

# HCAS Department of Economics Self-Study: 2008-2015

## Executive Summary

The Department of Economics faculty has completed a comprehensive self-study with the overarching goals of improving our academic programs and fulfilling the University's strategic goals. We believe that the Department of Economics has been successful in accomplishing its broad missions of providing sound training in economics to undergraduate and graduate students, producing nationally and internationally recognized research, and providing valuable services to our discipline, the Thomas Harriot College of Arts and Sciences, East Carolina University, the communities in Eastern North Carolina, as well as to local, state, and national governments. Looking forward, we see opportunities for improvement and refocusing, and we will strive to build on our record of accomplishment to achieve our new goals.

### a. The overall quality of each degree

#### *Undergraduate Education*

The department has provided a sound undergraduate economics education to the communities that ECU is serving, many of which are first or second generation college students. We prepare our students for successful careers in the private and public sectors as well as graduate studies in economics and related programs.

#### **BA Economics**

Students with a BA in economics have a deeper understanding of the economic choices that rational economic agents (individuals, firms, and government) make when deciding how to allocate scarce resources. The BA students understand that choices involve making tradeoffs, and how tradeoffs made by all actors in the economy determine the economic outcomes faced by society. This understanding will prove vital for students who want to be successful upon graduating from East Carolina University, particularly as they move into leadership positions. Tomorrow's leaders in both private business and public must understand fundamental economic principles and how market forces work in order to make sound personal and policy decisions. The BA program in economics is distinctive in that it can be specifically tailored for pre-law students and international studies students, while providing them with strong economic analytic skills without requiring substantial mathematical training. Our BA program is very successful in terms of retention/degree completion, student satisfaction, and student success. In particular, all majors are in their third or fourth years during the period covered by this self-study, and every BA major has graduated (through 2014).

#### **BS Economics**

Students who choose the BS economics degree track make up the main body of economics majors in our department. The BS economics program is distinctive in that we have both an

applied track for students who are seeking to gain a business background while mastering fundamental economic concepts, and a quantitative track that allows them to explore economic issues at a deeper analytic level using mathematical tools. The BS Applied concentration has played a significant role in retaining students who were unsuccessful in the College of Business. The BS Quantitative track is an excellent preparation for students who seek admission into graduate programs in economics or business. Based on the feedback from our alumni surveys, the employment prospects are great for our BS graduates, especially in areas of financial services.

### *Graduate Education*

Our Master's program prepares terminal MS students for careers in business and government as quantitative analysts. Our secondary goal is to prepare students for study at the doctoral level, either in the economics track of the Coastal Resource Management (CRM) program at East Carolina University, or in other economics-related doctoral programs. Our current program designation, Quantitative Economics and Econometrics (CIP Code 45.0603) received UNC System approval in May, 2015, and highlights its uniqueness. It is a development and continuation of the prior "MS in Applied and Resource Economics," with the new designation better reflecting its content, preparing students for the "big data" revolution in business and government. We have the only such economics program in the UNC System, and there are only a small number of these programs in the United States.

Student success at the graduate level is first and foremost the correct match of student and program. We conduct extensive interviews with potential students to assure that our program matches their educational goals. Careful selection along with ongoing assessment helps to maximize student success. While the department was pursuing and expecting to establish an economics PhD program 2010-2014, this program was intentionally resized to free funds and tuition waivers for expected PhD students. After the University withdrew that program from UNC consideration, the department returned to active recruiting of terminal MS students, and we expect the program to grow substantially in the future. Furthermore, our degree completion rate has been close to 100% during the past seven years. With a short turnaround time, one calendar year on average, our MS program is very successful in both effectiveness and efficiency. We provide a great value-added education, and the placements for our graduates in the past seven years have been outstanding.

#### b. Strengths and weaknesses of the department

### *Teaching*

The strengths of our faculty teaching are exemplified by the successful integration of faculty research and student learning. In the past six years during this review period, five economics faculty members won the ECU Scholar-Teacher Award, reflecting the general excellence in teaching for the 21st century in the department, one of its primary goals. Nevertheless, we shall continue to work on improving our curriculum to meet the ever changing student demands. For

instance, the Quantitative track of our BS degree usually attracts the very best students in the department, and they frequently double major in mathematics. Our current curriculum could be further strengthened by adding more advanced economics topical courses to challenge these top students. Instructional personnel is another important element of our teaching where an enhancement is highly desired. Just this year we lost an essential instructor for the development of our “big data” oriented MS program and intended undergraduate BS concentration in data analysis and decision making.

*Research*

The economics department prides itself on being highly research productive, particularly in light of the increasing instructional production needs during the past seven years. The department is more productive of research than other departments with Masters only programs, and indeed than many PhD programs (see the Academic Analytics below in Section 4). The Academic Analytics data contain 5 (Ohio University, Old Dominion University, University of North Dakota, Virginia Commonwealth University, and University of Missouri at Kansas City) out of 7 economics departments with Masters only programs among ECU’s 18 peer institutions. Among this group, our department is 1<sup>st</sup> in total citations, number of faculty with citations, percentage of faculty with journal publication, number of faculty with a journal publication, and number of journal publications; 2<sup>nd</sup> in citations per publication and percentage of faculty with citations. The achievements of the department can be seen in the quality of faculty publications, the growing number of grant applications and amounts of awards received. For instance, since 2008, the economics faculty has published 152 refereed articles and 13 books/volumes. These publications have appeared in both leading general interest economics journals and the leading field journals in our faculty’s research areas. During this period, SCOPUS conservatively shows 2,315 department citations.

	Articles (Refereed)	Articles (Proceedings)	Book Chapters	Books Written	Volumes Edited	Conferences & Invited Presentations	Research Reports
2008-09	26		2		1	42	3
2009-10	20		2		1	31	2
2010-11	22	3	3	1	2	47	
2011-12	17		2	1	1	33	1
2012-13	27	1	4	2	2	28	5
2013-14	16	3	6			31	4
2014-15	24	4	6	1	1	22	5
Totals	152	11	25	5	8	234	20

Table 1 ECU Economics Department Research Productivity Summary

The data summary from SEDONA are provided above to illustrate the productivity of our faculty over seven years (see Table 1). Note that it does not include some 40 presentations made by faculty but not entered into SEDONA (from faculty CVs), one book still in press, and 3 articles by a new faculty member who arrived in fall 2015. It does include research output of faculty who worked in the department in those years, but who have subsequently left.

Over the review period the economics faculty also participated in 25 externally funded projects through RAMses, receiving about \$4.2 million in grants. Many of these extramural grant activities were collaborated among economics faculty, averaging nearly two economics faculty members per grant during this review period. We break down the funding sources for these projects by year in Table 2. The economics faculty has also had a substantial impact on the profession with its economic research with 234 presentations in conferences and invited presentations at other universities, and 4 keynote speakers at major international conferences (see Table 1).

Academic Year	Submissions via RAMses / # of grants	Awards <sup>a</sup> via RAMses / # of grants	Other External Compensation <sup>b</sup>	Internal Awards <sup>c</sup>	Total
2008-2009	\$ 2,695,640 <sup>d</sup> / 6	\$2,695,640 <sup>d</sup> / 5	\$38,850	\$62,661	\$2,797,151
2009-2010	\$378,847 / 3	\$16,012 / 1	\$58,900	\$5,696	\$80,608
2010-2011	\$482,598 / 6	\$358,578 / 5	\$32,500	\$22,786	\$413,864
2011-2012	\$149,998 / 1	\$149,998 / 1	\$37,540	\$8,640	\$196,178
2012-2013	\$113,910 / 2	\$62,082 / 1	\$28,815	-	\$90,897
2013-2014	\$454,384 / 3	\$6,000 / 1	\$70,916	\$7,000	\$83,916
2014-2015	\$2,493,250 / 15	\$306,743 / 7	\$259,538	\$1,000	\$567,281
2015-2016	\$300,425 / 9	\$70,515 / 4	\$29,340	\$5,000	\$104,855
Total	\$ 7,069,052	\$3,665,568	\$556,399	\$ 112,783	\$4,334,750

Table 2. Total amounts of grants from both external and internal funding sources

Notes: a) Year of successful proposal is assigned to the year of the award; b) Other External Compensation includes honoraria, travel provided by outside sources, and contracts; c) Internal awards are grants and awards provided by East Carolina University; d) Includes grants awarded before 2008 but were in force through the program review period.

While we have built a national/international reputation among the economics research profession over the years, the department has recently lost two tenured outstanding researchers. In both cases the College and University made tremendous retention efforts to counter and match the outside offers, but we were unable to match the research release time and the substantial discretionary research funds provided on top of salary in those offers.

#### *Public Service/Economic Development*

Our faculty members have been actively engaged in service and outreach activities at all levels with a focus on three main areas: alumni relations and advancement, natural hazards and mitigation-related activities, and macroeconomic outreach activities aimed at regional development. Over the past seven years, we have successfully engaged our growing alumni, and their financial support for our student scholarships has grown rapidly as well. Through our public

service and engagement activities, we have made a great impact on coastal resource management, natural hazards policy making, regional economic development, and public health disparity, especially in malnutrition and obesity epidemics among disadvantaged population in Eastern North Carolina region. In the next seven years, we need to further translate these successes into external funding opportunities as well as student enrollments and placements.

#### *Support Staff*

During this seven-year period, our departmental staff has been very instrumental and effective in supporting our success. We however have been understaffed, given the rising demand of student needs (especially international students) and of administrative tasks. In the past two years, we lost two administrative associates to units outside the HCAS due to salary parity. Ms. Mills, our lead and only full-time administrative associate, in both occasions has stepped and gone above and beyond duty to take on tasks including office assistance, administrative assistance to faculty, majors and graduate students, departmental facility maintenance, and more.

#### c. Major findings from the self-study

During the past seven years, we have strived to provide a high-quality undergraduate program as well as a nationally recognized terminal Master's program. We have sustained high standards of excellence in learning, research, and engagement on various aspects of economics while successfully fostering an educational and professional environment of diversity and inclusiveness, in which students and faculty have worked together to advance the frontier of economic research and its applications. The self-study helps us identify the strengths and successes, as well as the areas to improve including our program developments.

#### d. Significant actions planned

In summary, the major actions planned in this self-study are provided below.

- High school recruiting and community college partnerships for recruiting;
- Economics Society – Advancement Council interaction for career mentoring of students;
- New BS tracks: Quantitative and Decision-Making to enhance success on the job market;
- More effective use of MS students as TAs;
- Develop the MS program as quantitative economics, rather than applied economics;
- Actively develop economics concentration in CRM and the forthcoming ECU-UNCW Joint Ph.D. Program in Integrative Coastal Marine Science (ICMS);
- Create capstone course for BA and BS programs, potentially using ECON 3343, revised to be a 4000-level course;
- Introduce measures in courses to improve student written and verbal communication;
- Expand program of public lectures and outreach for the region;
- Explore development of a terminal professional MS degree, in addition to our quantitative program;
- Revive general interest (1000-level) economics courses to attract new students;

- Enhance external fundraising, particularly through research grants;
- Strengthen capacity of the department to support regional economic development (new hire in 2016).

Our future curriculum development will be dynamic and interactive in that it is guided by evaluations from students as well as faculty in terms of assessment of quality and usefulness of courses, and recommendations for specific improvements. We plan to focus on actively exploring new concentrations to provide our students with the best opportunities for success in the 21<sup>st</sup> century workforce. Specifically, we will create new concentrations related to economic data analysis and decision-making in the next two years, which provide students with highly marketable skills for careers such as market research analysts and economic consultants. With our refocused and rebranded M.S. in Quantitative Economics and Econometrics, we plan to bring the program content more in line with the projected employment opportunities in the labor market. We plan to create professionally oriented tracks, such as market research analytics, to provide students with highly marketable skills in data analysis, communication, and critical thinking.

We maintain our commitment as a research-intensive department and continue to enhance opportunities for new faculty discoveries. Faculty research complements learning and prepares students to compete in a knowledge and skills-based society. In particular, we will enhance our research contributions in mission-driven areas of coastal economics and economic forecasting. These two research concentrations match perfectly with our current faculty strengths in terms of their research expertise, and also match well with ECU's strategic plan and other research assets on campus. We aspire to form a regional research consortium that consists of economics faculty, as well as researchers from other programs from ECU and its sister campuses. Its focus will be our economic approaches to coastal resource management and hazard mitigation, as well as forecasting measures of regional economic well-being such as unemployment, housing, public health, and business activity.

We continue to strive to contribute to the local and regional economic growth and development efforts through a variety of service and outreach activities such as advising, consulting, and participation at conferences. We will significantly increase our engagement with local communities and state agencies through service projects, faculty research contributions, and department/community partnerships in areas related to coastal resources and economic forecasting.

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# Full Report

## 1. Program Purpose

The purpose of all programs in the Department of Economics is: To combine the comprehensive teaching of university-level economics at the undergraduate and graduate levels with research in applied and theoretical economics, both to advance the state of knowledge in economics and to articulate the salient aspects of the discipline in a rigorous but accessible manner; To provide foundational liberal arts training in economics to students of all units of the University; To provide rigorous disciplinary training for students in its BA and BS undergraduate degrees, in its MS in Quantitative Economics and Econometrics (formerly Applied and Resource Economics), and in its social science concentration in the Coastal Resource Management (CRM) Ph.D. program; To pursue research extending the frontiers of knowledge in the science of economics; and to support the ECU's strategic directions of enhancing the region's prosperity, the region's health, and providing leadership in managing the region's natural and human resources, and in mitigating and responding to regional environmental and natural hazards.

The department offers two undergraduate degree programs, a BA and a BS, with two concentrations within the BS degree program, Applied and Quantitative. In addition to the university wide differences between a BA and a BS degree, the programs are distinguished by the extent of mathematical training required and the potential career paths that they open up. The least mathematically intensive is the BA and the most mathematically intensive is the BS Quantitative concentration. The BA is a broad liberal arts degree opening up interdisciplinary and international careers, the BS Applied focuses on business oriented economic analysis and skills, while the BS Quantitative is a preparatory track for further study at the Masters and PhD levels in economics or business.

Over the period of this study the department has offered one graduate program, MS in Applied and Resource Economics, which focuses primarily on preparing graduates for high paying jobs using economic analytic and econometric tools in business or government. It has also provided strong preparation for admission into high quality economics PhD programs.

### **BA Economics**

#### 1.1 Statement

Students who obtain a major in the BA in economics will gain an understanding of how economic agents make decisions given scarce resources. This knowledge will enable students to maximize their well-being and hopefully lead to a lifetime of making rational economic choices. Students who have an understanding of economic choices are better prepared to engage in lifelong learning, become leaders and solve problems.



This degree program provides a broad liberal arts training, including language training, a minor, and many electives, opening up opportunities for interdisciplinary training and a broad range of occupations and further study, particularly in law and public and international affairs.

