
247	International Relations (M.A.)	na	na	1/15
256	International Relations (Ph.D.)	na	na	1/15
438	Journalism, Broadcast (M.A.)	11/15	na	4/1
686	Journalism, International (M.A.)	na	na	4/1
884	Journalism, International (Certificate)	na	na	4/1
558	Journalism, Print (M.A.)	11/15	na	4/1
792	Landscape Architecture/Planning (M.L.Arch./M.Pl.)	11/1	na	3/1
416	Linguistics (M.A.)	na	na	3/15
425	Linguistics (Ph.D.)	na	na	3/15
98	Linguistics, Applied (M.A.)	na	na	3/15
431	Linguistics (Applied Linguistics)(Ph.D.)	na	na	3/15
500	Manufacturing Engineering (M.S.)	12/1	5/1	7/1
484	Materials Engineering (M.S.)	12/1	5/1	7/1
491	Materials Science (M.S.)	12/1	5/1	7/1
483	Materials Science (E.M.S.)	12/1	5/1	7/1
503	Materials Science (Ph.D.)	12/1	5/1	7/1

Code No.	Program	Admission Application Deadlines		
		Spring 1993	Summer 1993	Fall 1993
513	Mathematics (M.A.)	12/1	5/1	7/1
533	Mathematics (Ph.D.)	12/1	5/1	7/1
901	Mathematics, Applied (M.A.)	12/1	5/1	7/1
105	Mathematics, Applied (M.S.)	12/1	5/1	7/1
116	Mathematics, Applied (Ph.D.)	12/1	5/1	7/1
561	Mechanical Engineering (M.S.)	*	*	*
556	Mechanical Engineering (E.M.E.)	*	*	*
567	Mechanical Engineering (Ph.D.)	*	*	*
217	Mechanics, Applied (M.S.)	*	*	*
616	Microbiology (Ph.D.)	na	na	6/1
926	Molecular Pharmacology and Toxicology (M.S.)	10/15	na	4/1
927	Molecular Pharmacology and Toxicology (Ph.D.)	10/15	na	4/1
Music				
525	Choral Music (M.M.)	na	5/1	7/1
522	Choral Music (D.M.A.)	na	5/1	7/1
514	Church Music (M.M.)	na	5/1	7/1
510	Church Music (D.M.A.)	na	5/1	7/1
546	Composition (M.M.)	12/1	5/1	7/1
538	Composition (D.M.A.)	12/1	5/1	7/1
925	Early Music Performance (D.M.A.)	12/1	5/1	7/1
492	Conducting (M.M.)	na	na	12/15
297	Jazz Studies (M.M.)	1/1	na	9/1
711	Music (Early Music Performance) (M.A.)	12/1	5/1	7/1
564	Music Education (M.M.)	12/1	na	7/1
78	Music Education (M.M.Ed.)	12/1	na	7/1
557	Music Education (D.M.A.)	12/1	na	7/1
570	Music (History and Literature) (M.A.)	12/1	5/1	7/1
572	Music (Historical Musicology) (Ph.D.)	12/1	5/1	7/1
618	Music (Music Theory) (M.A.)	12/1	5/1	7/1
623	Music (Music Theory) (Ph.D.)	12/1	5/1	7/1
Performance				
Areas of emphasis:				
640	Accompanying (M.M.)	12/1	na	7/1
636	Accompanying (D.M.A.)	12/1	na	7/1
812	Advanced Studies Performance Program (Certificate)	12/1	5/1	7/1
659	Bassoon (M.M.)	1/1	5/1	9/1
652	Bassoon (D.M.A.)	1/1	5/1	9/1
46	Clarinet (M.M.)	1/1	5/1	9/1
41	Clarinet (D.M.A.)	1/1	5/1	9/1
69	Double Bass (M.M.)	12/1	5/1	7/1
57	Double Bass (D.M.A.)	12/1	5/1	7/1
110	Flute (M.M.)	1/1	5/1	9/1
101	Flute (D.M.A.)	1/1	5/1	9/1
89	French Horn (M.M.)	1/1	5/1	9/1
79	French Horn (D.M.A.)	1/1	5/1	9/1
122	Guitar (M.M.)	12/1	5/1	7/1
117	Guitar (D.M.A.)	12/1	5/1	7/1
164	Harp (M.M.)	12/1	5/1	7/1
159	Harp (D.M.A.)	12/1	5/1	7/1
145	Harpichord (M.M.)	12/1	5/1	7/1
135	Harpichord (D.M.A.)	12/1	5/1	7/1
205	Oboe (M.M.)	1/1	5/1	9/1
202	Oboe (D.M.A.)	1/1	5/1	9/1
229	Organ (M.M.)	12/1	5/1	7/1
220	Organ (D.M.A.)	12/1	5/1	7/1
248	Percussion (M.M.)	1/1	5/1	9/1
243	Percussion (D.M.A.)	1/1	5/1	9/1
271	Piano (M.M.)	12/1	5/1	7/1
263	Piano (D.M.A.)	12/1	5/1	7/1

Admission Application Deadlines

Code No.	Program	Admission Application Deadlines		
		Spring 1993	Summer 1993	Fall 1993
328	Saxophone (M.M.)	1/1	5/1	9/1
317	Saxophone (D.M.A.)	1/1	5/1	9/1
344	Trombone (M.M.)	1/1	5/1	9/1
342	Trombone (D.M.A.)	1/1	5/1	9/1
369	Trumpet (M.M.)	1/1	5/1	9/1
359	Trumpet (D.M.A.)	1/1	5/1	9/1
389	Tuba (M.M.)	1/1	5/1	9/1
383	Tuba (D.M.A.)	1/1	5/1	9/1
432	Viola (M.M.)	12/1	5/1	7/1
422	Viola (D.M.A.)	12/1	5/1	7/1
452	Violin (M.M.)	12/1	5/1	7/1
446	Violin (D.M.A.)	12/1	5/1	7/1
6	Violoncello (M.M.)	12/1	5/1	7/1
670	Violoncello (D.M.A.)	12/1	5/1	7/1
409	Vocal Arts (M.M.)	12/1	5/1	7/1
403	Vocal Arts (D.M.A.)	12/1	5/1	7/1
716	Nursing (M.S.)	12/1	5/1	8/1
854	Occupational Science (Ph.D.)	*	*	*
146	Occupational Therapy (M.A.)	*	*	*
107	Ocean Engineering (M.S.)	12/1	5/1	7/1
129	Operations Research Engineering (M.S.)	12/1	na	7/1
187	Pathobiology (Ph.D.)	9/1	na	4/1
654	Petroleum Engineering (M.S.)	12/1	5/1	7/1
647	Petroleum Engineering (E.P.T.E.)	12/1	5/1	7/1
657	Petroleum Engineering (Ph.D.)	12/1	5/1	7/1
584	Pharmaceutical Sciences (M.S.)	10/15	na	4/1
588	Pharmaceutical Sciences (Ph.D.)	10/15	na	4/1
375	Pharmacology and Nutrition (Ph.D.)	na	na	4/1
355	Philosophy (M.A.)	na	na	3/1
369	Philosophy (Ph.D.)	na	na	2/1
624	Physical Therapy (M.P.T.)	na	na	1/15
465	Physics (M.A.)	12/1	5/1	7/1
481	Physics (M.S.)	12/1	5/1	7/1
489	Physics (Ph.D.)	12/1	5/1	7/1
244	Physiology and Biophysics (Ph.D.)	na	na	6/1
493	Planning (M.Pl.)	12/1	na	7/1
509	Planning (Ph.D.)	11/1	na	6/1
794	Planning/Architecture (M.Pl./M.Arch)	11/1	na	3/1
792	Planning/Landscape Architecture (M.Pl./M.L.Arch.)	11/1	na	3/1
506	Planning Studies (M.S.)	12/1	na	7/1
208	Political Economy and Public Policy (Ph.D.)	12/1	5/1	7/1
518	Political Science (M.A.)	11/1	4/1	2/1
528	Political Science (Ph.D.)	11/1	4/1	2/1
806	Preventive Medicine (Health Behavior Research) (Ph.D.)	na	na	2/1
568	Professional Writing (M.P.W.)	12/1	5/1	7/1
610	Psychology (Ph.D.)	na	na	12/31

Admission Application Deadlines

Code No.	Program	Admission Application Deadlines		
		Spring 1993	Summer 1993	Fall 1993
11	Public Administration (M.P.A.)	12/1	5/1	7/1
3	Public Administration (D.P.A.)	10/15	na	2/15
	<i>Sacramento Program: 6/1</i>			
	<i>Washington, D.C. Program: 10/15</i>			
20	Public Administration (Ph.D.)	10/1	na	2/1
	Public Administration—Certificates			
870	Training and Human Resources Development (Certificate)	12/1	5/1	7/1
862	Local Agency Financial Administration (Certificate)	12/1	5/1	7/1
899	County Treasurers and Tax Collectors Management (Certificate)	12/1	5/1	7/1
856	Administration of Programs in Long-Term Care (Certificate)	12/1	5/1	7/1
887	Executive Administration of Mental Health Programs (Certificate)	12/1	5/1	7/1
888	Management of Ambulatory Care Systems	12/1	5/1	7/1
924	Public Art Studies (M.P.A.S.)	na	na	4/1
709	Public Policy (M.P.P.)	12/1	5/1	7/1
540	Public Relations (M.A.)	11/15	na	4/1
705	Real Estate Development (M.R.E.D.)	na	3/1	na
67	Religion (Social Ethics)(M.A.)	na	na	7/1
76	Religion (Social Ethics)(Ph.D.)	na	na	7/1
928	Safety and Health (M.S.)	12/1	5/1	8/1
195	Slavic Languages and Literatures (M.A.)	12/1	na	7/1
781	Slavic Languages and Literatures (Ph.D.)	12/1	na	7/1
264	Social Work (M.S.W.)	na	na	4/1
272	Social Work (Ph.D.)	na	na	7/1
213	Sociology (M.A.)	12/1	na	7/1
237	Sociology (Ph.D.)	12/1	na	7/1
230	Sociology (Applied Demography)(M.S.)	12/1	na	7/1
222	Sociology (Criminology)(M.S.)	12/1	na	7/1
283	Spanish (M.A.)	na	na	5/1
293	Spanish (Ph.D.)	na	na	5/1
905	Systems Architecture and Engineering (M.S.)	9/1	1/1	2/1
391	Statistics (M.S.)	12/1	na	7/1
201	Systems Management (M.S.)	12/1	5/1	8/1
	Theatre			
	Areas of Emphasis:			
908	Acting (M.F.A.)	na	na	4/1
910	Directing (M.F.A.)	na	na	4/1
911	Playwriting (M.F.A.)	na	na	4/1
915	Theatrical Design (M.F.A.)	na	na	4/1

School of Medicine

Case Western Reserve University  
10900 Euclid Avenue  
Cleveland, Ohio 44106-4945  
(216) 368-3197  
FAX (216) 368-3970

## **DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS**

The Department of Epidemiology and Biostatistics contains the disciplines that form the scientific foundation for public health research and education. These include: 1) Biostatistics: the science concerned with the design and analysis of biomedical research in humans and in laboratory experiments. Biostatistical theory forms the basis for the analysis of data in experiments from selected human populations and the generalization of the results to all human beings. 2) Epidemiology: the science dealing with the search for factors causing disease in humans and the study of the occurrence and distribution of diseases in human populations. A subspecialty is environmental epidemiology, which focuses on the impact of environmental contaminants on humans. Another relevant subspecialty is infectious disease epidemiology where the impact of infections and immunization on populations and their importance in preventing diseases is studied. The field of epidemiology is also concerned with the education of the public and strategies for adopting healthy behavioral practices. The results of large epidemiological studies have formed the basis of intervention programs that have reduced the incidence of disease, increased the quality of life and extended life. 3) Health Services Research is the discipline concerned with the evaluation of all aspects of the nation's health care delivery system. The system in the United States is concerned with the cost and quality of care along with the geographic variation in delivery of care.

Traditionally medical education focuses on the diagnosis and treatment of individual patients, however the disciplines of biostatistics, epidemiology and health services research deal with the diagnosis and analysis of health issues in large human populations. The results of studies in humans in these fields have had an enormous impact on the behavior of the American population. One example is the decrease in cigarette smoking and the elimination of cigarette smoking from public buildings in our society. Another visible example is the change in the American diet, away from fat and cholesterol.

The faculty are engaged in various research projects in these complementary disciplines. Use of computers and the management and handling of large data sets with information relevant to human health is another important supportive discipline in the Department. The faculty conducts collaborative research with the basic and clinical science departments of the School of Medicine. The department provides a broadbased environment for graduate students to develop a background in the above scientific disciplines in the public health area. This training will ultimately provide the student with the opportunity to pursue a career in research, teaching, or health related institutions, such as, departments of public health, hospitals, the pharmaceutical industry and other health care provider organizations.

### **GRADUATE PROGRAMS**

The department offers graduate programs leading to the Master of Science, Doctor of Philosophy and combined Doctor of Medicine-Doctor of Philosophy degrees. Students choose an area of concentration in one of the disciplines represented in the department: biostatistics, epidemiology, or health services research. Although an undergraduate degree is not offered, the department participates

differentiate various disease states, or to elicit etiologic and pathophysiologic mechanisms. Other studies may be experimental, for example, intervention studies to evaluate therapy, or observational controlled studies such as case-control studies. Knowledge gained from clinical epidemiologic studies is applied to the individual patient for diagnostic, prognostic and treatment purposes. The predictive value of laboratory and other diagnostic procedures is based primarily on clinical epidemiologic studies as is assessment of the utility of alternative methods of treatment, for example medical vs. surgical treatment of a condition.

### *Health Services Research*

Health Services Research is a multidisciplinary examination of the psychological, social, political and economic forces that affect the organization, delivery and use of health care services, especially in relation to its costs and benefits. Its results are directly applicable to the formation and evaluation of health policy under resource constraints, the management of health systems, and the accessibility and quality of health care services. The doctoral program is designed to prepare professionals for leadership roles in health services research, management, and/or policy. The program prepares graduates to conduct sophisticated studies and examine complex policy options using a wide range of quantitative and qualitative analytic techniques. The graduate is equipped for career opportunities in academic organizations, hospitals, government agencies, research institutes, health care consortiums, large industrial corporations, insurance companies and foundations.

In addition to course work in biostatistics, epidemiology, research methods, students take course work emphasizing theory and principles of health services research, cost/benefit and cost/effectiveness analysis, data management, decision analysis, decision support systems, meta analysis, psychometrics, survey research methodology, outcomes assessment, health care policy, and total quality management. Specific areas of interest such as decision sciences, statistics and evaluation, public health, and quality improvement are reinforced through electives and interchange through seminars, colloquia, journal clubs, and ongoing involvement with faculty on research projects.

