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Follow-up on 1992 Middle States Accreditation Team Report

Response to the Findings and Recommendations of the 1992 Middle States Team

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Progress Toward Self-Study/Strategic Plan Objectives of 1992

Since 1992, NJIT has both pursued the planning objectives stated in its self-study/strategic plan and responded to the specific recommendations contained in the Middle States visiting team's report. The following section summarizes the steps taken in this regard. More detailed material may be found in other sections of this report.

Response to the Findings and Recommendations of the 1992 Middle States Team

For the convenience of the readers, this section of the Periodic Review Report is organized under a series of headings that follow the order of topics covered in the 1992 Middle States team's report. Under each heading is a very brief précis of the team's findings and recommendations, followed by an update on how NJIT has responded. The summaries are confined to issues that, in the view of the visiting team, required attention. More extensive information on these topics will be found in other sections of this report.

1. Planning and Self-Study

Team Report: Some truly far-reaching goals should be added to the strategic plan. Some of these may not be attainable, but it is important for the institution to dare to dream and to become more aggressive about its long-range vision.

Response: NJIT has taken the recommendation that it “dare to dream” quite literally. An entirely new “vision statement” has been developed (see pp. 144-145). It expresses the ideals toward which the university wishes to strive, and it sets forth an ambitious agenda of goals and operating principles that are intended to shape the next phase of the university’s history. The “vision” will inform the on-going strategic planning process and provide direction to fund-raising efforts. The statement is included later in this report as a guide to NJIT’s future. In addition, a number of specific new goals are likely to emerge from the planning process itself (described in the final section of this report).

Team Report: In view of rapid changes in NJIT’s mission and goals, additional thought should be devoted to the interrelationships among various institutional goals. A clearer sense of priorities is needed. A financial analysis of the cost of attaining the goals should be completed, and attention is needed to methods of implementation and a tentative timetable.

Response: The extensive assessment and benchmarking programs described in this report are in large measure addressing the need to prioritize institutional goals and develop coordinated implementation plans. A new financial planning system that projects future costs and revenues is in place.

2. Organization/Administration/Faculty/Governance

Team Report: The size, scope, and quality of the faculty are sufficient to carry out the instructional mission at the present time; in the future this will depend on the evolution of NJIT’s graduate programs, especially the growth of Ph.D. programs.

NJIT intends to continue the expansion of its Ph.D. programs, with a target of a minimum of 50 degrees awarded annually by the academic year 2000-01. Enrollment of Ph.D. students stood at 303 in Fall 1996. In AY1996, 40 Ph.D. degrees were awarded. Although the size of the total faculty has grown only slightly since 1992 (from 336 to 354), shifts are taking place as vacancies in underenrolled programs are filled with appointments in programs of strong demand. Newly hired faculty are more clearly oriented toward graduate education and research than those they have replaced. Additional faculty appointments will be made. The focus of the current fund-raising campaign is endowment growth. Part of the income generated by these funds will be used to support endowed chairs and professorships.

Team Report: Plans to create a faculty senate should be encouraged.

Response: Establishment of a faculty senate is a topic of continuing discussion.

Team Report: The issue of "nominal teaching load" should be addressed.

Response: Faculty teaching loads have been reduced in most departments. Research faculty nominally teach nine hours instead of twelve per semester, and this load is usually further reduced through released time on grants and contracts. Payment of thesis advisement was eliminated from the faculty contract as of January 1993.

3. Budget

Team Report: The deans should participate more extensively in the budget process.

Response: A new administrative coordinating group, the "Senior Staff," has been created. Chaired by the president, and including the academic deans, this group discusses all major university policy and budget issues on a monthly basis. The academic deans have participated in the design, testing, and implementation of a faculty workload model.

Team Report: A long-term financial plan and five-year projections of obligations and revenues should be developed.

Response: A five-year budget projection model has been designed and is presented later in this report.

Team Report: A fixed asset accounting system is needed.

Response: Fixed asset accounting is in the process of being implemented; a physical inventory of all university equipment was recently completed. The system is tied to the adoption of the long form for indirect cost recovery, which enables the university to examine the implications of laboratory equipment and library usage in the context of cost recovery.

Team Report: A better understanding of the full cost of research and the long term support costs required is needed.

Response: Additional cost areas are being incorporated into the budget modeling process. The projections result from an examination of funding requirements for equipment, library resources, and other support costs related to research and grant acquisitions.

4. Physical Plant

Team Report: Expand the energy management system to all buildings.

