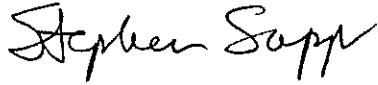




MEMORANDUM

To: Donna E. Shalala, President

From: Stephen Sapp
Chair, Faculty Senate 

Date: September 3, 2008

Subject: Faculty Senate Legislation #2008-02(B) – Proposal for the Establishment of the University of Miami Center for Computational Science

On August 27, 2008, the Senate voted to approve the proposal for the establishment of the University of Miami Center for Computational Science as presented by Jennifer McCafferty-Cepero for five years and any extensions thereafter.¹

The proposal is enclosed for your information.

The legislation is now forwarded to you for your action.

SS/rh

Enclosure (proposal)

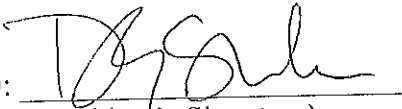
cc: Thomas LeBlanc, Executive Vice President and Provost
Jennifer McCafferty-Cepero, Presenter, Research Assistant Professor

¹ C18.2.1 If the Faculty Senate approves a UNIVERSITY CENTER OR INSTITUTE established under Bylaw 6.5, it may do so for an initial term of up to five years¹. Continued approval by the Faculty Senate for a defined term of up to ten years requires a review of the unit upon receiving such a recommendation, forwarded by the Executive Vice-President and Provost after consultation with the cooperating departments and schools.

C18.2.3 Periodic five year reviews may be conducted on all programs, centers, institutes and similar academic units as deemed appropriate by the Faculty Senate or the Executive Vice-President and Provost.

Faculty Senate Legislation #2008-02(B) – Proposal for the Establishment of the University of
Miami Center for Computational Science

PRESIDENT'S RESPONSE

APPROVED:  DATE: Sept 7 2008
(President's Signature)

OFFICE OR INDIVIDUAL TO IMPLEMENT: PROVOST TOM LEBLANC

EFFECTIVE DATE OF LEGISLATION: IMMEDIATELY
(if other than June 1 next following)

NOT APPROVED AND REFERRED TO: _____

REMARKS (IF NOT APPROVED): _____

Proposal for the Establishment of the University of Miami Center for Computational Science

This proposal seeks to formally establish a center for interdisciplinary computational science at the University of Miami. The center will be called, the "University of Miami Center for Computational Science" and will be abbreviated as "CCS".

There is an urgent need for an integrated, interdisciplinary Center that offers the expertise, infrastructure, and resources necessary to energize fundamental aspects of computational science and facilitate collaborations across disciplines.

Background:

Computers are the indispensable tools of modern science. Many experiments require powerful computers and methodologies capable of solving data intensive problems. Indeed, the computer has revolutionized science and engineering and much of the leading edge technology requires extremely sophisticated computing power to capture, store, analyze, and model data.

Computational science is an emerging discipline that complements theoretical and laboratory science by uniting computer science and mathematics with disciplinary research in biology, mathematics, chemistry, physics, and other applied and engineering fields. By definition, computational science requires a collaborative effort across a wide range of traditional academic disciplines. This interdisciplinary approach has led to significant advances in areas such as structural biology, drug design, engineering, ecology, materials science, high energy physics and global climate change. In this extraordinary period of growth both at the University and in the field, the establishment of the CCS will position the University of Miami among the leaders in computational science research.

Mission:

CCS will focus its initial efforts on catalyzing interdisciplinary computational science among all divisions, departments, Centers, Institutes, Schools and Colleges involved in science and engineering research. CCS will accomplish this by providing the intellectual leadership and resources to support the development and deployment of pioneering computational methods. It is anticipated that, over time, the CCS will become a locus for the establishment and development of fruitful collaboration across other disciplines that require computational support.

Market Analysis:

The establishment of the CCS at the University of Miami should be examined with due consideration of strengths and weaknesses and the current opportunities.

Strengths

- The science and technology in a variety of disciplines have matured sufficiently to warrant a significant institutional investment in an interdisciplinary institute focused on the computational sciences. Most notable among these disciplines are the research sciences, mathematics, and engineering.
- There are a number of ongoing studies and faculty members with unique expertise who would benefit from and who would be assets to the proposed CCS. With access to

resources and a framework around which to organize, the computational science expertise and research already present would grow and thrive.

- The University libraries have significant journal subscriptions and book holdings to support interdisciplinary work in the computational sciences.

Weaknesses

- There is no structure or formal organization that fosters interdisciplinary collaboration and communication in computational sciences.
- There is no coordination of computational science resources.
- We are one of the few research intensive universities in the United States that does not have a research and support unit dedicated to the computational sciences.
 - In 2005, 10 of the top 10 medical schools by NIH funding had such dedicated research units (Table 1).
 - In FY2006, 10 of the top 10 universities and colleges by R&D expenditures had such a dedicated research unit (Table 2).
 - All (100%) of American Association of Universities (AAU) members have such research units (Table 3).

Opportunities

The combination of recent and ongoing recruitments with established and productive University researchers presents an ideal moment for the establishment of the CCS. With a critical mass of human and technological resources, the CCS would facilitate interdisciplinary and pan-institutional collaborations that will accelerate the pace of discovery across disciplines.

Organization:

Overview

The CCS will provide hardware and software resources, host educational activities, and offer expertise in every aspect of scientific research that requires computation. The Center will be led by a Director. The Director will report to the Provost and the Provost will review the activities of the Director annually. There will be an Executive Committee to advise the Director on the various issues related to the CCS operations. There will be an Advisory Board to assess the scientific progress of the CCS and assist the Director in long term planning for the Center. The Center activities will be initially organized into 5 Programs (led by Program Directors) and 2 Center Resources (led by Resource Directors). This organization is explained in more detail below.

CCS Director:

The CCS Director is responsible for articulating and representing the vision of the CCS as well as the overall leadership and management of the Center, including the Programs and Resources.

