Section III

**Undergraduate Educational Offerings and General Education**

Standards 11 and 12
SECTION III UNDERGRADUATE EDUCATIONAL OFFERINGS AND GENERAL EDUCATION
(STANDARDS 11 AND 12)

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INTRODUCTION

In April 2004, as they charged the members of the Rutgers–New Brunswick Task Force on Undergraduate Education, Richard McCormick and Philip Furmanski wrote: “The largest component of our educational program is the instruction of undergraduates. Their experiences at the State University’s flagship campus often constitute the litmus test by which the state’s citizens judge us and our contributions to New Jersey.” This statement has been the keystone of discussions on all of our campuses about what a Rutgers education is; how that education is informed by its context within a public research university; and how undergraduates understand and take advantage of the resources in faculty and programs at this university. We want to know—we want our students to know—how education at a research university determines education goals, career goals, and goals for a civic life.

REIMAGINING UNDERGRADUATE EDUCATION

The work of our campuses in reimagining undergraduate education has been a preoccupation for two decades, but one only now succeeding in a comprehensive way. Though still a work-in-progress, our new undergraduate program in New Brunswick is based on clearly articulated goals, and answers the challenges posed by external and internal assessments. The university’s 1998 Middle States reaccreditation self-study, Assessing Our Vision for Excellence – Volume I, recommended that our new curriculum strengthen the role of introductory courses, which will have a pivotal place within the horizontal and vertical components of our core;

• put more emphasis on mathematical and scientific literacy and integrate these into the broader project of enabling diverse modes of analysis, teaching practices of inquiry, and helping students achieve a technologically assisted informational literacy;

• facilitate a global awareness in our students, by requiring that they not only take courses in the area of global cultures but also accommodate diverse perspectives across their programs of study; and

• build learning outcome goals and assessment methods into the curricular structure to ensure that the general education goals of the university are served appropriately.

Earlier Rutgers reports that assessed the curriculum made similar recommendations. In 1992 a universitywide committee issued Rutgers Dialogues: A Curriculum for Critical Awareness, a report that offered a cogent examination of the curriculum, and provided important recommendations to bring Rutgers students into dialogue with the research work of the university. In 2002 at Camden, the Ad Hoc Committee on the Curriculum made a series of recommendations that urged the campus to articulate realistically what curriculum would serve undergraduates in the 21st century. In 2006 at Newark the Committee on the Assessment of Undergraduate Education recommended a complete evaluation of the general education curriculum.

In New Brunswick, because of the difficulties its structure posed to any resolution of persistent concerns about the undergraduate experience, the president summoned a Task Force to confront the college structure. This structure had produced a labyrinthine set of requirements that differentiated the liberal arts colleges but offered no clarity about how those requirements constituted a Rutgers degree.
The Task Force’s charge was to assess, and then reimagine, all aspects of the undergraduate experience at the New Brunswick Campus, which serves 27,000 of Rutgers’ approximately 37,200 undergraduates. In July 2005, this extensive self-study resulted in a radically ambitious proposal, Transforming Undergraduate Education (TUE), for revising both the structural and the curricular design of the undergraduate program in New Brunswick. It is fair to say that the report constitutes the most far-reaching assessment of undergraduate education and undergraduate life ever done at Rutgers.

After a year-long discussion of the report, involving hundreds of faculty, students, staff, alumni, and administrators, the president made recommendations to the Board of Governors that addressed the issues raised by the Task Force and resulted in the most momentous transformation of the university since 1981, when an equally radical plan—removing faculty from the liberal arts and sciences colleges and placing them in departments in the Faculty of Arts and Sciences—prepared the way for Rutgers’ entrance into the AAU in 1989. The 1981 consolidation of the faculty from the individual colleges into a single Faculty of Arts and Sciences without the consolidation of the colleges and their students into a unit with faculty left a system of separate colleges that perpetuated historically based differences in admission and graduation requirements, and effectively disengaged faculty from oversight in important academic areas of policy and planning such as admissions, general education curriculum, and graduation requirements. The 2006–2007 “transformation” has boldly addressed the problems with the old structure. (See the Transforming Undergraduate Education website.) The newly created School of Arts and Sciences (SAS)—responsible for all liberal art students in New Brunswick—now parallels the professional schools in the placing of faculty and students in the same unit and in ensuring faculty accountability for students from the time of admissions and recruitment to graduation. (See the TUE Progress Chart in the Institutional Context section of this self-study for current status.) In addition, the president recommended to the Board of Governors that Cook College be renamed the School of Environmental and Biological Sciences (SEBS) to more closely match the school’s academic and land-grant mission and its status as a degree-granting unit. The president called for both SAS and SEBS to reevaluate their curricula, and for the professional schools to participate in this process, particularly as the general educational program affects their students, and to reconsider their curricula in light of changes to the core.

THE TUE VISION OF A RUTGERS EDUCATION

Transforming Undergraduate Education envisioned no less than a change of educational culture in New Brunswick. It emphasized the research mission of the campus; it urged the connection of faculty and undergraduates in the work of research; it gave faculty responsibility for every aspect of undergraduate education, from admissions and graduate requirements to the formulation of a core curriculum for general education; and it challenged students to take an active role in working with faculty to access the richness of research resources available to them in New Brunswick.

The Vision of a Core Curriculum in New Brunswick

Crucial to the implementation of the TUE’s vision is the reinvention of our core curriculum. The Task Force identified the multiple and conflicting curricular requirements set by each college or school as a serious impediment to the quality of undergraduate education at the New Brunswick Campus. These requirements had stressed that a student acquire a range of knowledge in lieu of exploring the connections among diverse fields of knowledge and “ways of knowing.” The actual effect of this has been that students pick and choose unrelated courses to fulfill general education requirements. There is little clarity among students and faculty about what general education—what a liberal arts education—is to accomplish, or indeed what it is.
To date, we have created one set of admissions standards and academic expectations. We now have a rationally organized system for all of New Brunswick: our students are in schools whose faculties are responsible for admissions, general education, and graduation policies.

But the crucial work lies ahead. The SAS Ad Hoc Core Curriculum Committee must adopt a core curriculum that will define what a Rutgers liberal arts degree is and thus what it means to be a Rutgers graduate. The work of the SAS curriculum group, which includes faculty from the professional schools, begins in the “Recommendations for a Core Curriculum” offered by the Task Force, recommendations that the TUE report called “a sketch of a revised curriculum” that would serve as “a starting point for a campuswide discussion of the rationale for undergraduate core distribution requirements”; that would “promote campuswide reflection on both the content and the pedagogic goals of the undergraduate core distributions requirements”; and that would “provide a model for how … [these] requirements might be reconceived.”

The Task Force offered three crucial recommendations:

- Shift the emphasis in the distribution requirements from distributing enrollments across disciplines to engendering engagement with the core mission of a research university.
- Reconceive the core distribution requirements as extending horizontally and vertically throughout the undergraduate curriculum.
- Recognize that the students’ experience of the core distribution requirements at a research university will differ, of necessity, from the students’ experience of those requirements at a small liberal arts college.

The Task Force envisioned a core composed of two components. The foundation of a liberal education, called the “horizontal” part of the core, takes place mainly in the first two years of students’ experiences and is composed of “the fundamental areas that make academic success and academic research possible—writing, reasoning and information competence, quantitative thinking, and scientific inquiry.” The Task Force imagined the “vertical” part of the core as offering “students the opportunity to work either inside or outside their major area of study” and providing them “opportunities to encounter multiple modes of thinking, knowing, and understanding as preparation for engaging with the multidimensional, multimodal, multivariable real-world problems.”

This call for rethinking—really reinventing—general education poses a challenge to the entire campus—not only to traditional ways of doing things, but to the ways we conceive the major and its relationship to general education. The Task Force has provided a challenge to the SAS curriculum group that will develop a new general education program, and to all units within Rutgers. The challenge is fundamentally about the relation of each student’s educational choices to the larger world—to the larger academic world at Rutgers and to the world beyond the university where students will build lives and careers.

