

Request to Plan a Doctoral Program in Economics at East Carolina University

Introduction

This is a request from East Carolina University for approval to plan a doctoral program in Economics (CIP: 45.0699).

Program Description

This proposed program provides advanced training towards a research doctorate in economics. The proposed program will be an academic rather than a professional degree program, but we also will explore internship possibilities to strengthen the practical dimension of student training. The program will include two years of general course work, culminating in comprehensive qualifying exams in theory, methodology and econometrics; one year of courses in the student's specific specializations culminating in field exams; and one to two years of dissertation research, culminating in defense of a PhD dissertation. The first year of course work can be replaced by a master's degree in economics. Students are expected to work as research or teaching assistants after passing the qualifying exams. The goal of the program is to train research economists with a particular focus on developing and applying theories of rational decision making under uncertainty, including expected utility theory, to selected areas that build upon and support current university strengths and strategic directions. There would be four primary areas of focus related to those strengths and directions: environmental risk; public sector risk; risk and decision making; and analytic and econometric tools of risk evaluation and response.

The broad educational objectives of the program are to train graduates who are qualified to:

- Advance the state of economic knowledge and educate others in the use of theoretical and analytic tools related to the above areas of focus;
- Design and conduct high quality research to understand issues of regional importance, such as economic development and the economic and social impacts of natural hazards and their mitigation;
- Take a leadership role in articulating the essential aspects of economic analysis in the four areas of focus described above;
- Work as part of a team with other researchers and policy professionals to formulate policy responses to regional issues based upon rigorous analysis;
- Design, manage, and evaluate programs and policies that address economic issues in each of the above areas for agencies of government, non-governmental organizations, and private firms.

The program will train research specialists with skills that are directly responsive to State, regional, and national needs. Thus it will satisfy the following programmatic objectives:

- Improve emergency response capacities in coastal regions by developing effective strategies for population evacuation in cases of catastrophic events, such as hurricanes, floods, tornadoes, or wildfires;

- Provide analytic support, expertise, and qualified personnel to the insurance industry, an industry that must deal with the immediate consequences of such catastrophic events;
- Support the sustainable development of eastern North Carolina by fostering optimal natural hazards management and hazard mitigation policies;
- Create and promulgate policies to mitigate and optimally respond to the long run economic consequences of climate change and sea level rise;
- Provide effective and timely cost-benefit analyses to assist in decisions regarding investment in, and the maintenance of, social and economic infrastructure;
- Provide economic analytic support to natural scientists, social scientists, policy makers, and government decision makers in dealing with issues of sustainable economic development, hazard mitigation, and effective emergency response;
- Collaborate with natural scientists, other social scientists, and policy makers to effectively measure and fully evaluate the tradeoffs between economic development and environmental impacts.

Each of the four areas of program focus reflects East Carolina University's current strengths and supports its strategic directions in the areas of economic development and the improvement of human health through social science research, education, leadership, and partnership. They will also contribute to the emerging role of East Carolina University as a major doctoral-level institution.

- i. Environmental Risk - Economists who study the environment must account for risk and uncertainty in their models and policy evaluations. Research based on survey techniques must incorporate probabilistic elements to accurately measure implicit prices. The design of environmental policy likewise must accommodate the risk and uncertainty that is embodied in any study of events which combine low probabilities with high expected losses, such as natural disasters. Research on these areas is essential to the development and implementation of policies for mitigating these risks; and mitigation will have a positive impact on the orderly economic development of the coastal region. This branch of the program will be consistent with the research and policy focus of the existing *Center for Natural Hazards Research* (CNI-IR) in the Thomas Harriot College of Arts and Sciences. This area of study also has a natural connection to the *Institute for Interdisciplinary Coastal Science and Policy* (I ICSP) being developed at East Carolina University.
- ii. Public Sector Risk - Current public policy concerns outside of the environmental area also can be addressed with the research techniques of the proposed program. The traditional benefit-cost evaluation of proposed changes in public policy is an area in which public policy design and implementation can be strengthened by incorporating insights from the economics of uncertainty. The current faculty has the experience and skills both with econometric methods to test theoretical constructs and with the

experimental economics methodologies for testing policy alternatives. The Quarterly Regional Economic Forecast called for in the current Department of Economics Strategic Plan will be a focal point for this branch of the program. The Quarterly Forecast will be a vehicle to provide leadership and outreach to citizens and organizations in the region for economic planning.

