Phase 1 Program Review Report

Degree and Program: Geography BA, Environmental Studies BA, GIS BS, and Planning BS

Department and College: Geography & Environment – College of Humanities & Social Sciences

Department Chair: John Hasse

Report Prepared By: John Hasse with departmental faculty

I. Description of program

Describe the origin and evolution of the program, including any significant changes of mission, scope, scale, or direction. The discussion of context can address the intersection of the program with other programs, such as dual majors, interdisciplinary majors, minors, concentrations, sequences, or service courses. Context may also address the ways in which the existence of the program supports other institutional activities and priorities, such as faculty research, faculty contributions to the profession, student research, co-curricular learning experiences, or contributions to the community. The overview of the current program should identify total credit hours, outline the curriculum including program options, and provide a semester-by-semester completion plan.

Introduction

The Department of Geography & Environment is a dynamic and productive nexus of innovative teaching, research and service to the region that is unique on the campus of Rowan University. The department stands out at Rowan as one of the only to offer four different degree programs in geography, environmental studies, planning and GIS. While it might appear ambitious for a small department to house four distinct baccalaureate degrees, the programs largely share a common foundation in the geographical/environmental sciences with each degree focusing on particular specialties of that core. In fact, our two most recently established B.S. degree programs, GIS and Planning, were created as professionalized versions of long-standing tracks within the Geography B.A. The Environmental Studies B.A. program, likewise, shares some of the same core courses and learning objectives but with a concentrated focus on environmental issues. Since the cores of the programs overlap and thus costs and requirements cannot be meaningfully separated, this program review and revitalization document presents our four programs as a package with the unique features/roles of the individual programs highlighted and distinguished where appropriate.

Overview of Department of Geography & Environment

The Department of Geography & Environment is focused around the common theme/topic of our home, planet earth, the science-based understanding of how its biogeographical systems function and the interface of how people live within and impact the earth's environmental systems. Our department was established in 1971 by Dr. Marvin Creamer, renowned for being the only person in history to circumnavigate the earth without instruments. The only instrument that he used was his vast
understanding of the earth’s geo-systems, ocean currents, prevailing winds, continental structures, stellar constellations, climates, biota and seasonal cycles. Marvin succeeded in making his way around the world because of his knowledge of Geography. Having just turned 99 this past January, Dr. Creamer's story is a metaphor for the importance of today's generation to arm themselves with knowledge about the globalizing world in order to successfully navigate through life and make meaningful contributions toward addressing the most important issues of our day. Marv Creamer’s contribution to Rowan and world will be honored by a world-cities signpost that will become an outdoor teaching space next to Robinson (figure 1).

The heart of what we do in the department is still all about what Marv Creamer started over four decades ago, an unyielding commitment to understanding our world and our planetary environment. To the popular perception of many in modern American society, geography is merely about memorizing state capitals, mountain chains and rivers, something to be done in middle school. But as an academic discipline and career pathway, geography is a dynamic field with an irreplaceable role to play in our interconnected and environmentally challenged world. Perhaps most surprising to many is that a range of outstanding career opportunities exist for college graduates trained in geographical and environmental sciences and the related specialty sub-fields.

What Geography Does
As the Greek roots of the term imply, geography is literally earth writing or describing the earth. Geographers, in essence, are storytellers of the infinitely complex systems, processes and phenomena of our unique planet. Geographers explore the physical and human landscape, document its components, develop academic understandings and use that knowledge to solve problems and develop effective plans for future activities within those landscapes. In our increasingly connected global world, geography is more relevant than ever.

The traditions of geography and environmental studies are also academically unique from other disciplines in two major respects. First our programs are firmly grounded in the physical sciences as well
as the human/social sciences. As such, our disciplines provide a well-established framework for joining the two academic meta-silos that have traditionally spoken markedly different academic languages. Second, Geography & Environment takes an integrative, big picture approach to knowledge that provides a common ground for many other disciplines to interact with one another in rich interdisciplinary collaborations.

**Geography & Environment as Both Physical and Social Science**

Planet earth and its bio-geophysical systems are the most complex phenomena to develop in the observable universe. The physical branch of geography explores the earth's geological, climatological and hydrologic systems as well as the biological/ecological systems that together make up the earth's biosphere. Many "hard science" methods are employed in the physical focus areas of our disciplines. Human geographers and environmentalists focus in on the human story, how people live throughout the world, how they organize and interact with one another. Human geographers practice methods typically employed in the humanities and social sciences. Practitioners and scholars in all parts of geography frequently utilize the powerful tools of geographic information systems (GIS) to integrate a range of spatial data into maps and other visualizations.

These physical and human legs of Geography & Environment are united within one of the most fascinating and important areas of focus, the study of the human-environment interaction. As humans spread to all corners of globe, they adapted to the new environments they discovered. Many of these environmental adaptations are reflected in the diverse cultures of the world’s population. But humans also have an unprecedented capability to change the environment. With the advance in industrial technology of the past several centuries, the environmental impact of humanity has approached critical thresholds of the earth's biophysical systems. Environmental Studies/Science has become the most pressing area of focus throughout nearly all geography and associated departments in North America and indeed throughout the world.

Geography & Environment provides an integrative, systems-oriented, big picture approach to knowledge. While most disciplines develop knowledge by breaking down the topic of interest into its most basic parts, the most fundamental force or the explanatory mathematical equations, Geography & Environment develops knowledge by exploring the big picture of how the components of the earth fit together, how they function as complex systems and how they are interrelated to one another. Scholars in our fields use a broad palette of quantitative and qualitative methods to identify patterns, reveal connections, and develop knowledge about planet Earth, its people and the environment. The Rowan Department of Geography & Environment is firmly grounded in this rich yet largely unknown academic tradition.

**A Decade of Change for Geography & Environment**

The Department of Geography & Anthropology was established in 1971. Through the 70’s, 80’s and 90’s the department was fairly stable and consistent with between 40 and 60 geography BA majors, a dozen geography minors and about two dozen anthropology minors (anthropology only offered a minor). There were six tenured geography faculty and three tenured anthropology faculty. The majority of the course sections were taught by tenured faculty throughout these decades. The department provided a major service contribution to the Rowan General Education and many of its courses fulfilled the multicultural-global Rowan Experience requirement. That period of departmental stability came to an abrupt end in 2007 with the simultaneous retirement of three senior faculty members effectively cutting
the geography faculty in half. The department has experienced unprecedented change in the decade since as illustrated in table 1.