*Transforming Undergraduate Education* calls for yet more: for an integrated living and learning experience, created or improved and overseen by all New Brunswick faculty, members of the new School of Arts and Sciences as well as faculty in the professional schools and other units. Improvements and changes will be decided upon in a systematic process of collegial deliberation. Most importantly, our faculty will bring the intellectual effort, the skill, and the passion they hold for their research endeavors, to our undergraduates in a new way, across disciplinary lines, but within the context of clearly articulated and institutionally supported learning goals.

In the opening section of the TUE report, one of the responsibilities assigned to the faculty is “to foster in our undergraduates the habits of mind and action that constitute the heart of the work of teaching and research: creativity, curiosity, openness to alternative points of view, desire for the
mastery of a subject area, critical insight, ethical conduct, perseverance, and a willingness to revise views on the basis of new evidence.” To do this, the TUE report recommended strongly and the president endorsed enthusiastically the creation of two additional components of undergraduate education that highlight and exploit the resources of a research university: first-year seminars and learning communities.

**First-Year Seminars and Learning Communities**

A first-year seminar is a one-credit, elective course designed and taught by a distinguished Rutgers faculty member. Class size is limited to 20 students. The seminars introduce first-year students to cutting-edge research conducted at Rutgers in all fields, from molecular biology to classics, from computer science to Asian Culture. Derived from hotly-debated issues in national and international news as well as from the quieter discoveries of the scholar, the seminars revolve around each professor’s current work. In fall 2007, Rutgers offered 52 seminars; one will run during winter session, and over 60 are scheduled for spring 2008. Students participate in lively discussions and collaborative projects in these classes and, under the tutelage of the faculty mentor, become engaged in the multitude of opportunities for study. Examples of seminars to be offered in spring 2008 include:

- Malevolent and Magnificent Microbes
- Religion, Conflict, and Peace
- Economics in the Laboratory
- Political Corruption
- Marriages Made in Heaven and Hell
- So, you want to be a teacher? Teaching Math and Science
- The Psychology of Medical Decision-Making
- What is Africa to Me?
- Computer Gaming
- Latino New York: Work, Identity, and Class
- Mary Shelley’s Frankenstein and Contemporary Technological Anxieties

During the last week of the seminar in the fall 2007 semester, participants were surveyed about their perceptions of the course and what they had learned. In general, responses were very positive. Participants were asked the extent they agreed with statements about the seminars. The following is a sample of the positive responses. The course:

- encouraged [me] to express ideas
- encouraged [me] to speak in class
- made a positive learning experience
- I discussed important issues
- [Gave me] knowledge of the professor’s research

A comprehensive assessment of the fall 2007 will be completed by February 2008, by the Office of Vice President for Undergraduate Education.

The university is also expanding opportunities for student-faculty engagement through service learning. For example, a major new learning community, Writer’s House, has been established on the College Avenue Campus. Several living-learning communities have been established on the
Livingston Campus; these Discovery Houses provide opportunities for students to live and take a series of courses together.

UNDERGRADUATE INITIATIVES AT THREE PROFESSIONAL SCHOOLS

Continuous and significant discussions of and improvements in the undergraduate curricula are typical of the practice in the professional schools also. Faculty assessment and evaluation, student feedback, and professional best practices inform curricular decisions; the three examples below provide some sense of the range of assessment practices that shape disciplines in the professional schools.

Ernest Mario School of Pharmacy

The faculty of the Ernest Mario School of Pharmacy conducted a thorough review of the undergraduate and professional curricula in 1998, which resulted in a major redesign and restructuring of the curriculum. The changes were based on changing needs of the health care system in the United States and changes in standards for the profession of pharmacy and for pharmacy education on a national level. As a result of this change, the five-year B.S. degree option for pharmacy was eliminated and the six-year curriculum leading to the Doctor of Pharmacy (Pharm.D.) degree became the only option for pharmacy majors. The school’s curriculum committee has continuously assessed the effectiveness of the new curriculum. As a result, changes have been implemented, such as the addition of a requirement for a second course in expository writing at a more advanced level (writing in a discipline) and a new professional elective option.

Mason Gross School of the Arts

At Mason Gross School of the Arts, departmental standing curriculum committees engage in an ongoing process of curriculum assessment. More “business of the business” courses, to ensure that graduates are well-grounded not only in their art but also in the details of their profession, have been offered. The Department of Visual Arts has recently proposed a sweeping revision of its B.F.A. curriculum to better ensure that students acquire the necessary conceptual and practical skills to enable them to reach the full limits of their talents.

School of Management and Labor Relations

At the School of Management and Labor Relations, the Department of Labor Studies asked a group of undergraduates to review its curriculum to suggest ways it might better meet student needs. The students presented a report to the faculty and, in response, the scope of the curriculum was broadened to encompass changing institutions and dynamics in the world of work, and courses aimed at strengthening students’ research and writing skills were introduced. All of the curricular changes were approved by the SMLR Curriculum Committee, and every two to three years the faculty reviews the curriculum and student feedback from course evaluations to consider whether courses need to be modified, added, deleted, or renamed.

UNDERGRADUATE INITIATIVES AT NEWARK AND CAMDEN

While the major transformation in undergraduate education has involved the New Brunswick Campus, the Newark and Camden campuses have also reassessed and strengthened undergraduate education by providing new opportunities for students to experience directly the benefits of working with research-active faculty as well as the experience of living and working in a learning community.
Rutgers–Newark

Speaking directly to both the Middle States accreditation team’s recommendations and the university’s concern that all of its students participate in and graduate with an understanding of research and its roles in their careers and lives, Newark in 1999 expanded its Honors College from a two- to a four-year program and reconceptualized it to place greater emphasis on experiential education, especially initiatives that complemented students’ major programs of study. This emphasis on research, in both the Newark College of Arts and Sciences (NCAS) and the campus’s professional schools, led to the creation of the Honors College Research Assistant program.

In fall 2004, NCAS and University College–Newark inaugurated a Writing Across the Curriculum program designed to address head-on the problems that students often confront when they encounter college-level expectations for complex thinking and writing. A faculty coordinator appointed by the director of the Writing Program is now charged with the assessment of this program and the administration of support initiatives for the faculty who teach the courses and the students who take them.

In 2006 the Committee on the Assessment of Undergraduate Programs, appointed by the dean of NCAS, recommended that the faculty undertake a complete reevaluation of the general education curriculum, which had not been reconsidered in 20 years. The committee directed specifically that this reconsideration grow out of a clearly articulated set of learning goals and objectives. In fall 2006, the provost appointed the Committee on the Future of Undergraduate Programs and charged it to review the first committee’s recommendation and draft a plan for implementation. That work continues. Specifically, the provost asked this committee, made up of faculty from NCAS and the professional schools, to “assess the general education core curriculum in light of the increasingly preprofessional nature of the undergraduate student body, over half of whom now graduate with professional majors. More broadly, it should develop a comprehensive vision for undergraduate education that reflects the distinctive character and unique strengths of the Newark Campus, in particular our urban location, the diversity of the student body, and the preprofessional aspirations of so many of our undergraduates.” A final report is expected in late spring 2008.

Rutgers–Camden

Rutgers–Camden began reworking its undergraduate programs in 2000. In fall 2000, Camden faculty reimagined the honors program, renaming it the Camden Honors College and tightening admissions standards and honors requirements. Admissions standards for this program are tough; admission generally goes to students awarded merit scholarships. Honors College students undergo a rigorous program that supplements their traditional academic program: their courses are small; in their junior and senior years, they undertake individual research projects in their major; and they receive crucial advising if they are applying to graduate and professional schools.

In fall 2001, Camden inaugurated the Freshman Seminar Program to better serve new students at the point of transition from high school to college. Freshman seminars, 3-credit regularly scheduled courses with enrollments of approximately 20 students, address a wide variety of topics of contemporary interest—e.g., human rights and the societal impact of computers and the internet—and require discussion, frequent writing assignments, and activities beyond the classroom. In fall 2007, there were 22 freshman seminar sections, with a total enrollment of 490 students. In addition, there were five honors seminars in fall 2007, with 60 students enrolled.

