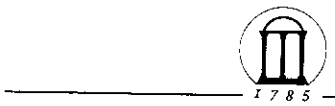
Gordhan L. Patel
Vice President and
Associate Provost



Office of the Vice President
for Research

March 17, 2004

MEMORANDUM

To: Arnett C. Mace
Senior Vice President for Academic Affairs & Provost

From: Gordhan Patel Gordhan L. Patel
Vice President for Research & Associate Provost

Re: Regenerative Bioscience Center Proposal

I am writing in support of the establishment of the interdisciplinary Regenerative Bioscience Center (RBC). Creating the Center will better position the University to seek major research funding in this emerging field and provide a mechanism for interactions with the wider community regarding the ethics and scientific potential of stem cell research. The attached proposal was created by a committee chaired by Steve Stice and included Celeste Condit, Harry Dailey, Steve Dalton and Mike Pierce. The proposal lists 35 faculty advocates. A letter of support is also attached with signatures from eight deans whose programs are or could become involved with these activities. We are hoping the proposal can be distributed to the University Curriculum Committee this week.

Attachment

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The University of Georgia

March 15, 2004

To the University Curriculum Committee:

We write in support of Dr.Gordhan Patel's proposal to establish an interdisciplinary Regenerative Bioscience Center at the University of Georgia. We note that the proposal identifies faculty advocates for this Center from many different UGA departments who are involved or interested in this field of research. The Center will provide an important institutional mechanism to strengthen research collaborations among these faculty and to promote dialogue with the wider community about issues relating to regenerative bioscience. The Center will also help position the University to compete for major research funding anticipated in the field.

It is our understanding that the proposal does not involve the development of any new courses at this time and that initial resources for the program will be provided by the Office of the Vice President for Research.

Sincerely,

Dean Wyatt Anderson
Franklin College of Arts and Sciences

Dean Keith W. Prasse
The College of Veterinary Medicine

Dean Gale A. Buchanan
College of Agricultural and Environmental Sciences

Dean John R. Soloski
College of Journalism and Mass Communications

Dean Sharon Nickols
College of Family and Consumer Sciences

(Interim) Dean Rebecca White
School of Law

Dean Svein Øie
College of Pharmacy

Dean Louis Castenell
College of Education

A PROPOSAL TO ESTABLISH THE

REGENERATIVE BIOSCIENCE CENTER

AT THE UNIVERSITY OF GEORGIA

March 1, 2004

Proposed to the University Curriculum Committee by

Gordhan L. Patel
Vice President for Research
& Associate Provost

1. Abstract

Creating the interdisciplinary Regenerative Bioscience Center (RBC) at UGA will facilitate scientific activities aimed at understanding the basic mechanisms of cellular differentiation, self-renewal and regeneration that often relate to abnormalities that lead to disease states. The RBC will function as a catalyst and home for the study of corrective or ameliorative approaches to disease involving the use of stem cell based regenerative biomedicine. It will provide a context for scientific collaboration across departmental and college boundaries to enhance the opportunities of faculty to secure extramural funding for research in the field. The Center will also contribute to the University's educational and outreach mission through enhanced student research experiences and by addressing the interests and concerns of the public at lectures, symposia, and workshops communicating the benefits and risks of regenerative bioscience. In addition, the proposed Center will actively seek collaborations in research and service with other universities, health-related organizations and initiatives, and other entities involved in regenerative bioscience.

2. Rationale and Main Goal

2.1 A Focus on Stem Cells

While scientists across the country have explored a range of regenerative methods and techniques, the Center will focus on stem cell research because it has proven the most promising area for broad breakthrough discoveries applicable to human health. Basic research in this field is discovering properties of stem cells that could ultimately contribute to the control and cure of such afflictions as Parkinson's disease, multiple sclerosis, certain cancers and other diseases. Formal US Government approval for the use of some 60 stem cell lines for regenerative bioscience has allowed research and discovery to continue with the support of federal funding, largely from the National Institutes of Health. While the focus of the RBC at UGA will be basic stem cell-related research, it will also participate in a related role, offering a productive forum for informed discussion and dialogue related to this scientific field.

