

State of the New Brunswick Campus

University Vice President for Academic Affairs

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I. INTRODUCTION

*The future enters into us, in order to transform us, long before it happens.*

Rainer Maria Rilke, *Letters to a Young Poet*

Change is the single constant factor at the University. This great institution is different every day, in ways both small and large. One class graduates, a new class enters. Academic disciplines expand beyond traditional disciplinary lines, or contract and reorganize, responding to the demands of the times and the advance of knowledge. New degree programs are introduced, new knowledge is developed. New scholars join the faculty ranks while others move to different institutions or to jobs outside of the academy. Faculty change their areas of research, students their majors and minors, and staff members their professional duties in support of the University. New state-of-the-art buildings house new laboratories and classrooms while older buildings are renovated or replaced. Classrooms are made smarter, buildings made wireless. New human connections are made within our diverse community as individuals discover the full and rich tapestry of the world and its people. A constant shifting and readjusting takes place and, for the most part, we adapt readily to the losses and the gains. And, through these many small changes, the University is transformed greatly, although often slowly and almost unseen and unnoticed because the accumulated changes have been so incremental. We, too, change in the process; as scholars and students, we recognize and embrace the need to accommodate the new order. Since we are all, simultaneously, creators and stakeholders in the University, its future and ours are, inextricably and powerfully, intertwined. We respect and honor Rutgers traditions, understanding that positive change is part of that tradition and to be welcomed. The ability to embrace change, to grow rather than be frozen in time, is a test of an institution's vigor and strength. Yet Rutgers, in looking to the future, remains wholly cognizant of its rich academic past, its commitment to educational opportunity, access, and excellence, and will honor and protect that past while moving forward.

For Rutgers University, 2002 was a year of deep change. President Francis L. Lawrence, after twelve years of service to the University, announced his decision to return to the faculty. State budget cuts, the result of a national recession, forced economies that adversely affected some important projects and programs. Governor James McGreevey established the New Jersey Commission on Health Science, Education, and Training, which presented its plan for a fundamental restructuring of higher education in the State of New Jersey, with its profound implications for the future of Rutgers. Former Newark Provost Norman Samuels became Acting

President. Then, in December, Dr. Richard L. McCormick returned as the 19<sup>th</sup> President of the institution he had so ably served as a faculty member, department chair, and Dean of the Faculty of Arts and Sciences. These dramatic, indeed, transformational changes will shape the University for years to come in ways that are not yet apparent and cannot be predicted. What can be predicted is that a firm commitment to fostering creativity, knowledge, and scholarship will remain in the forefront of all of our efforts. This is a moment in the history of the University that holds much promise, and it is a moment that we will seize, our eyes wide open, as we move forward guided by our long history and tradition. Our role, and our *responsibility*, is to make sure that we meet these challenges in the way that will best serve the University, our community of scholars and students, the State of New Jersey, and our nation. In an academic environment that focuses on individual achievement of faculty and students, we must collectively reaffirm our dedication to the common enterprise of the success of Rutgers University. We must believe and act upon the premise that if Rutgers succeeds, we all succeed.

Rutgers-New Brunswick stands strong and ready for change. For the New Brunswick campus, the year was one of continued steady progress and forward movement. Our faculty members, who continue to garner national and international honors for their groundbreaking scholarship, are at the forefront of research and teaching, creating and transmitting new knowledge. Our students continue to prove their ability to compete on a national level. Our staff continues to work effectively with the faculty and the student body, to provide the services that enable them to succeed. The development of new academic programs testifies to the vitality and responsiveness of our institution to the needs of the global economy, our students, and our State. The improvement of so many of our classrooms and labs demonstrates our continued efforts to maintain and enhance that with which we have been entrusted. We are a richer campus than we were a year ago—in our scholarly, teaching, and service achievements, and in our learning and living together as a community—and will be a richer campus next year and the next, and beyond. This report documents some major areas of progress over the course of this year.

## II. REINVEST IN RUTGERS AND STRATEGIC PLANNING IMPLEMENTATION

### A. *Reinvest in Rutgers: Phases V & VI*

This was the fifth successful year of the Reinvest in Rutgers Program, which continues to demonstrate its effectiveness in building programs and strengthening academic support through allocations of resources for activities that advance core priorities of a unit in the context of the University's Strategic Plan. In September 2002, \$3 million was allocated for the continuation of the Reinvest in Rutgers Program for a sixth year, bringing the total reinvestment to \$40.7 million.

Reinvest in Rutgers has provided a comprehensive program of resources for building and strengthening academic programs, and it provides a flexible way to respond to the strategic priorities of core programs, with particular emphasis on the following specific goals: recruiting excellent faculty with competitive start-up funding; building the academic programs identified in the University's Strategic Plan that respond to emerging instructional and research needs;

strengthening academic programs with resources that respond to recommendations of external reviews and CSPAD; enhancing multi-disciplinary activities, within and across units, by supporting faculty collaboration on teaching and research projects that advance the goals of the University Strategic Plan; promoting innovative teaching and learning with the use of technologies that transform core curricula of a department or unit for large numbers of students; addressing state and national labor market needs in instruction by supporting the development of new curricula, certificate programs, and new options, minors and majors; and supporting academic achievement in core programs by upgrading the infrastructure and renovating facilities that have high faculty and student use.

Reinvest funds have been instrumental in ensuring excellence in teaching at all levels of instruction and enhancing the research capacity of the University through our continuing ability to attract outstanding faculty, especially at the junior faculty rank, to build interdisciplinary programs, and to respond to emerging training and research opportunities in the targeted areas of engineering, information sciences, and life sciences. The University Vice President for Academic Affairs has continued to work with deans in all New Brunswick units in making critical faculty appointments in all the priority areas identified in the University Strategic Plan.

#### *Graduate Student Support*

A key measure of the strength of a research university is the strength of its graduate programs and the qualifications of its graduate students. Without excellent graduate students, the University would be unable to attract or retain its strong research faculty. Significant resources in the form of financial support and selective tuition remissions have been made available to recruit and retain the best graduate students, especially in those programs of the highest strategic priority. To compete with our peer institutions, deans have been given much flexibility in tailoring unit-specific strategies for increasing graduate student support with maximum effectiveness. The RIR funds and tuition remissions are designed to recognize and reward units that have successfully supported graduate and professional students on external grants and contracts, and to provide incentives for faculty to include graduate student support on future grant proposals.

Each graduate degree-granting college and school in New Brunswick was allocated funds from this initiative based on the unit's overall share of grant- and contract-supported graduate students in recent years and on the academic priorities specified in the University Strategic Plan. These graduate student support funds were used to recruit and retain excellent graduate students, in many cases from under-represented groups in areas of greatest competition, by offering specially constructed grant packages, and to support the professional development of graduate students by providing funds for opportunities such as travel to present papers at conferences.

Additional funds were again provided to deans this year to increase the regular base salaries of students appointed to State-funded teaching assistant and graduate assistant positions. These competitiveness pool funds, which are derived from a provision in the University's contract with the AAUP, have given graduate deans a flexibility in funding that permits them to

make more substantial offers to recruit and retain students because they bring graduate student stipends closer to those offered by peer institutions in targeted fields.

The program that provides tuition remissions to be leveraged on a matching basis in new grant proposals submitted by faculty members for grant programs in areas that are the highest strategic priorities (engineering, computer science, life science) offers an incentive for faculty members to write students into their grants and are an effective method of supporting and retaining superior students. In 2002, these tuition remissions helped to support students working on grants from such sources as the National Institute of Health, the National Institute of Mental Health, and the National Science Foundation.

The University Vice President for Academic Affairs has consulted with and worked closely with the graduate deans to tailor these resources to the needs of the graduate programs, to provide the necessary flexibility to assure them success in their efforts to recruit and retain the best graduate students. Many deans reported that stipend enhancements have been instrumental in achieving this goal and that the priority and competitiveness funds and the tuition remissions have given them the ability to enhance multi-year packages for all students. In some programs, even modest enhancements can make a significant improvement in the quality of the students choosing Rutgers over other excellent peer institutions.

Additionally, in the 2001-2002 academic year, in response to the University Senate, the New Brunswick Faculty Council, and an *ad hoc* Teaching Assistant Training committee of faculty, students, and administrators, RIR funds were made available by the University Vice President for Academic Affairs to support a number of initiatives to improve the quality of teaching by TAs. These funds, which were used to provide support for Head TAs, faculty coordinators, enhanced ESL instruction, and assessment and monitoring of language skills of International TAs, have been renewed for the 2002-2003 academic year.

### *Computing*

Reinvest funds and computer fee revenues have been used to provide the university community with the technical equipment and training that will allow all members to take full advantage of our state-of-the-art computer network. Initiatives to enhance computer use continue, with coordination among the members of RUCS, the New Brunswick Computing Advisory Committee, the Teaching Excellence Center, and the Office of the University Vice President for Academic Affairs, ensuring that all members of the University community are equipped to meet the demands and take advantage of the opportunities afforded them by the University's investment in technology.

### *RUNet 2000*

Progress continues on developing an efficient University-wide network infrastructure. By the end of 2002, 141 residence halls and 114 academic or administrative buildings had been wired. This initiative has enabled faculty and students to take full advantage of the new technologies to enrich their teaching and learning experience at the University. In New

Brunswick, all of the dorms are now wired, with the exception of two buildings which were found to be unsuitable for the wiring; in these two cases, alternate solutions have been sought to give students access to the University network.

### *Libraries*

Reinvest funds continue to support the University Libraries' Digital Library Initiative, which uses information technology to enhance collections, service, and outreach. The Libraries now provide access to a large array of full-text electronic information and are using information technology to enhance all of their services. Reinvest funds permitted the libraries to meet the price increases for current serials and to purchase new electronic resources, such as the Luna Imaging system, which will benefit areas as diverse as Art History and Geological Sciences by providing a means to access and manipulate slides from various collections to enhance classroom presentations and research. Over the past year, networked electronic resources, such as the *Web of Science* and a variety of full-text collections databases and journal packages, have accounted for 31% of the Libraries' total collection expenditures.

The Libraries support teaching and research activities by building electronic resources and databases that meet the various needs of the academic programs. Student computing fees permit the Libraries to build digital collections and electronic databases for uses in teaching. The Libraries are also involved in a project that will provide wireless networking to all five student centers. The Libraries have recently received a grant from the National Science Foundation to develop a moving image gateway, which will be a national catalog in collaboration with the Library of Congress, and will provide Rutgers with the metadata standards for describing and accessing film and video. The Libraries continues active participation in the Virtual Academic Library Environment (VALE) in New Jersey, a statewide information infrastructure that provides scholarly information resources to the faculty and students of the entire State. Marianne Gaunt, Director of the Libraries, is chairing the VALE executive Committee that recently established a committee to develop online information literacy tutorials that can be used by students at the point of need.