In fall 2003, Camden revised its general education requirements. The Ad Hoc Committee on the Curriculum, which was established by the Faculty Senate in December 2002, recommended eliminating requirements that were not fully articulated or were no longer aligned with the college’s goals, or were unsuccessful in attaining those goals. One much-debated requirement was a 3-credit
interdisciplinary course intended to provide an integrated perspective on the issues and ideas that shape contemporary society. This requirement could be fulfilled by taking either of two courses, Intellectual Heritage or Science, Technology, and Society. Since these courses were team-taught by faculty in several disciplines, some staffing difficulties arose. Sections became overcrowded and thus did not provide the seminar-type experience for first-year students originally intended. In recognition of this ongoing problem, the requirement was altered. In its place, foreign language, writing, and diversity/global studies requirements were implemented. Individual departments must now specify which of their courses meet the writing or diversity/global studies requirements, and the Academic Policy Committee determines which of the courses proposed by the department fulfill the requirement.

RUTGERS–NEW BRUNSWICK: A TIME OF TRANSITION

The structure of undergraduate liberal arts education on the New Brunswick Campus is currently in transition from the former system of four separate liberal arts and sciences colleges to the integrated program articulated in the TUE report. Beginning in September 2007, newly admitted undergraduate arts and sciences students are enrolled in the new School of Arts and Sciences (SAS) with a single set of admissions standards and academic expectations.

While TUE was being discussed across the campus, the Faculty of Arts and Sciences–New Brunswick voted in December 2005 to develop an interim core curriculum for the first two classes entering the new school and any current students who wished to transfer to SAS. An Interim Core Curriculum Committee, comprising arts and sciences and professional school faculty and staff, convened in spring 2006. The committee was explicitly charged with reconciling the general education requirements of the four colleges into a single set of requirements that would not require significant additional or redistributed resources and that would not foreclose the range of options open to the “second-wave” core curriculum committee. The committee created an interim core curriculum that maintains the general pedagogic goals shared by the four colleges, including courses in the following areas: writing (6 credits); quantitative reasoning (6 credits); natural sciences (6 credits); social sciences, humanities, and interdisciplinary studies (12 credits); diversity (3 credits); and global awareness (3 credits). On May 3, 2006, the faculty approved these distribution requirements. (See Liberal Arts Distribution Requirements, Final Report of the Committee on Interim Core Curriculum for the SAS.) The importance of implementing this interim core curriculum is illustrated by the following “before and after” diagram from the TUE report.
The “second wave” Ad Hoc Core Curriculum Committee began meeting during the spring semester of 2007 to propose a set of core requirements for all SAS students entering in fall 2009 and beyond. Using the Task Force recommendations as its starting point, the curriculum committee now has the time needed to engage in a comprehensive consideration of an appropriate core curriculum for an AAU public research university in the 21st century. This committee is establishing the learning goals for all SAS students. It will advance a set of core requirements that will meet those goals, and develop methods of assessing the achievement of those goals. Under the new Bylaws of the School of Arts and Sciences, a standing Committee on Core Requirements will monitor the requirements, oversee assessment, and recommend changes in the requirements based on those assessments. Driving this ongoing process will be the determination to articulate learning goals clearly and to develop appropriate modes of evaluation.

Following the TUE report recommendations of July 2005, Cook College became the School of Environmental and Biological Sciences (SEBS) in fall 2007. As part of this transition, its general education requirements were revised slightly in spring 2006 to more closely match those of the new School of Arts and Sciences; these changes will facilitate student transfer between the two schools,
one of the recommendations of the TUE, so that students would not be penalized with loss of credit for change of major or interests. (See SEBS Policy Regarding Interim (2007–2009) Core Requirements.) The SEBS general education requirements were systematically reviewed in light of the full curricular recommendations of the TUE report; In December 2007, the SEBS faculty voted to approve a new core curriculum, as described in the SEBS Core Curriculum Report.

UNDERGRADUATE EDUCATION AT RUTGERS: RECENT OVERVIEW

There are currently 15 academic units matriculating undergraduate students at Rutgers University: three in Camden (Camden College of Arts and Sciences, School of Business–Camden, and University College–Camden); four in Newark (Newark College of Arts and Sciences, College of Nursing, Rutgers Business School: Undergraduate–Newark, and University College–Newark); and eight in New Brunswick (Edward J. Bloustein School of Planning and Public Policy, Ernest Mario School of Pharmacy, Mason Gross School of the Arts, Rutgers Business School: Undergraduate–New Brunswick, School of Arts and Sciences, School of Engineering, School of Environmental and Biological Sciences, and School of Communication, Information and Library Studies). In addition, any students admitted through one of the units discussed above may also complete a major offered through the School of Management and Labor Relations in New Brunswick. Rutgers University Undergraduate Enrollment by Major, prepared by the Office of Institutional Research and Academic Planning, provides a detailed list of majors and number of students enrolled by major and by campus, fall 2004, 2005, and 2006. (See also the Rutgers–New Brunswick/Piscataway Undergraduate 2005–2007 Catalog.)

ESTABLISHED LEARNING GOALS

Following the discussions of the universitywide curriculum report, Rutgers Dialogues: A Curriculum for Critical Awareness, during the early 1990s, the university articulated a comprehensive set of learning goals for graduates of the university, goals that strongly influenced the development of undergraduate educational offerings since then, especially at the departmental and school levels, and that served as one of the guiding documents steering the discussions that led to the recommendations contained in the recent TUE report.

Each school has its own set of learning goals and objectives, within its schoolwide assessment plan, relevant to its represented disciplines. Each department has its own particular learning goals, compatible with and in support of both the school’s goals and the university learning goals for its own curricula. Schoolwide and departmental plans are reviewed in a newly instituted four-year cycle, which is described in Section VI of this self-study.

CURRENT GENERAL EDUCATION CURRICULUM

The Rutgers University general education curriculum crosses all three campuses and affects all undergraduate admitting units (arts and sciences and professional schools). In spite of differences dictated by campus-level specializations and cultures or preprofessional and professional prescribed curricula, traditionally there have been important commonalities across the university. All units have course requirements that address competencies in

- oral and written communication
- quantitative reasoning skills
- critical analysis and reasoning
• technical competencies
• diversity and global studies.

These common elements are articulated in each admitting unit’s general education requirements, along with the details of how each unit assures fulfillment of these requirements. (See Report on Degree Distribution Requirements and Report on Certification of Distribution Requirements.)

Students’ writing, mathematics, and language skills are assessed prior to assignment into introductory general education classes; see Sections II for more detailed discussion of testing and placement programs and Section VI for a detailed discussion of assessment.

The process of assessing and revising general education requirements is one of serious reflection and thorough discussion in all our units. The School of Environmental and Biological Sciences provides a good example. All curricular changes must be reviewed and approved by the school’s standing Curriculum and Educational Policy Committee, whose members are elected to six-year terms by the school’s faculty; the school’s Academic Forum, whose membership includes all faculty members in the school involved in undergraduate teaching and a number of student leaders, including the president of the school’s governing association; and an ad hoc Curriculum Review Committee appointed by the academic dean. Thoughtful discussion and revision define every step of the approval process.

With the transformation of undergraduate colleges in New Brunswick, another layer of review and approval has been added to ensure cohesiveness and adherence to common goals across the schools. This review process is vested in the vice president for undergraduate education and his advisory committees.

RESEARCH AND FIELD EXPERIENCE

Building on the research strengths of our faculty and our deep commitment to providing a solid grounding in the foundation of academic exploration and expertise to our undergraduates, research components are integrated routinely into curriculum design at Rutgers. Undergraduates with interests in a wide variety of disciplines have the opportunity and are encouraged to engage in a rich array of research and field experiences outside the usual laboratories and classrooms, organized and supervised by our research faculty under the auspices of our research centers and institutes, and integrated with programs in their academic departments.

For example, beyond the traditional work in on-campus programs, Rutgers’ Koobi Fora Field School in Kenya offers undergraduates a unique opportunity to learn the basic principles and field methods of paleoanthropology—hands-on training in paleontology, archaeology, geology, taphonomy, and ecology—on location at Koobi Fora, the most productive and spectacular early hominid region in the world.