Response: The energy management system continues to be added to buildings as funds are available. Substantial energy savings have been realized as a result.

Team Report: The card access security system should be extended to all buildings.

Response: Campuswide card access is being tested and implemented building by building until the system is fully installed.

5. Institutional Advancement

Team Report: Give high priority to increasing endowments.

Response: Increasing the university's endowment is the central objective of the current private fund-raising campaign, the largest such effort in NJIT's history.

6. Human Resources

Team Report: Improve recruitment of individuals from underrepresented groups.

Response: Increasing the diversity of NJIT's faculty has been an ongoing objective for many years. Since the Middle States team's visit some progress has been made -- more progress in the total, full-time faculty than in the tenure track faculty which changes much more slowly. In 1992, 11.3% of the total, full-time faculty were women, 2.1% were Black non-Hispanic, 1.2% were Hispanic, and 16.5% were Asian, using federal ethnic designations. Five years later, the corresponding percentages are as follows: 13.3%, 2.8%, 1.1%, and 17.8%, respectively. These data indicate that the most significant increase has been in the number of women on the full-time faculty. There has also been a significant increase in the percentage of Asians; however, this group is not considered to be under-represented. Since 1992, 16 women were appointed to the tenure track faculty (23% of total appointments), and 3 Blacks (4% of total appointments). One of the newly appointed Black faculty members is a tenured professor and chairperson of the Department of Physics. The other two are untenured assistant professors. The university continues its policy of providing a new faculty line which could not otherwise be justified to a department that appoints a member of an underrepresented minority or a woman. In addition to the faculty members, the newly appointed Associate Dean of Newark College of Engineering is an African American. A concerted effort has been made to raise awareness with respect to diversity issues among faculty and administrative staff. A recent full-day workshop was given by Howard Adams, the Director of the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. (GEM), and a series of workshops on women's issues has been offered with the support of a National Science Foundation grant, "Positive Opportunities for Women Engineers' Retention" (POWER).

Team Report: Create a more welcoming environment for women.

Response: Significant progress has been made with respect to the environment for women on campus. A Committee on Women's Issues was established; it is broadly representative and has been very active. The number of programs offered during Women's History Month has increased considerably. The Constance A. Murray Women's Center was recently opened and an Acting Director appointed. And the first on-campus child care center in the university's history opened in Fall 1996 in a brand new facility.

7. Students

A comprehensive survey of student satisfaction was conducted recently, to be followed by analysis of the results and attempts to address the legitimate concerns raised.

Team Report: Expand support services for minority students beyond the first year, and improve retention of minority students.

Response: Programs to retain minority students include the Undergraduate Research Experience and the reorganization and expansion of the University Learning Center. Support services have been expanded under the federally funded Student Support Services Program which is designed primarily for first generation college-goers. One result of recent efforts, including the program of freshman intervention, is an increase in freshman-to-sophomore retention of approximately five percent in the last three years. Expansion of the freshman intervention program to the sophomore year is being planned.

Team Report: Increase the representation of people of color in the faculty.

Response: See response above under "Human Resources".

Team Report: Pay more attention to part-time graduate students.

Response: Part-time graduate students have been given a number of new learning opportunities including stand-alone graduate certificates, the credits from which can be transferred to corresponding NJIT master's programs, course delivery at an expanded number of conveniently located sites, and distance learning opportunities to complete full degrees. Advisors in each department and program work with all students, without distinction between full- and part-time students. Students in certificate programs at off-campus sites are supported and advised on academic matters by the Office of Continuing Professional Education in close cooperation with the Office of Graduate Studies. Multiple avenues of communication are available for all students, including e-mail.

Team Report: Improve the consistency of degree requirements for TA's, RA's, and part-time students.

Response: Lack of consistency in degree requirements among TA's, RA's, and part-time graduate students occurred in one of the larger departments. That situation has been fully corrected. Continuing review of graduate education policies has resulted in greater consistency across the board.

Team Report: Address the issue of faculty who do not speak English well enough to be understood by students.

Response: Limited English speaking ability appears to be a special problem among some TA's. This is being addressed by special courses offered by the Department of Humanities and Social Sciences. These courses are also open to full-time faculty who choose to avail themselves of the opportunity. In addition, the fact that NJIT's Test of English as a Foreign Language (TOEFL) requirement for Ph.D. applicants has been raised helps address this issue since most of TA's are drawn from this group.

Team Report: Continue to improve the quality of student life on campus.