CCS Executive Committee:

Charge of the Executive Committee

The CCS Executive Committee is an advisory board whose purpose is to assist the CCS Director in the management, operations, and governance of the CCS, including project prioritization and allocation of Center resources. The Executive Committee also reviews and

approves applications for Center appointments. In addition, the Executive Committee will review the CCS Charter every three years and approve any recommendations for amendments.

Composition of the Executive Committee:

The Executive Committee will be comprised of the CCS Program Directors, the CCS Resource Directors, and three at-large CCS members identified by the Executive Committee. The at-large CCS members will be determined by a majority vote of the Executive Committee and will serve for three year terms. Terms of service are renewable at the discretion of the Executive Committee. The at-large CCS members will be University of Miami faculty who are demonstrated leaders in their field, regular CCS shared resource users, and who have established research programs with a strong track record of interdisciplinary research and activities.

The Executive Committee should reflect the interdisciplinary nature of the CCS and include representation from the College of Arts and Sciences, the College of Engineering, the Miller School of Medicine, and the Rosenstiel School of Marine and Atmospheric Sciences.

At the discretion of the Executive Committee, other members of the University research community may be invited to attend the Executive Committee meetings.

Meetings of the Executive Committee:

The Executive Committee will be chaired by the CCS Director who will convene the Committee at least quarterly.

CCS Advisory Committee:

Charge of the Advisory Committee:

The CCS Advisory Committee is an advisory group that evaluates the Center's scientific progress, technological needs and assists the CCS Director in developing strategic plans for the future of the CCS.

Composition of the Advisory Committee:

The Advisory Committee is comprised of the CCS Director, the Provost (or the Provost's designee) and the Vice Provost for Research (or the Vice Provost for Research's designee) and three external luminaries in computational science research and education. The Vice Provost for Research (or designee), in conjunction with the Provost (or designee) and the CCS Executive Committee, will identify and invite three internationally renowned senior scholars or industry leaders with a strong track record of interdisciplinary research and activities. The three year term of service for external luminaries is renewable at the discretion of the Vice Provost for Research (or designee), in conjunction with the Provost (or designee) and the CCS Executive Committee.

At the discretion of the Advisory Committee, other members of the University research community may be invited to attend the Advisory Committee meetings.

Meetings of the Advisory Committee:

The Vice Provost for Research (or designee) will chair the Committee and convene annual meetings.

CCS Programs and Program Directors:

CCS Programs

The CCS will be initially comprised of 5 programs. In order to increase the potential for fast-tracking success and keep the CCS focused, the CCS will initially concentrate on programs in the Physical Sciences and Engineering, Computational Biology and Bioinformatics, Computational Chemistry, Data Mining, and Visualization. Over time, the CCS expects to expand and develop programs in other areas such as the social sciences and humanities. As the University of Miami is not authorized to support “classified research”, the CCS programs do not involve “classified research.” All University of Miami faculty members are encouraged to participate in the activities of the CCS as appropriate for their research needs.

The Programs are the core components of the CCS and are not designed to exist apart from the CCS. Programs have two primary areas of activity. First, Programs are interdisciplinary research groups focused on specific areas of expertise or methodologies within computational science. Second, Programs provide various shared (core) resources to the University of Miami research community. In fulfilling both of these roles, Programs contain state-of-the-art technologies along with highly-skilled personnel that have experience using these technologies.

Program Directors

Each Program is led by a Program Director who works with the CCS Director to oversee, develop and administer the Program within the mission and vision of CCS. Program Directors are selected by the CCS Director, in conjunction with the Executive Committee or a designated search committee. Program Directors report to and are reviewed by the CCS Director. Program Directors hold faculty appointments in an appropriate academic department and are expected to have extramurally funded interdisciplinary research programs.

Physical Sciences and Engineering

The program in Physical Sciences and Engineering brings together physicists, engineers, and computer scientists to address shared computational problems. The program will develop innovative solutions and use high-performance computing to address the computational challenges these scientists face in the observation, analysis, modeling and prediction of phenomena in areas such as atmospheric, oceanic and climatic phenomena as well as problems related to fluid dynamics, solid structures, and materials.

Computational Biology and Bioinformatics

The program in Computational Biology and Bioinformatics will initially concentrate on the management and analysis of biological data ranging from molecular sequences and structures to mathematical ecology, marine ecology, biodiversity and population dynamics. In addition, the program will provide tools and training workshops to support statistical analyses of large data sets across disciplines (genomic databases, protein structure databases, etc.).

Computational Chemistry

The program in Computational Chemistry will address a range of problems at the interface of chemistry, biology, engineering, and medicine including medicinal chemistry and chemical biology. The program will focus initially on research questions in computational chemistry and engineering including electronic structure modeling, chemical kinetics, aerosol chemistry, and basic drug discovery.

Data Mining

The program in Data Mining will focus on developing methods for understanding large data sets including data clustering and association rule mining. The program will provide expertise in non-statistical data analysis to researchers across disciplines that require assistance in large scale data analysis.

Visualization

The program in Visualization is a cross disciplinary effort whose mission is to develop and improve the core technologies for comprehensive computational modeling, simulation, analysis, and visualization of natural and synthetic phenomena including research activity in computational mathematics, engineering, and geographical information systems. The group will also be involved in developing integrated approaches to computational modeling, mathematical analysis and interrogative visualization, especially for dynamic engineering, biomedical, epidemiological and geophysical applications.

CCS Resources:

Center resources are led by Resource Directors and are defined as resources that support the CCS Programs and are available to the University research community. The CCS Director, in consultation with the Executive Committee, selects the Resource Directors. The Resource Directors report to and are reviewed by the CCS Director. Resource Directors need not hold faculty positions.

The CCS initially will have two resources: high performance computing and software engineering.

High Performance Computing

The High Performance Computing (HPC) Resource provides assistance in parallelizing code, optimizing algorithms and computer programs, designing shared storage systems for global access and developing a UM "workbench" where people unfamiliar with HPC can run programs to aid their research through a web interface. The HPC group is focused on providing large scale computational and storage systems to the University.