### *New Brunswick Multicultural Allocations*

Reinvest resources continue to support the University's multicultural blueprint. These funds are earmarked for the appointment of new minority faculty in under-represented disciplines, for the supplementing of unit resources to promote the University's diversity agenda, including recruitment and retention efforts in support of undergraduate and graduate minority students. A wide range of programs and activities, university-wide, have been supported by these funds. The Committee to Advance Our Common Purposes continues to play a vital leadership role in coordinating and promoting activities of cultural understanding and diversity, including providing funding to faculty, staff, and students to build cross-cultural alliances, stimulating the development of innovative programs to improve multicultural understanding and foster a greater sense of community. The wide range of programs and activities supported by these funds appear elsewhere in this report.



*B. Strategic Resource and Opportunity Analysis (SROA) and Strategic Planning Implementation*

The Strategic Resource and Opportunity Analysis (SROA) program provided a strong pillar of support to the University's Strategic Plan by fostering innovative programs in targeted areas. This program, which began in 1995, has brought in more than \$365 million in external funds to date. The SROA funds are awarded through a peer-review process to support new academic initiatives across the University.

In 2002, 25 projects, including 5 new initiatives, were funded, for a total of \$2 million. A number of these proposals requested funds for computer equipment, information technicians, or web enhancements, but funding was also provided to the Zimmerli Art Museum for an exhibit of George Segal's work, and for Teacher Education and the Arts and Sciences. Many of these projects are cross-disciplinary.

### **III. NEW INSTRUCTIONAL PROGRAMS**

A new **Business Majors Program** was implemented in the Spring 2002 semester. The program, for business and pre-business majors at **University College**, provides curricular and co-curricular support for students interested in a business major, in order to increase the retention and academic success of these students.

The **Graduate School–New Brunswick** has joined the Inter-University Doctoral Consortium (IUDC), comprising Columbia University, NYU, Fordham, The Graduate Center, and The New School, with an invitation to Princeton and Stony Brook. Doctoral students in the Arts and Sciences will be able to take courses by permission at any member institution by registering through their own school and will have library access at all participating institutions as well.

### **IV: SIGNIFICANT PROJECTS RELATED TO TEACHING AND LEARNING**

*A. Instructional Technology Initiatives, Teaching and Scholarship*

- Twenty five undergraduate and graduate students from the **School of Communication, Information and Library Studies** will be involved in planning, developing, and evaluating a web-based instructional sequence for use by school library media specialists and middle school teachers to enable students to understand some of the issues related to the World Trade Center attacks, particularly in ways that will foster a sense of community and understanding of cultural diversity.

- Richard Miller, Barclay Barrios, and Mary Sheridan-Rabideau, **English/Writing Program**, have received a grant from the Woodrow Wilson Foundation to support a course on “Web Authorship in the Humanities.” This is one of the Foundation’s Innovation Awards designed to show that advanced training in the humanities has value both inside and outside the academy.
- Beckman Coulter engineers have installed the third Beckman Biomek 2000 robotic system, donated by Johnson and Johnson, in the **Cook Biotech Center's** high-throughput screening facility. This brings to four the total of complete robotic systems in the Center. Professor Gerben Zylstra (**Biochemistry and Microbiology**) will use the equipment extensively in the new Biotech Robotics undergraduate course planned for the Spring 2002 semester.
- Karen Lowrie (**National Center for Neighborhood and Brownfields Redevelopment**) taught a new online course entitled “Urban Neighborhood Redevelopment,” which covered topics including urban land use, politics, financing, and public involvement as they relate to neighborhood revitalization projects
- The course, "Psychology of Women's Leadership with a Global Perspective," developed over a two-year period by **Douglass College** and Ewha Women’s University in Seoul, Korea, held its first teleconferenced class meeting on February 6. The class is taught at Douglass College by Professor Deirdre Kramer and Associate Dean Suzan Armstrong-West, and at Ewha by Professors Pilwha Chang and Hye-Ryun Kang.
- Professor James Guo (**School of Engineering, Mechanical and Aerospace Engineering**) received a \$5,000 Undergraduate Curriculum Seed Grant for his proposal, "Development of a New Interdisciplinary Course: Biofluid Mechanics." The new course is being offered this Spring semester as a senior department elective and is an important element in the undergraduate Biomechanics option in the MAE Department.
- The **Teaching Excellence Center** continues its efforts to promote programs that improve teaching and learning in New Brunswick, by providing the faculty with resources, information, and expertise to improve their teaching, by offering workshops, seminars and programs that provide information, expertise, and discussion of issues pertinent to the improvement of teaching, by providing resources and services that contribute to comprehensive and meaningful evaluations of teaching, both formative and summative, to be used both for assessment and for faculty development, and by overseeing the delivery of support services to assist faculty in the design and development of new instructional technologies.

*B. Projects to Improve Undergraduate and Graduate Education*

University-wide learning goals that were developed in response to a 1992 review of the undergraduate curriculum (*The Qualls Report*) continue to guide campus efforts to improve teaching and learning. Under the leadership of the Vice President for Undergraduate Education, Dr. Susan Forman, innovative programs have been developed to provide direct support to faculty, staff, and students actively engaged in improving undergraduate education.

*Rutgers Dialogues Grants*

In its ninth year, the Rutgers Dialogues Grants Program, administered by the **Office of the Vice President for Undergraduate Education**, continues to support faculty and professional staff initiatives that focus on meeting the University-wide learning goals that resulted from the Rutgers Dialogues, the university-wide curriculum review. Among the areas included in the goals are: critical thinking, oral and written communication, mathematical reasoning and analysis, scientific inquiry, information and computer literacy, historical understanding, multicultural and international understanding, understanding of literary and artistic expression, understanding the basis of individual and social behavior, understanding the physical and biological world, citizenship education, and ethical awareness.

Among the nine innovative projects that were supported on the New Brunswick campus this year were: *Building a Cutting-Edge “New Europe” Curriculum (FAS-Political Science)*, which will develop educational modules on various aspects of European Affairs; *Women in the Workforce: An Investigation (School of Management and Labor Relations and FAS-Women and Gender Studies)*, which is developing curricular material to be incorporated into a new course that addresses students’ skills in the areas of multicultural and international understanding, scientific inquiry, and the basis of individual and social behavior; and *Improving Undergraduate Electro-acoustic Music Instruction (Mason Gross School of the Arts)* by which the Music Department was able to improve its instructional equipment and materials by standardizing keyboard synthesizers and adding computer-based samplers and sample libraries.

*C. Other Curricular Initiatives Related to Undergraduate Education*

The Curriculum Seed Grant Program, administered by the University Vice President for Undergraduate Education, provides support to faculty members as they prepare major (over \$20,000) grant proposals to private foundations or public agencies. Priority is given to projects that have high potential for significantly improving the curriculum, for long-term institutional adoption, and for attracting external funding. Two grants were awarded in New Brunswick for the 2001-2002 academic year: *Development of a New Interdisciplinary Course: Biofluid Mechanics (School of Engineering)*, a project that was conceived to keep undergraduates who might be interested in medicine aware of rapid advances in biomedical sciences. An interdisciplinary course will be developed that provides students with the background necessary to understand the physiological processes and physical mechanisms of human circulation and to model fluid flow and heat transfer in biological systems. The second project, *Technology Across the Curriculum (Graduate School of Education)*, will provide 5<sup>th</sup> year students in the Early

Childhood/Elementary Education teacher preparation program with the skills needed to incorporate technology into the curricula they create.

The Teaching and Curriculum Evaluation Grant Program, another initiative of the Office of the University Vice President for Education, funded one project in New Brunswick, *The Effectiveness of Automatically Grading Programming Assignments in CS111 (FAS-Computer Science)*. This project will rewrite grading software for computer science classes so that students will be able to complete a larger number of exercises over the course of the semester and gain more experience in solving computing programming problems.

#### *D. Undergraduate Research Programs*

In working to make undergraduate research experience a central element in their education, students have the opportunity to apply the knowledge gained in the classroom to hands-on problem-solving situations. Undergraduates work closely with the researchers who create new knowledge and so become active participants in the act of discovery. Students gain practical skills in research while enhancing their critical thinking, communication, and analytical skills.

All of the upper-level undergraduate honors programs include research and fieldwork components. Efforts continue to expand the number of students involved in research in upper level independent study, in scholarly projects, research projects, thesis projects, and honors projects.

The Rutgers **Undergraduate Research Fellows Program**, administered by the **Office of the Vice President for Undergraduate Education**, supports research projects involving faculty members and undergraduate students. The goal of the program is to increase the number of undergraduates involved in research activities and to increase faculty/undergraduate student collaboration on research projects. On the New Brunswick campuses, 47 students received research fellowships in 2002: 19 students from the **Faculty of Arts and Sciences**, 15 students from the **School of Engineering**, 9 students from **Cook College**, 2 students from the **Ernest Mario School of Pharmacy**, and one student from the **Edward J. Bloustein School of Planning and Public Policy**. The range of topics that these students are exploring demonstrates the extent to which students have become engaged in broad areas of research. The projects offer students a rigorous and sophisticated research experience, with the undergraduate researchers delving into topics such as: “Coal Handling and Transport Logistics” (Undergraduate research fellows Carol Ardila and Nathan Greenhut, **School of Engineering**); “Extracellular Matrix Changes in Fetal Growth Restricted Umbilical Arteries (undergraduate research fellow C. Andrew Kistler, **Ernest Mario School of Pharmacy**); “Construction of a Generalized Regional Economic Impact Modeling System (undergraduate research fellow Vyacheslav Khoroshevskly, **Edward J. Bloustein School of Planning and Public Policy**); “Inherited Susceptibility to Lead-induced Neurobehavioral Deficits (undergraduate research fellow Brandy Houser, **Cook College**); and “Cenozoic Record and Controls of Slope Stability on the New Jersey Continental

Margin” (Kyle E. Kingman, **Geological Sciences, Faculty of Arts and Sciences-New Brunswick**).

Each summer the **Center for Discrete Mathematics and Theoretical Computer Sciences (DIMACS)** hosts 5 or more undergraduates for an 8 week Research Experience for Undergraduates (REU) Program. The program has participants from many states, who work with DIMACS members from Rutgers, Princeton, AT&T Labs-Research, Telcordia Technologies, Bell Laboratories, and the NEC Research Institute.

The **Graduate School-New Brunswick’s** Research in Science and Engineering Program (RISE) is an undergraduate summer research program to advance diversity in science, math, and engineering. In summer 2002, the program brought 22 students, almost all from historically Black- or Hispanic-serving institutions. The students work in laboratories on the Busch and Cook campuses in a broad range of science and engineering fields.

Rutgers **Undergraduate Research Weeks** highlight the outstanding creative, scholarly, and scientific activities of Rutgers undergraduate students. Involvement in research is a vital component of the undergraduate programs, and students and faculty across the curriculum work closely together on advanced research projects. The accomplishments of the hundreds of students who participate in the research experience are highlighted during the month of April, when students have the opportunity to present poster sessions, research presentations, exhibits, symposia, and student conferences that are the products of their research experience.