## **THE MASTER OF SCIENCE PROGRAM**

### **Entry into Master's Program**

In addition to the requirements of the School of Graduate Studies, the equivalent of 6 graduate level semester hours of course work must be completed in a single area of science, behavioral, biological or social, either prior to matriculation or during the course of study for the Master's degree. Choice of the formal course work or successfully passing an examination within the chosen area of science is made on recommendation of the student's advisor and approval by the departmental Graduate Studies Committee. No more than 3 hours of graduate level course work in these areas may count toward the minimum required for the Master's degree.

### **Master of Science Course Work (36 hours)**

The Master's degree usually requires 36 hours of credit; on recommendation of the student's advisor and approval by the Graduate Studies Committee, a minimum of 30 hours is acceptable. At least 12 hours of common core courses are required of all students regardless of area of concentration. Each area of concentration has additional core courses and electives. A thesis (Plan A) is recommended for

EPBI	415	Health Sciences Information Systems
EPBI	435	Survival Data Analysis
EPBI	442	Biostatistics II
EPBI	443	Applied Multivariate Analysis
EPBI	445	Statistics in Health Sciences Research
EPBI	446	Categorical Data Analysis
EPBI	450	Clinical Trials and Intervention Studies
EPBI	464	Decision Support Systems
EPBI	495	Observational Methods in Chronic Disease Epidemiology
ANTH	480	Anthropology of Health and Illness
BAFI	420	Health Finance and Economics
MATH	591	Stochastic Processes I
MIDS	432	Health Care Information Systems
ORBH	407	Organizational Behavior and Analysis
SOCI	440	Social Research in Health Care Settings
SOCI	443	Medical Sociology
SOCI	448	Program Evaluation Research
STAT	488	Time Series Analysis
STAT	490	Reliability and Life Testing

### Additional Requirements

- A. EPBI 501 Graduate Seminar (0 credits) - registration each semester is required for attendance and participation in the weekly graduate seminar. Each student is expected to make one presentation each semester and is expected to earn a grade of "satisfactory". Students are expected to attend the department seminars.
- B. Demonstrated computer competence either by appropriate course work or work experience. Determination of computer competence is made upon the recommendation of the student's advisor and approval by the Graduate Studies Committee.

### Thesis Research (Plan A)

Students in Plan A are required to register for at least six hours (usually 3 hours per semester) in EPBI 651 (M.S. Thesis Research). However, they are exempt from the core Practicum requirement. A thesis committee, consisting of three faculty members, is customarily chaired by the student's faculty advisor.

This committee must meet to evaluate the student's thesis proposal no later than the first semester of registration in EPBI 651. Unanimous approval is required for work on the thesis to progress. If the committee approves the proposal, it shall record its approval in writing. An individual, written thesis must then be prepared conforming to regulations concerning format, quality, and time of submission as established by the dean of graduate studies and research. Under Plan A, a final oral examination (defense) of the thesis is required, and the committee must agree unanimously that the student has passed the thesis examination.

### Admission to Candidacy

Admission to candidacy is contingent upon successful completion of at least 18 hours of Ph. D. course work, as well as passage of the General Examination. The General Examination shall be given no sooner than completion of at least 18 hours of Ph.D. course work and no later than completion of 6 credit hours of EPBI 701 - Dissertation Research, Ph. D.

### General Examination

The General Examination is administered by three faculty members of the department and chaired by the thesis advisor. The examination covers Ph.D. course work within the area of discipline and should include at least three areas of concentration. The General Examination may also cover areas of weakness in Master's level core courses.

### Dissertation (18 hours)

A dissertation proposal must be written and defended before a Dissertation Examination Committee consisting of the student's thesis advisor, two additional members of the department and one member from outside the department. Once the proposal is approved, the student may commence to conduct independent research on her or his topic, leading to a written dissertation which must represent a significant contribution to existing knowledge. A student must register for at least 18 hours of EPBI 701, Dissertation Research, Ph. D.

**All requirements for both the Master of Science and Doctor of Philosophy degrees described within this prospectus are in addition to those required by the School of Graduate Studies.**

**EPBI 449. Mathematical Statistics II (3).** Hypothesis testing: Neyman-Pearson Lemma, - uniformly most powerful test, likelihood ratio tests, sequential tests. Exponential families. Rao Blackwell theorem. Linear models. Nonparametric methods. Multivariate normal distributions. Likelihood, repeated sampling, conditionality and other basic principles. Prerequisite: EPBI 448.

**EPBI 450. Clinical Trials and Intervention Studies (3).** Issues in the design, organization and operation of randomized controlled clinical trials and intervention studies. Topics covered will include: legal and ethical issues in the design; application of concepts of controls, masking and randomization; steps required for quality data collection; monitoring for evidence of adverse or beneficial treatment effects; elements of organizational structure; sample size calculations and data analysis procedures; common mistakes. Prerequisites: Basic epidemiology and biostatistics.

**EPBI 451. Population Genetics (3).** The basic concepts of human population genetics (Mendelian population, selection, mutation, inbreeding and population structure) and genetic simulation. Prerequisites: EPBI 431, EPBI 432, And BIOL 310 or consent of instructor.

**EPBI 452. Statistical Method in Human Genetics (3).** Analytical methods for quantitative characters, polygenic inheritance, and pedigree risk analysis using computer simulation and pedigree analysis programs. Prerequisites: EPBI 451 or consent of instructor.

**EPBI 460 Health Research Methods I (3).** This is a course in research methods which focuses on practical issues in the conduct of epidemiological and health services research studies with an emphasis on survey research methods. Topics include: the interrelationship between theory and research; identifying and formulating epidemiological and health services research questions and hypotheses; research design; sampling strategies; measurement and operationalization; questionnaire design; interviewing; codebook construction; data editing and coding; secondary analysis; issues in the selection of database management and statistical analysis software; and political and ethical influences on research.

**EPBI 461 Health Research Methods II (3).** This course focuses on measurement strategies for key health services research concepts including case mix, severity of illness, functional status, and patient outcomes. The course will also examine the interplay between physician practice patterns, geography, standards of care, and practice guidelines and patient management and outcomes. Statistical methods especially useful in health services research (e.g., cost/effectiveness and cost/benefit analysis, conjoint analysis, utility assessment, and meta analysis) will be introduced. Approaches to the assessment of care quality (e.g., continuous quality improvement) will also be examined. Prerequisite: EPBI 460 or consent of instructor.

**EPBI 464. Decision Support Systems (3).** Review of methods for decision support in medicine. Review of existing methods for aiding decisions including artificial intelligence and statistical methods to

enhance diagnostic accuracy (Bayesian methods, classical multivariate analysis, etc.) Methods for improving the display of information. Theoretical and empirical limitations of these decision aids. Lab exercises include the use of expert system and statistical software. Prerequisite: MATH 491 or equivalent.

**EPBI 465. Clinical Decision Analysis (3).** This course covers the application of decision trees to clinical problems, estimation and revision of probabilities including Bayes Theorem, utility analysis, cost benefit and cost effectiveness, sensitivity analysis, ROC curves and microcomputer programs for clinical decision analysis. Prerequisite: Consent of the instructor.

**EPBI 466. Information Retrieval: Theory and Applications (3).** Deterministic and probabilistic approaches to information retrieval including Boolean, Brouwerian, Bayesian, Markovian, and non-Markovian models. Information theory and its relationship to information retrieval. Applications to the health sciences emphasizing retrieval of information from clinical observations, laboratory data, and the biomedical literature. Prerequisite: EPBI 431 or equivalent.

**EPBI 471. Special Topics in Biostatistics (3).** Sampling methods, bioassay, statistical genetics, multivariate analysis, sequential analysis, stochastic models. Prerequisite: EPBI 442.

**EPBI 490. Epidemiology (3).** (Also listed as ANES 490). Epidemiologic principles and methods needed to understand population-based statements of illness and health. Descriptive epidemiology, analytic epidemiology and epidemiologic inference. Classification, morbidity and mortality rates, sampling, screening, epidemiologic models, field trials, controlled epidemiologic surveys, sources of bias and causal models. Prerequisite: STAT 219 or consent of instructor.

**EPBI 491. Statistical Methods in Epidemiology (3).** Objectives and methods of epidemiologic research, measures of disease frequency, measures of association. Validity, bias, confounding. Options for control of extraneous variables, stratification, matching. Interaction and synergism. Modeling techniques, logistic regression procedures. Prerequisite: EPBI 432, 490 or consent of instructor.

**EPBI 492. Epidemiological and Experimental Methods in Cancer Research (3).** (Also listed as EVHS 507). In-depth consideration of the historical development of epidemiological and experimental methods for cancer risk factor assessment. Emphasis on the role of lifestyle in cancer causation as well as the development of preventive strategies. Prerequisites: EPBI 490 and consent of instructor.

**EPBI 493. The Epidemiology of Cardiovascular Disease (3).** This course will familiarize students with the known factors contributing to various forms of cardiovascular disease in industrialized nations. It will also introduce the concept of prevention and the influence of behavior modification upon patient's health. Prerequisite: EPBI 490 or equivalent.

# THE FACULTY AND THEIR RESEARCH

## PRIMARY FACULTY

**Saeid B. Amini**, Assistant Professor. Ph.D., University of Iowa, 1983 M.S., University of Iowa, 1980 M.S., Massachusetts Institute of Technology, 1979. Survival analysis, linear and log-linear models, robustness, statistical computing, data management and analysis of cardiovascular disease.

**Roger A. Bielefeld**, Senior Instructor. Ph.D., Case Western Reserve University 1992, M.S., Case Western Reserve University, M.A. Miami University. Database systems, data structures and file management. Expert systems technology applied to simulation modeling.

**Robert H. Binstock**, Professor of Aging, Health and Society. Professor of Biomedical Ethics. Professor of Medicine. Professor of Political Science. Professor of Sociology. Ph.D., Harvard University, 1965. Gerontology, health care policy.

**Steven J. Bowlin**, Assistant Professor. D.O., Ohio University, 1983. M.P.H., Columbia University, 1988. Cardiovascular epidemiology, preventive cardiology, chronic disease epidemiology, public health, epidemiology methods.

**Hegang Chen**, Senior Instructor. Ph.D, University of Illinois, 1993, M.S., University of Mississippi, 1987. Experimental design and survey sampling.

**Sara M. Debanne**, Associate Professor. Ph.D., 1976, M.S., 1972, Case Western Reserve University. Lic. Universidad de Buenos Aires, 1969. Mathematical and statistical models in epidemiology, cancer epidemiology, quality control of medical databases.

**Amasa B. Ford**, Professor. Professor of Medicine and Family Medicine. Associate Dean for Geriatric Medicine. M.D., Harvard Medical School, 1950. Geriatrics, health services, longitudinal survey of health and disability of Cleveland elderly, and infectious disease in the elderly.

**Robert S. Galen**, Associate Professor. M.D., Boston University, 1970, M.P.H., Columbia University, 1972. Medical decision making, artificial intelligence, computers in laboratory medicine, strategies for the use of laboratory tests.

**Nahida H. Gordon**, Associate Professor. Associate Professor of Surgery. Director, Biostatistics Core Facility, Cancer Research Center. Ph.D., Case Western Reserve University, 1980. M.S., University of Wisconsin-Madison, 1962. Finite mixtures to study heterogeneity in populations, cancer clinical trials, and cancer epidemiology.

**David L. Hom**, Assistant Professor. Assistant Professor of Medicine. Assistant Professor of International Health. Ph.D., University of Pittsburgh, 1987. M.A., State University of New York at Buffalo, 1983. HIV infection, AIDS epidemiology, behavior modification, epidemiologic methods.

**Paul K. Jones**, Associate Professor. Ph.D., 1972, M.S., 1969, University of Iowa. Regression analysis, logistic regression analysis, and discriminant analysis, with applications in health care and health services research.



## SECONDARY FACULTY

**Pamela J. Byard**, Assistant Professor. Assistant Professor of Pediatrics. Ph.D., University of Kansas, 1981. Genetic epidemiology, human population genetics, genetics of growth, growth and disease progression in cystic fibrosis.

**Randall D. Cebul**, Associate Professor. Associate Professor of Medicine. M.D., Yale University, 1976. Clinical epidemiology, clinical decision making, cost-benefit analysis.

**Seth Landefeld**, Associate Professor of Medicine, M.D. Yale University School of Medicine, 1979. Clinical Epidemiology, Health Services Research, Quality of Care, Quality Improvement.

**David G. Miller**, Associate Professor. Associate Professor of Medicine. Medical Director, Hough Norwood Health Centers. M.D., Western Reserve University, 1957. Quality and effectiveness of ambulatory care, preventive care, ambulatory care organization.

**Grace J. Petot**, Assistant Professor. Assistant Professor of Nutrition. M.S., Case Western Reserve University, 1972. Computer applications of nutrient composition of foods. Dietary intake methodology, evaluation of dietary intake in chronic diseases.

**Susan Redline**, Assistant Professor. M.D., 1979, Boston University School of Medicine, MPH, 1985, Harvard School of Public Health.

**Norman B. Rushforth**, Associate Professor. Professor and Chairman of Biology. Ph.D., 1966, M.S., 1958, Cornell University. Epidemiology and animal behavior.

**J.B. Silvers**, Professor. Professor of Finance. Ph.D., Stanford University, 1971. M.S., Purdue University, 1966.

**Kurt C. Stange**, Assistant Professor. Assistant Professor of Family Medicine. M.D. Albany Medical College, 1983. Ph.D. University of North Carolina School of Public Health, 1989. Disease prevention and health promotion, geriatrics, effective methods of integrating preventive services into primary care.

**Frits van der Kuyp**, Assistant Professor. Assistant Professor of Medicine. Tuberculosis Controller for Cuyahoga County. M.D., University of Surinam, 1958. M.P.H., University of Michigan, 1962. Epidemiology, clinical epidemiology.

**Stephen Wotman**, Professor. Professor of Community Dentistry. D.D.S., University of Pennsylvania, 1956, Education Chair-Institute for Urban Health, problems of urban populations, health promotion, health outcome evaluation, health policy, the changing health care system, public health education, academic preparation of the health professional.



**New York University**

**Graduate School of  
Arts & Science**

**Application  
for Admission**



# Admission



Applications are invited from students who hold a bachelor's degree and show promise of superior scholarly achievement. Applicants are evaluated on: academic record, statement of purpose, honors, and letters of recommendation from instructors qualified to evaluate academic ability and potential. Standardized test scores, writing samples, and practical experience may also be taken into account. Admission is made without regard to age, sex, sexual orientation, race, color, religion, physical disability, or national origin. New York University is an affirmative action/equal opportunity institution.

## Application Procedure

Address all applications and inquiries to:

**New York University**  
**Graduate School of Arts & Science**  
**Office of Admissions and Financial Aid**  
**P.O. Box 907, Cooper Station**  
**New York, New York 10003**  
**Telephone: (212) 998-8050**

It is the responsibility of each applicant to ensure that all supporting credentials are received by the Office of Admissions and Financial Aid. **These credentials become part of the permanent records of the Graduate School and will not be duplicated or returned for any reason.**

Application deadlines vary depending on the department or program and on whether financial aid is sought. Please consult the deadlines listed in this booklet.