The Eagleton Institute of Politics provides another good example. Its Undergraduate Associates Program gives a group of selected students the chance to study government and politics together during their last three semesters at Rutgers. By means of special seminars, a supervised internship, and discussions with governmental officials and political practitioners, undergraduate associates directly explore applications of political science to the practice and processes of American politics. Students selected for the program take an entry seminar in the spring semester of the junior year, an exit seminar in the spring semester of the senior year, and a summer or fall internship accompanied by an internship seminar during the fall semester of the senior year. Through the required internship, students are afforded the opportunity to connect classroom learning with the experience of working in government, politics, or public affairs. In recent years students have been placed in internships in the New Jersey Legislature, the Office of the Governor, various departments of state government, public...
affairs offices of corporations, public interest groups, state associations, political campaigns, and
lobbying firms.

The SAS Department of History is closely associated with several research programs, including
the Thomas A. Edison Papers Project, the Rutgers Oral History Archives of World War II, and the
Elizabeth Cady Stanton and Susan B. Anthony Papers Project. The Edison Project is a comprehensive
20-year study of the famous inventor’s personal research materials. The Oral History Archives is an
alumni-funded project that records the life stories of Rutgers alumni who lived through the WWII era
or who are war veterans. The Stanton and Anthony Papers Project is publishing six volumes of
writings of the two leading figures of the women’s suffrage movement. All of these projects have
enriched the history curriculum at Rutgers. Undergraduates may earn credits as they serve as interns
on any of these projects.

Another example is provided by the Center for Discrete Mathematics and Computer Science
(DIMACS), with National Science Foundation sponsorship. DIMACS has offered a Research
Experiences for Undergraduates (REU) program since 1992. There are now four associated REU
programs: the DIMACS REU program offers projects mentored by DIMACS members; the
DIMACS/DIMATIA REU program offers projects mentored by DIMACS members and is extended
by two weeks to include time spent at the sister Center for Discrete Mathematics and Theoretical
Informatics and Applications (DIMATIA) site at Charles University in Prague, Czech Republic; the
Department of Mathematics Program offers projects mentored by math department faculty; and the
Homeland Security Center for Dynamic Data Analysis (DyDAn) REU program offers projects related
to homeland security mentored by DyDAn researchers.

Science laboratories provide another type of research opportunity. Students work closely with a
faculty member in a lab in challenging and demanding situations in which they learn how scientific
research is conducted and what it means to be a scholar and independent researcher. For example, an
undergraduate in the Department of Physics in New Brunswick recently participated in a project in
the Rutgers-led Center of Excellence for Radioactive Ion Beam Studies for Stewardship Science, a
consortium of university and other laboratories. Based at Oak Ridge National Laboratory for a
summer, he helped to test prototype detectors for a new array of silicon detectors for nuclear physics
experiments with radioactive beams. A student in the School of Engineering’s Slade Scholars
program is working in a nanomaterial self-assembly lab where he is creating 2-D self-assembling
arrays of nanocrystals and nanopolymers using a fluid forming process. Another student participated
in research with a faculty member who is a member of the National Academy of Sciences and spent
the summer of 2007 in Juneau, Alaska, working on a watershed monitoring project. This student also
received a Goldwater Fellowship this year, one of a number of undergraduates at Rutgers who
successfully competed for national awards such as the Fulbright and Goldwater. Given that a well-
designed research proposal is a central element of these highly competitive national award
applications, it is clear that students’ varied research experiences are a major component in their
ability to write nationally competitive applications.

ORAL AND WRITTEN COMMUNICATION

The general education curriculum also addresses undergraduate writing. In particular, oral and
written communication skills are developed through the requirements in the Rutgers University
Writing Programs.

In New Brunswick alone, the Writing Program provides instruction to more than 11,000 students
annually. Students must fulfill the undergraduate writing requirement by passing or receiving credit
for Expository Writing 101. Students must demonstrate a mastery of the literacy skills that reside at
the core of higher education: critical reading and critical writing. Through careful testing and
placement, students move through a series of courses that conclude with the student’s ability to read and use independent research to analyze a topic and to review arguments in order to produce an analytical essay that engages with a text and involves substantial research. All of these courses meet in small sections to permit instructors to hold conferences with students, schedule library-learning sessions, hold peer discussion groups, discuss student writing in class, and design assignments that encourage students to remain engaged in their work.

The New Brunswick Writing Program’s Business and Technical Writing Program offers a series of courses that help students develop an ability to conduct research and use information to develop viable plans of action, skills that are essential to success in the information and technology economy. Courses may be taken for research writing credit, elective credit, and credit toward writing certificates. Students are required to develop, research, and revise an independent project. Courses include Scientific and Technical Writing, Writing for Business and Professions, Writing for Biology, Writing Grant Proposals, Writing for Engineers, Science Writing, and Writing as a Naturalist. Newark, as noted above, has completely revised its Writing Program; it is now a stand-alone unit that focuses on Writing Across the Curriculum. (See Section VII for more information about the Writing Program in Newark.)

Camden also has a strong Writing Program that helps to support the writing requirement of the general education curriculum. Students must take 12 credits of “language skills,” including six in English composition, three in a foreign language at the 102 level or higher, and three credits of a writing intensive course.

LIBRARY SUPPORT

Educational offerings for students at Rutgers are significantly enhanced by library services that support instruction and educational programs. The Rutgers University Libraries promote the use of information and learning resources and services accessible through its website, including point-of-need assistance for selecting and using appropriate resources and services. (For a complete listing of these features, see the Rutgers University Libraries Report.)

Librarians collaborate closely with faculty to provide customized face-to-face synchronous library research instruction to help integrate information literacy into a course or curriculum and develop class- or curriculum-specific materials. From 2003–2006, librarians provided an average of 995 library research instruction class sessions, reaching an average of 21,155 individuals per year. Each of the major libraries in New Brunswick and their branches (Alexander, Douglass, Kilmer, Science and Medicine), the Dana Library in Newark, and the Robeson Library in Camden has a program coordinator to facilitate this instruction. Collaborations in New Brunswick have involved the Department of English Writing Program and the Douglass mission course, Shaping a Life. In Newark, Dana Library has a long-standing collaboration with the Academic Foundations Center’s Summer Program, which teaches at-risk students the basics of library use and research using general web resources. In Camden, the Robeson Library incorporates sequential library research instruction sessions into the English general education courses. Librarians also collaborate with faculty on digital projects that make information accessible to students in specific courses through the use of such specialized resources as the English Advice Manuals Online at Rutgers (E-AMOR), Early English Books Online (EEOB), and Italy’s People.

The libraries’ leadership in issues related to instructional literacy has been demonstrated in a number of initiatives, including the following:

- Its report, A Learning Framework for Information Literacy and Library Instruction Programs at Rutgers University Libraries (August 2003), and its recommendations for “Information Literacy Competencies at Rutgers,” outlined the standards,
performance indicators, and learning outcomes for library research instruction and information literacy at Rutgers. This report led to a symposium in May 2004 that sought to identify issues most applicable to the first two years of undergraduate education; subsequently, a faculty and library staff literacy advisory group was formed to discuss library information literacy initiatives.

- The online information literacy tutorial for undergraduates, Searchpath, was released in spring 2005, to teach students basic library and research skills. This six-module program works as both a stand-alone tool and as a supplemental tool to library research instruction sessions. Preliminary quantitative and qualitative assessment of the tutorial, in the form of written feedback, module quiz results, and interviews with students, has been incorporated in the process from the start.

- All six major libraries have computer lab classrooms equipped with an instructor PC with NetOps classroom control software as well as projection equipment for providing library research instruction sections. Wireless laptops are available across the libraries to permit research sessions in other facilities across the campuses.

- Approximately 313 public access computers are available for general information use across the libraries.

- Videoconference equipment is available in Alexander, Douglass, and Kilmer in New Brunswick; Dana in Newark; and Robeson in Camden.

By remaining central players in the national conversation on information literacy through involvement in the Association of College and Research Libraries and other major organizations, and by working closely with Rutgers faculty and students in identifying needs and opportunities, the libraries have been able to develop programs and initiatives, based on best practices across the country, that enhance the educational offerings across the three campuses. (For more information on the Rutgers University Libraries, see Section II.)