Response: A number of steps have been taken to improve the quality of student life. A fourth student residence hall is under construction and a new student services mall on the lower level of the parking deck has been completed. The number of intramural sports teams has been increased. A new baseball diamond is available. Sororities and fraternities have been recognized as regular clubs with representation on the Student Senate. Computer center and library hours have been extended. The office of an Associate Dean of Students has been relocated to the Student Center for easier access. And food services have been improved by offering brand-name foods and maintaining longer cafeteria hours. The program of campus beautification continues with additional plantings and maintenance of green space.

Team Report: Increase the number U.S. graduate students.

Response: Efforts to increase the number of U.S. graduate students include the offer of targeted assistantships and fellowships particularly for underrepresented minorities (including 10 assistantships and 4 presidential fellowships); establishment of a small part-time industrial Ph.D. program; site visits to approximately twenty U.S. undergraduate schools targeted for recruitment; increased NJIT presence at recruitment fairs; recruitment from the list of GEM applicants who are not drafted by companies; and a strong focus on expanding the B.S./M.S. program which now enrolls 100 students, most of them U.S. citizens. The percent of full-time graduate students who are U.S. nationals is at an all-time high; of 1037 full-time graduate students, 341 or 32.9 percent are U.S. nationals. The comparable 1992 figures were 1041 full-time graduate students of whom 268 or 25.7% were U.S. nationals.

8. Student Services

Team Report: Expand the space for student activities.

Response: Space for student activities has been expanded, most notably in the University Learning Center. Plans call for increased student space in the Colton-Campbell complex, and the remodeling of the Hazell Student Center will provide a relocated pub, expanded food services, and more student club space when completed.

Team Report: Increase staff and programs for residence life.

Response: A new position of Assistant Director of Residence Life was created and filled in 1995. In addition, week-end programming has been increased, a monthly calendar of residence hall activities is published, and cooperative student programming with Rutgers has been expanded.

Team Report: Expand the space for Health Services.

Response: A small increase in space resulted from renovation of the facilities housing NJIT's health services after the Middle States team visit. A design for substantial expansion has been developed and will be implemented when sufficient funds become available.

Team Report: Expand the student counseling staff.

Response: The staff of the Counseling Center has been increased by hiring a full-time psychologist to replace a non-psychologist who had devoted half-time to counseling and half-time to testing and placement.

9. Professional Programs

Team Report: Continuing attention should be paid to infrastructure (e.g., laboratories, equipment).

Response: Awards from two state bond funds (ELF and HEFT) in addition to federal grant funds and significant allocations of institutional matching funds have allowed NJIT to increase support for infrastructure. In the past five years construction of a Geoenvironmental Laboratory, a High Performance Concrete Laboratory, an Intelligent Structures Laboratory, an Ultrafast Optics and Optoelectronics Laboratory, a new distance learning television studio, and a computational fluid dynamics laboratory were completed. The entire campus computer network backbone was upgraded to ATM speeds, the student residence halls were added to the network, the personal computing labs were upgraded, and some additional computers were provided to faculty. The main undergraduate electrical engineering laboratory was remodeled and re-equipped. In Tiernan Hall, most of the chemical engineering and chemistry research labs were

remodeled, an improved ventilation system was installed, and faculty offices were upgraded. More remains to be done when funds become available.

Team Report: Develop a distinct identity (sense of place) for the School of Architecture.

Response: Work has commenced on a new home for the School of Architecture in the Building Sciences Complex, a 195,400 gross square foot project which entails a complete renovation of the existing Colton/Campbell/Weston buildings plus the construction of additional new space. When it is completed, the Complex will house the School of Architecture at NJIT, the Newark College of Engineering's Department of Civil and Environmental Engineering (including three important laboratories two of which are funded in part by the National Science Foundation), and several of the university's most essential student services functions. The estimated total construction project cost is \$24 million, of which \$2.4 million is to come from private fund-raising efforts.

Team Report: Further develop computing facilities in the School of Management.

Response: The School of Industrial Management is on the campus computer network, its students have access to general computing laboratories, and a new dedicated lab has been installed in the School.

Team Report: Develop graduate programs in Applied Math, Applied Physics and Applied Chemistry.

Response: Master's programs in these fields were in place in 1992. Joint doctoral programs with Rutgers have been established in Mathematical Sciences and Applied Physics, and a continuing cooperative arrangement with Rutgers encourages NJIT faculty to participate in offering the Rutgers Ph.D. in Chemistry.

10. Liberal Arts/General Education

Team Report: Continue to develop General University Requirements, the common core of studies for all students, with attention to writing, general communication skills, and multi-cultural/race/gender issues.