Unless otherwise noted, all applicants must submit three letters of recommendation and have two copies of their final official transcript sent from each college or university attended, showing any degrees awarded. **Graduate Record Examination** scores are also required by the following departments: Anthropology, Biology, Computer Science, Economics, English, Environmental Health Sciences, Institute of Fine Arts, French, Institute of French Studies, Journalism, Physics, Politics, Psychology, Sociology, and some divisions of Basic Medical Sciences. The Departments of Chemistry, Computer Science, Environmental Health Sciences, and Physics require the GRE Advanced scores. An applicant seeking admission to any of the departments listed above should arrange to have test scores sent directly to the Office of Admissions and Financial Aid from the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey 08540 (ETS code R2596-5); telephone (609) 771-7670, and include the department on their GRE application. Additional credentials may be required by certain departments and programs. Consult your department of interest for details.

In most departments, an offer of admission to the Graduate School is valid for three semesters: the one in which the student is initially accepted and two subsequent

semesters, including the summer session. A student who fails to register within three semesters must submit another application. In departments which accept students only for the fall semester, the student is permitted to register only for the semester indicated.

## Classification of Admission

A **matriculant** is a full- or part-time student seeking a graduate degree or certificate who must satisfy all conditions set forth by the Graduate School and the department or program.

A **non-matriculant** is a student who is not seeking a degree or certificate. A non-matriculant must apply by the same deadline as a student seeking matriculation.

## Full-Time Status

A student who has not completed all course requirements for a degree must register for no fewer than 12 points or the equivalent per semester during the academic year and no fewer than 6 points during each of the two summer sessions to maintain full-time status. Equivalents may be granted for scholarly responsibilities such as teaching fellowships, supervised research on a thesis, required internship, preparation for departmental comprehensive or qualifying examinations, and preparation for foreign language examinations.

## Visiting Students

A matriculated student in a degree program outside New York University may take up to 12 points as a visiting student in the Graduate School. Courses taken must be applicable toward a graduate degree at the student's home institution. Applicants as Visiting Students must have the written approval of the dean or a similarly authorized official at their home institution and must complete two copies of the "Visiting Student Permit to Register," available from the Office of Admissions and Financial Aid. Admissions procedures for visiting students in the summer are described in the **Summer Bulletin**. Call (212) 998-8170 for more information.

## Special Students

Various courses in the Graduate School are open to qualified individuals as special students. As a non-matriculated student, no more than 12 points can be taken. Interested applicants must have a minimum GPA of 3.0 from a U.S. or Canadian institution, and show proof of baccalaureate at registration. Call the Office of Admissions and Financial Aid at (212) 998-8050 for information.

Applicants interested in taking courses *during the summer session only* should complete and submit the brief application form in the **Summer Bulletin**. Call (212) 998-8170 for more information.

## Auditors

Students matriculated at New York University may officially audit courses in certain departments of the Graduate School of Arts & Science. Students not enrolled at the University may also audit courses in certain departments with the permission of the instructor.

Prospective students may audit selected courses at a greatly reduced rate in the following departments: Anthropology, English, French, History, Italian, Philosophy, and Spanish and Portuguese. For further information, contact the Office of Admissions and Financial Aid, (212) 998-8050; see also the **Bulletin**.

Matriculated students at the University, with the instructor's permission, may unofficially audit courses within their departments. Courses unofficially audited do not appear on students' transcripts.

Admissions procedures for auditors in the summer sessions are described in the **Summer Bulletin**.

## Transfer Credit

Advanced standing may be recommended by the department in which the student is accepted within the first six months of attendance. Credit may be evaluated for courses at other graduate institutions equivalent to those offered by the Graduate School, completed with a grade of B or the equivalent.

A maximum of 8 points can be awarded toward the master's degree, provided they have not been applied toward a prior degree, and a maximum of 40 points toward the doctorate. Approval of transfer points is subject to regulations governing residence and time limitations.

## Admission of Students with Foreign Credentials

An applicant is considered a foreign student when he or she is (1) an alien holding an F or J visa regardless of educational background, or (2) a U.S. citizen, permanent resident, or non-resident alien who has studied in an educational system outside the United States. See the calendar in this booklet for application deadlines. All supporting documents in languages other than English must be accompanied by certified English translations. Since New York University cannot accept checks drawn on foreign banks, the \$30 application fee must be in the form of an international money order or monetary coupon.

In most cases, a student whose native language is not English must submit scores of the Test of English as a Foreign Language (TOEFL), administered in the U.S. and foreign countries by the Educational Testing Service, P.O. Box 6151, Princeton, New Jersey 08541-6151;



## Financial Aid

(212) 750-8050. The scores should be sent to the Office of Admissions and Financial Aid directly from the Educational Testing Service. The student may be further tested on arrival at the University. If the student's English is not adequate, he or she will be required to register for non-credit English courses.

Applicants in the New York area may take the English proficiency test of the University's American Language Institute, 1 Washington Square North, New York, New York 10003. An appointment to take the test may be arranged by calling (212) 998-7040.

Please note that in order to obtain a visa, a foreign student must be a full-time student. All services pertaining to student visas and orientation are administered by the Office of International Students and Scholars, 21 Washington Place, second floor, New York, New York 10003; telephone (212) 998-4720. For information regarding foreign academic credentials and University academic programs, consult the Foreign Credentials Evaluator at 6 Washington Square North, New York, New York 10003; (212) 998-8050.

### Summer Programs

The Graduate School offers a wide variety of courses in its two summer sessions. General information and the **Summer Bulletin** may be obtained by calling the Arts & Science Summer Programs Office at (212) 998-8170. Students who have been accepted may, in most cases, begin in the summer, and should consult their departmental adviser for registration procedures.

Financial aid awards are offered only to students enrolled in degree or certificate programs and, in some cases, only to full-time students. Awards are made on the basis of scholastic merit, financial need, or both. The amount of the award is based on the number of courses for which a student intends to register. Foreign students who are not permanent U.S. residents are eligible for teaching and research assistantships, university fellowships, and scholarships, but not federal loans or work-study programs. Students must be accepted for admission before financial aid can be awarded. Award announcements are usually made between April 1 and May 1.

### Scholarships, Loans, and Student Employment

#### University Awards

**University Scholarships and Fellowships** are offered in most academic departments of the Graduate School. Scholarships provide partial or full tuition remission; fellowships provide a stipend, to which full or partial tuition remission may be added.

**Graduate Assistantships, Research Assistantships, and Teaching Fellowships** are available in certain departments. They provide tuition remission for up to 24 points and a stipend. Assistantships and teaching fellowships are awarded primarily on the basis of merit. All applicants for assistantships should contact the department directly for instructions and departmental applications. Assistants and teaching fellows are ineligible to receive scholarships, fellowships, the Perkins Loan (NDSL), or College Work-Study, and must, if eligible, apply for the Tuition Assistance Program.

**GSAS Developmental Fellowships** provide a \$9,300 stipend (in 1990-91) and 24 points of tuition remission to outstanding incoming doctoral candidates in certain departments, and may be continued beyond the first year.

**Multi-year Fellowships** provide a stipend of \$10,000 and tuition remission, guaranteed for three years. Departments nominate their most outstanding incoming doctoral candidates to the Graduate School Financial Aid Committee. Awards are made based solely on academic credentials.

**Resident Assistantships.** Resident Assistants reside in the undergraduate residence halls. They are responsible for organizing, implementing, and evaluating social and educational activities, and receive a stipend which includes free room and a meal plan. Since the stipend may affect the federal financial aid package, candidates should consult their financial aid counselor.

Applications and further information may be

obtained by contacting the Housing Office, New York University, 8 Washington Place, New York, New York 10003; (212) 998-4600.

**Other financial aid awards** are available to graduate students. For further information, contact the Office of Admissions and Financial Aid, Graduate School of Arts & Science, New York University, P.O. Box 907, Cooper Station, New York, New York 10003; (212) 998-8050.

#### Non-University Awards

Students interested in government, foundation, private, or overseas awards are encouraged to inquire at the Office of Admissions and Financial Aid by early fall of the year before they wish to apply. Many external awards, including those listed below, are available, and a special adviser is available to counsel students about these opportunities.

**New York State Tuition Assistance Program** provides awards to eligible legal residents of New York State enrolled in a full-time degree program. The award varies, depending on net income and tuition cost. All financial aid applicants at the Graduate School who are eligible are expected to apply. If you have filed the New York State FAF with CSS and completed the State Aid section, you have applied for TAP. For further information, write to the New York State Higher Education Services Corporation, 99 Washington Avenue, Albany, New York 12255. An application may be obtained from the State Aid Section of the Bursar's Office, 203 Main Building, or the New York University Financial Aid Office, 23 West Fourth Street, New York, NY 10012; (212) 998-4444.

**New York State Fellowships** are awarded for study in social sciences and in public or international affairs. For information, write to the New York State Higher Education Services Corporation, 99 Washington Avenue, Albany, New York 12255.

### Loan Programs

The University administers two loan programs supported by the federal government. These are low-cost loans whose repayment schedules may be deferred or cancelled in part, according to the various terms specified.

**Perkins Loan (formerly NDSL).** The University determines eligibility for the Perkins Loan. Students cannot apply for it directly.

**Robert T. Stafford Student Loan Program (formerly GSL)** provides low-interest student loans using the capital of lending institutions and the administrative facilities of state agencies. When New York University is unable to provide a student with loan assistance, the student's financial aid package may include a "suggested guaranteed student loan" amount. This loan is made by an independent bank or lending institution and is insured by both the

# Application Deadlines



state and federal governments. Students are subject to a needs test (FAF or FFS) to determine loan eligibility. Applications and information are available at participating lending institutions (banks, savings and loan associations).

**Supplemental Loans for Students (SLS, formerly ALAS)** enables graduate and professional students to borrow *in addition* to amounts borrowed under the Stafford Student Loan Program. To apply for a Supplemental Loan (SLS), contact a participating lending institution.

**Parent Loans for Undergraduate Students (PLUS)** are now available for parent borrowers of dependent graduate/professional students in addition to amounts borrowed under the Stafford or SLS programs, subject to lender approval.

## Benefits for Veterans

In many cases, a variety of educational benefits are available to veterans, their families, and in-service personnel. For further information or assistance in filing for education benefits, students are welcome to contact the Veterans Counseling Service in the Office of the Registrar, 201 Main Building, (212) 998-4800.

## Part-Time Employment

The **College Work-Study Program** is supported by both federal and University funds and is administered by the University. Maximum earnings from this program are assigned as part of the financial aid package drawn up by the University. Students normally work an average of 20 hours per week during the school term and up to 35 hours per week during vacations and summer.

**New York University.** The University's Office of Student Employment, located at 21 Washington Place, third floor; (212) 998-4433, posts job listings of part-time job opportunities both on and off campus. Other sources of part-time employment opportunities, such as specialized internship programs, may be obtained from the chairman of the department in which the student is admitted.

**New York City.** Many students are eager to work for the chance to gain experience in a field that they may wish to pursue after graduation, as well as for the income they obtain.

Unless a special departmental deadline is indicated below, applications must be received or postmarked as follows:

## Fall Term

Admission with financial aid—foreign students	December 15
Admission only—foreign students	April 1
Financial aid—continuing students	January 27
Admission with financial aid—new students	January 15
Admission only—new students	June 1

## Spring Term

Admission only—foreign students	November 3
Admission only—new students	December 1

## Summer Term

Admission only—foreign students	April 1
Admission only—new students	May 4

## Special Admission Deadlines:

Applications as specified below must be postmarked by the accompanying dates. Although these deadlines do not refer to the date of receipt of credentials, they should follow as soon as possible.

### Basic Medical Sciences:

Sackler Institute	March 16
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### Computer Science, Mathematics:

Fall admission with financial aid	December 15
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### Creative Writing Program:

All applicants	January 15
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### Fine Arts:

M.A. and Ph.D. admission (fall admission only)	January 15
Conservation Program (fall admission only)	January 15
Curatorial Studies Program (fall admission only)	January 15

### History:

Applications received before April 15 will receive priority. Those received after that date cannot be guaranteed consideration for the following fall term.

### Institute of French Studies:

M.A., Ph.D., and Certificate Programs (fall admission only)	April 15
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### Journalism and Mass Communication:

Fall admission	May 4
Spring admission	October 1
Science and Environmental Reporting (fall admission only)	May 18

### Psychology:

Clinical Ph.D. Program (fall admission only)	January 15
All other Ph.D. programs (fall admission only)	February 1
Postdoctoral Clinical Program (fall admission only)	March 16
Postdoctoral Program in Psychotherapy and Psychoanalysis (fall admission only)	January 15



# Tuition, Fees, and Expenses

The figures shown are for the 1990-91 academic year. An increase for following academic years should be anticipated; please call the Office of Admissions and Financial Aid at (212) 998-8050 for updated information.

## Tuition

The Board of Trustees of New York University reserves the right to alter this schedule without notice.

Application fee, non-returnable	\$	30.00
Tuition, per point, per term (includes a \$30.00 non-returnable registration, services, and academic support fee)	\$	425.00
Tuition, per academic year (24 points with fees)	\$	10,200.00
Tuition, NYU in Spain, per academic year	\$	8,745.00
Tuition, NYU in France, per academic year	\$	8,745.00
Late registration fee	\$	25.00
Late payment of tuition fee	\$	25.00
Deferred payment of tuition fee	\$	25.00
Special Auditing Fee	\$	235.00
Health Services Fee	\$	25.00

## Estimate of Expenses

For full-time students, based on 1990-91 figures

	for students not living at home	for students living at home
<b>Tuition per year</b>	\$ 10,200.00	\$ 10,200.00
<b>Living expenses</b> —(room, meals, books and supplies, clothing, laundry, and other incidentals)	\$ 9,950.00	\$ 3,825.00
<b>Total</b>	\$ 20,150.00	\$ 14,025.00

Tuition must be paid at registration. Holders of New York State Regents Fellowship Awards and Tuition Assistant Program Awards enrolled full time will be allowed credit toward tuition if an award certificate is presented at registration. Students who receive awards after registration will be issued a check by the University after payment is received and the Registrar's Office confirms eligibility.

The Graduate School offers deferred payment of tuition during fall and spring registration to fully matriculated students who register for at least 6 points per semester, as long as they are U.S. citizens or permanent residents and not recipients of financial aid.

# Codes: Fields of Study

Use these codes to indicate the department, program, and option for which you are applying on all application forms.