### 1.2 Strategic Goals Alignments

ECU seeks to “maximize student success”. Students with a BA economics have a deeper understanding of the economic choices that rational economic agents (individuals, firms, and governments) make when deciding how to allocate scarce resources. The BA economics students understand that choices involve making trade-offs, and how tradeoffs made by all actors in the economy determine the economic outcomes faced by society. This understanding will prove vital for students who want to be successful upon graduating from East Carolina University, particularly as they move into leadership positions. Tomorrow’s leaders in both private business and public must understand fundamental economic principles and how market forces work in order to make sound personal and policy decisions.

ECU also seeks to “serve the public”. What better way to serve the public than to educate future leaders on how to make sound economic decisions and how to interpret the complex consequences arising from their decisions and their interaction with the decisions of others? BA economics students receive a solid training on how to make rational economic decisions and how to interpret/understand their consequences.

Finally, ECU seeks to increase opportunity for education by continuing “to open the doors of higher education to diverse students of many backgrounds.” The economics department accepts all students in good academic standing into our degree program. These students include many who have been dropped by other departments due to failure to maintain a minimum GPA in excess of 2.0. This program also provides a second major or strong minor for students in political science and in other fields where they may have a pre-law concentration or interest in rigorous policy analysis.

### 1.3 Features

The BA economics program is very distinctive in that it can be specifically tailored for pre-law students and international studies students, while providing them with strong economic analytic skills without requiring substantial mathematical training. This is done through judicious use of the minor and ample free electives in their program.

### 1.4 External Factors

BA economics students are of course impacted by economic factors. According to [www.payscale.com](http://www.payscale.com), economics majors have the 15<sup>th</sup> highest mid-career average salary (\$96,700) among 129 listed college undergraduate majors. Moreover, the national average starting salary of economics majors is \$50,100, which indicates that the job market values economics majors. In addition, the Bureau of Labor Statistics (BLS, 2012), <http://www.bls.gov/ooh/life-physical-and-social-science/economists.htm#tab-6>, has estimated that the demand for economists will grow by



14% over the next 5 years, well above average for all professions. The Georgetown University study of undergraduate degrees has indicated that economics majors' average salaries exceed those of all business majors outside finance, and over half of the engineering majors (*What's It Worth: Economic Value of College Majors*, GU Center of Education and the Workforce, [www.cew.georgetown.edu/whatsitworth](http://www.cew.georgetown.edu/whatsitworth)).

## **BS Economics**

### **1.1 Statement**

Students who obtain a major in BS economics will gain an understanding of how economic agents make decisions in the presence of scarce resources. This knowledge will enable students to maximize their well-being and understand the linkages between rational decision making and societal outcomes. Students who have an understanding of economic choices are better prepared to engage in lifelong learning, become leaders and solve problems.

This degree program has 2 concentrations: BS Applied and BS Quantitative. The Applied concentration focuses on not only acquiring a more technical understanding of economic analysis and data than the BA, but also on acquiring and applying basic tools of business analysis (accounting and finance). The Quantitative concentration specializes in developing the mathematical analytical skills required for deeper study of economics at the graduate level.

### **1.2 Strategic Goals Alignments**

ECU seeks to “maximize student success”. Students with a BS in economics have a deeper understanding of the economic choices that rational economic agents (individuals, firms, and government) make when deciding how to allocate scarce resources. The BS economics students understand that choices involve making trade-offs, how tradeoffs made by all actors in the economy determine the economic outcomes faced by society, and how to measure those outcomes econometrically. In the Quantitative concentration they also receive the mathematical skills needed to model and analyze economic decisions and activity formally. These skills will prove essential for student success upon graduating from East Carolina University, particularly as they move into leadership positions in business and finance. Tomorrow’s leaders in both private business and public enterprise must understand fundamental economic principles, how market forces work, and how to measure decision and policy impacts in order to make sound personal and policy decisions.

ECU also seeks to “serve the public.” The BS economics students receive a solid training on how to make rational economic decisions, how to measure their consequences, and how to learn from the analysis of data.

Finally, ECU seeks to increase opportunity for education by continuing “to open the doors of higher education to diverse students of many backgrounds”. The economics department accepts all students in good academic standing into our degree program. These students include many who have left other departments due to failure to obtain a minimum GPA. The BS Applied

concentration has played a significant role in retaining students who were unsuccessful in the College of Business.

### 1.3 Features

The BS economics program is very distinctive in that we have both an applied track for students seeking to gain a business background while mastering fundamental economic concepts, and a quantitative track that allows them to explore economic issues at a deeper analytic level using mathematical tools. The BS Quantitative track is an excellent preparation for students who seek admission into graduate programs in economics or business.

### 1.4 External Factors

BS economics students are impacted by similar factors to those impacting the BA majors. Again, according to [www.payscale.com](http://www.payscale.com), economics majors have the 15<sup>th</sup> highest mid-career average salary (\$96,700) among 129 listed college undergraduate majors. Moreover, the national average starting salary of economics majors is \$50,100, which indicates that the job market values economics majors. BLS, <http://www.bls.gov/ooh/life-physical-and-social-science/economists.htm#tab-6>, has estimated (2012) that the demand for economists will grow by 14% over the next 10 years, making it one of the fast growing professions. The Georgetown University study of undergraduate degrees has indicated that economics majors' average salaries exceed those of all business majors outside finance, and over half of the engineering majors (*What's It Worth: Economic Value of College Majors*, GU Center of Education and the Workforce, [www.cew.georgetown.edu/whatsitworth](http://www.cew.georgetown.edu/whatsitworth)).

## **MS Quantitative Economics and Econometrics**

### 1.1 Statement

The primary purpose of our Master's Degree in Quantitative Economics and Econometrics is to prepare terminal MS students for careers in business and government as quantitative analysts. Our secondary goal is to prepare students for study at the doctoral level, either in the economics track of the Coastal Resource Management Program at ECU, or in other economics-related doctoral programs.

### 1.2 Strategic Goals Alignments

ECU's mission statement highlights Student Success, Public Service, and Regional Transformation. Student success at the graduate level is first and foremost the correct match of student and program. We conduct extensive interviews with potential students to assure that our program matches their educational goals. Careful selection along with ongoing assessment conducted by faculty helps to maximize student success. Basic and applied research conducted by graduate students supervised by our faculty is valuable service to both the profession and the general public. We challenge all stakeholders in our program to produce research that is usable to the public and relevant to our strategic goals. Regional transformation is enhanced when ECU provides rigorous quantitative training that can be applied to help grow Eastern North Carolina's major industries in healthcare, education, and coastal management.

### 1.3 Features

Our current program designation, Quantitative Economics and Econometrics (CIP Code 45.0603) received UNC System approval in May, 2015, and highlights its uniqueness. It is a development and continuation of the prior “MS in Applied and Resource Economics,” with the new designation better reflecting its content, preparing students for the “big data” revolution in business and government. The STEM designation and reorientation towards “big data” in our graduate economics program are very timely initiatives and we now offer the **only such economics program** in the UNC System, and there are only a small number of these programs in the United States.

### 1.4 External Factors

Economists in general are well-suited to play a major role in the “big data” revolution. The recent development of very large data sets enables investigation into areas of consumer behavior, regulatory review, and industrial organization, among many other traditional economics research topics, that was not possible in the past. Furthermore, non-traditional research areas such as education reform, medical treatment efficiency and a whole cohort of scientific studies are beginning to employ “big data” analysis tools. The Bureau of Labor Statistics forecasts **strong** future demand for economists, financial analysts, and market research analysts (<http://www.bls.gov/ooh/life-physical-and-social-science/economists.htm>). Our recent move to focus on quantitative economics and econometrics allows us to train students for these high growth job opportunities.

## 2. Enrollment, Degrees and Student Success

### BA Economics

#### Enrollment and Degrees Analysis

##### 2.1 Enrollment Trends

###### *Headcount enrollment*

First we must note that students often become economics majors in the final 3 or 4 semesters of their undergraduate careers. The number of BA majors in the past seven years (2008-2014) has averaged 13 (which include an average of 1 part-time student) ranging from 9 (Fall 2009) to 17 (Spring 2015). Part-time students comprised about 7% of our majors during the past seven years.

The economics department has increased its offerings of face-to-face introductory classes (ECON 2113/2133) from 19 (Fall 2013 & Fall 2014) to 21 (Fall 2015). The number of FTEs from introductory classes has also risen from 14.85 (2007-08) to 16.05 (2014-15). In addition the number of Distance Education offerings has expanded for the introductory courses from 0 (Fall 2013) to 3 (Fall 2015). With more students taking the introductory economics courses, we expect this to result in an increase in future majors. There are currently (Fall 2015) 25 BA majors enrolled.

### *Student diversity:*

The BA in economics attracts a diverse student body reflecting the diversity that exists at ECU. During the previous seven year period (2008-2014) about three in ten BA economics majors (30%) were non-white. This proportion has fluctuated considerably ranging from a low of 10% to a high of 54%. The bulk of the minorities in the BA economics program identify as Black or African American (10%). Hispanic (<1%) and Asian (<1%) comprise a much smaller percentage of the BA in economics majors.

### *Undergraduate majors' characteristics*

The typical BA economics major, during the period of 2008 – 2014, has the following characteristics:

- High school GPA: 3.53
- ECU GPA: 2.84
- SAT score: 1084
- ACT score: 24

All of these academic achievement measures are steadily increasing. Comparing the 2008 average vs. 2015 for each category shows improvement:

- High school GPA 3.22 (2008) rises to 3.56 (2015)
- ECU GPA 2.72 (2008) rises to 2.84 (2015)
- SAT 1072 (2008) rises to 1116 (2015)
- ACT 20 (2008) rises to 25 (2015)

### 2.2 Degrees Conferred – Trends:

The BA economics program has averaged 4 degrees conferred between 2007 and 2014. Given the small size, we do experience some fluctuations in degrees conferred, awarding as few as 1 (2014-15) to as many as 8 (2012-13).

### 2.4 Justification of program size:

This program caters to a select set of students, more literate and more globally oriented than most ECU undergraduates, but less interested in the mathematical side of economics. However, there are no courses offered only for these students, and so no resources would be saved by its elimination. Thus, given that the department averages approximately 139 majors (almost all BS degree majors – see below) from 2007-2014 and confers about 82 degrees per year and there appears no justification for reducing the program size. The economics department has generated an average of 14.8 FTEs between 2007 and 2015 from just the two introductory classes (ECON 2113 and ECON 2133). Future majors are required to take these introductory classes, and 26 professional degree programs at ECU also require one or both of these courses. Increased exposure of students to incomes benefits the recruit of economics majors. More recently, in 2014-15 the economics department has generated 16.05 FTEs from the introductory offerings.

The 3000-, 4000-, and 5000-level courses serve the students who are majoring (both BA and BS) and minoring in economics. From 2007-08 through 2014-15, the 3000-, 4000-, and 5000-level classes have generated an average of 5.94 FTEs. In addition, the department offers 6 to 10 principles classes and 6 classes for our majors during summer sessions. During this same time period, the department has generated an average of 1080 student credit hours each summer. Given the increase in introductory students, we anticipate that the number of BA majors will remain at their historical levels or increase slightly. Moreover, the quality of the undergraduate students that the BA economics program is attracting has steadily risen over a variety of undergraduate major characteristics – GPA (both high school and ECU), SAT and ACT scores. With the planned reduction in the number of credit hours required for the economics minor, we anticipate further growth in demand for the principles courses as well as for the required intermediate economics courses, somewhat dampened by the reduction in required economics electives. We also anticipate some spillover from the economics minor to the economics BA program.

#### 2.5 Student Success:

The BA program does not have issues with retention or graduation; the department generally has no first and second year majors, and every BA major has graduated (through 2014). University retention is affected by the D/F/W in introductory courses, which have been in the mid-20% region for the 2012 to 2014 period. We do find higher rates of D/F/W in introductory online courses as compared to face-to-face courses, e.g. in Fall 2014 – the D/F/W rate for 2000 level classes face-to-face was 24% versus 31% for online. The economics department has been encouraging students to use Pirate Tutoring Center, actively recruiting talented economics students to serve as tutors for Pirate Tutoring Center (PTC), and, when financing allowed, assigned a graduate TA to work in the PTC.

Students typically become BA majors during their final 3 or 4 semesters at ECU. D/F/W rates for BA students are near 0% in all courses except Intermediate Microeconomics, where they have varied from 0-12% since spring 2012. The BA students are typically among the best in the classes they take, with several every year double majoring, typically with Political Science. Almost every student who becomes a BA major graduates within 3 or 4 semesters, and some within 2 semesters; double majors occasionally take longer.

#### 2.6 Job placement of graduates

There has been no systematic tracking of BA or BS graduates by the department. University GSS indicates some 60% of the graduates (who respond, 23-28% typically) are still seeking employment, and 10-15% are pursuing further professional or graduate-level training. A department survey of alumni, for whom we had email addresses, in 2011 indicated that Financial Services (39%), Government (17%), and Retailing (9%) sectors were the most common job placements. Anecdotal evidence indicates that BA graduates enter graduate programs, often not in economics, and find jobs more quickly, on average, than the BS graduates.

## 2.8 Actions taken to improve student success

The economics department strongly encourages students to use Pirate Tutoring Center, actively recruiting talented economics students to serve as tutors for Pirate Tutoring Center (PTC), and, when financing allowed, assigned a graduate TA to work in the PTC. Tutoring is now provided at both the introductory and intermediate levels. Economics faculty have introduced incentive schemes to improve attendance, which significantly improves performance among those who take advantage of them, have added Blackboard discussion sessions, added external economics websites (e.g. FRB, Bureau of Census, economics blogs, and economics instructional videos from the web), and two introduced their own blogs to aid in student learning. Much of the faculty use active learning techniques, from classroom discussions to economic experiments and games. Faculty also used the Blackboard-integrated starfish platform to better communicate student successes and concerns.

The Department of Economics Advancement Council has been actively used both to raise funds for full tuition and fees student scholarships (one need-based and one merit-based), to provide seminars and workshops for students on preparing for and succeeding the job market (resume writing, interviewing, work ethics, ‘dressing for success’, etc.), and to bring actively engaged students together with our successful alumni for networking/social capital building purposes. The department has also paid for students to attend the School of Business “Professional Etiquette Seminar.”

## **Action Plans**

### 2.9 Action Plans to Increase Enrollments and Improve Student Success

We plan to adopt multiple approaches to aggressively grow our undergraduate majors. We will further promote our degree programs to students in principles of economics and general education course offerings via in-class discussion, prospective-majors events, and the department website. We will also collaborate with other HCAS departments (e.g. mathematics) that share our requirements for the calculus sequence to market our majors among high school students taking AP calculus courses and high school students attending various advanced math camps/competitions on ECU campus; we will also provide a regular presence in local high schools’ career-day events to attract high school graduates with aspirations in careers that could benefit from an economics degree. In addition, we seek to establish educational partnerships with community colleges and other post-secondary institutions in the region.