### Table 1 - A decade of departmental transformation

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**Geography Sequencers**

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**Geography Coord Ed & LSHSS majors**

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**Degrees Conferred**

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**Tenure Track Faculty**

- *Scott Stansfield* Rosado
- *Scott Rosado* Lemaire
- *Scott Lemaire* Hasse
- *Scott Lemaire* Kasserman
- *Scott Kasserman* Markowitz
- *Rosado Scott Lemaire* Hasse
- *Rosado Scott Lemaire* Kasserman
- *Rosado Scott Lemaire* Markowitz
- *Rosado Scott Lemaire* Moore
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- *Hasse Scott Lemaire* Kasserman
- *Hasse Scott Lemaire* Markowitz
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- *Hasse Scott Lemaire* Som-San
- *Hasse Scott Lemaire* Crumrine
- *Hasse Scott Lemaire* Christman
- *Hasse Scott Lemaire* Howell
- *Hasse Scott Lemaire* McGlynn
- *Hasse Scott Lemaire* anthropology
- *Hasse Scott Lemaire* social

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**CGCE courses per year**

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**GIS course sections / year**

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Table 1 illustrates the transformation. In the 06-07 academic year, the department consisted of 6 geographers and 3 anthropologists. Of the 94 course sections offered that year, 59 were geography courses (not broken out from anthropology in table to conserve space) and 39 of the geography sections (66%) were taught by seasoned tenured geography faculty. By the 2014-2015 academic year, the department taught 128 sections of geography courses, and 31 sections (24%) were taught by tenure track faculty. The department sadly transitioned from a program in which ⅔ of courses were taught by outstanding caliber and highly invested faculty members to one where the department now teaches 76% of its courses with adjunct and temporary and part-time faculty.

In spite of the unprecedented stormy seas that the department has weathered over a number of years, table 1 also illustrates the tenacious resilience of our faculty and staff and the vitality of our programs. We have achieved remarkable growth that has occurred in multiple dimensions as the result of considered management, strategic planning, good will, hard work and luck. During this period, the annual Student Credit Hours (SCH) generated by geography courses went from 3,958 SCH in 06-07 to 8,762 SCH in 14-15, an increase of 221% over the nine-year period. The department’s degree programs have grown from 69 geography majors in 2006 to a combined total of 175 in 2014. During the same time our minors and concentrations grew from 3 in 2006 to a combined total of 100 in 2014, a growth of 3,330%. Our Geography Liberal Studies sequence went from nonexistent to 120, the third most popular LSHSS sequence. Many of those sequencers are coordinate education majors in Elementary Ed and Early Childhood Development, which went from 30 in 2006 to a combined total of 100 in 2014. Our GIS program offerings have grown from 6 courses per year to 23 per year.

In 2005 the Environmental Studies program was developed as an interdisciplinary program with a director to be rotated from each of the contributing departments. Patrick Crumrine was hired to serve the environmental studies program and as an aquatic ecologist, he was housed in the Department of Biological Sciences. Geography and Anthropology was a contributing department to the environmental studies program and held the directorship several times.

In 2007, then-Provost Ali Houshmand visited each department. He challenged Geography & Anthropology to reinvent ourselves to make our program more relevant for the 21st century. We already had been developing plans for strengthening our applied offerings and increasing our research and community project activities. We proposed development of a GIS center that we called “Geospatial Research Lab” (see Appendix A). Provost Houshmand contributed $5,000 in salary support to hire a GIS support specialist in 2009, and the balance of the salary was covered by an externally funded project.

The following year we began a complete overhaul of our departmental curriculum, expanding our programmatic offerings to provide more variety and rigorous pathways through our departmental offerings by taking our most popular geography B.A. tracks and reinventing them as new B.S. programs in Planning and GIS. We also increased our offerings of specialty focus areas through the development of several concentrations. Our curricular restructuring efforts were developed in a white paper titled; “Recasting the Geography and ENST white paper” (Appendix B). These efforts took more than three years and several dozen curriculum proposals to go through the development and implementation of our strategic plan.

In 2010, Dean Parviz Ansari of the College of Liberal Arts and Sciences initiated a reorganization of several departments. He saw the benefit of housing the Environmental Studies B.A. program which had been growing in popularity within a department. His intention was to strengthen both the Environmental Studies and Geography programs and the potential for environmental research and
projects. Anthropology was split off and merged into Sociology, and the department was renamed Geography & Environment in the fall of 2010.

The following year, there was a major college reorganization and the college of Liberal Arts and Sciences was split into two colleges, the College of Science and Math (CSM) and the College of Humanities and Social Sciences (CHSS). Having a firm foothold in both the sciences and humanities, the Department of Geography & Environment elected to be housed within CHSS. This choice was intended to maintain support for the human/social branch of our discipline, which would have been difficult to do in CSM. CHSS has been a very positive environment for our programs to flourish.

Over the past two years, we have been building our faculty and continuing to improve our curricula. We have been actively developing a set of online courses and are currently only one course away from a complete online degree pathway. We continue to be successful with our Geospatial Research Lab and other funded projects. We have a very successful internship program that is now required for all of our majors. We have a long tradition of offering travel courses and many other opportunities for engaging in real-world experiential learning. The past decade has indeed been transformational for the Department of Geography and Environment. We have worked diligently with a very small core staff to navigate the changing waters of academia as well as the unprecedented changes that Rowan University has been experiencing as it rises into its role of Southern New Jersey’s premier research institution. In the next section we describe our reconfigured programs.

**Geography & Environment Programs**

The Department of Geography and Environment curricula are a set of modular and interconnected programs. Currently we have four degree programs, four minors, and five concentrations. We offer a coordinate education dual major as a track as well as our LSHSS geography sequence. The details of our program requirements are posted on our departmental web page. [http://rowan.edu/geography/programs](http://rowan.edu/geography/programs)

The individual degree programs provide particular pathways through our departmental curricula. But the degrees are not independent and in fact are intimately interrelated with one another. All students progress through a similar foundational introductory curriculum as illustrated as the base of the diagram (Figure 2). In these introductory courses, students learn about the major concepts and the interconnections of the many topics we cover. In these foundation courses, student often discover that their interest may shift to another of our focus areas than they originally thought; this common foundation helps students avoid “wasting” semesters in the wrong program before they find where they belong.

In the second stage of our curricula, the four programs then differentiate depending on the interests, skillsets and ambitions of individual students. The two B.S. degree options are considered professional preparation and require more secondary stage coursework. The Environmental Studies B.A. requires a broad collection of interdisciplinary courses both within and outside the department. The Geography B.A. is our most flexible and allows students to choose their own collection of courses with one and often two focus areas that they can pursue.

The third stage built into our degree program curricula is a set of flexible “program electives” where students are encouraged (but not required) to choose program electives that will result in a secondary specialty in one of our other focus areas by fulfilling a minor or concentration. For example, an environmental studies student who is drawn to planning courses can fulfill a minor in planning by taking
five planning bank courses for their program electives. Thus their transcripts would reflect that they are well-suited for an environmental planning position. As such, the middle period for students progressing through our programs is about gaining depth in their primary (and hopefully secondary) focus areas.

In the fourth and final stage, our programs once again converge for final polishing. All four programs require at least one methods course, which we allow to be interchanged between the more quantitative and qualitative methods course options that we offer. All students are REQUIRED to have an internship experience for course credit which they report on and present to fellow students and faculty. All students are required to complete a capstone seminar.