## Full Name of Department, Program, and/or Option

## Codes PROGRAM OPTION

<b>American Civilization (212) 998-8627</b> American Civilization (MA, PHD)	AMCV	AMC
<b>Anthropology (212) 998-8550</b> Anthropology (MA, PHD) Archeological Anthropology Cultural Anthropology Historical Archeology (PHD only) Physical Anthropology Urban Anthropology Anthropology—Concentration in Near Eastern Studies (PHD only) Anthropology of Language Anthropology/French Studies (Joint PHD) Ethnographic Film (with Department of Cinema Studies) (Certificate)	ANTH ANTH ANTH HIST ANTH ANTH ANTH ANTH ANTH ANTH ANTH	ANT ANR ANC ANH ANP ANU ANN ANL ANF ANE
<b>Applied Science (212) 998-8995</b> Applied Science Energetics (MS, PHD) Energetics—Economics (MS only) Fluid Dynamics and Atmospheric Sciences (MS, PHD)	APSC APSE APSR APSF	APS APG APC APF
<b>Biology (212) 998-8200</b> Biology (MS, PHD) Anatomy Applied Recombinant DNA Technology Biochemistry (at College of Dentistry) Biology/Environmental Health Sciences (Joint PHD) Biomedical Journalism (MS) Computers in Biological Research (MS) Histology and Cell Biology (at College of Dentistry) Microbiology (at College of Dentistry) Physiology (at College of Dentistry)	BIOL BIOL BIOL BIOL BIOL BIOL BIOL BIOL BIOL BIOL BIOL	BIO BDA BIA BDB BIE BIM BIU BDH BDM BDP
<b>Basic Medical Sciences (School of Medicine) (212) 340-5648</b> Basic Medical Science/Medicine (Joint MD/PHD) Biochemistry (at School of Medicine) (PHD) Cellular and Molecular Biology (at School of Medicine) (PHD) Environmental Oncology (MS) Microbiology (at School of Medicine) (PHD) Parasitology (at School of Medicine) (PHD) Path, Path/Immuno, Path/Viral & Chem Oncol, Path/Cell & Molec (PHD) Pharmacology (at School of Medicine) (PHD) Physiology and Biophysics (at School of Medicine) (MS)	BMSM BMSB  BMSC BMSB BMSM BMSR  BMSH BMSP BMSY	JBD BMB  BML EHO BMM BMR  BMP BNC BMS
<b>Chemistry (212) 998-8400</b> MS and PHD degrees offering programs in: Bioorganic Chemistry Biophysical Chemistry Experimental Physical Chemistry Inorganic Chemistry Organic Chemistry Theoretical Physical Chemistry	CHEM CHEM CHEM CHEM CHEM CHEM	CHB CHP PHC INO ORG PHT
<b>Cinema Studies (212) 998-1600</b> Cinema Studies (MA, PHD)	CINE	CIN
<b>Center for Latin American and Caribbean Studies (212) 998-8686</b> Latin American and Caribbean Studies (MA)	CLAC	CLC



**Classics (212) 998-8590**  
Classics (MA, PHD)

CLAS CLA

**Comparative Literature (212) 998-8790**  
Comparative Literature (MA, PHD)

COLI CLI

**Computer Science (212) 998-3000**

Computer Science (MS, PHD)  
Computer Science—Preparatory Accelerated Course (PAC)  
(ND or MA)

CSCI CSC

CSCI PAC

**Dental Materials Science (212) 998-9636**

Dental Materials Science (MS)

DMSC DMS

**Economics (212) 998-8900**

Applied Economic Analysis (Certificate)  
Economics (MA, PHD)  
Economics—Energetics (MA)  
Law/Economics (Joint MA/JD)  
Medicine/Economics (Joint MD/PHD)

ECOA ECA

ECON ECO

ECOE ECE

ECON JLE

ECON JEM

**Environmental Health Sciences (212) 340-5280**

Aquatic Ecology and Toxicology (PHD)  
Environmental Carcinogenesis (PHD)  
Environmental Epidemiology (PHD)  
Environmental Health Sciences (general/undecided)  
(MS, PHD)  
Environmental Health Sciences/Biology (Joint PHD)  
Environmental Radiation (PHD)  
Environmental—Occupational Hygiene and Toxicology  
Molecular Toxicology (PHD)  
Systematic Toxicology (PHD)  
Ergonomics and Biomechanics (PHD)

EHSC EHQ

EHSC EHC

EHSC EHE

EHSC EHS

EHSC EHB

EHSC EHR

EHSC EHH

EHSC MOT

EHSC SYT

EHSC EAB

**English (212) 998-8800**

Creative Writing—Fiction (MA)  
Creative Writing—Poetry (MA)  
English—English and American Literature (MA, PHD)  
Poetics (MA, PHD)

ENGL CWF

ENGL CWP

ENGL ENG

ENGL POE

**French (212) 998-8700**

French—Studies in Romance Languages and Literatures  
(MA, PHD)  
French Language and Civilization (ND, MA)  
French Literature (MA)  
French/Institute of French Studies (Joint MA/PHD)  
NYU in France (MA)

FREN FRC

FREL FRE

FREM FRL

FREN JFF

FREL NYF

**Germanic Languages and Literatures (212) 998-8650**

Germanic Languages and Literatures (MA, PHD)

GERM GER

**History (212) 998-8600**

History (MA, PHD)  
Archival Management (Certificate)  
European History  
Historical Archeology (PHD)  
History—Latin American and Caribbean  
History—Near Eastern  
History/French Studies (Joint PHD)  
History/Law (Joint MA/JD)  
Public History  
United States History  
Women's History (MA)

HIST HIS

HISA HIA

HIST EUR

HIST ANH

HIST HCL

HIST HIN

IFSH JHF

HIST JHL

HISP HIP

HIST USH

HIST WOM

**Hebrew and Judaic Studies (212) 998-8980**

Hebrew and Judaic Studies (MA, PHD)

HJST HJS

**Institute of Fine Arts (212) 772-5800**

History of Art and Archeology (MA, PHD)  
Institute of Fine Arts—Conservation (Certificate, MA)  
Curatorial Studies (Certificate, MA)

IFAH IFA

IFAC IFC

CURA CUR

**Institute of French Studies (212) 998-8740**

French Studies at Institute of French Studies (MA, PHD)  
French Studies/Anthropology (Joint PHD)  
French Studies/Business Administration (Joint MA/MBA)  
French Studies/History (Joint PHD)  
French Studies/Politics (Joint PHD)  
French Studies/Sociology (Joint PHD)  
Institute of French Studies/French (Joint MA/PHD)  
Law/French Studies (Joint MA/JD)  
French Studies/Journalism (Joint MA)

IFST IFS

IFSA ISA

IFST JFG

IFSH ISH

IFSP ISP

IFSS ISS

IFST JFI

IFST JLF

IFST JFJ

**Italian (212) 998-8730**

Italian—Studies in Romance Languages and Literatures  
(MA, PHD)  
Italian Language and Civilization (ND, MA)  
Italian Life and Institutions

ITAL ITR

ITLC ITA

ITAL ILI

**Journalism and Mass Communication (212) 998-7980**

Broadcast Journalism (ND, MA)  
Journalism—Science and Environmental Reporting (MA)  
Journalism/Business Administration (Joint MA/MBA)  
Journalism/Near Eastern Studies (Joint MA)  
Magazine Journalism (ND, MA)  
Newspaper Journalism (ND, MA)

JOUR BRO

SERP SER

JOUR JJG

JOUN JOS

JOUR MAG

JOUR NEW

**Liberal Studies (212) 998-8070**

Liberal Studies (MA)  
Religion (Post MA Certificate)  
Social Theory (Post MA Certificate)

LIBS LIB

LIBC LIS

LIBC LIS

**Linguistics (212) 998-7950**

Linguistics (MA, PHD)

LING LIN

**Mathematics (212) 998-3000**

Math and Statistics—Operations Research (with GBA) (MS)  
Mathematics (MS, PHD)

MATS MAS

MATH MAT

**Music (212) 998-8300**

Early Music Performance (Certificate only)  
Ethnomusicology (MA)  
Musicology (MA, PHD)  
Music Theory Composition (MA only)

MUSE MUS

MUSI ETH

MUSI MSC

MUSI MTC

**Museum Studies (212) 998-8080**

Museum Studies (Certificate only)

MUST MUT

**Near Eastern Languages and Literatures (212) 998-8880**

Near Eastern Languages and Literatures (MA, PHD)

NELL NEL

**Near Eastern Studies (212) 998-8877**

Near Eastern Studies (ND, MA)  
Near Eastern Studies/Journalism (Joint MA)

NEST NES

NEST NEJ

**Center for Neural Science (212) 998-7780**

Neural Science (PHD)

NEUR NEU

**Performance Studies (212) 998-1620**

Performance Studies (MA, PHD)

PERF PER

**Philosophy (212) 998-8320**

Law/Philosophy (Joint JD/MA)  
Philosophy (ND, MA)

PHIL JLP

PHIL PHI

**Physics (212) 998-7700**

Physics (MS, PHD)

PHYS PHY



# Codes: Fields of Study

## Politics (212) 998-8500

Law/Politics (Joint MA/JD)	POLI	JLO
Politics (MA, PHD)	POLI	POL
Politics-Concentration in Near Eastern Studies (PHD)	POLI	JPN
Politics/Business Administration (Joint MA/MBA)	POLI	POG
Politics/French Studies (Joint PHD)	POLI	JFP
Politics/Medicine (Joint PHD/MD)	POLI	JPM

## Psychology (212) 998-7900

Clinical Psychology (PHD only)	PSYL	PSL
Community Psychology (MA, PHD)	PSYM	PSC
Experimental Psychology (PHD only)	PSYE	PSE
Industrial/Organizational Psychology (PHD only)	PSYI	PSI
Personnel Psychology (MA only)	PSYP	PSP
Psychology-General (MA)	PSYC	PSY
Social/Personality Psychology (PHD only)	PSYS	PSS
Clinical Post-Doctoral Psychology (Certificate)	PSYL	PSL
Postdoctoral Psychotherapy/Psychoanalysis (Certificate)	PSYA	PPP

## Religious Studies (212) 998-8893

Religious Studies (MA)	LIBR	LIR
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## Slavic Languages and Literatures (212) 998-8670

Slavic Languages and Literatures (ND, MA)	SLAV	SLA
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## Sociology (212) 998-8340

Law/Sociology (Joint MA/JD)	SOCI	JLS
Medicine/Sociology (Joint MD/PHD)	SOCI	JSM
Sociology (MA, PHD)	SOCI	SOC
Sociology/French Studies (Joint PHD)	JIFS	JFS

## Spanish and Portuguese Languages and Literatures (212) 998-8770

Hispanic Culture (MA)	SPAH	SPH
Latin American Literature (MA)	SPAN	SPC
NYU in Spain-Studies in Hispanic Civilization (MA only)	SPAN	NSC
NYU in Spain-Studies in Hispanic Literature (MA only)	SPAN	NSH
Portuguese & Brazilian Languages and Literatures (MA, PHD)	PORT	POR
Spanish Language and Literature (MA, PHD)	SPAN	SPL
Spanish Peninsular Literature (MA)	SPAN	SPP



# Application Instructions



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**1** Carefully detach all forms along the perforations. Please type or print all information requested and place completed forms and the application fee in the return envelope provided to **New York University, Graduate School of Arts & Science, Office of Admissions and Financial Aid, P.O. Box 907, Cooper Station, New York, New York 10003. (212) 998-8050.** Note: Please keep photocopies of all application materials for your records.

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## **2 Application Form**

All applicants must complete the application form.

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## **3 Application Fee**

Please include a thirty dollar (\$30.00) check or money order made payable to **New York University.** The application fee is non-refundable.

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## **4 Admissions File Form**

All applicants must complete and return this form with the application.

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## **5 Letters of Recommendation**

Three letters of recommendation are required of all applicants. The applicant should fill out the top portion of the forms. The remainder of each form preferably should be filled out by a faculty member who has instructed the applicant in the same field in which graduate study will be pursued, or in the field of study up to the time of applying. After completing the letter, each faculty member should return the form directly to the Graduate School Office of Admissions and Financial Aid, not to the applicant.

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## **6 Statement of Purpose**

All applicants must complete and return this form with the application.

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## **7 Receipt Verification Card**

All applicants should self-address this card, affix postage, and attach it to the back of the envelope provided for returning your application. The card will be returned to you verifying the date and time your application was received.

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## **8 Supplementary Form PSY**

Applicants to the **Department of Psychology** must complete and return this form with the application.

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## **9 Supplementary Form CS**

Applicants to the **Department of Computer Science** must complete and return this form with the application.

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## **10 Supplementary Form ECON**

Applicants for the **Ph.D. degree** in the **Department of Economics** must complete and return this form with the application.

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## **11 Transcripts**

All applicants must request that each college or university attended send official transcripts showing conferral of bachelor's degree in duplicate directly to the Graduate School Office of Admissions and Financial Aid at the address shown at the top of this page. Student copies may be sent with your application for initial screening purposes.

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## **12 Test Scores**

For departmental admission requirements, consult the **Bulletin** of the Graduate School of Arts & Science, or contact the department you are applying to directly.

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## **13 Writing Sample**

Applicants to Cinema Studies, Performance Studies, or the English Department Creative Writing Program must submit samples of their writing prior to applying, or at the time of application. Creative Writing Program applicants should contact the program at (212) 998-8816 regarding length and format of writing samples.

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## **14 Deadlines**

**Financial aid applicants must submit forms 2, 4, and 6 no later than January 15.** Deadlines refer to the date of postmarking (or office receipt of applications without postmarks). All other application deadline dates are listed in this booklet.

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## **15 Notification of Decision**

Written notification of the admissions decision will be mailed as soon as departmental evaluation of credentials is completed. Applicants should contact the Graduate School Admissions Office if, after eight weeks, they have not received notice of the status of their application.

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## **16 Financial Aid Application and Supporting Documents**

1. To be considered for departmental aid in the form of a fellowship, scholarship, or assistantship award, your application for admission is sufficient. These awards are based on academic merit, and your department will be reviewing your application for admission with this in mind. Please be advised that the academic qualifications for such awards vary from department to department.

2. If you are interested in applying for any federal or state aid (Stafford Student Loan, Perkin's Loan, College Work Study, etc.), a separate application procedure is required. To obtain the necessary forms for this, which are the **New York University Application for Financial Aid** and the **Family Financial Statement (FFS)**, please write to the following address:

New York University  
Office of Financial Aid  
23 West 4th Street  
New York, NY 10012

If you are a foreign student you are not eligible for federal or state aid.