The HPC group will initially be divided into two teams: the HPC infrastructure team and scientific programming team. The HPC infrastructure team is responsible for designing, building, and maintaining the physical hardware required for CCS including large scale Symmetric Multi-Processing systems and high performance compute clusters. The storage efforts are focused on high performing enterprise storage systems with capacities into the Petabytes. The Scientific Programming team will assist researchers in using the resources provided by the HPC infrastructure.

The HPC Resource will be lead by a Resource Director who is an expert in creating and managing HPC environments with significant experience in project management as it relates to high performance and scientific computing.

Software Systems Engineering

The Software Systems Engineering (SSE) Resource provides expertise in the areas of systems design, development, implementation and integration. The group will provide these services through two core teams: software engineering and project management. The software engineering team provides technical expertise and the project management team provides leadership and coordination for systems projects.

The SSE Resource will be led by a Resource Director with expertise in scientific software development and significant experience in software systems consulting and/or managing software engineering groups in either industry or academic settings.

CCS Appointments

Faculty members are invited to request and maintain appointments in the CCS through a formal application and review process. All CCS members must have a faculty appointment in an academic department. Membership categories are independent of academic rank. Any interested faculty from the University of Miami or affiliated institutions are eligible for appointment to the CCS according to the criteria listed below. Faculty appointments within the CCS are for a three year term and are renewable.

Criteria for CCS appointment (all are not required for consideration)

1. Demonstrated interest or scientific activities in the computational sciences
2. Demonstrated research activity in any of the CCS programs.
3. Active/Proposed peer-reviewed or non-peer-reviewed funding in research with a computational science component or relevance
4. Computational science-focused publications

CCS Appointment Process

To be considered for an appointment within the CCS, an interested faculty member must submit the following information to the CCS Executive Committee:

- Description of research interest and statement of research focus
- Current CV (NIH or NSF Biosketch will also suffice)
- Current research funding information

Prospective members are asked to select one of the CCS Programs for alignment and request a letter of support from the coordinating Program Director. This information is then reviewed by the CCS Executive Committee.

Should an applicant be denied membership, the applicant can appeal in writing directly to the CCS Director for re-consideration. The CCS Director can grant the appeal or refer the matter to the Provost for final decision.

CCS Membership

CCS members are:

1. Eligible to have access to shared resources.

2. Eligible to receive developmental funding for innovative ideas.
3. Eligible for administrative support for submission of computational science-related grants and contracts.
4. Eligible for administrative support for management of computational science-related grants and contracts.

CCS Member Responsibilities

All CCS members are expected to contribute to the mission and growth of the CCS through support of CCS activities, including:

1. Willingness to work collaboratively with other scientists and clinical researchers on problems related to computational science.
2. Active participation in CCS activities including research programs and disease oriented working groups.
3. Active participation in the CCS education and visibility raising efforts, including appropriate symposia and community education.
4. Where applicable, willingness to provide mentoring to junior faculty and other CCS members.
5. All CCS members will be responsible to provide information updates as required, and must be willing to share this information for the purpose of reporting requirements.

Review of CCS Members

The Executive committee will meet yearly for a review of the appropriate CCS members (as determined by the three year cycle). Each member is discussed on the basis of evidence for:

- Scientific activities in the computational sciences
- Demonstrated collaborative research efforts
 - Publications with other CCS members.
 - Service as a PI or Co-investigator on grant/grant proposal(s) with other members.
 - Service as a PI or Co-investigator on clinical protocol with other members.
 - Participation as a mentor to more junior members.
- Participation at CCS activities
 - CCS research retreat.
 - CCS committees, special initiatives and meetings.
 - CCS education efforts.
- Demonstrated use of CCS shared resources

Members not meeting these criteria are counseled. A CCS appointment is withdrawn if progress is not demonstrated in the 12 month period following counseling.

Should an appointment be rescinded, the member can appeal in writing directly to the CCS Director for re-consideration. The CCS Director can grant the appeal or refer the matter to the Provost for final decision.

Space:

The research activities of the CCS require a well-equipped data center, and office and administrative space. The CCS will have space on the Coral Gables, RSMAS, and Miller School campuses. Initially the main offices of the CCS will reside in the Clinical Research Building on the Miller Campus. The state-of-the-art CCS data center will be located at a space TBD.

Funding Sources and Projections:

The CCS is being supported by the Provost, Deans and through a contract with the State of Florida. These funds are to be expended over a five year period and will be used to create the infrastructure necessary to support the Center and its Programs and resources described above. All members will be expected to seek external funding for their research, thus there are high expectations for significant growth in sponsored funding. A complete record of past expenditures and future commitments will be available at the first 5 year review of the CCS. The table below illustrates the five-year financial projections for the CCS.

<u>Year</u>	<u>University</u>	<u>Sponsored Activity</u>	<u>Gifts</u>
Year 1			
Year 2			
Year 3			
Year 4			
<u>Year 5</u>			
Totals			

- re-docted -

All numbers are in

Appendix A.

Table 1. Top ten NIH-funded medical schools in the country (FY 2005)

1. Johns Hopkins University –Institute for Computational Medicine
2. University of Pennsylvania – Penn State Institute for Computational Science
3. UC, San Francisco - Program in Systems Biology; Program in Bioinformatics
4. Washington University – Center for Computational Biology
5. Duke University – Center for Bioinformatics & Computational Biology
6. University of Washington – Program in Computational Molecular Biology
7. UC, Los Angeles – Center for Computational Biology
8. Yale University – Program in Computational Biology and Bioinformatics
9. University of Pittsburgh – Center for Computational Biology and Bioinformatics
10. University of Michigan – Center for Computational Medicine & Biology

Table 2. Top Ten R&D expenditures (FY 2006) (*National Science Foundation fiscal year 2006 Survey of Research and Development Expenditures at Universities and Colleges.*)

1. Johns Hopkins University - Institute for Computational Medicine
2. University of Wisconsin, Madison – Program in Computation & Informatics in Biology & Medicine
3. UC, Los Angeles - Center for Computational Biology
4. University of Michigan - Center for Computational Medicine & Biology
5. UC, San Francisco – Program in Systems Biology; Program in Bioinformatics
6. University of Washington - Program in Computational Molecular Biology
7. UC, San Diego - Bioinformatics and Systems Biology Group; Computational Neuroscience, Computational Mathematics
8. Stanford University - Institute for Computational and Mathematical Engineering ; Center for Computational Earth and Environmental Science; Biomedical Informatics Program
9. University of Pennsylvania - Penn State Institute for Computational Science
10. Duke University - Center for Bioinformatics & Computational Biology

Table 3. American Association of Universities (AAU) Members with Institutes, Centers, Programs, or Initiatives in the Computational Sciences.