Response: There have been major changes in the General University Requirements since 1992, including the piloting and initiation of five new courses. Writing, Speaking, and Thinking is a new first-semester freshman course that is paired with Fundamentals of Engineering Design. Technology, Society, and the Environment is a new second-semester freshman course that will be paired with another NSF Technology Reinvestment Program course being designed to follow Fundamentals of Engineering Design. Three new courses, designed to meet the cultural history requirement, are global in perspective. In addition, the basic Management and Economics courses are now fully integrated, including team-teaching in one instance.

Team Report: Continue to develop relations with Rutgers-Newark.

Response: Efforts to work with Rutgers continue. These efforts are more successful in some areas than others. New joint programs have been designed in mathematical sciences and applied physics at the Ph.D. level, and NJIT faculty are participating in Rutgers' Ph.D. programs in chemistry and management. Both Rutgers and NJIT faculties approved documents modifying faculty governance structures to facilitate the formation of federated departments and describing how such departments would function. A federated Department of History, chaired by an NJIT historian, is functioning smoothly, and a federated Department of Physics is in the process of being formed. Federated departments in Biological Science and in Psychology are under discussion.

11. Teaching and Learning

Team Report: In the context of the growing research mission of the university, examine teaching loads, class size, and other issues that affect the quality of instruction.

Response: Nominal teaching loads have been reduced for faculty actively engaged in other aspects of the university's mission, and the assignment of teaching loads is reviewed periodically.

Team Report: Study how to measure good teaching.

Response: Student course evaluations are used at NJIT as part of the faculty evaluation process. However, the difficulties of accurately measuring good teaching are well known. Research on techniques for measuring good teaching are not one of NJIT's research priorities, but the university community is eager to learn from the findings of the best research in the field.

Team Report: Expand the Master Teaching Program.

Response: The Master Teaching Program was re-named Partners in Learning, and has remained relatively small. An Institute for Effective Teaching at NJIT was established in 1994 but has also met with limited success. Plans have been developed to evaluate the entire approach sometime this year.

12. Graduate Education/Research

Team Report: Increase federal research support.

Response: Federal support has grown significantly since 1992. Federal research funds expended grew from \$5.8 million in FY'92 to \$20.6 in FY'96, and it is estimated that the level will reach approximately \$25 million by the end of the current fiscal year. Federal support now comprises by far the majority of all externally funded research (69%).

Team Report: Reexamine policy with respect to the recovery of indirect costs.

Response: Federal grants are the primary source of support for direct costs. While NJIT's indirect cost recovery rate remains low when compared to other universities, the university now recovers approximately \$3.5 million annually. NJIT now partially waives indirect costs much more rarely than in past years.

Team Report: Better coordinate research efforts between the departments and centers.

Response: Coordination between the centers and departments takes two forms. The directors of the intercollege, interinstitutional research centers now report directly to the Provost and Senior Vice President for Academic Affairs pursuant to a recent reorganization of administrative responsibilities. Other center directors report directly to the deans of their respective colleges. In order to facilitate coordination, the Provost has organized a Research Center Council consisting of the directors, chairpersons, and deans of the faculty involved in the centers.

Team Report: Examine practices for hiring non-tenure track researchers.

Response: As NJIT moves into the 21st century it will probably be necessary to appoint growing numbers of non-tenure track researchers. NJIT is currently considering the creation of a technology research institute that will be closely associated with the university but better able to engage in research not traditionally conducted on a university campus. This will require even greater reliance on non-tenure track research and development engineers.

13. Computing

Team Report: Increase the number of classrooms configured for interactive teaching with computers.

Response: A good beginning has been made in configuring classrooms for interactive teaching, including two such classrooms in University Hall and a "portable" computerized classroom. Nearly all of NJIT's classrooms have access to the campus computer network which makes two-way video and access to the World Wide Web available in these locations. While not all desirable features are available, these improvements make possible the use of multimedia aids to instruction. More is planned.

14. Library

Team Report: Continue to improve library collections and services.

Response: A new University Librarian has been hired. The number of volumes has increased from 156,000 to 209,000 over the past five years. Virtually all aspects of the library are now on line; the university recently subscribed to several on-line services that

give more timely and complete delivery of services; e.g., UnCover for journal access and Engineering Index for titles, abstracts, and conference proceedings. Significant expansion of the slide collection in the Architecture library is planned.

Team Report: An improved, clear articulation agreement between local libraries is needed.

