

New Brunswick Campus

Self-Study

for the

1998 Accreditation Visit

of the

Middle States Association

ACKNOWLEDGMENTS

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1. OVERVIEW AND MISSION

INTRODUCTION

The New Brunswick Campus Overview Committee for the Middle States Self-Study met from November 1996 through June 1997. The charge to the committee was to provide an overview of the operations of the Rutgers-New Brunswick campus in light of its current mission and goals. The 29-person committee represented a diverse set of university units, including faculty from a variety of academic departments and schools, staff from administrative and service units, and graduate and undergraduate students from several colleges. We divided into subcommittees according to tasks outlined in the charge, and represented by the sections of this report: New Brunswick Overview and Mission, Financial Overview of the Campus, New Brunswick Faculty, Curriculum and Assessment, Student Services: Recruitment to Graduation, Academic Support Services: Libraries and Computing, and Publications and Communications. (Appendix 1 details the charge to the committee and the committee and subcommittee memberships.) Subcommittee chairs, members, and staff drafted sections, which were then reviewed by the entire New Brunswick Overview Committee and the Middle States Steering Committee. Each subcommittee drafted recommendations, which the entire committee then debated and resolved. The committee presented its final report in December 1997. During the course of its work, the committee consulted widely with various campus constituencies, including faculty, administrators, staff, and students, and reviewed all relevant university reports. (Appendix 2 provides a list of constituencies consulted and documents reviewed.)

In considering the New Brunswick campus, the committee was repeatedly impressed by the evidence of excellence everywhere, and by the ambitiousness, seriousness of purpose, and dedication of various campus constituencies to making the university still better. The most visible evidence of Rutgers' distinction was its 1989 admission to the Association of American Universities (AAU). The high visibility of our faculty—whether in grants they receive or awards they have earned—is the foundation of our AAU membership and of the university's ongoing distinction. We cannot remark all of their achievements, but a brief survey will indicate the quality of the New Brunswick campus and its faculty.

- External funding on the New Brunswick campus has increased from approximately \$78.2 million in 1988 (with 39% from federal sources) to \$134.5 million in FY 1997 (with approximately 61% from federal sources). Awards from corporations have also increased over this period, while the state's share of external funding declined. (See Section 2.)
- New Brunswick is distinguished by having numerous faculty who are members of national academies. In 1995, Rutgers-New Brunswick ranked 12th among public AAU members in the number of faculty members in the National Academy of Sciences (11 faculty), 10th in the National Academy of Engineering (5), 5th in the Institute of Medicine (5, in a university without a medical school), and 11th in the American Academy of Arts and Sciences (13), for an overall ranking of 10th among public AAU members. (See Section 3.)

- The 1993 National Research Council rankings show nine Rutgers-New Brunswick programs in the top quartile, including (to use NRC's program titles) biochemistry and molecular biology; computer science; ecology, evolution and behavior; English; history; mathematics; philosophy; physics; and psychology. (See Section 3.)
- Rutgers-New Brunswick faculty have also been the recipients of many prestigious awards, including several Fulbright, Guggenheim, Rockefeller, and NEH grants, awards for outstanding books in art history, history, literary criticism, industrial relations, ecology, and political science, and numerous awards for outstanding research. In addition, one faculty member received the CASE Outstanding Professor of the Year award; another was appointed chair of the U.S. Nuclear Regulatory Commission; four Rutgers faculty received prestigious MacArthur awards; two more received the National Medal of Science; and one won the Pulitzer Prize in literature. (See Section 3 and resource documents.)

Many additional initiatives have continued to strengthen and enhance the quality and stature of the campus.

- A capital program of \$750 million financed by state and federal appropriations and gifts and grants (Fund for Distinction)
- A significant new building program: Civic Square for Mason Gross, the Bloustein School, and the Center for Urban Planning Research; Werblin Center; University Center at Easton Avenue (apartments); extension to Alexander Library; Scholarly Communications Center at Alexander Library; Art Library; Chang Library; co-generation plant
- Significant computing initiatives: computer hubs on each of the three campuses for undergraduates have brought the computer-student ratio from 1:200 in 1993 to 1:33 in 1997; networking of many departments and offices; a university-wide plan—RUNet 2000—promises to equip the university adequately for the next century
- Major reexaminations of the undergraduate curriculum and of undergraduate education in the context of a research university
- Reorganization of Faculty of Arts and Sciences and the undergraduate liberal arts colleges, bringing faculty and student academic work together and allowing new expansion of college honors programs through FAS departmental honors courses
- The establishment of an Enrollment Management Office to facilitate the application, admission, and recruitment process for undergraduates
- Continuing support of Faculty Council and other faculty advisory groups
- A faculty-developed strategic planning process that produced reports of the university's work in a variety of areas, and proposed projects and goals for the university in the next 10 years

- A Multicultural Blueprint that recognizes the changes in the demographic makeup of our students (and of the state's population), and articulates ways to ensure that our diversity serves our academic community rather than distracting or dividing it and
- The ongoing self-scrutiny by faculty groups, faculty/administration groups, and faculty/student groups.

This New Brunswick self-study is part of a continuous process of evaluation and self-scrutiny. Our willingness continually to reexamine our curriculum, undergraduate education in the context of a research university, our college system, our strategic planning processes, and our library and computing needs is a cornerstone of our campus culture. This report attests to our sense of our strengths and our desire to make our campus better still. Nothing provides better witness to the vigor of Rutgers-New Brunswick than its ability to analyze what it does well and to determine what challenges we must still confront.

The present report thus details what we have learned from our concentrated study of Rutgers-New Brunswick, describes our recent successes and continuing challenges, and presents our recommendations for the future. Throughout the following pages, we have given special focus to the challenges that have been produced by our achievements, challenges we will resolve as we move into the top quartile of AAU institutions.

GENERAL DESCRIPTION

Chartered in 1766 as one of the original colonial colleges, New Brunswick is the founding site and Carnegie Classification Research I campus of Rutgers, The State University of New Jersey. As the university's sole Research I campus, New Brunswick provides instruction, research, and public service of the highest quality. In the fall 1996, the campus had 33,862 students (25,939 undergraduates and 7,923 graduate students), 1,658 full-time tenured and tenure-track faculty, 4,617 staff, and 615 buildings situated in four locations--Cook/Douglass, College Avenue, Busch, and Livingston. Other instructional lines as of December 1996, included 279.50 full-time equivalents (FTEs) for teaching assistants (TAs), 19.44 for graduate assistants (GAs), 32.59 for postdoctoral students, and 97.96 for part-time lecturers (PTLs).

As shown in Appendix 3, Rutgers-New Brunswick has 12 faculty units, the largest of which is the Faculty of Arts and Sciences (FAS), created in 1981 when the faculties from the four separate liberal arts colleges (Douglass, Livingston, Rutgers, University) merged. FAS now offers instruction in 34 departments and programs, for both arts and sciences majors and for students enrolled in professional schools. In addition to FAS, five undergraduate professional schools have separate faculties and offer undergraduate instruction: Cook College, Mason Gross School of the Arts, College of Engineering, College of Pharmacy, and Social Work. Several schools offer major programs of study through the undergraduate colleges: E.J. Bloustein School of Planning and Public Policy; School of Business; School of Communication, Information and Library Studies; School of Management and Labor Relations; School of Social Work; and the Mason Gross School of the Arts.

Additionally, the Graduate School of Education, the School of Business, and the Edward J. Bloustein School of Planning and Public Policy offer combined bachelor's and master's five-year degree programs.

Undergraduate enrollment and housing at New Brunswick remain organized into four undergraduate liberal arts colleges: Douglass College (the university's college for women), Livingston College, Rutgers College, and University College (the university's evening college). In addition, undergraduates also study at Cook College, the university's land-grant institution. The New Jersey Agricultural Experiment Station is a legislatively established, statewide research unit associated with Cook College, with a mandate to improve the quality of life in the state by focusing on environmental, marine, food, agricultural, biotechnological, and life sciences. With the reorganization of the New Brunswick campus in May 1996, the reporting relationship for Douglass, Livingston, Rutgers, and University colleges shifted to the dean of FAS. Douglass, Livingston, and Rutgers are residential colleges, offering a variety of living accommodations; University College students are commuters. Undergraduates enrolled in the professional schools affiliate with one of the residential colleges for housing and student services.

With the May 1996 reorganization, the dean of FAS also became dean of the Graduate School-New Brunswick, the only Ph.D.-granting unit in New Brunswick. (See Appendix 4.) Efforts are currently underway to provide increased authority to unit deans for the graduate programs that fall under their disciplinary responsibility. While degree requirements, student support services, and oversight for graduate education will remain the principal responsibility of the dean of the Graduate School-New Brunswick, the unit deans will have authority for allocation of fellowships and the appointment of graduate program directors. Additionally, a proposal is under consideration to eliminate the New Brunswick-wide "graduate faculty," since faculty governance of graduate programs can be more appropriately implemented within the individual schools. The planning and implementation of these new organizational structures are still in progress.

In addition to the Graduate School-New Brunswick, the graduate/professional schools offer a wide range of professional doctoral and master's degrees (see Appendix 4 for a complete list of professional units and degrees offered.) These units include the College of Pharmacy; the Graduate School of Education; the Graduate School of Applied and Professional Psychology; the E.J. Bloustein School of Planning and Public Policy; the School of Communication, Information, and Library Studies; the School of Management and Labor Relations; the School of Social Work; and the Mason Gross School of the Arts. The newly merged Faculty of Management offers New Brunswick graduate business degrees through Rutgers-Newark.

In addition to the degree-granting units, New Brunswick is the home of many centers, bureaus, and institutes (CBIs) that have been developed to enhance the research focus in specified areas and to provide increased opportunities for interdisciplinary research. The number of these CBIs has continued to grow, to more than 100 at present (see Appendix 5 for a list of CBIs and their reporting relationships.) Grants and contracts received by faculty members on the New Brunswick campus for FY 1997 totaled \$134.5 million.

Undergraduates at New Brunswick enroll in 97 academic disciplines. Graduate students enroll in 76 distinct graduate/professional programs, and the Ph.D. is available in 55 of these fields. Rutgers-New Brunswick has 13,815 residence hall and apartment spaces for undergraduate and graduate students.

New Brunswick's rich traditions, its size, diversity, and comprehensive academic programs, place it in a strategic leadership position within higher education in New Jersey and in the nation. The exceptional quality of its faculty and programs in numerous areas and its momentum toward increased distinction provide rich opportunities for the campus to continue its recent successes. With a distinguished history in undergraduate and graduate education as well as in research, New Brunswick offers a plethora of learning environments that can benefit students at all levels and with diverse educational goals.

MISSION AND GOALS

The overall mission of the Rutgers-New Brunswick campus is to promote excellence in: (1) graduate and undergraduate education; (2) research and scholarship; and (3) service to the community, state, and nation, (See Appendix 6 for the New Brunswick mission statement.) The committee interprets this mission as follows.

- To introduce students to the most advanced knowledge and to provide an environment that will sustain and foster the growth of the campus as a productive and creative research force in the university, state, and nation;
- To maintain a commitment to excellence in graduate and undergraduate education through the provision of superior instruction and academic support services, and by attracting the most highly qualified students, faculty, and staff;
- To provide a challenging and supportive educational environment, in the classroom and cocurriculum, one that encourages students to be active seekers of knowledge, integrators of that knowledge, and critical examiners of their own ideas and beliefs;
- To assist students in the development of character and an appreciation of value in the moral and aesthetic realms;
- To promote the expansion of an institutional ethos that celebrates diversity and cultivates respect for the individual, and fosters a sense of community and dedication to serving humanity;
- To increase the level of distinction of our research, instructional, and service programs;
- To enhance the quality of life in the state of New Jersey through the provision of continuing education, public service programs, and related research that will aid the citizenry in such diverse areas as the arts, public policy, education, business and industry, agriculture, and local and state governmental bodies.

CAMPUS ADMINISTRATION AND ACADEMIC REORGANIZATION

The New Brunswick campus is administered through both central university offices and campus-based operations. Many of the major academic and support services are administered centrally. (See Section 2). For example, admissions, financial aid, parking, housing and dining, and the registrar are coordinated at the university level. Prior to 1996, the New Brunswick provost oversaw campus operations, supervised the academic units, and acted as the campus' chief academic officer and liaison to the central administration. In May 1996, President Lawrence announced a comprehensive restructuring of the academic administration of the New Brunswick campus. While retaining his university-wide responsibilities, the university vice president for academic affairs took responsibility for the academic and administrative responsibilities of the New Brunswick campus. The deans of academic units, who formerly reported to the New Brunswick provost, now report directly to the university vice president for academic affairs. These include the dean of the FAS and the deans of the 10 New Brunswick professional schools. The dean of the School of Business reports with a dotted-line relation to the university vice president for academic affairs for New Brunswick issues and to the provost of the Newark campus for direct operations.

As noted above, this same reorganization changed the reporting relationships of the deans of the four undergraduate liberal arts colleges, and the Graduate School-New Brunswick, to the dean of the FAS (who also became dean of the Graduate School-New Brunswick). One benefit of this restructuring was to reunite the faculty with their students, both undergraduate and graduate, for the first time since the 1981 reorganization. As Appendix 5 makes clear, the campus CBIs that had formerly reported to the New Brunswick provost now report either to the university vice president for academic affairs (if they span academic units), or to the appropriate dean or department chair (if they exist within one academic unit). (Appendix 5 provides the organization chart of the Office of the University Vice President for Academic Affairs.)

The administration designed these changes in reporting relationships to simplify the administrative structure and increase the authority and autonomy of the academic deans. Under the guiding principles of the reorganization, deans now have more autonomy, authority, and flexibility with respect to their hiring decisions, their personnel, and their budgets. These changes were put into place to allow deans to better manage their individual units, and to be more responsive to the needs of their students and faculties. This increased autonomy goes hand-in-hand with increased accountability: deans report to the university vice president for academic affairs in detail on the decisions they have made and the actions they have taken in all of the areas under their jurisdiction. Although it is too early to know to what extent these benefits will be realized, the deans we talked with were optimistic, agreeing that the new structure was both more effective and more efficient.

The administrative reorganization of the campus has affected New Brunswick undergraduates primarily through a closer working relationship between the FAS and the four liberal arts colleges. Early signs of increased cooperation are evident in such areas as academics, admissions, and recruitment. For example, FAS-sponsored agreements among the four undergraduate colleges have already produced more uniform academic policies and procedures, thus clarifying some of the

confusion about standards and requirements across the colleges and New Brunswick-wide honors courses. For graduate students, and for the faculty who instruct them, there is the potential for increased benefits as well. The move of graduate authority and resources to the academic deans promises greater coordination and benefits to graduate programs.

Although preliminary signs are positive, it is still too early to know the full consequences of the reorganization or to have fully assessed its impact. Further adjustments in working relationships are likely as various campus constituencies gain experience with the new structure. Some faculty are concerned that interunit communication might be reduced with the new organizational structure. As well, in some cases, CBIs maintain uneasy relations with departments (e.g., which unit is to administer grants and receive indirect cost returns), especially as they have had to compete for resources in a time of declining budgets. Input from the deans, directors, faculty, and students regarding what is working and what needs to be changed is ongoing. Assessment of the campus's experiences under this administrative reorganization will continue into the 1997/98 academic year.

GOVERNANCE

University Governance Structures

The New Brunswick campus operates in the context of the university governance structure. This is all the more salient for New Brunswick because the central administration is located on this campus. The principal authority for institutional decision-making, including the hiring of the president, rests with the Board of Governors. The Board is composed of 11 voting members, six appointed by the governor and five elected by the University Board of Trustees. The president sits on the Board *ex officio* without vote; two faculty members and one student are elected by the University Senate as nonvoting representatives. (See Appendix 7 for listings of the 1996/97 Board of Governors and Board of Trustees.)

The University Board of Trustees serves in an advisory capacity to the university administration and the academic units. The Board of Trustees consists of 59 voting members, including members of the public, alumni/nae, and three student members. In addition, two faculty members and two students serve in a nonvoting capacity as elected representatives of the University Senate and the president serves *ex officio* and without vote.

The Agricultural Experiment Station has its own advisory board, the Board of Managers, which advises the executive director on program development in research and cooperative extension, and serves as a primary liaison between the Experiment Station and its county constituencies.

The representational university-wide governance body at Rutgers is the University Senate. The Senate is composed of elected faculty, student, and alumni/nae representatives and administrators. The Senate has specified legislative and advisory responsibilities for diverse areas of university governance. (See University Regulations and Procedures, Book 2, for a complete description of the University Senate.)

Faculty Participation in Campus Governance

Within this larger framework of university governance, New Brunswick faculty participate in campus governance in several additional ways: as elected representatives to the Faculty Council, the principal faculty governance body; through the faculty units that provide instruction; through the legislative bodies of the undergraduate colleges; and finally through appointive service on standing and *ad hoc* committees and task forces established by the president or other members of the university's central administration. (See also Section 3 re Faculty Governance.)

The New Brunswick Faculty Council was created in 1989 in response to concerns raised in the last Middle States report that no effective mechanism existed to represent the faculty's voice. Consisting of elected faculty representatives from every academic unit on campus, the Faculty Council was established as advisory to the Provost. (See Appendix 8 for a list of Faculty Council's 1996-97 Executive Cabinet and committee structure.) Until 1996, the Faculty Council's committee structure worked closely with the Office of the Provost to provide recommendations on a wide variety of academic and operational issues. With the 1996 administrative reorganization, the New Brunswick Faculty Council receives a small budget from, and advises the university administration through, the university vice president for academic affairs. The vice president and representatives from the New Brunswick Deans' Council attend the monthly meetings, and work with the Council's Executive Cabinet, to facilitate exchange of information and ideas.

As specified in individual department and school bylaws, and in the routine everyday responsibilities of their departments, the faculty have responsibility for many academic and curricular issues and policies. Often, specialized accreditation agencies related to individual disciplines or schools require that faculty play the central role in establishing the curriculum and other academic matters within their units. Departmental administrators, such as chairs and vice-chairs, typically carry out the day-to-day administrative responsibilities of departments. Because of longstanding agreements between the university and the faculty bargaining agent—the American Association of University Professors (AAUP)—chairs lack some of the discretion of their counterparts at other major universities. For example, salary assignment and merit increases are structured and constrained through negotiated union agreements: the total pool of merit money is negotiated by the AAUP, but departments make recommendations to their deans. Since May 1996, the university vice president for academic affairs meets annually with the faculty and/or chairs of each academic unit to provide direct opportunity for faculty advice and communication.

Within each school, college, and faculty there also exists a legislative body, which includes the dean and the full-time faculty who have worked at the university for at least one year.¹ These governance units may include research and extension faculty and others as designated by the legislative body itself. The largest such legislative bodies are the FAS and the Cook College Council, with analogous bodies representing each of the other professional schools. Within each undergraduate college, a body of fellows constitutes the legislative body. Among the responsibilities

¹ By university charter, this legislative body also includes (in most cases) the president and the university vice president for academic affairs.

of this legislative body are approving courses of study available in the college, rules of procedure, admissions policies, distribution and graduation requirements, and scholastic standing. The legislative bodies of faculty, and colleges and schools that maintain faculty appointments, also have the responsibility to advise on appointments, promotions, and other personnel matters. The work of these legislative bodies is often carried out through faculty committees.

Finally, faculty also participate on standing and *ad hoc* campus-wide or university-wide committees that provide guidance to Rutgers' administrators. Recent examples include search committees for campus administrators, university strategic planning committees, the RUNet 2000 Project Advisory Committee, and the Committee for the Future. Much of the work of these recent university committees spans all three Rutgers campuses, a point that has led to much concern among faculty on this campus. In various faculty forums (e.g., the Faculty Council's review of the AY 1995/96 Marketing Study), New Brunswick faculty have questioned the assumption underlying the makeup of such committees: that the three Rutgers campuses represent one unified university. The character, needs, and concerns of Camden, Newark, and New Brunswick are often quite different and the relations among the campuses are not always clear and indeed are sometimes strained and competitive. Because these university committees and their impact on disbursing resources (e.g., SROA funds for strategic planning) have not been adequately studied, New Brunswick faculty remain concerned that the costs of such a strategy to New Brunswick need clearer articulation.

Student Governing Associations

Each of the undergraduate colleges and professional schools has its own student governing association. These associations consist of elected representatives and hold general meetings open to all students of the college. While exact responsibilities vary among them, most focus on the coordination of student activities and representing the needs of students on a variety of academic and student-life issues.

New Brunswick graduate students are all automatically members of the Graduate Student Association. The group functions largely through its Council, an elected body representing every graduate program and department. The Graduate Student Association sponsors a variety of social and cultural activities for graduate students, dispenses student fee monies, and represents graduate student interests within the university and other agencies. Some of the professional schools also have separate graduate student organizations.

A Student Advisory Committee to the President meets twice each semester, and student leaders report that student participation is high. While grateful for access to the president, student leaders expressed concern that there was too much reliance on elected student officers, and that the president needed to see a greater variety of students. The president has taken account of this concern, meeting throughout the year with students in resident halls and campus centers for informal discussions.

2. FINANCIAL OVERVIEW OF THE CAMPUS

UNIVERSITY CONTEXT

The New Brunswick campus operates within an overall university structure. New Brunswick houses the largest academic units at the university, the central administration, and centralized functions such as accounting/finance, budgeting, personnel, purchasing, research and sponsored programs, summer sessions, procurement, financial aid, registrar, admissions, Rutgers University Press, and major auxiliaries that operate with university-wide budgets.

The university's operating funds exceeded \$1 billion for the fiscal year ending June 30, 1996. As Table 2.1 demonstrates, the bulk of the university's revenue comes from three major sources; student tuition and fees, support from the state of New Jersey, and federal grants and contracts make up nearly three-quarters of all revenues. About one-third of all expenditures (30.4 %) went for instructional and departmental research (see Table 2.2.) Other major expenditures were sponsored research (10.1%), student aid (16.1%), and auxiliary enterprises such as food service and dormitory housing (11.9%).

Reflecting its transformation into a major research university and admission into the AAU, Rutgers during the mid 1980s was marked by aggressive recruitment of senior faculty, the development of research centers (CBIs) through direct state funding, and a significant rise in the level of external governmental and private support. The results were dramatic improvements in the quality of departments and faculty, the quality of students, increased grants and contracts, and a major building program.

THE BUILDING PROGRAM

Since the Middle States review of 1988, the university completed a capital program of over \$750 million, financed through the issuance of university bonds, federal and state appropriations, state of New Jersey bonds, and gifts and grants. The heart of the program, known as the Fund for Distinction, comprised about \$572 million in new projects (see resource documents) including \$468 million in support of academic areas, \$76 million for housing and dining operations, and \$28 million for support of student centers.

The building momentum of the 1980s continued into the 1990s with projects totaling more than \$225 million, and is ongoing. In New Brunswick, these funds went to the following projects.

- The construction of a cogeneration plant in New Brunswick for \$21 million that was bonded and will be paid for by energy savings.

- The construction of Civic Square in New Brunswick, which now houses the E. J. Bloustein School of Planning and Public Policy, the Mason Gross School of Arts, and the Center for Urban Planning. This initiative was part of a \$42 million economic development effort of downtown New Brunswick, and was funded through a series of Economic Recovery Grants and Economic Development Authority Bonds.
- The University Center at Easton Avenue, which includes 168 student apartments, parking, a health center, and retail space, were built to reduce overcrowding at Rutgers College and to provide another investment in the development of the city of New Brunswick. The total project cost of \$55 million was shared by Rutgers, the city of New Brunswick, and Robert Wood Johnson University Hospital.
- The development of a new football stadium and soccer/lacrosse field, and track facility at a cost about \$30 million, funded by bonds issued by the Sports & Exhibition Authority of New Jersey.
- The Higher Education Trust Fund Act (HEFT) was signed into law January 1994, and provided funds to all Rutgers campuses of \$38.8 million, plus \$25 million for the Law School in Newark. The funds were used for a variety of projects at New Brunswick, including major renovations of academic buildings to the construction of new classroom space. Sixty-four percent of the HEFT funds allocated to individual campuses went to New Brunswick.
- The Equipment Leasing Fund (ELF) was signed into law June 1993. It provided Rutgers-New Brunswick (and the other two campuses) with \$19.6 million for various equipment needs. The projects range from the purchase of new computer equipment to new lab equipment. Seventy percent of the ELF funds allocated to individual campuses went to New Brunswick.

SHRINKING RESOURCES

The challenge for Rutgers has been how to manage effectively the changing budget environment that has become part of university life in recent years. The university's response is visible in the major shifts that have occurred in university funding sources. The most significant change in the past 10 years is that state appropriations dropped as a percentage of total revenues. As Table 2.3 shows, these changes are quite dramatic. As recently as 1985, state appropriations represented 50.9% of the university's budget; by 1996, that figure had declined to 35.5%. Filling the gap were government grants, contracts, and federal appropriations, which increased from 8.7% of the budget in 1985 to 22.9% in 1996. (Other university resources have remained essentially constant during the same time period.)

Adding to the burdens of declining state support, the salary program of the university (which typically mirrors the state's salary program for its employees) has been seriously underfunded, and as of 1996/97 remains totally unfunded. As shown in Figure 2.1, this underfunding during 1989/95 amounted to \$92 million.

Other major financial issues facing the university include a buildup of debt equal to about \$460 million with an annual debt service of \$39 million (attributable mainly to the issuance of bonds for the building program). The university recognizes that it cannot extend its indebtedness beyond those projects currently planned (\$25 million for the Rutgers-Newark Law School and about \$20 million for wiring the infrastructure as part of the RUNet 2000 project) without the infusion of significant unrestricted resources. This limitation of the capacity of the university to borrow severely constrains the funding of new capital programs.

In terms of future infrastructure needs, one of the most promising new initiatives is the RUNet 2000 project, designed to wire the classrooms, offices, and residence halls across the university. The cost estimates for this project are in the \$100 million range. While the need to accomplish RUNet 2000 is not in dispute, the resources needed to achieve it are substantial and, in the context of the borrowing constraints discussed above, the challenge formidable. Two RUNet 2000 committees are currently examining the issues of financing and priority setting. (See Section 6 for details.)

In 1991, the university began a facilities condition audit of all its major buildings. The audit identified a backlog of deferred maintenance, capital renewal requirements, and plant adaptation to meet various code requirements, such as the Americans with Disabilities Act, and identified a funding requirement in excess of \$350 million. The ability of the university to fund this backlog has been greatly diminished by reduced support from the State of New Jersey.

IMPACT IN NEW BRUNSWICK

Within the larger university context, New Brunswick shared in both the successes already described and the problems of shrinking state resources. Over the past six to seven years, the New Brunswick campus coped with the lack of consistent state funding, and hence shrinking state resources, by reducing academic and support services budgets, and by shifting some expenses to auxiliary or fee-supported activities.

The impact of the costs in the academic area has been severe, as documented in a 1995 report by the New Brunswick provost:

During the 1980s, Rutgers-New Brunswick wisely invested in students, faculty, facilities, research centers, and teaching programs. The return on these investments has been stunning, as reflected in the increasing quality of students and faculty, a threefold increase in external grant funding in the last decade, and Rutgers' election to the Association of American Universities in 1989. While its progress is impressive, there remains a great deal to be done, and the economic climate of the early 1990s has not been as conducive to large-scale public investments. As the campus moves to fulfill its mission, it must confront the realities facing universities nationwide and, in particular, in New Jersey. No document that attempts to imagine new growth and developments in the university can be taken seriously unless it confronts realistically the prevailing economic climate for higher education over the past six years. Higher education budgets have decreased steadily, eroding Rutgers-New Brunswick's ability to build. Between 1989 and 1993 Rutgers-New Brunswick experienced cumulative

[state] budget cuts of more than \$21 million. Damage to campus programs has been substantial.²

According to the Provost's Report, declines in state funds have negatively affected the number of full-time faculty. (See also Section 3), increased the number of part-time lecturers, increased class size, and decreased non-salary budgets. Nevertheless, the investments in faculty, students, and infrastructure made in the 1980s have served the university well, even in this period of constrained state support. Other sources of funds have grown. For example, grants have increased from \$52.9 million in FY 1985/86 to \$148.1 million in FY 1995/96 and the university's fund raising has grown from \$21.8 million to \$43.2 million over the same period. Since FY 1992/93 state resources have begun to stabilize, and no university-wide budget reductions were required in fiscal years 1996 and 1997. The university has begun to re-invest in its highest academic priorities, as outlined in its strategic plan, by reallocating \$4 million in both FY1996/97 and FY 1997/98 through the Strategic Resources and Opportunity Analysis (SROA) Program. The FY 1998 state appropriation, made as this report was nearing completion, shows a modest increase of \$11.4 million, representing a 4.3 % gain over the previous year. Although it is too early to tell, the committee hopes that this increase signals the beginning of a longer-term trend toward the budget stability that will allow us to address critical needs and advance some of our most important goals.