2.2 The National Context

Research utilizing animal stem cells has been conducted at universities in America for the past decade to characterize and delineate features of cellular metabolism and differentiation that are crucial to understanding the basis and mechanisms of many human diseases. Recently the potential value of these cells in regenerative bioscience has become clear. To date, this work has largely been sponsored by federal research funding. Numerous institutions are bringing faculty into interconnected interdisciplinary programs to enhance the environment for scientific interaction and position themselves for anticipated NIH program project grants. The University of Wisconsin, for example, has established a center for basic studies on stem cells. Stanford University has created a new Institute for Cancer/Stem Cell Biology, and other universities are strengthening their research and teaching efforts in the field. The development of these new institutional centers is both an outcome of activity to date and a preparation for anticipated

increases in federal funding to come. Most importantly, the NIH has made clear that it expects to provide substantial funding to establish a limited number of regional centers for stem cell research. NIH is currently funding resource, training and seed grants in anticipation of identifying and funding select stem cell centers. In brief, this field of research has evolved quickly across the nation and seems poised to take a significant expansive step.

2.3 The Situation at UGA: Our Goal

UGA faculty have been approached about participating in proposed stem cell centers at other institutions in the region and the nation. This is a result of nationally acknowledged UGA expertise, the lack of an organized stem cell center here, and perhaps a lack of awareness about the rapid expansion of biomedical research programs at UGA. It is the conviction of the advocates of this proposal that UGA possesses a level of stem cell expertise on par the with leading institutions in the country and that UGA can position itself as a national leader in the field by moving expeditiously to capitalize on its resources, institutional investments, and scientific successes. Our goal can be stated simply: *The Center will coalesce UGA expertise, resources and accomplishments in the field in order to build one of the leading programs in the nation in regenerative bioscience.* The creation of the Regenerative Bioscience Center is a natural step toward this goal. The practicality of the goal is supported by listing current regenerative bioscience activity at UGA. Faculty in many UGA departments currently conduct research related to regenerative bioscience, and this activity has arisen in the context of a more general expansion of medically related research activity as exemplified by the rapid growth of membership in the Biomedical and Health Sciences Institute to over 130 research-active faculty members. Examples of UGA activity in regenerative bioscience include:

- The Department of Animal and Dairy Science (ADS) has strong research programs in the areas of molecular and cellular developmental biology and animal model research as it relates to regenerative biomedicine. The funding for these programs at ADS comes from multiple extramural sources, ranging from a discovery grant on neural stem cells, to support for a workshop to train scientists at other institutions on the culture and differentiation of stem cells, to industry sponsored research.

- The Complex Carbohydrate Research Center is conducting research on stem cell technology development. The CCRC has recently received a $6 million, multiple investigator grant from the National Institute for Research Resources at the National Institutes of Health which includes glycomic analysis of stem cells during differentiation to neuronal precursor cells.

- The Department of Biochemistry and Molecular Biology has faculty conducting research on stem cell characterizations through the molecular analysis of cell surface carbohydrates in collaboration with the CCRC (above). Other research programs in the department with funding from NIH utilize stem cell technologies to study the molecular basis of several human diseases.

- In the Department of Genetics, NIH funded research on the development of primordial cell types is providing new information about growth factors and their cellular signaling in cell self-renewal and neural cell development in mammals. Other funded investigators employ stem cell based research to study the genetics of animal models for human diseases.

- Researchers in Bioengineering are developing new manufactured support material to grow cells involved in regenerative medicine.

- Researchers in Plant Biology have obtained a grant from the National Cancer Institute (NCI) to conduct gene discovery relating to stem cell research.

- A proposal for funding has been submitted to the Georgia Cancer Coalition, as part of the application for establishing the Georgia Cancer Center of Excellence, to provide resources for regenerative bioscience at UGA as it relates to various types of cancer.

- Programs in the neurosciences exist in several colleges that could contribute to regenerative bioscience research.

- One of several biotech companies that have located in Athens to collaborate with UGA faculty researchers owns four of the 60 stem cell lines authorized for NIH-funded research.

- There is great potential for collaboration with programs in the College of Veterinary Medicine and at the College of Pharmacy.

- Faculty in the Department of Speech Communication have participated in developing public information strategies for the proposed Center, and the health communications group of the College of Journalism and Mass Communication is a source for communications expertise.

3. Objectives

To achieve its main goal, the proposed Center will focus on five key objectives.

3.1 Enhancing the Collaborative Context for Regenerative Bioscience at UGA

- The Center will provide an organizational structure designed to facilitate scientific cross-fertilization among investigators from different disciplines and backgrounds. Specific actions will include the creation of an interactive Website, organizing scientific retreats, and producing printed materials relating to the Center and its activities.