- iii. Risk and Decision Making - The proposed program will educate economic analysts with the technical skills necessary to deal with the issues of risk and uncertainty in a broad variety of contexts. In a world of certainty and perfect knowledge, the appropriate course of action becomes determinant once the objective function is fully specified. In such a static context, decision making is simple. The need for sophisticated decision making, however, arises from recognition that most interesting problems at some level involve irreducible elements of uncertainty. Specification of the appropriate utility/payoff functions, their complementary loss functions, and appropriate analytic frameworks, including but not restricted to that of expected "utility" for optimal decision making, involve challenges to which this branch of the program would be responsive. Such specification also involves behavioral economic approaches exploring alternative explanations for what might appear to be irrational, or to involve suboptimal decisions regarding risk.
- iv. Analytic and Economic Tools of Risk Evaluation and Response - The ability to manage risks in a changing world requires continual improvement of existing theories and techniques as well as the development of new tools to deal with new challenges. This means that our graduates need to be at the frontiers of knowledge in the areas of risk analysis, capable both of training others and advancing the scientific tools available for application. This focus of the proposed program supports and strengthens the East Carolina University and Harriot College goals of education and research that support economic development while advancing the frontiers of knowledge, and will strengthen East Carolina University as the center of learning for the issues related to our region and state.

East Carolina University and the Harriot College of Arts and Sciences constitute an ideal environment in which to initiate the proposed PhD program in economics. There are two specific areas of institutional uniqueness to which the proposed PhD in economics with an emphasis on risk analysis would be responsive. First, the central Atlantic region is home to fisheries and agricultural industries which are socially and economically important to the region. Research on issues of importance to these industries is currently proceeding in economics and in several other academic units at East Carolina University in cooperation with the Survey Research Laboratory of the Regional Development Institute. Such research is also currently proceeding as a cooperative effort among East Carolina, North Carolina State, and North Carolina A&T State University through the North Carolina Agromedicine Institute. There is as yet, however, no academic program in place which can integrate policy evaluation and design with the element of risk in these areas. Second, because of its geography and experience with natural disasters of recent years, ECU created and supports the *Center for Natural Hazards Research* within Harriot College. This unit brings together faculty researchers and graduate students from a variety of disciplines to study specific issues relating to natural hazards and this work attracts substantial funding by external

agencies. The Center works in close cooperation with the *Center for Coastal Systems Informatics and Modeling* which has recently been established at ECU as a regional engagement center of the *Renaissance Computing Institute* (RENCI) at Chapel Hill. The centrality of the systematic analysis of risk and uncertainty in these studies is clear and essential to their success. The fact that the current director of the Natural Hazards Research Center and RENCI holds a tenured faculty appointment in the economics department reflects the primacy of economic analysis to the mission of the center.

The university's current involvement in each of the above areas provides a rich milieu of issues to which the proposed program can contribute solutions. Moreover, the current economics department has strengths in several areas that would be essential to the success of the program. Faculty research in the economics of health and child welfare, environmental/resource economics, and in the economics of hazards generates high quality publications and attracts significant external support.

UNC Tomorrow Relevance

Its primary impact would fall under Our Communities and their Economic Transformation (Rec. 4.4). The program focuses research and will produce graduates with expertise in a range of risk assessment and risk mitigation strategies which would have application in a wide range of business and governmental responsibilities.

Disciplinary Panel

The disciplinary panel included representatives of ASU, FSU, NCSU, UNCG as well as ECU and UNC-GA. The representatives of the program made a brief presentation focusing on the importance of risk analysis, risk assessment, risk mitigation, and risk management and how relevant this work is to a wide range of business and governmental interest in NC, from natural hazards and disasters to man-made risks. The issue of financial risk as a core focus of much risk analysis was discussed. It is clear that this program will attempt to broaden the focus of risk analysis and management. There was discussion of why the focus on risk management and by the end of the discussion there was agreement from the panel members that this was an appropriate focus for an economics program.

Response

The program representatives emphasized that they want to prepare graduates who will have the skills and the focus to provide significant improvement to the understanding of hazard, risk mitigation, and risk management in a wide range of business and governmental areas. Key to this is to hone tools of analysis and develop new tools for understanding hazards and risk which is one of the four focuses of the program.

Student Demand

ECU has a master's degree program in Economic and its students have been successful in landing positions in a wide range of related occupations and several have gone on to doctoral work at other universities. The three existing public doctoral programs at NCSU, UNC-CH and UNCG had enrollment in the fall of 2009 of 95, 90, 10 (UNCG is starting up a new program.). Duke has the only private doctoral program in the State and had an enrollment 96.

Opportunities for Graduates of the Program

The program provides evidence that there is interest in many federal agencies to focus on and integrate risk analysis/management into agencies' analysis and public decision making. On the other hand the Labor Department suggests employment of economists will grow at a rate about average for all occupations. They think many economists are employed in areas of the government that will be expected to decrease in size, but it is not clear that this applies to doctoral level employment. As with other occupations, the recent economic decline and pessimism about the speed of recovery needs to be taken into account, particularly regarding the timing of a new program. The program is proposing an innovative focus which may attract students and prepare them for new opportunities but attention must be on what is happening to the overall field.