PLANNING AND BUDGET DEVELOPMENT

Faculty and administration in New Brunswick participate on a regular basis in planning practices designed to evaluate the adequacy of our academic units, including department external reviews and subsequent Committee on Standards and Priorities in Academic Development (CSPAD) reviews of departments. In addition to these longstanding practices, in 1991 the Rutgers administration initiated a strategic planning process. Each department, college, school, and CBI completed a strategic plan, and an individual New Brunswick plan followed. Rutgers' administrators reviewed and analyzed the various plans, studies, and reports, and in 1995 summarized their vision in the university's strategic plan: *A New Vision for Excellence*, a broadbased document that articulates the university's general goals, directions, and challenges through the year 2010.

Faculty were involved in the development of their department, college, school, and CBI strategic plans. They also participated as members of 13 implementation committees, which corresponded to academic growth areas identified in the strategic plan. Most of the committees solicited and evaluated proposals for new initiatives, and prepared their own prioritized set of plans. An implementation progress report was issued in September 1996: *A New Vision for Excellence: Implementation Progress Report*.

The Committee for the Future oversees the present planning phase. The committee is composed of the implementation committee chairs, the chair of CSPAD, the executive director of the Rutgers University Foundation, and members of the President's Cabinet. To identify funds to support strategic

² Excerpt from New Brunswick Provost's Report, "Building on Excellence, Strategic Plan for Rutgers-New Brunswick."

planning initiatives, in 1996 the university conducted a strategic resource opportunity analysis (SROA). Approximately \$4 million in annual funds identified through SROA were made available to the Committee for the Future for reallocations in support of academic initiatives identified in the strategic planning process. The first annual set of funded initiatives from this process occurred in Fall 1996, with \$2.7 million awarded to 17 New Brunswick projects. As this report was being completed, and in response to the improved fiscal climate, President Lawrence announced the “Reinvest in Rutgers” initiative, a comprehensive set of new initiatives to reinvest significant resources in core priority areas on all three campuses. In addition to the \$4 million in SROA funds, this special allocation will provide: \$3.9 million in support of the strategic priorities of the academic units, including support for new faculty in selected areas; \$2.5 million for critically-needed classroom improvements and upgrades; additional funds for the libraries and instructional technology; and further support for the implementation of RUNet 2000. While these are one-time allocations, the administration intends to continue and extend these reinvestment initiatives in subsequent years, as state funding allows.

The planning process is designed to be broadly consultative within the campus about the appropriateness of the campus goals and agreement about the priorities that are established. To be effective, the process must originate with faculty, whose ambitions the process supports. At each level, plans should be assessed in terms of their achievability and centrality to the campus mission. Developing a clear articulation between planning and budgeting will enable the different units to evaluate resources and budgetary requests more clearly within the context of their academic objectives. To be successful, strategic planning must be integrated with the plans and priorities of decanal and individual academic units.

To accomplish this process there must be constant communication between deans, chairs and their respective departments regarding ideas, projects, and initiatives. The ideas that are pursued must be the consequence of a rigorous process that assesses quality, cost feasibility, and intellectual excitement, along with skills for successful implementation. As strategic planning continues, and as priorities for the capital campaign are set, a strategic focus of such efforts must also be on maintaining, and indeed improving, New Brunswick’s basic academic infrastructure. Continuing to ensure and improve the quality of our faculty, graduate students, and undergraduates should be at the very core of Rutgers’ planning efforts, since it is the foundation of New Brunswick’s reputation for excellence in research, instruction, and service.

In conclusion, despite significant budgetary restrictions, the 1995 university strategic plan makes clear that excellence in the core mission activities of teaching, research, and public service will continue to be the primary focus for planning throughout the university. Program development will build on our current strengths in the various disciplines, will answer critical needs, and will make cost-effective use of university resources. Any additional resources available to various units will be based on the criteria of excellence, centrality to the university’s tripartite mission, diversity, and responsiveness to critical needs. These needs include, but are not limited to, excellent instructional programs, faculty scholarship, creative endeavors, and service. The university will continue to be responsive to emerging critical needs so that, as a statewide resource, New Brunswick will remain at the forefront of instruction, research, and service.

RECOMMENDATIONS

- 1) We strongly urge further development of a financial plan for a deferred maintenance fund. With continued direct appeals to the state for such funds, and state support for programs such as the Equipment Leasing Fund (ELF) and the Higher Education Facilities Trust Fund (HEFT), we shall see a sustained positive impact on the university's operations.
- 2) Given the university's history of reductions in funding, we must develop additional strategies to reallocate resources to fund university priorities.
- 3) We must redouble efforts to ensure that appropriate mechanisms are in place to link academic and financial planning and that such efforts are in keeping with the strategic planning process. Communication between faculty and their respective chairs and deans should ensure that quality program development continues even within a context of budgetary constraints.
- 4) We recommend further development of a systematic plan to expand the university's endowment to fill specific project needs and generate additional funds for all operating units.
- 5) Creative solutions for financing specific projects will be essential if we are to meet expanding institutional goals. As one part of this solution, the University Foundation has undertaken a feasibility study regarding the potential for a major capital campaign. The Strategic Resource and Opportunity Analysis is another example of a solution, reallocating administrative funds to support academic priorities.
- 6) The provision of efficient, high-quality services, while maximizing limited resources, should be an operational goal for all units. In the area of energy management, further re-engineering efforts, such as the successful cogeneration plant, should be considered.

Table 2.1: Total University Revenue, Fiscal Year 1995-96

	Amount (in millions)	%
Student Tuition and Fees	\$ 221	20.9
State of New Jersey Support	375	35.5
Federal Grants and Contracts	174	16.5
State and Municipal Grants and Contracts	60	5.7
Gifts, Private Grants and Contracts	36	3.4
Other Sources	62	5.9
Auxiliary Enterprises	<u>127</u>	<u>12.1</u>
Total Sources	<u>\$1,055</u>	<u>100.0</u>

Source: University Financial Report 1996

Table 2.2: Total University Expenditures, Fiscal Year 1995-96

	Amount (in millions)	%
Instructional and Departmental Research	\$ 321	30.4
Sponsored Research and Other Sponsored Programs	107	10.1
Other Separately Budgeted Research	54	5.1
Extension and Public Service	20	1.9
Libraries	28	2.7
Student Services	38	3.6
Operation and Maintenance of Plant	87	8.2
General Institutional and Administration	62	5.9
Student Aid	169	16.1
Auxiliary Enterprises (Including Debt Servicing)	126	11.9
Debt Servicing	18	1.7
Deferred Maintenance, Life Safety, Capital Improvements	<u>25</u>	<u>2.4</u>
Total Uses	<u>\$1,055</u>	<u>100.0</u>

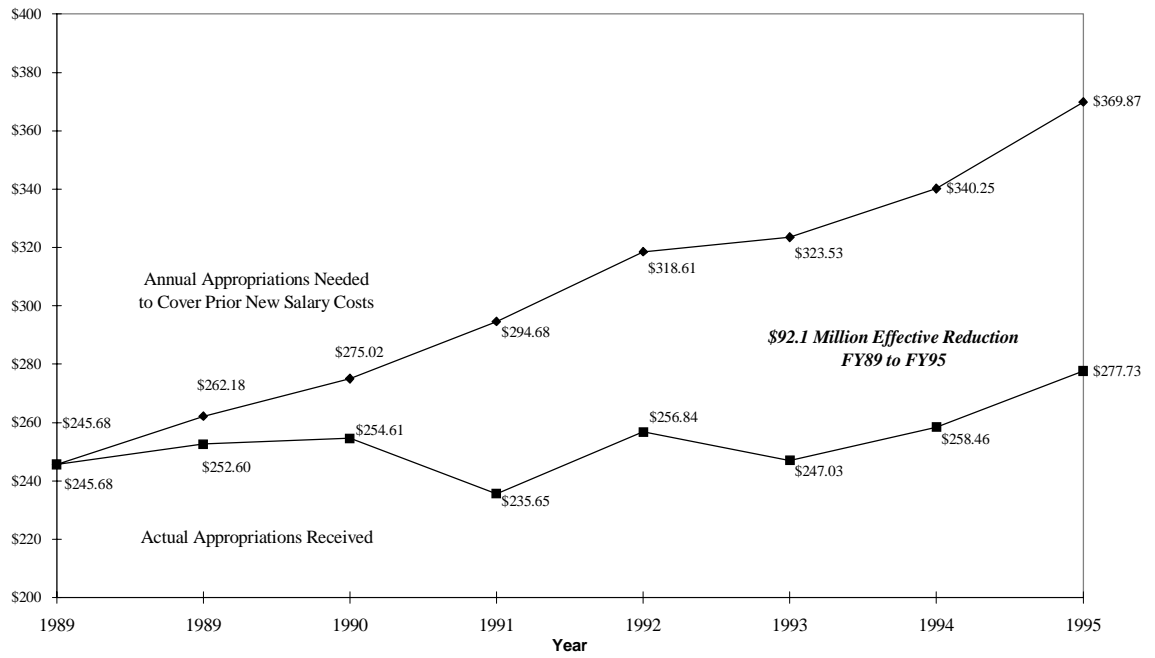
Source: University Financial Report 1996

Table 2.3: Percentage of University Budget by Source, Fiscal Year 1985-1996

	Percentage		
	<u>1985</u>	<u>1990</u>	<u>1996</u>
State appropriations, including fringe benefits paid by the State	50.9	45.3	35.5
State tuition and fees	20.3	20.4	21.0
Government grants, contracts and federal appropriations	8.7	13.5	22.9
Auxiliary enterprises	12.4	12.4	12.0
Gifts, private grants and contracts	2.8	3.5	3.4
Endowment and investment income	2.4	2.1	2.1
Indirect costs recovered	1.6	1.7	2.1
Other sources	<u>0.9</u>	<u>1.1</u>	<u>1.0</u>
Total	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: University Financial Statements

Figure 2.1: STATE BUDGET SHORTFALLS, 1989-1995
(in millions)



Source: Office of Budget and Resource Studies

3. NEW BRUNSWICK FACULTY

According to any number of measures, the quality of the Rutgers-New Brunswick faculty is exceptional. As noted in the introduction, New Brunswick is distinguished by having numerous faculty who are members of national academies. In 1995, Rutgers-New Brunswick ranked 12th among public AAU members in the number of faculty members in the National Academy of Sciences (11 faculty), 10th in the National Academy of Engineering (5), 5th in the Institute of Medicine (5, in a university without a medical school), and 11th in the American Academy of Arts and Sciences (13), for an overall ranking of 10th among public AAU members (*Rutgers University Fact Book, 1996*: pp.116-120). Table 3.1 presents the 1982 and 1993 National Research Council rankings for those Rutgers-New Brunswick programs in the top quartile in 1993. In 1993, nine programs were in the top quartile, up from three in 1982: (to use NRC's program titles) biochemistry and molecular biology; computer science; ecology, evolution and behavior; English; history; mathematics; philosophy; physics; and psychology.³

External funding on the New Brunswick campus has increased from approximately \$78.2 million in 1988 (with 39% from federal sources) to \$134.5 million in Fiscal Year 1997 (with approximately 61 % from federal sources). Awards from corporations have also increased over this period, while the state's share of external funding declined. Rutgers-New Brunswick faculty have also been the recipients of many prestigious awards over the past decade. Although a full listing is beyond the scope of this report, an examination of awards received in just one year (1994-95) reveals many honors, including several Fulbright, Guggenheim, Rockefeller, and NEH grants; awards for outstanding books in art history, history, literary criticism, industrial relations, ecology, and political science; and numerous awards for outstanding research. In addition, one faculty member received the CASE Outstanding Professor of the Year award, another was appointed chair of the U.S. Nuclear Regulatory Commission, four Rutgers faculty received the prestigious MacArthur awards, two more received the National Medal of Science, and one faculty member won the Pulitzer Prize in literature. (Resource documents include a select list of faculty honors and awards for 1986, 1990, and 1994-1996.)

Over the past decade, Rutgers-New Brunswick has continued the momentum begun in the 1980s to enhance faculty quality. Although the hiring of senior faculty has decreased, Rutgers has been successful in hiring excellent junior faculty. Table 3.2 demonstrates the effects on recruitment of budget cuts and shortfalls since 1988. While Rutgers-New Brunswick hired 67 new assistant professors in 1988-89, it hired only 27 new assistant professors in 1993-94. By 1996-97, however, recruitment rebounded somewhat with the hiring of 48 assistant professors. We have been less fortunate at the senior ranks. In 1988-89, New Brunswick hired 50 new senior faculty; by 1996-97 that number had dropped to nine. Because of reduced state funding, we have been unable to hire additional world class scholar leaders (WCSLs), but a few senior hires have been made in critical areas over the past several years. An

³ By 1993, seven other programs were in the top third of NRC's rankings including mechanical engineering, molecular and general genetics, pharmacology, physiology, political science, sociology, and statistics and biostatistics. Moreover, anthropology, cell and developmental biology, chemistry, and geography are only slightly lower in the rankings (National Research Council, 1995: Appendix P).

exception is in the hiring of experimental faculty in the sciences, where startup funds for equipment have been in very short supply. We believe that continued emphasis on hiring at the junior level is warranted, particularly given the relative scarcity of academic jobs and the typically high quality of applicants we attract. However, we need to maintain the pace of junior hires and in addition hire a select number of senior faculty in critical areas, to move additional programs to the next level of distinction.

The university's 1995 strategic plan for New Brunswick proposed reallocating faculty lines to areas of high priority to improve the quality of the faculty and to strengthen selected academic programs. The SROA process has provided a modest amount of one-time funding for new and/or high priority initiatives. The central administration has also made contributions, within the constraints of its budget, to startup costs for faculty hiring. However, these funding sources remain too limited to provide additional needed resources for high-priority faculty programs and for basic academic infrastructure needs. A major need is the infusion of additional funds for startup costs, especially in our science and social science departments. In addition, an increased number of raids on our best faculty during the 1996/97 academic year has put a strain on our already reduced resources. Academic deans need further assistance not only to recruit additional faculty to New Brunswick but to move aggressively to keep our most outstanding faculty.

Given the changing age profile of our faculty, the need to ensure the continued vitality of the faculty has become clear. In 1995, the university began the formal implementation of a post-tenure review system. (See resource documents.) Although some academic units had routinely reviewed all faculty on a regular basis, this practice was not uniform, nor was there consensus about how the results of such a review would be used. As implemented, the post-tenure review process focuses on issues of planning and career development, rather than evaluation and discipline. The process of post-tenure review is ongoing. In addition to the importance of this process in articulating our accountability to the state, chairs and deans report that the results of post-tenure review have been largely positive and have improved departmental planning and workload allocation. Furthermore, this process enables chairs and deans, in consultation with their faculty, to ensure that department planning and workload allocations are responsive to shifts in curricula and enrollments.

After the 1988 visit by the Middle States team, then-President Edward J. Bloustein created an external panel, chaired by Professor Dale Corson, a past-president of Cornell University, to examine criteria and procedures for promotion and tenure decisions. One recommendation of the Corson Committee was to devise a method for enabling the contributions of faculty who had been at the rank of associate professor for many years to be recognized if their teaching and service were of high quality. An internal committee was then formed to address the Corson recommendations, and recommended the "10-year rule." Under that "rule," when an individual has been at the associate professor rank for 10 years, the emphasis on scholarly productivity begins to decline, and excellence in teaching and service becomes more significant. In practice, although research remains a requirement, the emphasis shifts on a gradual basis from research to teaching and service. Thus, for example, an individual in rank for 20 years will not have to meet so rigorous a standard of scholarly performance as one who has been in rank for 11 years.

Deans report that the "10-year rule" has energized some of their mid-career faculty, stimulating new research activity and enhancing their interest in teaching and service. A problem remains, however, in that faculty and higher-level administrators have differing interpretations of the "10-year rule" (the same

can be said of the criteria necessary for promotion to Professor II). They recommend that the language interpreting the criteria be clarified so that the gradual nature of the shift in criteria be made more explicit.

DESCRIPTIVE DATA

Since 1985/86, the number of full-time faculty in New Brunswick has fluctuated somewhat from year to year ($\pm 1\%$ or less in most years). In 1996/97 New Brunswick had a full-time faculty of 1,826, down approximately 2% from 1,863 in 1985/86. (See Table 3.3.) Tables 3.4 to 3.8 provide demographic information for selected years during the past decade: the distribution of the New Brunswick full-time faculty by rank; the percentage of all New Brunswick faculty by race/ethnicity and gender; the percentage of FAS faculty by race/ethnicity and gender; the percentage of professional school faculty by race/ethnicity and gender; and the distribution of New Brunswick faculty by age.

To the degree that one can draw overall conclusions about the demographic profile of New Brunswick faculty in the decade 1986/96, the majority were predominantly tenured, white, post mid-life, and male. Over this period, the overall number of minority male faculty has decreased somewhat, although this decrease has been partly offset by an increase in the number of minority female faculty (Table 3.5). Among FAS faculty (Table 3.6), the big percentage increases have come for Asians (especially at the tenure-track level) and for white women. Similar increases have occurred for Asians among professional school faculty (Table 3.7). Among both FAS and professional school faculty, the percentage of African-Americans and Latinos has remained relatively constant. In 1995, Rutgers as a whole ranked 8th among AAU public research universities with respect to the percentage of full-time minority faculty and 3rd for full-time women faculty. In comparable data for African-American, Latino, and Asian faculty, Rutgers ranked 3rd, 10th, and 13th, respectively.

The declining relative percentage of tenure-track faculty has resulted in an aging demographic profile: the percentage of faculty over 59 years of age increased between 1986 and 1995, as did the percentage aged 45 to 59 (Table 3.8). Recognizing that a dynamic faculty depends on a continued infusion of tenure-track faculty, and that continued hiring depends on an orderly and planned retirement schedule, we urge the development of flexible faculty retirement options to meet individual and institutional needs.

The proportion of tenured New Brunswick faculty increased from 63% in 1987/88 to 69% in 1995/96 (Table 3.4). Table 3.9 presents data on success rates for promotions for female and male faculty in 1993 through 1996. Success rates for promotion vary by rank, with those being promoted to Professor I having the highest rate, followed by Associate, and then Professor II. During the same period, the success rate of female candidates for promotion exceeded that for males at all ranks, a gender effect that increased with rank.

Between 1990 and 1995, the overall promotion success rate for all faculty was 68%; the rate for white faculty was 69%, compared with 61% for all minority faculty. Within all minority faculty, African-American faculty had a success rate of 73% during this period. Overall, 13% of New Brunswick's

tenured faculty are members of minority groups (data provided by the Office of the University Vice President for Academic Affairs and the Office of Institutional Research).

FACULTY WORKLOAD

Given the decline in state support for the university over the past several years, faculty workload accountability issues have become increasingly significant. Course, committee, and administrative assignments, advising obligations, and outreach activities all limit the amount of time the faculty can spend on scholarly pursuits. In 1994, the Faculty Workload Committee, chaired by Professor Lisa Klein, defined the three areas of faculty responsibility:

- Commitment to the education of students at the undergraduate, graduate, and professional levels;
- Commitment to ongoing research, for advancing scholarship and creating new knowledge that benefits students and the larger society; and,
- Commitment to service.

The results of a survey of New Brunswick faculty revealed that the average faculty member in New Brunswick spent 31.3 hours per week on teaching, 12.1 hours per week on service, outreach and administration, and 18.0 hours per week on research, scholarly and/or creative work, for a total work week of 61.4 hours.⁴

Reports from the Office of Institutional Research show the amount of classroom teaching by the various units at New Brunswick (Tables 3.10 to 3.12). These tables show the amount of teaching at the undergraduate and graduate levels by faculty at each rank, and by teaching assistants and part-time lecturers. The tables demonstrate wide variation in the amount of undergraduate and graduate teaching by tenure-track faculty, by non-tenure track faculty, and by teaching assistants: in fall 1995, for example, 26% of undergraduate course sections were taught by teaching assistants, and another 20% by part-time lecturers paid by the course (Table 3.11). The figures for graduate courses, in contrast, show that in fall 1995, 81% of them were taught by tenured or tenure-track faculty (Table 3.12).

An important issue about teaching at New Brunswick is the extent of reliance on part-time lecturers (PTLs). Because of its location, New Brunswick is able to find a substantial number of well-trained individuals who are willing to accept per-course teaching assignments. However, in spite of the qualifications of these individuals, some departments report that they are poorly integrated into the academic life of the department or program, need training in the approaches to be used in teaching, and

⁴ The Klein Committee conducted a survey of New Brunswick faculty in selected departments. Faculty were asked to report the amount of time per week they devoted to each of the following three categories: teaching (including classroom teaching, research supervision, course development, mentoring at all levels, academic advising and service as advisors to student organizations); service, outreach and administration; and research, scholarly and/or creative work.

(where appropriate) need to be encouraged to assume additional responsibilities (such as course development, curricular reform, office hours, or student advising) beyond the time actually spent in class.

QUALITY OF LIFE ISSUES

Its location midway between New York and Philadelphia has assisted Rutgers-New Brunswick in attracting a talented and energetic faculty. Geography, however, is also a mixed blessing because the New Brunswick campus spans five separate locations. Many students must rely on buses to travel to their classes. Serious thought is needed to link academic planning to discipline distribution across the Rutgers-New Brunswick campuses. The successes of the geographic concentration of the Cook and Busch science departments show the benefits of academically based discipline clustering. Currently humanities, and especially social science, students and faculty bear the brunt of travel across the five campuses. One recent initiative to minimize the negative effect of geographic dispersion for students is promising: through the clustering of undergraduate courses, FAS has increased the percentage of students who can take all their first-year courses on their home campus. Additional planning is required to limit the negative effects of geographic dispersion on both students and faculty.

Geography affects the university's library system as well. (See Section 6.) Although there are libraries on each campus, important research collections are centralized in one location for each subject (e.g., at Alexander Library on the College Avenue Campus or at the Library of Science and Medicine on the Busch Campus). Faculty who do not maintain offices on the campus containing the research collection relevant to their work must either travel to another campus (with all the difficulties of traffic and parking), rely on intra- or interlibrary loan or other services, or use other libraries. Although these services function reasonably efficiently, they take time.

Significant improvements in computing have occurred at New Brunswick in the past decade. (See Section 6.) However, limitations remain for some of the campus' faculty, staff, graduate and undergraduate students (especially in remote access, email and Internet connections), frustrating those who rely on these services for their research and scholarly communication. As a consequence, many faculty have subscribed to private online services.

The limited number of teaching assistants remains a major challenge for the campus. New Brunswick is allocated 757.5 state-funded teaching assistants, which puts the campus in the bottom half of public AAU institutions (*A New Vision for Excellence*). Additional graduate or teaching assistants are paid from grants, co-adjutant funds, or with funds obtained from extension or other revenue-producing activities. The FAS and the Graduate School remain committed to investigating strategies for increasing the number of teaching assistants, fellowships, and tuition remissions, both for the purpose of attracting high-quality students to our graduate programs and to support faculty scholarship.

Other factors that affect the quality of faculty life are the high student/faculty ratio and the very low proportion of support staff at the New Brunswick campus. Rutgers ranks 22nd among the 28 public AAU institutions with respect to its student/faculty ratio (6.34 faculty per 100 full time equivalent students, compared with nearly twice that figure at some comparable research universities). A study conducted for the university by Coopers & Lybrand determined that Rutgers is very lean in its number of

administrators. This finding is supported by the relatively high proportion of faculty vs. nonfaculty staff at Rutgers. In 1995/96, faculty were 27.8% of the university employees at Rutgers (Table 3.13.) At comparable public research universities, the proportion of faculty is much lower (for example, Michigan 16%, Virginia 18%, UCLA 18%, Minnesota 21%). This low proportion of support staff at Rutgers, however, also translates into additional faculty time spent on administrative, technical, and clerical duties that are performed by nonfaculty at other public research universities. This situation also limits the ability of academic units to mount effective alumni relations programs or to conduct effective fundraising campaigns. An increase in the number of support staff, while protecting the budget for faculty positions, would significantly improve working conditions for the entire New Brunswick campus community.

An important component of the increase in the quality of Rutgers faculty, academic programs, students, and research output is the existence of research centers, bureaus and institutes. CBIs grew in response to new intellectual initiatives that crossed department/unit boundaries and to the desire of funding agencies to have an interdisciplinary group of faculty address issues of mutual interest. The CBIs have succeeded in attracting outstanding faculty to Rutgers. They have been aggressive in obtaining external funding and have provided important opportunities for Rutgers faculty to conduct research. Still, the relationship between the CBIs and the academic departments impacts faculty life for both good and bad. Although faculty tenure generally resides in an academic department, CBI demands on a faculty member's workload reduce the amount of time available for teaching and department work. Furthermore, when a faculty member obtains a grant, that grant is often administered through the CBI rather than the department, which means that any indirect cost return is realized by the CBI and not the department. The dual track system—CBIs representing important foci for research activities, with academic departments more focused on the educational mission—has also led to the perception of instructional vs. research faculty, with all of the financial, political, and social stresses that follow. At present, the university is not taking full advantage of the instructional capabilities of its CBI-affiliated faculty, nor are departments receiving their faculty's full participation in ongoing departmentally based governance activities. Given what many faculty believe to be the over reliance on co-adjutant faculty and the continual shortage of below-the-line funds, the impact on the departments of the CBI-oriented faculty creates resource issues that require attention.

Finally, one important concern of faculty is faculty development. As students' learning styles have changed and technological advances have altered the nature of information and data acquisition, efforts have been undertaken to provide faculty with professional development opportunities for keeping their teaching skills current. The Teaching Excellence Center, the Teaching Assistant Project, the University Libraries, and the Office of Disabled Student Affairs have offered numerous programs year on such topics a "Using Smart Classrooms," "Teaching Students How to Use the Libraries," "Motivating Students in Large Lectures," "Teaching Differently Abled Students," and "Promoting Civility in the Classroom." As we move further into providing course work through distance learning, additional programs must be established to train faculty to take full advantage of new teaching technologies.

PUBLIC SERVICE BY THE FACULTY

As New Jersey's state university and the land-grant institution, Rutgers has a long history of commitment to public service. This service includes institutional and programmatic efforts, credit-

bearing course and volunteer opportunities for students, grant-related programs, and individual efforts by members of the university community including faculty, students, and staff. This section provides a brief overview with a few examples of our efforts. (Resource documents provide additional details.)

The Office of the Executive Assistant for Community Affairs serves as one contact and coordinating point between Rutgers and the city of New Brunswick, responding to requests as well as initiating programs of mutual interest. Among the services coordinated by this office are technical assistance and consultation for matters needing faculty evaluation, such as water flow measurement; K-12 programs in mathematics, music and computer education; service on committees and boards, such as the City Market, Elijah's Promise, New Brunswick Cultural Center; and the Rutgers Community Relations Council. Other Rutgers units work independently with the city of New Brunswick. As will be noted in the next section, the Graduate School of Education collaborates on several programs with the New Brunswick public schools, and the dean of the GSE is a member of the Education Task Force of New Brunswick Tomorrow, the primary vehicle for school reform in the city.

The Minority Investment Corporation contributes to the development of a strong minority business community by providing support and investments for viable business plans. With investments ranging from \$900 to \$50,000, this program represents an example of excellent partnership among public, private, academic and nonprofit sectors of the community. Over 100 collaborative programs are in place with K-12 schools, ranging from work with students through teacher training to policy research on public education. Many of these programs are closely related to academic units and were initiated with the specific purpose of benefiting the community. For example, the success of Cook College, whose mission makes public service a central concern, is indicated by the fact that in 1996 two of the university's distinguished public service awards went to Cook faculty. Another example of successful public service is the Professional Development and Learning Initiative of the GSE, a teacher-training program centered in New Brunswick that helps teachers upgrade their skills by illustrating new strategies in teaching produced by Rutgers' faculty.