We will further take advantage of our graduate assistantships in instructional effectiveness by reallocating teaching assistants to large sections of foundation courses. We are also in the process of reviving the Economics Society to make our programs more visible on campus. In collaboration with our Department Advancement Council, we will periodically host professional etiquettes/mock interview workshops to enhance our seniors’ professional skills.



Resources needed: Our efforts to recruit more students would benefit from collaborative efforts from across the campus. For instance, more funding for recruiting trips, and even professional recruiters at the college level to coordinate the efforts at the unit level, would be very desirable.

The narratives describing “2.6 Job Placement of Graduates”, “2.8 Actions to Taken to Improve Student Success” and “2.9 Action Plans to Increase Enrollment and Improve Student Success” are identical for the BA and BS.

## **BS Economics**

### **Enrollment and Degrees Analysis**

#### 2.1 Enrollment Trends

##### *Headcount enrollment*

Again we must note that many students become BS majors in the final 3 or 4 semesters of their undergraduate careers; a majority of them become majors late in their junior year, often transferring from other majors. The overwhelming majority of these students transfer from the College of Business, where they have difficulty achieving the 2.5 cumulative GPA required to declare a major. These students face long roads to graduation due to this requirement (established for accreditation purposes), and many would be retention risks for ECU. They can, however, dramatically shorten the path to graduation by switching to the economics major and choosing the applied option of the BS degree, designed specifically for such persons. Most students who select this option have already taken several of the cognate courses required for our degree and after taking all the cognates, need just two additional introductory courses (marketing and management) to satisfy the business minor. Thus, they earn a comparable degree and can even apply for the MBA program after graduation. Clearly, the BS applied option contributes significantly to ECU’s goals of improving retention, reducing time to graduation, and preparing students for rewarding careers.

The number of BS majors in the past seven years (2007-2014) has averaged 139 students (which include an average of 13 part-time students) ranging from 109 (Spring 2015) to 164 (Fall 2011). Part-time students comprise about 9% of our majors during the past seven years. During this seven-year period, majors increased each year from 2008 to 2011, and then have proceeded to fall each year between 2011 and 2015. These students come to the major through the same introductory classes as those in the BA program. They, however, comprise the overwhelming majority of students in the 15 to 20 sections of courses for economics majors that we offer every semester. The number of BS Quantitative majors has ranged from 6 to 14, averaging 10 students over the period studied. The rise and fall in the number of economics majors most likely reflects the trends in the popularity of the business major at ECU, as most of our students transfer from the College of Business. According to the ECU Fact Books, the number of bachelor’s degrees granted by the College of Business rose steadily from 423 in 2008-09 to 612 in 2001-12, then declined to 561 in 2013-14, with a modest rebound in 2014-15 (584). Our focus on developing Ph.D. program over this period was another contributing factor, as we made no undergraduate



program innovations that might have attracted new majors. We address that shortcoming elsewhere in this report.

As noted above, the economics department has increased its offerings of introductory classes (ECON 2113/2133), both face-to-face and distance education (DE) courses. With more students taking the introductory economics courses, we expect this to result in an increase in future BS majors, particularly as 25 professional degree BS programs at ECU require ECON 2113, and 6 – both 2113 and 2133, easing the switch to an economics major later in their career at ECU.

### *Student diversity*

BS economics attracts a diverse student body reflecting the diversity that exists at ECU. During the previous seven year period slightly more than one in four BS economics majors (27%) were non-white. This proportion has been relatively steady, fluctuating between 23% and 31%. The bulk of the minorities in the BS economics program identify as Black or African American (16%). Hispanic (2%) and Asian (2%) students comprise a much smaller percentage of BS economics students.

### *Undergraduate majors' characteristics*

The typical BS economics major, between 2008 – 2014, has the following characteristics:

- High school GPA of 3.24
- ECU GPA of 2.48
- SAT score 1027
- ACT score of 21

All of these academic achievement measures are on their way up. Comparing the 2008 average vs. 2015 for each category shows improvement:

- High school GPA 3.16 (2008) rises to 3.35 (2015)
- ECU GPA 2.40 (2008) rises to 2.54 (2015)
- SAT 1007 (2008) rises to 1046 (2015)
- ACT 20 (2008) rises to 22 (2015)

### *Degrees Conferred*

The BS economics program has averaged 82 degrees conferred between 2008 and 2014. This has fluctuated from 70 (2008-09) to 102 (2012-13). In 2014-15, the department appears to be on track to award about 85 degrees.

### 2.4 Justification of program size

Given the department averaged approximately 139 majors from 2007-14 and conferred about 82 degrees per year, there appears no justification for reducing the program size. The economics department has generated an average of 14.8 FTEs between 2007 and 2015 for the two introductory classes (ECON 2113 and ECON 2133). Future majors are required to take these introductory classes. So the more students exposed to economics, the larger our potential pool of majors. More recently, 2014-15 the economics department has generated 16.05 FTEs from the

introductory offerings. The 3000-, 4000-, and 5000-level courses offered primarily serve the students who are majoring in the BS program (97% of economics majors). From 2007-08 through 2014-15, the 3000-, 4000-, and 5000-level classes have generated an average of 5.94 FTEs. In addition, the department offers 6 to 10 principles classes and 6 classes for our majors during summer sessions. During this same time period, the department has generated an average of 1080 student credit hours each summer. Given this increase in introductory students, we anticipate that the number of BS majors will grow beyond their historical levels. With the planned reduction in the number of credit hours required for the economics minor, we anticipate further growth in demand for the principles courses as well as for the required Intermediate economics courses, somewhat dampened by the reduction in required economics electives. Moreover, the quality of the undergraduates that the BS economics program is attracting has steadily risen over a variety of undergraduate major characteristics – GPA (both high school and ECU), SAT and ACT scores.

## 2.5 Student Success

The indicators of student success are the same as for the BA degree students. Indeed, all economics classes have a mix of students from the BA, BS Applied, and BS Quantitative programs. Only econometrics (ECON 3343) differs in that it typically has no BA students in it, as it is not a requirement for that degree.

Students typically become BS majors during their final 2 or 3 semesters at ECU. D/F/W rates for BS students vary greatly both over time (2012 -2014) and by type of course: required gateway intermediate economics (both micro, 3144, and macro, 3244), required Econometrics (3343), and electives/topics (3000-, 4000-, 5000-level) courses. Overall, the D/F/W rate in major's courses (3000 and 4000 level) is lower than the introductory courses, averaging 17% during the 2012 to 2014 period. The average withdraw rate for the three year period is just 2.6%. In intermediate economics and econometrics, the rate has ranged from 8% to 38%, averaging by semester 20.3%, while across other courses the range has been 9% to 20% with an average of 12.8%. The economics department offered just three online courses in the 3000 and 4000 level during the three year period (2012-14) and the D/F/W for this small sample averaged 12%.

The BS students are differentiated by concentration, with the Quantitative majors among the best in the department, while the BS Applied majors reflect department wide averages in all respects. BS Quantitative majors frequently double major with mathematics, with all taking at least a mathematics minor, while the best BS Applied majors double major with a business degree, and many taking a Business Administration minor. Again, almost every student who becomes a BS major graduates within 3 or 4 semesters, and some within 2 semesters; double majors occasionally take longer.

2.6-2.9 The narratives describing “2.6 Job Placement of Graduates”, “2.8 Actions to Taken to Improve Student Success” and “2.9 Action Plans to Increase Enrollment and Improve Student Success” are identical for the BA and BS.

## **MS Quantitative Economics and Econometrics Enrollment and Degree Analysis**

### 2.1 Enrollment Trends

#### *Headcount enrollment*

The number of new MS enrollments in the past seven years (2008-2014) has averaged 11 students per year (which includes a high of 16 in year 2009/10 and a low of 4 in year 2012/13). The number of part-time students is negligible – only 3 in 7 years. These are usually economics community college instructors needing to obtain 15 hours of economics classes.

#### *Diversity*

During the previous seven year period (2008-2014), 40% of the MS majors were non-white. The bulk of these were International students of varying races/ethnicities. Thirty percent of our graduate students have been female – holding steady at 3-4 per year. International students were about 34%, and five percent of students were identified as black.

#### *Characteristics of Incoming Students*

The typical incoming MS students in the years 2008-2014 have the following average admissions scores:

Undergraduate GPA = 3.20

GRE Verbal = 149/42 percentile

GRE Quantitative = 154/67 percentile

Average Applications: 15 (A high of 22 in 2010-11, low of 8 in 2012-13))

Average Admittances: 13 (A high of 20 in 2009-10, low of 6 in 2012-13))

Average Enrolled: 11 (see section 2.1 above)

Acceptance Rate: 88%

Enrollment Yield: 78%

### 2.2 Degrees Conferred

Average degrees awarded (2008-2014) = 10 (high of 16 in 2010-11 and low of 4 in 2013-14). While the department was pursuing and expecting to establish an economics PhD program 2010-2014, this program was intentionally slowly downsized to free funds and tuition waivers for expected PhD students (beginning Fall 2014). After the University withdrew that program from UNC consideration, the department returned to active recruiting terminal MS students, and we expect the program to grow substantially (subject to financing constraints) in the future.

### 2.3 Completion Rates

We have a one (calendar) year program with a one-year completion rate of nearly 100%. Dual mathematics and economics MS majors usually take an extra year. Careful student selection and a focused curriculum result in a high completion rate.

## 2.4 Program Size

Due to our attempt to begin a stand-alone PhD program, our MS moved toward recruiting PhD quality students, and the reduced number of admitted students was subsequently deemed “low productivity.” With the elimination of a PhD program possibility, we re-focused our MS program on terminal MS students and on preparing students for the economics concentration PhD in CRM and other economics-related doctoral programs. Major recruitment efforts among our own graduates including in-class recruitment, and sending letters to promising students have begun.

## **Student Success**

2.5 The D/F/W rate over 2008-14 has been 8%, all due to withdrawal from the program for non-academic reasons. Completion of the program for most students is within a calendar year, unless the student is simultaneously pursuing a Masters in Mathematics/Statistics which we have begun offering jointly with the Department of Mathematics.

## 2.6 Placement Rates

Our placement rate and level has been outstanding; some 20% of our students continue their studies after the MS, including 18 in the last 7 years in highly competitive PhD programs around the country, including Ohio State University, Wake Forest University, and Georgia State University among others. Most of the remaining graduates are employed in business (21 in past 4 years), and every year 1-3 find jobs in government. We make informed decisions about program development based on the feedback from graduates on the skills needed in the job market to refine our program. An example of this is our recent emphasis on outside certifications, particularly as related to SAS Programming.

## 2.8 Actions to Improve Student Success

In addition to feedback from graduates, we have used the assessment process to improve our program and student outcomes. We have identified five assessment goals that are tested and reviewed for student improvement, three specific to our program (mathematical optimization, statistical inference, and SAS programming) and two University-wide (leadership and global engagement). In each case specific actions were taken to improve student outcomes and this process is documented in our assessment materials, including feedback on the actions success. Examples of actions taken include more emphasis on mathematical and statistical foundations, additional SAS programming classes, and more applied work to enhance the student’s ability to employ the tools of statistical inference.

## **Action Plans**

### 2.9 Action Plans to Increase Enrollments and Improve Student Success

We envision three major program changes to enhance enrollment and student success. First, following our new designation as MS Quantitative Economics and Econometrics we will move

the emphasis of our terminal MS students from applied economics to quantitative economics. This is consistent with the discussion of employment trends discussed in Section 1.4. Additionally there is a new economics track in the Coastal Resource Management PhD program. We will prepare students who desire a higher degree to participate in the CRM program. In turn, we will de-emphasize our past efforts to place our MS students in PhD programs outside of ECU. Thirdly, the newly planned BS track with concentration on “big data” analysis shall feed more motivated students with quantitative backgrounds into our MS program.

We will continue to explore synergy among the existing programs and future new programs on campus to boost the applicant pool in both quantity and quality in the future. The recently approved economics concentration of CRM and the proposed joint coastal PhD with UNC-W will likely attract attention from high quality and motivated students in the region and beyond. Our master’s program could be a natural feeder pool into these PhD programs. In addition, we will continue to highlight that a true strength and differentiator of ECU’s coastal and marine work and its comparative advantage has been the strong and effective social and economic science research. We plan to enhance our graduate student recruiting through professional meetings, advertisements and professional ties with universities that have not traditionally served as sources of graduate students, including international institutions where our faculty members have academic connections. For instance, our faculty will actively recruit potential students to our graduate program while attending international conferences or workshops and among their own professional networks.

### **3. Curriculum, Learning Outcomes and Student Satisfaction**

#### **Curriculum Analysis**

Degree requirements from the University Catalog are available at the following links:

BA: [http://catalog.ecu.edu/preview\\_program.php?catoid=8&poid=1722](http://catalog.ecu.edu/preview_program.php?catoid=8&poid=1722)

BS: [http://catalog.ecu.edu/preview\\_program.php?catoid=8&poid=1751](http://catalog.ecu.edu/preview_program.php?catoid=8&poid=1751)

MS: [http://catalog.ecu.edu/preview\\_program.php?catoid=9&poid=2002](http://catalog.ecu.edu/preview_program.php?catoid=9&poid=2002)

In the Appendix, there is a TracDat “Curriculum Map” for each of the three degree programs, illustrating alignment of assessed student learning outcomes to the courses in the curriculum. As an academic, rather than professional programs, the undergraduate curriculum is built around a large set of electives, structured by level of difficulty, with rather few courses required of everyone; see curriculum maps. The MS program is more structured, with far fewer electives.

#### **BA Economics**

##### **3.1 Curriculum Map and Student Reinforcement**

The program is structured to introduce most of the essential concepts in the Principles of Economics (2113, 2133) courses, reinforce them in the 3000-level courses which only require Principles as prerequisites, master them in a series of electives (3000-level and 4/5000-level), and both master and assess their learning in the Intermediate Micro/ Macroeconomics (economic

theory, ECON 3144, 3244) courses. Upper level courses, those are the 4/5000-level, require ECON 3144, and depending on topic, ECON 3244, as prerequisite. The program attempts to offer, subject to faculty availability constraints, a broad range of topics courses, at both the 3000-level and 4/5000-level, to accommodate student interests, and to provide sequences of courses in a field/topic so the students can acquire depth of learning on that topic. There is no capstone course or project that might be used for assessment purposes. Assessment takes place in the highest level theory courses which all students are required to take.