APPLYING INFORMATION TECHNOLOGY TO EDUCATION

The overarching educational philosophy exemplified in the learning goals of information literacy and technological innovation requires that information technology serve as a critical element of undergraduate instruction. The University’s Office of Information Technology (OIRT) provides coordination for use of information technology throughout Rutgers in support of instruction and research. Smart classrooms, including internet connections, video projectors, and CD/DVD plays, etc., are distributed across all campuses and widely used in introductory courses that fulfill general education requirements. Lists of electronic classrooms are provided online for Camden, Newark, and New Brunswick.

Increased development and use of web-enhanced curricula span all campuses. One example of a strong, web-enhanced curriculum was developed by the Department of Sociology, Anthropology and Criminal Justice in Camden, which requires all graduates to complete their studies with strong computer and internet-based skills. Use of this web-enhanced curriculum provides resources for student research and group work and facilitates communication among students and faculty in specific courses by providing online opportunities for discussion, questions, assignments, readings, etc.

In line with national trends, communication within and outside of the classroom continues to grow. Email has been adopted widely as a supplemental instructional device. The Office of Instructional and Research Technology now provides class mailing lists. Increasingly, lectures are being podcast, and many introductory courses use personal response systems, or clickers, which
enable interaction among faculty and students in a large lecture setting. Jabber, the Rutgers Instant Messaging System, is an open-source service that provides secure, encrypted communication with others logged into the Rutgers central IM server.

Course management systems are widely used across all three campuses; Blackboard, eCompanion, eCourse, and WebCT are the primary ones. A collaborative website, DigiClass, designed by Rutgers students, faculty, and instructors to complement the commercial course delivery systems provides an easy-to-update repository of instructional materials. OIRT conducted a survey of course management system usage in 2006.

In addition, Sakai is a major educational support technology for the New Brunswick Campus. A higher education community project to develop and support a new collaboration and learning environment, the Sakai system serves as a potential alternative to systems such as Blackboard and WebCT and is intended to facilitate collaboration in research, administration, and service, as well as in courses. No knowledge of html is necessary and, because it is web-based, it can use any operating system (i.e., Mac or PC) and be accessed at any time. OIRT conducted a survey of Sakai usage in 2005. See Section IV for additional details on the extent of usage and the increase in course management systems and information technology since the periodic review and the last reaccreditation visit.

For each of the past three years, the university has committed approximately $500,000 to help restore some of the “smart” classrooms and upgrade others. These funds are in addition to the university’s $15 million commitment to upgrade all classrooms to make them technologically “smart” and to refurbish all classrooms with improved lighting, seating, and other technical features. That investment, which will involve a major renovation of classrooms on the university’s three campuses, is derived from recommendations in the TUE report. The renovation project will be conducted over a period of three to five years, with most of the construction scheduled during the summer breaks. A classroom renovation committee made up of faculty, students, and staff will set priorities, select specific classrooms for renovation, and establish a standard for future classroom design.

Equally important as the use of information technology in the classroom is its usage in reference materials in the university libraries. Although librarians conduct some library research sessions in labs and classrooms across the campuses, the majority of their programs take place in the libraries’ instructional rooms, so the statistics for library research instruction sessions roughly reflect the usage of these rooms. The Rutgers University Libraries Report for the Middle States Reaccreditation Self-Study provides usage tables that detail the striking increase in the libraries database usage over the last several years. What and how use is counted varies among the databases depending on the technology used. Usage of the libraries’ website is captured automatically monthly, daily, and hourly; is graphed; and lists the top 10 pages used. Additional usage statistics are available for digital services such as Ask a Librarian, electronic reserves, and intralibrary and interlibrary loan.

A compilation of materials describing information technology support details how the university is meeting the ongoing challenges to the smooth integration of rapidly developing new technologies for educational instruction. The report includes a discussion of progress, challenges, opportunities, and short- and long-term plans.

**SUPPORT FOR ACHIEVING LEARNING GOALS**

Rutgers is a large and diverse university, welcoming and educating thousands of students from communities throughout New Jersey, the U.S. and abroad. In order to enhance the learning experiences of students with varying levels of preparation in mathematics, sciences, and language arts, Rutgers has developed a set of learning centers across its campuses. These centers include:
Camden: Rutgers–Camden Learning Center in Armitage Hall
Newark: Rutgers Learning Center in Bradley Hall
New Brunswick: Learning Centers on the College Avenue, Cook/Douglass, and Livingston campuses; and the Math and Science Learning Center on the Busch Campus.

Learning centers work with students and faculty through a variety of no-fee academic support programs to promote student achievement. Programs include peer tutoring across disciplines, specific assistance with study skills and writing, and prescreening for learning disabilities. Both onsite and online support are provided.

TUE assessed the role of the learning centers in New Brunswick, based on a series of internal and external reviews of the academic support services in New Brunswick conducted in 2003, and agreed that stronger faculty leadership and guidance was necessary to integrate the activities of the centers more effectively with the needs of the faculty. In the reorganization precipitated by TUE, the New Brunswick Learning Centers now report to the assistant vice president for instructional support, a new faculty position that is part of the Office of the Vice President for Undergraduate Education and that provides oversight and coordination of academic support services.

ONGOING REVIEW PROCESSES

To assess the quality of undergraduate and graduate education at Rutgers, self-studies and external reviews of schools, departments, centers, and programs constitute ongoing and rigorous processes. From 1981 to 2005, the university conducted comprehensive reviews of academic programs on a cyclical basis by a team of external reviewers from peer institutions. The president’s Committee on Standards and Priorities in Academic Development (CSPAD), a group of senior faculty members, played a key role in conceptualizing the reviews, participated in the site visits, and generated reports designed to bring together the recommendations of the external reviewers with committee members’ assessments of the programs under review. The Report on the History of External Reviews provides a detailed listing of the external reviews conducted since 1996.

Some of these reviews had significant impact on program development. For example, as a result of an external review and subsequent responses by the university community, the science education program at Cook College, now known as the School of Environmental and Biological Sciences, was transformed into a joint program with the Graduate School of Education. This process began in 1996 with an external review of all teacher education programs at Rutgers, a review that harshly criticized the quality of the four-year program, designed for students interested in teaching science or vocational agriculture in high school. The report that resulted from this review led to an internal review by two ad hoc committees, and some immediate changes were instituted. Significant questions about the quality persisted, and periodic follow-up evaluations and internal reviews indicated that a major rethinking was needed. At the same time, faculty recognized the need for a much stronger science teacher education program with an emphasis on undergraduate science coursework. A further review, conducted in 2002, recommended the five-year B.S./M.Ed. degree program, a program that has proven more academically rigorous, more effective in preparing teachers for the state, and more responsive to student needs, than the previous program.

As useful as these external reviews could be, the growth of programs, departments, and missions rendered these comprehensive periodic reviews increasingly impractical. As a result, the executive vice president for academic affairs called for a revision of the process. In academic year 2005–2006, the university revised its practice regarding reviews, with a new policy for selection of units for review and for identification of issues to be addressed by reviewers. Specific discipline reviews now
focus on key issues of strategic importance, pending opportunities, or concerns about direction or quality. In some cases, cluster reviews are instituted to examine how the contributions of related units, taken together, can be greater than the sum of their individual parts (see Policy on Cluster Reviews). Deans, provosts, or the Office of the Executive Vice President for Academic Affairs, may initiate a review. Units may also nominate themselves for a university-sanctioned external review. The new Committee on Academic Planning and Review (CAPR) oversees these reviews. In addition, the recent implementation of All-Funds Budgeting—which devolves more decision-making power to the decanal unit and focuses more attention on strategic investments and revenue generation—makes the strategic allocation of resources more efficient and effective, and provides a finer mechanism for identifying, analyzing, and responding to enrollment trends and for fine-tuning programs as needed.

EDUCATIONAL OFFERINGS

The variety of educational offerings available for undergraduates at Rutgers is truly staggering—and is continually increasing because of specific interests in the larger community, new research directions of faculty, and a myriad of other reasons. This section examines the ways Rutgers responds to changing needs and emphases and briefly describes some of the newer programs.