Among the most successful of the public service activities are those involving educational outreach. Since its inception in 1987 the Rutgers Speakers Bureau has provided a Rutgers presence to more than 34,000 New Jersey high school students. The Citizenship and Service Education Program (CASE) attracted national recognition with a March 1993 visit by President Clinton, who announced his national service plan and recognized CASE as a model for other colleges and universities across the country. Established in 1988, CASE has grown to provide more than 100,000 hours of service annually by 2,500 students who are enrolled in more than 65 courses that integrate community service with academic content. Many departments and units throughout the university also organize faculty development courses and workshops for school teachers across the state (e.g., the Center for Historical Analysis has courses for high school teachers).

Rutgers faculty have also been actively involved in work to improve K-12 instruction in mathematics and science. Many Rutgers faculty are involved in the NSF-sponsored statewide systemic initiative, and Professor Joseph Rosenstein was instrumental in developing the New Jersey Mathematics Curriculum Framework which was released early in 1997. Professor William Sofer of the Waksman Institute of Microbiology has worked with high school science teachers to provide challenging opportunities for their students. As well, the Mathematics and Science Learning Center provides both a site for visits by school

science classes and coordinates visits by Rutgers faculty to attend school programs such as science fairs. Science faculty are also active in service at the national level. For example, Professor Shirley Jackson of the Physics Department is currently chair of the Nuclear Regulatory Commission.

Public service also reaches to the international arenas. The Center for Women's Global Leadership (within the Institute for Women's Leadership) has shown international leadership, in particular on the issue of women's human rights and domestic and state-sponsored violence against women.

Challenges persist. The university is complex, and all of these public service and outreach functions are independently initiated and run by separate bodies within the university. Ten years ago, a working group on public service noted a set of deficiencies in the administration and organization of such programs, and made a number of recommendations. One of these has come to fruition: the publicizing of Rutgers' service activities. The RU News Service and Media Relations have been increasingly comprehensive, efficient, and energetic in announcing the initiatives of Rutgers and its faculty in local print, visual, and electronic media. While this is a good index of our activities, it cannot be considered an exclusive one because it reports what is new and noteworthy, rather than what is ongoing and important.

Given the significant faculty involvement in service programs, we need to consider additional ways to recognize those who participate in and lead these activities. The Presidential Award for Distinguished Public Service and the Rutgers College Class of 1962 Public Service Award are valued acknowledgments of service, but these are available to two individuals each year. Additionally, faculty involved in the tenure and promotion process seek greater clarification regarding the extent to which service is considered in personnel decisions.

FACULTY GOVERNANCE

The role of faculty in the governance of the New Brunswick campus has engendered heated discussion and debate for more than a decade, especially following the 1988 report of the Middle States Association evaluation team that cited the lack of an effective, credible, and clearly defined structure for faculty governance. In response to that report, the faculty and then-Provost Paul Leath worked together to develop the New Brunswick Faculty Council, whose previous and current reporting relationship we described in Section 1. Given that the long-established University Senate consists of additional constituencies, such as administrators and students, the faculty regard the Faculty Council as the only true faculty voice (and changes to the Council's structure have been proposed to enhance that voice; see below). As of 1996/97 the Faculty Council consisted of 51 representatives elected by faculty from their academic units. It has numerous standing and *ad hoc* committees, and has (in its eight years of existence) addressed significant issues: devising a set of procedures for discontinuing programs; fraternity/sorority housing; library planning and funding; faculty/administrative relations; computing needs; the role of the undergraduate colleges; university red tape; and faculty personnel issues such as retirement incentives and undergraduate advising. (See Appendix 8.) Although the 1996 reorganization resulted in some uncertainty about the future of the Council, the university vice-president for academic affairs now provides the Council a modest budget, works with various Council subcommittees, reports on New Brunswick affairs at monthly Council meetings, and receives and responds to its recommendations.

In Spring 1997, the Council began to implement the recommendations of the Blair Report, passed unanimously by the Faculty Council in Spring 1996. Although disagreement remains as to the status of any legislative powers the Council may hold, progress has been made on other recommendations from the Blair Report. The Council is moving ahead to enlarge the size of the Council to 78 members for 1997/98, primarily by lowering the threshold for departmental membership from 30 to 15 and by eliminating multidepartmental constituencies housed on different campuses. The hope is that these new initiatives will bring additional faculty into the governance process, and strengthen faculty voice on campus.

A second shared governance mechanism exists in the colleges, where faculty may participate as fellows at Douglass, Livingston, Rutgers, and University, and serve as full members of the Cook College Council. These fellows participate voluntarily and, under the college dean, vote on academic issues pertaining to students, such as admissions, scholastic standing, and graduation requirements. The college deans and the faculty generally agree that the fellows system needs revamping. They recognize that not enough new faculty are joining the fellows system because, in part, new faculty hires don't know what fellow service is and because there are few rewards for such service: college service takes time but promises no credit toward tenure/promotion decisions. Two possible solutions have been proposed. One is to make the current fellows system work by making it mandatory. A second alternative is to move to an altogether different system, one that more directly involves faculty and departments in the ongoing work of the colleges. One argument suggests that increasing faculty interest in the colleges depends on finding the right projects to involve faculty.

At the graduate level, increased authority for discipline and school-based decisions is shifting to the graduate/professional faculty and deans. As the planning for the possible elimination of the New Brunswick-wide Graduate Faculty continues, school-based graduate governance mechanisms must be reviewed and, in some cases, developed. At the same time, interdisciplinary and interschool efforts must be protected. Special attention will also be necessary to monitor and evaluate the extent to which these initiatives are successful.

One recent initiative in shared governance is the President's Liaison Committee. This group was established by Faculty Council in AY 1995/96 after a group of distinguished senior professors questioned the president's leadership (questioning which began earlier, after the president's misstatement on race). Arguing that the administration had not conferred adequately with faculty on a range of issues for which faculty input is essential, this group proposed a referendum on the president's leadership. In response to these concerns about a lack of communication, the Faculty Council recommended the formation of the President's Liaison Committee, a group of nine senior faculty members (three each from New Brunswick, Newark, and Camden) who meet with the president several times per year to discuss important campus and university issues. The president and the Committee have found that consensus is possible on a number of issues. As the Committee continued to meet with the president into spring 1997, it appears to be helping to improve faculty-administration communication. A second Faculty Council committee—the Committee to Examine Faculty/Administration Relations—reported in spring 1997 on two successful faculty/administration discussion groups, on the recent marketing study, and on the libraries' budget allocation.

A source of tension in faculty-administration relations in spring 1997 remained the long-running contract negotiations between the administration and the faculty bargaining unit, the AAUP. The faculty has been without a contract since July 1995, and has received no salary increases since July 1994. One bright note in this continuing negotiation is the joint administration/AAUP decision in March 1997 to pay overdue promotion increments for those faculty tenured and promoted in 1995 and 1996. (As this report was nearing completion, the administration and the AAUP accepted the recommendations of the fact-finder/mediator, bringing the longrunning contract negotiations to conclusion.) Some faculty have also expressed concern about the fate of recommendations emerging from the "Pomper Report" produced by a faculty, student, and staff committee in spring 1996. The faculty held debates on the report in a number of arenas, including the Faculty Council and collegiate fellows' meetings. The 1996 administrative restructuring implemented one of the report's recommendations: the reorganization of the four liberal arts colleges under the dean of the FAS. For the first time faculty and undergraduates are combined into one New Brunswick-wide entity, at least in the arts and sciences. FAS has already moved to implement uniform rules and regulations across the colleges, to establish horizontal working groups to provide uniform student services, to increase the clustering of courses at colleges to reduce first-year student reliance on the bus system, and to set up department honors courses to serve the college honors programs. The FAS dean, staff, and faculty are continuing to review those recommendations within their purview.

In sum, the structure and function of faculty governance on the New Brunswick campus has changed since the 1988 Middle States evaluation team's visit. The Faculty Council has built a strong record of hard work and a willingness to tackle tough issues. Through the commitment of both faculty and administrators, the Council came through the 1996 reorganization a stronger institution, focused on consultation and dialogue. Even more promising is the spring 1997 agreement in principle between the Faculty Council and the university vice president for academic affairs that the New Brunswick Faculty Council is the central place where administrators come for faculty advice and information, and to which they are accountable. While we have made progress in establishing a structure for faculty governance and opening faculty/administration communication, we recognize that we still have some distance to go to achieve the fully effective and credible faculty governance envisioned by the 1988 Middle States Team.

RECOMMENDATIONS

(1) Ensuring our institutional quality and advancing to the next level of excellence depend in large measure on the strength of our faculty. We must take conscious steps to recruit and retain faculty of the highest quality.

- Mechanisms for ensuring the continuous infusion of high-quality junior faculty need to be identified and implemented. These efforts should be supplemented with selective outstanding senior faculty hires in specific program areas as needed to maintain or enhance program quality.
- Attention should be given to efforts that foster faculty development and creativity, and to measures that nurture and retain our best faculty.
- To sustain our commitment to a diverse faculty, we urge the continued development of New Brunswick-wide procedures to ensure appropriate planning regarding all aspects of faculty hiring, promotion, and retention.
- Orderly planning for reinvigorating the faculty with new junior hires depends on predictable rates of retirements. We must explore flexible faculty retirement options to meet individual and institutional needs.
- We also urge expanded monitoring of the use of part-time lecturers to ensure an optimum balance between the use of full- and part-time faculty. In particular, attention should be paid to the impact of part-time lecturers on departments' ability to carry out their responsibilities for teaching, advising, curriculum development, and governance.

(2) CBIs have significantly strengthened the university in many research areas. However, their multiplication has been accompanied by questions on such matters as the distribution of teaching and service responsibilities and CBI impact on the availability of resources to core departments. We recommend the establishment of a joint faculty/administration task force to review and analyze the current impact of the CBI system on the traditional academic structures of the university and to make suggestions for enhancing the relationships between centers and departments.

(3) The university encourages faculty to give time to public service. We urge that a formal statement clarifying the definition(s) of public service be adopted and that this statement further spell out how public service is to be rewarded within existing university structures.

(4) Though the establishment of the New Brunswick Faculty Council has improved faculty participation in governance, many faculty remain uncertain about their role in shared governance. To enhance the effectiveness of New Brunswick governance and strengthen faculty/administrator relations:

- We encourage continued review of the Faculty Council and exploration of ways that it can play a more central role in governance in New Brunswick. Administrative procedures should be developed

to facilitate responding in a timely manner to reports and to make recommendations of Faculty Council and other faculty task forces and appointed committees;

- We should constitute a university-wide committee to review the mission, goals, and membership of the University Senate and make recommendations to improve university-wide shared governance.

(5) Making sound policy decisions in the areas of faculty recruitment and retention depends greatly on maintaining sufficient and comparable data on faculty characteristics. To enhance the predictability of faculty trends for effective departmental and unit planning, we thus recommend that the university improve the availability of such data and facilitate access to these data for appropriate use by departments and schools.

Table 3.1 1982 and 1993 Rankings of New Brunswick Graduate Programs in Top Quartile in 1993

<u>Program</u>	<u>1982</u>		<u>1993</u>	
	<u>Ranking</u>	<u>Percentile</u>	<u>Ranking</u>	<u>Percentile</u>
Biochemistry and Molecular Biology	--	--	36.5	81.2
Computer Science	31	44.6	27	75.0
Ecology, Evolution and Behavior	--	--	26	79.8
English	15	84.7	17	86.6
History	27	71.0	20	82.0
Mathematics	21	80.4	19	86.3
Philosophy	37	43.9	13.5	81.2
Physics	33	70.8	20	86.4
Psychology	30	78.7	28	84.9

Program titles are those used by the National Research Council.

Source: National Research Council, 1995. *Research Doctorate Programs in the United States*. National Academy Press (Appendix P).

Table 3.2 Newly Hired Tenured and Tenure-Track New Brunswick Faculty, 1988/89 to 1995/96

<u>Academic Year</u>	<u>Assistant Professors</u>	<u>Senior Faculty*</u>	<u>Total New Faculty</u>
1988-89	67	50	117
1989-90	53	40	93
1990-91	54	22	76
1991-92	31	18	49
1992-93	52	22	74
1993-94	27	10	37
1994-95	66	9	75
1995-96	53	8	61
1996-97	48	9	57

* Associate Professors, Professors, Professors II

Sources: 1992/93 through 1996/97 Office of University Academic Affairs; 1988/89 through 1991/92, *Annual Report* for the New Brunswick Campus, Office of the Provost. Figures from the different data sources may not be strictly comparable.

Table 3.3 New Brunswick Full-Time Faculty, 1985/86 to 1996/97

<u>Academic Year</u>	<u>Full-time Faculty</u>
1985-86	1,863
1986-87	1,845
1987-88	1,821
1988-89	1,827
1989-90	1,852
1990-91	1,870
1991-92	1,810
1992-93	1,823
1993-94	1,806
1994-95	1,808
1995-96	1,833
1996-97	1,826

Source: Rutgers University Fact Book, 1996 (1986/96); 1985/86, 1996/97, 1997/98 data from the Office of the University Vice President for Academic Affairs.

Table 3.4 New Brunswick Full-Time Faculty (Headcount) by Rank, 1987/88 and 1995/96

	<u>1987/88</u>	<u>1995/96</u>
Professor, Professor II	627 (34.4%)	756 (41.2%)
Associate Professor	570 (31.3%)	537 (29.3%)
Assistant Professor	404 (22.2%)	369 (20.1%)
Instructor & Assistant Instructor	124 (6.8%)	124 (6.8%)
Other	<u>96</u> (<u>5.3%</u>)	<u>47</u> (<u>2.6%</u>)
Total	1,821 (100.0%)	1,833 (100.0%)
Total with tenure	<u>1,146</u> (<u>62.9%</u>)	<u>1,257</u> (<u>68.6%</u>)

Source: Office of Institutional Research, IPEDS Fall Full-Time Faculty Profiles

Table 3.5 New Brunswick Faculty By Gender and Ethnic/Racial Categories, 1986 and 1995

<u>Race/Ethnicity</u>	<u>1986</u>		<u>1995</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
African-American				
Male	55	3.0	52	2.8
Female	31	1.7	34	1.9
Asian				
Male	79	4.3	122	6.7
Female	27	1.5	43	2.3
Latino				
Male	28	1.5	33	1.8
Female	16	0.9	11	0.6
White				
Male	1,148	62.2	1,070	58.4
Female	461	25.0	466	25.4
Other				
Male	0	0.0	2	0.1
Female	0	0.0	0	0.0
Total				
Male	1,310	71.0	1,279	69.8
Female	535	29.0	554	30.2

Source: Office of Institutional Research, IPEDS Fall Full-Time Faculty Profiles

Table 3.6 Faculty of Arts and Sciences, New Brunswick Faculty by Ethnic/Racial Categories, 1986, 1990, and 1995

<u>Year</u>	<u>African-American</u>	<u>Asian</u>	<u>Latino</u>	<u>White Female</u>	<u>White Male</u>	<u>Total</u>
<u>Professor and Associate Professor</u>						
1986	23 (4%)	18 (3%)	14 (2%)	95 (15%)	493 (77%)	643
1990	19 (3%)	22 (4%)	15 (3%)	105 (18%)	408 (72%)	569
1995	22 (4%)	24 (4%)	18 (3%)	107 (18%)	407 (70%)	578
<u>Assistant Professor and Below</u>						
1986	11 (5%)	21 (9%)	12 (5%)	76 (33%)	112 (48%)	232
1990	10 (5%)	20 (10%)	12 (6%)	63 (30%)	104 (50%)	209
1995	7 (4%)	28 (15%)	9 (5%)	70 (36%)	79 (41%)	193

Source: Office of Institutional Research; compiled from IPEDS data.

Table 3.7 New Brunswick Professional School Faculty by Ethnic/Racial Categories, 1986, 1990, and 1995

<u>Year</u>	<u>African-American</u>	<u>Asian</u>	<u>Latino</u>	<u>White Female</u>	<u>White Male</u>	<u>Total</u>
<u>Professor and Associate Professor</u>						
1986	35 (6%)	42 (7%)	7 (1%)	122 (23%)	334 (62%)	540
1990	37 (5%)	45 (6%)	8 (1%)	145 (21%)	467 (67%)	702
1995	22 (4%)	55 (8%)	8 (1%)	166 (23%)	450 (63%)	711
<u>Assistant Professor and Below</u>						
1986	15 (5%)	25 (8%)	11 (3%)	64 (20%)	209 (64%)	326
1990	24 (7%)	40 (12%)	9 (3%)	131 (38%)	137 (40%)	341
1995	20 (6%)	58 (17%)	9 (3%)	123 (36%)	136 (39%)	346

Source: Office of Institutional Research; compiled from IPEDS data.

Table 3.8 New Brunswick Faculty by Age Categories, 1986, 1990, and 1995

<u>Year</u>	<u><35 years</u>	<u>35-44 years</u>	<u>45-59 years</u>	<u>>59 years</u>
1986	16.4%	33.8%	37.2%	12.6%
1990	13.2%	33.3%	38.4%	15.1%
1995	10.1%	29.3%	43.9%	16.7%

Source: Office of Institutional Research, AAUP Survey

Table 3.9 Success Rate of Promotions by Rank and Gender, 1993/1996

	<u>To Associate</u>		<u>To Professor</u>		<u>To Professor II</u>	
	<u>Considered</u>	<u>Achieved</u>	<u>Considered</u>	<u>Achieved</u>	<u>Considered</u>	<u>Achieved</u>
Female	71	44 (62%)	27	22 (81%)	9	6 (67%)
Male	<u>140</u>	<u>84 (60%)</u>	<u>150</u>	<u>109 (73%)</u>	<u>56</u>	<u>27 (48%)</u>
<hr/>						
Total	211	128 (61%)	177	131 (74%)	65	33 (51%)
		<u>Considered</u>	<u>Achieved</u>			
Female Overall		107	72 (67%)			
Male Overall		346	220 (64%)			

Source: Office of the University Vice President for Academic Affairs

Table 3.10 Classroom Teaching by Faculty (in FTEs*), Fall 1995

	<u>Undergraduate FTE</u>	<u>Graduate FTE</u>
College of Engineering	1,030	305
College of Pharmacy	616	111
Cook	1,466	214
E.J. Bloustein School of Planning & Public Policy	167	104
Faculty of Arts & Sciences-NB	15,377	1,150
Humanities	5,283	367
Life Sciences	1,391	122
Physical & Mathematical Sci.	4,611	394
Social Sciences	3,854	243
Non-Departmental FAS	238	24
Graduate School-NB	184	18
Graduate School of Applied and Professional Psychology	3	153
Graduate School of Education	58	516
Mason Gross School of the Arts	33	209
School of Communication, Information & Library Studies	23	327
School of Management & Labor Relations	71	163
School of Business-NB	656	22
School of Social Work	407	638
Total New Brunswick	21,591	3,930

* One undergraduate FTE = 16 credit hours; one graduate FTE = 12 credit hours

Source: Fall 1995 Instructional Activities Report, Course Analysis System. Office of Institutional Research and Academic Planning

Table 3.11 Percentage of Undergraduate Instructional Units Taught by Various Ranks, Fall 1995

	<u>Prof</u>	<u>Assoc Prof</u>	<u>Asst Prof</u>	<u>Instr</u>	<u>Asst Instr</u>	<u>TA</u>	<u>PTL</u>	<u>Lect</u>	<u>Total</u>
College of Engineering	16	9	0	0	36	8	0	506	
College of Pharmacy	17	15	10	0	0	32	24	1	234
Cook	31	29	6	6	2	9	16	2	748
E.J. Bloustein School of Planning & Public Policy	*	*	*	*	*	*	*	*	70
FAS-NB	22	13	6	2	4	30	22	2	5,981
Humanities	18	13	6	1	5	31	25	2	2,744
Life Sci	11	14	6	3	1	50	12	4	548
Phys & Math Sci	23	6	6	1	4	37	21	2	1,579
Social Sci	37	25	9	5	2	9	13	0	1,032
Non-Dept. FAS	*	*	*	*	*	*	*	*	78
Graduate School-NB	*	*	*	*	*	*	*	*	52
Graduate School of Applied & Professional Psychology	*	*	*	*	*	*	*	*	2
Graduate School of Education	22	11	1	0	0	36	27	3	120
Mason Gross School of the Arts	24	23	14	0	2	19	12	6	800
School of Communication, Information & Library Studies	13	12	21	0	0	9	36	9	176
School of Management and Labor Relations	*	*	*	*	*	*	*	*	41
School of Business-NB	13	18	28	0	0	6	30	6	242
School of Social Work	4	6	9	2	37	0	34	7	143
TOTAL NB	23	16	8	2	3	26	20	2	9,115

* Percentage breakdown not calculated for units with fewer than 100 instructional units (a one-credit course which meets for one semester generates one instructional unit)

Source: Course Analysis System, Fall 1995 Instructional Activities, Reports VII and VIIA, Office of Institutional Research and Academic Planning

Table 3.12 Percentage of Graduate Instructional Units Taught by Various Ranks, Fall 1995

	<u>Prof</u>	Assoc <u>Prof</u>	Asst <u>Prof</u>	<u>Instr</u>	Asst <u>Instr</u>	<u>TA</u>	<u>PTL</u>	<u>Lect</u>	Total <u>No.</u>
College of Engineering	41	31	22	0	0	0	6	0	328
College of Pharmacy	*	*	*	*	*	*	*	*	90
Cook	51	35	9	0	0	1	4	0	202
E.J. Bloustein School of Planning and Public Policy	*	*	*	*	*	*	*	*	76
FAS-NB	57	23	15	0	0	0	4	1	1,170
Humanities	59	25	11	0	0	0	3	0	414
Life Sci	36	28	32	0	0	0	1	3	103
Phys & Math Sci	68	18	12	0	0	0	2	0	360
Social Sci	52	28	18	0	0	0	2	0	275
Non-Dept. FAS	*	*	*	*	*	*	*	*	18
Graduate School-NB	*	*	*	*	*	*	*	*	12
Graduate School of Applied & Professional Psychology	41	12	1	0	0	6	31	9	166
Graduate School of Education	32	34	6	0	0	0	28	0	407
Mason Gross School of the Arts	38	26	8	0	6	0	7	15	295
School of Communication, Information & Library Studies	35	28	12	0	0	5	15	5	193
School of Management & Labor Relations	*	*	*	*	*	*	*	*	92
SB-NB	*	*	*	*	*	*	*	*	20
School of Social Work	10	18	13	2	0	2	55	0	312
Total NB	43	25	13	0	1	1	15	2	3,363

*Percentage breakdown not calculated for units with fewer than 100 instructional units
(a one-credit course which meets for one semester generates one Instructional Unit).

Source: Course Analysis System, Fall 1995 Instructional Activities, Reports VII and VIIIA,
Office of Institutional Research and Academic Planning.

**Table 3.13 Distribution of New Brunswick Full-Time Employees by Job Category, 1995-96
(N=6,473)**

<u>Job Category</u>	<u>Percentage</u>	
<u>Faculty</u>		
Professor and Associate Professor	19.7	
Assistant Professor	5.6	
Other instructional staff	<u>2.4</u>	
Total Faculty		27.8
<u>Nonfaculty</u>		
Executive, Administrative, and Managerial	2.7	
Professional	23.5	
Technical and Para-professional	6.0	
Secretarial and Clerical	17.3	
Skilled Craft	5.7	
Service and Maintenance	17.0	
Total Nonfaculty		<u>72.2</u>
Total full-time employees		100.0

Source: Office of Institutional Research, *Fact Book, 1996*

4. CURRICULUM AND ASSESSMENT

An awareness of the importance of global perspectives already profoundly affects curricular decision making.... As we review curricula and plan for new programs, we are preparing our students for an increasingly global environment....we need to enhance educational programs at Rutgers to better prepare graduates for that new world (*A New Vision for Excellence*, 1995).

OVERVIEW

Like other academic institutions, Rutgers is facing extraordinary environmental challenges and concomitantly emerging opportunities. Students who graduate from Rutgers now and at the beginning of the 21st century will enter a world that is increasingly technologically sophisticated and interconnected economically while at the same time culturally diverse and rooted in particular communities. Most graduates are likely to work in positions or organizations which, although located in our state or in other American communities, will be multinational in scope or interconnected instantly far beyond their own locality. Therefore, the curriculum offerings must be adapted to the requirements of a rapidly changing, global, multicultural, and high technology world. In this section we describe new curricular challenges facing Rutgers and focus on new program directions being developed in response to the demands of globalism and new technologies. New Brunswick is the primary research center of Rutgers and, as such, offers exciting opportunities for undergraduates and graduates who wish to study with faculty actively involved in cutting-edge research. Recent curricular changes are designed to maximize effective classroom teaching and to provide students with opportunities for combining their classroom learning with research.

LIBERAL ARTS EDUCATION⁵

Curriculum Development

Not surprisingly, since the centralization of academic units that came with the reorganization of the early 1980s, the work of liberal arts curriculum development and revision is done mainly--and done well--at the level of department and school. Departments, especially larger units, have developed their own mechanisms (e.g., curriculum committees) that for the most part effectively translate current research in given disciplines into significant revisions of undergraduate and graduate curricula. In some appropriate cases, as with Cook College, curriculum is developed not within departments but across them, according to the content of the given curriculum.

⁵ By liberal arts education we refer to pedagogical goals that focus on problem-solving, analysis, critical thinking, and the clear exposition of thought in oral and written forms. It is a mode of thinking that transcends disciplinary and professional education and is imparted in the liberal arts colleges as well as in the professional schools.

Mechanisms are also solidly in place for the oversight of curricular revision. In the case of several Cook College programs, as well as in the School of Engineering and other professional schools such as Social Work and the Graduate School of Education, curriculum is tightly controlled by national accreditation. For arts and sciences curricula, the FAS Curriculum Committee provides oversight of all departmental and program-based revisions within FAS. This mechanism ensures that all curricular revision--whether of a single undergraduate course or of an entire set of major requirements--is done in consultation with related departments, and is revised to conform to standard "catalogue" style and format. One drawback of the amount of "detail" work that goes into such supervision, however, is that little time is left within these venues for broader and ongoing discussions of general education, its links to disciplinary specialization, and interdisciplinary study.

Significantly, the faculty of each school or college has the ultimate approval on curriculum. For example, curricular revision at FAS is ultimately approved at the end-of-semester FAS meeting, presided over by the FAS dean. Cook College's curricular revisions are submitted to a committee on educational policy, then on to an Academic Forum (which has faculty and student representation), and finally to the faculty at large. In the Graduate School-New Brunswick, programs submit their curricular changes to faculty committees in their area of study (e.g., humanities, social sciences), which then make recommendations to the Graduate Executive Council. Final curricula are approved by the Graduate Faculty.

Once approved, new and revised curricula of all New Brunswick colleges and schools are then presented to the New Brunswick Academic Liaison Subcommittee of the New Brunswick Academic Coordinating Council, chaired by the vice president for undergraduate education. The Academic Liaison Subcommittee is composed of representatives of various schools (including FAS, the Graduate School-New Brunswick, and the professional schools), residential and professional colleges, and departments. Although it does not have the power to override faculty decisions on curriculum, the subcommittee does provide New Brunswick-wide oversight and facilitates contact among faculties. Although academic deans interviewed felt strongly that better mechanisms are needed to communicate curricular development across units, they believed that such deliberation above the level of respective faculties should not be legislative.

In the past decade, there have been significant changes to departmental curricula in a number of departments or schools, including (for example) history, English, sociology, biological sciences, and the Graduate School of Education. The revisions respond to changing definitions of disciplinary subject matter and to shifts in patterns of student enrollment. The broadening of the literary canon and the consequent need to expose students to a wider range of writers and cultures has informed curricular changes in history and English. The growth in the subfields within biological sciences and the desire to respond to growing student interest in this area have led to the establishment of the Division of Life Sciences with a Center for Instruction in the Biological Sciences, administered by a director with the status of department chair. This center will oversee the instruction of undergraduate students in the core curricular areas, providing a degree of coherence and pedagogical centralization not previously available. Although the life sciences organization is ongoing and it is still too early to assess its full benefits, there is optimism that a core curriculum, followed by a more individualized major, will enhance student preparation. Among the professional schools, in 1996 the Graduate School of Education implemented new programs for the initial preparation of teachers. The programs offer the combined B.A. and the

Ed.M. degrees. These programs require a major in the arts and sciences, a general education requirement, the professional education sequence, a clinical internship, and a research component.

