**Testimony to the NJ Higher Education Committee
September 24th, 2012**

**Investment in Higher Education: Some Notes on Benefits to the Economy
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Others in this panel have testified on the economic benefits to the community of higher education in terms of research and grant funding. This part of the testimony focuses on how important (good) teaching itself is as an economic asset to the state ­ in terms of developing educated, competent, innovative, and creative graduates who improve the economy and community as they enter the job market and influence many/all sectors of it.

Earning a degree in itself is a benefit to the economy. According to an analysis by the Pew Research Center, utilizing data from the Census Bureau, a person with an undergraduate degree will earn in their career on average $1.42 million over 40 years. The figure for a high school graduate is $770,000, or $650,000 less. The difference after factoring college expense and loss of potential earnings over four years of college is smaller, but still a very substantial $550,000 (<http://www.pewsocialtrends.org/2011/05/16/lifetime-earnings-of-college-graduates/>). People who earn a graduate degree on average earn more over a 40-year career than those with only an undergraduate degree, $1.6 million on average (<http://www.pewsocialtrends.org/files/2011/05/Is-College-Worth-It.pdf>).

While higher education institutions in NJ are an asset to the economy for the reasons explained above, they do so much more through research and teaching. With a focus on teaching and learning, the following examples are offered as just a few illustrations of the many, many good things going on at Rowan University that make investment in higher education an investment in the local, state and regional economy…

**Department of Marketing and Business Information Systems, Rohrer College of Business**

*Project Based Learning:* Real problems from existing businesses and organizations get solutions generated by students in the classroom.  Projects range from website design to promotion development to market planning.  Such projects occur in courses such as MKT 09.386. The Marketing Plan and MIS 02.428 Business Web Applications.  These projects have often resulted in recognition from the businesses and organizations assisted.  Dr. Dan McFarland received recognition from Camden County for such a project.

*Research Informed Teaching Examples and Projects:* Faculty engaged in research often bring these research projects into the classroom to enhance a particular lecture or to develop an engaging student learning experience.  In MKT 09.330 Marketing Channels or MKT 09.360 Service Marketing, the professor often brings examples of health promotion research in which he is engaged and uses it to develop group projects from which students can see the interaction of consumer psychology, organizational communication, and learning. Dr. Manuel Pontes frequently uses the dissemination of health information as the basis for classroom assignments.

*Joint Faculty-Student Research:* Whether grant-funded or not, Faculty often engage in research projects that involve partnering with students sometimes for credit in the form of an independent study and sometimes simply for the research experience.  The Management Information Systems Faculty regularly engage in joint projects with their students, both as means to conduct research and as well as a means to train students.  Darren Nicholson engages in research with students almost every semester as well as between semesters.

These experiences provide a varied and complete learning environment for students.  While the projects and experiences may also enhance the community through successfully completed projects (#1), a better understanding of business education in the creation of value (#2), and an improved ability to conduct research in the future (#3), it is the primary goal of such activity to produce graduates who will themselves add value to the community through their own contributions as community business people, leaders, and citizens.

**Department of Chemistry and Biochemistry**

The department has increased its enrollment to double (250) over the past 3 years, attracting more and better prepared high school graduates to their majors.

Graduates become better prepared and qualified for high skilled work forces such as in chemical, biochemical and pharmaceutical industry. Graduates have been accepted by many high-quality graduate programs in leading universities around the country.

More real life project and collaborations have been fostered with industry to help research and development in neighboring companies and hospitals-such intellectual support was virtually non-existent in the South Jersey in the past.

**Department of Civil & Environmental Engineering, College of Engineering**

Dr. Joseph Daraio recently joined the department. His research and teaching includes sustainable management of water resources, and development and improvement in infrastructure. A collaboration of research and teaching will develop graduates with engineering practice skills in sustainability and improvement in environmental and human health.

Dr. Ralph Dusseau is working with his Junior/Senior Clinic team “to determine the feasibility of rehabilitating a steel arch hanger (Hanger Q) at Millville Airport” (CEE Newsletter, Fall 2012, p.2). This is one example of many projects that both help the area and help prepare graduates who will bring immediate value to the region.