Our programs are designed to provide students with excellent preparation for the many fields related to geography and environment as well as for postgraduate education.

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**Curricular Core of G&E Programs (common to all degree paths)**

- **Intro to Mapping & GIS**
- **Between two and four Introductory Geography & Environment Courses**
- **Principles of Planning & Environmental Design**
- **Core degree program courses (primary focus varies by degree program)**
- **Program Electives (can choose 2nd focus from other departmental offerings)**
- **Methods Course**
- **Internship Requirement**
- **Senior Seminar**
Table 2 - Brief Description of Program Paths Available in Geography & Environment

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<thead>
<tr>
<th>Degree</th>
<th>Major themes</th>
<th>Features/qualities</th>
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| Geography       | Geography is about understanding the world; the physical earth as well as human societies. Geography takes a global perspective that looks at the world’s functional systems and cultural expressions with a special focus on place. Geography provides an integrative approach to problem solving and will play a vital role in creating a sustainable future. | - Highly flexible degree  
- Many sub-disciplinary opportunities  
- Many career possibilities                                                                                     |
| • B.A. Minor    |                                                                                                                                                                                                              |                                                                                                          |
| Environmental Studies       | ENST focuses on understanding and solving environmental problems. Highly interdisciplinary with courses taken in many different departments. Focuses on both the societal and physical aspects of environmental problems. Students interested in environmental science can take the environmental science concentration. | - Broad interdisciplinary training  
- Diverse course work  
- Rapidly growing major                                                                                     |
| • B.A. Minor    |                                                                                                                                                                                                              |                                                                                                          |
| GIScience       | This is a professional degree in Geospatial Sciences including Geographic Information Systems (GIS), Remote Sensing and Global Positioning Systems (GPS). Graduates will be well prepared for entry level positions in this rapidly growing subfield of geography. Excellent preparation for graduate school. | - Bachelor of Science degree  
- Professional preparation  
- Rigorous coursework                                                                                         |
| • B.S. Minor    |                                                                                                                                                                                                              |                                                                                                          |
| Planning        | This is a professional degree program focusing on environmental and sustainable planning. Planning is applied design and management of the environment including both built and natural landscapes. Graduates will be well prepared for positions within the planning profession with an excellent foundation for pursuing licensure and graduate education. | - Bachelor of Science degree  
- Professional preparation  
- Rigorous coursework                                                                                         |
| • B.S. Minor    |                                                                                                                                                                                                              |                                                                                                          |

Concentrations Housed in Geography & Environment

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<th>Geoscience</th>
<th>The concentration in geosciences focuses on earth’s physical systems including: geology, climatology, geomorphology, hydrology, etc. This is geared toward students who want to pursue earth science-related careers and is a valuable track for science and engineering students.</th>
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<tr>
<td>Environmental Science</td>
<td>The ENV SCI concentration provides a cohesive and thorough introduction to the disciplines that provide the foundation for environmental science. This includes core courses in biology, chemistry and geology. The concentration is geared toward students who are interested in pursuing careers and graduate programs in environmental science so that they can be competitive with other students with environmental science B.S. degrees.</td>
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<tr>
<td>Global Issues</td>
<td>To support students interested in a career or graduate school in an area of geography that requires our students to engage in intensive analysis of economic, cultural, political and environmental issues that shape the world today as a result of globalization. This program concentration will provide students a structured program to grapple with these changes and their meanings, paying special attention to some key geographical concepts and insights such as territoriality, scale and time-space compression.</td>
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<tr>
<td>GeoEducation</td>
<td>A structured program intended to develop current and future geography educators/teachers. The sequence of courses were selected to benefit and strengthen students who are on track to be educators</td>
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<tr>
<td>Sustainable Built Environments</td>
<td>A collaborative concentration with Civil &amp; Environmental Engineering Designed to create a focus area for majors and engineers interested in sustainable planning and green architecture</td>
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II. Need for the Programs

Describe how the program supports relevant pillars and strategic initiatives. Similar programs in the State and Philadelphia region should be listed with an analysis of similarities and distinctions in terms of program purpose and curriculum. If available, enrollment data for these programs should be provided. Provide data showing demand for the program. Contextualize and evaluate the enrollment data, including recruitment and graduation success, and assess the performance and efficacy of the program if applicable, internal transfer data may be provided.

Relationship of GENV programs to the institutional mission and strategic priorities

President Houshmand has outlined his vision for the institutional mission and strategic priorities summarizing them as four “pillars” of the university of access, affordability, quality and economic engine. The faculty and our programs and activities offered within the Department of Geography & Environment enthusiastically support these goals for the university, and we also encourage a 5th pillar that we believe is an important principle for our university, sustainability and producing globally educated citizenry.

I. Access
Alternate Academic Pathways: The department’s many program options provide a palette of possibilities for our students to find the pathway through university education that best fits their interest and skill sets. Our programs are often a great match for students who are admitted to Rowan but unable to get into other restricted programs such as engineering or who decide that other programs are not a good match for them after trying them out. We are happy to provide access to students to a university education that opens up career possibilities that they may have never considered.

Online Course Options: We provide a full series of online courses that in short order will allow students to complete a geography degree 100% online. Our online courses are offered during the summer and intersession as well as during the regular semester as e-sections.

Rowan Select: The department is an enthusiastic supporter of the Rowan Select program, which provides access to students who have borderline SAT scores but who otherwise would make an outstanding Rowan student. We have allocated one of our most energetic ¾ faculty members, Dr. David Rockwell, to teach Rowan Select courses. He has taken the position very seriously and has become an active mentor to his Rowan Select students.

Non-Traditional Students: The department has long valued the interests and contribution of the nontraditional students in our programs. We have for many years rotated the majority of our courses in the evenings so that students who may hold jobs or be on daycare duty during the day can have access to accomplishing their career goals. The online course offerings likewise are an asset to nontraditional students.
Non-Restricted Majors: Our programs offer excellent educational pathways to students who may not be able to pursue their intended major such as engineering. We present our classes and programs in a way that often opens up student minds to careers that they may have never considered.

II Affordability
Internships: All of our baccalaureate degree programs require students to complete at least 3 credits (approx 140 hours) of internship. Although some of the positions are voluntary, many are paid, providing students with income and job experience so that they can better secure a job upon graduation.

Flexible Modular Program Structure: Our degree programs are modular and interrelated with a common set of foundational courses as described above. This allows students to begin on one degree path and change to one of our other programs without “wasting” a semester and paying for classes that will ultimately not be used toward degree completion.

Accelerated Degree Completion: Many of our students are transfers from both external schools and internal from other Rowan programs. We have our course rotations structured in a manner to allow students to progress through the program in as short a time as possible. We do this through continual course rotation and by offering courses during the intersession and summer. This allows students to complete their degree in a compressed time horizon and more quickly enter the job arena and become income earners.

Programs that Support Commuters: By rotating our courses in the evening and offering many online options, we support students who may work during the day or choose to commute in order to save money on campus housing. We have also offered courses on the Camden campus.