## V. SPECIAL STATE TECHNOLOGY RESEARCH AND WORKFORCE PROGRAMS

The Office of the University Vice President for Academic Affairs has worked to increase coordination among different units and faculty in seeking large, multi-unit grant proposals to federal and state funding agencies, and has worked with the State through the Commission on Higher Education and the New Jersey Commission on Science and Technology to define programs and secure funds to advance research in targeted areas, to enhance grant matching, to provide support for facilities and equipment, to improve teacher quality and capacity, and to foster workforce development and technology transfer. Rutgers-New Brunswick has been successful in competing for grants in the following programs:

### *New Jersey Commission on Higher Education High-Tech Workforce Excellence Program*

- “Tissue Engineering: A New Frontier in Materials, Biology, and Medicine,” **School of Engineering**. Highly trained tissue engineers are in great demand by New Jersey's pharmaceutical and medical technology industries. The grant supported the development of an interdisciplinary undergraduate training program that built upon the university's strong programs in engineering, biotechnology and biomaterials (\$1,335,250).

- “University-Industry Partnership to Enhance Biotechnology Education for a High-Tech Workforce,” (**Cook-AgBiotech**). This grant was used to develop a facility for education, research, and training in high throughput screening, the automated research equipment that is prevalent in the pharmaceutical and biotechnology industries. New lab courses utilizing state-of-the-art equipment as well as corporate internships prepare undergraduate students for careers in the emerging high-tech biotechnology field of high throughput screening (\$1,335,250).
- “New Directions for the High-Tech Computer Science Workforce” (**FAS-Computer Science**). Through e-learning and traditional classroom teaching, this project expands instruction in key computer science areas, including computer vision, animation, and graphics such as modeling for medical imaging (\$1.64million).
- “Nanomaterials Science and Engineering: An Enabling Paradigm Shift for Photonics, Energy, Electronics and Biology” (**School of Engineering-Ceramics and Materials Engineering**). This project contributes to the development of a state-of-the-art, interdisciplinary undergraduate curriculum in nanomaterials science and engineering. (\$2.5million)

*New Jersey Commission on Higher Education Teacher Effectiveness Grant*

- “Urban Science Education Collaborative for Teacher Effectiveness,” **Graduate School of Education**. The grant supports a model science classroom at the Professional Development School in New Brunswick and pre-service and in-service professional development programs in science for teachers throughout the state (\$499,979).

*New Jersey Commission on Higher Education Teacher Quality and Capacity Grant*

- This grant (**FAS-New Brunswick, Graduate School of Education, FAS-Newark, FAS-Camden**) is providing permanent support of seven new faculty lines for the University (1 in Newark, 1 in Camden, 5 in New Brunswick) in the areas of math and science teacher education, and funding to support significant strengthening of the teacher education curricula in these areas through collaborative efforts between the teacher education programs and the arts and sciences faculty (\$496,000 plus permanent base budget adjustments).

*New Jersey Commission on Higher Education Research Capacity Grants*

In FY 2002 Rutgers was awarded funding for the following five projects in New Brunswick:

- “Enhancement of Food Sciences Program” (**Cook**), provides start-up funds for development of non-thermal processing which will allow manufacturers to produce safe foods of higher quality and with longer storage times (\$150,000);

- “Building Interdisciplinary Research in Biotechnology” (**Cook**) supports the hiring of a senior level scientist to coordinate the activities of the Biotechnology Center (\$150,000);
- “Building Interdisciplinary Research Capacity in Large-Scale, Wireless Sensor Networks” (**School of Engineering**) received funds to seed or strengthen the following laboratories: System-on-Chip (SOC); MEMS sensor devices; and wireless network protocols and software (\$400,000);
- “Initiatives at the Interface of Biological, Mathematical and Physical Sciences” (**FAS-BioMaPS**), received funds to support interdisciplinary research in the experimental study of the biochemical pathways involved in the expression of genes, the detailed study of single molecules of biologically active substances, the computational modeling of such molecules, and the design and production of new molecules with desired properties (\$1,077,623);
- Infrastructure Improvements to Support a Molecular and Cellular Pharmaceutical Sciences Initiative (**Ernest Mario School of Pharmacy**) for support in establishing a core group of faculty with complementary research interests in the molecular and cellular aspects of drug delivery to harness information from the Human Genome Project as it relates to the absorption and disposition of drugs for combating and preventing diseases, and for the necessary facilities and infrastructure improvements (\$300,000).
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*New Jersey Commission on Science and Technology Awards*

In Fiscal Year 2002, the New Jersey Commission on Science and Technology awarded research excellence grants to Rutgers totaling \$4.55 million for projects involving plastics and food technology.

- The **School of Engineering** received \$2.35 million to establish a research center dedicated to developing advanced materials based on immiscible polymer blends (IMPBs).
- The **Center for Advanced Food Technology at Cook College** received \$2.2 million for research on processing conditions that could enhance the anti-inflammatory factors in foods, herbs and spices.
- The NJCST also awarded \$150,000 to the **New Jersey Center for Biomaterials** at Rutgers.

## VI. MULTICULTURAL INITIATIVES

During the 2001-2002 academic year, the University completed the seventh year of its ongoing campaign to realize the goals proposed in the Multicultural Blueprint and to create among its students, faculty, and staff a vibrant culture that is knowledgeable about and tolerant of all the ethnic and cultural traditions within its community. We have made significant progress over the years, not only in the scope of the projects but in the numbers of people participating in each event. The University community has embraced the ethos of diversity in a thoughtful and positive way.

University allocations were made to each New Brunswick unit and the Libraries to achieve these goals, with funds allocated from the Reinvest in Rutgers initiative and from resources of the University Vice President for Academic Affairs. Additional resources were provided from the SROA program in support of this initiative. Multicultural funds supported minority faculty development for individual faculty research, for conferences, and for computers and other office equipment. Start-up packages to help these scholars with their research needs were indispensable to the recruitment efforts. The following summaries are but a small sample of the many academic and co-curricular multicultural activities undertaken by the New Brunswick units and the Libraries that were funded in whole or part by these resources. A full report of these activities is prepared at the end of the Spring semester.

Dr. Gus Friedrich, Dean of the **School of Communication, Information, and Library Studies** and Chair of the **Committee to Advance Our Common Purposes**, announced the restructuring of the programs and sub-committees designed to improve impact and efficiency of the Committee to Advance Our Common Purposes. A new Programs Committee will oversee evaluation and assessment of CACP programs, and recommend the development of relevant new programs and initiatives.

Among the many multicultural initiatives during the 2001-2002 academic year:

- The **Center for Latino Arts and Culture**, **The Paul Robeson Cultural Center**, **The Asian American Cultural Center**, and the **Jane Voorhees Zimmerli Art Museum** are developing a statewide arts and education initiative for 2004 to explore how diverse artists from underrepresented communities are shaping culture and communities throughout the state. A conference in May, *Transcultural New Jersey: Diverse Artists Shaping Culture and Communities*, brought together curators, museum directors, faculty members, educators, art historians, cultural specialists, arts organizations, artists, and community leaders to share ideas on the creative achievements of the state's multicultural artists and exchange views on the cultural impact of the state's emerging and older ethnic and racial communities.
- **The Department of Journalism and Media Studies, School of Communication, Information, and Library Studies** organized a campus-wide workshop on ethics and responsibilities of campus journalism focusing on a number of issues related to diversity



and multiculturalism, including issues of free speech, political correctness, hate speech, censorship, and treatment of diverse populations, to initiate dialogue among students that will be continued in various campus settings after the workshop.

- The **School of Engineering** supports a number of activities for underrepresented groups in the field of engineering through direct support of the Rutgers Society of Hispanic Engineers, MEET, The Rutgers Chapter of the National Society of Black Engineers, The Paul Robeson Center, the Society of Women Engineers, the James Dickson Carr Society, and The Rutgers Engineering Undergraduate Research Exchange Program. All of these groups foster a greater sense of community and improve the learning environment for all students in addition to assisting in recruitment and retention of minority students.
- The **Bloustein School** continues to apply for and receive HUD scholarship grants to attract low income/minority graduate students to Urban Planning. The School has received four of these awards, and this has enabled them to support a total of fifteen minority graduate students in Urban planning, twelve of whom have already graduated.
- The **Graduate School of Applied and Professional Psychology** holds an annual Diversity Recruitment Fair, a program at which undergraduates, professionals, and masters level students of color and ethnicity are provided with information about GSAPP and the Rutgers Clinical Ph.D. program, as well as about graduate training in general. Students who are invited to interview day are offered housing, providing orientation activities for Asian, Black, Hispanic, and International students the night before the interview.
- **Mason Gross School of the Arts** held its annual *Art Day*, which brings more than sixty high school students from Paterson, New Brunswick, Elizabeth, Asbury Park, Willingboro, Perth Amboy, and Trenton High Schools to explore a variety of artistic media, including drawing, pastel work, printmaking, design, and Polaroid camera studies. *The Rutgers University Summer Acting Conservatory*, a five-week program designed for fifty high school students who want to experience intensive professional actor training in a college environment, will target minority students to participate.
- The **Office of Career Services** has worked to raise fund to support diversity programs and outreach. Salomon Smith Barney provided a grant to support a diversity intern program, and JP Morgan Chase awarded a grant to support diversity-related programs including focus groups on diversity, on-site externships, and diversity symposia.
- The **University Libraries** presented a program, *Exploring Community: Customs and Cultural Perspectives*, that focused on the holiday celebrations and customs of various groups, including those of people from India, Indonesia, Pakistan, the Mid-East, and also of African Americans.

- The **Graduate School of Education** has established a Samuel DeWitt Proctor Chair in Education. The focus of the chair is upon education broadly conceived, including issues of multiculturalism, diversity, and achievement.
- The **Cook College Residence Life Multicultural Educational and Programming Initiative** provides extensive multicultural, educational, and social programming and seminars across Cook. The themes of the programs are all related to diversity and multiculturalism.
- The **University Health Services** sponsors *Shades*, a multi-racial, multi-ethnic student theater troupe that focuses on issues of vital concern to the diverse student population.
- The **School of Management and Labor Relations** held a career day for minority students, offering advice on how to pursue a career in employment relation. The presentations gave advice on writing effective resumes, developing interviewing skills, and networking. Three alumnae of the LER programs discussed their experiences as minority women working as professionals in human resource management, labor relations, and labor politics.

