

## **Request for Authorization to Establish a Master of Science in Biomedical Sciences at East Carolina University**

The Brody School of Medicine at East Carolina University requests authorization to establish an M.S. in Biomedical Sciences degree program (CIP 26.0102).

### **Program Description**

The goal of this interdisciplinary degree program is to provide advanced training in biomedical research to students at the graduate and post-graduate levels. Through direct participation in ongoing research, students will be instructed in the application of the scientific method in modern biomedical research as well as in state-of-the-art approaches to the investigation of biomedical problems. It is anticipated that graduates of this program will eventually enter the work force in the areas of medicine, biotechnology, biomedical or pharmacological research, and health education, all of which are areas of current personnel shortages. The program should attract three groups of potential students: graduate students from traditional science disciplines (biology, chemistry, biochemistry, etc), select medical students, and residents or fellows in clinical training. This 38 semester hour program is closely related to the Ph.D. programs in the basic medical sciences in the Brody School of Medicine Division of Health Sciences and will utilize the same faculty as teachers and mentors. There is adequate capacity in existing didactic courses and research laboratories in the participating departments to accommodate the anticipated number of new students. An additional benefit of this new degree program will be an increase in the School's research productivity due to the new students' involvement in ongoing research projects.

### **UNC Tomorrow Relevance**

This proposed program would address several Recommendations within the UNC Tomorrow Report including the components to enhance our Global Readiness (Recommendation 4.1), Our Communities and Their Economic Transformation (Recommendation 4.4), and Our Health (Recommendation 4.5).

### **Highlights from UNC-GA Data Template**

No other public or private college or university in North Carolina offers a similar degree. In the past three years, ECU has established one doctorate, one masters, and two baccalaureate programs, and has discontinued four masters and two baccalaureate programs.

### **Outcome of Consultation with Disciplinary Panels**

The panel included faculty members from NCSU and UNC-CH in addition to the ECU faculty presenters. Panel members discussed the varied backgrounds of students who might apply to this program, and the employment opportunities for the program graduates. In short, the program teaches students who have a background in science how to perform biomedical research, and the panel members agreed this is an important and beneficial result. Overall comments were positive, with consensus on the desirability of offering this degree program.

### **Student Demand**

The graduate directors of the current doctoral programs in the Brody School of Medicine Division of Health Sciences report that they receive inquiries from students each year about the availability of masters programs. Moreover, the pool of potential applicants for this new program is quite large. In the 2005-06 academic year, for example, the numbers of baccalaureate graduates in the biological sciences at the following UNC campuses were: ECU – 190; UNC-CH – 368; NCSU – 491; UNCW – 156; and UNCG – 77. In addition, chemistry majors interested in extending their experience into the biomedical area would also likely be interested in this program. The program projects full enrollment of the program in its fourth year will be 26 full-time students.

### **Opportunities for Graduates of the Program**

Graduates of this program will be able to apply for laboratory research positions in companies performing medical, biotechnical, or pharmacological research. Program graduates, should they choose to do so, will also be eligible to apply to medical school or to Ph.D. programs in the health sciences. Also, because a large percentage of community college instructors will be retiring in the next years, there will be an acute shortage of instructors to teach in the allied health programs offered on community college campuses. Graduates of this program will certainly be qualified to teach in medical science programs at the community college level.

### **Resource Implications**

**Resource needs:** No new courses, faculty, facilities, or library resources are needed to implement the proposed degree program. Ongoing financial support for the new program will be mainly enrollment growth funding.

**Resources allocated:** The participating departments are utilizing existing courses, faculty, facilities, laboratory equipment, technological infrastructure, and library resources to offer and support this new program.

**Estimated cost to the State:** Based on the University funding formula, when the program reaches full enrollment, ECU would receive additional state appropriations of approximately \$395,000 if fully funded by the General Assembly.

### **Recommendation**

It is recommended that the Board of Governors approve East Carolina University's request to establish a Master of Science in Biomedical Sciences degree program (CIP 26.0102) subject to the availability of funding.