- Brandeis University
- Brown University
- California Institute of Technology
- Carnegie Mellon University
- Case Western Reserve University
- Columbia University
- Cornell University
- Duke University
- Emory University
- Harvard University
- Indiana University
- Iowa State University
- The Johns Hopkins University
- Massachusetts Institute of Technology
- McGill University
- Michigan State University
- New York University
- Northwestern University
- The Ohio State University
- The Pennsylvania State University
- Princeton University
- Purdue University
- Rice University
- Rutgers, The State University of New Jersey
- Stanford University
- Stony Brook University-State University of New York
- Syracuse University
- Texas A&M University
- Tulane University
- The University of Arizona
- University at Buffalo, The State University of New York
- University of California, Berkeley
- University of California, Davis
- University of California, Irvine
- University of California, Los Angeles
- University of California, San Diego
- University of California, Santa Barbara
- The University of Chicago
- University of Colorado at Boulder
- University of Florida
- University of Illinois at Urbana-Champaign
- The University of Iowa
- The University of Kansas
- University of Maryland, College Park
- University of Michigan

- University of Minnesota, Twin Cities
- University of Missouri-Columbia
- University of Nebraska-Lincoln
- The University of North Carolina at Chapel Hill
- University of Oregon
- University of Pennsylvania
- University of Pittsburgh
- University of Rochester
- University of Southern California
- The University of Texas at Austin
- University of Toronto
- University of Virginia
- University of Washington
- The University of Wisconsin-Madison
- Vanderbilt University
- Washington University in St. Louis
- Yale University

Appendix B. Biographical information

Proposed CCS Director:

The proposed CCS Director is Dr. Nicholas Tsinoremas.

Dr. Nick Tsinoremas holds faculty appointments at the Miller School of Medicine and the College of Arts and Sciences at the University of Miami. Tsinoremas received his B.A. in Chemistry from the University of Athens, Greece, and his Ph.D. in Molecular Biology from the University of Leeds, UK. Before joining the University of Miami he served as Senior Director of Informatics at The Scripps Research Institute- Florida. There he recruited and managed the Informatics and IT groups for the newly formed Scripps Florida. In the past, he was Director of Computational Genomics and Genomic Discovery at Rosetta/Merck where he directed the project that combined informatics and computational approaches with gene expression profiling and genetics to discover, prioritize, and define drug target genes. Prior to working for Merck/Rosetta, Tsinoremas was the Vice-President of Genomics at DoubleTwist Inc., where he determined the scientific direction of DoubleTwist's bioinformatics applications and databases. He also held informatics positions at Incyte Genomics and Progenitor Inc.

Proposed CCS Program Director for Data Mining:

The proposed Program Director for the Data Mining Program is Dr. Mitsunori Ogihara.

Dr. Mitsunori Ogihara received a Ph.D. in Information Sciences from the Tokyo Institute of Technology in Japan in 1993. He joined the Department of Computer Science at the University of Rochester in 1994 and served as the Chairman of that department from 1999-2007. In July, 2007, Dr. Ogihara joined the Department of Computer Science at the University of Miami. Dr. Ogihara has published more than 140 articles in journals, book volumes, and conference proceedings and authored or co-authored two books. He received an NSF CAREER Award and serves on the editorial board for Theory of Computing Systems and for International Journal of Foundations of Computer Science.

Proposed CCS Resource Directors:

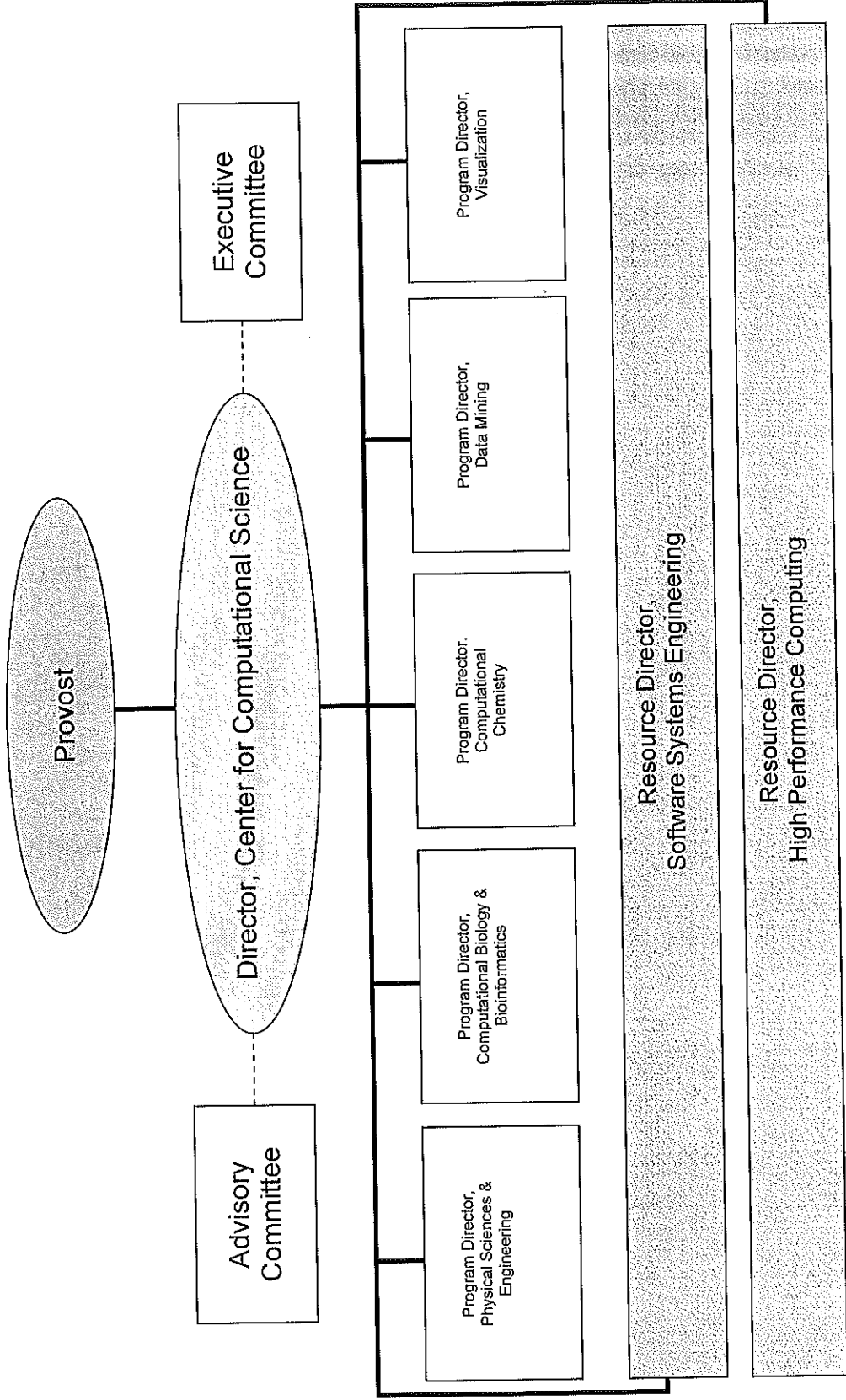
The proposed Resource Director for the High Performance Computing (HPC) Resource is Mr. Joel Zysman.