## VII. STUDENT AFFAIRS

Under the direction of Vice President for Student Affairs, Dr. Emmet Dennis, **the Office of Student Affairs** in New Brunswick continues to provide needed services for all students in New Brunswick. Among the initiatives of the past year were:

- A University-wide diversity website is being developed. The website will provide an online index of diversity resources for members of the University community and external constituents.
- The **Office of Compliance and Student Policy Concerns** completed work with the committees reviewing the Credit Card Task Force, the revised University Code of Student Conduct, and the Policy on Parental Notification and submitted the reports for implementation this year.
- **The Office of Career Services** collaborated with the **Office of Institutional Research** on an electronic “60 Second Senior Survey,” sent to 8,000 Rutgers seniors on all three campuses. The results were compiled and analyzed during Summer 2002.
- **Campus Information Services’** new Off-Campus Housing Service (OCHS) website was launched (<http://ruoffcampus.rutgers.edu/>). Through the website, credit card transactions

are now entered on-line and processed through the Administrative Computing Services Discover program. The website was singled out by the editors of *The Harvard Crimson* as one of the best in the nation.

- The **Board of Governors and Board of Trustees Grants for Innovations in Student Life**, which provides up to \$15,000 per project designed to enhance student life and learning, funded nine proposals in its initial year. The goals of this program are to integrate student life and learning, to promote and facilitate academic support for greater success, to foster community development, and to enhance the development of exceptional leaders and citizens.

## VIII. INTERNATIONAL PROGRAMS AND PROJECTS

The post-September 11<sup>th</sup> world challenges the very notion of globalism. Over the past year, Rutgers faculty have responded by ensuring that our students develop a broad understanding of the world, proficiency in other languages, and knowledge of other cultures. Our faculty, more than ever, are active in research projects which extend beyond the boundaries of New Jersey and are working with colleagues around the world, and the University's service programs reach citizens of other countries. Rutgers Global Programs continues to promote cooperation with institutions abroad and among the various departments and centers in New Brunswick, Newark, and Camden. During the 2001-2002 academic year, a great many international activities took place across all the campuses, in the academic departments and in the colleges. This report highlights only a small number of the projects to which Global Programs lent support.

### A. *Global Interactive Courses*

Global Programs continues to pioneer new ways to internationalize the curriculum using high technology. During the year, two Global Interactive Courses were completed, and three more are in the planning process.

Colleges and universities are recognizing the potential of bringing high technology into their curricula. In marked contrast to most programs, the proposed Global Interactive Courses exploit in a positive way the geographical distance that exists between students. Adding cyber components to traditional brick-and-mortar classes, these courses use the varied milieus and backgrounds of the students to explore cultural differences, as well as national modes of perception and analysis.

#### *Elements of a Global Interactive Course:*

A member of the Rutgers faculty teams up with a member of the faculty in one of our partner institutions abroad to develop a joint undergraduate course. The course is offered at both locations simultaneously, each taught by the local faculty member. A syllabus, a reading list, and assignments are prepared, with the exact same material for the two classes. The two mortar-and-

brick classes are linked by the one common cyber-classroom set up by the two faculty members, allowing the students and faculty to work together on projects and assignments. Each professor gives the lectures in the same sequence and at relatively the same time at their respective institutions. After each class, one student is assigned to summarize (in English) the lecture and discussion; this summary is placed on the web. At the beginning of the following class, the students and faculty analyze the discussion of their overseas partner to learn how the other culture approached the same material. Joint student projects are the core of the course. All students enrolled in the course are paired—one Rutgers student with one overseas student—and each pair is charged with a single project. Using the course website, each pair of students works together to formulate the questions related to their project, collect the data for it, and work together to analyze the data and create a unified report, which will then be put on the website. The assessment of each student, which is based on class participation, tests, and the quality of the project, is done by the course instructor at the student's home school.

The goals of these courses are to challenge the ethno-centrism of both faculty and students; to provide an opportunity for the faculty from both Rutgers and the overseas university to work together; to provide American faculty members with the opportunity to team-teach with a colleague from another country; to expand cultural awareness and create a more nuanced view of societal values, approaches to material, and the analysis of data; to allow the students and the faculty to question the cultural influence on themselves as well as on their peers in another country; to encourage active discussion rather than passive observation; to use high technology to bridge geographical space to explore cultural patterns of thought and perceptions; and to provide an unparalleled international learning experience without leaving their home universities.

#### *Ewha Womans University and Rutgers*

Douglass College and Global Programs along with Ewha Womans University in Seoul, Korea, jointly created a Global Interactive Course on women and leadership, *Psychology of Women and Leadership in a Global Community*. The course was held during the spring 2002 term. Twelve Douglass honors students enrolled, and twelve students from Ewha were selected by the president of the university to participate. Classes met twice a week for 14 weeks during the spring 2002 term. The course paired the Douglass students with the students from Ewha. Each Rutgers/Ewha student pair engaged in regular e-mail dialogue and worked on a joint project.

The core of the course was to profile women in leadership positions. Each pair of Rutgers and Ewha students was assigned to interview two leaders from the same profession, one in each student's respective country, on issues of gender and culture for women in various professions. Using an interactive website created especially for this course and modeled after **Douglass College's** highly successful "Shaping a Life" website, the students worked together to develop comparable interview questions. The emphasis was on global similarities and cultural variations in expressions of leadership.

#### *Ritsumeikan University and Rutgers*

During the 2001-2002 academic year, students at Ritsumeikan University and Rutgers

University explored different aspects of the political and cultural history of Japan and the United States in the course, *The Japanese Discovery of America: A Program in Japanese and American Cultural Studies*. Prior to the beginning of the term, the two professors each recorded six lectures on videotape that were screened by the students of their colleague. Issues which were discussed included: the political and economic contexts for the cultural contacts between Japan and the U.S., and the role of Rutgers University in the history of those contacts. During the fall, the students divided into committees to plan for the visit of the Japanese students during the spring term. From 01 February to 10 March 2002, the Ritsumeikan students came to Rutgers for a five-week experience of study abroad. The Japanese students were hosted by the Rutgers students. During this time, the Ritsumeikan students attended regularly scheduled lecture courses at Rutgers, participated in a Citizenship and Service Educational (CASE) experience in the local schools, went on field trips to visit the United Nations in New York, traveled to Washington D.C., and took a special course titled *Democratic Theory and American Political Culture*. The course included discussions of poems and essays on democracy and democratic theory, discussion of the various lecture courses and the experience of the CASE program, and the completion of assignments. The assignments were reflective journals and photo-essays co-written by the Ritsumeikan and Rutgers students, which were put on the course website and served as a final project for the course.

Among the other courses currently under development are:

*Global Media and Society*, a team-taught course involving St. Petersburg State University and Rutgers. The Rutgers students will be undergraduates in New Brunswick and Rutgers Study Abroad students studying at one of our European locations. Undergraduates studying international journalism comprise the class at the School of Journalism at St. Petersburg State University. The course will examine world events in print and broadcast media from American, European, and Russian perspectives. Throughout the term, the class will examine ongoing or developing events related to political, religious, health, economic, military, and domestic issues as well, as regional crises and sports, with the choices determined by the latest world developments.

*U.S. and Europe as Seen from Abroad*, a collaboration between the University of Leiden and Rutgers, will be a global interactive course which considers how the U.S. and Europe are seen by each other. This Global Interactive course will examine how the United States and Europe perceive each other. Lectures will focus on historical essays such as Mark Twain's writings while he was in Europe and De Tocqueville's work while he was in the U.S. Contemporary works will include Jean-Jacques Servan-Schreiber's, *The American Challenge*, and other more recent works. Student projects will consist of paired Rutgers and Leiden students interviewing selected groups about their impressions of the U.S. and Europe, e.g., a 75 year-old person's impressions, 30 to 40 years old's views, or the views of police officers, local politicians, etc. Using the already established Ewha and Ritsumeikan courses as models, the Rutgers/Leiden course will connect the professors and the students via a course website.

*Technology across Culture*, a cooperative venture between the University of Sao Paulo and Rutgers, involves Rutgers School of Engineering, Cook College, and the University of Sao Paulo in the creation of a Global Interactive Course that explores how scientists can work on technical projects across cultural boundaries and asks, in essence, if scientific projects are immune

to cultural pressure. Rutgers students will be paired with students from the University of Sao Paulo and assigned joint projects to see how culture influences decisions on a scientific project.

*The American Revolution as Seen from Both Sides of the Atlantic* is a course that will partner with a British University with Rutgers to explore the American Revolution as seen from British and American perspectives. The course will explore the ways that former enemies teach the same material. Student projects would examine historical figures such as Benedict Arnold to see how such a figure is perceived by the different countries.

*B. Coordination of International Activities on Campus*

Many of Rutgers' talented faculty members work successfully abroad or with international partners, and on international topics. As was highlighted in the strategic planning process in 1996, the faculty seek administrative help in coordinating their projects and are looking for ways to work more collaboratively. Once again, Global Programs is particularly proud to have been able to work with almost all of the academic units on the New Brunswick campus.

Global Programs assists faculty members who wanted to develop and host scholarly conferences on campus. This past year saw the beginning of plans for an international conference to be held at Rutgers on *Information Age Towns*. Over the past decade, several governments around the world were interested in how high technology could change a mid-sized town. Several towns in Japan, Ireland, and Japan have been equipped with high technology to see how their citizens could benefit by broadband access to the internet. These towns have been termed, "Information Age Towns." Professor Claire McInnemie at the **School of Communication, Information, and Library Studies** is working with Global Programs to develop the first major international conference on the response of the citizens of these towns to this new technology.

Global Programs and **Cook College** are teaming up with the University of Sao Paulo to create a workshop, a Forum on Education of the Americas, which will focus on developing new paradigms for academic globalization in the Americas, to be held at the University of Sao Paulo during January 2004.

Global Programs also brought together academic groups and individuals in a number of events, such as a special reception for members of the New Brunswick faculty and President Lawrence to meet the Hubert Humphrey Fellows, and a reception for the Rutgers Fulbright Fellows and other visiting faculty from abroad to meet Rutgers faculty and staff members.

*C. Development and Support of Area Studies Programs*

In an effort to support area studies at Rutgers, Global Programs has been involved in several new projects. Among them are:

*South Asia*

Since more and more members of the Rutgers faculty have research interests in India,

Pakistan, Sri Lanka, Bhutan, Nepal, and Myanmar, faculty members, under the leadership of Professor Veneeta Dayal, **FAS-Department of Linguistics**, are investigating ways to advance Rutgers work in this geographic area. With Global Programs, the faculty is exploring the possibility of creating an undergraduate major and minor as well as forming a center.

#### *Europe*

Global Programs and the **Center for Russian Central and East European Studies** (CRCEES) are working together to transform CRCEES into the Center for Comparative European Studies. This new center will develop a new, innovative, multi- and inter-disciplinary undergraduate curriculum reflecting the dramatically changed realities of today's Europe.

Global Programs and the Government of Hungary have renewed their longstanding relationship. Founded in 1991, Rutgers' **Institute for Hungarian Studies** has continued to focus on Hungarian Studies. Through the support of the Fulbright Commission and the Ministry of Culture and Education over the past 10 years, Rutgers has hosted visiting scholars.