In addition to taking the economics requirements, students in this program must have a minor and take a foreign language, 3 cognate courses (computers, writing, statistics), and meet the Foundation Core requirements. These provide the student with a broad liberal arts education and enhance the breadth and depth of their learning, and their ability to further learning.

### 3.2 Curriculum

To keep the curriculum up-to-date, faculty members actively pursue new research, and remain abreast of the literature. Information on curriculum development and advances is acquired at professional meetings including but not limited to the Southern Economic Association (SEA) and American Economics Association (AEA), and from the AEA's website. Every year, 2 or 3 faculty members attend the "Teaching Economics" workshop at UNC-W, sponsored by the AEA. We also rotate instructors and modify course contents based on feedback from both past graduates and from the assessment process.

### 3.3 Identified Strengths and Weaknesses in Student Learning Outcomes

Faculty members review the assessment results and identify the strengths as well as the areas in need of improvement for student learning when the assessment data are collected. The number of student learning outcomes assessed, means of assessment, and evaluation criteria have changed over time. The BA program in economics used the following learning outcomes in the program assessment; note that these differ somewhat from those we will be assessing in the future (see the BA Curriculum Map).

- 1) Students will be able to apply the demand-supply model to explain the market system and the effects of various government interventions.
- 2) Students will be able to identify the structure of national income accounts and explain models of aggregate output and price levels.
- 3) Students will be able to apply disciplinary concepts to explain how global and local issues are interconnected.
- 4) Students will be able to utilize reflection to promote personal growth and leadership.
- 5) Students will be able to explain the concept of opportunity cost and apply the principle of comparative advantage.

Means of assessment employed include both direct and indirect measures of student learning outcomes. The direct measures include the end-of-semester exams designed by program faculty,



which are different from the final exams for grade. In addition, a set of selected questions from the Test of Understanding in College Economics developed by the National Council on Economic Education was deployed in 2013-14 for the first time. This externally developed assessment tool provided means to compare how our students were doing compared to the national average. The indirect measures of student learning outcome include the targeted self-assessment questions on senior survey.

Our criteria for success for the direct measures include that 80% of the students score 70% or better on the end-of-semester assessment exam and that 80% of our students who take the Test of Understanding in College Economics meet the national average. For the indirect measures, we target that 80% of the senior students majoring in economics average a self-assessed confidence level of 5 or greater in explaining the relevant economic concepts (using a Likert scale ranging from 1 - not confident at all to 7 - completely confident).

Our students have performed at or above the expected level on the following assessment items: clear statements of disciplinary concepts to explain how global and local issues are interconnected; thorough understanding of the market system of resource allocation; and overall comprehensiveness of national income accounting and aggregate output/price determination. Evaluations by faculty members showed that students did not do as well on the economic idea of costs and their role in efficient division of labor. Weaknesses included understating global issues, and professional collaboration and self-knowledge. Econometric knowledge was not assessed.

### 3.4 Differences in Student Learning Outcome in Face-to-Face and Online Programs

While our undergraduate instruction is traditionally based on the face-to-face classroom setting, we are actively participating in online programs to provide the distance learning opportunities to both traditional and non-traditional students. We have offered the online classes for the introductory level for several years, typically in the summer sessions, and recently expanded them to a few intermediate and topics courses for our majors. The assessment data from online courses are unavailable at the present time due to technical issues, but several faculty members developed an assessment instrument available in Blackboard during 2014-15. During fall 2015, two sections of ECON 2113 and one section of 2133 are offered as online classes. Assessment results from these classes will be compared to those from the face-to-face courses in 2015-16.

### 3.5 Decisions Made and Changes Instituted Based on Assessment

Our faculty regularly meet to evaluate the assessment outcome and identify areas where improvement is possible. For example, based on the 2013-14 leadership assessment results, our faculty made changes in ECON 3323, "Decisions and Games," to improve professional collaboration and self-knowledge among the students. The decision projects were completed by groups of students, rather than individual essays, for the first time in 2014-15. Each group of students chose a problem of personal interest and implemented a rational choice approach to finding a solution to the problem. Ten projects were evaluated by a committee of faculty



members not teaching the course. The results show that 80% of our students in ECON 3323 “Decisions and Games” scored 70% or better on the project compared to the previous year’s results where only 55% of our students scored 70% or better.

Curricular changes based on assessment have often included developing additional lecture materials and problem-solving exercises. The assessment results for ECON 2113 (ECON 2133) showed that only 48% (57%) of our students in ECON 2113 (ECON 2133) who took the Test of Understanding in College Economics met the national average 2013-14. Faculty teaching ECON 2113 and ECON 2133 developed and used a series of homework assignments to provide additional opportunities to students to improve their learning, and implemented in-class problem-solving exercises to reinforce the student learning in various economic issues. The assessment results in 2014-15 show that 67% of our students in ECON 2113 and 71% of our students in ECON 2133 met the national average.

### 3.6 Effectiveness of the Changes

Our assessment records indicate that the curricular and pedagogical changes made to enhance our student’s learning outcomes have been effective.

For example, based on the assessment results 2013-14, our faculty teaching ECON 3114 in 2014-15 developed extra credit tasks and homework problems to promote learning of key concepts in the market system of resource allocation. The results from the end-of-semester assessment show that 67% of the students in our BA scored 70% or better on the exam compared to the last year’s result, where only 50% of students scored 70% or better.

In addition, our faculty teaching ECON 3244 developed additional lecture materials to promote learning of key concepts in national income accounting and aggregate output/price determination, introduced in 2014-15. The results from the end-of-semester assessment exam showed that 100% of the students in our BA scored 70% or better on the exam compared to the last year’s result that only 75% of students scored 70% or better.

Overall, there is evidence of continual improvement over the previous cycles of assessment through the changes made to enhance student learning outcomes.

### 3.7 Satisfaction of Students

BA and BS students are not separately surveyed. Student assessments of faculty contributions indicate more than 85% of students are “satisfied” or “very satisfied” with the general contributions of department faculty. This evaluation has been consistent through the 2011-2012, 2013-2014 and 2014-2015 academic years. The major has also prepared students well for both graduate education and for entering the workplace. Between 2007 and 2011, approximately 25% of major alumni chose to further their education following graduation. Approximately 90% of major alumni found employment within six months of graduation of which 70% reported applying their economics training to perform their job duties. These employment rates alone are

revealing of the success economics majors achieve. The quality of jobs that economics majors are earning is equally important. Although majors found employment in twenty three different sectors, the majority of majors (~55%) reported working for the government or in the financial services sector. Moving forward, the department seeks to better motivate students, explain course material more carefully and make clearer course expectations. Among these indicators, student reporting rates of being satisfied and highly satisfied trailed ECU averages by approximately ten percentage points. Given the rigor of economics course material, faculty will be increasingly encouraged to present data and concepts to students both audibly and visually. Economic data is particularly well-suited for in-classroom visualization. This technique will improve the communication of difficult course material while reinforcing course expectations and better motivating students.

### 3.8 Evaluation of Skills

BA majors are not assessed on econometric skills, as are the BS majors; in all else assessment is identical. Based on 2014-2015 student assessments, economics students reported the development of mathematical skills (87.5%) and a knowledge of the scientific method (91.7%) at rates exceeding ECU averages (80.2% and 86.7%). More than 90% of student assessments also indicate the use of analytic skills and critical thinking skills in economics coursework. Similar to the trend observed in student satisfaction outcomes, the development of written and spoken communication of economic material by students leaves room for improvement. Among these indicators, students report the development of these skills in the economics classroom at rates trailing the ECU average by 13 to 17 percentage points. Moving forward, the department will bridge its strength of developing students' understanding of the scientific method with its weakness of fostering clear written and spoken communication of course material. One example of this approach is to include assignments in upper-level research methods courses that apply the scientific method to an empirical research question, which is then presented and discussed by fellow students. Further, instructors will be encouraged to use in-classroom polling software. This software enables instructors to receive real-time, interactive and anonymous feedback from students. This feedback unveils the lecture material that is understood well by the students and understood poorly by the students.

### 3.9 Employer Feedback

The economics department does not have a formal feedback mechanism with employers. Our proxy for "Employer feedback" is the proportion of students in an Alumni Post Graduation survey that reported finding a job within 6 months of graduation. This employment measure provides an indication of how valuable employers consider recent graduates from ECU with an undergraduate economics degree. During the entire sample period prior to 2007 through 2011, 89 of 99 students (90%) reported finding employment within six months.

The Alumni Post Graduation survey also asks whether graduates have used economics training at their job; again, an indirect measure of employer feedback. During the sample period (pre-2007 to 2011) we find that 64 of 92 students (70%) reported using their economics training at the job

site. More recently between 2008 and 2011 (10 of 15 students or 67%) reported that they used their economics training on their job. The top three sources of employment upon graduation are Financial Services (first), Government (second), and Retail (third).

### 3.10 Improving Student Satisfaction

The Department of Economics uses innovative learning strategies and delivery methods to maximize student access to both faculty and material by providing online lectures for students enrolled in both distance education classes and face-to-face classes. Faculty are also available to answer student questions both in person (as all faculty have office hours and offer appointments) and can be reached electronically as well as through email. Faculty members commonly respond to email questions outside of traditional office hours. The Department prepares students with knowledge by responding to student interests through updating the course offerings to include Behavioral Economics and Financial Economics I. Behavioral Economics is a popular new offering of the department. And Financial Economics has proven timely given the recent Great Recession. Financial service is the number one source of employment for Economics graduates.

The economics department in an effort to improve its course offerings for its majors has recently added two new Economics electives in 2014-15. These two courses – ECON 3310 (Behavioral Economics) and ECON 4706 – Financial Economics I broaden our course offerings. In addition, a new research course, ECON 4000, has been created and approved, but the department currently lacks the resources to offer it. The course descriptions for each are provided:

#### ECON 3310 – Behavioral Economics

One of our program's student learning outcomes outlined in our most recent assessment report (11/24/2014) is that "Students will be able to apply economic concepts and theoretical tools to solve economic problems." Our current curriculum does not have a course that addresses the theoretical tools developed in behavioral economics. Specifically, the course develops multiple economic theories of individual choice and shows how each theory can lead to different predictions of economic behavior. The course outlines the instances where standard economic theory fails to make accurate predictions of human behavior and describes how economic theory has adjusted to account for this.

#### ECON 4000 – Applications of Economic Analysis

This meets an assessed need for a course that allows students to integrate all they have learned in a deep study of something that interests them. It is a writing intensive course where the student is expected to prepare multiple papers. The students in this course will work closely with faculty in preparation of a senior research paper. This course will serve as a cumulating event for an economics major, allowing them to employ the analytical tools learned in both their required courses and their subsequent course work in other economic fields. Students in these upper level classes will continuously interact with faculty who will provide mentoring and guidance in preparing this research paper.

## ECON 4706 – Financial Economics I

The course elevates the assessment performance of our students and college in the following four ways: This course aims to prepare senior economics-major students ready to pursue a CFA designation, or to pursue a career in the finance industry. The course will fill the knowledge gap of current training we provide for economics-major students by adding financial economics and equity analysis skills required by major banks and money market funds.

In addition to the two new course offerings the economics department also has increased the number of DE classes it offers. This provides our majors with increased flexibility, lower costs of commuting and gives access to more non-traditional students to become majors.

In an effort to increase the number of economics minors we have revised the minor program to requiring 18 credit hours (ECON 2113, 2133, 3144, 3244 + 6 hours of ECON electives) which is a reduction of six credit hours.

To reduce the potential for course bottlenecks which could prevent a student from graduating, the economics department has modified the economics major degree requirements to allow students to substitute 3 elective additional economics credit if they could not take their COMM 2410 requirement since COMM 2410 is being phased out.

In our writing intensive (WI) classes the new QEP requirements are fully implemented. The economics department has implemented course caps to prevent an overload of students. Instructors teaching WI classes are fully cooperating and using the various resources of the university writing center. The use of student writing mentors in WI classes is also being explored to assure that the 5 QEP learning outcomes are met.

### 3.11 Action Plans: Pedagogical Change in Next 7 years

In the next seven years, we aim to improve the quantitative rigor in terms of statistics and econometrics as well as the written/oral presentation skills component of the undergraduate curriculum. We plan to create a new concentration related to economic data analysis and decision-making in the next seven years, which will provide students with highly marketable skills for careers in market research analysis and economic consulting. This new concentration will appeal to at-risk students in engineering, computer science, and industrial engineering technology and will offer a more professionally oriented option that addresses market needs. This option will appeal to high school and community college students with strong quantitative skills. The new majors, moreover, will also reinforce the internal recruiting of MS students for our refocused and rebranded graduate program.

The economics department in an effort to improve its course offerings for its majors has recently added two new economics electives in 2014-15. These two courses – ECON 3310 (Behavioral Economics) and ECON 4706 – Financial Economics I broaden our course offerings. The course descriptions for each are provided above. The department has also created new 4000-level

writing intensive research courses (ECON 4000), also described above. These course sections need to be smaller sizes to allow active research mentoring by the instructor, and hence we have not been able to offer them to date, although some faculty members are eager to do so. We also plan to upgrade our current ECON 3343 (Econometrics –Writing Intensive) to a 4000 level capstone course, required to accommodate all graduating seniors in the department, for both BA and BS students. BS students are already required to take this course. We plan to drop an economics elective course for BA students and require them to take this 4000-level writing-intensive econometrics course instead. The program will be revised to include this course as a capstone course for final assessment of student learning.

### 3.12 Action Plans to Improve Educational Experience

Our orientation for curriculum development in the next 7 years will be dynamic and interactive in that it is guided by evaluations from students as well as faculty in terms of assessment of quality and usefulness of courses, and recommendations for specific improvements. We plan to solicit and respond to feedback on the quality of advising and students' overall impression of the quality of the major experience. To accommodate students' growing and diversified learning needs both on and off campus, we plan to constantly employ new learning technology (e.g. interactive online tools) as well as adaptive learning modules. We focus on actively exploring new concentrations to provide our students with the best opportunities for success in the 21st century workplace. We will also develop self-paced online courses and provide specialized educational access for individuals interested in refining their skills through professional development and continuing education.

Based on assessment results, instructors identify areas that need improvement and create additional content/homework/classroom activities to facilitate learning. In addition, instructors have experimented with improving classroom technology by using on-line homework/tutorials, along with conducting classroom experiments, and using clickers in large classroom settings in an effort to improve motivation, involvement, attendance and learning. Group work assignments have been introduced in some economics classes (e.g. Games and Decisions). In addition, instructors use think-pair-share activities to improve student learning. Faculty have also implemented real-time polling devices in the classroom, which allow students to anonymously provide feedback on their level of understanding. This feedback is then used by instructors to identify lecture material that is unclear.