Cost Conscious Ethic: The department is very sensitive to the cost of being a student today. Many of our faculty intentionally choose affordable textbooks over more costly books or no text books at all. We have a long tradition of having travel as a component to our programs, and travel has always been organized at bargain prices by our faculty for the students. As a department we heavily rely on Blackboard to minimize the usage of paper and other expenses.

III Quality
Dedicated Faculty and Staff: The quality of our programs is central to our department. The high quality that we achieve is primarily a result of a dedicated and proactive group of faculty and staff.

Outstanding Adjunct Faculty from Industry: Not only do we have excellent permanent staff, our adjuncts are some of the best in the region. We have worked diligently to develop and recruit some of the best adjuncts that adjunct pay can buy. Many of our planning adjuncts are prominent professional planners in the Philly metropolitan area. Our GIS adjuncts have fulltime careers in places like the Delaware Valley Regional Planning Commission and the NJ Office of GIS.

Innovative: Modular Curriculum: We’ve designed our curriculum so that students can choose their own unique combinations of courses to fulfill their interest.

Leading-edge of Pedagogic Methods: Most of our faculty are in touch with and experiment with developments in teaching techniques and teaching technologies to enhance student learning.
IV Economic Engine
Fund Research and Projects: We have had an active research agenda which has resulted in developing substantial economic activities at Rowan. See Table on Pages 17-18.

Involved in Planning Projects within the Region: Our faculty are involved with real-world projects that are important initiatives for regional growth such as the Rowan Boulevard development project.

Helped to Bring Light Rail to Campus: Research conducted in the Department of Geography & Environment contributed to the selection of the Conrail tracks as the selected corridor of travel. The light rail will directly serve campus and Glassboro’s downtown center, one of the largest current development projects in south Jersey. Analysis of the geographic factors that will influence the success of the commuter transit alternatives currently proposed for Southern New Jersey and a detailed station location analysis in Glassboro can be found at http://users.rowan.edu/~hasse/glocorail/.

NJ MAP - Web-based Community Planning Support Tools: NJ MAP is a project that helps local municipalities to better plan and manage their environment. We endeavor to develop the NJ MAP project so that it brings real value to communities throughout the state and helps them make better decisions for their own economic development and environmental protection.

V Sustainability and Global Citizenry

A Fifth Pillar: The department suggests that Rowan add a 5th pillar to the university to which we should be committed. Rowan should strive to graduate students who understand the need and challenges for society to develop a sustainable economy in the coming decades and who will become broadly educated, critical-thinking citizens in the increasingly globalized world that they will be inheriting.

Sustainability: Our department champions Rowan being a leader in sustainability, and we emphasize sustainability throughout our degree programs as well as within the general education courses that we teach. The department intends to embrace and pursue the development of the new Rowan Core changes to the general education model and to incorporate these values.

Global Citizens: The department also believes that Rowan should exemplify the role of the forward looking university in delivering education that produces globally literate citizens. To this end we emphasize global education and the value of the arts and humanities in producing roundly educated graduates who will be able to understand and compete with an increasingly international marketplace.

Comparisons to Similar Programs in the Region

In the metro Philadelphia region, there is an association of higher education geography programs called the Delaware Valley Geographical Association. Rowan faculty have long played a central role in this association, and continue to play a significant role today. The association maintains some information which is useful for this document, and additional information about geography, environmental studies, planning, and GIS programs has been gathered from the national Association of American Geographers.
<table>
<thead>
<tr>
<th>Institution Name</th>
<th>Degree Programs Offered</th>
<th>Majors</th>
<th>Faculty Members</th>
</tr>
</thead>
</table>
| East Stroudsburg University of Pennsylvania | - Minor in Geography  
- M.S. Applications of GIS and Remote Sensing in Environmental Science                                                                                                                                                                                                                                                                                                                                                     | n/a    | 2 (per dept. web page) |
| Kutztown University of Pennsylvania       | - B.A. Geography  
- Minors in Geography, Environmental Geography, and Planning Geography  
- dept. participates in interdisciplinary B.S. Environmental Science - Geography Track                                                                                                                                                                                                                                                                                                                                   | 65     | 7                |
| Millersville University of Pennsylvania   | - B.A. Geography  
- Minor in Geography                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 75     | 6                |
| Philadelphia University                   | - M.S. in Geodesign (GIS + Architecture)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | n/a    | 44 full time affiliated  
31 adjunct (per dept. web page) |
| Rowan University                          | - B.A. in Geography  
- B.A. in Environmental Studies  
- B.S. in Geographic Information Science  
- B.S. in Planning  
- Post-Bacc. Certificate in Cartography and Geographic Information Science  
- Minors:  
  - Geography  
  - Environmental Studies  
  - Planning  
  - Geographic Information Science  
- Concentrations in  
  - Geoscience  
  - Global Issues  
  - Environmental Science  
  - Geographic Education  
- Shared programs:  
  - B.A. in Geography and Education (dual-major program)  
  - Concentration in Sustainable Built Environments (with Coll. of Engineering)                                                                                                                                                                                                                                                                                                                                   | 185    | 5.5              |
| Rutgers University                        | - B.A. Geography  
- Minors in Geography and International and Global Studies  
- M.A., M.S., and PhD programs in Geography  
- B.S. Environmental Planning and Design  
- B.S. Environmental Science  
- M.S., and Ph.D. in Environmental Science                                                                                                                                                                                                                                                                                                                                                                                             | 48 BA majors, 3 Masters, 42 PhD (in residence) | 10 in department  
19 additional affiliated |
| Temple University                         | - B.A. Environmental Studies; Geography & Urban Studies                                                                                                                                                                                                                                                                                                                                                                                                                                 | 179 BA majors, 7 Masters, 17 | 22 (full time, including |
What is evident in the comparison to other regional peer and aspirant schools is that we are doing very well in terms of majors especially, considering the number of faculty. We have more majors from our four combined programs than all other comparable programs except the University of Delaware. In New Jersey, our program is vastly outperforming undergraduate enrollments at Rutgers. We believe that our innovative modular curriculum is out in front of the curriculum of these comparison programs.

**Nationally Significant GIS Course Offerings**

In a national survey of geography departments, Richard Boehm, a prominent geography education researcher at Texas State University, identified Rowan’s Department of Geography as the 4th highest in number of students enrolled in introductory GIS classes. This has put us on the national map of GIS programs. We accomplished this enrollment through diligent curricular planning and strategic partnerships with departments such as Civil Engineering, which requires all of their majors to take Intro to Mapping & GIS.