#### *Africa*

Global Programs continues to assist the Department of Anthropology at Rutgers in advancing the cooperation with the Koobi Fora Field School in Kenya and the National Museums of Kenya. The project combines both large-scale inter-disciplinary research and teaching on an international scale in East Africa.

#### *D. Coordination of Special Projects*

As is true in most active offices, there are many projects undertaken that cannot be readily classified.

#### *Emergency Medical Assistance*

For the fifth year, Global Programs was able to offer to all Rutgers faculty and staff in Newark, Camden, and New Brunswick who travel overseas special emergency medical assistance through ACE Insurance. The ACE Medical Assistance plan includes hospital admission deposit, medical monitoring, dispatch of a doctor or specialist, emergency medical evacuation, and medically supervised repatriation. In addition, there is pre-trip medical referral information, emergency medication, embassy and consular information, lost document assistance, emergency message transmission, medical emergency cash advance, legal assistance, translator/interpreter access, medical benefits verification, and medical claims assistance, among other services. Over 900 faculty and staff members enrolled in this program from 1998-2002.

#### *Overseas Alumni Development*

In an effort to reach out to alumni abroad, Global Programs has been trying to assist the Alumni Office in organizing events overseas, most notably, special meetings of the Rutgers Club in Korea, France, Japan, and India.

### *Global Program as the Office of International Protocol*

During the past year, many visitors came to Rutgers from abroad. Global Programs was pleased to be able to arrange and host their visits. Among our many official visitors were: the Senior Vice-President, Hong Duc University, Vietnam; the Senior Vice-President, from Jilin University, China; a Government delegation from Tanzania; the Director-General of the National Museums of Kenya; the Vice-President, Ritsumeikan University; His Excellency, Ambassador of Mozambique; the Senior Officials from Ewha Womans University, Seoul, Korea; the Senior Vice-President, University of Sao Paulo; the Director, National Science Foundation, South Africa; the Senior Vice-President, University of Krakow, Poland; and a delegation from Fukui, Japan. In addition, two professors visited Rutgers through the agreement with Jagiellonian University as well as one special visiting professor from Japan.

### *Coordinate University Agreements*

As a major research university, Rutgers is continually interacting with universities abroad, and Global Programs creates and coordinates these agreements. This past year, four new agreements were put into place with: the University of Leiden; the University of Sao Paulo, Brazil; the Bartlett School of Planning, University College London; and the P. N. Lebedev Physics Institute of the Russian Academy of Sciences, Russia.

### *Expansion of Study Abroad Opportunities for Rutgers University Students*

Despite world tensions, Study Abroad has continued to grow in the past year. Although programs in Israel and India have been suspended, other new programs have opened up in China, Korea, and Greece. Most exciting, Rutgers has just opened its first Study Abroad program that is fully integrated into a Rutgers four-year undergraduate degree. With Study Abroad's help, Rutgers B.F.A. Theater Arts department has an exclusive link to Shakespeare's Globe Theatre in London. This year-long program will be part of every B.F.A. acting student's program. Studying abroad remains a popular undergraduate option for Rutgers students.

### *Study Abroad in America at Rutgers*

Study Abroad in America at Rutgers is in its fifth year. This program gives overseas students the opportunity to enroll in regular university classes on a short-term basis alongside American students. In the spirit of Rutgers Study Abroad, Global Programs has established a program, with no known parallel in American universities, whereby students from abroad will be able to enroll as non-matriculating students at either Douglass, Rutgers, or Livingston College for a single term or a full academic year.

## **IX. STUDENTS**

### **A. NEW BRUNSWICK STUDENT BODY**

The New Brunswick student body accounted for 69.7% of the 51,480 University students in Fall 2002. The total New Brunswick Fall 2002 enrollment was 35,886 (see Table 1), 235 more students than the New Brunswick enrollment in Fall 2001. In New Brunswick, 54.8% of the students are women, consistent with the nationwide trend that has emerged in the last decade of



women comprising the majority of college students. The number of New Brunswick undergraduates in Fall 2002 who are members of a minority group (African-American, Native American, Asian/Pacific Islander, Latino, or Puerto Rican) rose to 36% from 35% in Fall 2001.

Students registered for full-time study (28,475) constituted 79% of New Brunswick enrollments in Fall 2002. Approximately 38% (2997) of all graduate enrollments (7816) in New Brunswick are full-time. In Fall 2002, 16.9% of the entire New Brunswick student body entered Rutgers as a resident of a state other than New Jersey in comparison to 16.3% in Fall 2001.

In Fall 2002, the New Brunswick undergraduate enrollment was 28,070, which is 282 fewer students than the record high undergraduate enrollment in Fall 2001 of 28,352. University College (+164), the School of Engineering (+91), and the Ernest Mario School of Pharmacy (+8) showed increases in enrollment in Fall 2002.

The academic quality of the students continues to rise. In Fall 2002, the combined average SAT scores of regularly enrolled first year students across all the New Brunswick undergraduate day colleges was 1210, continuing the trend of rising scores: 1209 in Fall 2001, and 1205 in Fall 2000. The Faculty of Arts and Sciences and the College undergraduate honors programs continue to contribute to our success in enrolling high-achieving students. The Outstanding Scholars Recruitment Program has been another factor in our ability to attract very strong students to Rutgers-New Brunswick.

In Fall 2002, the New Brunswick graduate schools enrolled 7,816 students, 517 more than in Fall 2001, a 7% increase in the number of students. Almost every school saw increases in enrollments. The Ernest Mario School of Pharmacy's 21% increase (+52) in graduate enrollment follows a 19.5% increase in 2001 and a 7% increase in 2000. This is the fifth year of increased enrollment and is a result of the School's highly successful six-year doctoral program. The graduate enrollment in the Edward J. Bloustein School of Planning and Public Policy increased by 20% (+29), in the School of Communication, Information, and Library Studies by 18% (+70), and the Mason Gross School of the Arts increased graduate enrollment by 10% (+24).

TABLE 1  
NEW BRUNSWICK ENROLLMENT (HEADCOUNT) BY UNIT  
FALL 1998 THROUGH FALL 2002

	Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002
<i>Undergraduate</i>					
Douglass	3,064	3,099	3,226	3,354	3,251
Livingston	3,336	3,536	3,791	4,070	4,028
Rutgers	10,737	10,993	10,875	10,740	10,496
UC-NB	3,018	3,308	3,256	3,165	3,329
Cook	3,309	3,231	3,119	3,253	3,122
Engineering	2,192	2,190	2,265	2,337	2,428
MGSA	570	617	625	651	626
Pharmacy*	860	825	782	782	790
<b>Total Undergraduate</b>	<b>27,086</b>	<b>27,799</b>	<b>27,939</b>	<b>28,352</b>	<b>28,070</b>
	Fall 1998	Fall 1999	Fall 2000	Fall 2001	Fall 2002
<i>Graduate</i>					
Pharmacy	173	191	205	245	297
EJB	77	97	146	147	176
GS-NB	3,830	3,697	3,589	3,596	3,865
GSAPP	171	177	185	205	199
SCILS	426	431	403	393	463
SMLR	288	284	239	280	284
GSE	1,461	1,461	1,403	1,340	1,393
MGSA	225	234	247	250	274
SSW	1,024	937	881	843	865
<b>Total Graduate</b>	<b>7,675</b>	<b>7,509</b>	<b>7,298</b>	<b>7,299</b>	<b>7,816</b>
<b>TOTAL ALL:</b>	<b>34,761</b>	<b>35,308</b>	<b>35,237</b>	<b>35,651</b>	<b>35,886</b>

\*Phase in is occurring to 6 year Pharm D. program.

*B. Financial Aid Summary for AY 2001-2002*

Approximately 72.1% of New Brunswick students, 18,594 undergraduate students and 7,127 graduate students, received \$217.2 million in financial aid through the University Office of Financial Aid during A/Y 2001-02. Financial aid dollars in the form of grants also known as “Gift Aid” were 30.4% greater than loans.

Overall, approximately \$115.3 million, or 53.1% of all aid awarded to New Brunswick students was in the form of grants. State grants totaled \$31.5 million and accounted of 27.3% of grant funds to New Brunswick students. Federal grants equaled \$19.6 million or 17.0% of all grants. University grants equaled approximately \$59.9 million and or 52.0% of the grant funds awarded. Private grants accounted for the remainder of the grants awarded, at \$4.3 million, or approximately 3.7% of the total.

Approximately \$88.0 million, or 40.5% of all aid awarded in New Brunswick was in the form of loans. In the eighth year of our participation in the Direct Lending Program, total loans equaled almost \$78 million, and accounted for 40.7% of all student aid received in New Brunswick. Of the total loan amount, nearly all (88.5%) was awarded through the federal loan programs, with state, university, and private loans together constituting the remaining 11.5% of the total loan funds awarded.

Federal Work-Study and non-Federal Work-Study awards totaled \$13.9 million, or 6.4% of all financial aid dollars supporting students on the New Brunswick campus.

*C. Academic Degrees Conferred (Tables 2 and 3)*

The total number of degrees conferred in New Brunswick in AY2001-2002 was 7005, 339 fewer than in 2000-2001 when 7344 degrees were awarded. At the undergraduate level, 5788 degrees were awarded, 291 more than in AY2000-2001. Bachelor of Arts degrees accounted for 62% (3611), Bachelor of Science degrees accounted for 35% (2037), and the remainder were Bachelor of Fine Arts (100) and Bachelor of Music degrees (40) granted by the Mason Gross School of the Arts. Of the 5,788 Bachelor degrees awarded in AY2001-2002, 697 (12%) were jointly granted by the School of Business, the Bloustein School, or SCILS and one of the undergraduate colleges.

The New Brunswick campus conferred 1,689 advanced degrees last year, 158 fewer than in AY2000-2001. Doctorates accounted for 28% (472) of these degrees, and Masters accounted for 72% (1213). Last year, Doctorates accounted for 26% and Masters for 74%. The number of doctorates increased in every unit except the Graduate School-New Brunswick.