- The Center will sponsor the creation of a database of researchers and resources in the field at UGA to foster cooperation, collaboration and innovation.

- In addition to coalescing expertise in the sciences, the Center will encourage the engagement of humanistic and social scientific scholars regarding issues related to regenerative bioscience.

3.2 Improving and Expanding Research Infrastructure in the Field

The Center will advocate for the development of specialized resources to support research activities in the field, including the acquisition of specialized equipment and the development of core laboratory facilities.

3.3 Attracting Top Faculty and Graduate Students to UGA

- All RBC faculty members will have their appointments in established UGA departments, and the proposed Center will cooperate with departments across campus in the recruitment of new faculty in both the biological and social sciences whose research interests intersect with this field.

- The possibility of conducting research in this area should also enhance faculty members' efforts to recruit top graduate students. Within the context of the BHSI, RBC faculty will eventually pursue graduate student training grants to support in the recruitment of top graduate students.

- The proposed center will generally contribute to the recruiting atmosphere at UGA by providing career development opportunities for both new and established investigators. Training programs will be established in areas allied with regenerative bioscience.

3.4 Expanding Research Funding Opportunities:

- Creating the proposed Center will improve UGA's federal research funding opportunities by creating a more readily recognizable organizational structure for the range of activity at this institution. It will also open UGA opportunities beyond those available to individual investigators. The center will become the natural catalyst for large grant proposals involving multiple investigators seeking funding for infrastructure, training, and inter-institutional collaboration.

- The proposed RBC will also support efforts at UGA and within the state to target funding strategically for projects reflecting the core interests of the Center.

As has already proven to be the case at other institutions, the Center could serve as a focal point for individual donors and private foundations interested specifically in providing financial support for the development of regenerative bioscience research.

3.5 Strengthening Relationships with the External Community:

- All of the above objects will be served by raising the regional and national profile of Georgia's activity in this field, and efforts to do so are already underway. Symposia and conferences involving leading national and international experts will be held. NIH sponsorship for an annual workshop in the field has been awarded for three years starting in 2003, and a one-day symposium on regenerative bioscience featuring a nationally known keynote speaker coincided with the first workshop held in November, Fall 2003. The next workshop will be held in June, 2004.

- Public forums will be held to inform the general public and news media about general health issues relating to activities within and outside of the Center. The Center will also promote dialogue with relevant communities such as patient advocacy groups, medical provider organizations, and representatives of the agricultural industry.

- One further external focus will be to enhance regional economic development. The critical mass of researchers affiliated with the Center will help create an environment attractive for enhanced associations with existing biotechnology interests and the recruitment of additional ones. Outcomes include increased investment and employment opportunities in the high-tech sector for Georgia.

- Enhancing our research cooperation with the medical School of Georgia, Georgia Tech and Emory will be facilitated through regular interaction between faculty with stem cell and regenerative medicine interests. Several meetings have already taken place with statewide cooperation a potential outcome.

4. Governance and Procedures of the Center

The following headings for the proposed governance of the Center correspond with Section 5 (b) of UGA Academic Affairs Policy Statement No. 7 regarding Centers and Institutes.

1) Governance: The proposed Center for Regenerative Bioscience will operate as an independent unit under the direct authority of the Vice President for Research and in affiliation with the Biomedical and Health Sciences Institute. The Center will be governed by a Director appointed by the Vice President for Research and an Advisory Board. The Advisory Board will provide advice to the Director on the strategic direction and activities of the Center and suggest ways to maximize the benefits of these activities for the university and the region. The Advisory Board will be composed of both faculty and non-faculty members whose interests encompass the Center's concerns. Academic units and individual faculty will participate in the activities of the Center and help to determine its future directions.

2) Funding: Space and nominal funding for the initial public activities of the Center will be provided by the Vice President for Research. Subsequent funding will be derived through the normal budget process and from newly generated gifts, grants and sponsorship.

3) Faculty Affiliation: Affiliated faculty members will retain their departmental appointments and salaries and may participate in the Center's Advisory Board as well as interdisciplinary programs and research opportunities.

4) Participating Faculty: Participation in the Center will include faculty involved in regenerative bioscience research, related social science research and education.

5) Evidence of Support: A letter of endorsement signed by the Deans of Agriculture and Environmental Science, Arts and Sciences, Pharmacy, Veterinary Medicine, Law, Education, Journalism and Mass Communications, and Family and Consumer Sciences is attached. More than 35 faculty have indicated their advocacy for this proposal (see section 7, below).