## The Institute of Environmental Medicine



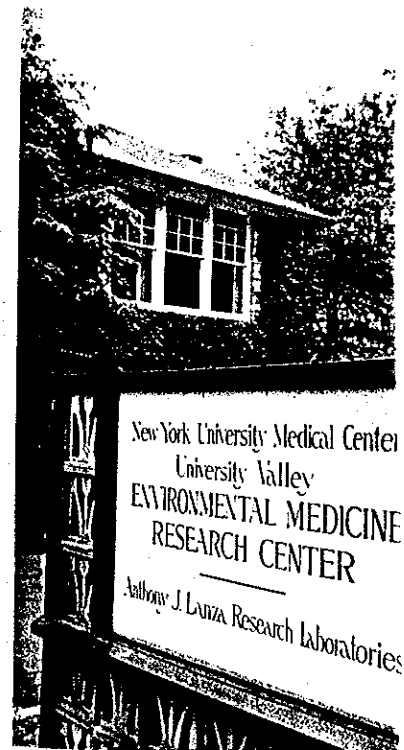
Above: Phase contrast micrograph of Syrian hamster cells which have phagocytized particles of nickel sulfide.

The Institute of Environmental Medicine of the New York University Medical Center is a diverse and dynamic research-oriented facility dedicated to the study of all aspects of environmental health sciences. The Institute offers a strong teaching and research program leading to both the Master of Science and Doctor of Philosophy degrees granted by the Graduate School of Arts and Science of New York University.

The Institute was founded in 1947, as a Division of Industrial Medicine dealing with the questions of health and safety in the occupational environment especially in regard to hazardous chemical and physical agents. With the multitude of environmental contamination and public health issues that began to arise in the early 1960s, the Institute assumed one of the leading roles as a center of both applied and basic environmental health research. Accordingly, a timely enlargement in faculty, staff, students and physical facilities soon followed. The Institute facilities are located at the NYU Medical Center in New York City and at the Anthony J. Lanza Laboratory in Tuxedo, NY. The 65,000 square foot Lanza Laboratory, located about 40 miles northwest of New York City, is situated within a 20,000 acre reserve known as Sterling Forest.

The mission of the Institute is principally to: 1) train graduate and medical students for careers in research, teaching and professional service, and 2) conduct research for the identification and control of environmental health hazards. To these ends, the Institute addresses a broad spectrum of areas in environmental health ranging from the biomedical and ecological effects of radiation and toxic chemicals to the causative mechanisms of cancer, arteriosclerosis, respiratory disorders and other environmentally related diseases.

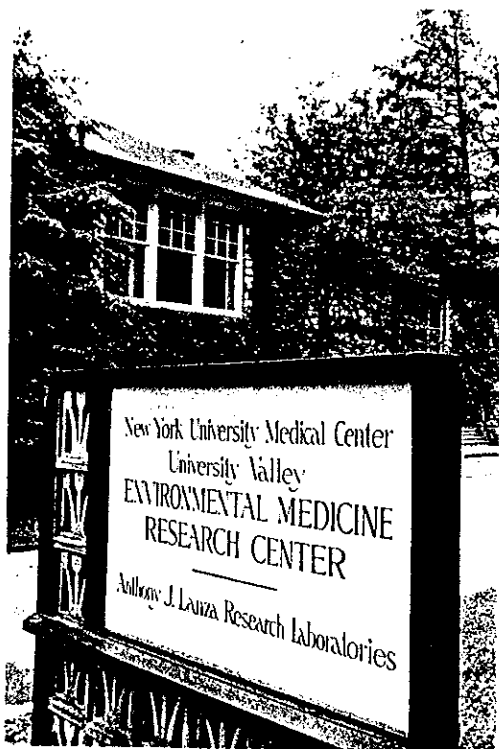
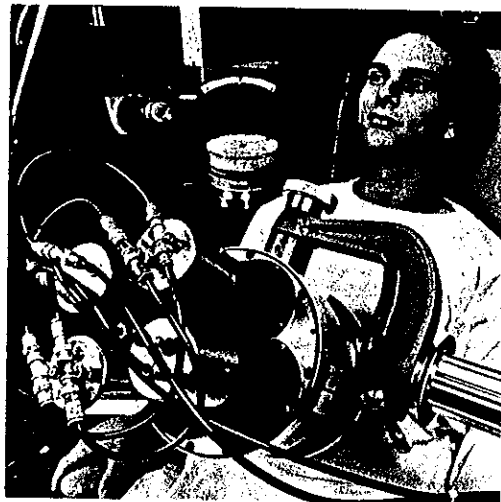
The Institute of Environmental Medicine has been designated by the National Environmental Health Sciences as a university-related center of excellence in teaching and research. The Institute also has been selected by the National Cancer Institute as an NCI-designated cancer center. Research and teaching programs are carried out by a staff of about 45 and a supporting staff of about 75 graduate and post-doctoral fellows who are engaged in the research of the Institute.



Environmental Medicine of the University Medical Center is a diverse research-oriented facility dedicated to all aspects of environmental health. The Institute offers a strong research program leading to both Master of Science and Doctor of Philosophy degrees by the Graduate School of Arts and Sciences of New York University. The Institute was founded in 1947, as a Division of Industrial Medicine dealing with the health and safety in the occupational environment especially in regard to hazardous chemical and physical agents. With the advent of environmental contamination and health issues that began to arise in the 1950s, the Institute assumed one of the leading roles as a center of both applied and basic environmental health research. Accordingly, there was a large expansion in faculty, staff, student and physical facilities soon followed. The research facilities are located at the NYU Medical Center in New York City and at the Anthony J. Lanza Laboratory in Tuxedo, NY. The 65,000 sq ft Lanza Laboratory, located about 40 miles west of New York City, is situated on a 100-acre reserve known as Sterling Forest.

The primary mission of the Institute is principally to: 1) provide training and professional service to medical students for careers in environmental health research for the identification and control of environmental health hazards. To this end, the Institute addresses a broad range of issues in environmental health ranging from toxicological and ecological effects of environmental agents to the causative role of environmental factors in cancer, arteriosclerosis, respiratory and other environmentally related diseases.

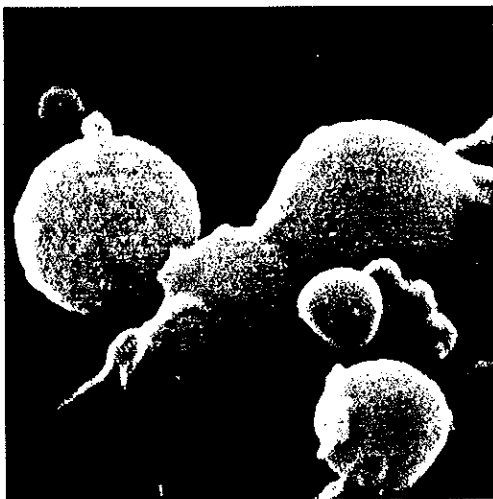
The Institute of Environmental Medicine has been designated by the National Institute of Environmental Health Sciences as one of ten university-related centers of excellence in teaching and research. The Institute also has been selected by the National Cancer Institute as an NCI-designated cancer center. Research and teaching programs are carried out by a faculty of 45 and a supporting staff of about 85. Approximately 75 graduate and post-doctoral students are engaged in the research of the Institute.



Above right: "Whole body" counter for human radioactivity measurements.

Above left: Anthony J. Lanza Research Laboratories in Sterling Forest.

## Graduate Study at the Institute



*Above: Scanning electron micrograph of Chinese hamster cells which have engulfed coal fly ash particles.*

*Opposite: Exposure chambers for in vivo experiments.*

From the beginning, it has been clear to scientists at the Institute that the task of learning how the environment affects the health of individuals would require a multidisciplinary approach. As a result, the Institute encompasses a faculty consisting of physicians, biologists, chemists, engineers, mathematicians, physicists and others from a wide array of fields. Today, in the size and diversity of its faculty, the Institute is perhaps one of the most comprehensive institutions of its kind. Institute faculty members are widely known in their fields. In addition to their extensive research publications, many serve as advisors to industry and government agencies throughout the world.

A major mission of the Institute is the education of scientists in the environmental health field. Emphasis is on the adverse health effects of physical and chemical agents. Studies leading to degrees of Master of Science and Doctor of Philosophy are offered through the Graduate School of Arts and Science, one of the 14 schools which constitute New York University.

Graduate studies at the Institute reflect the diverse research interests of its faculty. The research program of the Institute is concerned with investigating and developing effective methods of dealing with environmental factors involved in such major health problems as cancer, respiratory illness and cardiovascular disease. Drawing upon the most recent advances in the basic sciences, investigators utilize basic studies at the molecular and cellular levels, animal experiments, epidemiology, field studies, and mathematical modeling. In its research activities, the Institute functions at the interface between basic and applied science.

Graduate students at the Institute generally follow one of several specialty tracks, depending upon their professional goals. Study is oriented toward attainment of a Ph.D., except in the case of Occupational Hygiene, where students are accepted for a Masters degree. It should be emphasized that each program is adjusted for the specific background and goals of the individual student.

Specialty tracks for the Ph.D. are as follows:

- Environmental Oncology
- Cellular and Molecular Environmental Health
- Environmental Hygiene/Air Pollution
- Occupational and Environmental Health
- Neurotoxicology
- Aquatic Ecology and Toxicology
- Environmental Epidemiology
- Environmental Radiation
- Genetic Toxicology
- Molecular Toxicology
- Industrial and Environmental Toxicology

In recent years approximately 100 graduate students each year have been accepted at the Institute, of whom approximately 70% have been full-time students. Students come to the Institute from all parts of the United States and from countries around the world. Examples of foreign students have been from the People's Republic of China, Brazil, India, France, Switzerland, Canada, West Germany, Yugoslavia, and People's Republic of China. Graduates of the Institute have been employed in academic research institutions (10%), government agencies (10%), and industry (33%).

Students at the Institute work in a variety of fields reflecting the various research interests. Examples of the types of projects currently being undertaken include the following partial list of recent Ph.D. theses:

- Effects of low level benzene inhalation on hematopoietic precursor cells
- Oncogene activation in rat nasal mucosa
- Mortality experience of workers exposed to halogenated ethers.

beginning, it has been clear to scientists that the task of learning how it affects the health of individuals requires a multidisciplinary approach. As the Institute encompasses a faculty of physicians, biologists, chemists, mathematicians, physicists and a wide array of fields. Today, in the diversity of its faculty, the Institute is the most comprehensive institution. Institute faculty members are known in their fields. In addition to their research publications, many serve as consultants to industry and government agencies throughout the world.

Mission of the Institute is the education of students in the environmental health field, focusing on the adverse health effects of chemical agents. Studies leading to a Master of Science and Doctor of Philosophy are offered through the Graduate School of Environmental Health Science, one of the 14 schools of the State University of New York University.

Research studies at the Institute reflect the broad research interests of its faculty. The primary concern of the Institute is concerned with identifying and developing effective strategies for dealing with environmental factors that cause major health problems as cancer, respiratory illness and cardiovascular disease. Drawing upon the most recent advances in the basic sciences, investigators utilize techniques at the molecular and cellular level for laboratory experiments, epidemiology, field studies and mathematical modeling. In its research, the Institute functions at the interface between basic and applied science.

Students at the Institute generally choose from several specialty tracks, depending on their professional goals. Study is oriented toward the attainment of a Ph.D., except in the case of Environmental Hygiene, where students are awarded a Masters degree. It should be noted that at each program is adjusted for the student's background and goals of the individual.

Specialty tracks for the Ph.D. include the following:

- Environmental Oncology
- Cellular and Molecular Environmental Oncology
- Environmental Hygiene/Air Pollution
- Occupational and Environmental Hygiene
- Neurotoxicology
- Aquatic Ecology and Toxicology
- Environmental Epidemiology
- Environmental Radiation
- Genetic Toxicology
- Molecular Toxicology
- Industrial and Environmental Toxicology

In recent years approximately 70 graduate students each year have been affiliated with the Institute, of whom approximately two-thirds have been full-time students. Students have come to the Institute from all parts of the United States and from countries around the world. Recent foreign students have been from Japan, Republic of China, Brazil, Indonesia, Thailand, Switzerland, Canada, West Germany, England, Yugoslavia, and People's Republic of China. Graduates of the Institute hold positions in academic research institutions (53%), government agencies (10%), and industrial or consulting companies (33%).

Students at the Institute work in a wide variety of fields reflecting the various specialty tracks. Examples of the types of projects which students choose for their doctoral work are shown in the following partial list of recent Ph.D. thesis titles:

- Effects of low level benzene inhalation on murine hematopoietic precursor cells.
- Oncogene activation in rat nasal carcinomas.
- Mortality experience of workers exposed to halogenated ethers.

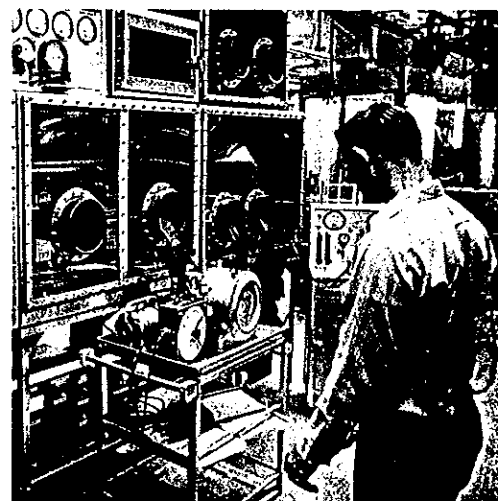
Separation and characterization of biologically significant chemical classes in airborne particulate organic matter.

Sources, distribution and mobility of plutonium and radiocesium in soils, sediments and water of the Hudson River estuary and watershed.

Toxic and mutagenic effects of bisulfite on animal cells in culture.

The effects of acute and subchronic ozone exposure on the functional properties of rabbit alveolar macrophages.

The repair of DNA damage in rat epidermis as a function of age and ultraviolet light exposure.



## Admission Requirements and Matriculation



*Above: The border between normal and malignant cells in culture.*

*Opposite: State of the art mass spectrometer used for studies in chemical carcinogenesis.*

### Admission Requirements

Applicants for graduate education at the Institute should have a good background in one of the sciences. The evaluation of applicants is based on the academic record, Graduate Record Exam (both general and subject) scores and letters of recommendation. Pertinent work experience is also taken into consideration.

Students who wish to matriculate jointly in the Sackler Institute or in the Biology (or other) department (see below) must also satisfy the admission requirements of the other department.

### Matriculation Options

Students at the Institute of Environmental Medicine have a number of matriculation options. The choice of options is determined by the area of specialization and the career goals of the applicant.

### Program in Environmental Health Sciences

This program is offered by the faculty of the Institute of Environmental Medicine under the guidance of an Interdepartmental Committee. Most of the graduate students in the Institute are matriculated in this program. Applicants for this program should specify "Environmental Health Sciences" for the department name on the application form and "G48" for the major code on the statistical form.

### Collaborative Majors

A collaborative major is offered jointly by The Institute of Environmental Medicine and the Biology Department at Washington Square. This option is used mainly by students in the Aquatic Ecology and Toxicology track and in the Environmental Oncology track. Applicants for this program should specify "Environmental Health Sciences" on the application and the code "G48B" on the statistical form. Collaborative majors can also be arranged with other departments such as Chemistry, Physics and Psychology.