PROGRAMS OF STUDY: RESPONDING TO CHANGING NEEDS

Educational offerings, majors, and certificate programs for Rutgers students are broad, varied, and rigorous. The university has an established approval process for new degree programs, distance learning programs, establishment of departments/divisions, creation of degree granting units, and new sites for instruction. Since 1997–1998, Rutgers has instituted four new distance learning programs, four new departments/divisions, two new degree-granting units, and several off-campus program sites. During this period, a total of 55 new degree programs have been established.

The New Program Approval Process for the approval of new degree programs begins at the faculty/department level and then involves “all relevant parties at the school/campus level, culminating with the provost or executive vice president for academic affairs.” This includes decanal review and review by campus leadership. The next stage involves university review, including review by an external consultant, and approval by the President’s Cabinet and the Board of Governors. At the final stage, the Office of Institutional Research and Academic Planning circulates for comment a new program announcement to the New Jersey Presidents’ Council, a statewide organization of the presidents of New Jersey’s institutions of higher education. The New Jersey Commission on Higher Education has the final authority for approving or disapproving new programs that raise unresolved concerns related to cost and duplication but not content. The vetting process, involving faculty, deans, and other approving bodies within the university, ensures program quality.

A number of interdisciplinary and innovative new undergraduate programs, such as those described below, have been developed and launched at Rutgers over the past 10 years. These reflect the university’s commitment to the development of programs that respond to a changing scholarly, social, and cultural environment.

Childhood studies in Camden and genetics in New Brunswick provide two good examples of recently approved undergraduate programs. The bachelor of arts degree in childhood studies, approved in 2006, is the first degree in the nation in an emerging academic discipline that is transforming research and scholarship on children in the same way that women’s studies and African-American studies transformed the study of gender and race during the 20th century. The bachelor of
science degree in genetics in New Brunswick approved in 1998, one of the pioneering programs in this discipline, was instituted in response to rapid changes in the direction of scientific inquiry and recognition of the need to train students in this growing field. Since its establishment, 310 students have completed the genetics major. Many of these graduates have gone on to graduate school, medical school, and to work as technicians in laboratory research.

The ability to capitalize on scholarly strengths in disparate areas in response to critical cultural social and cultural moments is exemplified by South Asian Studies in the School of Arts and Sciences. This program developed in response to growing interest by undergraduates with origins in South Asian countries. Beginning in 2002, a group of students, faculty, and staff worked to expand the offerings in this area; this resulted in creation of a minor program in South Asian Studies and focused hiring plans in a variety of departments on faculty with corresponding research and scholarly interests. The planning process included consideration and recommendation by interdisciplinary experts, consultation with the cognate departments, and review and approval by the arts and sciences faculty. The committee, working in concert with the dean’s office, created a mission statement and specific goals for the program; an administrative structure; and a plan for future resources for the program, including faculty hires in different departments.

External factors such as world events affect students’ interests in courses and major programs, and Rutgers’ educational offerings reflect those shifts in demand (as well as corresponding shifts in faculty research and scholarly interests). An example is the expansion of interest in Middle Eastern Studies (MES), an interdisciplinary arts and sciences program in New Brunswick, post September 11, 2001. The number of student registrations under the Middle Eastern Studies number (including courses originating in MES and courses offered by cognate departments) grew from 327 in 2000–2001 to 932 in 2005–2006. Enrollments in the cognate departments’ courses under their own departmental numbers also grew in a corresponding fashion, with an increase in the number of course sections, from 34 to 57, during this period as well. Twenty new courses and eight new cognate courses have been developed and approved. Substantial resources were devoted to this growing area of interest and scholarship.

The introduction of a new option in the biotechnology major in the spring of 2003 provides insight into the responsiveness to student and marketplace needs, and illustrates the rigorous consultation and program development process that precedes final approval. A faculty member, recognizing a shortage of individuals trained in bioinformatics and able to respond to the needs created by the growing genome sequencing projects, first proposed in 2000 an M.S. program in biotechnology with an option in bioinformatics. After consultation, a joint SEBS/SAS graduate faculty committee did not see the need at the M.S. level; the SEBS undergraduate faculty, however, was enthusiastic about it as an option within the B.S. and submitted a proposal to the SEBS Curriculum and Educational Policy committee in the summer of 2002. In developing the proposal, programs at other universities were reviewed and former students pursuing advanced degrees in bioinformatics were brought in to assist in curriculum design. Once instituted, the program director continued to evaluate the impact of the option through tracking the number of students, their performance in the course sequence, individual discussions with the students, and tracking the students who leave the program before completion to understand their reasons for leaving. This evaluation process began shortly after the new option became available to students, and continues to the present time.

CURRICULAR REVISIONS

In addition to developing new programs, significant revisions based on disciplinary and pedagogical changes, learning-outcome assessments, and student demand, are an ongoing part of the process of
keeping the undergraduate curriculum at the cutting edge. For example, the New Brunswick Department of History provides ongoing revision of its course offerings to reflect disciplinary advances and new faculty research and scholarly interests. History is one of the most popular humanities disciplines on campus, typically with more than 600 junior and senior majors and an additional 100 in a joint history/political science major, and 8,500 course registrations in approximately 200 course sections per year. The departmental faculty reviews the course offerings and makes revisions and additions each semester based on the variety of factors mentioned above. The number of new and substantially changed courses—53 new courses, 11 courses substantially revised, and 25 old courses discontinued since the fall of 2000—reflects the vibrancy of this discipline and its process. The departmental undergraduate education committee reviews all proposed new offerings and changes, and the full department votes on the courses. The departmental recommendations are reviewed by the SAS curriculum committee each semester (with a full review of the syllabus for each new or substantially changed course) and courses are then brought to the full faculty of the SAS for approval.

A second example of the revision process, this time reflecting learning-outcomes concerns, is that undertaken by the New Brunswick Department of Economics, which examined the paths its majors took through its curriculum and as a result made significant changes in 2004. Economics is among the popular social sciences disciplines, typically with around 1,000 majors and 11,000 course registrations per year. Department members had a sense that students were taking economics courses in an illogical sequence—that in an attempt to avoid taking the difficult core classes, students were taking the economics major “backwards” by taking their electives first and later taking their core classes (intermediate micro, intermediate macro, and econometrics).

The department conducted a study of its prerequisite structure and the actual registration habits of its students and discovered that in academic year 2002–2003, 69 percent of all the sections of elective courses in economics required only principles of economics, and the required econometrics course was a prerequisite for only one elective course, advanced econometrics.

Using information provided by the registrar’s office, faculty found that 77 percent of economics majors took econometrics in their senior year, 46 percent of the majors took intermediate macro in their senior year, and 31 percent of the majors took intermediate micro in their senior year. Ideally, these three courses should be completed in the sophomore or junior year.

Consequently, the department adopted strategic principles to develop a new prerequisite structure for the major, determined a simple rule based on those principles to provide incentive for their majors to take the core requirements appropriately, and applied that rule to determine the details of how upper level courses fit in the new structure. The changes were approved by a vote of the entire department, reviewed and approved by the arts and sciences curriculum committee, and approved by a full vote of the arts and sciences faculty in May of 2004. The department offered additional (and larger) sections of the core courses to meet the transitional demand. While some instructors of any particular elective course might have decided not to use one or more of these prerequisites in their instruction, the combination of econometrics and intermediate theory courses as prerequisites for the electives accommodated those instructors who could now teach the elective at a higher level of sophistication, and it gave students the incentive to take the core requirements early rather than postponing them until their last semesters.

DUAL AND JOINT DEGREES

Rutgers offers both dual-degree and joint-degree programs for undergraduates. These arrangements provide students with programs that would not be possible without the combined resources of two or more units within Rutgers or cooperative arrangements with other higher education institutions.
Within the university, a joint degree is awarded by two degree-granting units, such as the B.A. in labor studies and employment relations, awarded by the School of Management and Labor Relations and the School of Arts and Sciences. Joint-degree programs with other institutions result in one degree awarded jointly by all the schools involved, such as the Master of Public Health—awarded by UMDNJ, Rutgers, and New Jersey Institute of Technology (NJIT). Dual-degree programs result in two separate degrees awarded through an approved arrangement, such as the B.A. from the School of Arts and Sciences and the B.S. from the School of Engineering, or the B.A. in political science from Camden College of Arts and Sciences and the master of public administration from the Graduate School–Camden.