Mr. Joel Zysman has over 16 years of experience in high performance and scientific computing. Prior to joining the University of Miami he was the Director of Scientific Computing at Scripps Florida. In the past he has designed and managed the Supercomputing installation at Merck Research Labs as well as working in senior technical positions at SGI and Cray Research Inc.

The proposed Resource Director for the Software Systems Engineering (SSE) Resource is Mr. Christopher Mader.

Mr. Christopher Mader received his B.S., in Systems Engineering, from the University of Arizona. Mr. Mader has over 16 year of experience in scientific software development, including leading the software engineering group at Scripps Florida and directing or participating in software engineering efforts at The Institute for Genomic Research, DoubleTwist, Inc., and Stanford University.

Organizational Chart for the CCS.



University of Miami Center for Computational Science (CCS) High Performance Computing Resources

Overview of the Center for Computational Science

The Miami CCS provides the infrastructure and intellectual leadership for developing outstanding interdisciplinary programs in research and education in the computational sciences at the University of Miami. More specifically CCS coordinates and promotes computationally based research, fosters computational science education and provides for the expansion of computational resources and support for the University and the region.

The Center is developing five initial cross-disciplinary programs that together span the life sciences, physical sciences and the high tech world. These are Computational Biology and Bioinformatics, Computational Physics, Computational Chemistry and Chemoinformatics, Data Mining, and Visualization. Providing the infrastructure for these programs are our High Performance Computing and our Scientific Software Engineering cores.

High Performance Computing Infrastructure

The HPC Infrastructure at CCS represents over four Teraflops of computational power split between two distinct architectural paradigms, Symmetric Multiprocessing (SMP) and Massively/Embarrassingly Parallel Processing (M/EPP). More specifically, we currently have a 256 CPU IBM Power5+ SMP cluster with high speed interconnect, a 96 CPU IBM Power4 SMP cluster and a 32 CPU SUN SPARCIII server. Additionally the Center has a Linux Xeon cluster with 228 processor cores for M/EPP programs and algorithms. This cluster has an aggregate of 334 Gigabytes of RAM. The cluster runs RedHat Enterprise Linux. In aggregate the Center currently has ~600 compute CPUs with 1 TB of memory.

Storage

There is over 100TB of shared SAN storage with a common namespace for all servers. The storage design is centered around IBM's GPFS. GPFS allows high speed access to the clustered storage through a distributed meta-store/object-store scheme. The presentation layer of the storage is done through Samba which affords all clients equal access to the storage, utilizing a single management point.

Software

The center offers a complete software suite to its users. Along with standard scientific libraries, the center offers optimized libraries and algorithms tuned for the compute environment. All programs and algorithms are implemented in 64-bit mode in order to address large memory problems. 32-bit libraries and algorithms are also provided for compatibility.

The center also uses a grid scheduling program in order to maximize the efficiency of the computational resources. This increased efficiency translates into faster execution of programs and more resources available to our researchers.

Expertise

The HPC analysis segment of the center focuses on the design and porting of algorithms and programs to the parallel compute model. The Center has several scientific programmers on staff to this end. The scientific programmers have many years experience moving serial code to the distributed/parallel paradigm while retaining the accuracy of the initial model.

Future growth

Within calendar 2008 the center plans to grow to over 1,500 compute cores with a high-speed interconnect for efficient message passing. We also anticipate expanding our storage capabilities to over 500 TB of storage within the 2008 calendar year.




Thomas J. LeBlanc, Ph.D.
Executive Vice President and Provost

MEMORANDUM

August 20, 2008

To: Steve Sapp
Chair, Faculty Senate

From: Thomas J. LeBlanc, Ph.D. 
Executive Vice President and Provost

Subject: Center for Computational Science

I write to confirm that the Deans approved the establishment of the Center for Computational Science at the May 7th meeting of the Academic Deans' Policy Council.

TL/em



Thomas J. LeBlanc, Ph.D.
Executive Vice President and Provost

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Thomas J. LeBlanc, Ph.D. *TJL*
Executive Vice President and Provost

Date: March 24, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to request support from the University of Miami Faculty Senate to approve the creation of the Center for Computational Science (CCS).