Response: NJIT participates in a number of consortia and agreements among libraries in New Jersey, including the following. NJIT has joined the New Jersey State Library, the Newark Public Library, the University of Medicine and Dentistry of New Jersey (UMDNJ), Princeton University, and Rutgers University in signing a contract with the State of New Jersey under which the signatories will provide information and documents to other New Jersey libraries through interlibrary loan. NJIT participates in InfoLink, a regional consortium that allows members to borrow from each other without charge. Through the New Jersey Academic Library Network (NJALN), NJIT students and faculty may borrow from any State College library in New Jersey. And NJIT has reciprocal borrowing agreements with the following local libraries: Essex County College, UMDNJ, the Newark Public Library, and Rutgers' Dana Library.

Team Report: Students would like more training in access to off-campus library catalogs and indexes.

Response: Students are taught how to access and use the Library Home Page at NJIT in freshman seminars and six open tours conducted each semester. The Home Page has direct links to EIPlus (Engineering Index), ERIC, UnCover (an index of 16,000 journals), the New Jersey Union List of Serials, and dozens of other libraries' bibliographic catalogs which can be accessed through standard search tools on the Internet. Two open seminars are offered each semester to train students, faculty, and staff in the use of these search techniques. The library has added to its user manual a section that describes how to search each database (<http://www.njit.edu/njit/library/welcome.html>).

15. Continuing Education

Team Report: Integrate Continuing Education, Distance Learning, and Extension Programs.

Response: Continuing Education, Extension Programs, and Distance Learning have been integrated under a single individual, the Director of Continuing Professional Education (CPE).

Team Report: Seek to "cross-sell" academic and non-credit programs.

Response: A new position, Director of Continuing Professional Education Marketing, was created to facilitate the cross-selling of academic and non-credit courses. This change

has led to opportunities at numerous companies and to the production of a widely circulated comprehensive CPE course catalogue.

16. Distance Education

Team Report: Expand the use of computing in distance education.

Response: The use of computing in distance education has increased, most dramatically at the new branch campus in Burlington County, the Technology and Engineering Center.

Team Report: The library collection must be set up to accommodate the needs of distant learners.

Response: The NJIT Library provides both reference service and interlibrary loan/document delivery service for its off-campus students including distant learners. Students may remotely search and identify books or articles which meet their needs from the NJIT library catalog, EIPlus, UnCover, and other sources using the Library Home Page or by telnetting directly to "libsys.njit.edu". Students are either mailed or faxed requested articles and mailed requested books. Books and articles which are not owned by the NJIT Library will be borrowed from other libraries as needed and then mailed to off-campus students. The Library has a manual specifically for off-campus students, available on the Library Home Page. Librarians respond directly to e-mail and by fax or via the Office of Distance Learning or the Library Home Page) to forms used to ask reference questions and request books and articles. One librarian is charged specifically with insuring that the instructional library needs of off-campus students (both extension site users and distance learners) are met.

17. Public Relations/Publications

Team Report: Press relations and publications for improved visibility are critical to NJIT's goal of increased national stature and academic recognition.

Response: The results of attention to the goal of increasing NJIT's visibility in New Jersey and beyond are chronicled throughout this report and are fully described in the section devoted to "visibility". Publications have been revamped to render them more attractive in content and presentation. Press coverage has improved, though not extensively in the national media. An annotated list of faculty and administrative expertise has been developed and widely disseminated for public relations purposes.

18. Outcomes Assessment

Team Report: Make more complete use of the data collected for analytical purposes.

Response: Considerable progress can be reported. Analysis and dissemination of available data include a new annual accountability report which is distributed university-

wide in the fall. A comprehensive survey of student opinions and perceptions has been completed. The results are being fully analyzed to identify problems, and an attempt will be made to rectify conditions that lead to legitimate complaints. Also, extensive surveys of employer satisfaction with NJIT graduates and of alumni satisfaction with their educational experience at NJIT have been conducted by the Eagleton Institute at Rutgers. Although the results are generally very positive, the responses are being analyzed in order to discover areas where improvements are needed. An extensive evaluation component has been incorporated into the new General University Requirements curriculum.

Progress Report on Self-Study/Strategic Plan Objectives of 1992

Important progress has been made toward the accomplishment of the objectives stated in NJIT's Self-Study/Strategic Plan: "Educating Professionals for Leadership in a Global Economy." A comprehensive compendium of developments and actions taken in this regard since the Middle States team visited NJIT in 1992 can be found in Appendix G.