Among the many students achieving great things that will bring value to the world beyond Rowan University, Andrea R. McFarland, graduating class of 2014, is “currently conducting research about mixed species algae on an Honors Research Fellowship… She is also the vice president of Engineers Without Borders and has traveled to The Gambia, Africa, to work on water retrieval systems in eight separate villages” (CEE Newsletter, Fall 2012, p.6).

**Department of English**

Drs. Tim and Martha Viator have recently published articles about versions of The American Dream.  In what is a clear example of collegial collaboration, they developed definitions of eight variations of the American Dream and questions for secondary teachers to use in their classes.  In May 2012, they presented their research in a workshop for high school teachers of social studies and of literature/language arts.  At least three school districts will employ this research in their classes, especially as it helps with economic literacy.

**Department of Foreign Language & Literature**

Dr. Roberto Madero regularly researches and publishes on Argentine political and literary history; he is currently teaching a special topics course in the department on "Literature & Dictatorship" which relates directly to student awareness of Latin American political history.

Dr. Marilyn Manley does the same with Andean Quechua language, spoken by one million indigenous people of Latin America; she teaches "Modern Descendants of the Incas" an Honors course.

These types of courses are invaluable in increasing awareness of and engagement in international issues for graduates, an asset in an increasingly global economic environment.

**Department of Health & Exercise Science**

The department, led by Dr. Jim McCall and Dr. Peter Rattigan, has partnered with its state organization and the NJ YMCA, in conjunction with a grant from Horizon, on a project that will conduct health fitness testing, instruction and assessment for 22 NJ schools, expanding to around 60 schools over the next three years. It is hoped that the project will expand to many more schools and districts and become a major player in assessing and addressing health fitness issues, including obesity and diabetes, in K-12 schools across the entire state. Graduates certified in K-12 Health and Physical Education are trained in the same fitness assessment and education programs, and will influence the health of students and future adults across New Jersey.

The department’s Get FIT program, led by Dr. Leslie Spencer, started in 2008 and has been run in some form ever since. Its "parent" organization is the Family Resource Network (state agency) with Rowan as it's first and primary partner. Past funders have included CIGNA Foundation, AETNA Foundation, NJ Council on Disabilities, Rowan University (NSFSG program) and the Family Resource Network. Data indicates that it is an extremely effective and cost-effective program.  It is effective in improving fitness levels and reducing health risks of individuals with developmental disabilities.  It is cost-effective in that it served 120 clients and provided significant training for 40 undergraduate students last year for $48,000.   This $48,000. This also includes the cost of developing and implementing a nutrition counseling program in which 10 nutrition counselors were trained. The value to the region of this program to underserved populations, and in educating Rowan graduates to work with this population, is incalculable.

**Department of Management and Entrepreneurship**

All Management and Human Resource Management majors are required to complete an Internship in order to graduate. Many of the program’s students find full time positions through their excellent performance during their internships.

**Department of Language, Literacy, and Special Education**Dr. Jay Kuder has been collaborating with colleagues in Pennsylvania and Maryland to develop and test new technologies for helping students with autism. They have developed an app that is sold through the Apple store. It has been tested in three studies in PA, NJ, and MD.

**Department of Music**

Department alumni enrich the cultural life through their performances and through their teaching.  Many alumni become highly qualified public school teachers, others become entrepreneurs, forming their own private music schools and creating musical scores for films and video games.

The music department is beginning the process of developing a commercial music program, which would teach students the production and creative skills that will expand the arts/ entertainment scene in Southern New Jersey and provide resources for South Jersey businesses.

**Department of Teacher Education**

Lesson Study is being conducted at specific Professional Development Schools. Lesson Study is a professional development process that was first developed in Japan where teachers systematically examine their practice, with the goal of becoming more effective. Many school districts across the United States have adopted lesson study as the their primary staff development focus.