The department will fund economics majors to serve as tutors at the Pirate Academic Success Center, especially for underrepresented classes like intermediate micro and macro. Funds will be raised from the golf tournament and other donations. The Economics Society is being revamped to encourage greater student participation. The economics department is planning on organizing, in collaboration with the Pitt-Greenville Chamber of Commerce, an Economic forum that features a high profile speaker to address important economic issues. An economics symposium is scheduled in Oct 5th 2015, with a world-class guest speaker from UCLA. We plan to make this a recurring event every year.

### 3.13 Additional Resources Needed

More reassignment times for instructors who are involved in creating new courses and new programs will also be needed as these preparations will likely be very time-consuming. Even though the new curriculum approval process has been streamlined in the past several years, it will help us tremendously if it could be further streamlined to accommodate our future proposals at both the undergraduate and graduate levels. Our proposed new programs will likely benefit from more IT support to cater to our future needs for interactive learning, massive data access and processing for both undergraduate students and graduate students.

The department is also exploring additional funding avenues that will enable us to send more faculty members to different regional high schools to recruit quantitatively oriented high school students who may be interested in majoring in economics. Additional funding would be helpful in order to pay for refreshments for parents and students on admitted students' day. Additional funding would enable the department to fund student travel to attend nationwide economics competitions. Additionally, if the department had more financial resources, then we could offer more guest speakers to the department and the Economics Society. The department is also considering reviving the ECU chapter of the International Honor Society for Economics.

## **BS Economics**

### 3.1 Curriculum Map, Student Reinforcement

Like the BA, the program is structured to introduce most of the essential concepts in the Principles of Economics (2113, 2133) courses, reinforce them in the 3000-level courses which only require Principles as prerequisites, master them in a series of electives (3000-level and 4/5000-level), and both master and assess their learning in the Intermediate Micro/Macroeconomics (economic theory, ECON 3144, 3244) courses. 4/5000-level courses require ECON 3144, and depending on topic, ECON 3244, as prerequisite. A significant difference in requirements, and learning path, is the requirement that students in both BS concentrations take calculus and econometrics. There is only one required econometrics course (ECON 3343) in which the relevant concepts and methods are introduced, mastered, and assessed. When the quality of students (hence 'student demand') justifies it an econometrics course is offered at the 5000-level, further developing tools, concepts, and applications. The learning objectives for this requirement are reinforced in most topics courses where econometric results relevant to the topic are discussed.

The program attempts to offer, subject to faculty availability constraints, a broad range of topics courses, at both the 3000-level and 4/5000-level, to accommodate student interests, and to provide sequences of courses in a field/topic so the students can acquire depth of learning on that topic. These courses are the same as those taken by the BA majors. There is currently no capstone course or project that might be used for assessment purposes. Assessment takes place in the highest level theory courses which all students must take.



In addition to taking the economics requirements, students in this program must take around 20 hours of cognate courses beyond the 9 hours of cognates required for the BA, and meet the Foundation Core requirements. The Cognate courses differentiate the two concentrations. The BS Applied requires the essential accounting and finance core of a BS in Business, while the BS Quantitative requires the essential core of a BA in Mathematics. While no minor is required in either concentration, 6 more credit hours in business courses give a BS Applied student a Minor in Business Administration, while 9 more hours of math gives a BS Quantitative student a minor in Mathematics.

### 3.2 Curriculum

To keep the curriculum up-to-date, faculty members actively pursue new research, and remain abreast of the literature. Information on curriculum development and advances is acquired at professional meetings (SEA and AEA), and from the AEA website. Every year, 2 or 3 faculty members attend the “Teaching Economics” workshop at UNCW, sponsored by the AEA. We also rotate instructors and modify course content based on feedback from both past graduates and from the assessment process.

The BS curriculum is innovative in its structuring of the concentrations available to students. The BS Applied uses Cognate courses, noted above, to maximally prepare students for success in careers in business and government immediately on graduation. The BS Quantitative uses Cognate courses to raise the level of mathematical training of graduates to the level required for admission and initial success in high quality graduate programs in business and economics, in particular PhD programs. Both programs maintain the full undergraduate economics core of microeconomics, macroeconomics, and econometrics, with 21 to 24 hours of economics electives in which that core is applied.

### 3.3 Identified Strengths and Weaknesses in Student Learning Outcomes

Faculty members review the assessment results and identify the strengths as well as the areas in need of improvement for student learning when the assessment data are collected. The number of student learning outcomes assessed, means of assessment, and evaluation criteria have changed over time. The BS program in economics used the following learning outcomes in the program assessment; note that these differ somewhat from those we will be assessing in the future (see the BS Curriculum Map).

- 1) Students will be able to apply the demand-supply model to explain the market system and the effects of various government interventions.
- 2) Students will be able to identify the structure of national income accounts and explain models of aggregate output and price levels.
- 3) Students will be able to apply disciplinary concepts to explain how global and local issues are interconnected.
- 4) Students will be able to utilize reflection to promote personal growth and leadership.



5) Students will be able to use economic data to carry out statistical inference and prediction.

Means of assessment employed in the BS program were identical to those for the BA, although one assessed student learning objective is different due to the difference in program requirements; econometrics is required in this program. The criteria for success and metrics (both direct and indirect measures) remained the same as for the BA.

Our students performed at or above the expected level on the following assessment items: clear statements of disciplinary concepts to explain how global and local issues are inter-connected, thorough understanding of the market system of resource allocation, and overall comprehensiveness of national income accounting and aggregate output/price determination. Evaluations by faculty members showed that students did not do as well on economic idea of costs and their role in efficient division of labor, and in carrying out statistical analysis using economic data. Weaknesses included the tools of linear regression, understating global issues, and professional collaboration and self-knowledge.

#### 3.4 Differences in Student Learning Outcome in Face-to-Face and Online Programs

The discussion remains the same as for the BA above; econometrics has not (yet) been taught as a DE course.

#### 3.5 Decisions Made and Changes Instituted Based on Assessment

Our faculty regularly meets to evaluate the assessment outcome and identify areas where improvement is possible, as discussed above; see the example there, where most students were in the BS program.

Curricular changes based on assessment have often included developing additional lecture materials and problem-solving exercise. Again, the discussion above regarding assessment induced changes in the Principles courses (2113, 2133), largely populated by BS majors and majors of other degree programs, remains relevant here.

#### 3.6 Effectiveness of the Changes

Our assessment records indicate that the curricular and pedagogical changes made to enhance our student's learning outcomes have been effective. As discussed above, changes were made in ECON 3144 (Intermediate Microeconomics) to improve student learning. The results from the end-of-semester assessment show that 77% of the students in our BS program scored 70% or better on the exam compared to the last year's result where only 50% of students scored 70% or better. Again as discussed above, changes were made in ECON 3244 (Intermediate Macroeconomics) to promote learning of key concepts in national income accounting and aggregate output/price determination. The results from the end-of-semester assessment exam show that 87% of the students in our BS program scored 70% or better on the exam compared to the last year's result that only 75% of students scored 70% or better.

Overall, there is evidence of continual improvement over the previous cycles of assessment through the changes made to enhance student learning outcomes.

### 3.7 Satisfaction of Students

BA and BS students are not separately surveyed. Student assessments of faculty contributions indicate more than 85% of students are “satisfied” or “very satisfied” with the general contributions of department faculty. This evaluation has been consistent through the 2011-2012, 2013-2014 and 2014-2015 academic years. The major has also prepared students well for both graduate education and entering the workplace. Between 2007 and 2011, approximately 25% of major alumni chose to further their education following graduation. Approximately 90% of major alumni found employment within six months of graduation of which 70% reported applying their economics training to perform their job duties. These employment rates alone are revealing of the success economics majors achieve. The quality of jobs that economics majors are earning is equally important. Although majors found employment in twenty three different sectors, the majority of majors (~55%) reported working for the government or in the financial services sector. Moving forward, the department seeks to better motivate students, explain course material more carefully and make clearer course expectations. Among these indicators, student reporting rates of being satisfied and highly satisfied trailed ECU averages by approximately ten percentage points. Given the rigor of economics course material, faculty will be increasingly encouraged to present data and concepts to students both audibly and visually. Economic data is particularly well-suited for in-classroom visualization. This technique will improve the communication of difficult course material while reinforcing course expectations and better motivating students.

### 3.8 Evaluation of Skills

The only separate assessment of BS students is on their mastery of statistical and econometric tools. Based on 2014-2015 student assessments, economics students reported the development of mathematical skills (87.5%) and a knowledge of the scientific method (91.7%) at rates exceeding ECU averages (80.2% and 86.7%). More than 90% of student assessments also indicate the use of analytic skills and critical thinking skills in economics coursework. Similar to the trend observed in student satisfaction outcomes, the development of written and spoken communication of economic material by students leaves room for improvement. Among these indicators, students report the development of these skills in the economics classroom at rates trailing the ECU average by 13 to 17 percentage points. Moving forward, the department will bridge its strength of developing students’ understanding of the scientific method with its weakness of fostering clear written and spoken communication of course material. One example of this approach is to include assignments in upper-level research methods courses that apply the scientific method to an empirical research question, which is then presented and discussed by fellow students.

### 3.9 Employer Feedback

The economics department does not have a formal feedback mechanism with employers. Our proxy for “Employer feedback” is the proportion of students in an Alumni Post Graduation survey that reported finding a job within 6 months of graduation. This employment measure provides an indication of how valuable employers consider recent graduates from ECU with an undergraduate economics degree. During the entire sample period prior to 2007 through 2011, 89 of 99 students (90%) reported finding employment within six months.

The Alumni Post Graduation survey also asks whether graduates have used economics training at their job; again, an indirect measure of employer feedback. During the entire sample period (pre-2007 to 2011) we find that 64 of 92 students (70%) reported to use their economics training at the job site. More recently between 2008 and 2011 (10 of 15 students or 67%) report that they used their economics training on their job. The top three sources of employment upon graduation are Financial Services (first), Government (second), and Retail (third).

### 3.10 Improving Student Satisfaction

The Department of Economics uses innovative learning strategies and delivery methods to maximize student access to both faculty and material by providing online lectures for students enrolled in both distance education classes and face-to-face classes. Faculty are also available to answer student questions both in person (as all faculty have office hours and offer appointments) and can be reached electronically as well through email. Faculty commonly respond to email questions outside of traditional office hours. The Department prepares students with knowledge by responding to student interests through updating the course offerings to include Behavioral Economics and Financial Economics I. Behavioral Economics is a popular new offering of the department. And Financial Economics has proven timely given the recent U.S. Financial Crisis 2007-08. Financial Services is the number one source of employment for economics graduates.

The economics department in an effort to improve its course offerings for its majors has recently added two new economics electives in 2014-15. These two courses – ECON 3310 (Behavioral Economics) and ECON 4706 – Financial Economics I broaden our course offerings. In addition, a new research course, ECON 4000, has been created and approved, but the department currently lacks the manpower to offer it. The course descriptions for each are provided:

#### ECON 3310 – Behavioral Economics

One of our program’s student learning outcomes outlined in our most recent assessment report (11/24/2014) is that “Students will be able to apply economic concepts and theoretical tools to solve economic problems.” Our current curriculum does not have a course that addresses the theoretical tools developed in behavioral economics. Specifically, the course develops multiple economic theories of individual choice and shows how each theory can lead to different predictions of economic behavior. The course outlines the instances where standard economic theory fails to make accurate predictions of human behavior and describes how economic theory has adjusted to account for this.

### ECON 4000 – Applications of Economic Analysis

This meets an assessed need for a course that allows students to integrate all they have learned in a deep study of something that interests them. It is a writing intensive course where the student is expected to prepare multiple papers. The students in this course will work closely with faculty in preparation of a senior research paper. This course will serve as a cumulating event for an economics major allowing them to employ the analytical tools learned in both their required courses, in particular econometrics (ECON 3343) and their subsequent course work in other economic fields. Students in these upper level classes will continuously interact with faculty who will provide mentoring and guidance in preparing this research paper.

### ECON 4706 – Financial Economics I

The course elevates the assessment performance of our students and college in the following four ways: This course aims to prepare senior economics-major students ready to pursue a CFA designation, or to pursue a career in the finance industry. The course will fill the knowledge gap of current training we provide for economics-major students by adding financial economics and equity analysis skills required by major banks and money market funds.

In addition to the two new course offerings the economics department also has increased the number of DE classes it offers. This provides our majors with increased flexibility, lower costs of commuting and gives access to more non-traditional students to become majors.

In an effort to increase the number of economics minors we have revised the minor program to requiring 18 credit hours (ECON 2113, 2133, 3144, 3244 + 6 hours of ECON electives) which is a reduction of six credit hours. To reduce the potential for course bottlenecks which could prevent a student from graduating, the economics department has modified the economics major degree requirements to allow students to substitute 3 elective additional economics credit if they could not take their COMM 2410 requirement since COMM 2410 is being phased out.

In our writing intensive (WI) classes the new QEP requirements are fully implemented. The economics department has implemented course caps to prevent an overload of students. Instructors teaching WI classes are fully cooperating and using the various resources of the university writing center. The use of student writing mentors in WI classes is also being explored to assure that the 5 QEP learning outcomes are met.

### 3.11 Action Plans: Pedagogical Change in Next 7 years

In the next seven years, we aim to improve the student learning outcomes in terms of statistics and econometrics as well as the written/oral presentation skills component of the undergraduate curriculum. We plan to create a new concentration related to economic data analysis and decision-making in the next seven years, which provides students with highly marketable skills for careers like market research analysts and economic consultants. This new concentration will not only appeal to at-risk students in engineering, computer science, and industrial engineering technology but will also offer a more professionally oriented option to quantitatively oriented

high school and community college students that address market needs. The latter groups are unaware of the expanding career opportunities available to them in the “information age.” The new majors, moreover, will also expand the pool of students for our refocused and rebranded MS degree program.

The economics department in an effort to improve its course offerings for its majors has recently added two new economics electives in 2014-15. These two courses – ECON 3310 (Behavioral Economics) and ECON 4706 – Financial Economics I broaden our course offerings. The course descriptions for each are provided above. The department has also created new 4000-level writing intensive research courses (ECON 4000), also described above. These course sections need to smaller sizes to allow active research mentoring by the instructor, and hence we have not been able to offer them to date, although some faculty members are eager to do so. We also plan to upgrade our current ECON 3343 (Econometrics –Writing Intensive) to a 4000 level capstone course, required to accommodate all graduating seniors in the department, for both BA and BS students. BS students are already required to take this course. We will drop an economics elective course for BA students and require them to take this 4000-level writing-intensive econometrics course instead. The program will be revised to include this course as a capstone course for final assessment of student learning.