6) Additional Resources: The Director and Advisory Board will develop means to pursue gifts, grants, and sponsored work to strengthen the resources of the Center.

7) Additional Staff: The size and variety of the staff will depend on the programmatic needs of interdisciplinary projects and the level of extramural funding generated by the Center.

8) Participating Units: The Office of the Vice President for Research will provide oversight, budget allocation, and assistance in seeking gifts, grants, and sponsorship. There are no other units that will provide fiscal support to the Center. Participating faculty from programs across campus will retain their departmental affiliation.

9) Courses and Degrees: No new courses or degrees are proposed.

5. Principal Activities

The principal activities of the Center are explained in detail under the five headings of Section 3, above. These include:

- Enhancing the Collaborative Context for regenerative bioscience at UGA
- Improving and Expanding Research Infrastructure in the Field
- Attracting Top Faculty and Graduate Students to UGA
- Expanding Research Funding Opportunities
- Strengthening Relationships with the External Community

6. Letter of Support

Attached.

7. Faculty Advocates

The following faculty have identified themselves as advocates of establishing the proposed Center for Regenerative Bioscience.

Celeste Condit, Ph.D.
Research Professor, Department of Speech and Communications

Harry A. Dailey, Ph.D.
Professor, Department of Microbiology, Department of Biochemistry & Molecular Biology
Director, Biomedical and Health Sciences Institute

Steven Dalton, Ph.D.
Associate Professor, Animal and Dairy Science
GRA Eminent Scholar

Gordhan L. Patel, Ph.D.
Vice President
VP Office for Research

J. Michael Pierce, Ph.D.
Professor, Department of Biochemistry & Molecular Biology,
Complex Carbohydrate Research Center
Director-elect, UGA Cancer Center

Steve Stice, Ph.D.
Professor, Animal and Dairy Science
GRA Eminent Scholar

Stuart Feldmen, Ph.D.
Professor of Pharmaceutical and Biological Science
Associate Director Biomedical & Health Science Institute

David Puitt, Ph.D.
Regents Professor and Head
Biochemistry and Molecular Biology

Clifton Baile, Ph.D.
GRA Eminent Scholar in Agricultural Biotechnology
Distinguished Professor of Animal Science & Foods and Nutrition

Regenerative Bioscience Center

Alan Darvil, Ph.D.
Regents Professor and Director
Complex Carbohydrate Center

B.C. Wang, Ph.D.
Professor of Biochemistry & Molecular Biology
GRA Eminent Scholar in Structural Biology

John McDonald, Ph.D.
Department Head, Genetics

James Prestegard, Ph.D.
Professor
Complex Carbohydrate Center

Mary Bedell, Ph.D.
Assistant Professor
Genetics

Betty Jean Craige, Ph.D.
Director Academics
Comparative Literature

Richard Meager, Ph.D.
Professor
Genetics

Lee Pratt, Ph.D.
Research Professor
Botany

Barry Palevitz, Ph.D.
Professor
Botany

Harry Dickerson, Ph.D.
Associate Dean
Veterinary Medicine

Mike Adang, Ph.D.
Professor
Entomology

J. Roger Broderson, Ph.D.

Regenerative Bioscience Center

Administrative Director
VP Office for Research

Marie-Michele Cordonnier-Pratt, Ph.D.
Sr. Research Scientist
Plant Biology

William S. Kisaalita, Ph.D.
Associate Professor
Biological Agricultural Engineering

James Lauderdale, Ph.D.
Assistant Professor
Cellular Biology

Richard Winn, Ph.D.
Associate Professor
School of Forest Resources

Mark Farmer, Ph.D.
Associate Professor of Cellular Biology and Director
Center for Ultrastructural Research

Edward T. Kipreos, Ph.D.
Assistant Professor
Cellular Biology

Joe Crim, Ph.D.
Department Head
Cellular Biology

Haini Cai, Ph.D.
Assistant Professor
Cellular Biology

Charles Keith, Ph.D.
Associate Professor
Cellular Biology

Kojo Mensa-Wilmot, Ph.D.
Professor
Cell Biology

Guigen Zhang, Ph.D.
Assistant Professor
Biological Agricultural Engineering

Rick L. Tarleton, Ph.D.
Research Professor
Cellular Biology

Robert Ivarie, Ph.D.
Professor
Genetics

Nancy Manley, Ph.D.
Assistant Professor
Genetics

Brian Condie, Ph.D.
Research Scientist
Genetics