Table 4 - Top Introductory GIS Student Enrollments in Geography Departments Nationally

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>Fall 12</th>
<th>Spring 13</th>
<th>Fall 13</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University of Wisconsin-Stevens Point</td>
<td>119</td>
<td>124</td>
<td>132</td>
<td>375</td>
</tr>
<tr>
<td>2</td>
<td>Texas State University</td>
<td>116</td>
<td>118</td>
<td>104</td>
<td>338</td>
</tr>
<tr>
<td>3</td>
<td>Texas Tech University</td>
<td>104</td>
<td>98</td>
<td>109</td>
<td>311</td>
</tr>
<tr>
<td>4</td>
<td>Rowan University</td>
<td>116</td>
<td>70</td>
<td>111</td>
<td>297</td>
</tr>
<tr>
<td>5</td>
<td>St. Cloud State University</td>
<td>82</td>
<td>100</td>
<td>72</td>
<td>254</td>
</tr>
<tr>
<td>6</td>
<td>Mississippi State University</td>
<td>68</td>
<td>48</td>
<td>86</td>
<td>202</td>
</tr>
<tr>
<td>7</td>
<td>Kennesaw State University</td>
<td>76</td>
<td>34</td>
<td>87</td>
<td>197</td>
</tr>
</tbody>
</table>
Job Availability and Post-Collegiate Educational Opportunities

The federal Bureau of Labor Statistics *Occupational Outlook Handbook* highlights a range of career options associated with the degree programs on offer in the Dept. of Geography & Environment at Rowan. In all but two of the career areas (Surveying and Mapping Technicians, Urban and Regional Planners), job growth is anticipated to exceed the average growth for the US economy as a whole over the next ten years.

Table 5 - BLS Statistics

<table>
<thead>
<tr>
<th>BLS Job Title</th>
<th>Anticipated Growth 2012-2022</th>
<th>Median Pay 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographers</td>
<td>29% (&quot;Much faster than average&quot;)</td>
<td>$74,760 per year</td>
</tr>
<tr>
<td>Cartographers and Photogrammetrists</td>
<td>20% (&quot;Faster than average&quot;)</td>
<td>$57,440 per year</td>
</tr>
<tr>
<td>Geoscientists</td>
<td>16% (&quot;Faster than average&quot;)</td>
<td>$90,890 per year</td>
</tr>
<tr>
<td>Environmental Scientists and Specialists</td>
<td>15% (&quot;Faster than average&quot;)</td>
<td>$63,570 per year</td>
</tr>
<tr>
<td>Surveying and Mapping Technicians</td>
<td>14% (&quot;As fast as average&quot;)</td>
<td>$39,670 per year</td>
</tr>
<tr>
<td>Urban and Regional Planners</td>
<td>10% (&quot;As fast as average&quot;)</td>
<td>$65,230 per year</td>
</tr>
</tbody>
</table>

With regard to graduate education, many of our G&E graduates have gone on to pursue graduate level education at regional universities such as Rutgers, University of Pennsylvania and University of Maryland among others. Several have become tenured faculty members at universities. Others have pursued a wide range of options for advanced training that are available regionally and nationally. The following table summarizes graduate program routes typical for G&E graduates. This data was collected from gradschools.com, which is updated more frequently than the directories of many professional societies and other scholarly organizations and may better reflect the current state of advanced degree availability in these areas.
Table 6 - **Graduate Degree Routes Typical for G&E Graduates**

<table>
<thead>
<tr>
<th>Type of Degree</th>
<th>Number of U.S. Programs Offering this Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.A. / M.S. Geography (including programs specializing in GIS; including interdisciplinary programs featuring a specialization in Geography or GIS)</td>
<td>147</td>
</tr>
<tr>
<td>PhD Geography (including programs specializing in GIS; including interdisciplinary programs featuring a specialization in Geography or GIS)</td>
<td>59</td>
</tr>
<tr>
<td>M.A. / M.S. Environmental Studies or Environmental Science (including programs in ecology, policy, forestry, geology, environmental management, and environmental education)</td>
<td>848</td>
</tr>
<tr>
<td>PhD Environmental Studies or Environmental Science (including programs in ecology, policy, forestry, geology, environmental management, and environmental education)</td>
<td>453</td>
</tr>
<tr>
<td>M.A. / M.S. / M.P.A. Urban and/or Regional Planning</td>
<td>135</td>
</tr>
<tr>
<td>PhD Urban and/or Regional Planning</td>
<td>42</td>
</tr>
</tbody>
</table>

The Department of Geography & Environment currently employs several strategies for recruitment and enrollment. We actively participate in all Rowan Open House events, including Exploratory Studies. We recruit heavily from our own Gen Ed courses as that is the most fruitful way for our potential majors to “discover” G&E as a major. We also recruit from our community outreach projects. We are very grateful to have a dedicated academic advisor, Harold Thompson, who has already made a major improvement in enrollment, guiding students through our many program options and pathways, which should result in significant improvement in student retention.

**Geography & Environment Faculty FY 15**

- John Hasse - professor chair [2 course release for chair, 1 course release research]
- Denyse Lemaire - professor [full professor, no course release] (retired December 2014)
- Patrick Crumrine - associate professor - joint appointment with Biology (on sabbatical FY 15)
- Zachary Christman - assistant professor [adjusted load research]
- Jordan Howell - assistant professor [adjusted load research]
- Chuck McGlynn - instructor [full load - actually overload to fill Lemaire gap]
- Laura Ruthig - administrative assistant
- GIS support staff - (currently unfilled - active job search underway).

**Departmental Facilities and Operating Costs**

The department has three dedicated classrooms in Robinson Hall, 302 (geoscience laboratory classroom), 306 (human geography & Environmental Studies social perspectives classroom) and 311 (our GIS Teaching Laboratory). Robinson 302 (our geoscience laboratory classroom) houses our geology collection, which is one of the most extensive collections in southern New Jersey.
The department’s GeoScience Teaching Lab (Rob 302) houses one of S. Jersey’s most extensive geology collection. The department’s GIS Teaching Studio (Rob 311) has fostered the prominence of our GIS programs within the region.

The department maintains about 80 computers in teaching, research and open labs as well as servers, GPS equipment and necessary GIS software. We continually innovate with teaching technologies in the classroom. Our non-salary operating budget is $16,400 and our lab budget is $4,000. This budget has remained flat for many years. While this operating and lab budget is one of the highest for the College of Humanities and Social Sciences, considering that we have physical science and geographic information science lab courses, our non-salary costs associated with our laboratory teaching and research are far less than other departments with lab expenses in the College of Science and Math and College of Engineering. The Department of Geography & Environment provides excellent education at minimal cost in comparison to other departments across the university.

Revenues

Although full time students pay a flat rate tuition and thus there is not an exact 1 to 1 ratio to the Student Credit Hours (SCH) generated by a department, the part-time tuition cost is nonetheless a reasonable proxy for the amount of gross revenues in tuition payment and student fees that a department generates for the university.