### Matriculation in the Sackler Institute

The Sackler Institute of Graduate Sciences is the graduate research center at NYU Medical Center and comprises the Departments of Biochemistry, Microbiology, Parasitology, Pharmacology, and Physiology, as well as the Department of Environmental Medicine. Students in the Cellular and Molecular Environmental Medicine, Molecular Toxicology, or Geriatrics tracks should matriculate in the Sackler Institute. Students applying to the Sackler Institute should specify "Sackler" for the department on the application form, and use the department code on the statistical form.



## Requirements

Graduate education at the Institute requires a good background in one of the sciences. Evaluation of applicants is based on academic record, Graduate Record Exam (GRE) scores and letters of recommendation. Pertinent work experience is also given consideration.

Students who wish to matriculate jointly in the Institute for Environmental Medicine or in the Biology (or other) department (see below) must also satisfy the requirements of the other department.

## Options

The Institute of Environmental Medicine offers a number of matriculation options. The number of options is determined by the area of interest and the career goals of the student.

## Environmental Health Sciences

The Environmental Health Sciences program is offered by the faculty of the Institute for Environmental Medicine under the direction of an Interdepartmental Committee. Graduate students in the Institute are encouraged to apply to this program. Applicants for this program should specify "Environmental Health Sciences" as the department name on the application and "G48" for the major code on the application form.

## Majors

The Environmental Health Sciences major is offered jointly by The Institute for Environmental Medicine and the Department of Environmental Health Sciences at Washington Square. It is pursued mainly by students in the Biology and Toxicology track and in the Environmental Oncology track. Applicants should specify "Environmental Health Sciences" on the application and the department code on the statistical form. Collaboration can also be arranged with other departments such as Chemistry, Physics and

## Financial Aid

The Institute provides N.I.H.-sponsored traineeships in the areas of:

Environmental Oncology

Inhalation Toxicology

Occupational Hygiene (MS only)

The Helen Q. Woodard and the Merrill Eisenbud Graduate Fellowships are awarded on a competitive basis to outstanding applicants.

Financial aid is also available as Research Assistantships on individual research grants. The Graduate Steering Committee of the Institute attempts to match the students' interests with available research projects.

## Matriculation in the Sackler Institute

The Sackler Institute of Graduate Biomedical Sciences is the graduate research division of NYU Medical Center and encompasses the Departments of Biochemistry, Cell Biology, Microbiology, Parasitology, Pathology, Pharmacology, and Physiology, as well as Environmental Medicine. Students interested in the Cellular and Molecular Environmental Oncology, Molecular Toxicology, or Genetic Toxicology tracks should matriculate in the Sackler Institute. Students applying to the Sackler Institute should specify "Sackler" for the department name and "Environmental Oncology" for the program on the application form, and use "G 16S" as the department code on the statistical form.



## Faculty

### **Institute Director**

**Arthur C. Upton, M.D.** Pathology  
Professor  
Health effects of environmental agents,  
Carcinogenesis, Risk Assessment, Preventive  
medicine.

**Bernard Altshuler, Ph.D.** Applied Mathematics  
Professor  
Quantitative theories of carcinogenesis, Risk  
assessment, Target cell dosimetry.

**Slpra Banerjee, Ph.D.** Biochemistry  
Research Assistant Professor  
Metabolism, DNA adducts, *In vitro* transformation  
and tumorigenicity of chemical carcinogens.

**Sidney Belman, Ph.D.** Biochemistry  
Professor  
Mechanism of carcinogenesis, Modification of tumor  
and cancer development by nutritional agents,  
Biochemical and biological mechanisms involved.

**Opinder Bhanot, Ph.D.** Organic Chemistry  
Research Associate Professor  
Molecular mechanisms of mutation by carcinogens  
using site-specific mutagenesis; role of mutagenesis  
by carcinogen-induced DNA lesions in oncogene  
activation.

**Maarten C. Bosland, D.V. Sc.** Experimental/  
Toxicologic Pathology  
Assistant Professor  
Chemical carcinogenesis of the prostate gland in  
rodents, Nutrition and chemical carcinogenesis in  
animal models, Toxicologic and tumor pathology.

**Frederic J. Burns, Ph.D.** Biology  
Professor  
Radiation carcinogenesis, Cell proliferation kinetics,  
Models of carcinogenesis, Oncogene activation in  
cancer cells.

**Nelwyn T. Christle, Ph.D.** Biomedical Science  
Assistant Professor  
Genotoxicity of metals, DNA metabolism and repair,  
Genetic alterations associated with neoplasia.

**Beverly S. Cohen, Ph.D.** Radiological Physics  
Research Associate Professor  
Inhalation exposure and dosimetry, Aerosol  
measurement, Industrial and environmental hygiene.

**Norman Cohen, Ph.D.** Radiological Health  
Professor  
Biokinetics, metabolism and toxicology of  
bone-seeking radionuclides and heavy metals in man  
and nonhuman primates, *In vivo* measurements and  
internal dosimetry.

**Max Costa, Ph.D.** Pharmacology  
Toxicology/Biochemistry  
Professor  
Molecular mechanism of metal car-  
Cellular toxicology of metals, Chro  
aberrations induced by metals, Ge  
affected by metals.

**Neil Dubin, Ph.D.** Biomathematics  
Associate Professor  
Cancer epidemiology, Statistical e  
disease screening programs, Stat  
epidemiologic research.

**Hugh L. Evans, Ph.D.** Psychobiol  
Associate Professor  
Sensory perceptual and cognitive  
thirst and energy expenditure, Diu  
Neurobehavioral toxicology of met

**Krystyna Frenkel, Ph.D.** Biochem  
Assistant Professor  
Carcinogen-induced DNA modif  
tumor promoters on cell-mediated c  
Modulation of oxidative damage by

**Seymour J. Garte, Ph.D.** Biochem  
Assistant Professor  
Molecular biology of carcinogenes  
activation, Recombinant DNA, Ger  
techniques applied to causes and  
environmental disease.

**Bernard Goldschmidt, Ph.D.** Org  
Associate Professor  
Synthesis of oligonucleotides, Synt  
carcinogenic adducts, Determinati  
of modified DNA nucleotides.

**Albert F. Gunnison, Ph.D.** Toxicol  
Associate Professor  
Biochemistry and immune defense  
Metabolism and toxicology of sulfu  
sulfate salts.

**Naomi H. Harley, Ph.D.** Radiation  
Research Professor  
Measurement of natural radioactivit  
environment, Modeling and dosime  
deposited radionuclides, Radiation  
and risk assessment.

**Richard J. Imbra, Ph.D.** Radiation  
Research Assistant Professor  
Specific DNA-protein interactions in  
regulation of eukaryotic gene expres  
ion-induced carcinogenesis.

**Rudolph J. Jaeger, Ph.D.** Biochem  
Research Professor  
Toxicology of halogenated plastics  
Respiratory pathophysiology, Hepa



**Max Costa, Ph.D.** Pharmacology and Toxicology/Biochemistry  
Professor  
Molecular mechanism of metal carcinogenesis, Cellular toxicology of metals, Chromosome aberrations induced by metals, Gene expression affected by metals.

**Neil Dubin, Ph.D.** Biomathematics, Biostatistics  
Associate Professor  
Cancer epidemiology, Statistical evaluation of disease screening programs, Statistical methods in epidemiologic research.

**Hugh L. Evans, Ph.D.** Psychobiology  
Associate Professor  
Sensory perceptual and cognitive function, Hunger, thirst and energy expenditure, Diurnal rhythms, Neurobehavioral toxicology of metals and solvents.

**Krystyna Frenkel, Ph.D.** Biochemistry  
Assistant Professor  
Carcinogen-induced DNA modification, Effect of tumor promoters on cell-mediated oxidative damage, Modulation of oxidative damage by metal ions.

**Seymour J. Garte, Ph.D.** Biochemistry  
Assistant Professor  
Molecular biology of carcinogenesis, Oncogene activation, Recombinant DNA, Gene cloning techniques applied to causes and mechanisms of environmental disease.

**Bernard Goldschmidt, Ph.D.** Organic Chemistry  
Associate Professor  
Synthesis of oligonucleotides, Synthesis of carcinogenic adducts, Determination of the structure of modified DNA nucleotides.

**Albert F. Gunnison, Ph.D.** Toxicology  
Associate Professor  
Biochemistry and immune defense of the lung, Metabolism and toxicology of sulfur dioxide and sulfate salts.

**Naomi H. Harley, Ph.D.** Radiation Physics  
Research Professor  
Measurement of natural radioactivity in the environment, Modeling and dosimetry of internally deposited radionuclides, Radiation carcinogenesis and risk assessment.

**Richard J. Imbra, Ph.D.** Radiation Biology  
Research Assistant Professor  
Specific DNA-protein interactions involved in the regulation of eukaryotic gene expression and in metal ion-induced carcinogenesis.

**Rudolph J. Jaeger, Ph.D.** Biochemical Toxicology  
Research Professor  
Toxicology of halogenated plastics and solvents, Respiratory pathophysiology, Hepatotoxicity.

**Theo. J. Kneip, Ph.D.** Analytical Chemistry  
Professor  
Toxic substances in the environment, Transport and distribution of toxic substances, Evaluation of human exposure.

**Gerard Laurer, Ph.D.** Health Physics  
Research Professor  
Detection and measurement of deposited radionuclides, Detection and measurement of stable elements, Development of new detection systems.

**Paul Linsalata, Ph.D.** Radiological Studies  
Research Assistant Professor  
Measurement of radionuclides and chemical congeners in aquatic and terrestrial ecosystems, Environmental modeling and model validation, Dose assessment.

**Morton Lippmann, Ph.D.** Environmental Hygiene  
Professor  
Aerosol and inhalation research, Deposition, clearance, and health effects of inhaled pollutants, Human exposure assessment.

**Michael Marmor, Ph.D.** Physics  
Associate Professor  
Environmental epidemiology, Cancer epidemiology, Epidemiology of AIDS.

**Frank H. Mukal, Ph.D.** Microbial Genetics  
Associate Professor  
Characterization and isolation of genotoxic substances.

**Norton Nelson, Ph.D.** Biochemistry  
Professor  
Toxicology, Carcinogenesis.

**Joseph M. O'Connor, Ph.D.** Physiology/Ecology,  
Research Associate Professor  
Transport and fate of toxic organics in aquatic ecosystems, Kinetics and metabolism of toxic organics and drugs in aquatic organisms.

**Joan Lee Parkes, Ph.D.** Biochemistry/Cell Biology  
Research Assistant Professor  
Environmental agents in development of atherosclerosis, Oncogene activation in human atherosclerotic plaque DNA.

**Bernard S. Pasternack, Ph.D.** Biostatistics  
Professor  
Epidemiology of environmental and endocrine factors in breast cancer, Epidemiology of occupationally related cancers, Epidemiology of radiation carcinogenesis.

**Arthur Penn, Ph.D.** Molecular Biology  
Research Professor  
Gene expression during atherosclerosis plaque development, Environmental agents in atherosclerosis.

**Toby G. Rossman, Ph.D.** Microbiology  
Professor  
Genetic effects of carcinogens, Mechanisms of mutagenesis, Detection of mutagens in the environment and in exposed populations.

**Alvin Segal, Ph.D.** Organic Chemistry  
Research Professor  
Mechanisms of chemical carcinogenesis, Chemical biological interactions, DNA adduct formation.

**Arthur Sellakumar, D.V.M.** Veterinary medicine  
Research Professor  
Experimental pathology, Inhalation toxicology and carcinogenesis.

**Richard B. Schlesinger, Ph.D.** Biology  
Associate Professor  
Pulmonary biology, Lung disease pathogenesis, Pulmonary toxicology.

**Roy E. Shore, Ph.D., D.P.H.** Epidemiology  
Associate Professor  
Cancer, radiation and nutritional epidemiology, epidemiologic methods.

**Elizabeth J. Thomas-Snow, Ph.D.** Biomedical Sciences  
Research Assistant Professor  
Molecular genetics and genetic toxicology, Molecular mechanisms of mutagenesis and carcinogenesis, Eukaryotic DNA polymerases in mutation induction.

**Carroll A. Snyder, Ph.D.** Organic Chemistry  
Research Associate Professor  
Effects of inhaled substances on the hematopoietic and immune systems, Induction of respiratory cancer by inhaled substances.

**Jerome J. Solomon, Ph.D.** Physical Chemistry  
Research Associate Professor  
Mass spectrometry in carcinogenesis and environmental research, DNA-carcinogen interaction and characterization of DNA adducts.

**Dalia M. Spektor, Ph.D.** Atomic Physics  
Research Assistant Professor  
Health effects of inhaled pollutants, Environmental epidemiology, Aerosol science and technology.

**Katherine S. Squibb, Ph.D.** Biochemistry  
Research Assistant Professor  
Xenobiotic and trace element assimilation and metabolism in non-mammalian species.

**George D. Thurston, Sc.D.** Environmental Health Sciences  
Research Assistant Professor  
Aerosol science, Air pollution epidemiology, Source apportionment modeling, Air pollution meteorology.

**Paolo G. Toniolo, M.D.** Epidemiology  
Assistant Professor  
Epidemiology of hormonal dependent cancers of breast, endometrium and testis, Diet and breast cancer, Air pollution epidemiology.

**Walter Troll, Ph.D.** Biochemistry  
Professor  
Mechanism of carcinogenesis—Role of oxygen radicals, Prevention of cancer by protease inhibitors and antioxidants.

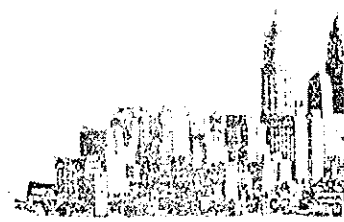
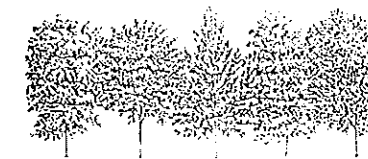
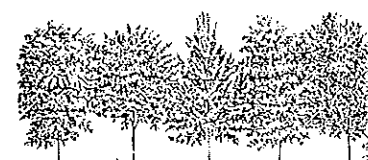
**Benjamin L. Van Duuren, Sc.D.** Organic Chemistry  
Professor  
Chemical carcinogenesis, direct-acting carcinogens, occupational and environmental cancer, Spectrophotometric methods in carcinogen and carcinogen-bioadduct analysis.

**Ronald Wood, Ph.D.** Psychology  
Research Associate Professor  
Inhalation toxicology of organic solvents, Abuse potential of inhalants, Standards for defining neurobehavioral toxicity.

**Lily Y. Young, Ph.D.** Microbiology  
Research Associate Professor  
Metabolism of toxic compounds in the environment, Microbiology of anaerobic environments, Aquatic and environmental microbiology.