Other curricular innovations have responded to the increased demand for students with a strong preparation in calculus and writing. Under the auspices of FAS and the mathematics department, the Calculus Project caps enrollment in calculus classes for all students willing to sign up for an additional hour of instruction. The English Department has instituted English 201, an intensive writing course that is linked with a section or course offered in another department or school. Students must register for both courses and enhance their writing skills through continued practice in essays and papers in a specific content area.

Curriculum, Honors Programs, and the Undergraduate Colleges

Curricular offerings specific to the undergraduate colleges are often innovative, interdisciplinary, and meet with high student satisfaction (see, for example, Douglass College's "Shaping a Life" course, as well as Livingston, Douglass, and Rutgers College honors courses). Yet, since the 1981 reorganization the relation between residential college curricula development and Rutgers faculty has been, for the most part, less than coherent simply because the colleges were without faculty members and the resources that come with them. College distribution requirements, as determined by the fellows of a given college, cannot be implemented unless departments are willing and able to give over their faculty to meet such requirements. For example, several years ago the Rutgers College fellows instituted a foreign language requirement that FAS was not able to support financially. Advising of students is now divided between general advising, which is handled by the colleges, and departmental and major advising, which is handled within departments. The lack of communication between these separate advising systems leads to confusion among students and faculty alike. College Honors Programs are faced with the same systemic problem, formulating and maintaining honors courses that are completely dependent on the borrowing of faculty from already overtaxed departments. The 1981 reorganization also affected the coordination of curricular activities. Under the 1996 administrative reorganization, the undergraduate college deans now report to the dean of the Faculty of Arts and Sciences, facilitating greater coordination of course requirements, staffing needs, and departmental resources.

Several reports over the years--including the 1996 "Building a Learning Community" (The "Pomper Report")--have proposed ways of restructuring the colleges in relation to units that possess faculty and faculty resources (most notably, FAS). Importantly, one of the aims of the "flattening" of administrative organization that was cited as the objective of the 1996 restructuring was to close the gap between planning and resources. The relevance of this restructuring to honors and curricular planning is just beginning to develop. The FAS dean is now overseeing an FAS Honors Program, which intends to double the number of honors courses available by introducing a set of discipline-based honors courses in addition to the college-based courses already being offered. Although this program is coordinated through FAS, the departments themselves run the discipline-based courses, while the colleges continue to solicit volunteers to staff the interdisciplinary college-based courses. The relationship of the new FAS Honors Program to the existing College Honors Program will require further consideration after 1997/98, the first year of the FAS program.

Interdisciplinary Curriculum Development

The 1981 consolidation of faculty resources in departments and schools, rather than colleges, makes interdisciplinary curricular development challenging. Two recent studies of undergraduate curricular need, *Rutgers Dialogues: A Curriculum for Critical Awareness* and *Building a Learning Community*, have identified the need to help students make connections across traditional disciplinary lines and to facilitate the creation of interdisciplinary initiatives. While the sharing of intellectual disciplinary resources fares well at New Brunswick within CBIs and honors programs and between individual faculty members, current structures and mechanisms for developing interdisciplinary courses do not facilitate and often impede course development and pedagogical interchange. The same challenges face undergraduates in the liberal arts who are interested in an “individualized major.”

PROFESSIONAL PREPARATION AND EDUCATION

Judging from the level of satisfaction of our undergraduates and alumni as indicated in year-end surveys of graduating seniors (1995 Undergraduate Student Survey), it is perhaps safe to say that for the majority of our students, their education and experience at Rutgers University represent an essential and adequate preparation for their later career and profession. However, we strive to do even better, particularly in a rapidly changing society where competition is becoming increasingly keen, global, and technology-based. Our society needs well-trained persons who are interested in and understand the many and diverse aspects of their tasks, persons able to identify important issues and questions, and come up with innovative solutions to difficult problems.

All students, whether in traditional liberal arts colleges or in professional schools, need a strong liberal arts underpinning. To develop and refine critical thinking skills, students should be exposed to a diverse range of knowledge to achieve a broader awareness of the extent of disciplines and to experience the nature of other intellectual fields. Emphasis must also be placed on improving communication and interpersonal skills. Students should be made aware of the value of clear communication, both written and spoken, and required to develop these skills through practice. Moreover, these skills cannot be confined to one or two courses in the first year of a student’s work at the university, but need to be developed and expanded throughout a student’s education. At the same time, the temptation to require so many different courses that students have no time to delve more deeply into a particular subject matter and prepare for future professional work must be avoided.

Students must have the opportunity to develop problem-solving skills. A recent roundtable discussion of industry leaders highlighted the need to hire workers who can take complex problems and see them through to a solution.⁶ Students need extensive practice in solving problems, not just elegant and well-defined theoretical problems, but messy, complex, real-world problems. It is this problem-solving skill coupled with knowledge of a particular field that makes an undergraduate degree the crucial foundation for a lifetime of learning. Explicit recognition of the importance of problem-solving skills

⁶ Brill, Arthur S., and Daniel J. Larson. 1995. “Are We Training our Students for Real Jobs?” *Academe* (November-December): 36-38.

should be made in introductory courses of all appropriate degree programs, whether by the use of computers and quantitative analysis or non-quantitative, abstract reasoning.

It is also imperative that we increase students' awareness of the "real-world." Faculty and students must give attention to the relation of disciplinary knowledge to the enterprise as a whole and to the problems and opportunities associated with commercial endeavors in various fields and professions. The pedagogical as well as practical value of industrial-research collaboration should be recognized by our university community. In this context, the establishment of various "internship" and "externship" programs at Rutgers is a step in the right direction. In general, students who participate in collaborative research efforts will develop a better understanding of the opportunities, needs, and challenges of various industrial and commercial enterprises.

A number of ongoing and recent programs in New Brunswick respond to the challenge to bring into closer and more productive relation the varied areas of research and teaching, lived experience and curriculum, professional preparation and liberal arts education. We mention only a few. Cook College requires three credits of experienced-based education for all students, and offers a rich array of options to fulfill the requirement, including cooperative education, approved research projects, specific courses in research problems in a given discipline or subdiscipline, and the George H. Cook Honors Program. The Department of Political Science now requires all majors to take at least one small seminar designed to introduce students to the current research of the faculty teaching the course. This and other initiatives respond to the general need for writing across the curriculum, established by the *Rutgers Dialogues* Report.

The Citizenship and Service Education (CASE) program provides mechanisms for students in professional and liberal arts courses to combine their course work with community service in ways that encourage the integration of scholarship and real-life problems. The vice president for Undergraduate Education has established a Web page and printed directory of opportunities for undergraduate involvement in research. The Department of Spanish and Portuguese has established a yearly topic which serves as the focus for courses in advanced language, and for introductory through advanced literature and culture. It is also the subject of discussion in a series of workshops and conferences. The topic chosen responds to issues of both academic and contemporary social and cultural concern and seeks to help students to understand the implications of current research in literature and culture for the analysis of contemporary social and cultural issues. The continuation of study-abroad programs enables students to bring together their classroom learning and their daily experience in a context that makes immediately palpable the relations of liberal arts and professional education to social, civic, and global realities and needs. Current programs in Costa Rica, South Africa, Israel, Mexico, France, Italy, and many other countries represent a significant and exciting opportunity for students to prepare themselves for careers in a global economy. These initiatives should be supported and expanded.

Among professional schools, the goal of the GSE-New Brunswick Professional Development School is to improve education for children and improve professional education for both teachers in the schools and students in GSE's Five-Year Teacher Education Program. The Professional Development School was selected by the U.S. Department of Labor as the New Jersey Program Focus for the 1996 Goals 2000 Teacher Forum; one of eight charter members of the National Education Association's Teacher Education Initiative; and as an Exemplary Program (by the International Reading Association). Rutgers

graduate and undergraduate students work integrally with a New Brunswick school in senior-year placements, in internships, and as counselors. Teachers from the local school have also participated in collaborative studies with GSE faculty in the areas of literacy, mathematics and technology, and classroom management.

While curricular development across the range of disciplines has not only kept up with but often set the pace for national trends, the deans of the various academic units themselves identify major areas of concern. Some fields face persistent challenges that require a flexible and rapidly adjusting curriculum to respond to new issues, as in the case of managed care in the health and human services field. Professional and career preparation of all students requires the maintenance of high standards for professional training as well as continued study and dialogue regarding articulation between liberal arts and professional education. Faculty from the various professional schools and FAS must have the opportunity for ongoing dialogue regarding the curricular needs of Rutgers undergraduates in a variety of areas, including internship availability and supervision, the relationship of liberal arts and professional education, and the changing nature of students, their needs, and their professional opportunities.

GRADUATE PROGRAMS AND GRADUATE EDUCATION

The structure of Rutgers' 76 graduate programs varies according to the discipline. For the humanities, social sciences, and most physical sciences, graduate programs and academic departments coincide almost entirely, but in other areas, such as the biological sciences, graduate programs commonly cross departmental, school, even university boundaries, in keeping with the growing interdisciplinary trend. The programs are connected to each other in myriad ways. Although there are obvious reasons for not confining any one graduate program to a traditional academic department, the cost of not doing so in the biological sciences has been an aggravating disconnection between graduate programs and departments. The organizational vacuum has been filled to a limited extent by the Graduate School, which has provided what few resources and limited guidance exist. An emerging solution to this situation is the consolidation of several related departments and graduate programs into a Division of Life Sciences within FAS. This reorganization seeks to divide the faculty into smaller, more focused, and intellectually coherent departments with a clear research focus, thus benefiting graduate students and advanced undergraduate students. The division will coordinate the development of the smaller units and oversee hiring efforts.

On the graduate level, as in the areas of undergraduate liberal arts and professional education, structures must allow for rapid adjustment to changes in the field and continuing discussion of broad and specific issues that affect professional preparation. The 1996 restructuring of the Graduate School-New Brunswick and its relation to FAS and the professional schools is ongoing. Formerly the Graduate Faculty, composed of members of FAS and of professional schools offering graduate programs, considered issues common to graduate education across all disciplinary and professional boundaries. There is concern that the separation of the FAS and professional graduate faculties will inhibit communication across school and division lines. As noted above, maintaining a structure that fosters such communication is imperative to prepare graduate students for careers in a changing world that increasingly relies on interdisciplinary preparation.

As indicated by national rankings and external evaluations, individual programs have achieved excellence in graduate education even in the face of declining resources. Graduate student placement varies from program to program but Rutgers doctoral students continue to find positions in excellent institutions. The National Research Council study, *Research-Doctorate Programs in the United States*, identified an increase in the number of Rutgers programs in the top quartile of programs within given fields. (See Section 3, Table 3.1.)

GLOBALIZATION, MULTICULTURALISM, AND NEW TECHNOLOGIES

New Brunswick academic units are in the process of expanding curriculum content on international issues, exploring creative programmatic approaches to global concerns, and developing ways to use new technologies to deliver academic programs in New Jersey and throughout the world. These approaches build on existing curriculum content and will provide a diverse student body with values, skills and knowledge needed to graduate as productive citizens in the future. We discuss four types of recent curricular initiatives.

Enhanced Curriculum Content and New Programs

FAS is developing a new interdisciplinary approach to global studies that will allow students to take a joint major in global studies and some other subject such as history/global studies, political science/global studies, or Spanish and Portuguese/global studies. Individual majors will be connected to a joint program of faculty from different departments who are interested in international and global issues and research.

Existing programs in Asian studies will be enhanced through the use of new computer technology for Japanese and Korean language learning, new research areas in Chinese studies, a graduate-degree program in East Asian studies, and a Center for Asia-Pacific Studies.

Women's studies is working with centers and other departments to develop multi-disciplinary curricular initiatives in women's studies, gender studies, and global politics at the graduate level. New programs will incorporate gender perspectives into the curricula of Rutgers' professional schools at New Brunswick as well as other academic units and campuses.

One initiative to emerge from the strategic planning processes is an institute for language. This institute is "designed to make rapid adjustment in response to changes in ... needs" of Rutgers students, and to "serve corporate and community needs through contracts for services" (Report of the International Studies Strategic Planning Implementation Committee).

International Partnerships and Exchange Programs

Numerous exchange programs exist with other universities. The School of Management and Labor Relations developed the first professional masters program in Singapore in 1988. Similar programs are being initiated in Indonesia (1997) and elsewhere.

The Local Democracy Program in Poland, the Institute for Hungarian Studies, and their umbrella organization, the Center for Russian, Central and Eastern European Studies, have established faculty and student exchanges. Faculty in professional schools (e.g. social work, education, engineering) and in arts and sciences departments have been involved in individual exchange programs with other countries, in teaching or research. Faculty and students from other countries as diverse as Poland and Japan have been brought to New Brunswick for research, study, or teaching. All of this adds an enriched global perspective to our campus offerings.

An interdisciplinary Center for Children and Families and Human Services will include an international component. The undergraduate program of Citizenship and Service Education (CASE) on the New Brunswick campus is already disseminating course content and ideas about citizenship education to international locations. It has begun programs in Costa Rica (summer session) and semester programs in South Africa and Poland.

In 1997/98, the Soros Foundation awarded \$71,000 to faculty in the GSE to initiate the Soros Educational Council, which will coordinate and expand efforts to improve and reform educational opportunities in the former Soviet Union (through distance learning techniques, as well as traditional faculty internships and exchanges).

Structures for Coordinating Efforts

A Global Studies Program, recently established on the New Brunswick campus, expands the scope and responsibilities of the former International Center. It is expected to help coordinate various initiatives and ongoing international programs throughout the university. The center's mission is to build on the "international strengths of our existing departments, and programs and centers, and encourage joint initiatives" in an interdisciplinary effort involving all levels of students, faculty, and visitors in understanding of international issues (*University Strategic Plan, 1995*). This initiative is still in its early phase and much work remains to be done to maintain the momentum initiated by individual programs and to coordinate international and global initiatives while remaining flexible and open to new opportunities.

New Technologies and State-of-the-Art Learning Tools

A wide variety of new instructional technologies are already in use, and instruction via interactive video and the Internet will continue to grow. Newly available multimedia for synchronic and

asynchronatic⁷ long-distance instructional technologies and learning already enable the university to expand its service base and offerings, and its expert faculty can be available throughout the state and globally. Intercampus offerings have also increased: for example, in fall 1997 New Brunswick faculty taught an undergraduate course in Chinese for Newark students via interactive video.

New technologies will enhance the capacity of Rutgers to create partnerships with universities and professional experts around the world, as well as with public and private schools in New Jersey. As an example, the Graduate School of Education is signing an agreement with University of Veracruz for a number of collaborative initiatives, including faculty and student exchange, joint conferences, and the establishment of courses via distance learning. In 1998, the GSE and the faculty of psychology at Veracruz will offer jointly a graduate course using distance learning techniques, to expand the access to the expertise of both faculties.

While the new technologies offer exciting opportunities, they also raise important issues with respect to pedagogy and intellectual property rights, among others. Full study and discussion of the implications of distance-learning and other new forms of teaching should be ongoing. At present, the Levin building, the new classroom in Alexander Library's Scholarly Communication Center, and special initiatives sponsored by New Brunswick's Teaching Excellence Center provide facilities and training for the use of the latest teaching technologies. Increased faculty training in these areas is imperative and must be widespread and continually updated.

THE RELATION AMONG CURRICULA, TEACHING, AND RESEARCH

The development and delivery of excellence in curricula, teaching and research depends on the involvement and commitment of the faculty. The basic question is whether the university can strike an appropriate balance in defining expectations of faculty, and in rewarding their accomplishments in all three of its core mission activities of teaching, research, and public service.

Rutgers committed itself in the 1980s to becoming a major public research university. This commitment included a program of hiring "world-class scholar leaders" (WCSLs), the hiring and nurturing of junior faculty based on potential for research excellence, and the establishment and investment in a large number of CBIs. (See Sections 1 and 3.) While this program led to notable successes, culminating in the university's 1989 election to membership in the AAU, it has also contributed to ongoing discussions regarding the relation between research and teaching. The current administration has undertaken a number of initiatives to underscore the importance of teaching, including the appointment of a vice president for undergraduate education, the establishment of Learning Resource Centers and Teaching Excellence Centers, and the call for curriculum reform through the Rutgers Dialogues committee. Some faculty have expressed concern that the emphasis on undergraduate education and the commitment of resources in this area have occurred at the expense of the research

⁷ Synchronatic long-distance instruction refers to transmission that is received simultaneously with its production, allowing for dialogue between instructor and students. Asynchronatic long-distance instruction is recorded and then transmitted to students at a later time.

programs of the university, and that our commitment to hiring and retaining scholars of stature has diminished. They feel that New Brunswick's role as a major research university has not been sufficiently supported. On the other hand, the emphasis on research that permeated the culture during the 1980s continues to prevail in the promotion procedure, creating a situation where research accomplishments are significantly weighted over teaching and service in committees that evaluate candidates for promotion at all levels.

Few would question the argument that the university's commitment to and investment in research excellence at New Brunswick provide numerous opportunities for curricula enhancement. Indeed, a commitment to research excellence on the New Brunswick campus is fundamental to attracting, nurturing, and retaining faculty who are at the forefront of developments in their respective fields, with consequent implications for participation in and contributions to curriculum development and revision. At the same time, research active faculty on this campus are in a position to contribute immensely to both undergraduate and graduate education. This occurs through thesis supervision, seminar courses, honors programs and research problems courses, but also through participation in more traditional course/classroom settings. To extend research opportunities to undergraduates, the Office of the Vice President for Undergraduate Education has created the Rutgers Undergraduate Research Fellows Program. This unique program is designed to increase the number of undergraduates involved in research activities and to increase faculty/undergraduate student collaboration on research projects. Finally, the presence of a major commitment to research excellence on this campus creates in itself an intellectual atmosphere that is mutually supportive of curriculum excellence, an atmosphere that fuels the excitement of discovery and learning for all students, graduate and undergraduate.

The effective communication of research findings is also a primary goal of the university. The committee recognizes, however, that balancing teaching and research priorities and concerns continues to be a difficult goal. Faculty members must be concerned with achieving tenure and promotion in the Rutgers' system, if this university is where they want to build their academic future. The committee's concern is whether the university's stated expectations and reward structure for faculty are consistent with its stated goal of excellence in both teaching and research.

The university's policy with respect to the criteria applicable to academic appointments and promotions (Appendix D of the promotion procedures) states: "Effective teaching should be a fundamental endeavor of all members of the faculty." It also states: "Active scholarship should be a fundamental endeavor of all members of the faculty." At the level of promotion to associate professor with tenure, the most critical step in the promotion process, the emphasis falls more heavily on research, with a lesser emphasis on teaching.⁸ One might argue that the university's stated commitment to excellence in both teaching and research might be better served at this "most critical step in the promotion process" if, as with scholarship, effective teaching were necessary to the achievement of tenure rather than just "normally a condition for the achievement" of tenure. The new Form 1-a requires significantly increased documentation of teaching performance, including summaries of kinds of classes

⁸ Appendix D states: "For general teaching/research faculty, scholarship, including research accomplishment, is the primary criterion. Excellence in scholarship, as defined in the criterion above, is necessary to the achievement of tenure; effective teaching, as defined in the criterion above, is also normally a condition for the achievement of tenure."

taught (lecture, seminar), number of students in each class, and students mentored in theses, honors, and dissertation work. Some New Brunswick faculty continue to express concern about the difference in wording with respect to research/scholarship and teaching.

For promotion to professor, the institution of the “10-year rule” provides that for associate professors who have remained in rank for 10 years, the balance among the criteria shall be altered to provide increased consideration for contributions to teaching and service. This would appear to represent a reasonable opportunity for sustained teaching excellence to be recognized at this level of promotion, especially when comparable research excellence may not be evident. Regarding promotion to professor II, the expectations clearly identify scholarly eminence as the criterion for promotion.

With respect to merit awards, the university's policy states that contributions in teaching, scholarship, or service may form the basis of the award. Clearly the opportunity for a balance in the recognition of teaching and research excellence is available, although it is unclear to what extent that balance is achieved in practice.

While it is understandable that some variability in teaching workloads, and consequently, time available for research, is required in an institution of the size and scope of Rutgers, a well articulated and reasonably uniform policy should exist to monitor and minimize differences among departments, colleges, and faculties. When a reduced teaching load is available, either because of lower course loads or grant buyouts, faculty generally opt out of their undergraduate teaching obligation, with detrimental consequences for the quality and continuity of undergraduate major and non-major offerings.

The evaluation of teaching as a criterion for promotion remains problematic. The campus lacks well defined and uniformly applied structures to provide for the peer review of teaching effectiveness although some departments, such as history and English, have already established such procedures. Certainly the student teaching evaluations distributed and managed by the Teaching Excellence Centers are a contribution, but they do not represent peer evaluation. As well, the Committee on Standards and Priorities in Academic Development (CSPAD) assessment, classification, and recommendations that follow external reviews of departments and programs should focus on the delivery of excellence in both teaching and research.

RESOURCES AND BUDGETING PRIORITIES

There are two major challenges related to resource allocation that affect curriculum and curricular change: (1) the costs of curricular modification and modernization in faculty time and in equipment purchase; and (2) the costs of starting new programs while sustaining existing offerings. Curricular modification and modernization must keep pace with the challenges of a rapidly changing world. To initiate and sustain curricular innovations, faculty need release-time to develop new programs and to integrate new technologies. Distance learning, instructional use of the Internet, email, “power point,” and other resources require faculty training and, to maximize their pedagogical potential, careful integration into the curriculum. Classrooms, offices, and libraries must be refitted to allow for the use of the most recent pedagogical and technological advances, without sacrificing important, traditional, and successful avenues to knowledge. The Teaching Excellence Center has initiated a number of programs to enhance faculty training and knowledge in this direction. More support for these and similar efforts is needed.

Changing definitions of academic field, the growth of interdisciplinary research and teaching, and the need to balance general and specialized education require careful assessment in an era of declining, stable, or only moderately increasing economic resources. New interdisciplinary programs necessarily compete with established programs, and there must be mechanisms to effectively and efficiently determine priorities, to recommend economies, and at the same time to encourage experimentation and modernization. In particular, we need to ensure that resources follow shifting responsibilities. As enrollments in priority areas increase, so must targeted resources.

Other curricular concerns relate to traditional costs and decreasing financial support. Stated simply, our core programs are suffering. For example, within FAS large departments with ambitious undergraduate major requirements suffer immense and increasing financial pressure, and are forced to raise stop-points of upper-level courses for majors beyond the point at which such curricula can successfully be implemented. The university must pay particular attention to maintaining the excellence of core academic programs.

Also, while students who are assessed as remedial find a coherent (if budgetarily challenged) system of courses, advising, and instruction at their disposal, FAS has found that the percentage of its budget devoted to remedial education has risen consistently and alarmingly. While this fact might support one current of opinion nationwide that remedial work should be shunted down to the community college level, a recent study of remedial courses at Rutgers-New Brunswick (especially the university's well established and successful Gateway programs) demonstrates that on the whole remedial students at the university do "wildly well," much better in fact than in remedial instruction at the community college level (Educational Policy Committee, New Brunswick Faculty Council, 1996).

Administrators of remedial programs have found that pressure needs to be put on these students to work continuously through and satisfactorily complete remedial courses. Also, while the Learning Resource Centers (LRCs) have been available since the early 1990s to provide much-needed learning assistance campus-wide, the above study strongly recommends that LRC resources be made available to support staff centers (such as the English department's Writing Centers) where crucial remedial tutorial work takes place.

Recent programs and changes in structure in New Brunswick acknowledge and attempt to meet these challenges. The establishment of the Teaching Assistant Project, the Teaching Excellence Center, the Rutgers Dialogues Grants from the Office of the Vice President for Undergraduate Education, the introduction of 30 "smart classrooms" in New Brunswick, the use of computer fee monies to upgrade departmental and student computer service, and the ongoing RUNet 2000 initiative facilitate curricular innovation using current technology and offer financial support, and/or reduced classroom teaching time, to enhance the curriculum and classroom teaching and learning. The 1996 consolidation of the New Brunswick undergraduate colleges and the Graduate School-New Brunswick within FAS, as well as the reallocation in funds through Strategic Resource and Opportunity Analysis (SROA) address important areas of curricular concern. The competition between the undergraduate colleges, the academic departments, and FAS for resources to cover general educational requirements, departmental requirements, and interdisciplinary and nondepartmental courses such as college mission courses and honors courses can now be addressed within a structure that places within the same body the power for curricular development and the economic resources to support it. The growing use of faculty with joint

appointments also is expected to maximize faculty resources, encourage interdisciplinary work, and enhance communication across departmental lines.

Faculty members are often worried less about the conception and initiation of new courses and fields of study—again, the mechanisms for such innovations have been solidly and well established— than about the way curricular development, once begun, is assessed by the administration and consequently invigorated or de-emphasized. External reviews clearly play an important role in the assessment of curricula, but it is not clear to faculty how such assessment is articulated into support for the maintenance of these curricula. While the Office of the Vice President for Undergraduate Education awards grants for the development of curricular initiatives, why and when funds taper off for such programs becomes a critical factor. Greater clarification from FAS is needed to further specify the FAS criteria of “student demand” and “quality of curricula” for enhancing support for curricula initiatives.

A great variety of international programs and new global initiatives are being implemented on the New Brunswick campus, either alone or in collaboration with Camden or Newark. Many programs mentioned (and others) involve teaching, training, or research overseas. These programs certainly provide vital new energy and a broader perspective for the university, and they also enhance our reputation in the state, nation, and abroad. However, they also intensify questions about the availability of resources and need for coordinating efforts. Such extensive new development would be difficult at any time but may be more problematic at a time of shrinking resources, when departments are already being asked to do more with less and still not compromise excellence in carrying out the university mission of teaching, scholarship, and service. Issues of competing needs and increased demands on already hard-pressed faculty and students become more significant as we contemplate additional globally oriented programs. However generous and cooperative foreign institutions might be, they frequently lack the resources to give extensive support to such programs either in their own country or for exchanges with the U.S. Corporate support may be available for certain programmatic initiatives but is bound to be both selective and precarious. Furthermore, new content has to be inserted in the curriculum in a way that enhances students’ general problem-solving ability and critical thinking, without substituting for other core knowledge.

Significant challenges face the university in the areas of curriculum and assessment. The use of part-time faculty provides a temporary solution to loss of financial support but is now excessive in a number of programs. Professional schools and some departments benefit from the use of part-time lecturers with expertise or practical knowledge in areas not covered by the full-time faculty. However, part-time lecturers who are paid a minimal salary of \$2,000-\$3,000 a course do not and often cannot participate in teacher-training programs and have no long-term allegiance to the program or the institution. With only modest understanding of the curriculum and mission of the department and university, their presence in increasing numbers impacts significantly on the ability to modernize the curriculum. A recent FAS initiative hopes to use SROA money to increase the number of departmentally based teaching assistants, because of their commitment to their programs and the ability to supervise them over time (and because graduate programs want TAs to develop professionally). The lack of an adequate number of teaching assistantships remains a persistent problem at Rutgers. In the face of these and the previously mentioned challenges, mechanisms for establishing priorities and allocating resources must be continually examined, and effective and efficient structures must be instituted and maintained in the areas of curriculum and assessment.

RECOMMENDATIONS

(1) Recognizing the need to maintain vital and dynamic academic programs, the committee encourages the creation of additional mechanisms beyond existing curriculum committees. Broader discussions of all aspects of the curriculum, including liberal arts and professional education, and undergraduate and graduate education, could take place through the Faculty Council or other faculty bodies.

(2) To broaden the educational opportunities available for students, we encourage the following:

- In line with strategic planning efforts, enhance interdisciplinary offerings and identify faculty resources and incentives for interdisciplinary course and program development;
- Explore opportunities for coordination and expansion of internship programs (e.g., CASE) by all departments where such opportunities are deemed appropriate.

(3) While extensive efforts have been undertaken by the colleges and by FAS to revamp the offering of honors programs in New Brunswick in recent years, additional review and program development are needed to clarify and codify the opportunities available across all undergraduate units in New Brunswick.

(4) Given the important role of the undergraduate liberal arts colleges in New Brunswick, we recommend further examination of the relationship of FAS to the colleges and their faculty fellows regarding curriculum and other issues.