The establishment of the CCS synergizes existing strengths and recent recruiting efforts across the University. The new Center would position the University for rapid expansion across disciplines and afford the opportunity to create a world-class environment for research and education in the computational sciences. Importantly, the creation of the CCS would build a framework around which to organize technology and expertise in interdisciplinary computational science activities.

In addition, the CCS will provide the intellectual leadership and resources to support the development and deployment of pioneering computational methods. Although the proposed CCS will initially focus on catalyzing interdisciplinary computational science among all divisions, departments, schools and colleges involved in the research sciences and engineering, in short order the CCS will undoubtedly become a locus for the establishment and development of fruitful collaboration across other disciplines that require computational resources and expertise.

With a critical mass of human and technological resources, the CCS will play a central role in the University's research enterprise by facilitating interdisciplinary and pan-institutional collaborations that accelerate the pace of discovery across disciplines. The new CCS is a critical piece of the burgeoning research activities at our University and I am fully committed to its success. I fully endorse its creation without hesitation or reservation.



March 21, 2008

Robyn Hardeman
Secretary of the Faculty Senate
325 ASHE Building (4634)
Coral Gables, Florida 33124

Re: Support for the Center for Computational Science (CCS)

Dear Colleagues:

I write in strong support of the creation of the Center for Computational Science (CCS) at the University of Miami Miller School of Medicine.

The establishment of the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise at the Miller School. The new Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

The new Center is an important and timely addition to the University of Miami. The UM/Sylvester Comprehensive Cancer Center and I are fully committed to the success of the CCS. I offer the full cooperation of UM/Sylvester and look forward to establishing strong collaborations with the new Center. I fully endorse its creation.

Please do not hesitate to call on me if I could be of further assistance in the deliberations of the Faculty Senate.

Sincerely,

A handwritten signature in black ink, appearing to read "W. J. Goodwin".

W. Jarrard Goodwin, M.D., F.A.C.S.
Director, UM/Sylvester Comprehensive Cancer Center
Sylvester Professor, Department of Otolaryngology



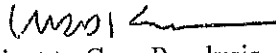
LEONARD M. MILLER SCHOOL OF MEDICINE
Office of the Director • Post Office Box 016960 (D-1) • Miami, Florida 33101
Location: 1475 N.W. 12th Avenue • Miami, Florida 33136
305-243-4918 • Fax: 305-243-4901 • jgoodwin@miami.edu • www.sylvester.org
Leading the Search for a Cancer Cure



THE MIAMI PROJECT TO CURE PARALYSIS
AN INTERNATIONAL CENTER FOR SPINAL CORD INJURY RESEARCH

W. Dalton Dietrich, Ph.D.
Scientific Director

To: Robyn Hardeman
Secretary of the Faculty Senate

From: W. Dalton Dietrich, III, Ph.D. 
Scientific Director, The Miami Project to Cure Paralysis
Kinetic Concepts Distinguished Chair in Neurosurgery
Professor of Neurological Surgery, Neurology and
Cell Biology and Anatomy

Date: March 13, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to request support from the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami.

The establishment of the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise at the Miller School. The new Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

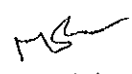
The new Center is an important and timely addition to the University of Miami. The Department of Neurological Surgery and The Miami Project to Cure Paralysis and I are fully committed to the success of the CCS. I offer the full cooperation of the Department and look forward to establishing strong collaborations with the new Center. I fully endorse its creation.

MILLER
SCHOOL OF MEDICINE
UNIVERSITY OF MIAMI

Lois Pope LIFE Center
Post Office Box 016960 (R-48) ▪ Miami, Florida 33101
Location: 1095 NW 14th Terrace ▪ Miami, Florida 33136
305-243-2297 ▪ Fax: 305-243-6017 ▪ www.themiamiproject.org

MILLER
SCHOOL OF MEDICINE

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Marc E. Lippman, M.D. 
Chairman, Department of Medicine

Date: March 13, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to request support from the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami.

The establishment of the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise at the Miller School. The new Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

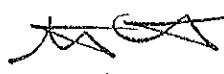
The new Center is an important and timely addition to the University of Miami. The Department of Medicine and I are fully committed to the success of the CCS. I offer the full cooperation of the Department and look forward to establishing strong collaborations with the new Center. I fully endorse its creation.



MILLER
SCHOOL OF MEDICINE

Steven E. Lipshultz, M.D.
Professor and Chairman of Pediatrics
Professor of Public Health and Epidemiology
Professor of Medicine

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Steven E. Lipshultz, MD
Chairman, Department of Pediatrics 

Date: March 18, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to request support from the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami.

The establishment of the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise at the Miller School. The new Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

The new Center is an important and timely addition to the University of Miami. The Department of Pediatrics and I are fully committed to the success of the CCS. I offer the full cooperation of the Department and look forward to establishing strong collaborations with the new Center. I fully endorse its creation.



MILLER
SCHOOL OF MEDICINE

MEMO

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Eckhard R. Podack, M.D., Ph.D.
Chairman, Department of Microbiology & Immunology

Date: March 21, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to request support from the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami.

The establishment of the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise at the Miller School. The new Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

The new Center is an important and timely addition to the University of Miami. The Department of Microbiology & Immunology and I are fully committed to the success of the CCS. I offer the full cooperation of the Department and look forward to establishing strong collaborations with the new Center. I fully endorse its creation.

Sincerely,



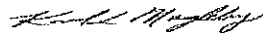
Eckhard R. Podack, M.D., Ph.D.
Sylvester Distinguished Professor and Chairman



MILLER
SCHOOL OF MEDICINE

Karl L. Magleby, Ph.D.
Professor and Chairman
Department of Physiology & Biophysics

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Karl L. Magleby, PhD 
Chairman, Department of Physiology & Biophysics

Date: March 20, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to request support from the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami.

The establishment of the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise at the Miller School. The new Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

The new Center is an important and timely addition to the University of Miami. The Department of Physiology & Biophysics and I are fully committed to the success of the CCS. I offer the full cooperation of the Department and look forward to establishing strong collaborations with the new Center. I fully endorse its creation.