Some dual-degree programs combine undergraduate and professional graduate work, such as the physician assistant B.S./M.S. program, but most are at the graduate level, such as the J.D./M.D. program offered at Rutgers–Newark and UMDNJ.

Rutgers also offers numerous joint-degree programs with NJIT and UMDNJ. Rutgers–Newark offers 11 undergraduate and six joint graduate programs with NJIT as well as two undergraduate and two graduate joint-degree programs with UMDNJ. Rutgers–Camden offers one and Rutgers–New Brunswick offers 10 joint graduate programs in the health sciences with UMDNJ. In addition to these, the master of public health is a joint degree offered by Rutgers, UMDNJ, and NJIT in Newark, New Brunswick, and Camden, and the Ph.D. in urban systems is offered jointly by Rutgers–Newark, UMDNJ, and NJIT. See Report on Dual and Joint Degree Programs for lists of all dual- and joint-degree programs.

Because each joint degree program is a single program combining the resources of two or more institutions, each joint program must receive institutional approval through the program approval process and governing boards of each participating institution. One institution is designated as the lead institution only for purposes of administering the process through the state level. In contrast, because the component programs in the dual degree have been previously approved within the home institution and by the state, combined programs do not need state approval as long as they continue to meet all state standards. A memorandum of agreement covering detailed administrative and budgetary matters is written and must be approved by each institution’s governing board.

PROGRAMS DESIGNED TO EMPHASIZE AND SUPPORT UNDERGRADUATE RESEARCH

Many additional educational offerings for undergraduates at Rutgers support the students’ immersion into a research environment. Among the many opportunities available are the following:

**Aresty Research Center for Undergraduates**

The Aresty Research Center, founded in 2004, connects Rutgers undergraduates to the research work of the university from the time they enter as first year students. More specifically, its articulated mission is to’

- generate interest among undergraduates in the process of and participation in research;
- foster research experiences throughout the careers of its undergraduates and across the disciplines;
- increase participation in undergraduate research, particularly among underrepresented groups and first-generation college students;
- facilitate mentoring relationships between faculty and students, leading to engaged scholarship;
• cultivate a renaissance approach to research in which conversations take place across the disciplines such that “experts” are able to explain and understand the work of those outside their fields of expertise;
• expose a wider audience to undergraduate research at Rutgers; and
• encourage curricular reform that promotes active and engaged learning.

See Section V for a detailed description of the ongoing efforts and significant successes of this center.

**Honors Work**

The TUE report stressed the importance of honors in creating a pervasive research culture for students at the university; and it offered detailed recommendations, especially for a New Brunswick-wide SAS honors program and for more coordination among all school honors programs.

The great majority of schools and undergraduate departments already offer students the opportunity to participate in honors programs. The school-based honors programs provide a unique environment for a diverse group of exceptional undergraduate scholars to meet and experience a college education that is especially intellectually rigorous and socially rich, and that is built on small interactive seminars and cocurricular activities. Exceptional incoming students are encouraged to take advantage of challenges beyond the traditional curriculum and classroom. Students have the freedom to design their own honors experiences by participating in honors courses and special sections of traditional courses, interdisciplinary seminars, a shared community, mentoring experiences, summer classes/research experiences/internships, special intersession programs, lecture series, and cultural and social activities.

In spring 2007, 849 students (out of 10,062) were enrolled in the Rutgers College Honors Program; 229 (out of 2,600) were enrolled in the Douglass College Scholars Program; 95 (out of 3,800) in the Livingston College Honors Program; and 19 (out of 3,933) in the University College Honors Program. With the creation of the School of Arts and Sciences, a campuswide honors program has been instituted to provide more students with a wide range of honors-related opportunities.

The George H. Cook Scholars program at the School of Environmental and Biological Sciences is a senior honors research program open to all students in the top 15 percent of their class and to other students through nomination by a faculty member. Students define and conduct guided independent research projects in their final three semesters and defend a senior thesis based upon this research. Currently 25 students participate in the George H. Cook Scholars Program.

**First-Year Seminar Programs**

Already in place in Camden, these programs started in New Brunswick in fall of 2007. As noted above, as part of the TUE initiative, a total of about 120 seminars will be offered in New Brunswick in academic year 2007 – 2008.

**Learning Communities**

The university is expanding opportunities for student-faculty engagement in research and service learning. As a component of TUE and described above, several major new learning communities have been established in New Brunswick in the last year. For example, a major new learning community, Writer’s House, has been established on the College Avenue Campus. Several living-learning communities called Discovery Houses have been established on the Livingston College; students live together and take a series of courses together.
First-Year Interest Groups (FIGs)

These 1-credit seminars are designed to give first-year students a forum to explore common academic and professional goals. Each FIG consists of a small group of up to 22 students who have chosen the same cluster of courses and/or share common academic or extracurricular interests. In the business FIG, for example, seniors from the Rutgers Business School act as peer instructors and business school faculty and administrators visit classes to provide information on admission to the business school as well as provide career guidance. These interest groups allow new students to work closely with advanced students on issues of mutual interest.

Capstone Courses

Taken in the junior or senior year, capstone courses are an integral and required element of the curriculum for a number of programs on all campuses. Many SAS departments already offer senior seminars (limited to 20–25 students) that are designed to integrate the student’s previous work in the major and in electives. All students at Rutgers Business School: Undergraduate Programs are required to take the capstone course, Business Policy and Strategy. This course is restricted to seniors (those who have earned at least 90 credits toward their degrees) who have completed the accounting, finance, management, and marketing core courses. Prerequisite courses provide students with a basis to understand and apply various strategic approaches that will be used to formulate business policy. The modes of instruction include case studies and simulations. In the simulation, student “companies” compete against each other with the students acting as the top decision making executives. Part of the course grade depends upon the presentation that the top “executives” make to their respective “stockholders.”

Study Abroad

Many programs of study, specifically those involving language study, encourage and provide for international experiences as an integral component of the curriculum. For example, the recently instituted Italian American Studies Program requires all students to participate in a study abroad program, either an academic year at the University of Florence, a fall or spring semester abroad, or a summer abroad in Urbino, Italy.

The Global Village

The Global Village at Douglass Residential College brings curricular and cocurricular programs together in a residence environment. These programs, which bring faculty and graduate students into the “village” for special presentations and social occasions, enhance students’ sense of the academic work of the university and give students access to faculty in many disciplines and to the research work of centers throughout New Brunswick. The Douglass Residential College currently offers seven “houses” within the Global Village—Human Rights, Mid-East Coexistence, LEAD House (for leadership education), Language Houses (French and Spanish), Africana House, and East Asian House).

Office for the Promotion of Women in Science, Math, and Engineering

The recently established Office for the Promotion of Women in Science, Math, and Engineering, headed by associate vice president Joan Bennett, a member of the National Academy of Sciences, is working to improve the experience of undergraduate women at Rutgers. This office provides academic support, fosters community building, and develops mentorship programs that recruit faculty as mentors to undergraduate women. The office has submitted grant proposals for support for underrepresented minority students and will work with the honors programs to support the participation of undergraduate women in science research.
ACHIEVEMENT AND EXCELLENCE

STUDENT ACHIEVEMENT

The goal of the educational offerings and the focused attention on general education requirements are to enable our students to achieve at their highest level and, equally important, to discover at Rutgers the importance of a research-informed or inflected education to their lives and to the quality of living in their communities and in the nation. Student success can be assessed in myriad ways: such as the quality of the graduate programs to which they are accepted, the number of papers they publish, the quality of internships and employment opportunities they earn, and the national awards and honors that they receive. In the 2006–2007 academic year, Rutgers students received Fulbright Fellowships to study in France, Spain, Germany, and Bolivia; Goldwater Scholarships; and grants and scholarships from the National Institutes of Health and the National Science Foundation, among many other awards. In 2007, 319 juniors and seniors were inducted into Phi Beta Kappa, the nation’s premier honor society, and many are invited to join the American Society of Scholars. The success of students from the professional schools, such as the Mason Gross School of the Arts, can be judged in the later success of alumni, including the venues at which they perform or show their art (e.g., the music student who is invited to participate in Yo Yo Ma’s SilkRoad Project; the visual artist who was invited to show her work at Art Basel; theater program graduates who appear regularly on stage in New York, and in films and television). Student achievement at such high levels would be impossible without a strong faculty committed to student success.