(5) To ensure that faculty, teaching assistants, and part-time lecturers are able to teach in a changing pedagogical environment, current training efforts provided by departments, the Teaching Assistant Project, and the Teaching Excellence Center should be enhanced. Furthermore, additional department-focused opportunities are needed to train instructors in the use of “smart classrooms,” distance-learning technology, computer-assisted instruction, database technologies, and electronic media.

(6) We encourage the creation of a committee under the auspices of the New Brunswick Faculty Council to examine issues pertaining to distance learning, including teaching techniques, student learning styles, student services, academic freedom and integrity, intellectual property, and related issues.

(7) To sustain and advance the high quality of instruction in New Brunswick and increase the opportunities for student/faculty interaction, we urge the following.

- Increase the number of full-time faculty.
- Increase the number of TAs. Toward that end, we urge implementation of Graduate School-New Brunswick’s graduate assistance proposal to the Committee for the Future.
- Reduce the number of PTLs, except in those departments where they are deemed educationally valuable.

(8) To further reinvigorate our commitment to excellence in teaching, we urge efforts be directed toward defining unit-specific expectations regarding teaching evaluations, course development and materials, and peer observation in the classroom. Moreover, institutional efforts are needed to evaluate the promotion and tenure processes and, in concert with the Committee on Standards and Priorities in Academic Development, the critical balance between research and teaching.

(9) To ensure that budgetary decisions are in keeping with academic priorities and planning, flexible systems are needed to provide for the reallocation of resources in an environment of changing enrollments and curricula.

5. STUDENT SERVICES: RECRUITMENT TO GRADUATION

The student-services and student-life programs in New Brunswick are designed to facilitate the educational experience of students from the point of application through commencement. This section of the report focuses on the three critical components of the students' experience: recruitment and admission; organization of instruction; and the provision of student-life programs that are designed to support, retain, and create an educational environment that will enable students to learn and grow.

RECRUITMENT AND ADMISSIONS

Undergraduate Enrollment Management

With the reorganization of the Office of Undergraduate Admissions and the appointment of an associate vice president for enrollment management, the administration has demonstrated a strong commitment to providing enrollment services in a timely, efficient, and contemporary manner. The shift from an "admissions" framework to one focused on "enrollment management" makes explicit the integration of all aspects of recruitment, admission, enrollment, retention, and graduation. These activities are centered in the Office of University Undergraduate Admissions, which now reports to the vice president for university budgeting. Faculty and prospective students are already seeing the benefits of the new, integrated system.

The restructured Office of Admissions has moved to restructure the recruitment and admissions process. As of March 1997, the office has established an Internet home page that describes admissions application, and is moving toward having the application form transmitted electronically through the World Wide Web. The office has also outsourced its significant telephone operations and communications functions by redirecting telephone calls to the Campus Information Services Office. This change in telephone coverage has been enormously successful and provides positive opportunities to interact with current students and members of the Rutgers community as members of the public consider applying to Rutgers. Finally, the process of notifying successful first-year applicants has been accelerated to a three-week response time with timed post-admission recruitment mailings.

Recognizing its strongest assets, the Undergraduate Admissions Office has also begun to involve more faculty, and staff and students from the collegiate units in its recruitment efforts, through programs

designed for admission and post-admission recruitment, the publication of a new series of collegiate brochures, and collaborative on-campus open houses and recruitment events. Specialized efforts have continued to focus on scholars for the honors programs, the financially and educationally disadvantaged, and out-of-state students. The office has also strengthened collaborative efforts with high school counselors and teachers in advanced placement and honors courses.

As the university moves toward the 21st century, it must further adapt to the many challenges and opportunities facing it, including (1) clarifying and simplifying for potential students and the general public the organizational structure of the undergraduate colleges within the university; (2) redoubling efforts to stem the outmigration of some of the best high-school graduates from New Jersey, and at the same time considering increasing out-of-state enrollments; and (3) identifying additional resources in a time of decreasing state support to meet competitive pressures from peer institutions and an expected increase in the number of applications. Along with an emphasis on enrollment management must also come a recognition that the budgets of core units must reflect shifts in enrollment. For example, 56 additional writing sections were included in academic year 1996/97 English department offerings, with no additional resource allocation. In preparing for new and exciting curricula offerings, we must protect our core disciplines as well.

Graduate Admissions

Reporting to the university vice president for academic affairs, the university director of graduate and professional admissions has oversight responsibilities for the admissions operations of the 16 graduate and professional schools at Rutgers.⁹

Graduate admissions is a collaborative process with graduate deans, faculty, students, and the Graduate Admissions staff. While the primary responsibility for graduate recruitment rests within the individual disciplines, the Graduate Admissions Office provides direct service to all schools and helps coordinate recruitment and admissions functions. There is a single application form and uniform procedures for all New Brunswick graduate units. The graduate admissions office is linked directly to, and served by, the university's student record database, which also serves the registration and financial aid offices. The Graduate Admissions home page on the WWW provides a downloadable application, as well as access to the graduate admissions office, academic discipline home pages, and catalogs.

The university received a total of 20,007 applications in 1996, and admitted 9,113, for a total of 5,418 admit coming/enrolled graduate students. New Brunswick applicants totaled 11,972, of which 5,315 were admitted and 3,440 became admit coming/enrolled students. The total university enrollment for 1996 exceeded the goal established by the university's Enrollment Committee. The quality of

⁹ Except for the Schools of Law in Camden and Newark, and the Graduate School of Management in Newark, all graduate and professional schools are served by an admissions office reporting to the university director. Admissions offices in the Law Schools and Management report to their deans, but the university director maintains a relationship with these offices in exercising university responsibilities. The undergraduate admissions directors in Camden and Newark are also responsible for graduate admissions on their campuses. At New Brunswick, graduate and undergraduate admissions are handled in separate offices.

applicants, admits, and admits/coming as measured by test scores and GPAs is at an all-time high and continues to improve each year. The average GRE scores (combining verbal and quantitative) of applicants increased slightly, from 1,140 in 1995 to 1,144 in 1996, and the mean GPA increased from 3.16 to 3.19 during the same period.

Like its undergraduate counterpart, Graduate Admissions faces both challenges and opportunities in the near future: (1) given aggressive marketing strategies used by our peer institutions, Rutgers must more effectively coordinate its marketing of its stellar programs internationally, nationally, and locally; effective coordination will involve better support for department recruiting efforts; (2) as a state university, Rutgers must be responsive to the academic needs of the state's citizens, including nondegree programs and professional master's degree programs, especially those delivered through distance learning and electronic classrooms; (3) admissions procedures must also remain flexible to serve those populations seeking nontraditional graduate education; and (4) resources must be identified to ensure that graduate admissions procedures and practices take full advantage of technological advances, including electronic application, image processing, and data warehousing.

Office of Financial Aid

The University Financial Aid Office is charged with the coordination of all need- and academically-based financial aid resources for undergraduate students and for need-based financial aid for graduate students. Academic financial support for graduate students is administered through the academic deans. The Office of Financial Aid served 22,101 undergraduate students and 4,286 graduate students in academic year 1995/96. Much institutional focus has been placed on the administration of the Federal Direct Loan Program, which currently provides \$98,998,288 to 17,894 students, and has become an efficient way to deliver financial aid to students.

The University Office of Financial Aid is the primary agency responsible for assisting families to obtain the necessary resources to finance a Rutgers education. Through direct counseling services for students and families, the office assists in the recruitment and enrollment process for new students, and supports university retention goals by assisting returning students. The key principle in the administration of need-based aid is that the primary responsibility for financing educational costs rests first with the student and family (either parents or spouse). When the resources to meet educational costs are inadequate, the office assists in the application process, problem-resolution phase, and crediting of aid to the student's account by drawing upon federal, state, and institutional sources of assistance.

The office's other major role is to provide information regarding federal, state, and university aid sources. Because the majority of financial assistance comes from federal and state sources, the Office is heavily regulated by federal and state statutes/regulations. Program participation requirements demand strict adherence to applicable regulations, and the Office is subject to annual audit and program reviews. (Resource documents outline recent initiatives of the Office of Financial Aid.)

Several opportunities and challenges face the office in the near future: (1) A growing federal/state electronic sophistication in the provision of award information and family applications provides Rutgers with the opportunity to provide enhanced electronic service for students and families by directly

accessing their files from campus based PC/Internet linkages. Voice response technology will also reduce and eventually eliminate the need for New Brunswick students to physically visit the College Avenue office for information regarding their aid application/award. (2) The reauthorization of the Higher Education Assistance Act (1998) produces legislative and programmatic change requiring substantial programming and revision of student consumer information. (3) The development of integrated systems and processes involving admissions, financial aid, the registrar's office and bursar functions will provide the opportunity for enhanced student service and more efficient administration. (4) A major operational challenge is the development of "batch repackaging" that systematically increases/decreases student awards, to avoid overawarding and to allocate additional resources. Preliminary efforts with FAS, which involve increased coordination between FAS departments, the FAS dean's office, and the Office of Financial Aid, are promising.

REGISTRATION AND ORGANIZATION OF STUDENT INSTRUCTION

Office of the University Registrar

The Office of the University Registrar is the official custodian of the academic records at Rutgers. The office is a centralized unit in New Brunswick serving all the degree-granting schools and faculties and the Summer Session, with offices located in Newark and Camden to service schools on those campuses.

The staff uses an online computer registration system (which includes Touch-Tone telephone registration, grade reporting, and transcript requests) and an academic record and transcript system that allows for viewing biographic data on more than 600,000 students, as well as grades and registrations for all students enrolled since 1987. The volume of activity in the registrar's office is high: registrations are processed for over 48,000 students each fall semester (a few thousand fewer each spring) and over 20,000 each Summer Session (one of the largest summer sessions in the nation). More than 225,000 transcripts for students are produced each year. In a typical year the office produces over 10,000 diplomas and over 40,000 student-enrollment certifications for government agencies and private industry.

In the past year the office spearheaded a major effort to modify the Touch-Tone telephone grade reporting and transcript request system to offer students a choice between requesting a complete academic transcript or a single semester grade report, since many students only need a recent grade report for tuition remission from employers.

The Office needs to explore the ability of the Touch-Tone registration system to handle more complex tasks, and even higher volume, as well as the effect of Touch-Tone registration system on the relationship between faculty advisers and students. Further, as the demand for electronic access multiplies, the Office needs to examine ways to enhance security and confidentiality and to provide enhanced flexibility by the academic units to manage data for research purposes.

University Scheduling and Space Management

The mission of this office is to oversee the development and implementation of policies, systems, and procedures to facilitate the scheduling of courses and to ensure effective usage of all space in the university. Working under the general guidance of the vice president for undergraduate education, and in conjunction with provosts, deans, and department chairs, the office's goals are to: (1) oversee the collection of courses from departments and provide necessary coordination in scheduling and assignment of rooms, published in the *Schedule of Classes*; (2) conduct studies for the purpose of facilitating intercampus registration and alleviating unnecessary intercampus travel within New Brunswick; (3) direct the computerized sectioning/registration of all first-year students in New Brunswick; (4) prepare and analyze class size distribution patterns to measure against peer institutions and to project needs for instructional space; (5) oversee the maintenance of an inventory of all space owned or leased by the university, in accordance with federal and state classification and reporting requirements; and (6) plan new systems for the purpose of providing management information on the efficient and effective use of space.

The strengths of the office are its organizational structure, staff, and computer systems. The centralized scheduling and space management operation makes it possible to monitor and manage efficiently the use of space and to generate reliable and accurate reports. Almost all data are available online, and there are numerous reports available for management of operations. (See resource documents for recent initiatives undertaken by scheduling.)

As the campus looks to the future, scheduling faces several challenges and opportunities: (1) to address problems with classroom upkeep and availability: faculty have complained that classrooms are deteriorating and teaching conditions are often bad; (2) to develop course-clustering options and other strategies to minimize students' intercampus travel; (3) to have a well balanced distribution of courses throughout the week to provide students with greater freedom of choice, flexibility in scheduling for new courses, and to ease parking and transportation problems; (4) to interpret federal Office of Management and Budget guidelines successfully to recover several million dollars as indirect costs for the use of university spaces, equipment, and operation and maintenance associated with the sponsored research activities; and (5) to assess the potential impact of Rutgers' distance-learning initiative on the university's scheduling and space management.

STUDENT LIFE

Student-life programs are administered in the undergraduate colleges (Cook, Douglass, Livingston, Rutgers, and University). The mission of Rutgers' student-life programs is to create a campus climate that will enable undergraduate and graduate students to realize their academic and personal goals. A broad range of cocurricular programs and services extends classroom learning and maintains an affirmative and supportive environment that enables all students to learn. Student-affairs administration in the undergraduate colleges and in the central administration work together to develop and implement programs that provide students with opportunities to practice the skills necessary for success as responsible, ethical, and informed members of the global community. Extensive academic, cultural, recreational, social, health, and career programs are provided to ensure that students develop the leadership skills to meet the challenges they will face after graduation. The FAS-sponsored horizontal

intercollege working groups have begun to foster communication between student affairs units in New Brunswick. Additional, more formal mechanisms may be needed, however, to ensure effective collaborations and consistent policy formation among the undergraduate units.

From an administrative and managerial point of view, the organization of student affairs at the New Brunswick campus appears complex. Some services and programs originate in the colleges: orientations, academic and personal counseling, residence life, services for students with disabilities, student centers and student activities, and recreation programs. Others such as health and career services are centralized and offered to all students at multiple sites regardless of college affiliation. History has to some extent determined the organization of some of these services, but overall this seems to be an effective means of delivering services to undergraduates in such a way that the programs and services reinforce the mission of the particular college and students' sense of identity and involvement with a particular community.

Advising and Student Development

All advising, whether academic or personal, seeks to provide students with the best information available to enable them to make informed and effective decisions. Academic advising is a complicated endeavor with a multitude of components. For undergraduates, advising begins with the staff in the colleges who provide the initial orientations that include guidance for course registration, academic regulations, explanation of graduation requirements, distribution requirements, preliminary information about specific majors, and additional academic opportunities such as study abroad, honors programs, and special research options. Once students have declared their majors, they are advised by faculty in their major department.

Advising programs directed toward specific populations for particular purposes have grown throughout the university as undergraduate colleges, academic departments, and student-affairs staff develop ways to enhance the success of minority students, particularly African-American and Latino students. Programs have also been developed to enhance retention of women in majors in which they are underrepresented. The undergraduate colleges, for example, have developed support programs for students at risk: programs like "Success in the Sciences" and "Project Beck" provide cocurricular support to African-American and Latino students majoring in the sciences to increase retention in those disciplines. The "Douglass Project for Women in Math, Science, and Engineering" provides such support for women. The "McNair Program" and "Project Learn" are examples of advising programs that provide students with faculty mentors and internships to prepare these undergraduate minority students for graduate or professional school. Retention programs are more fully described in the Report of the Undergraduate Education Committee.

Among AAU public universities in 1995 Rutgers as a whole ranked 2nd in the percentage of African-American students (10.8%) and 6th in the percentage of total minority enrollment (38%). With over 18,000 minority students, Rutgers enrolls more minority students than any other college or university in the state. In 1995, with the adoption of the Multicultural Blueprint by the Board of Governors, the university recommitted itself to recruiting, enrolling, and retaining minority undergraduate and graduate students, as well as to recruiting and retaining minority faculty. Units were encouraged to develop their own initiatives, and some funding was provided.

Academic departments have developed advising systems appropriate to their disciplines. Departments publish handbooks for majors that include an explanation of requirements, a current course description list, and descriptions of special options within the major (including research projects, internships, and travel opportunities). Some departments and graduate programs include this information on their Web sites, and/or host open houses and information nights, participate in “majors fairs,” or hold their own orientation for majors or those considering the major. Some departments assign students to specific advisors; most identify the faculty members who have agreed to act as advisors for that year and provide the office hours when those advisors are available.

Faculty advisors note that while telephone registration has eased the process of registration, it has also eliminated an important occasion for many students to seek advice from faculty in person. Most faculty find that fewer undergraduates seek advising now that signatures are no longer required on registration cards (although it is also true that much of the advising associated with registration was rather perfunctory and sometimes performed by departmental administrative assistants). Numerous internal documents bear witness to the extent of dissatisfaction and the energy spent in attempts to improve advising. The *1992 Graduating Student Opinion Survey* reports that 42% rarely or never interacted with faculty outside the classroom: 39% were satisfied; 33% were not; 28% did not use or did not know about the service. The *Undergraduate Opinion Survey* (Eagleton Institute, 1995) reports that only 20% of students were very satisfied with the approachability of faculty members, while 50% reported being somewhat satisfied.

Academic advising is consistently identified as a system in need of improvement. While information is now delivered to students more quickly and extensively than ever before through mass mailings, Web sites, information kiosks, Touch-Tone telephone, and departmental handbooks, we must continue to look for new and creative ways to encourage more faculty/student interaction outside the classroom to provide that next level of advising. The student government leaders we met with spoke time and again about their desire to know, and interact with, the stellar faculty we have at Rutgers. They spoke movingly of the difficulty that large class size in particular poses to their ability to get to know and interact with faculty. More opportunities to do just that are needed, whether through advising or other strategies. More faculty are needed to participate in the advising process, both in departments and in the colleges. For their part, faculty urge more efforts to encourage students to take advantage of faculty availability for advising and discussion, and to use the vast resources of our libraries, lectures, learning centers, and so forth. They also note how new technologies like email and Web pages for courses have increased faculty/student intellectual interaction.

Orientation and Multicultural Programs

Orientation programs are college- and department-based, and take the shape that meets the needs and mission of the unit. Undergraduates attend orientations that include programs on racial and ethnic diversity, social decisionmaking, academic integrity, and sexual-assault prevention, as well as sessions on the mechanics of registration, electronic mail, libraries, and bus schedules. Orientation programs at Livingston and Rutgers Colleges have won awards from the National Orientation Directors' Association in each of the last four years. Diversity education efforts and bias-prevention measures have likewise been acknowledged at national conferences for their innovative means of educating the campus community about tolerance and the very real benefits of understanding and appreciating diverse peoples.

These programs are particularly noteworthy for their involvement of students in leadership positions. Orientation and diversity education programs are primarily developed and initiated by students who are trained and advised by student-affairs staff members. Orientation sessions are planned and executed by teams of well-trained volunteers from the colleges. Multicultural peer educators conduct discussion sessions in residence hall lounges and student centers, using training materials developed by student-life staff. Rutgers College developed a powerful video dramatizing particular flash points within the multicultural debate, and the video is now in use throughout the university in sessions led by peer educators trained and supervised by Douglass College staff.

The primary challenges that remain relate to transfer students and to funding. In fall 1996, for example, a total of 1,447 transfer students enrolled. Of these, 664 were from New Jersey community colleges, and the remaining 783 were from diverse sending institutions. In spring 1997, 444 transfer students matriculated, with 192 of these students coming from New Jersey community colleges. Clearly, more needs to be done to develop an effective orientation for transfer students, especially in January, and more resources are needed to ensure retention of this important population of undergraduates. Transfer students often experience difficulty when making the transition to this large research university. Those who enter at mid-year begin with limited advising because of the short amount of time between admission and registration. The colleges continue to look for ways to bring to orientation for transfer students the same level of excellence that characterizes our programs for new students making the transition from high school. Any expansion or further refinement of these programs is likely to require an orientation fee, since no additional funding to support these programs is anticipated.

International Students

In 1996-1997 Rutgers enrolled 1,478 international students in graduate programs and 482 in undergraduate colleges. Enrollment of international students in both graduate and undergraduate programs continues to decline, attributed to the absence of scholarships or any financial aid for international students. New immigration laws that will require schools to provide to the Immigration and Naturalization Service detailed reports on every foreign student each semester may further discourage students from coming to the U.S. Those requirements will certainly tax an already overburdened staff at the Center for International Faculty and Student Services who process all government documents required for foreign nationals faculty, staff, and students alike.

The center provides a broad range of administrative support and advisory services to all international students and faculty to facilitate their transition to a new cultural and educational environment and to enhance their understanding of U.S. culture. The center's small staff (two professionals and three clerical staff) is hard-pressed to serve its clientele. The staff/client ratio has ranged from 1:700 to 1:1000 since its establishment in 1986. Its current staff resources are sufficient to serve roughly half the population it currently serves.¹⁰ The small staff struggles to provide appropriate programming and counseling in the time remaining after critical personnel-related paperwork for foreign national faculty and postdoctoral fellows is completed.

As part of the university's strategic plan to develop global programs, the university initiated an international alumni development program. Active alumni abroad are expected to help develop links with business, governmental, and educational entities in their home countries as well as to recruit new students and help provide travel, study, or employment opportunities for enrolled students.

Housing and Residence Life

With over 14,000 undergraduate and graduate students living in 172 buildings exceeding five million gross square feet, Rutgers is second only to Michigan State University in the size of its housing operation. On-campus housing options for undergraduates range from conventional double-occupancy residence hall rooms, to six-person suites, to four-person apartments. Graduate housing includes 379 apartments for families, and 745 single spaces in apartments or single occupancy residence hall rooms. Family housing is in short supply and the six to nine month waiting period for family housing has been a continuing problem for incoming graduate students. Family housing and continuous nine-month housing for undergraduates are two of the most recent extensions of service to meet the needs of our students.

Since 1988 Rutgers has added residential facilities for over 1,900 students. Amenities like air-conditioning, carpeting, and full wiring for voice, video, and data are standard in these new suites and apartments. Improved safety measures such as card access systems, improved lighting around buildings, and expansion of the security guard and student safety officer program have been warmly welcomed.

Housing administrators feel most challenged by the cost and extent of deferred maintenance. (See Section 2.) In 1996/97, \$4.48 million will be spent for capital improvement, deferred maintenance, and code compliance. An expenditure of \$5 million annually is improving the overall appearance and energy efficiency of many of our units, but it does not begin to address more extensive projects such as the renovation of the Newell Apartments on the Cook campus that will require up to \$20 million over the next five years.

¹⁰ Similar institutions are much better served; for example, U.C.-Berkeley employs more than twice the staff to serve a smaller population; Penn State has five full-time professionals serving the same number of students; the University of Oregon has four full-time professionals serving 1,000 fewer clients; and the University of Massachusetts employs six professionals to serve its 1,800 international students (unpublished Strategic Plan Document, International Center, 1993).

Many of our peer institutions are troubled by high vacancy rates, but at Rutgers the challenge is rather how to distribute creatively the available housing to undergraduate and graduate units to minimize vacancies and maximize the number of viable learning communities. There is sufficient on-campus housing for students who choose this option. But because students are housed according to their undergraduate colleges, shifting enrollment patterns are reflected in an uneven housing occupancy pattern. Overenrollment at Rutgers College, for example, leads to tripled double rooms, while simultaneous underenrollment at Livingston and Douglass Colleges leaves rooms vacant on those campuses. The Division of Housing looks to the college-based offices of residence life for strategies to remedy this imbalance. Most recently Rutgers College transfer students were housed on the Livingston College campus in a residence called the "Transfer Center." The special focus on programming suited to the special needs of these students is apparently responsible for the high rate of satisfaction.

Special-interest housing options also provide additional enrichment. Douglass College has developed a residence for Rutgers women participating in the "Douglass Project for Women in Math, Science, and Engineering," a nationally recognized support program to improve retention of women in those majors and professions. Douglass' seven cultural houses provide cultural and language programs to enrich the education of women who choose one of these options. The Rutgers College Office of Residence Life expanded special-interest housing to include language study, cultural exploration, and arts expression. A total of 17 special-interest sections in five buildings contribute to a strong sense of community and an increase in the number of students who chose to renew their housing contracts rather than move off campus.

Housing and residence life staff, as well as all resident students who are surveyed each year, are unequivocal in their recommendation for the future: fiber-optic wiring of every residential unit for full voice, video, and data communication, a priority also supported by the student leaders with whom we met. A goal students have identified as of equal importance would thus be achieved: cable television in every room.

Judicial Affairs

After two years of study and spirited debate, a new *University Code of Student Conduct* was passed and implemented in January 1995. The new code replaced a system that had not been revised in twenty years and was widely believed to be inappropriately adversarial and out of date. The new code changed the role attorneys play in the process, and was revised to include computer fraud, sexual assault, and harassment.

Serious challenges remain. The greater consistency in the determination of sanctions hoped for has not materialized, perhaps because of the limited training hearing board members receive. While the judicial program has suffered from a notable lack of faculty participation, efforts by the Office of the Vice President for Academic Affairs to recruit faculty to serve on hearing panels should address this problem. As of fall 1997, we anticipate a significant increase in faculty involvement and are hopeful that faculty will be integrally involved in the judicial system. Nonetheless, regular training sessions for advisors and board members and educational programs about academic integrity and related topics need to be institutionalized.

This critically important means of teaching and reinforcing ethical behavior must receive greater attention in the immediate future. College-based judicial officers will continue to need help to develop a means of increasing and sustaining faculty participation and improving the efficiency and effectiveness of the system.

Recreation

Recreational sports, fitness, and dance programs are delivered to the student body on the New Brunswick/Piscataway campuses through three independent recreation departments in the residential colleges. This is in keeping with the university's philosophy that student services, where possible, should be developed and delivered at the college level to ensure that the students have immediate access to the activities and the facilities.

The breadth and depth of recreational sports programming varies from college to college. All three colleges offer a schedule of open recreation hours, intramural sports, fitness activities, instructional classes and trips. Cook/Douglass and Rutgers College Recreation offer Sports Club activities. Both also offer aquatics programs. In addition to the swimming and scuba classes that Cook/Douglass sponsors, Rutgers College offers a full complement of American Red Cross aquatics classes for the adult learner, activities in water polo, master swimming, sailing, jet skiing, and children's swim. While the programs are produced to satisfy the interests and needs of the students who reside on a specific campus, they are not for their exclusive use. All programs and facilities are open to the entire university community.

The university began a building campaign in the late 1980s that greatly benefited recreational sports. (See Section 2.) Existing facilities were renovated or expanded, and a 150,000 square foot multipurpose facility was opened on the Busch campus. In the mid-1990s the university began addressing deficiencies in outdoor recreation at each of the colleges. By spring 1997 each of the colleges could stage evening activities on lighted playing fields. Other improvements included a new 7,000 square foot fitness center on the College Avenue campus, a renovated indoor tennis facility, beach volleyball courts, an indoor climbing wall, an outdoor challenge course, and an indoor golf learning and practice center.

The start of the building campaign signaled a new era in recreation at the university that has resulted in much more than the opening of state-of-the-art facilities adjacent to each of the residential communities on campus. It sparked exciting program offerings and an increase in the number of activities produced. The result has been a dramatic increase in the number of students participating in recreational activities, a combined total of almost 6,000 daily, and a significant increase in the students' satisfaction level. In a recent survey of graduating students, recreational services ranked first among all student services, with a 99% satisfaction level.

In 1992 the university removed all state support from recreational services, leaving those budgets wholly dependent on student fees and generated revenue. A parallel decision to shift the financial burden from state funds to student fee money was made to support building repairs and maintenance. These two decisions have made it difficult to support major repairs and to offer new programs. This problem is compounded by the fact that a not-for-profit entity such as the university cannot compete with the commercial sector when generating revenue, nor can it venture beyond its educational mission when it

develops revenue-generating programs. Of all the challenges facing the recreation departments at the university, this is the one that will require the most attention in the years to come.

Safety and Security

Security personnel at the New Brunswick campus include 67 commissioned police officers, 70 security guards, and four dispatchers. Rutgers police officers are commissioned by the state of New Jersey, armed, and empowered to arrest. The police force works closely with police departments in the six surrounding municipalities and, as part of its commitment to community policing, has established partnerships with the undergraduate colleges to increase visibility and accessibility. Security enforcement includes officers on foot or bicycle patrol, security guards on foot patrol in residential areas, mounted student security patrols on some campuses, security shuttle bus service throughout New Brunswick whenever the regular bus service is not operating, and student safety officer programs.

Every year the Division of Public Safety provides each member of the university community with a copy of the annual compilation of the reported incidents of crime on campus. This publication, *Safety Matters*, fulfills the right-to-know obligations of the university while reminding the community of the extensive crime-prevention programs offered throughout the year. Rutgers compares favorably with peer institutions. Incidents of violent crime are low, with charges of simple assault involving fights among students predominating. Theft leads the list of all crimes reported.

The Rutgers University Police Department was reviewed by the International Association of Chiefs of Police (IACP) in November 1996. The recommendations offered included a restructuring to shift some duties to civilian employees, freeing officers for more community activities.