TABLE 2  
NEW BRUNSWICK UNDERGRADUATE DEGREES  
2001-2002

	BA	BS	Total
Cook College	35	548	583
Douglass College	644	80	724
School of Engineering	0	417	417
Livingston College	602	173	775
School of Pharmacy	0	135	135
Rutgers College	1864	580	2444
University College	466	104	570
<b>Total</b>	<b>3611</b>	<b>2037</b>	<b>5648</b>
	<b>BFA</b>	<b>BM</b>	<b>Total</b>
Mason Gross	100	40	140
<b>Total NB Undergraduate Degrees</b>	<b>3711</b>	<b>2077</b>	<b>5788</b>

*\*Joint BS degrees awarded with the New Brunswick School of Business are as follows: Douglass College, 28; Livingston College, 46; Rutgers College, 255; University College 17; Total: 346.*

*Joint degrees awarded with the E.J. Bloustein School of Planning and Public Policy are as follows: Douglass College, 7; Livingston College, 9; Rutgers College, 18; and University College, 8. Total: 42.*

*Joint degrees awarded with the School of Communication, Information, and Library Studies are as follows: Douglass College, 63; Livingston College, 70; Rutgers College, 124, University College, 52; Total: 309*

TABLE 3  
NEW BRUNSWICK ADVANCED DEGREES  
2001-2002

DOCTORATE DEGREES	UNIT	NUMBER
Doctor of Pharmacy	EMS	108
Doctor of Psychology	GSAPP	28
Doctor of Education	GSE	36
Doctor of Philosophy	GS-NB	289
Doctor of Musical Arts	MGSA	11
<b>TOTAL NB Doctorate Degrees</b>		<b>472</b>
MASTERS DEGREES	UNIT	NUMBER
Master of City and Regional Planning	EJB	31
Master of City and Regional Studies	EJB	6
Master of Public Affairs and Politics	EJB	12
Master of Public Policy	EJB	8
Master of Psychology	GSAPP	34
Master of Education	GSE	284
Master of Arts	GS-NB	85
Master of Arts-Teaching	GS-NB	9
Master of Philosophy	GS-NB	2
Master of Public Health	GS-NB	16
Master of Science	GS-NB	292
Master of Science-Teaching	GS-NB	0
Master of Fine Arts	MGSA	46
Master of Music	MGSA	8
Master of Communication and Information Studies	SCILS	42
Master of Library Service	SCILS	100
Master of Human Resource Management	SMLR	65
Master of Labor and Industrial Relations	SMLR	1
Master of Labor and Employee Relations	SMLR	16
Master of Social Work	SSW	156
<b>TOTAL NB Masters Degrees</b>		<b>1213</b>
OTHER DEGREES	UNIT	NUMBER
Specialist in Education	GSE	4
Artist's Diploma in Music	MGSA	0
<b>TOTAL NB Others</b>		<b>4</b>
<b>TOTAL NEW BRUNSWICK ADVANCED DEGREES</b>		<b>1689</b>

#### D. STUDENT AWARDS AND HONORS

- Three **Graduate School-New Brunswick** students—David Braun, Jessica Libove, and Briana Pobiner—all in the Department of **Anthropology** have received Fulbright-Hays Dissertation Research Grants.
- Fulbright Fellowships have been awarded to students in the Graduate School-New Brunswick—Lindsay Braun (**History**) to South Africa; Brian Hall (**Sociology**) to Taiwan; Elizabeth Jordan (**Anthropology**) to South Africa; Shannon Nix (**Ecology and Evolution**) to Norway; and Nia Parson (**Anthropology**) to Chile.
- **Rutgers College** student Sandeep Wonkatal is one of the authors on a paper that is in press at a peer reviewed journal, *Molecular and Cellular Biology*.
- **Rutgers College** student Stephen Healy (2002) has been awarded a Howard Hughes Medical Institute Fellowship.
- **University College** student, Rafael Eduardo Cuellar, has been appointed by the President of the United States to the Board of Directors of the National Cooperative Bank. Mr. Cuellar is currently enrolled in the University College Postbaccalaureate Pre-health Program to prepare for a change of career to medicine.
- Chris Gunson, a **Livington College** Senior, was invited by to participate as a U.S. representative to an international student summit in Fall 2002. The four day summit was held in the island of Kyushu, where he discussed the issue of human security.
- Luke Oman, graduate student at the **Cook Center for Environmental Prediction (CEP)**, received a Graduate Assistantship in Areas of National Need (GAANN) Fellowship appointment from the Federal Department of Education
- Purity Kiura (**GSNB-Anthropology**) has been awarded an NSF Dissertation Improvement Grant for 2002.
- Junior Natalie Udovidchick (**SOE-Mechanical and Aerospace Engineering**) was one of 16 students chosen from a nationwide pool of applicants to receive a summer fellowship to the NASA Academy at the Goddard Space Flight Center, Maryland. Ms. Udovidchik, who serves as president of the ASME student section at Rutgers, was also awarded a Melvin R. Green Scholarship by ASME's Board of Engineering Education.
- Nicole Isaacson (**GSNB-Sociology**) is one of three recipients of postdoctoral fellowships from the Sexuality Research Fellowship Program of the Social Science Research Council, funded by The Ford Foundation.

- Senior Kimberly Kauffeld (**SOE-Industrial and Systems Engineering**) received the prestigious Material Handling Institute of America Scholarship Conveyor Product Section Honor Award (\$3,000)
- Alexandre Chan, a member of the Doctor of **Pharmacy** class of 2004, was appointed to the Student Advisory Committee of the National Community Pharmacists Association. Only eight students in the country are appointed to this committee each year and are recognized by their peers for their ability to make a fine national leader for the Association.
- Sonia S. Dharap, a graduate student pursuing a Ph.D. in the **Pharmaceutical Sciences** program under the mentorship of Assistant Professor Tamara Minko, was the recipient of the 2002 Research Achievement Award given by the American Association of Indian Pharmaceutical Scientists. Only four such awards are given each year and Ms. Dharap's work was selected from over 100 applicants.
- The Middle States Division team, led by Rutgers **Geography** graduate student Tom Mitchell, recently won the World Geography Bowl that took place at the annual meeting of the Association of American Geographers in Los Angeles. Four of the five team members are students in Rutgers' Geography graduate program: Tom Mitchell (named the competition's Most Valuable Player), Robert Donovan, Peter Kabachnik, and Julie Silva.
- Cordelia Aitkin (**GSNB-Psychology**) has won the competitive NSF Graduate Research Fellowship; five other Rutgers students won honorable mention in the competition.
- Benjamin Singer (**GSNB-Literatures in English**) was awarded an SSRC Sexuality Research Dissertation Fellowship, one of the most prestigious fellowships in the social sciences; he was one of only two students in literature disciplines to win the award.
- Mimi Katz (**GSNB-Geological Sciences**) is the 2002 recipient of the Geological Society of America's Doris Curtis Memorial Fund for Women in Science Award, for Ph.D. research with significant impact in the geosciences.
- **GSNB-Anthropology** students Jackson Njau and Nia Parson received Dissertation Fieldwork Grants from the Wenner-Gren Foundation.
- Carla MacDougall (**GSNB-History**) and Christina Lupton (**GSNB-Literatures in English**) received *Deutscher Akademischer Austauschdienst* (DAAD) Graduate Scholarships for Research in Germany.
- Jason Nikitzuk (**SOE, Mechanical and Aerospace Engineering**) was appointed an National Science Foundation Undergraduate Research Fellow for the Academic Year 2001-2002.

- Melinda Mangin (**GSE-Department of Educational Theory, Policy, and Administration, Ph.D. in Education, Policy**) was awarded a 2002-2003 American Educational Research Association/Spencer Pre-Dissertation Fellowship. She is one of 20 students nation-wide to receive this award.

## **X. ADMINISTRATION**

### *A. New Administrative Appointments*

Adesoji Adelaja, Dean of Research at Cook College and Director of the New Jersey Agricultural Experiment Station, was named Executive Dean of Agriculture and Natural Resources, Executive Director of the New Jersey Agricultural Experiment Station, and Dean of Cook College, effective June 1.

Carmen Twillie Ambar, a senior-level administrator at Princeton University's Woodrow Wilson School of Public and International Affairs and an accomplished attorney, was named dean of Douglass College, effective Aug. 12, 2002.

Michael Holcomb was appointed the University Director of Graduate and Professional Admissions following the retirement of Don Taylor after 40 years of service.

Jolie Cizewski (Professor, Physics and Astronomy) was named Vice Dean of the Graduate School–NB.

Elizabeth Grosz (FAS-NB, Women's and Gender Studies), internationally noted feminist philosopher, has assumed her position as the Blanche, Edith, and Irving Laurie New Jersey Chair in Women's and Gender Studies for Spring 2002.

## **XI. FACULTY**

### *A. The New Brunswick Faculty Body Full-time Teaching Staff*

In Fall 2002, there were 1,934 full-time faculty members on the New Brunswick campus. The overall distribution of the New Brunswick faculty at these ranks has varied little over the past several years. Approximately 64% of the full-time faculty in New Brunswick in 2002 were tenured.



TABLE 4  
FULL-TIME FACULTY, NEW BRUNSWICK ONLY  
FALL 2001/FALL 2002

RANK	FALL 2001	FALL 2002
PROFESSOR	771 (40%)	756 (39%)
ASSOCIATE PROFESSOR	490 (25%)	483 (25%)
ASSISTANT PROFESSOR	416 (22%)	415 (21%)
INSTRUCTOR/ASSISTANT INSTRUCTOR	204 (11%)	248 (13%)
OTHER	42 (2%)	32 (2%)
TOTAL	1923 (100%)	1934 (100%)

*Source: Office of Institutional Research, November 2002*

*Part-time Teaching Staff*

The size of the University's teaching staff fluctuates by semester, based on course demand, faculty leaves, and student populations. By maintaining such a flexible teaching staff, the University is able to respond to specific situations and provide the staff needed for the courses required by students. The members of the part-time teaching staff are valuable members of the community. Courses taught by skilled and experienced professionals actively involved in the field on a day to day practice level offer students an important window into and preparation for the workforce.

*B. New Faculty Appointments*

The continuing strong faculty recruitment effort in New Brunswick has resulted in the addition of 69 new clinical track, tenure-track, and tenured faculty members to the academic units and libraries of the campus. Of these appointments, 13 were tenured appointments, with 8 at the rank of Associate Professor, 3 at the rank of Professor I, and 2 at the rank of Professor II. Of the 56 clinical and tenure track appointments, 50 were at the rank of Assistant Professor and 6 at the rank of Associate Professor.

Twenty-six of the new faculty members, or 38% of the 69 new tenure-track and tenured appointments were in the Faculty of Arts and Sciences, while 11 were at Cook (16%), 7 in the Graduate School of Education (10%), 6 each in the School of Engineering (9%) and in the Ernest Mario School of Pharmacy (9%), 4 at the School of Communication, Information, and Library Studies (6%), 3 in the Mason Gross School of the Arts (4%) and in the Rutgers University Libraries (4%), 2 in the School of Management and Labor Relations (3%), and 1 in the Edward J.

Bloustein School of Planning and Public Policy (1%). Among the 13 tenured appointments, 9 were in FAS (3 in Philosophy; 2 in Computer Science; 1 in German, Russian, & E. European Languages and Literatures; 1 in Women's and Gender Studies; 1 in Economics; 1 in Chemistry and Chemical Biology); 2 were in the School of Communication, Information, and Library Studies (1 in Library and Information Science; 1 in Journalism and Media Studies); 1 in the Graduate School of Education (Learning and Teaching); and 1 in the School of Management and Labor Relations (Labor Studies and Employee Relations).