#### Design and Production

Janice Brunell and Pat Flanagan  
The Cooper Union  
Center for Design and Typography



**Graduate Program in Epidemiology**

The Department of Community Health  
School of Medicine

Graduate Program Advisor:

Vincent Mor, Ph.D., Professor of Medical Science

Department Chairman:

Lois Monteiro, Ph.D., Professor of Medical Science

(rev. 9/92)

## INTRODUCTION

Brown University's Department of Community Health offers comprehensive course work in chronic disease epidemiology for both master's and doctoral degree candidates.

### I. PROGRAM DESCRIPTION: MASTER OF SCIENCE IN COMMUNITY HEALTH

The master's degree program provides a comprehensive introduction to the basic knowledge and methods of chronic disease epidemiology and academic gerontology. The program provides a strong foundation for individuals interested in pursuing academic careers in the fields of epidemiology, or geriatrics or other primary care medical specialties. Graduates are well prepared for continued studies culminating in a Doctor of Philosophy or Doctor of Medicine degree. Candidates for the Master of Science degree follow an integrated program of study including eight semester courses including a thesis seminar. Courses are listed in Table I.

All master's and doctoral students are required to take a two-course sequence in biomedical statistics (BIC 213 and BIC 216), a course on The Causes of Chronic Disease (BIC 221), a course on Research Methods in Epidemiology (BIC 212), and the Thesis Seminar. All graduate students must prepare a thesis during the thesis seminar. In order to receive the MSc degree, the student must submit the thesis to the Graduate School on schedule and in the specified format. In addition, doctoral students are required to take Environment, Behavior and Disease (BIC 214). Remaining courses may be selected from the list of program electives, or from other graduate level courses at Brown University, with the permission of one of the advisor. For students who enter the program without a strong background in human biology, courses in physiology or pathology are strongly recommended.

The program culminating in the Master of Science Degree is intended for students who have an M.D. or other doctoral degree, or who are medical students. Coursework equivalent to the master's program may also constitute the first year of a doctoral program. However, we do not view the master's as a desirable terminal degree. Therefore, admission is limited to those with a doctoral degree, to students in the Program in

Liberal Medical Education at Brown, to other medical students, or to those who plan to continue with Ph.D. studies on completion of the program.

Applicants other than physicians or medical students must possess a Bachelor's Degree and submit Graduate Record Examination results (General Test) or must have successfully completed three years of study in the Program in Liberal Medical Education at Brown University. Candidates intending to continue in the Ph.D. program must apply separately for candidacy in that program.

## II. PROGRAM DESCRIPTION: DOCTOR OF PHILOSOPHY

The doctoral program is intended for highly qualified students who plan to pursue a career that includes teaching or research in epidemiology or epidemiologic methods. The doctoral program is designed to provide a strong background in the etiology and control of chronic diseases, research methods, and related topics. The major requirement for the Ph.D. is the doctoral dissertation, the culmination of a program of original research. The dissertation presents the results of the research in a form suitable for publication in recognized journals, and it should make a substantial contribution. Additional requirements for the Ph.D. are specified below.

### ADMISSION AND DEGREE REQUIREMENTS

#### 1. Admission:

Candidates for admission to the doctoral program should hold an M.D., a Master's degree in epidemiology or a closely-related field, or be enrolled in an suitable Master's degree program or in the Brown M.D.-Ph.D. program.

#### 2. Advising:

On entering the program, each student will be assigned an advisor. The advisor may be changed as appropriate to the student's research interests.

### 3. Course Work:

A. Core Courses. Each student is expected to attain proficiency in the epidemiology of chronic disease, epidemiologic research methods and biostatistics. Ordinarily, the requirements in epidemiology will be met through the following coursework: BIC 221 (The Causes of Chronic Disease), BIC 212 (Research Methods in Epidemiology), BIC 214 (Environment, Behavior and Disease), and BIC 296 (Thesis Seminar in Community Health). Ordinarily the requirements in biostatistics will be met by taking BIC 213 (Probability and Statistics for Medicine and Biology) and BIC 216 (Design and Analysis for Medical and Biological Research). Insofar as possible, these courses should be taken during the student's first year of graduate study. As appropriate, written or oral placement examinations will be offered to students entering the program.

A grade of A or B higher is required in all course work except BIC 296, which is graded as credit/no credit.

B. Minor Subject. Each student is expected to become acquainted with an additional field related to his/her research interests. Usually this requirement will be met by taking two courses in one of the following fields: demography, mathematical statistics, computer science, environmental studies, radiation biology. As appropriate, tutorial arrangements can be made for study of other subjects such as occupational epidemiology or pathology.

C. Seminar. Students will participate in the seminar course, Thesis Seminar in Community Health, yearly while they are on campus. These seminars will cover topics of current interest and problems in research methods.

### 4. Colloquia:

Students are expected to attend colloquia sponsored by the Program in Epidemiology during their tenure. The colloquia are intended to introduce students to research being conducted by faculty and other graduate students in the program, as well as to provide representative speakers from off campus.

## 5. Dissertation Research:

Students will normally begin a research project during their second semester in residence. Usually students will be sufficiently certain of their interests to choose their research advisor by this time. It is to be emphasized, however, that the research advisor may be changed upon mutual agreement, if it is clear that a student's interests may be pursued more appropriately with another faculty member.

A. Written qualifying examination: This examination is normally given before the end of the fourth semester. The examination covers the fields of epidemiology, biostatistics, the minor subject, and the proposed dissertation topic. A written dissertation proposal must be submitted at least two weeks before the examination. A student who fails the examination may be permitted to take a second examination, but not sooner than six months or later than a year from the date of the first examination.

B. Ph.D. Dissertation Committee: After the student has passed the qualifying examination, a dissertation committee will be appointed. The committee will consist of the advisor and at least two additional faculty in areas related to the student's research.

C. Format of the Dissertation: The dissertation must be prepared in the form of publishable (or published) papers. After a successful defense, the Dissertation must be submitted to the Graduate School on schedule and in the specified format.

D. Readers of the Dissertation: In addition to the Chairman of Dissertation Committee, the dissertation will be read at least by two members of the faculty who were not directly involved in the research. At least one of the readers will not be a member of the Dissertation Committee.

E. Dissertation Defense: After the dissertation has been accepted by the readers and all other requirements for the PhD degree have been completed, the student will deliver an oral public presentation of the dissertation followed by a defense to members of the Dissertation Committee, the readers, and other interested faculty.

### III. Research Facilities

The Center for Gerontology and Health Care Research and The Epidemiology Program have active and well-funded research programs. Research interests of the affiliated faculty include the epidemiology of benign and malignant neoplasia, AIDS, congenital defects and neonatal and childhood diseases; health services research in long term care; prevention of cardiovascular disease; medical care and functional health of the elderly; statistical methods; and the control of chronic diseases by means of early detection and treatment.

The Department operates state-of-the-art microcomputers, work stations and statistical and graphic software. There is ready access to local and extended computer networks.

The fifteen floor Sciences Library for the biological and physical sciences holds about 7,000 current periodicals and 450,000 bound volumes and provides study space for more than 300 students.

Associated faculty within the Division of Biology and Medicine provide support in basic medical sciences such as pathology, microbiology, nutrition and genetics. Excellent opportunities also exist at Brown for training in statistics, computer science, demography and environmental science.

### IV. Core Faculty

Nicholas Lange, Sc.D., Assistant Professor of Medical Science  
Vincent Mor, Ph.D., Professor of Medical Science  
William Rakowski, Ph.D., Assistant Professor of Medical Science  
Sally Zierler, Dr.P.H., Associate Professor of Medical Science



TABLE 1. COURSES OFFERED BY THE GRADUATE PROGRAM IN EPIDEMIOLOGY  
(catalog descriptions follow)

Required courses for MSc

- BIC 212 Research methods in epidemiology
  - BIC 213 Probability and statistics for medicine and biology
  - BIC 216 Design and analysis for medical and biological research
  - BIC 221 Causes of chronic disease
  - BIC 296 Graduate independent study (Thesis seminar)
- (Three additional elective courses, for a total of eight credits)

Required courses for PhD

- BIC 212 Research methods in epidemiology
- BIC 213 Probability and statistics for medicine and biology
- BIC 214 Environment, behavior and disease
- BIC 216 Case Studies in Biometry
- BIC 221 Causes of chronic disease
- BIC 296 Graduate independent study (Thesis seminar)

Elective courses

- BIC 174 Health Behavior and Health Promotion in the Older Population
- BIC 225 Social Epidemiology of Aging
- BIC 234 Methods in Applied Clinical Trials

## GRADUATE COURSE DESCRIPTIONS

### Health Behavior and Health Promotion in the Older Population (BIC 174)

This course will examine the health-related beliefs of older persons, the behavioral actions that older adults take to promote their health, and intervention strategies that might be used to improve the health status of the older population. The course will therefore be considering data both from large national and regional surveys, and from smaller health education and clinically-based samples. It is designed for upper-division undergraduates and graduate students. (Dr. Rakowski)

### Research Methods in Epidemiology (BIC 212)

This course introduces principles of the design, analysis and interpretation of epidemiologic studies. The conceptualization of epidemiologic problems, measures of disease frequency, experimental and nonexperimental approaches, simple and multivariate analysis, and presentation of results are some of the topics. Emphasis is on practical applications; exercises are an integral part of the course. Assumes knowledge of basic probability and statistics. (Dr. Zierler)

### Probability and Statistics for Medicine and Biology (BIC 213)

A first course in the basics of applied statistics, with many medical examples. We begin with some basic probability theory and derive deductively some consequences of unchallenged assumptions about hypothetical experiments. We then proceed inductively to draw conclusions based on empirical evidence from actual experiments with the help of statistical model-building. Topics to be covered include: the concept of randomness, probability distributions, likelihood-based models, estimation and hypothesis testing, graphical techniques, contingency tables, simple linear regression, model and data criticism. This course is intended primarily for graduate students in medicine and biology and presumes some familiarity and comfort with quantitative thinking. Some knowledge of calculus would be helpful but is not required. (Dr. Lange)

### Environment, Behavior and Disease (BIC 214)

This course is an introduction to current knowledge of the effects of environmental and behavioral exposures on the occurrence of serious disease. The topics for the current academic year are: sexual behavior as the transmitter of viral agents (AIDS, cervical cancer, congenital disease); medicine, medical procedures/occupational disease (reproductive

Methods in Applied Clinical Trials (BIC 234)

A laboratory course in the logic and organization of research studies seeking to test the efficacy of a novel medical or health care intervention. The primary goal of the course is to develop substantial competence in the design of experiments in applied field settings. The second goal is to acquire basic skills in the analysis of computerized data ranging from basic frequency distributions to partial correlation, analysis of variance and covariance, with particular emphasis on summarizing and interpreting selected results in laboratory reports. Selected computerized data sets drawn from actual randomized clinical trials provide applied experience and form the conceptual framework for the development of technical skills. (Dr. Mor)

Graduate Independent Study (Thesis Seminar in Community Health)  
(BIC 296)

A seminar series for students with current or anticipated involvement in public health or clinical research. Each student prepares and presents a paper in the format of a grant application or a research report. Seminars early in the year provide background information for these papers. Later seminars consist of student presentation, and faculty and student discussion, of these papers. Preparation of the paper is done in conjunction with tutorial sessions. Meets every other week during the academic year. Culminates in a Master's Thesis for students in the M.Sc. program. (Dr. Mor; faculty of program)

REFERENCES CITED

1. Anderson P. Florida is likely to pick up 4 seats in U.S. House, Census results show. Miami Herald, Aug 28, 1990, p.1a.
2. A Decade of Growth. The Miami Herald. Jan 26, 1991.
3. Wallace R. Dade a little younger, Census finds. The Miami Herald. May 31, 1991.
4. Florida Population: Census Summary, 1990. Population Program, Bureau of Economic and Business Research, University of Florida.

**Toyoko S. Yamashita**, Associate Professor. Associate Professor of Pediatrics. Ph.D. 1976, M.S. 1971, University of Hawaii. Statistical methods in human genetics, genetic simulation, medical information management and pharmacokinetics.

#### ADJUNCT FACULTY

**Gerald J. Beck**, Adjunct Associate Professor. Ph.D., University of California Berkeley, 1975. Repeated measures analysis, multivariate methods, stochastic processes, analysis of clinical data.

**David Chou**, Adjunct Assistant Professor. Director of Laboratory Computers, The Cleveland Clinic Foundation. M.D., University of Pittsburgh, 1974. M.S., University of Minnesota, 1980. Computers in laboratory medicine, medical databases.

**Tom Greene**, Adjunct Assistant Professor. Assistant Professor of Psychiatry. Ph.D., 1985, M.S., 1983, Cornell University. Multivariate methods, exploratory data analysis, matroid theory, linear models, human teratology.

**Kenneth L. Kutina**, Adjunct Assistant Professor. Vice President for Planning. Ph.D. 1974, M.B.A. 1967, Case Western Reserve University. Simulation modeling of socio-economic systems such as higher education and health systems; applied statistics; application of quantitative methods to program cost, planning and policy analyses.

**Robin B. Lake**, Adjunct Assistant Professor. Senior Technical Specialist, Information Sciences and Environmental Technology Branches, BP Research. Ph.D., Case Western Reserve University, 1969. M.A., Harvard University, 1964. Evaluation of health care quality, information sciences, environmental modeling and risk assessment.

**Ronald G. Potts**, Adjunct Assistant Professor, M.D., University of Cincinnati, 1969. Medical Director, Kaiser Permanente of Ohio. Health care organization and management, outcomes research, applications of industrial models of quality to medical care.

**Douglas Y. Rowland**, Adjunct Assistant Professor, Ph.D., 1972, Case Western Reserve University, M.S., 1969, Case Western Reserve University M.S., 1967, Case Institute of Technology. Mathematical and statistical models in epidemiology, study design and analysis, meta-analysis, cost-benefit analysis.

**Mark D. Schluchter**, Adjunct Associate Professor, Ph.D., University of California, 1982. Staff Biostatistician, Department of Biostatistics and Epidemiology, The Cleveland Clinic Foundation. Biostatistical methods, design and analysis of longitudinal studies, analysis of incomplete data.

**Wilma L. Mackay**, Senior Instructor. M.S., Case Western Reserve University, 1970. Epidemiologic studies of diabetes mellitus, design and analysis of clinical trials.

**Duncan V. Neuhauser**, Professor. Professor of Medicine. Professor of Family Medicine, Professor of Organizational Behavior. Keck Foundation Senior Research Scholar. Co-Director, Health Systems Management Center. Ph.D., University of Chicago, 1971. M.B.A., 1966, M.H.A., 1963, University of Michigan. Clinical decision analyses, health care organization and management.

**Alfred A. Rimm**, Professor and Chairman. Ph.D., 1963 Rutgers University. Chronic disease epidemiology, linkage of large existing databases for studying the United States health care delivery system.