Health Services

Rutgers Student Health Services on the New Brunswick Campus is committed to providing for the healthcare needs of the diverse student population of the New Brunswick Campus, collaborating in research activities of the university faculty and students, and providing for the work-related healthcare needs of university employees. Three Health Service Centers are located at Busch/Livingston, College Avenue, and Douglass/Cook campuses. The Clinical Laboratory was recently evaluated by the Joint Commission on Accreditation of Health Care Organizations (JCAHO) for the first time, and scored in the 95th percentile in the country.

These centers provide primary health care, consultation, and referral services, and promote optimal health practices and preventative medicine for students, faculty, and staff. The wide array of offerings include pharmacy, laboratory services, psychiatric treatment, and counseling services. Counseling areas and programs include alcohol and drug abuse, unplanned pregnancy prevention, stress management, sexual assault prevention and treatment, and other areas of health education. Health Service Centers also provide internship and preceptorship training sites for multiple university programs in pharmacy, clinical psychology, laboratory technology, premedical education, and physician assistant.

Health Services is committed to increasing student awareness of the available services, assessing the student needs to better serve the students, and improving the public relations image of health service at all of the centers. The Student Patient Representative Program provides patients with a student representative trained by Health Services to hear suggestions and complaints, and address them to the Health Center directors and other staff. Health Services is also planning to meet with a consulting group from the School of Communication, Information and Library Studies in an effort to improve communications between the centers and the people they serve. An additional goal is to upgrade the information system, including the hardware and communications network. With the recent organizational reassignment of Health Services to the associate vice president for administration and public safety, we anticipate additional service enhancements for students in New Brunswick.

A major challenge is meeting state regulations for measles, mumps, and rubella immunization. This requires extensive staff training, development of automated data recording and record keeping systems, and multiple reminders and education programs for students. All areas of Student and Academic Affairs have been involved in increasing our compliance level. Another major challenge is to maintain the current services despite years of state-mandated budget cuts and the university's commitment to keeping student fees at reasonable levels. Health Services can continue to provide current services only if the cost of inflationary increases is included in annual budget projections and funded accordingly.

Counseling Centers/Psychological Services

The New Brunswick campus has four college-based counseling centers on the Cook, Douglass, Livingston, and Rutgers College campuses. University College also has a counseling component, which is part of its academic advising/student affairs office. These centers provide psychological assistance in the form of crisis intervention, short-term psychotherapy, assessment, and referral when appropriate.

Counseling centers make an important contribution to retention and the overall well-being and morale of the student body. Faculty and staff depend on them for help in dealing with difficult students. The challenge they face is how to maintain the current availability of services for students when the number of students seeking help and the level of their psychological disturbance continue to rise. Counseling center directors are maximizing their limited resources by hiring advanced graduate students and part-time counselors. They meet monthly to share information and to develop strategies to maintain high-quality clinical services and a variety of educational programs responsive to the needs of students and staff. Because the service is so crucial and the demand so steady, future budget cuts would compromise the level of care we can provide our students and the necessary support we must provide our staff and faculty. The university may have to consider the institution of a student fee for this service.

Career Services

Career Services is a centralized operation with a single director overseeing four offices on the New Brunswick campus. The director reports to the vice president for student affairs and operates fairly autonomously within the university. Career Services' mission is to prepare students for meaningful careers and lives beyond Rutgers. The office provides comprehensive career planning and employment services beginning with first-year students (orientation), sophomores (choosing a major), juniors

(internships), seniors (jobs or graduate school), graduate students (academic or non-academic job search) and alumni (job search and career transition). Career Services had a total of 140,000 visits in 1995/96, up from 73,000 in 1991/92 (+92%). In 1995/96, 375 employers recruited on campus and conducted 6,000 interviews; 800 employers and 9,000 students and alumni participated in 11 career fairs; 6,000 students received individual career counseling or résumé critiques; 12,000 students participated in workshops or seminars; and 63% of the seniors responding to the 1996 senior survey reported that they used Career Services, with 72% rating their usage “excellent” or “good.”

The demand for services has increased substantially during the past five years, at the same time that six staff positions have been eliminated. A student fee increase in 1995 permitted Career Services to create several new department-funded positions. Improved services include a program for first- and second-year students, an internship services unit, expanded evening hours, an automated on-campus recruiting system, and the ability to respond to increased demand from alumni seeking new jobs or new careers.

Career Services is currently challenged by the need to convert existing services to the Internet, including the on-campus recruiting system (currently an automated phone-based system), the résumé referral system, the job listing service, and internship services. Integrating new technology into all systems should improve communication among career services centers on campus as well as with potential employers. By taking advantage of the position they occupy as liaison between employers and faculty, Career Services plans to assist academic departments to develop additional internship opportunities for students for academic credit. Some faculty argue that Career Services could better assist graduate students in a more timely fashion in their job search process.

Dining Services

The Division of Dining Services of Rutgers is the third largest of the self-operated university food services in the U.S. As a \$25 million annual operation, Dining Services employs 700 (including student workers) to feed over 12,000 students in six student dining facilities and faculty, staff, students, and guests at 11 cash facilities on the New Brunswick/Piscataway campus. Dining Services also caters approximately 2,800 events each year, manages all food operations in athletic facilities, as well as the “Knight Express Card,” a debit program that allows students to make purchases against a prepaid balance at campus bookstores, convenience stores, and food vendors.

In 1989 Dining Services opened a new facility, the Busch Dining Hall. Over the past ten years extensive renovations of three other facilities (Brower, Tillett, and Cooper) were completed. Dining has expanded offerings and hours of operation. An increasingly diverse student population has pressed for more specialized options, including kosher meal plans, Asian entrees, and vegetarian entrees. Dining Services remains challenged by students’ demand for more flexibility and the university’s commitment to keeping costs reasonable. Resident students who are required to purchase a meal plan look to maximize the flexibility of those food dollars, while Dining Services seeks to maintain a stable financial base for its operation. Student advisory committees continue to work closely with the director to incorporate more dining options without driving costs too high; a pilot program at Douglass College in 1996/97 is testing one version of a flexible meal plan.

Parking and Transportation

The Rutgers bus system is the second largest bus service among college and universities and is the second largest bus system in the state of New Jersey. A total of 32 buses on nine routes move 45,000 passengers each day at an annual cost of \$3.8 million. Approximately \$660,000 of that cost is funded by a mandatory \$36 annual student fee. Fully six million passengers annually are moved from campus to campus on these buses operated by a private contractor that employs professional unionized bus drivers. Rutgers' parking operation is also large and complex, registering almost 27,000 vehicles each year and maintaining 200 surface lots and four decks with over 21,000 spaces. An estimated 500,000 visitors to campus each year severely tax this service, which receives the lowest grades on student satisfaction surveys. The \$1.9 million annual operating expense is funded entirely from revenue from annual permit fees and fines.

After a study by outside consultants in 1991, organizational changes were made to increase communication, flexibility, and accountability. Suburban Transit has dedicated a separate division of its company to our contracted operation. Parking and transportation services were merged and moved from Public Safety to Auxiliary Services. Extensive improvements in customer service followed. Communication has improved notably with the addition of special customer service phone lines, email, regular announcements updated twice daily on the new low-frequency radio station, and a Web site. A student advisory board meets regularly with the director. An increased number of dispatchers keep buses operating at appropriate intervals.

The ability of students, faculty, and staff to function depends to a remarkable extent on the effectiveness of these two operations. The sprawling geography and urban congestion of the area pose a particular challenge that will remain in the foreseeable future. Staff look to regionalized solutions as the most fruitful for further improvements. Participation on county, state, and city transportation committees is expected to yield improvements in bike paths and local highway connections in the near future. Experiments with block scheduling and clustering of courses for undergraduate students on their home college campus should ease the demand for transportation between campuses. For example, through the clustering of courses on college campuses FAS has increased the number of students who can take all their first-year courses on their own campus. While no additional construction of parking facilities is anticipated, improved systems for transporting people to available, if remote, lots should ease demand in our most congested areas. Systems have been put into place to incorporate parking and transportation issues in all future building plans.

RECOMMENDATIONS

- (1) To enhance results and use resources appropriately, we encourage continuation of collaborative efforts among the admissions and financial aid offices, the colleges, and the faculty on all matters pertaining to recruitment and enrollment, and we urge that special attention be directed to reviewing financial aid packaging policies to address students' unmet financial needs.
- (2) To meet the needs of residential students, we urge the appointment of a New Brunswick-wide committee to undertake a thorough examination of the Meal Plan system with the goal of developing a flexible and contemporary program.
- (3) To ensure compliance with state health regulations, University Health Services should continue to collaborate with the Undergraduate and Graduate Admissions Offices to develop mechanisms to capture data regarding students' required immunizations prior to the first day of enrollment.
- (4) To improve the functioning of the University Code of Student Conduct judicial process, attention should be directed to ensuring sufficient faculty participation. Assessment of the effectiveness of the system should be a priority.
- (5) To enhance recreation resources and services for students, we encourage the appointment of a committee to develop a master plan for recreation services in New Brunswick that includes recommendations regarding facilities, staffing, and financing.
- (6) Given the almost total reliance on student fees and generated-revenue support for student life staff and programs, we urge the development of a financial plan to ensure the continued provision of effective services for undergraduate and graduate students.
- (7) Mechanisms should be developed with the Office of the Registrar, Institutional Research, and RUCS to enhance the collection and acquisition of data related to students and to assess how well our programs are meeting their stated goals.

6. ACADEMIC SUPPORT SERVICES: LIBRARIES AND COMPUTING

LIBRARIES

The single most important mission of the Rutgers-New Brunswick libraries is to support and promote the research and instructional programs of the New Brunswick campus. While the mission remains constant, the goals to achieve and sustain the mission are evolving as the environment surrounding the libraries and their user community changes with an unprecedented speed through program growth and developments in information and telecommunications technologies.

The New Brunswick libraries constitute the research collections of the library system, as they support the Research I campus of the university, at 19 separate service locations.¹¹ These collections are supplemented by additional and unique materials in libraries on the Newark and Camden campuses. Current holdings of the New Brunswick libraries include 2.3 million volumes of monographs and bound periodicals, 2.9 million units of microforms, 2.3 million government documents, and 17,585 current serials subscriptions. The operations of the campus libraries are supported by a staff of 57 library faculty, 101 staff and approximately 55 FTE student assistants.

Alexander Library (social sciences and humanities) and the Library of Science and Medicine comprise the major government publications depository in New Jersey, as designated by the Federal Depository Library Program. Included in this comprehensive collection are documents from the United States, New Jersey, the United Nations, and other international agencies. The Special Collections/University Archives unit houses rare books, manuscripts, university archives, New Jerseyana, genealogy, and other primary research materials. Their collections are particularly strong in U.S. social and cultural history. The campus also has two libraries that were at one time free-standing college libraries for their respective colleges: the Mabel Smith Douglass Library (Douglass College) and the Kilmer Library (Livingston College). These libraries now develop collections in specific subject areas and provide general undergraduate resources and services.

Because of their central location, extensive collections, and excellent services, the New Brunswick libraries attract a wide variety of non-Rutgers users, including faculty and students from local community colleges, corporate users at the science libraries and the patent depository, and many genealogists, faculty, students, and citizens at the Sinclair New Jersey collection in Special Collections and Archives. In FY 1996/97, the New Brunswick libraries served approximately 2,370,000 users. Special user surveys, the last conducted in 1991, indicated that approximately 10% of library users were not affiliated with the university, demonstrating the service the libraries provide to the wider community.

The New Brunswick campus is also the location of the central library administrative offices and system-wide support services. These include the University Libraries Administrative Offices, which oversee the general operation of the libraries on all three campuses, and other central technical services operations, such as acquisitions, cataloging, and computing systems support. (Resource documents include an organization chart for Rutgers Libraries; see also the Libraries/Information Technology report of the Middle States Self Study.)

¹¹ Alcohol Studies Library, Annex, Archibald Stevens Alexander Library, Art Library, Bailey B. Pepper Entomology Library, Blanche and Irving Laurie Music Library, Chemistry Library, Chrysler Herbarium Library, East Asian Library, Kilmer Area Library, Library of Science and Medicine, Mabel Smith Douglass Library, Mathematical Sciences Library, Media Services, Physics Library, School of Management and Labor Relations Library, Science and Engineering Resource Center (SERC) Reading Room, Special Collections/University Archives, Stephen and Lucy Chang Science Library.

Library Facilities/Services

In the past 10 years, university support and the libraries' fundraising efforts have enabled the New Brunswick libraries to make significant improvements to their facilities, providing additional and more functional user space and enhancing capabilities for electronic information and services. These projects included the construction of the Technical Services Building on Busch campus (1988), a new Art Library and the renovation of Alexander Library on the College Avenue campus (1992, 1994); the Chang Science Library on the Cook campus in Foran Hall (1995); and renovation and expansion of the Library of Science and Medicine on the Busch campus (1997). In addition, an expansion of the Physics building (1990) now houses a new Physics Library. Of particular note are the new Chang Science Library and the Scholarly Communications Center in Alexander Library. Both these facilities are geared to providing the most recent technological infrastructure and equipment for the provision of electronic services and collections.

The Stephen and Lucy Chang Science Library was planned with a focus on electronic services. Currently housing 52 networked workstations, current periodicals, reference materials, and electronic resources in 10,000 square feet of space, the facility provides proximity access for study space and information resources for the large complement of Cook students and faculty. This facility returns to the campus a physical library presence that has been missing since the close of the Agricultural Science library nearly 25 years ago. Construction and furnishing of the Library was funded by the Jobs, Education, and Competitiveness Bond Act of 1988, the New Jersey Commission on Science and Technology, the U.S. Department of Agriculture, and the Rutgers University Fund for Distinction. The state equipment leasing fund (ELF) and the generous support of individuals like Dr. and Mrs. Chang funded the equipment.

The Scholarly Communication Center (SCC), located on the fourth floor of the new wing of the Alexander Library, was completed in May 1997. The SCC is a multifunctional teaching, research, and training facility that was constructed with support from public (HEFT, NEH grant) and private donations. The main objectives of the SCC are to provide a facility for on-site as well as remote learning and teaching for the Rutgers community and to serve as a test bed and demonstration site for the application, development, and evaluation of electronic resources. The SCC, composed of a teleconference lecture hall with 100 seats, information handling labs (25 networked workstations each), and a humanities and social science data center, will also serve as an electronic hub for the university's research and scholarly activities, joining the Rutgers community with the intellectual resources of other institutions from around the globe.

These new facilities, along with the upgrade of other libraries, have enhanced librarians' ability to meet the growing demand for instructional services by providing more effective teaching space. In the past ten years, instructional activities have increased dramatically, primarily due to the proliferation in formats of information resources and the changing nature of access tools. In FY 1996, New Brunswick librarians conducted almost 1,000 instructional sessions in response to faculty requests, up from 690 in 1991/92. Some are at the general level, while others are tailored for specific disciplines. To meet these increasing demands, New Brunswick librarians are developing a three-credit undergraduate research methods course that will enhance students' basic research skills, including the identification and effective

use of target resources in diverse formats from print to digital. (Resource documents include the proposal for this course, which was first offered in fall 1997.)

The libraries' Media Services also support the university's instructional mission by providing maintenance and support of the "smart classrooms" on the New Brunswick campus. In their first year of operation, Media Services staff have conducted numerous orientation sessions for approximately 200 faculty. As the use of these classrooms increases, Media Services will be monitoring the amount of funding required to keep these rooms maintained appropriately. Additionally, faculty who wish to create technology-enriched curricula will need support for these initiatives. As a result, the university vice president for academic affairs has established a committee to facilitate collaboration among the university service providers to support these initiatives. Librarians are a key presence on this committee.

Collections

While expanded and improved facilities enable the New Brunswick libraries to provide more reading space and high tech capacity for users, the overall funding for scholarly resources has been less favorable. The allocation to the New Brunswick campus libraries for scholarly resources (library materials) in fiscal year 1997 is \$3.6 million for New Brunswick, representing 75% of the total university allocation for library materials. An additional \$0.57 million was reserved centrally for networked resources available from anywhere in the university. As described in the resource documents, the budget for scholarly resources has remained nearly constant for the past six years, a situation that makes providing the necessary information resources extremely difficult in the face of escalating costs and new program development. As a result, Rutgers' national standing as a research institution and premier university facility has been compromised: among the 108 member libraries of the Association of Research Libraries, Rutgers' ranking dropped from 16th to 25th between 1989 and 1997. This lower rank is even more troubling because it reflects Newark's and Camden's holdings in addition to New Brunswick's: looked at alone, this campus' rank dropped to 81 by 1995. This is a situation that must be reversed if New Brunswick is to maintain its institutional prestige as a premier research university. Budget cuts have already taken a toll on our ability adequately to support graduate study and to mount comprehensive undergraduate programs.

A move to electronic media will not ameliorate this serious situation any time soon. Although electronic products significantly increase a researcher's ability to identify potentially appropriate information, they also increase the appetite for information, a hunger that libraries are less and less able to satisfy. Contrary to the expectation that scholarly publishing will soon be totally electronic and that electronic information is "free on the net," high-quality electronic publication is generally more expensive than its printed equivalent and requires the expenditure of at least \$100 million for electronic infrastructure, such as RUNet 2000. (See resource documents for the libraries' report on technology.)

Rutgers, like other institutions, is dealing with the tremendous growth in the number of publications in all formats, accompanied by escalating prices. As a result, difficult choices are being made in library acquisitions. The science libraries, where inflationary increases are the most severe (see resource documents), have canceled nearly 300 journal titles in the 1996/97 academic year alone. Nearly 100% of their budget is allocated to serial purchases. Other libraries with social sciences and humanities collections have also canceled journal subscriptions, but at a less severe rate. The budget allocation has

been supplemented by endowed funds, the “parents’ phonothon” (dedicated to library collections), the Instructional Computing Initiatives (providing nearly \$150,000 annually for university-wide electronic information resources), and one-time supplements from the university.

The state allocation for acquisition of scholarly resources is only a part of the library system’s overall operating budget, but it is in direct competition with salaries and wages, equipment, and supplies. The cost of scholarly information is, to a large extent, beyond the libraries’ control, as are (in part at least) salaries and wages negotiated on a contractual basis. It is clear that a variety of funding mechanisms will be required to ensure that the campus community has access to the information resources it needs for research and instruction. One potential strategy is to establish a “super fund” for scholarly resources at the university level, funded by an Endowment Fund for the Libraries’ Scholarly Resources generated through the university’s capital campaign. (Twenty million dollars in the endowment fund would yield \$1 million in annual income that would partially offset the annual increment of inflation to which scholarly resources are subject.) In the interim, the university should extend additional state funding for the libraries’ scholarly resources to prevent further damage to the university’s research and instructional programs.

These and other strategies will continue to be investigated and employed as the library system engages the university community in the update of their long-range plan over the course of the 1997/98 academic year. As the New Brunswick campus plans described in the university’s strategic plan begin to be implemented, access to necessary information resources will be required for the campus to achieve its goals.

Human Resources

As telecommunications and information technologies continue to have a major impact on society and higher education, the role of academic libraries—from collection development to user services—is being re-examined. The libraries must continuously refresh and update the skills of librarians and staff and reallocate human resources in support of new services and service excellence, and frequently this must be accomplished without additional operating dollars. In fact, the New Brunswick libraries have lost approximately 30 positions over the last eight years as the state reduced funding to the university.

To address these staffing shortages, to be responsive to changing campus needs, and to redirect staffing to support campus priorities, the New Brunswick Libraries have been examining their organizational structure to maximize the use of their resources, eliminate redundancies, and create a more flexible organization using new technologies. An internal task force, created in 1995/96, identified common goals and proposed the creation of a single campus entity—the New Brunswick Libraries—from four separate administrative structures. (See resource documents.) The use of a team-based approach across all campus library locations should lead to the discovery and implementation of “best practices” for service delivery, permit the reallocation of staff and librarians to service areas where the need is greatest, and enhance personnel creativity in designing effective services. The implementation of the task force’s plan is ongoing, and has focused initially on organizational structure. Subsequent stages will focus on collections and services delivered at each library location. This will take place in FY 1997/98 as the libraries engage the campus community in updating their long-range plan.

Since the implementation of the reorganization plans in 1996, there have been visible signs that staff benefit from the excitement of learning new skills and new habits, such as the function-based team approach to designing new work flows. The discovery of one's potential and the excitement of practicing new expertise, combined with new talents among newly hired staff, should lead to a sense of renewal and energy as New Brunswick libraries transform themselves into an even more responsive and dynamic organization.

COMPUTING AT RUTGERS-NEW BRUNSWICK

Rutgers University Computing Services (RUCS) is the university's computing and telecommunications organization that operates a campus-based division in New Brunswick. RUCS provides voice and data networking services, batch and timesharing computing platforms for general-purpose academic computing systems and administrative applications software, and maintains student computing laboratories that serve the needs of teaching, research, and public service programs.¹²

Centralized computing resources provide large-scale machine-readable data files to meet the unfunded research needs of faculty, and maintain computing accounts with email access for all faculty, staff, and students. In addition, the university established the High Performance Computing Project (HPCP) in 1985 to encourage use of the National Supercomputer Centers. Rutgers has continuously funded the HPCP at four access sites (College of Engineering, chemistry, physics, and RUCS). Two major projects that depend on supercomputing resources are the molecular dynamic simulations in chemistry and the interinstitutional arrangements at the Institute of Marine and Coastal Sciences. The HPCP also provides access, education, training, and support for students in using supercomputers at national centers. (See resource documents.) Rutgers students and faculty received 27,400 Cray C-90 hours (equivalent) of supercomputer resources from the National Supercomputer Center during the 1995/96 year, an increase of 65% over the previous year.

There are also departmentally maintained research computing resources throughout New Brunswick that are organized for the needs of specific disciplines. Most research activities are funded by internal allocations and grant-funded projects. The research community depends heavily on a reliable communications infrastructure for departmental and interdisciplinary projects connected with the internet and other national data bases.

Through the early participation of the Department of Computer Science in the ARPANET, Rutgers was among the pioneers in pre-internet data networking activities. Concurrent with the establishment of the John von Neumann National Supercomputer Center in New Jersey in the mid-1980s, Rutgers funded and built an ethernet-based distribution system serving 13 buildings on the Busch campus.

In the early 1990s the administration and the academic leadership of the New Brunswick campus embarked on a long-term plan to build a modern data communication network that is consistent with

¹² For additional details, refer to Information Systems (Libraries)/Information Technology, Middle States Self-Study, 1998.

national standards for sustaining teaching, research, and administrative needs. A large number of faculty committees have guided this process and described the technological progress of the university over the past decade. (See resource documents for a list of committees.) The 1992 report of the Committee on Computing and Information Planning provided the blueprint for the technological future of the university. The 1998 Middle States report on Information Systems (Libraries)/Information Technology documents the major achievements in computing and the growing relationship of networking with the strategic mission of the university. Rutgers continues to play a major role with other universities. For example, by joining the Internet 2 Group, Rutgers is committed to providing a high-performance network environment to support world-class activities of faculty educators and researchers.

Several major initiatives have been undertaken since the report of Computing and Information Planning was completed in 1992. A major ongoing source of computing funds was established in 1993 with the institution of a student computer fee, the only consistent source of computer funding other than the general university budget. The New Brunswick Advisory Committee for Instructional Computing (ACIC), appointed by the university vice president for academic affairs (and working with the New Brunswick Faculty Council), makes recommendations on the use of fee revenues. The fee supports the operation and maintenance of the general-access computer centers that are located on each campus in New Brunswick and provides resources for the specialized needs of departmental laboratories. Resource documents include a list of the centralized computing projects in New Brunswick that received funds from the computing fee in 1995/96.

The student fee has been instrumental in funding up-to-date, public-access computing hubs on each New Brunswick campus. Operated by RUCS, these hubs provide general computer access to every Rutgers student. RUCS staff works with the Advisory Committee for Instructional Computing to provide regular replacement of the hardware and software in the hubs. Since the organization of these hubs in 1993, the availability of computers for students has improved dramatically: the ratio of computers to students on the New Brunswick campus improved from 1:200 in 1993 to 1:33 in 1997. The number of student email accounts also increased during the same period, from 2,500 to 45,000 (Information Systems (Libraries)/Information Technology, Middle States Self Study, 1998). User surveys are conducted annually to measure user satisfaction. Survey results for 1995/96 for the College Avenue and Livingston hubs, respectively, show a high degree of satisfaction with the facilities and help provided by monitors and consultants. The 1996-97 survey was under way during our deliberations. (See resource documents.)

In addition to their use on hubs, student fees are also distributed to the deans and the libraries through a competitive grants process. The ACIC evaluates proposals from individual departments and units, submitted through their deans to operate their own labs (e.g., computer science, chemistry, engineering, physics, the Edward J. Bloustein School of Planning and Public Policy, and all of the High Technology Centers). Resource documents present both the dollars allocated to some of these facilities as well as a look at their scope.

The state of New Jersey approved a bond issue to modernize teaching and research equipment for the higher education community in 1993. The Equipment Leasing Fund (ELF) was established and the university was allocated \$19.44 million. Nearly \$3.6 million was spent on improving and extending the network maintained by RUCS and expanding the electronic databases and information literacy capability

of the University Libraries. In addition, approximately \$6.2 million was used to replace and upgrade computer equipment in departmental laboratories to advance teaching and research programs on the New Brunswick campus.

The state also allocated \$38.9 million to Rutgers from the Higher Education Trust Fund (HEFT) for the construction and renovation of facilities for the advancement of science and technology and the training of the workforce for the future. HEFT provided the opportunity to improve the environment for learning and teaching by many needed renovation and construction projects. Of particular interest for instructional computing is the construction of the new Science and Engineering Resource Center (SERC II). This new classroom building, scheduled for completion for fall 1998, will contain specialized laboratories and a 450-seat auditorium with modern technologies for teaching. In addition, 18 classrooms and 10 lecture halls were renovated and equipped with HEFT funds to create "smart classrooms." A faculty program committee planned and designed these improvements, which have set the standard for technology-based classrooms of the future. Faculty attend workshops to learn how to use the multimedia equipment, access RUNet, and use other data resources to help with their courses.

RUCS has played a crucial role in supporting centralized administrative systems. Several major assessment, evaluation, and planning efforts have occurred since 1991. These assessments have recognized that the definition of departmental services has changed since the existing systems were designed. There is now a greater appreciation of the importance of providing distributed access to university administrative data. As a result, there is currently a multi-year plan for RUCS to provide new service from existing systems through the use of Web-based and Oracle warehousing technology. Through a combination of leveraging and replacement strategy, Rutgers' core administrative systems will migrate to new data and computing architectures that take advantage of current technology to provide the university community with improved information for planning and analysis. Several recent data warehousing initiatives are the Human Resources project, Student Information, and the Undergraduate Admissions Project. These have demonstrated the effectiveness of leveraging existing systems with newer technologies. (For additional details, see Information Systems (Libraries)/ Information Technology, Middle States 1998 report.)

RUCS has provided less support for research computing, and for administrative needs within departments. We lack clear knowledge about research or department-based administrative needs. What is clear is that as computing has shifted from a centralized mainframe environment to a decentralized system, support structures have failed to keep pace. In recognition of this problem, a faculty committee on the Livingston Campus met in 1995/96 to assess departmental needs and to make recommendations regarding a computing support structure for Rutgers. (See resource documents for the committee's final report.) The result is a new Rutgers Computer Support Model, designed to improve computer support in departments. Based on the experience at Indiana University, RUCS has introduced a pilot project on the Livingston campus organized on a distributed support model. The model consists of the hiring of departmental Unit Computing Specialists (UCS) who will act as the first point of contact for all departmental computing needs. Thus far, three UCS staff members have been hired. By working jointly with the department and RUCS, the UCS will be closely aligned with the disciplinary requirements of departmental faculty, but will have ready access to levels of technical expertise within the divisions of RUCS. The support model calls for the commitment of extensive training and development of departmental UCS staff to provide them with the skills and knowledge needed to become less reliant on

the central computing organization and better able to provide local support to departmental users. Based on expertise with the pilot, the model will be refined and expanded to other New Brunswick campuses.