### 3.12 Action Plans: Improve Educational Experience

Our orientation for curriculum development in next 7 years will be dynamic and interactive in that it is guided by evaluations from students as well as faculty in terms of assessment of quality and usefulness of courses, and recommendations for specific improvements. We plan to solicit and respond to feedback on the quality of advising and students’ overall impression of the quality of the major experience. To accommodate students’ growing and diversified learning needs both on and off campus, we plan to constantly employ new learning technology (e.g. interactive online tools) as well as adaptive learning modules. We focus on actively exploring new concentrations to provide our students with the best opportunities for success in the 21st century workforce. We will also develop self-paced online courses and provide specialized educational access for individuals interested in refining their skills through professional development and continuing education.

Based on assessment results, instructors identify areas that need improvement and create additional content/homework/classroom activities to facilitate learning. In addition, instructors have experimented with improving classroom technology by using on-line homework/tutorials, along with conducting classroom experiments, and using clickers in large classroom settings in an effort to improve motivation, involvement, attendance and learning. Group work assignments have been introduced in some economics classes (e.g. Games and Decisions). In addition, instructors use think-pair-share activities in improve student learning.

The department will fund economics majors to serve as tutors at the Pirate Academic Success Center, especially for underrepresented classes like intermediate micro and macro. Funds will be

raised from the golf tournament and other donations. Also the new data analysis orientation should improve student job opportunities, and hence improve overall satisfaction.

The Economics Society is being revamped to encourage greater student participation. The economics department is planning on organizing, in collaboration with the Pitt-Greenville Chamber of Commerce, an Economic forum that features a high profile speaker to address important economic issues. Our next economics symposium is scheduled in Oct 5th 2015, with a world-class economist as guest speaker from UCLA. We plan to make this a recurring event every year.

### 3.13 Actions Plans: Additional Resources Needed

More reassignment times for instructors who are involved in creating new courses and new programs will also be needed as these preparations will likely be very time-consuming. Even though the new curriculum approval process has been streamlined in the past several years, it will help us tremendously if it could be further streamlined to accommodate our future proposals at both the undergraduate and graduate levels. Our proposed new programs will likely benefit from more IT support to cater to our future needs for interactive learning, massive data access and processing for both undergraduate students and graduate students.

The department is also exploring additional funding avenues which will enable us to send more faculty members to different regional high schools to recruit quantitatively oriented high school students who may be interested in majoring in economics. Additional funding would be helpful in order to pay for refreshments for parents and students on admitted student's day. Additional funding would enable the department to fund student travel to attend nationwide economics competitions. Additional, if the department had more financial resources, then the department could offer more guest speakers to the department and Economics Society. The department is also considering reviving the ECU chapter of the International Honor Society for Economics.

## **MS in Quantitative Economics and Econometrics**

### 3.1 Curriculum Map, Student Reinforcement

We have a clearly defined course sequence with very few electives. All students take the same 4 classes in the fall (including an option based on math background) and the same 4 in the spring. We allow elective choices in economics, mathematics, and business for the final 3 classes taken in the summer. The structure is laid out in the Curriculum Map in Appendix A which outlines the path of achievement of assessed student learning outcomes.

### 3.2 Curriculum

To keep the curriculum up-to-date, faculty members actively pursue new research, and remain abreast of the literature. We also rotate instructors and modify course content based on feedback from both past graduates and from the assessment process.

### 3.3 Strengths and Weaknesses



Using the assessment tools, we have identified deficiencies in student preparation in basic mathematics and statistics, and have modified course content to address these issues. We continue building on our faculty strength in applied econometrics to introduce students to the tools needed for relevant policy analysis.

#### 3.4 Face to face vs Online

We have no distance education instruction classes for our required MS courses.

#### 3.5 Changes related to Assessments

In addition to continually modifying course content and structure to address assessed deficiencies as noted in Section 2.9, we are in the process of implementing important pedagogical changes related to our new designation as “MS Quantitative Economics and Econometrics.” This change, together with the new assessment process, requires that we re-evaluate objectives, outcomes, and methods of analysis.

#### 3.6 Effectiveness of the Changes

It is too early to determine if the proposed changes will be effective. However, we have had some early success as our enrollment has returned to the normal level.

#### 3.7 Satisfaction of Students

The Graduate Director and other faculty are frequently in touch with former graduate students, providing feedback on our program. Our move encouraging SAS certification came from a former student. Our decision to change the program focus to Quantitative Economics originated from student feedback.

#### 3.8 Evaluation of Skills

Students report on the quality and usefulness of knowledge and skills by reporting their preparedness for both further study and the demands of their jobs. We have incorporated this feedback in our program structure.

#### 3.9 Employer Feedback

Employers are happy with the combination of economic analytic and data handling skills of our graduates. Our employer feedback has indicated a need to add more computer programming content, which we have done.

#### 3.10 Improving Student Satisfaction

The Graduate Director has initiated brief, twice monthly meetings with each graduate student to assess their progress and satisfaction. The Graduate Student Survey indicates general satisfaction with the program.

#### 3.11 Action Plans: Pedagogical Change in Next 7 years

As described above we have just renamed our program, and are in the process of revising course content to provide more large data analysis. There remains an applied focus in topics courses/electives in the program.

A hallmark of a strong economics graduate program is rigorous theoretical and quantitative analysis that creates a valuable master's degree and contributes to the on-campus collaborative and interdisciplinary doctoral programs, such as the CRM PhD program and the proposed Public Health PhD. Our future action plans aim to ensure that our graduate students acquire the skills, knowledge and research training needed for successful careers in the academic, private and public sectors. In particular, we have just successfully refocused and rebranded our M.S. program as a STEM program (Quantitative Economics and Econometrics) to bring the program content in line with the projected employment opportunities in the labor market. We plan to further strengthen master's curriculum with specific quantitative and programming skills such as data mining, management of large data sets, basic market research analytics, and advanced SAS programming.

In the next two years, we plan to create an exploratory committee and assess the feasibility of creating professionally oriented tracks (in lieu of Professional Science Masters accredited degrees), such as market research analytics, to provide students with highly marketable skills in data analysis, communication, and critical thinking. We will also develop self-paced online courses and provide specialized educational access for individuals interested in refining their skills through professional development and continuing education.

### 3.12 Action Plans: Improve Educational Experience

Our added quantitative emphasis is designed to improve students' vocational outcomes, feeding back to improved student satisfaction. We will maintain the close personal interaction between students and faculty that has been a strong source of student satisfaction in the past.

### 3.13 Actions Plans: Additional Resources Needed

One of the most attractive features of our program is its quick pace and short time to completion (13 months on average). Current graduate student funding is based on the traditional long summer break. We recognize the costs, both intellectual and financial, to students of summer down time and would like to have assistantships and out-of-state tuition waivers that recognize the benefits to students of year-round study. In addition we need additional faculty resources for the summer time to teach classes and mentor students on a 12 month basis, *without detracting* from the resources available for our undergraduate programs.

## **4. Strength of Faculty: Teaching, Research and Scholarship**

### **Faculty Resources**

#### 4.1 Faculty Profile:

The economics department currently has 17 tenured and tenure-track faculty members. There are 9 full Professors, two of whom are half-time in the department. There are 4 Associate Professors, one of whom currently serves as Chair of the department, and 4 Assistant Professors, one of whom is half-time in the department. The 3 half-time members (15.8% of faculty) are committed for the other half of their time as Research Scientists, 2 in ICSP and 1 as a Program Director in CSI. There are also 2 fixed-term teaching faculty (10.5%) on year-to-year contracts. There are 4 women in the department (21%), a full Professor, an Assistant Professor, and both Teaching Professors. There are 5 Asian faculty (26.3%), a full Professor, 3 Associate Professors, and an Assistant Professor. There are no Hispanic or black faculty. All faculty hold a terminal degree in economics or finance.

#### 4.2 Faculty Resources

The department has recently lost two tenured outstanding researchers, and just this year an essential instructor for the development of our “big data” oriented MS program and intended undergraduate BS concentration. While we have been allowed to hire at the junior level to replace the lost tenured faculty, the instructor was just lost for College budgetary reasons. His replacement by a new faculty member with similar data management and computer programming skills is essential for the achievement of department goals. As we move towards creating professionally oriented tracks (in lieu of Professional Science Masters accredited degrees), such as market research analytics, we need at least two new graduate faculty members who are specialized in quantitative finance and modeling.

#### 4.3 Faculty Recruiting and Retention Actions

Since 2008, the department has been authorized (it has no independent control over positions) to make 5 tenure-track hires, 4 of them replacements for departed faculty (one arriving Fall 2015), and 1 incremental new hire toward staffing an intended PhD program (cancelled by ECU, winter 2013).

The department has actively countered every outside offer to our outstanding faculty both by providing as favorable a research environment as our resources will allow and by successfully seeking University-wide (UNC-GA) “retention funding.” We faced 3 offers with substantially higher salaries from the University of Texas, the Federal Reserve System, and the University of Georgia. In all cases, we were able to offer salary matching the 9-month equivalent salary of those offers. In one case (UT) we succeeded in retaining Dr. Jamie Kruse, but in the other 2 cases, we were unable to match the research release time and the substantial discretionary research funds provided on top of salary in those offers, losing Dr. Jahan-Parvar (FED BOG) and Dr. Landry (UGA). Retention of research active faculty in the face of ever-growing teaching loads is an increasing problem, as several tenured faculty members have been and are ‘testing the market’ for better positions.

In every search the department posts open positions on multiple affirmative action list-serves, as well as AEA JOE, the *Chronicle of Higher Education* (when the budget allows it), and specialized outlets when the search is targeted on a narrow field. Despite our efforts, due to ECU's position in the economics job market, we have difficulty attracting women and minorities, although in our search of 2 years ago we were able to attract and hire a female econometrician.

## Analysis of Teaching

### 4.4 Program Trends – all programs.

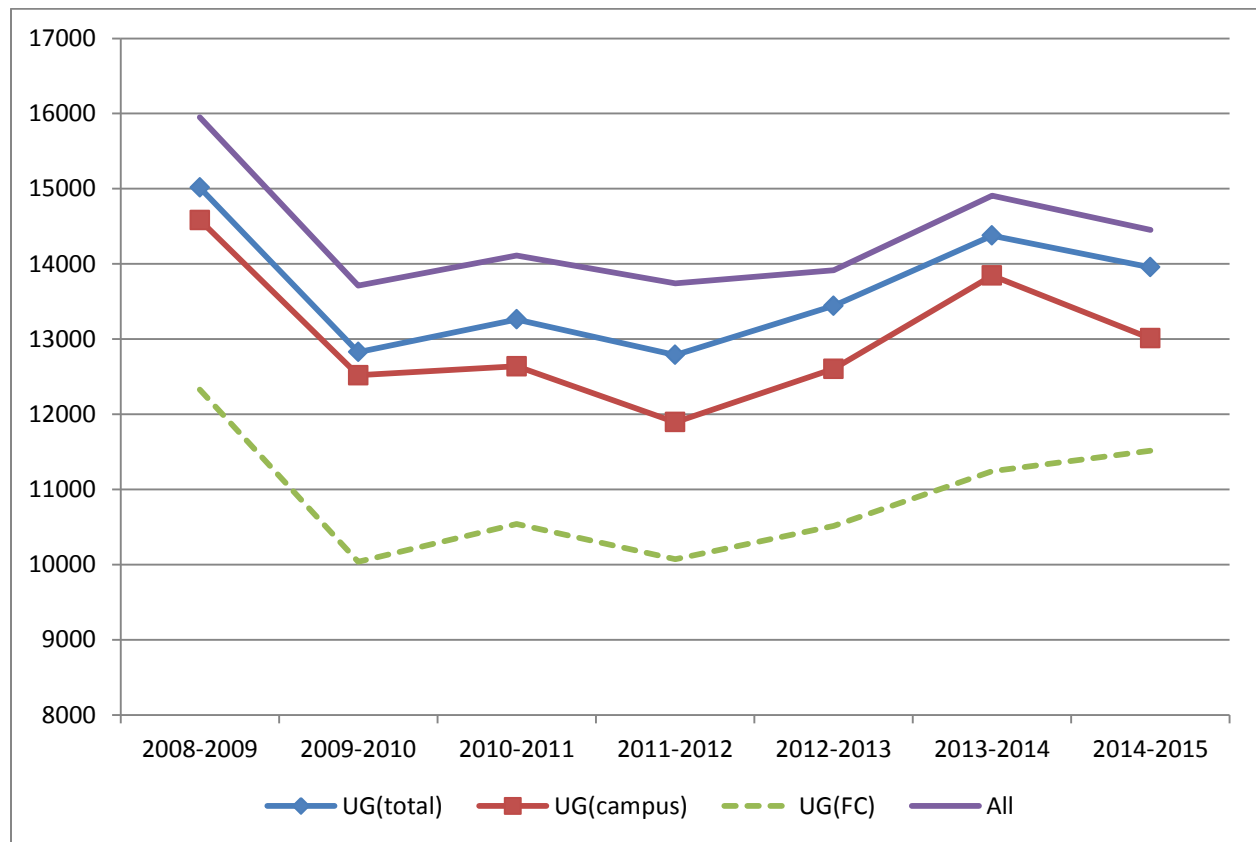


Figure 4.4a Trends of Production of Undergraduate Credit Hours

As illustrated by Figure 4.4a, the student credit hour production at the undergraduate level by the department declined sharply between academic years 2008-09 and 2009-10 for combined undergraduate and graduate credit hours, total undergraduate hours, as well as hours from foundation courses (ECON 2113/2133). This sharp drop was primarily driven by a loss of two FTE positions. Nevertheless, after the numbers stabilized around 2011-2012, the level of production steadily grew to near the 2008-09 peak. After accounting for the FTEs, the production of credit hours per FTE has demonstrated a similar trend (see Figure 4.4b). The per FTE production bottomed around 2011-12 academic year, we have since almost recovered completely to the peak level prior to the great recession. As indicated by the plans in Sections 2 and 3, the

rise of enrollment shall further boost our credit hours production. We also plan to explore the possibility of offering less technical courses to attract a broader range of non-majors to participate in our lower-level economics offering. For instance, we plan to revive ECON 1000, a basic (micro or macro) overview of economics. Dr. Tabakova has worked with our HCAS colleagues to help train the local K-12 Social Studies teachers to teach economics at public schools. We plan to offer an economics course to formally accommodate this rising demand from local teachers as well as students in the College of Education.