The College of Education has infused Teacher Work Sample (TWS) into both its undergraduate and graduate teacher preparation programs. Teacher Work Sample includes a unit of instruction, evidence about student learning within the unit, and use of student data for future instructional and reporting plans. An important component of TWS is reflection on practice- especially the teacher's effect on student learning. Lesson Study and TWS are tools for developing highly qualified teacher candidates at Rowan

Dr. Robin McBee has conducted research on how teachers conceptualize and carry out caring in their classrooms. She surveyed 144 elementary teachers and 41 secondary teachers in New Jersey and followed these up with selected one-on-one interviews.  She found that teachers report having flexibility, demonstrating interest and caring, and providing time for their students to be successful. She is using these and other findings with her students to help them develop into committed and caring teacher candidates.

Dr. Yvonne Rodriguez has worked with hundreds of undergraduate and graduate students who she regularly asks to conduct caring experiments in their P-12 classrooms and share the results with the undergraduate seminar class and graduate classes. Through research and practice, a curriculum was created for a cyber-bullying workshop, a time-line to implement the pilot, and to evaluate the results of our endeavors. Over 4, 000 6th, 7th, and 8th graders in 200 classrooms participated in the anti bullying curriculum. The Cyber Empowerment Workshop is now the third session of the Child Assault Prevention Program of the NJ Division of Family and Community Partnerships. This curriculum directly addresses the NJ HIB Law.

Dr. Nancy Dejarnette has studied the "new" Urban Teacher, asking how clinical practice candidates placed in a Professional Development School (PDS) in an urban community perceive the PDS relationship and goals, and how clinical practice candidates placed in a Professional Development School (PDS) in an urban community perceive the challenges of teaching and learning in an urban community. She uses research to help students become effective teachers in urban communities/schools.

The Science education program has been working with various local schools and districts to develop STEM (Science, Technology, Engineering and Math) initiatives and encourage scientific literacy. The program has worked with the College of Engineering in developing the Engineers on Wheels program that currently provides under privileged schools in the South Jersey area access to educational technologies and science presentations related to school curricula. The program works with other programs at Rowan in providing outreach workshops as well programs to in-service, pre-service teachers and urban area students (e.g., the AIM High Science and Technology Academy). The program has encouraged, paid for and supported student teachers in their research and research presentations at international and national conferences.

**Department of Theatre and Dance**

Innovative Teaching and Research have been integrated in the development of the use of 3-d imaging in live performance in research conducted in the CAVE to produce original production for international premiere in Mexico City, Teatro De La Danza, August 2012.

The department designs and builds original stage designs throughout the state in venues such as Burlington County Institute of Technology and Gloucester County Institute of Technology.

**Final Note**These are some examples of the work that is going on in teaching at Rowan University demonstrate the value to the South Jersey area and beyond that our graduates bring to the community and the economy. This is not to ignore the value of research activity at Rowan, however, which has also involved students, adding value both directly and indirectly to the area:

* In the last fiscal year, Rowan University faculty raised over $9.1 million in in research grants from the Federal government, the State of New Jersey and private industry in these four areas: Sustainability & Community, Materials & Infrastructure, Health Sciences & Biotechnology and Computation & Information.
* Student learning plays an essential component of faculty-led research in classes, clinics and laboratories at Rowan University. Undergraduate and graduate students are not only engaged in cutting-edge research in the classroom, grant funding allows them to be hired as laboratory research assistants, enabling them to compete effectively for jobs following graduation.
* In the South Jersey Technology Park at Rowan University, faculty and students in 16 R&D labs interact with 15 small businesses that are engaged in transitioning university research into the marketplace. Together, the R&D labs secured more than $1 million in new research awards, and the small businesses generated more than $1 million in revenue, last year.
* Examples for R&D projects and business that have spun out (all involve undergraduate students):
1. Bio-fuels developed from algae (Dr. Kauser Jahan)
2. Defeating anti-biotic resistant bacteria (Dr. Greg Caputo)
3. Hydrogen fuel cells to power electric cars (Dr. Tabbetha Dobbins)
4. Early diagnosis of Alzheimer’s disease (Dr. Robi Polikar)
5. FocalCool, a small business spun out of Dr. Tom Merrill’s innovative technology to the heart during a heart attack
6. DNJ Pharma, a small business spun out of Dr. Cathy Yang’s research in developing drugs to treat prostate cancer