Table 8a. & b. Rowan University Tuition

<table>
<thead>
<tr>
<th>Part-Time (per credit) Costs</th>
<th>In State</th>
<th>Out of State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$348</td>
<td>$656</td>
</tr>
<tr>
<td>Fees</td>
<td>$151</td>
<td>$151</td>
</tr>
<tr>
<td>Total - Tuition &amp; Fees</td>
<td>$499/s.h.</td>
<td>$807/s.h.</td>
</tr>
</tbody>
</table>

Geography & Environment Gross Tuition Dollar Generation

| Total SCH provided by GENV in FY 14 | 7,921 |
| Amount paid by students per credit | $499 |
| Gross tuition and fees paid for GENV course | $3,952,579 |
| Cost of GENV salary and non-salary* | $609,770 |
| **Net Revenues generated by students paying tuition and fees for GENV courses in FY 14** | **$3,342,809** |
At $499 per semester hour (assuming in-state tuition rate), the department grosses nearly $4M in student tuition and fees and nets $3.3 M(*see salary note above).

To put the fiscal value of Geography & Environmental programs into context with other departments, we generate more student credit hours of tuition through our course offerings than Civil, Mechanical and Chemical Engineering combined. Geography and Environment has accomplished this with only 5 ½ tenure track faculty valued at $589,370* total salary expense compared to the 39 engineering tenure track faculty shared among the three departments with combined salaries totaling $3,119,285 according to the Rowan FY 15 Budget.

This illustrates that Geography and Environment generates more than 10 times the net revenues of the three engineering programs when looking at the simple calculation of student tuition dollars and student fees paid versus tenure track salaries paid. Of course, this is a simplistic analysis and there are many other factors to consider, such as laboratory expense, which will make the fiscal differentiation even greater. But the student credit hours paid is at least one comparable fiscal metric by which we can demonstrate our cost effectiveness and the value that our programs provide for students. However, other measures of revenue should also be considered, such as externally funded research and projects.

**Funded Research**

Geography & Environment has been actively engaged in research and community outreach projects. Many of these projects have been supported through external funding. The following list highlights many of the projects we’ve been conducting over the past several years.

**Table 9 - Geography & Environment Funded Research Highlights Since 2009**

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
<th>Duration</th>
<th>Funding Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Guard Facilities GIS Mapping Internship</td>
<td>NJ Army National Guard had a need for inventorying and mapping the physical infrastructure of 40+ Guard locations. Project employs a full time director and 3 student interns. Student interns gain valuable GPS field collection and GIS database data development skills.</td>
<td>2009 to present ongoing</td>
<td>$129,000 per year ongoing</td>
</tr>
<tr>
<td>Evaluation of land use patterns for Evidence of Persistent Exclusionary Zoning</td>
<td>This project was commissioned by the Fair Share Housing Center, one of the region’s most prominent organizations in advancing affordable housing interests.</td>
<td>2010-2011</td>
<td>$24,000</td>
</tr>
<tr>
<td>National Guard Environmental Management Internship</td>
<td>Modeled on the above GIS intern program, the NJ Army National Guard had a need for assistance in environmental compliance activities on their 40+ Guard locations. Project employs a full time director and 3 student interns. Student interns gain valuable environmental regulation and GIS skills.</td>
<td>2012 to present ongoing</td>
<td>$128,000 per year ongoing</td>
</tr>
<tr>
<td>New Jersey Municipal Asset Profiler (NJ MAP)</td>
<td>The Geraldine R. Dodge Foundation support to create an innovative Web-Based GIS and environmental data viewer to support sustainability and environmental planning activities. This project supports the data and activities of multiple governmental and non-</td>
<td>2012-13 2013-14</td>
<td>$40,000 per year expected to be ongoing</td>
</tr>
</tbody>
</table>
governmental stakeholders at the state, regional and local levels.

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Description</th>
<th>Start Date</th>
<th>End Date</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Map Systems Geospatial Data Bridge</strong></td>
<td>This project developed the technical mechanisms and programming for different web-based map services to share and render data from multiples sources. This pilot project established the proof of concept for a data bridge allowing Rowan to become a central data hub for geospatial services.</td>
<td>2012-2013</td>
<td>$10,000</td>
<td></td>
</tr>
<tr>
<td><strong>NJ Landscape Project Habitat Change Analysis Pilot Study</strong></td>
<td>This project performed a pilot study for the New Jersey Department of Environmental Protection, Division of Fish, Game and Wildlife to determine the degree to which threatened &amp; endangered habitat has been impacted by development growth in NJ.</td>
<td>2013-2014</td>
<td>$17,000</td>
<td></td>
</tr>
<tr>
<td><strong>Rowan Facilities GIS Support</strong></td>
<td>Geography Interns collected and developed geospatial data and services for Rowan facilities.</td>
<td>2011-2014</td>
<td>$15,000 per year</td>
<td></td>
</tr>
<tr>
<td><strong>National Geographic Alliance</strong></td>
<td>Rowan Department of G&amp;E is the official host of the NJ Geographic Alliance program for promoting geographic education in the US. Workshops and programs support K-12 teachers in enhancing geography education skills.</td>
<td>2009 - present - ongoing</td>
<td>$27,000 per year ongoing although now administered by PSEC</td>
<td></td>
</tr>
<tr>
<td><strong>Watershed Education Program: NOAA</strong></td>
<td>National Oceanic &amp; Administrative Administration - funded project to promote watershed-based environmental education workshops for NJ teachers</td>
<td>2012 - 2014</td>
<td>$83,000 per year for two consecutive years</td>
<td></td>
</tr>
<tr>
<td><strong>NJ Agricultural Preservation Soil Disturbance Mapping</strong></td>
<td>Funded by the NJ Department of Agriculture to create data on how much soil disturbance has occurred on farmland under preservation.</td>
<td>2013-2014 options for continuation</td>
<td>$42,000</td>
<td></td>
</tr>
<tr>
<td><strong>Social Capital &amp; Resilience of Elderly Exposed to Hurricane Sandy</strong></td>
<td>This project is a collaborative between Zachary Christman and Rachel Prichno, senior researcher at Rowan’s SOM. Funded by the Department of Health &amp; Human Services, Dr. Christman will direct the geospatial components of the project</td>
<td>October 2013</td>
<td>$640,000 over 3 yrs ($210K /yr)</td>
<td></td>
</tr>
<tr>
<td><strong>Planning for Water Quality in Salem County</strong></td>
<td>In this project the department provides mapping analysis evaluation for Salem County. A pilot study will be conducted that allows scenario testing for local municipal zoning to allow evaluation of their zoning regulation and the possible impacts to water quality</td>
<td>Sept 2014 - Dec 2015</td>
<td>$265,000 full grant ($135,000 Rowan subcontract)</td>
<td></td>
</tr>
<tr>
<td><strong>NJ Conservation Blueprint GeoToolkit</strong></td>
<td>This William Penn Foundation-funded project is a collaboration between the Rowan Department of Geography, the Nature Conservancy and the New Jersey Conservation Foundation. Rowan will be developing online mapping tools to support the conservation community.</td>
<td>April 2015 - September 2016</td>
<td>$192,500 full award ($45,000 Rowan Subcontract)</td>
<td></td>
</tr>
</tbody>
</table>

Since 2009, the Department of Geography has engaged in over **$2.2 million dollars in externally funded projects**. We hope that the contributions that we provide by our projects are not overshadowed by overly focusing on how much money they generate. We are proud of the intrinsic value that our projects, both funded and unfunded, create for our students and the community at large. These projects benefit the public interest through protecting New Jersey’s environment, advancing scientific knowledge and helping local towns plan more effectively. Most of our projects involve our students receiving...
We have also assessed whether students completed an internship and their ability to synthesize concepts from across the environmental studies curriculum during that internship. Between 2012 and
2014, 100% of students participating in internships successfully completed them, and 89% of students were able to synthesize concepts from across the environmental studies curriculum as indicated by responses of internship supervisors.