## General Information Template for Academic Program Review

### ***Degree Area and Level:***

M.S. in Biomedical Sciences (CIP 26.0102) at East Carolina University

### ***Addressing UNC Tomorrow:***

This proposed program would address several Recommendations within the UNC Tomorrow Report including the components to enhance our Global Readiness (Recommendation 4.1), Our Communities and Their Economic Transformation (Recommendation 4.4), and Our Health (Recommendation 4.5).

### ***Role of Program in Relation to State and Regional Needs:***

According to the proposal, “The need for additional biomedical scientist is documented in “Advancing the Nation’s Health Needs,” a 2005 publication from the National Research Council. This publication states that most biomedical scientists receive their baccalaureate in another field and calls for the development of programs that will interest students and help with their transition into the biomedical field. Our proposed program should accomplish this as it is expected that some of the graduates will continue their training by enrolling in doctoral programs in the biomedical sciences. Finally, some of the graduates of this program will help the predicated need for teachers of the basic medical sciences at the community college level.”

### ***US Labor Department Analysis:***

- *Summary* – The Occupational Supply Demand System puts this degree code in the Medical Sciences category. The national information available for this category is, “An increasing focus on monitoring patients at hospitals and health care centers to ensure positive patient outcomes will contribute to job growth for epidemiologists. In addition, a heightened awareness of bioterrorism and rare, but infectious diseases such as West Nile Virus or severe acute respiratory syndrome (SARS) should spur demand for these workers. As hospitals enhance their infection control programs, many will seek to boost the quality and quantity of their staff.”  
[http://www.occsupplydemand.org/OSD\\_UnitOfAnalysis.aspx?CLUSCODE=096A-15&ST=NC&PathNo=1](http://www.occsupplydemand.org/OSD_UnitOfAnalysis.aspx?CLUSCODE=096A-15&ST=NC&PathNo=1)

### ***Availability of Program Statewide (Enrollment and Degrees Awarded in Last 3 Years):***

- *Public universities* – Not available.
- *Private universities* – Not available.

### ***Available or not from Academic Common Market:***

Not available

### ***ECU Campus enrollment and degrees awarded in similar programs at the Masters level:***

*(Based on two CIP digits – 26 CIP is the summary group for Biological and Biomedical Sciences under which Biomedical Sciences is a program)*

Enrollment			Academic Year						
			Fall 06	Spr 07	Fall 07	Spr 08	Fall 08	Spr 09	Fall 09
ECU	Biology/Biological Sciences	MS	54	50	47	46	49	42	52
	Molecular Biology	MS	14	13	14	12	20	19	23

Number of Degrees Awarded			Academic Year			
			2006-2007	2007-2008	2008-2009	
ECU	Biology/Biological Sciences		MS	19	10	14
	Molecular Biology		MS	3	5	3

***Campus Average of enrollment and degrees awarded in this degree area at the Masters level:***  
*(Based on two CIP digits – 26 CIP is the summary group for Biological and Biomedical Sciences under which Biomedical Sciences is a program - over the last 3 Academic Years, Fall 2006-Fall 2009)*

<b>Campus Average</b>			
	Number of Active Programs	Enrollment per Semester	Degrees Awarded per Year
ASU	1	30	9
ECSU	1	4	1
ECU	2	33	9
FSU	1	9	2
NCA&T	1	21	4
NCCU	2	29	5
NCSU	14	10	4
UNCC	2	18	7
UNC-CH	13	5	4
UNCG	3	16	10
UNCW	2	23	7
WCU	1	27	6
Campus Average:		19	6

***ECU Campus Degree Programs added in the past three years:***

- *Bachelor*
  - BA African and African American Studies (02/09/2007)
  - BS Applied Atmospheric Science (02/12/2010)
- *Master*
  - MS Sustainable Tourism (01/08/2010)
- *Doctoral*
  - AuD Audiology (06/13/2008)

***ECU Campus Degree Programs discontinued in past three years:***

- *Bachelor*
  - BS Marketing Education (03/20/2009)
  - BS Accounting (08/14/2009)
- *Master*
  - MM Music Therapy (03/20/2009)
  - MPT Physical Therapy (06/08/2007)
  - EdS Counselor Education – Intermediate Degree (03/20/2009)
  - CAS Library Science – Intermediate Degree (03/20/2009)
- *Doctoral*
  - N/A