KLM:rb



Department of Physiology & Biophysics • Leonard M. Miller School of Medicine
Post Office Box 016430 (R-430) • Miami, Florida 33101
Location: Rosenstiel Medical Sciences Building, Room 5046, 1600 NW 10th Avenue • Miami, Florida 33136
305-243-6236 • Fax: 305-243-6898 • kmagleby@miami.edu

MILLER
SCHOOL OF MEDICINE

James D. Potter, Ph.D., FAHA
Professor and Chairman
Department of Molecular and Cellular Pharmacology

To: Robyn Hardeman
Secretary of the Faculty Senate

From: James D. Potter, Ph.D., FAHA
Professor and Chairman
Department of Molecular and Cellular Pharmacology

Date: March 18, 2008

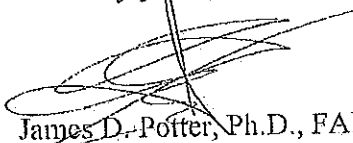
Subject: Support for the Center for Computational Science (CCS)

This memo is to request support from the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami.

CCS is a rapidly emerging field that unites computer science and mathematics with research in biology, chemistry, physics and other disciplines. The establishment of the CCS addresses a growing need for computational expertise at the Miller School of Medicine and would position the University of Miami and the Miller School for rapid expansion. It would also afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

The new Center would be an important and timely addition to the University of Miami, and the faculty of the Department of Molecular and Cellular Pharmacology and I look forward to establishing strong collaborations with the new Center. We fully endorse its creation.

Sincerely yours,



James D. Potter, Ph.D., FAHA
Professor and Chairman

JDP:el



LEONARD M. MILLER SCHOOL OF MEDICINE
Post Office Box 016189 (R-189) • Miami, Florida 33101
Location: 1600 NW 10th Avenue, RMSB 6085 • Miami, Florida 33136
305-243-5874 • Fax: 305-324-6024 • jdpotter@miami.edu

MILLER
SCHOOL OF MEDICINE

MEMORANDUM

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Robert Warren, Ph.D. *Robert Warren*
Interim Chair, Department of Cell Biology & Anatomy
Miller School of Medicine

Date: March 20, 2008

Subject: Support for the Center for Computational Science (CCS)

This memorandum is to document my enthusiastic support for the proposal to create a Center for Computational Science (CCS) at the University of Miami.

The establishment of the CCS will benefit existing faculty and facilitate the recruitment of new faculty into the department as we anticipate the long-awaited hiring of a new chair. The proposed center will clearly address a growing need for computational expertise in many research and clinical programs at the Miller School. The Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

I urge to Senate to approve the creation of this new center when the formal proposal is put on an upcoming agenda this spring. It will be a great asset for the Miller School and the entire university.





Memorandum

To: Robyn Hardeman
Secretary of the Faculty Senate

From: J.M. Tien *JMT*

Date: April 11, 2008

Subject: CoE Endorsement of the Center for Computational Science (CCS)

Based on a vote of the faculty of the College of Engineering, please be informed that the College of Engineering endorses the establishment of the Center for Computational Science (CCS) at the University of Miami.

The CCS helps our faculty recruiting efforts and addresses a growing need for computational expertise at the College of Engineering. The new Center would position the University of Miami and the College for rapid expansion and provide the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. More importantly, the creation of the CCS would allow for an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

The College of Engineering faculty and I are fully committed to the success of the CCS. I offer the full cooperation of the College and look forward to establishing strong collaborations with the new Center.

JMT:oar

James M. Tien, Ph.D., NAB
Distinguished Professor and Dean
College of Engineering
P.O. Box 248294
Coral Gables, Florida 33124-0620
Phone: 305-284-6035 • Fax: 305-284-3815 • jmtien@miami.edu



MEMORANDUM

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Douglas Fuller
Chair, Department of Geography and Regional Studies

Date: April 28, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to express my strong support to the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami. The establishment of the CCS will enhance our recent recruiting efforts and address a growing need for computational expertise in the College of Arts & Sciences. In particular, our Department will benefit from the CCS by providing a new interactive mechanism to create exchanges among scholars who use of large data sets (several of our faculty use large volumes of GIS data and remotely sensed imagery in their work), and give greater prominence to the use of geovisualization in all aspects of our teaching and research.

The new Center will position the University of Miami and the College of Arts & Sciences to improve its computation infrastructure and create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create the means around which to organize and augment our computational resources - a considerable unmet need across the University.

Therefore, the CCS will be an important and timely addition to the University of Miami. Our Department is committed to its success and I look forward to establishing strong collaborations through the new Center.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas Fuller".

Douglas Fuller

Department of Geography and Regional Studies
Antonio Ferré Building
1000 Memorial Drive, Rm. 211
P.O. Box 248067
Coral Gables, FL 33124-2221



To: Robyn Hardeman Secretary of the Faculty Senate
From: Kathryn Tosney, Chair of Biology
Date: April 29, 2008
Re: Support for the Center for Computational Science (CCS)

This memo supports the proposal before the Faculty Senate to create the Center for Computational Science (CCS) at the University of Miami.

Establishing the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise at the College of Arts & Sciences. The new Center would position the University of Miami and the College of Arts & Sciences for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, creating the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources - a considerable unmet need across the University.

The new Center is an important and timely addition to the University of Miami. The Department of Biology and I are fully committed the CCS's success. We have numerous faculty who welcome this initiative personally, as it will greatly facilitate their research. Its advent was an important element in our past two successful recruiting seasons. We already have one person with a dual appointment in the CCS, professors collaborating with members of the CCS, and anticipate further interactions.

I offer the full cooperation of the Department and look forward to establishing many more strong collaborations with CCS. I fully endorse its creation.