After years of planning, the RUNet 2000 Project has emerged as a major strategic initiative that merges the development of the computing infrastructure with academic priorities. RUNet 2000 is an ambitious and visionary plan to address the university's needs for voice, data, and video communications services for meeting the goals of instruction, research, and public service into the next century. The planning effort has involved a widespread committee process with representatives from the faculty, staff, and administration. A major goal of RUNet 2000 is the "establishment of a high-speed network that provides an unrestricted and a unified system of communications in all university facilities." (Resource documents include an early RUNet 2000 planning document.) The upgrading of the fiber backbone, the networking of dormitories and facilities, and installation of new data and video equipment will be a multi-year construction project. RUNet 2000 will have high priority in the university's capital program and require a partnership of gifts from the private and corporate sector as well as funding by state and federal government sources for completion.

While major strides have been made in instructional, research, and administrative computing, major challenges remain to achieve the university's strategic goals. Foremost among those challenges is completing the RUNet 2000 project's goal of linking all members of the Rutgers community to the modalities of telecommunications services of the next century. Given the complex geography of the campuses and the age of facilities, the connection of the buildings' internal wiring to the backbone represents a significant financial hurdle that must be overcome to create a comprehensive information infrastructure. The RUNet 2000 first priority is to bring the network "up to and including the router" for the full range of New Brunswick buildings. Additional funding must be found to address a secondary goal of the RUNet 2000 project: completing the internal building wiring of classrooms and offices to link up to the building's router. Departments and buildings are at different stages in this evolutionary process, with some fully wired for years, some partly wired, and others not yet wired. Many departments, especially those on Douglass, still rely on modems or resort to nonuniversity Internet providers to communicate with their students or do mundane computer tasks. The preliminary source of funds identified for RUNet 2000 will only be the first step in a long process of completing Rutgers-New Brunswick's technological infrastructure. Securing funds to complete the large and dispersed infrastructure in New Brunswick has to be assigned a high priority to meet the strategic academic plans of the university.

A second and equally important challenge is the provision of adequate technical support for the huge and growing number of computers on campus. With these new computers, departments and other units need technical personnel to keep the equipment and software in satisfactory operating condition and to plan for the future. At this time a large number of departments have no technical personnel and must rely on faculty and graduate students to solve network, connectivity, and setup problems. As noted above, the administration identified funding for a pilot project on the Livingston campus and, in conjunction with the FAS Dean's Office, began to implement the project in 1996/97. In addition, RUCS has already begun to reorganize its personnel better to implement the central element of technical training of support personnel proposed in the hierarchical support structure model. New Brunswick-wide implementation of this support model must proceed apace.

A future goal must be to position computing as a central feature of the academic and administrative planning process. Recent administrative changes represent a significant step to integrate more effectively computing issues into the academic planning process. The major reorganization of the New Brunswick campus in 1996 strengthened the autonomy, authority, and flexibility of the academic deans; it also changed the reporting relationship of various research centers that were closely affiliated with departments and academic units. RUCS also is more closely related to the planning process by reporting to the Vice President for Institutional Research and Planning. Finally, as we were completing this report, the New Brunswick Computing Advisory Committee (NBCAC) was established. Chaired by a faculty member, this committee is an important first step in ensuring that computing plays a central role in academic and administrative planning in support of core missions.

RECOMMENDATIONS

Libraries

- (1) Because scholarly resources in print and electronic format are becoming increasingly costly, New Brunswick libraries must have adequate funding for scholarly resources.
 - We should establish a major endowment fund for scholarly resources to ensure adequate support for research and instructional activities.
 - At the same time, we must provide adequate and ongoing support for information technologies and infrastructure to make certain that library users have access to the most up-to-date information and services.
- (2) To ensure timely and quality services to library users, we must identify additional, sophisticated human resources in information technology, user education, and subject specialties.
- (3) We should establish a system-wide Faculty Library Advisory Group as a forum for identifying major library issues and for developing priorities.
- (4) To maximize the effectiveness of the New Brunswick libraries, we urge prompt implementation of the 1995/96 Library Task Force recommendation to create a single library structure from the existing four campus-based libraries.

Computing

- (1) To meet the voice, video and data communications needs of Rutgers faculty, staff, and students, we urge continued strong support for the RUNet 2000 planning and implementation process. A wide variety of funding efforts is required to ensure the full implementation of RUNet 2000's ambitious vision. In addition, because the project focuses on improving technology only "up to and including the building router," additional planning efforts and funds will be necessary to bring computing to each Rutgers desktop.

- (2) To fully realize the goals of the Livingston Campus Pilot Project, additional efforts are needed.
- Personnel funds must be targeted, at the decanal and vice presidential levels, to provide secure funding for unit computer specialists at Livingston, and to expand the program throughout the entire New Brunswick campus.
 - We strongly endorse the efforts of RUCS and the RUNet 2000 Project Advisory Committee to develop an appropriate faculty, staff, and student advisory group to help RUCS establish priorities.
- (3) To encourage faculty and student initiative, and to bring the best computer technology to both faculty and students, we urge a modest increase in the yearly student computer fee. Simultaneously, we must also widen the funding base for computer technology beyond an overreliance on the student fee. We thus support the RUNet 2000 Project Advisory Committee's recommendation for a restructuring of university budget practices to guarantee a separate revenue stream for RUNet 2000 and other computing initiatives.
- (4) To improve student access to computer technology, we encourage the establishment of implementation plans to wire all residence halls for voice, video, and data as soon as it is feasible. In addition, we support the goal of the Advisory Committee for Instructional Computing to use student fee funds to establish an ongoing equipment replacement program for the campus computer hubs.
- (5) Access to RUCS' pool of modems remains unsatisfactory for many faculty, staff, and students. Mechanisms must be developed to increase such access at the earliest opportunity.

7. PUBLICATIONS AND COMMUNICATIONS

INTRODUCTION

There are several audiences addressed by the university's principal publications. The most important of these are the prospective students whose initial interests in Rutgers will be rewarded or discouraged by the image of the university communicated in brochures and catalogs. Other audiences, smaller but highly influential, are addressed by the university's most ambitious publications. They include the corporate scientist or industrial entrepreneur in search of a high tech research partner, the CEO investing in basic exploration and innovation, and the political leaders, donors, grantors, and alumni whose interest in and contribution to the university's future are crucial.

The purpose of Rutgers' publications program is to give evidence to each of these audiences that it is wise to turn to Rutgers for an investment in the future, whether one is a high school senior or a CEO. The strongest message communicated by the publications assures the reader that Rutgers is an institution characterized by integrity, activity, and abundant evidence of excellence. In many of these documents, this message is primarily communicated graphically by design and photography, and secondarily by text.

In recent years, the university's public image has been significantly sharpened and defined by a thorough communications program that has rigorously addressed our audiences with messages that reinforce both our achievements and our aspirations. When a prospective student, a potential collaborator, or a likely donor examines the university from a distance, it is most likely through these documents; and so, to a certain degree, a rising future depends upon the way the university invites and satisfies attention through its documents. Our audiences will turn away if our message does not accurately anticipate their interests, and they will not consider Rutgers at all if our message is not convincing, inviting, accurate, and attractive.

OBJECTIVES

The primary objective of Rutgers' publication program has been to advance and confirm the university's long-range initiatives to join the highest level of our nation's public research institutions. These initiatives encompass a threefold mission promoting excellence in undergraduate and graduate education, in research and scholarship, and in public service to the state, nation, and world. Fulfilling this objective has been especially challenging, given the constraints and inconsistencies over time in the university's budget. Given limited resources, the university has attempted clearly to define its print materials as to audience, message, and whether primarily promotional or informational, to assure the greatest effectiveness of each piece. The university remains consistently committed to a publications program of high quality and accuracy, both to elicit critical support and to assure its constituents of the university's continuing ability to live up to its ambitious goals.

As a secondary objective, the university's publications address some of the important issues in higher education, often debated in the national press, and explain and defend the role of the public research university in resolving them. Such issues include the misperceptions that undergraduate teaching is not valued at research universities, that teaching and research are incompatible pursuits, and that universities are immense bureaucracies with little sense of public accountability.

To meet these objectives, the university has rejected a strict, university-wide visual identity as being too restrictive in light of our diversity, complexity, and size. Instead, the typical Rutgers designs and texts are coordinated for specifically identified audiences. An overall visual approach that is clean and contemporary remains a consistent feature across publications. First priority is given to establishing the appropriate tone and depth of presentation for each publication according to the audience—whether a high school senior or a research scientist.

The self-study committee reviewed a comprehensive sampling of the university's primary publications. These publications exhibited high standards for design, illustration, and production, matched equally by well composed, informing, and persuasive texts. In addition, comparing the publications to the equivalent publications in use a decade ago revealed a tremendous improvement in the way the university presents itself to the external world.

CATEGORIES

Analysis of a diverse sample drawn from the university's current printed publications yields six categories, each with a different function.

General University Promotion

These publications present the university to people whose connections to Rutgers are most generic. They are the least likely audience to turn to the university with a specific need, but whose interests in higher education are likely to be advanced by association with Rutgers.

As products, these documents are carefully constructed, well printed, and illustrated with strong visual content that communicates the vitality and achievement of the Rutgers community. Three examples of such publications are the *President's Report*, the university's strategic plan: *A New Vision for Excellence*, the *Rutgers Fact Book*, and the *Rutgers Magazine*. These publications are, by definition, university-wide rather than campus specific.

Such examples assert a shared theme of institutional vision and purpose, usually captured in a specific phrase (for example, "Forging Connections for Future Growth"). As documents, they tend to display the highest public and research achievements of faculty, the most promising trends among students, and the evidence of greatness that presents the university's most compelling stories, most broadly told.

Research Promotion

The message of these publications is that Rutgers is an incisive research leader and a powerful business partner in diverse fields of applied sciences and contemporary technology. They are direct in their message ("Rutgers Research Drives the Economy"), and they share the high quality of illustration, typography, and text noted above.

Examples of publications that promote research are *Creating New Knowledge*, addressing the impact of our innovative technologies on business, and brochures promoting the Center for Agricultural Molecular Biology and the Center for Advanced Biotechnology and Medicine.

Fundraising

With state funding for higher education increasingly unstable, private giving has become more critical for the university's future. These publications are intended to elicit money from donors. The large-format *Annual Report* (using themes such as "Legacy," "Possibilities," and "Making a Difference") serves as a way to acknowledge donations directly, while also stimulating additional giving. Additional special-interest documents emphasize themes intended to appeal to traditional collegiate values and historic preservation. Other documents involve a broader, and less traditional university constituency (for example, "Community, Diversity, and Educational Excellence"), or serve as appealing gifts that remind the recipient of Rutgers throughout the year (e.g., Rutgers University Calendar).

Undergraduate Recruitment

In an increasingly competitive market for the attention of the best high school students, undergraduate recruitment documents must provide immediate appeal through their appearance, and subsequent promise of an engaging and satisfying undergraduate experience.

Our undergraduate recruitment documents have a playful and attractive face, intended to identify the wide array of students we seek: ethnically diverse, bright and responsive, ready for the experiences of college life. Simultaneously, the documents present the substantive aspect of the Rutgers undergraduate experience: the university's firm intellectual grounding, our high expectations, and the extraordinary opportunities of a great research university. Results attributed to this presentation of the university are that Rutgers now has one of the nation's most diverse student bodies among public universities, and a consistently strong mean combined SAT score among its first-year students.

Examples include the undergraduate *Viewbook*, used by all campuses but with campus-specific sections. These publications are heavily illustrated and highly readable. *Where the Best Minds Wind Up* combines the themes of inquiry and play by featuring seven very appealing undergraduate scholars, each casually photographed but identified as intellectually gifted and engaged by the university. The message is clearly made that bright minds thrive at Rutgers.

Overall, the undergraduate recruitment publications make up a sequential package of communications that are designed to guide a prospective student through the complexities of a large university, from the more general to the more specific, and to facilitate an intelligent choice of college.

Graduate Recruitment

Documents for graduate programs are naturally narrower and more emphatically career, and research-oriented than undergraduate recruitment documents. Graduate recruitment documents retain the emphasis on short texts and the presentation of somewhat hard-edged data. No graduate parallel to the university-wide undergraduate *Viewbook* exists. One example of a Rutgers-wide publication is the recent brochure intended to attract people of color to graduate programs. Central funding provides most graduate programs with a single-sheet poster designed for bulletin board display. However, for more elaborate brochures, graduate programs normally depend on upon program-based funding. A publication advancing the graduate management program is an example of such a presentation. Another example is the Edward J. Bloustein School of Planning and Public Policy *Prospectus*. However, most graduate schools and programs rely heavily on their catalogs for communicating with prospective students.

Catalogs

These are the most conventional of the university's publications. Primary attention is given to accuracy and comprehensiveness. Like most college catalogs, they are functional and descriptive, and not primarily intended as recruitment pieces. At the same time, however, they are among the most essential of the university's publications because they are legal descriptions of program requirements, courses, and options for the students. They are not intended to bring students to the university so much as to get them through their degree programs.

The catalogs are uniform in size, style, and content. They are usually printed on newsprint, carry no photographs and (with one exception) do not feature images of students or faculty. Apart from the high production values evident elsewhere, several qualities are missing from these catalogs: evidence of student experiences in specific programs of study; how faculty design the process of education within their disciplines; the interaction of faculty research and teaching; service, internship, and travel opportunities for students; and how particular programs lead to their intended outcomes.

Especially to the extent that the graduate catalogs serve in fact as primary communications with prospective students, higher-grade production values and more scene-setting promotional content would make these documents more effective.

Electronic Communications

A major communication vehicle that was nonexistent a decade ago is the World Wide Web. The university strives to use this medium to its fullest by developing an organized series of central university Web pages that provide a coherent top layer to the university's Web site. These pages then lead into the plethora of sites developed and maintained by individual departments, faculty, and students.

For student information purposes, all the university catalogs are maintained on the Web. They are currently being reformatted to make the information more accessible. Also, current students and visitors to the New Brunswick campuses can use a series of kiosks, maintained in each of the campus student centers, to access a wealth of information about the school.

For prospective students, both an electronically submittable application and a downloadable application are maintained on the undergraduate admissions Web site.

Campus Information Services

A major and relatively new communications resource for the university is Campus Information Services (CIS). Housed on the College Avenue campus, CIS trains and employs students to answer the university's central phone line. A huge electronic data base is maintained by and is at the disposal of these students to respond to inquiries. Within the past year, this office has taken on responsibility for answering the undergraduate admissions office phone lines. They maintain the kiosk database and many of the informational pages on the university's web site.

Providing a courteous, informed response to the thousands of callers each week has allowed the university to make great strides in providing a more responsive face to both students and the general public.

RECOMMENDATIONS

(1) Extensive efforts have been directed toward increasing the availability of information regarding graduate programs on the Rutgers Web site. Priority for further funding should be given to program-specific graduate recruitment publications. Secondly, a university promotional publication for graduate opportunities in New Brunswick would be useful.

- (2) To ensure the quality of our electronic presence on the Internet including the organization, consistency, coordinated graphics, accuracy and timeliness of information we encourage the development of systems and procedures, with appropriate staff support, committed to Web site development.
- (3) To enhance our institutional standing and promote the appropriate image of the university, we encourage the development of a financial plan that will enable University Communications to provide high-quality print materials, including catalogs and promotional pieces, and the wider distribution of the *Rutgers Magazine*.
- (4) To assist prospective students and their families and the numerous visitors to the campus, we urge that funds be identified to implement the plans for a Visitor's Center at Riverstead.

8. CONCLUDING RECOMMENDATIONS

As this report details, Rutgers-New Brunswick is a campus of extraordinary achievement. Our remaining challenges derive in part from those very achievements. Throughout these pages we have articulated both successes and challenges. Here we add recommendations that address the broad themes of our study, especially those we wish to underscore and those relevant to multiple sections.

- (1) The stature of Rutgers-New Brunswick depends crucially on support for core academic areas. The university must articulate plans to support these areas, including scholarly resources in the New Brunswick library system and basic support (including faculty development) to core academic departments. While availability of outside financial support (e.g., the capital campaign) should be important in setting priorities, it should not be allowed to intrude upon these basic academic needs.
- (2) In allocating our scarce resources, we must be committed to the principle that planning and resource decisions should be effectively linked. Increased responsibility must be accompanied by increased resources. Reallocations of existing resources must be made in accordance with campus and university priorities, and the role of faculty in identifying and developing those priorities through their decanal units should be underscored. At the department level, teaching committees, executive and personnel committees, and post-tenure review procedures are among the strategies faculty currently use to exercise responsibility in monitoring faculty teaching and its relation to changing curricular needs.
- (3) Maintaining New Brunswick's excellence as a premier AAU research university requires continuous building of our faculty strength. We need at least to maintain the pace of junior hires and in addition to hire a select number of senior faculty to move more programs to their next level of distinction.
- (4) To increase the number of TAs, fellowships, and tuition reimbursements available for graduate recruitment and support, we recommend expanded and continuous funding for the recent Graduate School-New Brunswick proposal to the Committee for the Future for leveraging existing departmental funds with central monies.

- (5) With a degree of uncertainty remaining in the wake of the May 1996 administrative reorganization, the administration and the academic deans must together actively manage the ongoing transition to ensure that its full promise is realized. For example, the undergraduate colleges and the administration of student affairs require continued attention.
- 6) Nearly 17 years after the major campus reorganization of 1981, it is time to rethink the geographical distribution of disciplines across the Rutgers-New Brunswick campuses. If there ever was a justification for the dispersal of departments across the campuses, it does not exist today. Instead, humanities and (especially) social science students and faculty bear the brunt of the travel across New Brunswick's campuses. The successes of the geographic concentration of the Cook and Busch departments show the benefits of academically-based discipline clustering. We recommend the establishment of a campus-wide committee to identify appropriate academic criteria for departmental clustering.
- (7) Over the past few years, faculty groups have questioned the president's leadership and expressed concern that their voice is not being sufficiently solicited in campus decision making, a stance that has led to strained faculty/administration relations. Other issues have similarly strained student/administration relations. During the 1996/97 academic year, both faculty and student leaders have been heartened by increased communication with the administration. We strongly support the university vice president for academic affairs' designation of the New Brunswick Faculty Council as the faculty voice on campus. As the university begins its second year of operating under the new organizational structure, we encourage continued good-faith efforts on both sides to increase faculty voice in campus and university policy making. We urge similar good-faith efforts to enhance student/administration dialogue.

APPENDIX 1

Charge to the New Brunswick Campus Overview Committee

Thank you for agreeing to serve on the Overview Committee. You are being asked to review the 16 categories listed below within the context of the New Brunswick campus and its relationship to the mission and goals of the University as a whole. Your first draft of this section should be submitted to the steering committee for review no later than February 14, 1997, and a final report should be submitted by June 2, 1997. These 16 categories are as follows:

- Mission, Goals, and Objectives
- Institutional Integrity
- Planning and Resource Allocation
- Programs and Curricula
- Outcomes/Institutional Effectiveness
- Admissions
- Student Services/Student Life
- The Faculty
- Organization and Administration
- Governing Board
- Budgeting and Accounting
- Libraries
- Other Resources
- Plant and Equipment
- Innovation and Experimentation
- Catalogs, Publications, and other Communications

In your report, each one of these areas should be addressed with a descriptive section, followed by an analysis, and concluded with a section on recommendations. The entire report ideally should be no more than 50 pages in length. Supporting documentation in the form of tables, charts, graphs, and reports/studies/plans should be included as appendices to the report.

Mission, Goals, and Objectives

Review the current University mission statement, the New Brunswick Campus statement, and statements for campus schools and colleges with reference to the following:

- History of the campus and its relationship to the University.
- The process for review and updating of the statements.
- Their congruence with each other.
- Their relationship to planning/accountability/and resource allocation processes and the extent to which these appear to be realistic.
- The extent to which they are reflected in the missions, goals, and objectives of the constituent schools and colleges headquartered on the campus.
- Evidence for their knowledge and use by various campus constituencies.
- Evidence for their efficacy in terms of the campus' ability to fulfill or attain them.

Institutional Integrity

Consider the current status of academic freedom on campus and the way in which this freedom is manifest.
Assess the campus commitment to equity and diversity.
Describe institutional and campus commitments to academic freedom.
Provide examples of how this commitment is honored and communicated.
Describe institutional and campus commitments to equity and diversity.
Examine the evidence for fulfilling this commitment with regard to students, faculty staff, curricula, services, and outreach.
Assess the extent to which these commitments reflect campus/institutional priorities.

Planning and Resource Allocation

Consider the campus planning and resource allocation processes and their relationship to the following:

- The missions of the schools and colleges that comprise the campus.
- The University's planning and allocation processes.
- Their efficacy in relation to campus and university missions.

Programs and Curricula

Review the programs and curricula (undergraduate as well as graduate/professional) offered on the campus with reference to the following (noting that programs include non-instructional activities too):

- Their variety and scope.
- Their relationship to the University's mission, goals, and objectives.
- Their relationship to the campus mission, goals, and objectives.
- Their relationship to the mission, goals, and objectives of the schools and colleges which offer them.
- Their evaluation and updating.
- Their resource and support base.
- Off-campus/distance offerings.
- Future plans.

Outcomes/Institutional Effectiveness

Describe the processes and means by which outcomes data, both qualitative and quantitative, are gathered, analyzed and used to improve the following and by whom:

- Programs and curricula.
- Student services.
- Student life.
- Academic support.
- Research.
- Public Service.

Admissions

Consider campus recruitment and admissions policies and practices (undergraduate, graduate, and professional) with regard to the following:

- University and campus mission, goals, and objectives.
- School and college mission, goals, and objectives.
- Academic program requirements.
- Equity and diversity.
- Their success in relation to enrollment goals.

Student Services/Student Life

Describe the current range of student services and student life activities available on campus and evaluate their adequacy with regard to:

- Advising, counseling, financial aid, discipline, health services, judicial affairs, orientation, government, athletic, social, recreational, and other student development and co-curricular activities.
- Foreign students.
- Student-faculty-administrative interactions.
- Student satisfaction.
- Campus climate.
- Integration with academic programming.
- Housing, dining, and transportation.
- Safety and security.
- Attention to gender and diversity issues.

The Faculty

Discuss the faculty and their campus and institutional responsibilities with regard to:

- Number and profile.
- Qualifications and relationship to school/college, campus, and University missions.
- Recruitment and hiring.
- Equity and diversity.
- Promotion and tenure.
- Faculty development.
- Workload (including student advising).
- Administrative support.
- Public service.
- Scholarship and research.

Organization and Administration

Evaluate the organization and administration of the campus in terms of the following:

- Relationship to mission, goals, and objectives of the campus and University.
- Relationship to the University.
- Efficacy of communication.
- Recent changes and planned future changes.
- Ability to effect change.

Governing Board

Describe campus governance with reference to the following:

- Its organization and scope.
- The role of students, faculty and administrators.
- Its relationship to other University governing bodies.
- Its efficacy.

Budgeting and Accounting

Consider the current budgeting and accounting processes for the campus in relation to:

- History.
- Their development.
- The University budgeting process.
- Current and projected fiscal climate.
- Various sources of revenue.
- Expenditure patterns.
- Mission, goals, and objectives.
- Strategic plan implementation.

Libraries

Review the current status and adequacy of the campus libraries with consideration of the following:

- Student needs, faculty needs, programs, technology, staffing, funding, collections.
- Relationship to campus and University strategic plans.

Other Resources (e.g., instructional equipment, support staff)

Discuss the adequacy of resources to support the campus mission with respect to the following:

- Instructional Equipment (including computers and software, laboratory equipment, etc.).
- Current funding for this and plans to make upgrades in this area.
- Support staff.

Plant and Equipment

Review the status of the campus physical plant with regard to the following:

- Existing adequacy with respect to fulfillment of the campus mission and those of its constituent schools and colleges.
- Deferred maintenance.
- Projected enhancements related to campus and University planning priorities.
- Innovation and Experimentation

Describe innovative programming and delivery methods with regard to the following:

- Current status.
- Pedagogy.
- Delivery.
- Outreach.
- Faculty and staff development.

Collaboration (either inter-institutional, intercampus, or interschool/college).
Relationship to campus and University strategic plans.

Catalogs, Publications, and other Communications

Review current campus publications with regard to their accuracy and form and whether or not they are up-to-date.