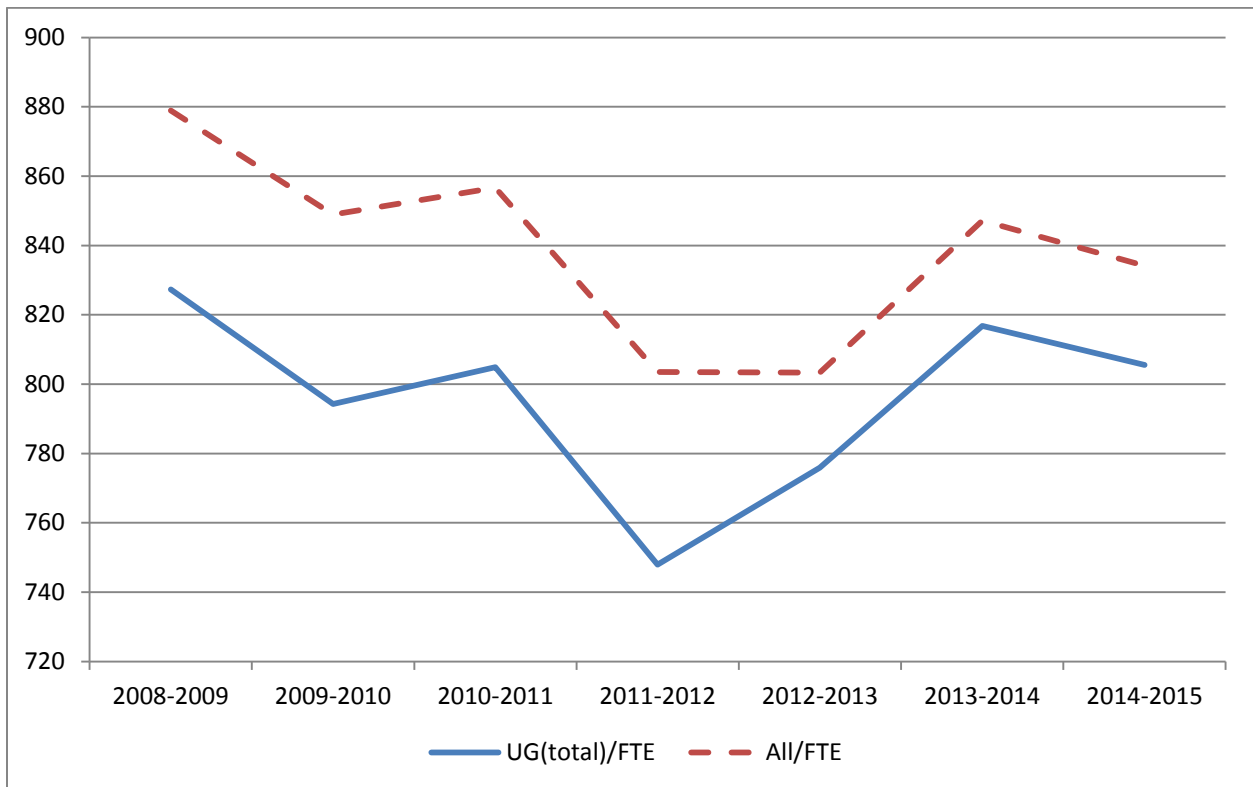


Figure 4.4b Trends of Per FTE Productivity of Undergraduate Credit Hours

In the past seven years, our credit hours production for Distance Education has increased from around 300 hours/year to the peak of 945 hours in year 2014-2015 (see Figure 4.4c). The decline of graduate credit hours after 2011 was primarily linked to our attempt to begin a stand-alone PhD program. The screening of our MS candidates moved toward recruiting PhD quality students. With the elimination of a PhD program possibility, we re-focused our MS program on terminal MS students and on preparing students for the economics concentration for CRM as well as the future School of the Coast PhD. Major recruitment efforts among our own graduates including in-class recruitment, and sending letters to promising students have begun to yield fruit as we saw a drastic increase of enrollment by 40% the in current academic year 2015-2016. We therefore expect the production of graduate credit hours will increase commensurately. Moreover, to fully capture the productivity of our graduate education, we plan to request the core courses taken outside the department be cross-listed as economics courses. More importantly, the

newly planned data track in our BS degrees will feed more qualified students into our MS program.

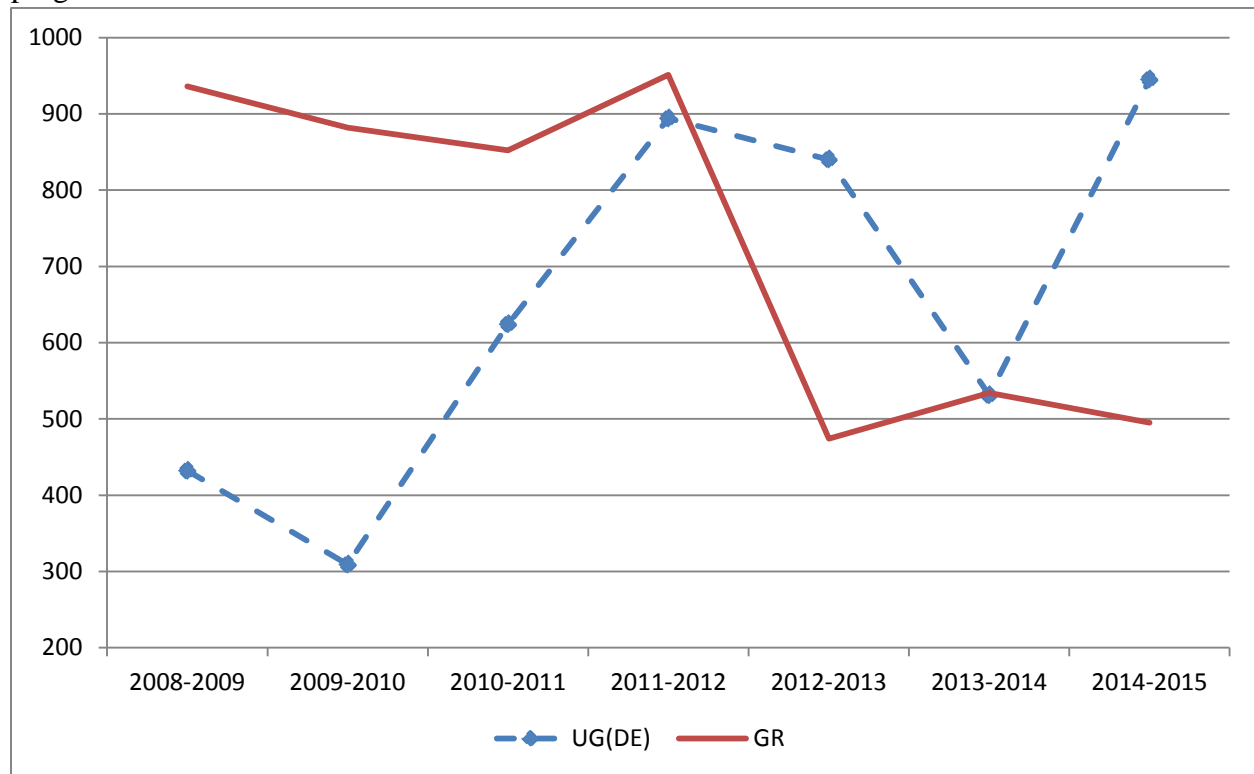


Figure 4.4c Trends of Production of Graduate Credit Hours and DE Undergraduate Credit Hours

#### 4.5 Teaching Load

Based on the Delaware Study data, the general teaching load of the faculty has risen from 2.1/semester to an average of 2.5/semester in the recent years (see Table 4.5). This trend was dictated by the loss of faculty in 2009-2010 and the new workload policy of 5 sections per FTE implemented in 2012-2013. To cope with the increasing teaching load, the department has allocated more graduate assistants to instructors who are teaching large sections. The department also implemented its own workload assignment policy to reassign research active faculty with more research time.

	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013
Organized Class Sections per FTE Faculty	2.1	2.8	2.3	2.3	2.6	2.3

Table 4.5 Delaware Study of instructional costs and productivity

#### 4.6 Contributions of Graduate Assistants

Given that the duration of our graduate program is only one calendar year, by the time that the students are trained and become eligible to teach independent sections, they are already graduating. Nevertheless, graduate assistants are very instrumental in faculty's instructional



production through assisting in tutoring students, proctoring exams, scanning tests, or recording grades. We started a dual degree program with mathematics department in 2012. Since then, on a few occasions we have been able to employ economics master's students who are to stay on campus for an additional year to teach independent sections of ECON 2113 with success. This year we have received the first cohort for the economics concentration in the CRM PhD program and we anticipate that they will start making direct contributions in the next academic year.

#### 4.7 Major Achievements

The major achievements by the department faculty are exemplified by the perfect integration of faculty research and student learning. In five of the past 6 years, economics faculty members have won the ECU Scholar-Teacher Award, reflecting the general excellence in teaching for the 21st century in the department, one of its primary goals. We have successfully implemented the new QEP writing intensive policies, limiting class size and ensuring proper development of student writing portfolios. We have just revised the MS program, instituting a SAS programming requirement, and requesting GA approval for a name and CIP code change to STEM "Quantitative Economics and Econometrics" (045.0603) to better reflect the content of the program, and increase the OPT visa length for international students from 12 to 27 months. This responds to our objective of producing leaders equipped to manage regional resources and mitigate environmental and natural hazards. In the past seven years, we have placed 18 MS students into highly competitive PhD programs, including Wake Forest University, Ohio State University Economics and Georgia State University with full funding. This meets the key objective of the department of maximizing student success by preparing our students for high paying jobs. Drs. Craig Landry, Jamie Kruse, Okmyung Bin, and Keeler mentored more than 10 CRM PhD students, of whom most were our former MS students. To cope with the increasing teaching demands, the department has allocated more graduate assistants to instructors who are teaching large sections. We have continued to promote new instructional technologies from online interactive resources, to in-class clickers to improve the efficiency as well as effectiveness of our content delivery. We also sponsored faculty to travel to teaching workshops/conferences to enhance their instructional skills.

### **Analysis of Research, Scholarship and Creative Activities**

#### 4.8 Major Achievements

The economics department prides itself on being highly research productive, particularly in light of the heavy teaching load that the University requires. The department is more productive of research than other departments with Masters only programs, and indeed than many PhD programs; see the Academic Analytics in the Appendix. The achievements of the department can be seen in faculty publications (SEDONA) and the growing number of grant applications and amounts of awards received (RAMSES). Since 2008, the economics faculty has published 188 articles and book chapters and 13 books/volumes; the 2 faculty members who left in 2012 and 2014 published during the time to departure 38 articles in refereed journals. These publications have appeared in both leading general interest economics journals (e.g. *AER*, *Econometrica*, *JET*, *QJE*, *REStud*, *EER*, *IER*, *Economica*, etc.) and the leading field journals in our faculty's research

areas (*RAND Journal of Economics*; *Journal of Economic Behavior and Organization*; *Journal of Macroeconomics*; *Journal of Mathematical Economics*; *Journal of Labor Economics*, *Journal of Money, Credit, and Banking*; *Journal of Risk and Insurance*; *Journal of Public Economic Theory*; *Studies in Non-Linear Dynamics and Econometrics*; *Land Economics*; *Public Choice*; *Journal of Comparative Economics*; *Journal of Agricultural and Applied Economics*; *Journal of Environmental Economics and Management*; *Natural Hazards*; *Marine Resource Economics*; etc.) During this period, citation counts in SCOPUS, which substantially understates citations of faculty research due to SCOPUS' narrow focus, gives the department 2315 citations since 2008. Over that period the economics faculty also participated in 25 externally funded projects through RAMses, receiving about \$4.2 million in grants. Many of these extramural grant activities were collaborated among economics faculty, averaging nearly two economics faculty members per external grant during this review period. Annual reports from SEDONA indicate that the economics faculty has also had a substantial impact through presentations in conferences and invited presentations at other universities (274, including 28 international) and as keynote speakers (4) at major international conferences. Dr. Kruse has been honored as a HCAS Distinguished Professor of Economics since 2012.

#### 4.9 Strengths and Weaknesses

This success is partially captured in recent Academic Analytics reports comparing it to 219 PhD granting programs in the US, and to our university-peer economics departments which have PhD programs. In the Appendix, the relevant Radar graphs for 2012 and 2015, reflecting data 2007 to 2010 and 2010 to 2013 respectively, can be found. In the earlier period, the department out-produced the majority of all PhD granting institutions in all areas but citations and awards, for which being at a leading PhD institution provides a substantial advantage. The department's performance, as measured by Academic Analytics, fell to just above average for 219 PhD granting institutions in the latter period, largely due to the loss of highly research productive faculty members. However, compared to ECU's official peer institutions PhD granting economics departments in 2013, in all categories our department's performance has been above the 78-th percentile, and was even stronger in 2010 (those AA Gauge and Radar charts are in the Appendix). The relative strengths of the department are in research productivity; the relative weaknesses are in awards, grants, and "per faculty member" measures, where the number of faculty is over-counted by around 20% each year due to the presence of 3-5 non-research fixed term (one-year and temporary) faculty.

#### 4.10 Department Support

To support faculty research and scholarship, the department regularly designates over half of its annual operating budget to faculty travel for research and presentation of research results, particularly at major professional conferences. The department continually encourages faculty to aggressively distribute their results to the profession and seek opportunities to present in economics departments of other universities. The department also actively supports faculty applications for internal research "seed" monies (CRA, RCA, etc. grants) when such monies are available, and strongly encourages applications for external funding. Those faculty members

who have received grants actively mentor junior faculty seeking funds for the first time, and the department actively encourages faculty participation in College and University workshops on grant preparation and submission. Prior to the recent increase in teaching loads and SCH requirements, the economics department offered junior faculty a full research reassignment in the spring semester of their 4<sup>th</sup> year to provide a boost in research in preparation for submission of a research portfolio for tenure in the following year; university policies make this no longer feasible. The department also actively pursues ‘start-up’ funds from the university (RGS) for new hires that help them establish their research program at ECU, and begin developing a solid research portfolio toward tenure.

#### 4.11 Analysis of Service and Outreach Activities

The economics department actively encourages faculty to serve at all levels, and demand increasing levels of service as faculty members grow in rank and stature. All members of the department are thus actively engaged in service and outreach activities at the University, community, and national levels, as can be seen in a review of the attached CVs. Some examples are discussed here. Internally, senior and fixed term faculty members most actively participate in University and College committees, averaging 12 committees (6 to 19 in various years) over the past 7 years. For the region, several faculty members, but most consistently Dr. Parker, regularly engage the local press and broadcast media, and both Parker and Rothman have both been highlighted in national media. Dr. Rothman has also been a member of the elite Survey of Professional Forecasters run by the Federal Reserve Bank of Philadelphia since 2010, providing service at the national level.