Future assessment efforts will more holistically address student learning outcomes across the four degree programs housed in the department. These efforts will be guided by the new assessment framework currently being developed.

**Results of student or alumni satisfaction surveys**

The department is currently engaged in several activities to better gauge the success of recent graduates in advancing to graduate school and securing jobs in the field. These efforts are being facilitated by staff in the office of Institutional Effectiveness and Research Planning (IERP) and will focus on graduates since 2004. These initial efforts will capture students that graduated during a period of significant transition within the department. During this period there has been a nearly complete turnover of faculty, the Anthropology program was moved to the Department of Sociology and replaced by the Environmental Studies program, and the department developed two new B.S. degree programs in GIS and Planning.

**Table 10** Between 2004 and 2014, 341 students graduated with a degree from the department. Some students earned multiple degrees; thus the total number of degrees awarded exceeds the number of students graduating.

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>Number of degrees awarded</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.A. Geography</td>
<td>231</td>
<td>72 were coordinate education majors</td>
</tr>
<tr>
<td>B.A. Environmental Studies</td>
<td>100</td>
<td>Established in 2006, first graduates in 2008</td>
</tr>
<tr>
<td>B.S. GIS</td>
<td>12</td>
<td>Established in 2011, first graduates in 2012</td>
</tr>
<tr>
<td>B.S. Planning</td>
<td>10</td>
<td>Established in 2011, first graduates in 2012</td>
</tr>
</tbody>
</table>

The database provided to the department by IERP only includes employment records for 52 of these students. We are currently working with staff in IERP to develop a survey to send to this group of students to gather additional information on graduate school attendance, employment status, and other measures. We are also reaching out to graduates via social media in an effort to gather this information. As part of our assessment efforts, we are developing an exit survey that will be distributed annually to graduating seniors from the department. This survey will attempt to assess students’ content knowledge, perception of knowledge and satisfaction with their educational experience within the department and at Rowan University. We anticipate polling the current cohort of graduating seniors in spring 2015.

**IV. Conclusions and Proposed Strategy**

*Considering the analysis presented in this report, draw conclusions about the productivity of the program in terms of enrollment as well as relevant contextual factors. Determine whether student enrollment is*
appropriate and justifiable given the value and costs associated with the program. Refer to data from this report to support your determination.

If you conclude that student enrollment in the program is not appropriate and justifiable, propose a strategy for addressing the issue and outline a plan for implementing the strategy.

Conclusions

Looking back at the 10 year chronology table at the beginning of this document, it is clear that the department has worked diligently over the past decade in redefining ourselves and our role at Rowan. We have created a set of outstanding programs that are now prominent in the region and beginning to receive national recognition. Our combined majors have steadily grown over this decade, and the number of students who have passed through our classes has also substantially increased. Our research and community outreach projects have been very successful and continue to grow. Our Planning BS program is the first such degree in southern New Jersey, and our GIS BS has risen in prominence and is now seen as one of the best in the region. This record of success has occurred in spite of many tumultuous changes, through careful strategic planning and concerted effort considering that we have achieved many of our goals with only a handful of tenure track faculty.

Geography & Environment has weathered many meaningful challenges, both internal and external, related to: academic reorganization, faculty and staff turnover (due to retirements of long-serving faculty and departures). In spite of these challenges, current Geography & Environment faculty have demonstrated resilience and creativity, to reorganize and emerge with bolstered mission and direction to build the department and uphold the mission of the university. In other words, we believe that we are exactly the type of department that is prized in the ‘new’ Rowan University -- flexible, ambitious, dedicated to high quality teaching and impactful research, and primed for growth alongside our student body, campus community, and geographic region.

The reasons for our confidence are clear -- we are a dynamic group, attracting increasing numbers of students, situated in areas of growth both within and beyond the university walls. Recent faculty hires have added new energies to the confidence and expertise found in our tenured faculty. Future tenure-track hires will only continue this trend. In the past few years, two new degree programs have been introduced to better serve student interests while also meeting regional economic demands.

As the data presented in this report indicates, the Department of Geography & Environment has accomplished far more with much fewer resources than many other departments and programs at Rowan as well as peers in the surrounding region.

Proposed Strategy

- Improve recruitment, retention, and/or persistence
- Revise the curriculum
- Enhance the resources of the program
- Restructure the program to make it more cost-effective
- Discontinue the program to permit reallocation of resources to another program
- Other (please describe)

While we feel that student enrollment in our programs is currently at an appropriate level, we look forward to growing our student numbers in the near future. We feel that the best way forward in this
area is to improve our recruitment of new students in all areas: incoming freshmen, transfer students, and students already attending Rowan but majoring in other programs. We know from experience that once students ‘find’ our courses, degree programs, and faculty, they greatly enjoy what we have to offer and are able to build successful careers after graduation. Our biggest challenge, then, is getting them to find us.

**Improved Recruitment, Retention. and/or Persistence**

**Incoming freshmen recruitment strategy:**
- Better job getting info about department to high schools (promotional materials)
  - Specialized high schools out there too, e.g. MATES (Marine Academy of Technology and Environmental Science -- magnet school) that have students already interested in what we do (they may just not yet know we’re here)
    - Within NJ there is a perception that Stockton is the main school for people interested in environmental issues, but our resources (faculty, course offerings, facilities [GIS in particular]) are much better
- Website must be improved -- critically important for potential students AND their parents

**Transfer student recruitment strategy:**
- Correct errors in transfer guide for community colleges
- Get more info to community colleges (promotional materials)

**Current RU students doing something else:**
- Improved on-campus visibility
  - Marv Creamer commemorative site
  - Student clubs that exist already can be expanded
  - Expand opportunities for amazing field and online courses
    - continuing Dr. Lemaire’s tradition
- Improve conversion of students in our Gen Ed classes to dept. majors
- Greater collaboration with ‘cognate’ departments where students would clearly benefit from dual major with us...shared courses/programs? (Like new SBE concentration)
  - Many CHSS depts might fit in this category, e.g. History, Anthropology, Law/Justice, Foreign Languages
  - Engineering programs
- Additional minor changes to curriculum to make G&E courses more accessible to majors, minors, concentrators, sequencers, and non-majors alike (see below)

**Retention and Persistence**
- Dedicated Advisor - Harold Thompson joined the department in January 2015
  - Already having major impact on assisting students
    - proactively reaching out to students for advising & registration
    - available for students throughout the week
    - following up on red flags in Starfish
    - 90 credit audits
    - other helpful contributions
- Streamlining curriculum so that there is a common, more flexible G&E core (see below)
- Website improvements so that students have better information about each degree program, what is required to complete, the recommended sequences and the rotation of courses so that
students can choose which G&E pathway makes the best fit for their interests and their timing goals for graduation.