Resource Implications

The resource needs are typically specified more fully in the proposal for establishment. By the time the program is fully ramped up which would likely be at least six years from now, the estimated cost to be provided by State funding would be approximately \$440,000 dollars, or approximately \$90,000 per year over the five-year ramp up period.

Issues to Address in Planning

A very thorough analysis needs to be done of the employment in economics particular at the doctoral level.

Recommendation

This appears to be a very innovative degree program and would fit well with many of the initiatives in coastal studies, climate studies, and environmental studies generally. While this has an important focus, there are three other existing doctoral programs in economics in the State. The campus is also pursuing a doctoral program with a higher rank.

I think there is ample evidence that this would be an innovative, quality program but the recommendation in these circumstances must be tempered slightly as to the timing of the development of the program by the above consideration.

The staff of the General Administration recommends that the Committee on Educational Planning, Policies, and Programs approve the request from East Carolina University to plan a doctoral program in Economics.

Approved to be Recommended for Planning to the Committee on Educational Planning, Policies, and Programs



Senior Vice President for Academic Affairs

August 2, 2010

General Information Template for Academic Program Review

Degree Area and Level:

PhD in Economics (CIP 45.0699) at ECU

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), and Our Communities and Their Economic Transformation (Recommendation 4.4).

Role of Program in Relation to State and Regional Needs:

According to the proposal, "Graduates of this program will find opportunities both within and outside of academics, although we expect most to accept non-academic positions. Outside of academics, firms and institutes that provide consulting services to the insurance industry will provide placement opportunities."

US Labor Department Analysis:

- *Summary* – Employment of economists is expected to grow seven percent from 2006 to 2016, about as fast as the average for all occupations. Demand for economic analysis should grow, but the increase in the number of economist jobs will be tempered as firms hire workers for more specialized jobs with specialized titles. Many workers with economic backgrounds will work in related occupations with more specific job titles, such as financial analyst, market analyst, public policy consultant, researcher or research assistant, and purchasing manager. Overall employment growth also will be slowed because of the relatively high number of economists employed in slow growing or declining government sectors. Employment in Federal government agencies is expected to decrease, and employment in State and local government is expected to grow more slowly than employment in the private sector.

Source: http://www.occsupplydemand.org/OSD_UnitOfAnalysis.aspx?CLUSCODE=112A-06&ST=NC&PathNo=1

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

- *Public universities* – The UNCG program was approved by the BOG on 11/08/2002 and is in the 52 CIP category.

Enrollment			Academic Year					
			Fall 06	Spr 07	Fall 07	Spr 08	Fall 08	Spr 09
NCSU	Economics	PhD	85	77	96	91	95	92
UNC-CH	Economics	PhD	97	91	93	84	90	79
UNCG	Economics	PhD	9	10	11	12	10	10

Number of Degrees Awarded			Academic Year		
			2006-2007	2007-2008	2008-2009
NCSU	Economics	PhD	10	6	19
UNC-CH	Economics	PhD	8	17	13
UNCG	Economics	PhD	N/A	N/A	N/A

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- *Private universities* – Source: <http://gradschool.duke.edu/about/statistics/admitecon.htm>

Enrollment		Academic Year			
		2006-2007	2007-2008	2008-2009	2009-2010
Duke University	PhD Economics	80	81	89	96

Number of Degrees Awarded		Academic Year		
		2006-2007	2007-2008	2008-2009
Duke University	PhD Economics	12	11	11

Available in Online or Distance Format from UNC institutions:

Not available

Available or not from Academic Common Market:

Not available

ECU Campus enrollment and degrees awarded in similar programs at the Doctoral level:

(Based on two CIP digits – 45 CIP is the summary group for Social Sciences under which Economics is a program.) ECU does not offer any Doctoral programs in this CIP category.

Campus Average of enrollment and degrees awarded in this degree area at the Doctoral level:
(Based on two CIP digits – 45 CIP is the summary group for Social Sciences under which Economics is a program - over the last 3 Academic Years, Fall 2006-Fall 2009.)

Campus Average			
	Number of Active Programs	Enrollment per Semester	Degrees Awarded per Year
NCSU	2	78	8
UNCC	1	16	N/A * Established in 2006
UNC-CH	5	71	8
UNCG	1	23	3
Campus Average:		47	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)
 - BS Geographic Information Science and Technology (06/11/2010)
- *Master*
 - MS Sustainable Tourism (01/08/2010)
 - MS Biomedical Sciences (06/11/2010)
 - MS Security Studies (06/11/2010)
- *Doctoral*
 - AuD Audiology (06/13/2008)

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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