



NEW JERSEY INSTITUTE OF TECHNOLOGY

SELF STUDY DESIGN:

**A SCIENCE AND TECHNOLOGY RESEARCH UNIVERSITY FOR THE 21ST
CENTURY**

Prepared April 06, 2010



Prepared for the
Middle States Commission on Higher Education ❖ Reaccreditation 2012

CONTEXT

New Jersey Institute of Technology (NJIT), founded in 1881 as Newark Technical School, has been accredited by the Middle States Commission on Higher Education (MSCHE) since 1934. Upon acceptance of the institution's periodic review report, NJIT last had its accreditation reaffirmed on November 17, 2007. NJIT is now preparing for its decennial self study evaluation, a process that will conclude in 2012.

The most recent MSCHE action on June 25, 2009—to affirm the additional location at Beijing University of Technology as within the scope of the institution's accreditation—reflects NJIT's expanding role as a science and technology research university for the 21st century. The most recent visit from a MSCHE representative to our campus was that of Mary Ellen Petrisko, MSCHE Vice President and NJIT self-study liaison, on March 9, 2010.

It is within that context that the present self study design is offered.

INTRODUCTION

Our design is informed by three documents submitted to MSCHE: *Middle States Self Study Design, January, 2001*; *An Emerging Presence: Self Study and Strategic Plan, 2002*; and *The Future's Edge: New Jersey Institute of Technology Periodic Review Report, June 2007*. The content of each of these documents, as well as their reception, reveals that strategic planning has played a key role in NJIT's current past. From 2004 to the present writing, strategic planning has helped us adapt to a changing environment, create a vision for the future, provide a basis for allocating resources, and guide our daily work. As NJIT President Robert A. Altenkirch wrote of our *Strategic Plan, 2004-2010*, while oftentimes university-based planning ends with the publication of a plan, the NJIT community has worked to ensure that ours is a plan of action for the university's growth and development. In that the 2010 strategic plan is now drawing to a close, the NJIT community is now preparing to launch its new *Strategic Plan, 2010 to 2015*. This university-wide effort has been planned to complement the present self study.

What, we ask ourselves in preparing both the NJIT strategic plan and the MSCHE self study, is the role of a science and technology university in the nation, the region, and the state? The unique role of NJIT is well established, and we center our decisions around our four-fold mission: in undergraduate, graduate, and continuing professional education, to prepare students for productive careers and amplify their potential for lifelong personal and professional growth; in the conduct of research, to emphasize applied, interdisciplinary efforts encompassing architecture, the sciences, including the health sciences, engineering, mathematics, transportation and infrastructure systems, information and communications technologies; in contribution to the state's economic development, to foster growth through the state's largest business incubator system, workforce development, joint ventures with government and the business community, including the development of intellectual property; and in service to both its urban environment and the broader society of the state and nation, to conduct public policy studies, making educational opportunities widely available and initiating community-building projects.

An exemplar project in defining NJIT's unique, mission-centered vision is the university's Gateway Project, a model of economic development and community enhancement. In a bold and strategic move with the city of Newark, the university has taken on the role of redeveloper for a diversity of projects—from student and residential housing to professional offices, from large and small scale retail to entertainment venues. Launched in 2007, the Gateway Plan comprises a conceptual system of development of new, private, clustered housing for Greek Life organizations and redevelopment along Dr. Martin Luther King, Jr. Boulevard between Central Avenue and Orange Street. The financial scale of the project is over \$1 billion. The project is now fully in place, with a formal redevelopment plan approved, and a Master Developer engaged. Developed in consultation with the James Street Commons Neighborhood Association, St. Michael's Medical Center, the Greek Life Community, NJIT Administration, and the City of Newark, the Gateway Project promises to allow Newark gains of urban renewal similar to those described by University of Pennsylvania President Emerita Judith Rodin in *The University and Urban Revival: Out of the Ivory Tower and Into the Streets* (Philadelphia: University of Pennsylvania Press, 2007).