New Brunswick Overview Committee Membership

Akinbiyi M. Akinlabi, FAS-Linguistics
Clayton P. Alderfer, Graduate School of Applied and Professional Psychology
Joseph Barone, College of Pharmacy
Lisa Bellincampi, Student, UMDNJ, Orthopedic Surgery
Mary Lee Bretz, FAS-Spanish & Portuguese
Eleanor L. Brilliant, School of Social Work
Abena P. Busia, FAS-English
David W. Carr, School of Communications, Information, and Library Studies
Margaret L. Christ, Director, University Publications
Naima A. Cook, Student, Douglass College
Roger N. Cornish, Mason Gross School of the Arts
Jorge Garcia, FAS-Philosophy
Leonardo A. Hernandez, Student, Rutgers College
Ian A. Hodos, Senior Associate Director, Undergraduate Admissions
Edward Kozack, Assistant Vice President, Auxiliary Services, Old Queens
Barbara A. Lee, School of Management and Labor Relations
Alice Liu, FAS-Biological Sciences
Marie T. Logue, Dean of Students, Rutgers College
Marc K. Manganaro, FAS-English
Eric L. Miller, Student, Cook College
George H. Nieswand, Cook College
Albert J. Reid, Director, Budget & Resource Studies
Patricia A. Roos, Chair of Committee, FAS-Sociology
Barbara A. Shailor, Dean, Douglass College
Ryoko Toyama, Director, Alexander Library
Robert L. Wilson, FAS-Mathematics
Abdelfattah Zebib, School of Engineering

Staff: Barbara A. Bender, Graduate School
 Roberta K. Leslie, University Academic Affairs, Old Queen's

New Brunswick Overview Subcommittee Membership

Overall coordination: Roos, Bender, Leslie

Group 1: Institutional Mission and Administration (Bender, Leslie)

- Mission, Goals, and Objectives
- Institutional Integrity (policies; evidence in appropriate sections below)
- Organization and Administration
- Governance

Group 2: Planning and Budgeting (Barone (chair), Kozack, Reid, Leslie)

- Planning and Resource Allocation
- Budgeting and Accounting
- Plant and Equipment

Group 3: Faculty (Wilson and Lee (co-chairs), Alderfer, Busia, Cornish, Garcia, Leslie)

- The Faculty
- Outcomes/Institutional Effectiveness (w/respect to research and public service)

Group 4: Curricula and Assessment (Nieswand and Bretz (co-chairs), Brilliant, Liu, Manganaro, Hernandez, Bender)

- Programs and Curricula
- Outcomes/Institutional Effectiveness (w/respect to programs and curricula)

Group 5: Enrollment Management and Student Services/Student Life (Shailor and Logue (co-chairs), Hodos, Akinlabi, Bellincampi, Cook, Bender)

- Admissions
- Student Services/Student Life
- Outcomes/Institutional Effectiveness (w/respect to services)

Group 6: Libraries, Computing, and Other Academic Support (Zebib and Toyama (co-chairs), Miller, Leslie)

- Libraries
- Other Resources (including Computing)
- Outcomes/Institutional Effectiveness (w/respect to academic support resources)

Group 7: Communications and Other Services (Carr (chair), Christ, Bender)

- Catalogs, Publications, and other Communications
- Outcomes/Institutional Effectiveness (w/respect to other services)

All groups (as relevant): Institutional Integrity and Innovation and Experimentation

APPENDIX 2

List of Persons/Units Consulted

Teuvo Airola, Professor, Natural Resources
Rae Alexander-Minter, Director, Paul Robeson Center
Jean Ambrose, Assistant Vice President for Faculty Affairs
James Anderson, Associate Dean and Professor, SCILS
Arlene Walker-Andrews, Chair, Faculty Council Personnel Committee
Susan Armstrong-West, Assistant Dean of Students, Douglass College
Dennis Bathory, Chair, FAS Curriculum Committee
Michael Beals, Associate Dean for Undergraduate Initiatives, FAS Dean's Office
James Begin, Professor, School of Management and Labor Relations
Rudy Bell, Professor, History
Robert Bierman, Director, University Student Health Services
Douglas Blair, Professor, Economics
Diane Bonanno, Associate Dean, Rutgers College Recreation
Jeanne Boyle, Director of Library of Science and Medicine
John Brugel, University Director of Financial Aid
Richard Budd, Dean (former), SCILS
Ilona Caparros, General Reference Librarian, Alexander Library
Ray Caprio, Vice President for Continuous Education and Outreach
Bruce Carlton, Executive Dean, Cook College and Executive Director, NJAES
David Chandler, Director, Rutgers College Counseling
Nelson Chou, Head, East Asian Library
Cheryl Clarke, Director, Diverse Community Affairs, and graduate student, English
John Colaizzi, Dean, College of Pharmacy
Boyd Collins, Information Technology Librarian, Alexander Library
Joseph Consoli, Head of Collection Development, Alexander Library
Naima A. Cook, President, Douglass College Black Students' Congress
David Daut, Professor, Electrical & Computer Engineering, College of Engineering
Mary Davidson, Dean, School of Social Work
Kayo Denda, graduate student/library intern
Mitunori Denda, Associate Professor, College of Engineering
Ellis Dill, Dean, College of Engineering
Emmett Dennis, Dean, University College-New Brunswick
Lowell Edmunds, Professor, Classics
Marta Eisenman, Director, Cook College Counseling Center
Tessa Evans, Head, Acquisitions Dept., Busch
Emily Fabiano, Education Librarian, Alexander Library
Leslie Fehrenbach, Associate Vice President for Administration and Public Safety
Mary Fetzer, Government Publications Librarian, Alexander Library
Brian Fisher, Information Assistant, Campus Information Services
Hans Fisher, Professor, Nutritional Science
Sheila Fleischman, Director, Judicial Affairs
Richard Foley, Dean, FAS
Susan Forman, Vice President for Undergraduate Education
Ziva Galili, Professor and Chair, History
Marianne Gaunt, University Librarian

Gary Gigliotti, Director, Teaching Excellence Center
Ellen Gilbert, Social Sciences Librarian, Alexander Library
John Gillis, Chair, New Brunswick Faculty Council Library Committee
Rona Goffen, Acting Director, Global Programs
Gary Golden, Director of Paul Robeson Library, Camden
Stuart J. Goode, Livingston College Governing Association
Peter Graham, Associate University Librarian for Technical and Automated Services
Evelyn Greenberg, Hypercard Specialist, Alexander Library
Martha Greenblatt, Professor, Chemistry
Jane Grimshaw, Vice Dean, FAS-NB
Dominic Guerrini, Information Assistant, Campus Information Services
Sandra Harris, Dean, Graduate School of Applied and Professional Psychology
Charles Hedrick, Director, New Brunswick Computing Services, RUCS
Leo Hernandez, President, Rutgers College Governing Association
James Hughes, Dean, Edward J. Bloustein School of Planning and Public Policy
Arnold Hyndman, Dean, Livingston College
Michael Imperiale, Director, Rutgers University Housing
Kenneth Iuso, University Registrar
Mary Ann Jensen, Director, Douglass Psychological Services
Carl Kirschner, Dean, Rutgers College
Peter Klein, Professor, Philosophy
Doyle Knight, Professor, Mechanical & Aerospace Engineering
Edward Kozack, Assistant Vice President for Auxiliary Services
Jill Kwiatkowski, Information Assistant, Campus Information Services
Linda Langschieid, Head, Scholarly Communication Center Management Team, Alexander Library
George Laskaris, Executive Director of Computing and Information Technology, RUCS
Paul Leath, Professor and Chair, Physics and Astronomy
Edward Levy, Associate Dean of Students and Director of Recreation, Cook/Douglass
Barbara Lee, Acting Dean, School of Management and Labor Relations
Ronald Levy, Professor, Chemistry
Michael Livio, Vice Chair, Cook College Council
Ian Maw, Dean, Academic and Student Affairs, Cook College
Eric Miller, Cook College Council, NBOC-MSA
Arun Mukherjee, Director of Scheduling and Space Management
Lynn Mullins, Director, Dana Library, Newark
Stanley Nash, Head of Reference Service, Alexander Library
Jack L. Nelson, Professor, Graduate School of Education
New Brunswick Faculty Council
Pam Noakes, Director of Recreation, Livingston
Richard Nurse, Assistant Vice President for Undergraduate Education
Eve Orenstein, Mason Gross School of the Arts-SGA
Steve Pappis, Operations Supervisor, Werblin Recreation Center
Gerald Pomper, Professor, Political Science
Francoise Puniello, Director, Douglass Library
Barry Qualls, Professor and Chair, Department of English
Pamela Richard, Professor, SCILS
Godfrey Roberts, Associate Dean for Undergraduate Instruction, FAS-NB
Kenneth Roy, Director, Livingston College Counseling Center
Halina Rusak, Head, Art Library
John Salapatas, Executive Associate for Academic Affairs and Budget

Charles Sams, Director, Dining Services
Jonell Sanchez, Student Representative-Board of Governors
Tefko Saracevic, Professor, SCILS
Suzanne Scheiner-Albl, University College - UCGA
Joseph Seneca, University Vice President for Academic Affairs
Robert Sewell, Associate University Librarian for Collection Development and Management
Michael Shafer, Director, Program of Citizenship Education and Community Service (CASE) Program
Barbara Shailor, Dean, Douglass College
Paul Shallow, EALAC
Joel Shapiro, Professor, Physics and Astronomy
George Sigel, Professor, Chair, Faculty Council
Charles Sims, Professor, Mathematics
Jeffrey Smith, Associate Dean, Graduate School of Education
Gracemary Smulewitz, Supervisor, Alexander Technical Services
Marilyn Somville, Dean, Mason Gross School of the Arts
Samson Soong, Associate University Librarian for Administrative Services
Robert Spear, Director, Parking and Transportation
Nicholas Stojsin, Student, Graduate Student Association
Paul Sullivan, Associate Director, Campus Computing Facilities
Gail Child Szenes, Director, Center for International Faculty and Student Services
Donald Taylor, Director of Graduate and Professional Admissions
Farideh Tehrani, Head of Access Services, Alexander Library
Allegra Tiver, Rutgers College
Tony Tripolitis, Associate Professor, Religion
Robert L. Tuck, Engineering Governing Council
Elsa Vineberg, Associate Dean of Instruction, Rutgers College
Ralph Voorhees, Alumni
Corinne Webb, Associate Vice-President for Enrollment Management
Eugene White, Professor and Chair, Economics
Richard White, Director, Career Services
Joseph P. Whiteside, Senior Vice President and Treasurer
Louise Wilkinson, Dean, Graduate School of Education
Myoung Chung Wilson, Collection Development/information Services Librarian, Alexander Library
Richard Wilson, Professor, Political Science
Nancy Winterbauer, Vice President for University Budgeting
Marion Yudow, Director of the FAS Language Laboratories
Abdel Zebib, Professor, Mechanical and Aerospace Engineering

List of Documents Reviewed

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APPENDIX 3

Rutgers-New Brunswick Academic Units, 1996-97

College of Engineering (COE)

Dean Ellis H. Dill

- Biomedical Engineering
- Ceramic and Materials Engineering
- Chemical and Biochemical Engineering
- Civil and Environmental Engineering
- Electrical and Computer Engineering
- Industrial Engineering
- Mechanical and Aerospace Engineering

Cook College (COOK)

Executive Dean Bruce C. Carlton

- Agricultural Economics and Marketing
- Animal Sciences
- Biochemistry and Microbiology
- Bioresource Engineering
- Coastal and Environmental Studies
- Ecology, Evolution, and Natural Resources
- Entomology
- Environmental Sciences
- Food Science
- Human Ecology
- Humanities and Communication
- Landscape Architecture
- Nutritional Sciences
- Plant Pathology
- Plant Science
- Rutgers Cooperative Extension
 - 4-H Youth Development
 - Agricultural and Resource Management Agents
 - Extension Specialists
 - Family and Consumer Sciences
- Statistics

College of Pharmacy (COP)

Dean John L. Colaizzi

- Chemical Biology and Pharmacognosy
- Pharmaceutical Chemistry
- Pharmaceutics
- Pharmacology and Toxicology
- Pharmacy Practice and Administration

Edward J. Bloustein School of Planning and Public Policy (EJB)
Dean James W. Hughes
Public Policy
Urban Planning and Policy Development
Urban Studies and Community Health

Faculty of Arts and Sciences-NB (FAS-NB)
Graduate School-NB (GS-NB)
Dean Richard F. Foley
Africana Studies
American Studies
Anthropology
Art History
Biological Sciences
Chemistry
Classics
Comparative Literature
Computer Science
East Asian Languages and Cultures
Economics
English
Exercise Science and Sports Studies
French
Geography
Geological Sciences
Germanic Languages
Hebraic Studies
History
Italian
Linguistics
Mathematics
Molecular Biology and Biochemistry
Philosophy
Physics and Astronomy
Political Science
Psychology
Puerto Rican and Hispanic Caribbean Studies
Religion
Slavic and East European Languages and Literatures
Sociology
Spanish and Portuguese
Statistics
Women's Studies

Faculty of Management (incorporates School of Business-NB)
Dean P. George Benson
Accounting
Finance
Management
Management Science and Information Systems

Marketing

Graduate School of Applied and Professional Psychology (GSAPP)

Dean Sandra Lee Harris

Applied Psychology

Clinical Psychology

School Psychology

Graduate School of Education (GSE)

Dean Louise Cherry Wilkinson

Educational Psychology

Educational Theory, Policy, and Administration

Learning and Teaching

Mason Gross School of the Arts (MGSA)

Dean Marilyn Feller Somville

Dance

Music

Theater Arts

Visual Arts

School of Communication, Information, and Library Studies (SCILS)

Acting Dean Todd T. Hunt

Communication

Journalism and Mass Media

Library and Information Studies

School of Management and Labor Relations (SMLR)

Dean John L. Burton

Human Resource Management

Labor Studies and Employment Relations

School of Social Work (SSW)

Dean Mary Edna Davidson

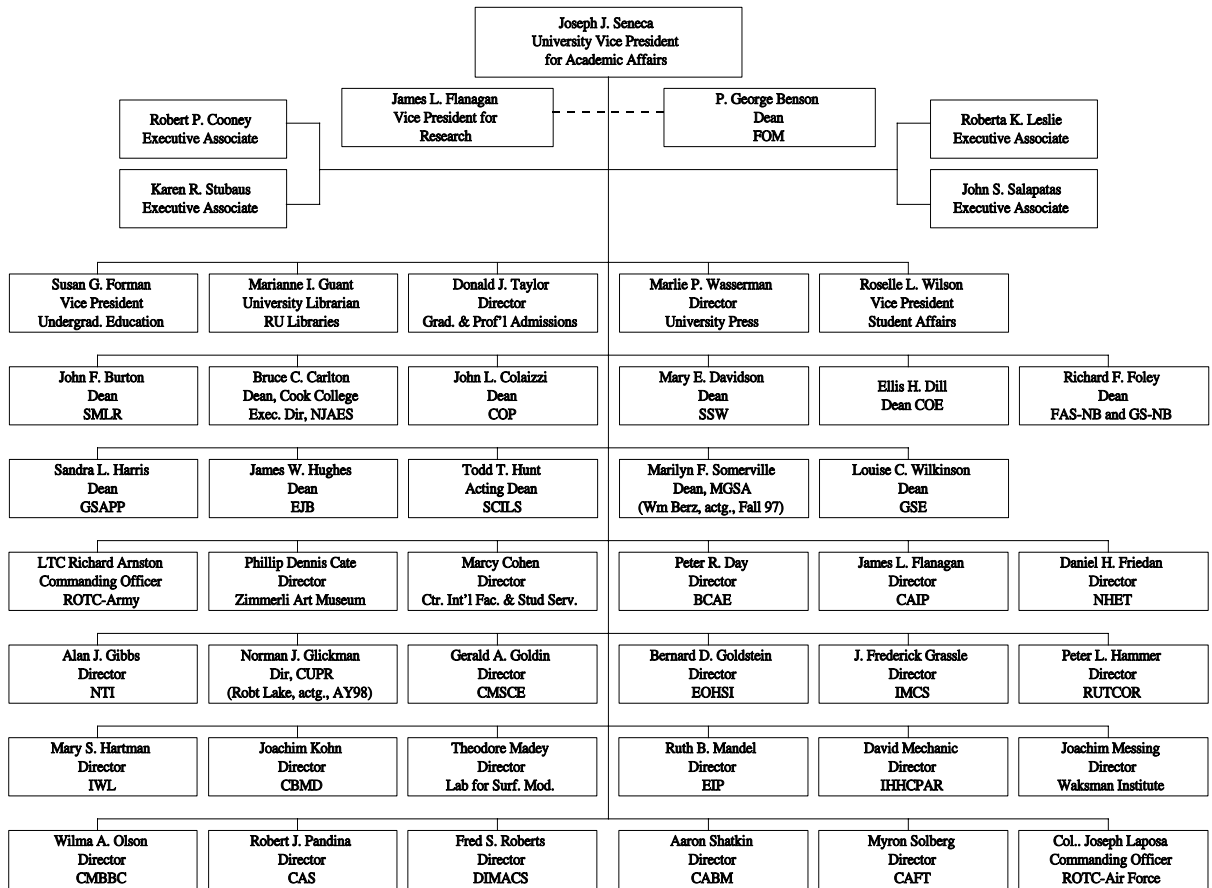
APPENDIX 4

Graduate Programs of Study in New Brunswick

<u>Name of School</u>	<u>Degrees Offered</u>
College of Pharmacy	Pharm.D.
Edward J. Bloustein School of Planning and Public Policy	Dr.P.H., M.P.H., M.C.R.P.
Graduate School-New Brunswick	Ph.D., M.A., M.A.T., M.S., M.S.T., M.Phil. (The M.P.H., Dr.P.H., and some Ph.D.'s are offered jointly with the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School.)
Graduate School of Applied and Professional Psychology	Psy.D., Psy.M.
Graduate School of Education	Ed.D., Ed.M., Ed.S.
Mason Gross School of the Arts	D.M.A., A.D., M.M., M.F.A.
School of Communication, Information and Library Studies	M.C.I.S., M.L.S.
School of Management and Labor Relations	M.H.R.M., M.L.I.R
School of Social Work	M.S.W.

APPENDIX 5

Office of the University Vice President for Academic Affairs
Organization Chart



**Centers, Bureaus, and Institutes and their Reporting Relationships
1996/97**

CBI's REPORTING TO THE UNIVERSITY VICE PRESIDENT FOR ACADEMIC AFFAIRS

	<u>Director</u>
Center for Advanced Biotechnology and Medicine (CABM)	Aaron Shatkin
Center for Advanced Food Technology (CAFT)	Myron Solberg
Center of Alcohol Studies (CAS)	Robert J. Pandina
Center for Biomaterials and Medical Devices (CBMD)	Joachim Kohn
Center for Computer Aids for Industrial Productivity (CAIP)	James L. Flanagan
Center for Discrete Mathematics & Theoretical Computer Science (DIMACS)	Fred S. Roberts
Biotechnology Center for Agriculture and the Environment (BIOTECH Center)	Peter R. Day
Eagleton Institute of Politics (EIP)	Ruth B. Mandel
Environmental and Occupational Health Sciences Institute (EOHSI)	Bernard D. Goldstein
Institute for Health, Health Care Policy, and Aging Research (IHHCP)	David Mechanic
Institute for Marine and Coastal Sciences (IMCS)	Frederick Grassle
Center for Mathematics, Science, and Computer Education (CMSCE)	Gerald A. Goldin
Center for Molecular Biophysics and Biophysical Chemistry (CMBBC)	Wilma A. Olson
National Transit Institute (NTI)	Alan J. Gibbs
Center for New High Energy Theory (NHET)	Daniel H. Friedan
Rutgers Center for Operations Research (RUTCOR)	Peter L. Hammer
Laboratory for Surface Modification (LSM)	Theodore Madey
Center for Urban Policy Research (CUPR)	Norman J. Glickman
Waksman Institute of Microbiology	Joachim Messing
Institute for Women's Leadership (IWL)	Mary S. Hartman
 <u>Administrative Centers</u>	
Air Force ROTC	Col. Joseph Laposa
Army ROTC	LTC Richard Arnston
Center for International Faculty and Student Services	Marcy Cohen
Zimmerli Art Museum	P. Dennis Cate

CBI's REPORTING TO THE VICE PRESIDENT FOR CONTINUOUS EDUCATION & OUTREACH

	<u>Director</u>
Continuing Education Conference Center	Sandra Rocio Castro
Division of Summer Session and Continuing Studies	Thomas Kujawski

CBI's REPORTING TO THE VICE PRESIDENT FOR UNDERGRADUATE EDUCATION

	<u>Director</u>
Kreeger Learning Resource Center (LRC)	Karen Smith
Center for Latino Arts and Culture	Isabel Nazario
Paul Robeson Cultural Center	Rae Alexander-Minter
Teaching Excellence Center (TEC)	Gary Gigliotti

CBI's REPORTING TO THE BLOUSTEIN SCHOOL OF PLANNING AND PUBLIC POLICY

American Affordable Housing Institute	<u>Director</u> David Schwartz
Consortium for Educational Equity	Rebecca Lubetkin
Center for Environmental Communications	Caron Chess
Center for Government Services	Henry Coleman
Center for Negotiation and Conflict Resolution	Sanford M. Jaffe
Project on Regional and Industrial Economics	Ann Markusen

CBI's REPORTING TO COOK COLLEGE

Center for Controlled Environment Agriculture	<u>Director</u> William J. Roberts
Center for Environmental and Agricultural Education	Louis A. Iozzi
Fisheries and Aquaculture Technology Extension Center	Richard A. Lutz
Walton Center for Remote Sensing and Spatial Analysis	Teuvo Airola
Center for Theoretical and Applied Genetics	Robert Vrijenhoek
Center for Turfgrass Science	Bruce Clarke

CBI's REPORTING TO THE EAGLETON INSTITUTE OF POLITICS

Center for the American Woman and Politics	<u>Director</u> Debbie Walsh
Center for Public Interest Polling	Janice Ballou

CBI's REPORTING TO THE COLLEGE OF ENGINEERING

Center for Advanced Infrastructure Technology	<u>Director</u> Ali Maher
Center for Ceramic Research (CCR)	Dale Niesz
Bureau of Engineering Research	Alvin Salkind
Fiber Optic Materials Research Program (FOMRP)	George H. Sigel
Interfacial Molecular Science Laboratory	Stephen Garofalini
Laboratory for Nanostructured Materials Research	Thomas Tsakalakis
Center for Materials Synthesis	Bernard H. Kear
Center for Packaging Engineering	James Idol
Wireless Information Network Laboratory (WINLAB)	David Goodman

CBI's REPORTING TO THE FACULTY OF ARTS AND SCIENCES

Bureau of Biological Research	<u>Director</u> Richard Triemer
Institute of Biostatistics	Herbert Robbins
Rutgers Center for Cognitive Science	Zenon W. Pylyshyn
Laboratory for Computer Science Research	Casimir Kulikowski
Center for the Critical Analysis of Contemporary Culture	George L. Levine
Bureau of Economic Research	Eugene White
Thomas A. Edison Papers	Robert Rosenberg
Center for the History of Electrical Engineering	William Aspray
Rutgers Center for Historical Analysis	Ziva Galili
Institute for Hungarian Studies	Jozsef M. Borocz
Center for Global Security and Democracy	Edward Rhodes
Center for the Study of Jewish Life	Yael Zerubavel

Local Democracy in Poland	Joanna Regulska
Center for Mathematical Sciences Research	Joel Lebowitz
Bureau of Physics Research	Paul Leath
Center for Russian, Central, and East European Studies	Joanna Regulska
Laboratory for Vision Research	Bela Julesz
Walt Whitman Center for the Culture and Politics of Democracy	Benjamin R. Barber
Center for Women's Global Leadership	Charlotte Bunch
Institute for Research on Women	Marianne DeKoven

Administrative Centers

Global Programs	Seth Gopin
Minority Undergraduate Science Programs (OMUSP)	Francine B. Essien

CBI's REPORTING TO THE INSTITUTE FOR HEALTH, HEALTH CARE POLICY, AND AGING RESEARCH

	<u>Director</u>
Center for Research on Care for the Mentally Ill	Nancy Wolff

CBI's REPORTING TO THE INSTITUTE OF MARINE AND COASTAL SCIENCES

	<u>Director</u>
Center for Coastal and Environmental studies	Norbert P. Psuty

CBI's REPORTING TO THE COLLEGE OF PHARMACY

	<u>Director</u>
Laboratory for Cancer Research	Allen H. Conney
Controlled Drug-Delivery Research Center	Yie W. Chien

CBI's REPORTING TO THE SCHOOL OF COMMUNICATION, INFORMATION AND LIBRARY STUDIES

	<u>Director</u>
Journalism Resources Institute	Jerome Aumente

CBI's REPORTING TO THE SCHOOL OF MANAGEMENT AND LABOR RELATIONS

	<u>Director</u>
Center for Management Development	Charles Nanry
Center for Women and Work	Barbara A. Lee

CBI's REPORTING TO THE SCHOOL OF SOCIAL WORK

	<u>Director</u>
Center for Social and Community Development	William Tatum

APPENDIX 6**Rutgers-New Brunswick Mission Statement**

Rutgers-New Brunswick is committed to promoting excellence in graduate and undergraduate education, in research and scholarship, and in service to the community, state, and nation. With its rich traditions, its size and diversity, and its comprehensiveness of academic programs, it occupies a strategic leadership position within higher education in New Jersey and in the nation. The high quality of its faculty and programs in a wide array of areas, and its momentum toward increased distinction, provide rich opportunities for the campus to continue its evolution toward becoming one of the world's outstanding research universities. With its distinguished history in undergraduate education and its innovative educational structures, the campus will promote the highest quality of instruction and broad learning environments that benefit students at all levels and with varying needs. Rutgers-New Brunswick, through systematic and innovative program development, will continuously strive to meet the highest educational and research standards and thereby join the ranks of the small number of truly distinguished university centers.

Rutgers-New Brunswick is committed to increasing systematically the number of instructional, research, and service programs of distinction; to retaining and enhancing its strong commitment to undergraduate education; to attracting the most highly qualified students and faculty; and to insuring broad access to its programs. Only by achieving excellence across a broad array of educational, research, and service programs, while maintaining a vigorous commitment to diversity, can the campus fulfill its responsibility to the state and nation and be true to its own history and traditions.

Rutgers-New Brunswick is dedicated to providing instructional, research, and public service programs that will insure the continued economic, social, and cultural development of the state and its people. In pursuing these goals, the campus will insure that the interrelationship among undergraduate and graduate education, research, and service which is the hallmark of the best public research university center is maintained and strengthened.

New Jersey Agricultural Experiment Station

In the land-grant tradition, the New Jersey State Agricultural Experiment Station (NJAES) is committed to the development and delivery of basic and applied research in the areas of food, agriculture, and environmental and life sciences, and the application of knowledge gained through research to help the people of New Jersey acquire the understanding and skills needed to address problems in the renewable natural resources. NJAES will seek to build strength in the relevant sciences that will lead to excellence in research and extension, and will give increased emphasis to multidisciplinary approaches to solving complex problems facing modern agriculture and the environment. In adapting the land-grant concept to contemporary circumstances, NJAES will exploit the new technologies which will permit greater efficiency in agriculture and food production and success in solving environmental problems.

Building on existing strengths, NJAES will focus on specific thrust areas of critical importance to New Jersey's economic and social development: intensive production agriculture; food science and nutrition; marine and coastal sciences; environment; and biotechnology.

APPENDIX 7

Board of Governors and Board of Trustees (1997/98)

1997/98 BOARD OF GOVERNORS

Anne M. Thomas, Chair
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Mildred R. Schildkamp, Secretary
Enrica G. Chretien, Assistant Secretary
Joseph P. Whiteside, Treasurer

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Ruben Cardona
Anthony S. Cicatiello
Kevin J. Collins
Albert R. Gamper, Jr.
Nancy L. Lane
Francis L. Lawrence

Nancy K. Lotstein
Eugene M. O'Hara
Thomas A. Renyi
Louie Crew, Faculty Representative
Harry W. Janes, Faculty Representative
Gwendolyn McLoof, Student Representative

1997/98 BOARD OF TRUSTEES

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David J. Harris, Jr., Vice Chair
Mildred R. Schildkamp, Secretary
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Jerald D. Baranoff
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E. Ralph Biggadike
Joan L. Bildner
Ruth Ann M. Burns
Ruben Cardona
John Herbert Carman
Judith T. Caruso
Anthony S. Cicatiello
Michele Cortese
Clinton C. Crocker
Thomas G. Dallessio
Frederick D. DeSanti
Louis T. DiFazio
Milita Dolan
Robert P. Eichert
Evelyn S. Field
Jeanne M. Fox
Bruce G. Freeman
Albert R. Gamper, Jr.
Leslie E. Goodman
Kenneth J. Grispin
Jorge L. Hernandez
Richard W. Hill
Robert A. Laudicina
Francis L. Lawrence
Jeffrey M. Lawrence
Walter L. Leib
J. Bruce Llewellyn
Nancy K. Lotstein
Henry A. Lubinski

Michael C. MacDonald
Duncan L. MacMillan
Colleen M. McCann
Katherine N. McGinnis
James W. Mitchell
Patricia Nachtigal
E. Allen Nickerson
Eugene M. O'Hara
Brian D. Perkins
Eileen L. Poiani
Gail L. Powers
Paul V. Profeta
Thomas A. Renyi
Lillian Ringel
Bethany Rocque-Romaine
Jeanne G. Romer
Michael T. Salpas
John J. Scally, Jr.
Philip S. Schein
Dorothy M. Stanaitis
Anne M. Thomas
Karen J. Thorburn
Karen M. Torian
Mary Vivian Fu Wells
W. Kevin Wright
Robert S. Boikess, Faculty Representative
Francoise S. Puniello, Faculty Representative
Michael Benevento, Student Representative
John D. Ruvolo, Student Representative

APPENDIX 8

Faculty Council (1996/97)

Executive Cabinet

<u>Name</u>	<u>Title</u>
Douglas Blair	Vice Chair
John Gillis	Cabinet
Paul Leath	Cabinet
Roy Licklider	Cabinet
Pamela Richards	Cabinet
Michael Shafer	Past Chair
George Sigel	Chair
Arlene Walker-Andrews	Cabinet

Faculty Council Committee Chairs

<u>Chair</u>	<u>Committee</u>
Jackson Toby	Admissions, Recruitment, and Retention
Michael Shafer	Budget and Planning
Charles Sims	Computer Policy
Mark Manganaro	Educational Policy and Planning
John Gillis	Library
Arlene Walker-Andrews	Personnel Policy
No Chair	Physical Plant and Services
Paul Leath	Research
Peter Li	Student Affairs
Mark Wasserman	Teaching

Appendix 9

List of Resource Documents

Fund for Distinction Capital Program

Rutgers, The State University Fund for Distinction Capital Program: Phase I
Rutgers, The State University Fund for Distinction Capital Program: Phase II
Rutgers, The State University Fund for Distinction Capital Program: Phase III
Rutgers, The State University Fund for Distinction Capital Program: Housing/Dining/Student Centers
Rutgers, The State University Fund for Distinction Capital Program: Student Centers

Rutgers Faculty

Selected Faculty Honors and Awards, 1986, 1990, and 1994-1996
Post-Tenure Review Policy and Procedure
Selected Public Service Activities of New Brunswick Faculty

Student Services: From Recruitment to Graduation

Recent Initiatives of the Office of Financial Aid
Recent Initiatives of the Office of University Scheduling and Space Management

Academic Support Services: Libraries and Computing

Rutgers University Libraries Organization Chart
Research Methodologies. An Honors Course for Colleges of Rutgers University, New Brunswick Campuses. A Proposal. (2/97)
Library Materials Budget History & Projection (11/96)
RUL Report. Technology: Enhancing Information Access (Fall 1996)
Final Report. Task Force on New Brunswick Libraries. (7/16/96)
High Performance Computing Project. 1996/97
New Brunswick Faculty Committees on Computing; 1992-97
New Brunswick Computing Initiatives, 1995/96
Status of Major Equipment at Campus Computing Centers. Fall 1996
College Avenue Computer Center. 1995/96 User Survey
Livingston Computing Center. 1995/96 User Survey
Rutgers Computing Services 1996/97 Survey Request
RUNet 2000 Project Advisory Committee. 1996 Draft Recommendations
Advisory Committee for the Livingston Computing Services Project. 1996