FACULTY EXCELLENCE

The excellence of the Rutgers faculty is apparent from the large numbers of research, teaching, and mentoring awards that faculty members receive annually. Each year, there is an increase in the number of faculty named as fellows to prestigious societies and associations, including the National Academy of Sciences, American Association for the Advancement of Science, the National Academy of Engineering, the American Academy of Arts and Sciences, the Institute of Medicine, and the European Academy of Arts and Sciences. With the number of our faculty who are currently members of the National Academies (National Academy of Sciences, 19; National Academy of Engineering, 8; Institute of Medicine, 7; American Academy of Arts and Sciences, 15) for example, Rutgers ranks 14th among AAUs. Recently, faculty members have received awards such as Fulbright Hayes, Guggenheim, Mellon, and the Crafoord Prize in Biosciences from the Royal Swedish Academy of Sciences. Selected 2006–2007 awards appear in the 2007 Commencement Program. The opportunity for our students to work with such esteemed faculty exposes them to the latest research, broadens their research opportunities, and opens doors to them that might otherwise be closed.

That a high value is placed on the teaching mission of these outstanding faculty is apparent from the number of internal teaching awards at the university. Because so many departments offer faculty teaching awards, only a few can be cited here. The examples provided below illustrate the types of awards offered for excellence in teaching at Rutgers. For example, Rutgers–Camden faculty are eligible for the Lindback Distinguished Teaching Award; the Provost’s Teaching Award; and the JoAnn Mower Endowed Teaching Prize, an award established by graduates to honor a great teacher who influenced their own life.

The university as a whole also recognizes the contributions of the faculty in its annual teaching awards, four to five of which are awarded each year, based on the recommendations of a faculty committee. The recently instituted Faculty–Scholar Award recognizes the achievements of those faculty members whose research informs their teaching in a significant way. Two to three faculty members are honored with this award annually.
In addition to awards bestowed by the university, Rutgers faculty members receive many national teaching and mentoring awards. Since 1999, three Rutgers faculty members have received New Jersey Teacher of the Year Awards from the Carnegie Foundation for the Advancement of Teaching/Council for Advancement and Support of Education; others have been honored by organizations such as the Association of Graduate Schools, and the American Association of Psychology. In consecutive years, 2004 and 2005, a faculty member from Rutgers College of Nursing received the Governor’s Nursing Merit Award for excellence in nursing education.

CONCLUSION

Rutgers offers a wealth of learning opportunities consistent with the overall goals for undergraduate education. These include curricular innovation, directed at information, science, and technological literacy, global citizenship, multicultural understanding, and active learning. Rutgers is able to provide this rich learning environment as a function of its role as a producer of research, a setting that presents unique opportunities for undergraduate students. The role of Rutgers University as the leading public research institution in the state allows the development of a research-oriented undergraduate experience that provides a solid general education with multiple opportunities for enhancement through opportunities in specialized research, community engagements, internships, and study abroad. The deep engagement of the faculty in the research community encourages students to follow this example and, increasingly, with faculty encouragement, to seek this deeper engagement in their academic careers.
## RECOMMENDATIONS

1. **Complete the development and approval of a New Brunswick core curriculum for all liberal arts students and the components of the core that are part of the curricula of the professional schools; continue to develop educational programs on all campuses that broaden students’ educational opportunities.**

   **Primary responsibility:** Executive vice president for academic affairs

   **Assessment:** Develop a portfolio of program evaluation and learning outcome measurement tools to document outcomes, monitor progress over time, and promote the use of outcomes information in planning and improvement efforts.

2. **Promote and provide expanded opportunities and access for study abroad while developing new and strengthened academic initiatives in global and international studies.**

   **Primary responsibility:** Dean, Rutgers Study Abroad and provosts

   **Assessment:** Monitor outcomes, including participation in study abroad programs; monitor approval and promotion of new majors, minors, and certificate programs in global and international studies.

3. **Develop a long-term strategic plan to improve coordination in the availability and use of instructional support technology throughout the university, on and off-campus.**

   **Primary responsibility:** University librarian, vice president of information technology, and vice president for continuous education and outreach

   **Assessment:** Develop a portfolio of measures to monitor and document outcomes and progress in the use and enhancement of instructional technology.
WEBSITES REFERENCED IN SECTION III

Assessing Our Vision for Excellence – Volume 1

Rutgers Dialogues: A Curriculum for Critical Awareness

Transforming Undergraduate Education

Transforming Undergraduate Education Website
http://ur.rutgers.edu/transform_ru/

Report of the Committee on Assessment of Undergraduate Programs –
Faculty of Arts and Sciences 2005–2006
http://chemistry.rutgers.edu/uae/

School of Arts and Sciences
http://sas.rutgers.edu/

Liberal Arts Distribution Requirements Report of Committee on Interim Core Curriculum for SAS

Bylaws of the School of Arts and Sciences –
Rutgers, The State University of New Jersey – Ratified: December 14, 2006

SEBS – The Transition from Cook to SEBS
http://sebs.rutgers.edu/about/transition.asp

School of Environmental and Biological Sciences Policy Regarding Interim (2007–2009) Core
Requirements
http://sebs.rutgers.edu/academics/sebs-core-policy.pdf

SEBS Core Curriculum Report

Rutgers University Undergraduate Enrollment by Major

Rutgers–New Brunswick/Piscataway Undergraduate 2005–2007 Catalog
http://catalogs.rutgers.edu/generated/nb-ug_0507/index.html

Rutgers University Learning Goals
http://oirap.rutgers.edu/reports/MSA2008/Self-Study-Reports/LearningGoals.pdf

Report on Degree Distribution Requirements
http://oirap.rutgers.edu/reports/MSA2008/Self-Study-Reports/MiddleStatesUGdegreq-5.pdf

Report on Certification of Distribution Requirements
http://oirap.rutgers.edu/reports/MSA2008/Self-Study-Reports/UndergraduateDegreeVerificationRequirements.pdf

Koobi Fora Field School
http://www.rci.rutgers.edu/~kffs/

The Rutgers University Libraries Report
http://oirap.rutgers.edu/reports/MSA2008/Self-Study-Reports/MiddleStatesReportfromtheLibrariesWithCharts.pdf
Rutgers Universities Libraries – Searchpath
http://searchpath.libraries.rutgers.edu/

Camden Computing Services – Smart Classrooms
http://smartclassrooms.camden.rutgers.edu/locations.php

Rutgers–Newark – Smart Classrooms
http://oat.newark.rutgers.edu/smartclassinfo.html

Rutgers-NB/Piscataway – Enhanced Classroom Support
http://classrooms.rutgers.edu/

Department of Sociology, Anthropology, and Criminal Justice - Web-Enhanced Curriculum
http://sociology.camden.rutgers.edu/curriculum/index.htm

Jabber
http://jabber.rutgers.edu/

DigiClass
http://digiclass.rutgers.edu/index.html

Data from Course Management System Survey
http://oirt.rutgers.edu/docs/cmsdata.pdf

Data from Sakai Survey
http://oirt.rutgers.edu/docs/sakaisurvey.pdf

Report of the Rutgers University Office of Information Technology
http://oit.rutgers.edu/middlestates.html

Rutgers-Camden Learning Center
http://learn.camden.rutgers.edu/

Rutgers–Newark Learning Center
http://lc.newark.rutgers.edu/

Rutgers-New Brunswick Learning Centers
http://rlc.rutgers.edu/

Math and Science Learning Center
http://mslc.rutgers.edu/

External Review History

Policy on Cluster Reviews

Committee on Academic Planning and Review Membership

All-Funds Budgeting
http://oirap.rutgers.edu/msa/Documents/AFBv3.pdf

New Program Approval Process


Dual and Joint Degree Programs
http://oirap.rutgers.edu/reports/MSA2008/Self-Study-Reports/Dual-JointDegreePrograms.pdf
Aresty Research Center for Undergraduates
http://aresty.rutgers.edu

Rutgers, The State University of New Jersey –
Two Hundred and Forty-First Anniversary Commencement, May 16, 2007 Program