C. *Faculty Awards and Honors*

- Steven Handel (**Cook-Ecology, Evolution, and Natural Resources**) has been elected a Fellow of the Explorers Club, headquartered in New York City.
- The Institute of Scientific Information (ISI) has included Professor Ilya Raskin (**Plant Science-AgBioTech**) on its list of the 106 most cited authors in the category of Plant and Animal Science.
- Dean James W. Hughes (**Bloustein School**) was named a Distinguished Fellow of the National Association of Office and Industrial Properties (NAIOP) for 2000-2004.
- Dona Schneider (**Bloustein School-Urban Studies**) was awarded a UMDNJ Foundation Teaching Award.
- Allan H. Conney (**Pharmacy-Laboratory for Cancer Research**) was presented with the DeWitt S. Goodman Memorial Award at the 93<sup>rd</sup> Annual meeting of the American Association for Cancer Research.
- Henryk Iwaniec (**FAS-Mathematics**) received the 2002 Frank Nelson Cole Prize in Number Theory, presented every five years by the American Mathematical Society (AMS) to recognize outstanding contributions in the field.
- Carla Yanni (**FAS-Art History**) was selected for a Senior Fellowship at the Center for Advanced Study in the Visual Arts (Washington, D.C.) for the calendar year 2002-2003.
- Peter Wacker (**FAS-Geography**) was recently presented with the Richard J. Hughes award by the New Jersey Historical Commission, in recognition of his outstanding contributions to the field of New Jersey history and his many efforts on behalf of public education and historic preservation.
- Ann Fabian (**FAS-American Studies**) and Stephen Neale (**FAS-Philosophy**) have received Guggenheim Fellowships for 2002.
- David Levering Lewis (**FAS-History**) was named to the American Academy of Arts and Sciences, elected to the American Philosophical Society (APS), and received the Pulitzer

Prize (1999 and 2001) for each volume of his biography of W.E.B. DuBois. He has also received the prestigious Lamplighter Award for Civil Rights from the Black Leadership Forum, Inc.

- University Archivist Tom Frusciano (**Rutgers University Libraries**) was named a Fellow of the Society of American Archivists (SAA), the national professional association for archivists and manuscript librarians.
- Rochel Gelman (**FAS-Psychology and Center for Cognitive Science**) was named a Fellow of the Cognitive Science Society. She is one of the first five Fellows named to the Society, an honor that recognizes eminent scientists who have made outstanding contributions to the field of cognitive science.
- Charles Gallistel (**FAS-Psychology**) has been elected a member of the National Academy of Sciences.
- Liviu Iftode (**FAS-Computer Science**) was awarded a Career Award by the National Science Foundation.
- Wilma Olson (**FAS-Chemistry and Chemical Biology**) began her term as President of the Biophysical Society at the Society's 2002 annual meeting in San Francisco.
- Leslie McCall (**FAS-Sociology**) was awarded a Demos Senior Fellowship for the academic year 2002-2003. The Fellowship is funded by the Ford Foundation to support research on economic and political inequality.
- Gene Likens (**Ecology and Evolution/Institute of Ecosystem Studies**) was awarded the National Medal of Science.
- Eric Krebs (**MGSA, Theater Arts**) was honored by the Actors' Equity Association as this year's recipient of the Rosetta LeNoire Award, which recognizes outstanding contributions made toward increasing diversity within the American Theater.
- Randy James (**MGSA-Dance**) received the New Jersey Governor's Award in Arts Education for 2002, sponsored by the New Jersey Department of Education.
- Dr. Harold Hafs (**Cook-Animal Sciences**) is the recipient of the 2002 National Association of Animal Breeders Pioneer Award.
- Angus Kress Gillespie (**FAS-American Studies**) was awarded a Fulbright Scholar grant to lecture at Agder University College in Norway for the 2002-03 academic year.
- Emma Amos (**FAS-Visual Arts**) received the Van Der Zee Award from Brandywine Workshop and Center for the Visual Arts at the Kimmel Center, Philadelphia.

- Jerry Fodor (**FAS-Cognitive Science and Philosophy**) was named a Fellow of the Cognitive Science Society in recognition of his scholarship and significant role in the development of Cognitive Science at Rutgers as well as his international leadership in the field. Professor Fodor is the second Fellow ever named by the Society.
- Martha Greenblatt (**FAS-Chemistry**) was awarded the Francis P. Garvan-John M. Olin Medal by the American Chemical Society.
- Herbert Neuberger (**FAS-Physics and Astronomy**) was elected a Fellow of the American Physical Society.
- Carol Kuhlthau (**SCILS-Communication**) has received the Library and Information Technology Association's 2002 Frederick G. Kilgour Award for Research in Library and Information Technology.
- Professor Tefko Saracevic (**SCILS-Library and Information Science**) received a Fulbright Senior Specialist grant in Library Science from the J. William Fulbright Foreign Scholarship Board (FSB) and the Council for International Exchange of Scholars (CIES) for the Summer 2002 in Croatia.

## **XII. ACADEMIC PROGRAMS**

### *New Academic Programs and Program Changes*

Bachelor of Science in Astrophysics (Faculty of Arts and Sciences-New Brunswick)

Doctor of Philosophy in Women's and Gender Studies (Graduate School-New Brunswick)

### *Conversion of Option to Degree Program*

Existing Medicinal Chemistry option within the Master of Science and Doctor of Philosophy in Pharmaceutical Science converted to an independent graduate program in Medicinal Chemistry (Graduate School-New Brunswick)

### *New Articulated Program*

Articulated bachelor's/Doctor of Medicine degree program established with the University of Medicine and Dentistry of New Jersey-New Jersey Medical School (university-wide)

### *External Reviews*

External Reviews are an important element in ensuring excellence in all New Brunswick

programs, and each year a number of academic departments and programs are reviewed. For each external review, three to five faculty experts from universities around the country are invited to campus for three days to assess the faculty, the undergraduate and graduate curricula, and the research, teaching, service, and outreach activities of a department or school. In 2002, the following academic programs in New Brunswick were reviewed:

Cook Biochemistry & Microbiology  
 FAS Economics  
 FAS cluster review of Physics & Astronomy, New High Energy Theory Center, Lab for Surface Modification, and the Bureau of Physics Research.

In 2003, the following reviews are scheduled to take place:

Cook Food Science,  
 Cook Human Ecology, and  
 Cook Ecology and Evolution.

### XIII. RESEARCH AND EXTERNAL FUNDING

In 2002, grants awarded to faculty and programs at the University reached an all-time high of \$242 million. The New Brunswick campus played a major role in achieving this extraordinary level of support. The large number of significant awards in highly competitive areas testifies to the excellent research, scholarship, and intellectual leadership of the faculty.

	UNIVERSITY-WIDE		NEW BRUNSWICK ONLY	
	FY2001	FY2002	FY2002	%
FEDERAL	\$123,025,352	\$132,931,685	\$120,929,064	91%
STATE OF NEW JERSEY	\$ 36,403,646	\$ 33,775,593	\$ 29,514,237	87%
CORPORATIONS	\$ 17,337,216	\$ 17,020,349	\$ 15,771,521	93%
FOUNDATIONS/OTHERS	\$ 45,596,066	\$ 58,642,074	\$ 48,845,137	83%
<b>TOTAL</b>	<b>\$222,362,280</b>	<b>\$242,369,701</b>	<b>\$215,059,959</b>	<b>89%</b>

Faculty members university-wide were successful in receiving a total of \$242,369,701 in external awards for research, training, and public service projects during FY2002. Federal support for research and development rose to \$132 million from \$123 million in the previous year. State support for research and development fell from \$36 million in FY2001 to \$33 million in FY2002, a reflection of the State's budget constraints in this fiscal year. Foundation support rose again this year, from \$45 million in FY2001 to \$58 million this year, a continuation of the rising trend of recent years. Table 5 shows the comparisons for each year and also the significant amount of funding that was brought in by the New Brunswick Campus. As in past years, public funding remained the mainstay of support for academic research and development. Overall, the

\$132 million in Federal support derived primarily from the National Institutes of Health (NIH), the National Science Foundation (NSF), and the Department of Defense (DOD). Table 6 indicates the amounts awarded by these three organizations, both university-wide and on the New Brunswick campus.

TABLE 6  
THREE HIGHEST SOURCES OF FEDERAL FUNDING  
FY 2002

	UNIVERSITY-WIDE	NEW BRUNSWICK	% NEW BRUNSWICK
NIH	\$45,926,312	\$41,504,757	90%
NSF	\$36,249,022	\$34,059,231	94%
DOD	\$10,895,281	\$10,868,846	99%

A significant number of faculty members receive large awards from Federal Agencies and corporations every year. During the 2001-2002 academic year, 53 faculty and staff investigators were awarded grants that exceeded \$500,000.

TABLE 7  
FY 2002 INDIVIDUAL AWARDS TOTALING OVER \$500,000  
BY NEW BRUNSWICK PRINCIPAL INVESTIGATORS

PRINCIPAL INVESTIGATOR	AWARD AMOUNT
Barnett, Steven W.	\$5,310,000
Berman, Helen M.	\$5,205,776
Montelione, Gaetano T.	\$4,926,119
Larrousse, Paul J.	\$3,991,200
Muller, Michael R.	\$3,306,820
Mechanic, David	\$3,256,636
Holm, Robert E.	\$3,000,000
Hallman, William K.	\$2,500,000
Reinhard, Susan	\$2,435,621
Palmer-Keenan, Debra	\$2,420,757
Taghon, Gary L.	\$2,000,001
Sarkar, Dipak K.	\$2,000,000
Shearer, Peter W.	\$1,894,543
DeLuca, Michael P.	\$1,841,750
Tischfield, Jay	\$1,649,526
Gerecke, Donald	\$1,356,168

TABLE 7 (CONTINUED)

PRINCIPAL INVESTIGATOR	AWARD AMOUNT
Holm, Robert E.	\$1,209,200
Cook, Deborah H.	\$1,200,000
Flanagan, James	\$1,100,000
Yang, Chung S.	\$1,097,872
Breslauer, Kenneth J.	\$1,077,623
Janes, Harry W.	\$1,000,000
Devlin, Thomas J.	\$ 999,325
Danforth, Stephen C.	\$ 932,704
McDonald, Margaret	\$ 916,077
Sennott, Gretchen	\$ 892,177
Mechanic, David	\$ 871,234
Messing, Joachim W.	\$ 850,000
Ramos, Joe William	\$ 847,000
Kato, Naohiro	\$ 832,363
Wailoo, Keith A.	\$ 819,727
Seitzinger, Sybil	\$ 798,000
Janes, Harry W.	\$ 760,000
Yang, Chung S.	\$ 724,961
Iftode, Liviu	\$ 704,926
Barone, Joseph A.	\$ 697,383
Tischfield, Jay	\$ 690,429
Barone, Joseph A.	\$ 675,172
Schneider, Dona	\$ 675,013
Arnold, Edward V.	\$ 662,061
Oudemans, Peter V.	\$ 650,000
Tischfield, Jay	\$ 644,255
Bainbridge, Lori	\$ 643,533
Grassle, J Frederick	\$ 616,000
Knight, Doyle D.	\$ 610,000
Davidson, Mary	\$ 599,000
Lutz, Richard A.	\$ 594,862
Montelione, Gaetano T.	\$ 555,000
Rosen, Robert T.	\$ 550,000
Reinhard, Susan	\$ 542,714
Imielinski, Tomasz	\$ 527,000
Petronko, Michael R.	\$ 513,434
Nassif, Hani	\$ 513,272