**Planned Revisions to G&E Programmatic Curriculum**

We plan to address several areas in our programmatic curriculum in order to increase recruiting/retention, clarify and streamline programmatic pathways, improve accessibility and affordability for students and to improve the revenues for the department and university. The major components of our plans include:

1. Creation of a BS degree pathway in Earth & Environmental Science;
2. Streamlining of departmental curriculum so that all degree programs have a more unified common core;
3. Increasing our online offerings;
4. Overhauling our GEN ED courses to comply with the new Rowan Core model;
5. Create a suite of G&E CUGs; and
6. Improving our course rotation sequence so that students can more efficiently progress through the programs and potentially finish in an accelerated manner.

1) **BS pathway in Earth & Environmental Science**

As described throughout this document, the collection of programs that we offer are not isolated and independent from one another but different pathway specialties for the common programmatic G&E core focusing on our remarkable planet, how it works, and the especially critical question of human and environment interactions. The difference between the geography side and environmental side of our programs is one of nuance: Geographers tend to take more of a ‘big picture approach’ focusing down to particular site or location, while environmentalists tend to look from the site-specific conditions outward to the impacts on the surroundings (i.e. environment) and populations.

Both our Geography BA and Environmental BA programs provide an excellent liberal education for students. However, only our geography side has pathways (BS Planning and BS GIS) that are more rigorous for advanced students with more focused career goals or graduate school aspirations. In name, Environmental Studies and Environmental Science are quite similar, but there is a key difference between the two disciplines. Environmental Studies is generally defined as an interdisciplinary field that draws primarily from the social sciences in an attempt to better understand environmental challenges. While students are expected to appreciate the scientific aspects of environmental issues, the focus is more on the underlying social and political aspects of these issues. Environmental Science draws from the basic natural sciences and math to better understand the scientific and quantitative aspects of environmental issues. There are limited curricular options for students who wish to pursue training in environmental science within our department and at Rowan University, collectively. This clearly puts our department’s ability to attract top environmental science students at a major disadvantage -- over the past several decades, Stockton University in particular has built its reputation as the environmental school of Southern New Jersey. We have received indications from some prospective students, parents and employers that they are less interested in a B.A. program in Environmental Studies since there is the perception of inadequate training in the physical sciences. We aim to address this perception and attract more top environmental students through development of a **Bachelor of Science** degree in Earth & Environmental Sciences.

Fortunately, we have many of the component parts of a B.S. in Earth and Environmental Science degree already in our department. We have had a concentration in Environmental Science as well as a concentration in Geoscience successfully running for over 7 years. Creating a B.S. degree program in
Earth & Environmental Science can be done by incorporating these existing concentrations, and adding additional basic math and science courses already regularly offered by other departments. These would all coalesce around elements of the existing core of the current Environmental Studies B.A. program. Beyond this initial framework, additional geosciences courses may be developed to provide students with more options for study.

We feel strongly that the addition of a B.S. in Earth and Environmental Science will have a major impact on attracting students who currently choose Stockton or other institutions in the region such as Ramapo, Rutgers, or the University of Delaware to pursue an environmental science degree. Since earth and environmental sciences is a discipline that has the potential for substantial external support from major funding agencies, we also see the opportunity to replace Denyse Lemaire’s faculty line in the geosciences with a prominent researcher who can garner the attention of prospective students and bring additional revenues in support of the department. The department is in the process of developing a white paper for the creation of a B.S. degree in Earth & Environmental Sciences.

2) Streamlining of departmental curriculum
Although our programs have been working together in a modular manner as previously described, there are a number of curricular adjustments that we intend to employ in order to make the G&E degree programs have a more unified common core. We are revisiting our program assessment document, which was a simple cut and paste of the former Environmental Studies and Geography program assessment documents originally developed when the programs were still independent. The department began a program assessment overhaul in January of 2015 and will be continuing that process over the summer of 2015.

3) Increasing our online offerings
We intend to complete our efforts to make a complete online degree pathway for a geography BA. We have only one course yet to develop in order to accomplish that goal. We will continue to develop our courses into online delivery options. We aim to develop courses that fulfill the new Gen Ed model currently under development at Rowan (see below). We hope to develop our online GIS offerings to be eventually able to provide a master’s degree in GIS that can be completed fully or partially online.

4) Overhauling our GEN ED courses to comply with the new Rowan Core model
We see our introductory courses as being ideal candidates for developing to support the new Rowan Gen Ed model. We are supportive of the new model and believe that our courses can play a vital role. One area that we are developing related to this is bringing in the concept of Big History into our introductory courses such as Earth, People and Environment. The Big History framework is ideal for a geography department to provide since it is about big picture ideas. It fits well into the goals of the Gen Ed reform committee and will help students have a better “road map” for navigating the coming decades because they will have a sense of not only their geographic place in the earth but the grand historical context of what the earth represents. We will be working with the Gen Ed reform process to provide excellent course options for Rowan students to accomplish their core literacy requirements. Furthermore, many of our majors are internal transfers who “discover” our fields by taking one of our courses as a Gen Ed requirement. We aim to continue this strategy of finding majors by offering excellent Gen Ed classes for the new model.

5) Create a suite of Certificate of Undergraduate Studies
We are designing a set of Certificates of Undergraduate Studies (CUGS) for students who like our courses but can’t finish a full minor or concentration (ex. engineering students). The CUGS will fit nicely
into our modular curricular design and offer an additional set of pathways for students to achieve value from taking a cluster of our courses.

6) Improving our course rotation sequence
Although we offer many course options during each semester as well as during summer and intersession, we plan to improve and streamline our course rotation sequences so that students can more efficiently progress through the programs and potentially finish a semester or two early.

Conclusion

The Department of Geography & Environment is a special place on the Rowan campus. Although we are small, we make a big wake in the role and service that we provide. We have excellent faculty, staff and students, and in the true fashion of geographers, G&E is going to continue to be “going places” in the future. We have shown what we can do when President Houshmand provided us with a monetary contribution to our GIS support staff specialist and we subsequently became the premiere GIS program in the region and attracted over $2 million in externally funded projects.

Our programs provide outstanding experiences for our students and geographers and environmentalists slated to become even more relevant and needed in the future. As the world globalizes and humanity strives to figure out how to curtail the impacts to the environment that our industrial society imposes, there will be a future in the G&E careers that will help make the world a better place. With continued support and investment in the department of Geography and Environment, Rowan will be nourishing the jewel that has existed in Robinson Hall since Marvin Creamer established it nearly 45 years ago. The department stands ready to forge ahead and to navigate the many adventures that await.