**Ann W. Roy**, Assistant Professor. Ph.D., Case Western Reserve University, 1984. M.A., Louisiana State, 1980. Aging research, health issues in aging.

**Kathleen A. Smyth**, Assistant Professor. Ph.D., 1984, M.A., 1973, Case Western Reserve University. Medical decision making, computers in medicine, medical sociology, health services research methods, long term care alternatives.

**Hope H. Snider**, Assistant Professor. Assistant Clinical Professor of Medicine. Associate Chief of Staff for Education and Cleveland VA Medical Center. M.D. 1962, M.P.H. 1964, Harvard University. Quality management programs and learning resources management in the teaching hospital.

**Theodore Speroff**, Assistant Professor. Assistant Professor of Medicine. Case Western Reserve University, Ph.D., 1987. University of Akron, Psychology, Ph.D., 1979. Health Services Research and outcomes assessment, meta analysis, clinical epidemiology, MetroHealth Firm trials, decision sciences, clinical decision making and quality of care.

#### **EMERITUS FACULTY**

**Edward A. Mortimer, Jr.**, Elisabeth Severance Prentiss Professor Emeritus. Professor of Pediatrics. M.D., Northwestern University, 1947. Disease related clinical epidemiology, particularly causative and experimental studies as they relate to clinical medicine, infectious disease and immunization, including policy and research on new vaccines for both the U.S. and the developing world.

**Frederick C. Robbins**, University Professor Emeritus. Dean Emeritus. M.D., Harvard University, 1940. Infectious disease, international health.

**EPBI 494. Infectious Disease Epidemiology (3).** The epidemiology, prevention and control of representative infectious disease models. Emphasis on the triad of agent, host and environment and the molecular and genetic basis of agent and host interaction in the population. Prerequisite: EPBI 490 and a microbiology course or consent of instructor.

**EPBI 495. Observational Methods in Chronic Disease Epidemiology (3).** Applied intermediate level course in observational research design methods found commonly in chronic disease epidemiology, including: design selection, selection of subjects, measurement of exposure and disease status, validity and reliability issues, sample size and power considerations, issues in analysis, risk assessment, minimizing bias and confounding, interactions, and matching. Designs include cross-sectional, case control, and cohort studies. Prerequisites: EPBI 490, EPBI 432, or consent of instructor.

**EPBI 499. Independent Study (credit as arranged).**

**EPBI 501. Graduate Seminar (credit as arranged).**

**EPBI 555. Pattern Biology (3).** (Also listed as DGMS 555). A course on understanding the nature of biological experimentation, emphasizing the implicit assumptions that govern analyses of complex, heterogeneous, and diverse biological data. The philosophical bases of the science of biology are explored and primary sources are read. Seminar format. Prerequisites: Consent of instructor.

**EPBI 591. Stochastic Models in Epidemiology (3).** Random variables and probability laws. Examples of stochastic processes: normal, stationary, counting, renewal processes. Markov chains with discrete and continuous state space. Markov processes, Poisson process. Stochastic models of population growth: birth and death models. Mutation processes, spread of epidemics. Prerequisite: EPBI 442.

**EPBI 592. Special Topics in Epidemiology (3).** Vaccine development, epidemic models; nutritional epidemiology, genetic epidemiology; opportunistic infections; nosocomial infections; prevention strategies.

**EPBI 601. Masters Project Research (credit as arranged).**

**EPBI 602. Practicum (credit as arranged).**

**EPBI 651. Thesis M.S. (credit as arranged).**

**EPBI 701. Dissertation Ph.D. (credit as arranged).**

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**EPBI 408. Public Policy and Aging (3).** Overview of aging and the aged. Concepts in the study of public policy. Policies on aging and conditions that they address. The politics of policies on aging. Emergent trends and issues.

**EPBI 414. Introduction to Statistical Microcomputing (3).** Topics include an overview of microcomputer hardware and MS-DOS software, database elements and structures, statistical and spreadsheet software, presentation graphics, and data communications. Considerable emphasis is on developing familiarity with particular software packages including dBASE, Epi-info, Lotus 1-2-3, SPSS, BMOP, Procomm, and Harvard Graphics.

**EPBI 415. Health Sciences Information Systems (1-2).** Computer-based health information systems components, especially database management systems and data structures. Prerequisite: Consent of instructor.

**EPBI 420. Structured Computer Programming (3).** (Also listed as ANES 420). The precise statement of a problem solution as an algorithm. Stepwise refinement of an algorithm using pseudocode. Translation of pseudocode into a high-level programming language, applying style concepts. Use of a time-sharing operating system and interactive text editor. Non-numerical problems relevant to the health sciences. Uses the C programming language.

**EPBI 431. Statistical Methods in Biological and Medical Sciences I (3).** (Also listed as ANAT 431, ANES 431 AND BIOL 431). Application of statistical techniques with particular emphasis on problems in the biomedical sciences. Basic probability theory, random variables, and distribution functions. Point and interval estimation, regression, correlation, and analysis of variance. Problems whose solution involves using packaged statistical programs. Prerequisite: Two semesters of calculus or consent of instructor.

**EPBI 432. Statistical Methods in Biological and Medical Sciences II (3).** (Also listed as ANES 432 AND BIOL 432). Methods of analysis of variance, regression and analysis of quantitative data. Emphasis on computer solution of problems drawn from the biomedical sciences. Design of experiments, power of tests, and adequacy of models. Prerequisite: EPBI 431 or consent of instructor.

**EPBI 435. Survival Data Analysis (3).** This course will discuss the basic concepts of survival analysis including hazard function, survival function, types of censoring, Kaplan-Meier estimates, log-rank tests, and the generalized Wilcoxon tests. Parametric inference will include exponential and Weibull distributions with and without censoring. The proportional hazard and other methods of handling covariates will be discussed. Prerequisite: EPBI 432, 448 or equivalent.

**EPBI 441. Biostatistics I (Generalized Linear Models) (3).** Selected topics in linear and logistic models. Model fitting, estimation, and measures of goodness of fit for continuous and binary data. Special problems encountered in

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selection of models. Prerequisites: 432 and 448.

**EPBI 442. Biostatistics II (Nonparametric Statistics) (3).** This course deals with the basic concepts and applications of nonparametric statistics. Topics will include distribution-free statistics, one sample rank test, the Mann-Whitney and Kruskal Wallis tests, one sample and two sample U-statistics, asymptotic relative efficiency of tests, distribution-free confidence intervals, point estimation, linear rank statistics and non-parametric regression. Prerequisite: EPBI 432 or equivalent.

**EPBI 443. Applied Multivariate Analysis (3).** This course will start with review of matrix algebra as it pertains to multivariate statistics, then proceeds to study inference about multivariate means: Hotelling's  $T^2$ , MANOVA, MANCOVA, growth curves, and other linear models such as simultaneous confidence interval, multivariate multiple regression, principal components, factor analysis, cluster analysis, linear discriminant analysis and its relationship to logistic model. Prerequisite: EPBI 432, EPBI 448 or STAT 381 or equivalent.

**EPBI 445. Statistics in Health Sciences Research (3).** Emphasis is placed on correct ways of formulating problems and hypotheses for statistical analysis and on the application of biostatistics to laboratory and clinical data. Topics covered are experimental design; analysis of qualitative and quantitative data, including analysis of variance; regression methods and analysis of bioassays.

**EPBI 446. Experimental Design for Biomedical Sciences (3).** This course deals with basic problems of experimental design. Topics will include completely randomized and balanced incomplete block designs, parallel group designs, Youden and Latin squares, repeated measurement studies, factorial experiments and designs for bioassays and response surfaces. Prerequisite EPBI 432 or consent of instructor.

**EPBI 447. Survey Sampling Methods in Health Sciences (3).** This course will discuss the basic concepts of sampling theory including simple random and systematic sampling, ratio and regression methods of estimation, stratified and cluster sampling, randomized response survey and their applications in health sciences. Prerequisite EPBI 432 or consent of instructor.

**EPBI 448. Mathematical Statistics I (3).** Basic probability theory. Estimation techniques for the parameters of the basic distributions: maximum likelihood, method of moments, unbiased estimates, confidence intervals, sufficient statistics, Cramer-Rao inequality. Transformations of random variables. F and t distributions. Order statistics. Prerequisite: Math 223. Corequisites: EPBI 431. STAT 286 or STAT 385 or consent of instructor.



## Comprehensive Examination (Plan B)

Students in Plan B are required to pass satisfactorily a written comprehensive examination. This examination is administered by a committee of three faculty members and chaired by a member of the Graduate Studies Committee. The members are selected as follows: one from biostatistics, one from epidemiology, and the third from the student's own area of discipline. The Committee will also include the student's advisor in its deliberations. The examination will include questions on the common core courses and on those courses required by the student's area of discipline. The comprehensive examination will be given twice each year (usually late October and late March), on dates to be announced about a month in advance. Notification of a student's readiness to take the comprehensive examination must be made by the student's advisor to the Graduate Studies Committee by September 22 for the October examination and by February 23 for the March examination. The committee must agree unanimously that the student has passed the comprehensive examination.

## **THE Ph.D. PROGRAM**

### **Entry into Ph.D. Program**

In addition to the requirements of the School of Graduate Studies, the following are departmental requirements:

- A. Students entering without a (related) Master's degree must complete requirements for the Master's degree.
- B. Students entering with a (related) Master's degree may begin taking advanced courses in their area of concentration. Such students are considered responsible for knowledge of Core Courses for the Master's in their area of discipline and may be examined on these course content materials within the General Examination prior to admission to candidacy.
- C. The equivalent of 9 graduate level semester hours of course work must be completed in a single area of science behavioral, biological or social, either prior to matriculation or during the course of study for the Ph. D. degree. Choice of the formal course work or successfully passing an examination within the chosen area of science is made on recommendation of the student's advisor and approval by the departmental Graduate Studies Committee. No more than 3 hours of graduate level course work in these areas may count toward the minimum required for the Ph. D. degree.

### **Ph.D. Course Work (18 hours)**

Advanced course work for the Ph.D. is determined on an individual basis in conjunction with a student's advisor and Dissertation Committee. A minimum of 18 hours is required. Registration in EPBI 501 Graduate Seminar (0 credits) is required each semester for attendance and participation in the weekly graduate seminar. Each student is expected to make one presentation each semester and is expected to earn a grade of "satisfactory". Students are expected to attend the department seminars.

the Epidemiology and Health Services Research areas of concentration, and a comprehensive examination (Plan B) for Biostatistics. Students may petition to take a comprehensive examination (Plan B) in lieu of the thesis requirement. Students should consult the University General Bulletin regarding academic regulations for Master's degree. A copy of these regulations is given to each graduate student on entry into the program.

Common Core Courses (12 - 15 hours)

- EPBI 431 Statistical Methods I (3 hours)
- EPBI 432 Statistical Methods II (3 hours)
- EPBI 490 Epidemiology (3 hours)
- EPBI 651 Thesis (6 hours) - Plan A only
- EPBI 602 Practicum (3 hours) - Plan B only

Additional Core Courses for Each Disciplinary Area

A. Biostatistics (12 hours)

- EPBI 420 Structured Computer Programming (3 hours)
- EPBI 435 Survival Analysis (3 hours)
- EPBI 441 Biostatistics I (Generalized Linear Models) (3 hours)
- EPBI 442 Biostatistics II (Non Parametric Statistics) (3 hours)
- EPBI 443 Applied Multivariate Analysis (3 hours)
- EPBI 446 Categorical Data Analysis (3 hours)
- EPBI 448 Mathematical Statistics I (3 hours)
- EPBI 449 Mathematical Statistics II (3 hours)

B. Epidemiology (9 hours)

- EPBI 414 Introduction to Statistical Computing (3 hours)
- EPBI 491 Statistical Methods in Epidemiology Research (3 hours)
- EPBI 495 Observational Methods in Epidemiology (3 hours)

C. Health Services Research (12 hours)

- EPBI 491 Statistical Methods in Epidemiology Research (3 hours)
- EPBI 460 Health Research Methods I (3 hours)
- EPBI 461 Health Research Methods II (3 hours)
- EPBI 465 Clinical Decision Analysis (3 hours)

Electives (9-12 hours)

Electives should be chosen in consultation with the student's advisor, to arrive at the required number of semester hours when combined with cores. Suggested electives include:

- EPBI 408 Public Policy and Aging
- EPBI 414 Introduction to Statistical Microcomputing

in the Integrated Graduate Studies Program. Financial aid in the form of partial or complete tuition support is available to a limited number of students. Hourly employment as a research assistant is also a potential source of income for our students.

Individuals completing the Master's degree qualify for a variety of job opportunities in industry, public health departments, health care settings, and health services research facilities. The Ph.D. program prepares individuals for independent and collaborative research, teaching, or management roles in health care delivery, health care systems or local, state and national public health departments.

## AREAS OF DISCIPLINE

### *Biostatistics*

Statistics is a discipline which provides tools for making decisions under conditions of uncertainty. Biostatistics applies the discipline to medical and biological data. The study of statistics includes design and analysis of experimental and non-experimental studies, theory of probability and statistics, and knowledge of methodology used to evaluate the properties of statistical procedures. It also includes a competency in computers, which encompasses programming, statistical package use, and database management.

The graduate program in biostatistics stresses the concepts underlying the scientific method, the interpretation of experimental results, and the practical realities of biomedical data collection and analysis. A practicum in consulting is required. It is recognized that a background in mathematics and theoretical statistics is essential for sound statistical analyses. Consequently, an applicant to the program should have both a strong aptitude for quantitative thinking and interest in biomedical applications. Students in the program have done research on such topics as analysis of red blood cell volume distribution, Markov chain models in diabetes, finite mixture distributions in survival analysis, and the effect of son or daughter preference on population size.

### *Epidemiology*

Epidemiology is the study of the distribution and determinants of disease in a human population. Put simply, it is a discipline that concerns itself with measuring the risk of acquiring a disease over some period of time (incidence), the risk of having a disease at some point in time (prevalence) or the risk of dying over some period of time (mortality rate). In order to make these statements of risk, a numerator (disease, state, condition) and a denominator (population) must be defined and measured. It is this definition and measurement that is at the heart of the epidemiologic method. The discipline of epidemiology is integrative in the sense that it draws heavily on methods and concepts from other disciplines such as demography, statistics, information science, biology, medicine and sociology. The uses of epidemiology are varied and range from community diagnosis through evaluation of health services to search for causes of disease. All uses are aimed toward prevention and control of disease in populations and, ultimately, the individual.

Clinical epidemiology is the application of epidemiologic method and reasoning to the study of patient populations. The denominator population usually consists of hospitalized and/or ambulatory patients who have either a single disease state or physiologic or pathologic abnormality, a common source of care, or other characteristics in common. Studies in these populations may be descriptive, i.e., defining the natural history of the progression of disease, in order to assess risk factors for prognosis, to define and