Source: Office of Research and Sponsored Programs

TABLE 8  
SUMMARY OF AWARDS BY DISCIPLINE, FY2001 AND 2002  
NEW BRUNSWICK CAMPUS

DISCIPLINE	FY2001		FY2002		
	NUMBER OF AWARDS	TOTAL \$ AWARDED	NUMBER OF AWARDS	TOTAL \$ AWARDED	% CHANGE
Biological Sciences	222	\$41,846,853	214	\$47,274,957	13.0%
Professional Schools	336	\$36,078,824	325	\$44,082,770	22.2%
Agricultural Sciences	184	\$21,637,059	222	\$31,220,519	44.3%
Engineering Sciences	224	\$26,798,329	185	\$23,790,613	(11.2%)
Social Sciences	146	\$19,941,192	143	\$21,500,609	7.8%
Environmental Sciences	165	\$21,978,926	153	\$19,843,958	(9.7%)
Math and Computer Sciences	95	\$11,198,610	112	\$11,835,326	5.7%
Physical Sciences	98	\$ 9,199,094	95	\$ 9,002,950	(2.1%)
Other	50	\$ 5,868,765	48	\$ 3,515,302	(40.1%)
Humanities	33	\$ 1,467,478	33	\$ 2,630,774	79.3%
Arts	10	\$ 258,850	11	\$ 362,181	39.9%
<b>TOTAL</b>	<b>1563</b>	<b>\$196,273,980</b>	<b>1541</b>	<b>\$215,059,959</b>	

*Technology Transfer*

University income from royalties generated by patents can be leveraged by the University to further its research and development efforts. The Office of Corporate Liaison and Technology Transfer (OCLTT) reports that Rutgers ranks high among public AAU institutions in terms of the dollar amount of royalties received. In FY2002, the University's patenting and licensing activity continued to grow: 138 new invention disclosures were submitted to OCLTT, 110 U.S. patent applications were filed, and 29 new U.S. patents issued. The value of royalties received in FY2002 (\$3,953,111) and publicly traded equity acquired through licensing at the end of FY2002 (\$631,375) exceeds \$4.5 million. Cumulatively, 45 new companies have been spun off from Rutgers, based on Rutgers' technology, and another 3 are in negotiation. A significant portion of this income was derived from patents and licenses developed by New Brunswick faculty.

*Research: Some Examples*

The Rutgers-New Brunswick faculty continues to create new information, promote scientific inquiry, make new discoveries, generate new resources, and educate students. The faculty continues its engagement in research that furthers the goals of the Strategic Plan, bridges the disciplines, and builds partnerships with other universities and industries. Rutgers remains a leader in New Jersey in the use of high technology to serve the State and to demonstrate its benefits to its citizens. A few faculty research projects are described below to demonstrate the mutually beneficial relationship between the academy, the government, and industry that serves the public interest.



- WellGen, Inc., a Rutgers “spin-off” company, has made an investment deal with the Danisco Venture Group, a unit within Danisco A/S, one of the world’s largest producers of ingredients for the food and beverage industry. WellGen, Inc. is developing proprietary disease prevention products for the human food, pet-food, dietary supplement, and human therapeutic markets using recent advances in the ability to identify genes associated with specific human or animal diseases and to identify foods that turn these genes on or off. WellGen, Inc. is using a biotechnology-based process to screen the effect of food and related substances on the expression of genes associated with cancer and other diseases. The screening technology was developed and patented at Rutgers’ **Center for Advanced Food Technology** and the Robert Wood Johnson Medical School.
- The **Center for Advanced Food Technology** (CAFT) has been awarded two 7-year contracts related to the Department of Defense's Combat Ration Network for Technology Implementation (CORANET) project. The two contracts, which total \$19,250,000 over seven years, were awarded by the Defense Logistics Agency's Defense Supply Center, based in Philadelphia. CAFT has been designated a CORANET Research Partner, along with the University of Georgia, Ohio State University, Washington State University, Texas A&M, the University of Tennessee, and the Illinois Institute of Technology. The Partners will develop technologies for producing combat rations—production methods that will set benchmarks for cost, quality, and cycle time and that will be viable in both military and civilian markets. CAFT’s Food Manufacturing Facility will be used as the demonstration facility for all the technologies developed by the CORANET Partners.
- The **Edward J. Bloustein School of Planning and Public Policy**’s Voorhees Transportation Policy Institute’s (VTPI) Bicycle and Pedestrian Resource Project has been approved by the NJ Department of Transportation (NJDOT) for one-year renewal of \$207,000. This project will continue to develop and publish a body of information and research about mobility and safety issues for pedestrians and bicyclists.
- The National Institutes of Health has awarded a grant of \$1.035M to support the project, "Activated Macrophages and Ozone Toxicity," Debra L. Laskin (**Ernest Mario School of Pharmacy**). This project involves studies on the effects of inhaled irritants on rat macrophage and epithelial cell functional and biochemical responsiveness.
- Phytomedics, Inc., a private biopharmaceutical company based in Dayton, New Jersey, signed a five-year, \$4.3M research and licensing agreement to continue its working relationship with Ilya Raskin (**Plant Science-AgBioTech**) in exchange for exclusive rights to license the technologies developed in Dr. Raskin’s laboratory. The products under development include botanical drugs and plant-produced recombinant proteins. Two botanical drug candidates are currently entering clinical trials. The first shows promise for the treatment of autoimmune disorders and the second has shown the ability selectively to stimulate programmed cell death in tumor cells and protect the body from a range of carcinogenic substances. Another core area of Phytomedics’ business is the plant-based production of recombinant proteins such as antibodies, cytokines, and

vaccines. Phytomedics is currently working on the production of a variety of pharmaceutical proteins in cooperation with several large pharmaceutical companies.

- A team of Rutgers University scientists—Mark Croft (FAS-Physics and Astronomy), Richard Mammone (SOE-Electrical and Computer Engineering), William Mayo (SOE-Ceramics and Materials Engineering), and Joseph Wilder (Center for Advanced Information Processing—has developed a device that soon could be used at U.S. airports to detect bombs and explosives hidden in luggage. Through x-ray diffraction, the device analyzes the chemical makeup of items inside suitcases, and can pick out bombs and explosive materials. The Federal Aviation Administration has funded this project since 1993.
- Steven Barnett (**GSE-Educational Theory, Policy, and Administration**) was awarded \$5.3 million from the Pew Charitable Trusts to support the “National Institute for Early Education Research.”
- James Katz (**SCILS-Communication**) received a \$297,000 grant from the Robert Wood Johnson Foundation to investigate human rights issues in tobacco control policy.

#### **XIV. IMPROVEMENT TO FACILITIES**

The University embarked on the development of a comprehensive physical master plan for advancing core academic goals of the strategic plan. The master plan will provide a comprehensive vision and useful guidelines for long-term growth. Planning guidelines will address improving facilities and sites for new construction in the context of enrollment demand and research capacity. The first phase of the process was completed with the Paulien Report, which provided an analysis of current space conditions and models for expansion using national benchmarks in higher education for meeting current enrollment and expansion.

The consulting firm of Ayers/ Saint/Gross is assisting the University during the second phase of the master planning process. An assessment has been made of the strengths and weaknesses of each campus in discussions with representatives of the University community in Camden, Newark and New Brunswick. Planning guidelines were developed for dealing with critical issues as future areas of development, parking and transportation strategies, housing, strategic partnerships with local communities and the quality and design of out-door spaces. This process has provided a valuable opportunity for considering the development of the New Brunswick/Piscataway Campus consistent with the University’s Strategic Plan. A preliminary report of the New Brunswick/Piscataway physical master plan will be presented to the Board of Governors during the spring 2003 semester.

Significant improvements were made to facilities during the year. The Higher Education Capital Improvement Program (HECIP) has been a major initiative with an overall budget of \$200 million, including an allotment of \$169 million from the State. The program will reduce the

growing backlog of deferred maintenance and code compliance requirements of the University that are estimated to be \$500 million. HECIP has moved forward on schedule and on budget with 75 building projects completed or in progress. A substantial portion of the HECIP work was completed in core classroom buildings over the summer 2002. The program is scheduled for major completion by the end of the 2003 year.

Five major new projects are underway. These new construction projects are:

- Human Genetics /Biomaterials Building providing training and laboratory facilities for the **Department of Genetics** led by Dr. Jay Tischfield and the New Jersey Center for Biomaterials headed by Dr. Joachim Kohn;
- A Biomedical Engineering Building containing specialized classroom, multi-media conferencing and research laboratories for **Biomedical Engineering**;
- An Aquaculture Facility that will be used to conduct training and research for development of aquaculture as a large-scale industry in New Jersey;
- A Public Safety Building developed in partnership with the New Brunswick Development Company to revitalize the George Street Corridor with the occupancy of Public Safety, Parking and Transportation Services and other related Rutgers organizations;
- Neilson Dining Hall renovations that will completely modernize the servery and kitchen with enhanced food service. The four projects (excluding the Public Safety Building that will be leased to the University) have a combined project total of nearly \$67 million.

Several notable renovation projects for supporting the teaching and research of faculty are near completion, e.g., rooms in the School of Pharmacy were renovated to create a Physical Assessment and Patient Counseling Teaching Laboratory, a computer modeling laboratory, tissue culture laboratory and a research laboratory in Pharmaceutics for Dr. Tony Kong. The property at 151 Ryders Lane was renovated to complete teaching and outreach facilities for the Douglass Developmental Disabilities Center. A major renovation of the main floor of the Mabel Smith Douglass Library is underway. In addition, the School of Engineering has embarked on improving student advising and counseling services that will be accompanied by the renovation of the Office for Student Development. Landscaping of the Bishop Quad was completed to upgrade the appearance of the student housing area along College Avenue. A bikeway was constructed along Cedar Lane and Busch and Livingston Campuses. The Waksman Laboratory, located in Martin Hall, has been refitted as a conference and seminar room. The room has been chosen the American Society for Microbiology's first National Historic Milestone Site.

University Facilities is making good progress on the state mandated housing fire safety program, which requires schools and universities to install fire suppression systems in every student residence. The University plans to modify fire alarm systems in 159 buildings at a cost of \$35 million by 31 July 2004. University renovations are proceeding on schedule with the mandated milestone dates.