Sincerely,
Kathryn Tosney

Professor Kathryn Tosney
Chair of Biology
The University of Miami
215 Cox Building
phone (305) 284-3988
fax (305) 284-3039

Department of Biology
P.O. Box 249118
Coral Gables, Florida 33124-0421
Phone: 305-284-3973
Fax: 305-284-3039

MILLER
SCHOOL OF MEDICINE

Pascal J. Goldschmidt, M.D., FACC
Senior Vice President for Medical Affairs and Dean
Chief Executive Officer
University of Miami Health System

Memorandum

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Pascal Goldschmidt, M.D.
Senior Vice President for Medical Affairs and Dean
Miller School of Medicine

Date: August 4, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo is to document my strong support for the creation of the Center for Computational Science (CCS) at the University of Miami and to encourage the Faculty Senate to approve its implementation.

There is little doubt that powerful computing applications and methodologies are required to solve the spectrum of data-intensive biomedical problems. From imaging technologies to human genomics, computational approaches have revolutionized the biomedical and clinical sciences. The leading edge technologies that will carry us through this century require extremely sophisticated computing power to capture, store, analyze, and model data. The proposed University of Miami CCS is a vital addition to our University research culture. It supplies not only the infrastructure and technical resources necessary to energize fundamental aspects of computational science such as an HPC environment, but also the intellectual and human resources necessary to facilitate successful collaborations across disciplines – key components to fostering innovative research.

The formation of the CCS addresses the long standing need for computational expertise within the University and dovetails with our recent recruiting efforts at the Miller School. The Miller School faculty and I are committed to the success of the CCS. I offer the full cooperation of the Miller School and look forward to establishing strong collaborations with the new Center. I strongly support the establishment of the CCS as a University Center.



MILLER
SCHOOL OF MEDICINE

Pascal J. Goldschmidt, M.D., FACC
Senior Vice President for Medical Affairs and Dean
Chief Executive Officer
University of Miami Health System

Memorandum

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Pascal J. Goldschmidt, M.D.
Senior Vice President for Medical Affairs and Dean *PJG*

Subject: Support for the Center for Computational Science (CCS)

Date: April 3, 2008

This memo is to express my strongest endorsement and request support from the Faculty Senate to approve the creation of the Center for Computational Science (CCS) at the University of Miami.

The establishment of the CCS synergizes with our past and especially recent recruiting efforts and addresses a growing need for computational expertise at the Miller School. The new Center would position the University of Miami and the Miller School for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources – a considerable unmet need across the University.

Increasing, NIH research requires team work and the generation and mining of very large groupings of data, and therefore the availability of CCS and its team of experts will markedly facilitate access to federal funding for our research.

The new Center is an important and timely addition to the University of Miami. The Miller School faculty and I are fully committed to the success of the CCS. I offer the full cooperation of the Miller School and look forward to establishing strong collaborations with the new Center. I fully endorse its creation.

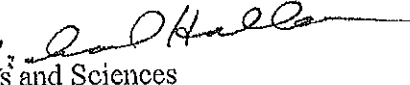




COLLEGE OF ARTS AND SCIENCES

Office of the Dean

To: Robyn Hardeman
Secretary of the Faculty Senate

From: Michael R. Halleran, 
Dean, College of Arts and Sciences

Date: May 6, 2008

Subject: Support for the Center for Computational Science (CCS)

This memo expressed support from the faculty of the College of Arts and Sciences for the creation of the Center for Computational Science (CCS) at the University of Miami.

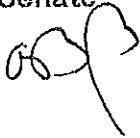
The establishment of the CCS synergizes with our recent recruiting efforts and addresses a growing need for computational expertise in the College of Arts and Sciences. The new Center would position the University of Miami and the College for rapid expansion and afford the opportunity to create a world-class environment for research into computational methods as well as to support the computational needs across disciplines. Importantly, the creation of the CCS would build an interdisciplinary home for computational research at the University and create an infrastructure around which to organize computational resources, a considerable unmet need across the University.

At its meeting on April 14th, the faculty of the College of Arts and Sciences voted strongly to support creating the CCS. I offer the cooperation of the College and look forward to establishing strong collaborations with the new Center.



MEMORANDUM

TO: Stephen Sapp
Chair, Faculty Senate

FROM: Otis B. Brown 
Dean

DATE: April 22, 2008

SUBJECT: University of Miami Center for Computational
Science

This memo is in support of the request for the "naming" of the sponsored research center by the University of Miami Center for Computational Science at the University of Miami. A significant number of Rosenstiel School faculty and staff are already engaged in the pre-operational use of high performance computing resources that will be associated with this Center and we are very pleased with its continuing evolution.

The Rosenstiel School Council at its meeting on April 14, 2008 reviewed the current working draft proposal dated April 7, 2008 and unanimously recommended approval of this Center.


I endorse the creation/naming of this Center by the Faculty Senate, as well.

pc: Robyn Hardeman, Faculty Senate Office

MILLER
SCHOOL OF MEDICINE
UNIVERSITY OF MIAMI

Memorandum

TO: Robyn Hardeman, Faculty Senate

FROM: Conswella Robinson, Secretary for Faculty Council (Medical Campus)  8/22/08

DATE: August 17, 2008

RE: Approval of Centers/Institutes

This is to inform you that the following proposals were presented to and unanimously approved by the Faculty Council at the Miller School of Medicine.

The proposal for the Center for Computational Science was presented by Dr. Jennifer McCafferty-Cepero on April 15, 2008. A handout was distributed to the Council as she explained a very detailed presentation. There was a motion to vote; the Council unanimously approved. The proposal for the Dodson Interdisciplinary Immunotherapy Institute (DIII) was also presented by Dr. McCafferty-Cepero on May 20, 2008. This item was also unanimously approved after a brief presentation. On May 20, 2008, Dr. Leslie Baumann presented a proposal for the Cosmetic Medicine and Research Institute. Dr. Baumann distributed a handout and after a brief presentation, the Cosmetic Medicine and Research Institute was unanimously approved by the Faculty Council.

If you need any other information or should you have any questions, please feel free to contact me in the Office of Faculty Affairs at 305-243-6551.

Senior Associate Dean for Faculty Affairs

P.O. Box 019132 (D2-6) | Miami, FL 33101
Location: 1611 NW 12th Avenue, Park Plaza West, Suite J | Miami, FL 33136
Phone: (305) 243-6551 | Fax: (305) 243-5574