The department has also engaged the community by organizing major regional economic forums (2009, 2011, and upcoming, 2015), which were regularly attended by most community leaders in economic development and local businesses. Dr. Ericson has served on 2 community boards (Sheppard Memorial Library; Pitt County Development Commission), and chaired the first. Drs. Bin, Kung, and Liu have been involved in ethnic community programs and Dr. Tabakova in a program to enhance the social sciences, including economics, in high schools. Dr. Kruse and Landry (for most of this period a faculty member) have served on numerous NSF Panels, NC Task Forces, and regional and coastal advisory committees. Drs. Rothman and Rupp have organized sessions at national conferences, and Rothman has organized an entire conference. And the entire faculty is actively involved in refereeing for the profession. Over the past seven years economics faculty members have refereed 320 articles (12 of them chapters) and 37 research proposals for national and international funders. Dr. Ericson has also been involved in the revival of economics as a science in the territories of the former Soviet Union, leading the Economic Education and Research Consortium in mentoring research and funding quality economics research in the region through biannual research workshops.

Drs. Parker and Ericson initiated the Department of Economics Advancement Council 12 years ago which has actively supported economics students by raising funds for scholarships. A primary activity is the organization of the annual fundraising golf tournament and auction for

alumni and friends, including in the local community. The Council works with the Economics Society to bring the local business community together with students.

A major part of community engagement is through the Center for Natural Hazards Research, founded and directed by Dr. Kruse, and involving 5 other faculty members over this period (some now departed). It brings in the entire eastern NC community and NC Emergency Management in an annual conference on hurricane preparedness and related natural disaster research. Another important part of our engagement is through the leadership provided by our faculty across the campus of East Carolina University. In particular, our faculty have actively contributed to program development in International Studies, CRM, Geography, and BS in University Studies. Drs. Zeager and Kruse have provided great service to the ongoing HCAS Voyages Discover Lecture series in the capacity of Steering Committee chair and Speaker Selection Committee member respectively.

#### 4.12 Action Plans

Based on our distinctive research and service identities, we will aggressively pursue high levels of externally fundable projects, including grants, fellowships, and gifts for the department. Multidisciplinary and interdisciplinary proposals to various regional and national funding agencies such as NSF, NIH, NOAA, and NASA will be encouraged. We will increase the number of proposals in two main areas. Faculty members with expertise in environmental and coastal issues will more aggressively pursue grant opportunities in collaboration with other HCAS faculty and with researchers in ICSP and the Natural Hazards Center. Those with expertise in forecasting will pursue external funding to support a quarterly forecast of trends affecting economic activity as a public service to the region. We shall redefine an incentive and reward structure for the acquisition of external grant/contract funding. For instance, amounts of external funding will be factored into annual evaluations as well as tenure and promotion decisions, reassignment time will be awarded to faculty who are working on major extramural grant proposals on a competitive basis. Our unit code revision will also incorporate external funding activities as part of the tenure and promotion criteria. The department chair and Research/Technology Committee will be charged to identify and respond more rapidly to requests for research proposals that utilize our specialized areas of expertise. The department will also actively work with College and University advancement staff on campus and ECU alumni to identify potential donors for scholarships, endowed chairs, professorships, and other types of endowments.

The resources needed to support the teaching, research and service activities of faculty include:

- 1) Reassignment times for faculty who are involved in developing new research proposals, and new courses/programs;
- 2) Travel funds to support faculty to disseminate their work in national or international conferences or invite outside speakers to give seminars and foster collaborative work;
- 3) Funds and logistical support from College or University for organizing community events.

## 5. Regional Transformation – Economic Development/Public Service

### 5.1 Summary

Our major activities by the department faculty can be summarized into three main areas: alumni relations, natural hazards and mitigation related activities, and macroeconomic outreach activities aimed at regional development.

The department has published semi-annual alumni newsletters in the past 7 years to reach our 1,000 strong alumni to disseminate the achievements of our faculty and students as well as other activities involved by the department. Dr. Parker, who is now the chair of Outreach and Alumni Relations Committee, has hosted annual ECU Economics Alumni Golf Tournament and fund-raising activities since 2004. In the past seven years, we have raised about \$112,000 for scholarships. We also have 12 inductees in our Wall of Fame, who have pledged \$120,000 to support student success among our majors. Drs. Bishop and Zeager both had extensive community outreach activities including helping at-risk children in the Greenville area. Dr. Liu has worked together with his coauthors at ECU Department of Public Health to conduct research projects that inform local government agencies to design better public programs and benefit impoverished population in the Eastern North Carolina. Drs. Zeager and Liu are developing a database for rigorous evaluation of programs at the Building Hope Community Life Center for at-risk children in west Greenville. Dr. Zeager has provided great service to the community in his role of Steering Committee chair for the Voyages of Discovery lecture series. Dr. Kruse is currently the member of the Speaker Selection Committee for the lecture series.

Our faculty members provide leadership roles to the Center for Natural Hazards Research (CNHR) at Harriot College of Arts and Sciences, including Dr. Jamie Kruse serving as the director of the center, along with Dr. Landry (left ECU in 2014) as former assistant director, and five other economics faculty members as core research associates. Our faculty members have provided the collaborative effort between the Center for Natural Hazards Research and North Carolina Department of Public Safety to stage the North Carolina Hurricane Conference held on ECU's campus. The CNHR also hosts the annual ECU/NCCEM Hurricane Conference, which started in 2009, is a venue for exchange of ideas and needs. This collaboration between the North Carolina Department of Emergency Management and East Carolina University has served as an important event where academics have presented their research to practitioners with a goal of giving them actionable results. New NOAA products have been tested and rolled out for practitioner use. The conference is held at the Murphy Center at ECU in May. Featured speakers have ranged from two sitting directors of the National Hurricane Center, Bill Read and Rick Knabb, to Governor Pat McCrory to a representative of the British Consulate. In 2014, there were over 300 guests representing North Carolina (NC) Department of Natural Resources, NC Department of Agriculture, NC Department of Public Instruction, NC State Highway Patrol, NC National Guard, North Carolina Sea Grant, Civil Air Patrol, US Army Corp of Engineers, National Weather Service, Amateur Radio Emergency Service, Salvation Army, American Red Cross, Community Emergency Response Teams, SKYWARN (volunteer program of trained

severe weather spotters), Vidant hospital, local city/county planners, local fire department, local emergency medical services, local/regional/state emergency management, universities, and community colleges. On September 17 and 18, 2009, the CNHR hosted the Hurricane Floyd Symposium that commemorated the storm's 10th anniversary and the 5th year of the CNHR's existence. The public forum and research conference was designed to examine lessons learned from the disaster, the current status of the region, and highlight ongoing natural hazards research projects relevant to hurricane risk.

Dr. Keeler, also serving the leadership role at Coastal Studies Institute, gave one of the keynote talks at the National Association of Regulatory Utility Commissioners 2014 Meetings on the Clean Power Plan. He over the past seven years have given policy talks to Dare County Create the Future Initiative, Manteo Rotary Club, Dare County Rotary, Dare County League of Women Voters, the American Planning Association NC annual meeting, and the NC Oyster Summit convened by the NC Coastal Federation, and the North Carolina Coastal Local Governments Association.

On the macroeconomic front, the department has hosted two major regional economic forums in 2009 and 2011 about subprime mortgage crises and regional businesses. Dr. Parker has given 35 speeches to regional trade organizations, Rotary Clubs, and other community organizations across the countries and overseas in the past seven years. Dr. Zhao obtained the FRM designation in fall 2014 and became a formal member of Global Association of Risk Professionals (GARP), 2013 The Global Association of Risk Professionals (GARP) is a not-for-profit organization and the only globally recognized membership association for risk managers. Dr. Rothman has been a member of the elite Survey of Professional Forecasters run by the Federal Reserve Bank of Philadelphia since 2010. Both Dr. Parker and Dr. Rothman have given numerous interviews about oil prices, financial markets, and regional economy through popular regional media outlets. Dr. Ericson has also been frequently interviewed on regional economic issues, in particular energy pricing.

## 5.2 Action Plans and Resources

We continue to strive to contribute to the local and regional economic growth and development efforts through a variety of service and outreach activities such as advising, consulting, and participation at conferences. We will significantly increase our engagement with local communities and state agencies through service projects, faculty research contributions, and department/community partnerships in areas related to coastal resources and economic forecasting. For instance, the department will identify projects that serve local government agencies and private enterprises. We also plan to make our regional economic forum an annual event with nationally known economists as keynote speakers to engage local businesspeople, entrepreneurs, as well as other stakeholders for regional economic development.

We are currently given permission to fill a new tenure-track position and our aim is to recruit a specialist in regional economic development. This new hire shall significantly enhance our



ability to participate in ECU's efforts of leading regional economic transformation. The position is also expected to generate substantial research output on the issues related to economic development policies and planning (both urban and rural), firm behavior (including production and firm location, industrial districts), as well as promotion and regulation of industries in our region.

Our faculty's tenure and promotion standards will take into account the efforts and achievements in the scholarship of engagement. We have just formed Outreach and Alumni Relations Committee to work with our economics Advancement Council and disseminate our faculty research discoveries in forms that are usable by the community. For example, this committee could task faculty members with the proper expertise to provide forecasts on regional economic outlooks, conduct economic impact analysis. We will also actively disseminate faculty accomplishments to ECU News Services and local media.

## **6. Resources**

### **6.1 Summary of Resource Adequacy**

The Department of Economics depends exclusively on State funds, transferred through Harriot College of Arts and Sciences, for all of its operating funds; there are no other sources of funding for supplies, equipment, maintenance, operations, utilities, travel and research support. There are also some grant overhead funds (5% of grant overhead; faculty member gets another 5%), which support article submission and publication costs and some research equipment and software, but these, after 7 years of growing funding cuts, are largely exhausted at this time. Annual State Operating Fund allocations to economics have shrunk from \$36K at the beginning of AY 2008-9 to \$22.9K in 2014-15. These budget funds are always exhausted 100% every year, as the University absorbs any remaining funds near the end of the Fiscal Year (June 30). This has most significantly affected faculty research travel, one of several factors leading outstanding researchers to leave the University. This over 36% drop in funding has also made it more difficult to maintain the up-to-date nature of the courses, and has limited the number of faculty whom we could be sent to 'teaching economics' workshops. Without funds to hire temporary faculty we are also limited in our ability to provide deserving faculty members with course load reductions, something which is also severely inhibited by University policies regarding faculty workload and student credit hour production.

The inadequacy of funding is also reflected in the severe deterioration of the physical plant in the department. Offices and rooms in the department are neither cleaned nor repaired without a request and significant delay. And any upgrading or real renovation is expected to be paid by the department, for which there have not been any funds over the past seven years. The university environmental office has considered our conference room carpeting a safety hazard, but it is only marginally worse than most of the other carpet in economics offices. IT in the department is impoverished; a broken laptop delays, and can sometimes seriously disrupt teaching. The 4-year computer replacement program (was 3 year before this period) has led to general obsolescence of computers in the department, unless they were bought on grant money.

Finally, the inability to carry funds across fiscal years severely inhibits our ability to plan and sponsor major academic events, which frequently require, particularly if at a high level, invitations and the ability to commit funds usually well over a year in advance.

## 6.2 Space

Our current MS program is extremely cramped for space. Outside of classrooms, there is no place that can fit all our MS students at the same time; the office with computers can hold only about half that is needed. As the program is planning substantial expansion, in part to avoid a “low productivity” classification, we will need more office/desk space for graduate students, and could make excellent use of a graduate student lounge in which the students and graduate faculty might informally interact. That is an essential part of building a large, yet cohesive and successful, graduate program, a place where questions can be informally explored and research ideas sparked and research programs launched.

## 7. Other Operational or Programmatic Outcomes

### 7.1 Other Assessed Outcomes

There have been no other formally assessed outcomes over the past seven years. For most of that period, the department has strengthened advising by supplementing faculty advisors with substantial technical support of the staff, Ms. Cindy Mills in particular. Staff organizes the paperwork required to support advising, presenting faculty advisors with spreadsheets indicating the status of the student, their formal needs for graduation, and what needs to be done along alternative paths to the degree, with faculty using their expertise to advise on substantive curricular choices. This has substantially improved advising and student satisfaction as seen in graduating senior surveys and real-time feedback from students. The department has extremely limited, aside from above, funds for graduate student support that it uses differentially to attract the best possible cohort each year. In spring 2015 the department began reviewing all its service operations for efficiency with an eye toward reducing operating costs. The organizational structure of the department has remained unchanged over the past seven years, although several ad-hoc committees have been created to deal with special projects and growing administrative demands from the College and University. The PhD Program Development Committee, disbanded after the University ceased to further support creation of an economics PhD Program in early 2014, exemplifies the former. The Strategic Planning and Assessment Committees exemplify the latter.

### 7.2 Action Plans

To achieve the department’s goals for curriculum revision and student recruitment at both the undergraduate and graduate levels, we plan to revise the Department of Economics Unit Code. The Undergraduate Program Committee (UPC) will have responsibility for both undergraduate curriculum revisions and student recruitment, in collaboration with a newly appointed Director of Undergraduate Studies (DUS). The UPC will take primary responsibility for the curriculum revisions while the DUS takes the lead in student recruitment. We expect our major program

development initiative of creating a new BS concentration in data analysis to obtain University approval in academic year 2015-2016. We plan to recruit new economics majors to this option by May 1, 2018.

Likewise, the Graduate Program Committee (GPC) will take primary responsibility for the graduate curriculum revisions and the screening of applicants while the DGS takes the lead in student recruitment and the advising of enrolled graduate students. The next 7-year objectives of the GPC are to facilitate our efforts to refocus and rebrand our MS program as a STEM program (Quantitative Economics and Econometrics – CIP Code 45.0603), and to align program content with the skills required for rapidly expanding employment opportunities. We have already gained the STEM designation for our MS program. We will also create a permanent Assessment of Teaching Committee, which will (among other tasks) recommend curriculum revisions to the UPC as needed, based on assessment results. The department chair and Research/Technology Committee will be charged to identify and respond more rapidly to requests for research proposals that utilize our specialized areas of expertise. Our recently established Outreach and Alumni Relations Committee raise our fundraising target to \$20,000 per year (a 15% increase over recent years) by May 2018.

It will be the responsibility of the Personnel Committee (PC) and the Department chair to evaluate the contributions of each faculty member to the goals of the department, including service in its programmatic initiatives. Using this information, the PC will find appropriate fits for each faculty member when making recommendations on committee assignments to the voting faculty for the following year.

As no revisions have been made to our unit code for many years, it will be necessary to update it with regard to the criteria for promotion and tenure. For example, external research funding has become a more important consideration for the university. Engagement in the community must be taken into consideration. An ad-hoc committee of department faculty will be charged with making recommendations on revisions to the unit code to the voting faculty by December 1, 2015.

In terms of the resources needed to improve the programmatic outcomes, we strongly urge the University to formally integrate the department administrative associates into the advising process. Much of what an advisor must do under new university, web-based, processes is unrelated to the academic and scholarly advice that faculty should be dispensing as academic advisors; it is inefficient use of both faculty and student time to not have professionals/staff handling that aspect of advising.