With a nod to the urban renewal tradition described by Judith Rodin, Dr. Zemin Zhang, a James Street neighborhood resident, had this to say about the Gateway Project in his November 2007 article “Out of the Ivory Tower and Into the Streets” published in *The Daily Newarker*, an on-line community news publication:

“On January 7, 2006, the *New York Times* reported on the city's changes through what had happened along one street, Dr. Martin Luther King Jr. Boulevard. However, the article left out the most crucial stretch of the street between Orange Street and Central Avenue. Since early 2006, NJIT has planned a daring project to be the catalyst of all downtown development from that missing piece. As residents of the James Street neighborhood for the past two decades, we have closely studied and scrutinized every detail of this unprecedented project, initiated by an institute without millions in the endowment fund like the University of Pennsylvania, Columbia, or NYU. However, our conclusion on this project has been encouraging and convincing. In the history of the city and the state, the NJIT Gateway Project is the first time that a state research university has acted as a redeveloper to initiate public and private cooperation for every aspect and every phase . . .

From the beginning, the NJIT Gateway Project has engaged local residents, as well as the university community, as stakeholders, the highest form of mutually beneficiary participation. Dr. Altenkirch initiated many unscripted open-dialogs with the community. Concerned private citizens sit in stakeholder meetings on all aspects of decision making.”

As Dr. Zhang has observed, NJIT's Gateway Project embodies the creative vision of the university, and, in partnership with the community, provides a concrete example of NJIT's deep commitment to economic development and community service.

Ensuring the integrity of the university's mission while facing new challenges is, in essence, the fundamental question we will address in our self study. In answering this question, we will articulate the role of a 21st century science and technology university in the state, the region, and nation.

A PORTRAIT OF NJIT

On August 7, 2007, Katherine Mayberry, former Vice President for Academic Affairs at Rochester Institute of Technology and first reviewer of *The Future's Edge: New Jersey Institute of Technology Periodic Review Report*, wrote that “NJIT has approached the strategic goal of research and development growth by developing a comprehensive and truly supportive infrastructure that has already proven highly effective. The increased focus on research seems not to have compromised the institution’s sense of its core strengths, its multiple constituents, nor its multiple shareholders.”

The current self study finds NJIT continuing in the tradition of a dedicated commitment to growth and a concurrent commitment to its core values.

NJIT’s research efforts, for example, have continued to expand, with \$100M in expenditures expected this fiscal year—a doubling in expenditures from fiscal year 2000. Federally funded research has more than doubled. Presently, we are in the position of statewide leadership for healthcare information technology and at the center for proposed initiatives that are in competition for over \$75 million in federal funding.

In enrollment, NJIT has admitted the largest first-year class in its history—923 students, an 18% increase over the fall 2008 class. The fall 2009 admitted students held a composite SAT scores of 1142, a score well above the national average score of 1016. In 2010-2011, we plan an enrolled headcount of 9,193 students; and we plan an enrolled headcount of 9,561 the following year.

Yet in this period of growth, our core values endure: NJIT provides accessible, affordable education for the technological professions to a diverse student body; we deliver practical research results to our sponsors; and we are active participants in the life of our Newark community. Upon its visit in the spring of 2012, the MSCHE Self Study Team will find substantial evidence of our progress since the last MSCHE visit in 2002.

- Innovatively, the Newark College of Engineering (NCE) has launched a Department of Biomedical Engineering that has rapidly become one of the largest in the College. In addition, the Otto M. York Department of Chemical Engineering has been transformed into the Otto M. York Department of Chemical, Biological, and Pharmaceutical Engineering, thus allowing new research to develop in particle technology, polymeric materials, polymer physics, membrane technology, and pharmaceutical engineering.
- As evidence of achieved goals of the *Strategic Plan, 2004-2010*, study in architecture at NJIT has broadened to include design, thus prompting a new name: The College of Architecture and Design (CoAD). While CoAD continues to play an important role in architectural education in New Jersey, the new fine arts program provides unique opportunities for aspiring artists exploring interrelationships between art and technology.
- Integral to a technological research university known for innovation, entrepreneurship, and engagement, the School of Management (SOM) continues its tradition of research in entrepreneurship and small business development and pursues new research areas such as

the management of information technology and the unification of economic theory into applied business practices.

- In 2012, the evaluation team will also find NJIT's newest college, The College of Computing Sciences (CCS). The College symbolizes NJIT's desire to make computing integral to its educational activities. The mission of the College of Computing Sciences—to deliver education in a broad range of computing disciplines to students on and off campus, to carry out cutting-edge computing research, and to work closely with industry—has resulted in an instructional staff of nearly sixty and a wide array of programs from the baccalaureate to the doctoral level.
- While the College of Science and Liberal Arts (CSLA) has continued to embrace its substantial commitment to the undergraduate General University Requirements—NJIT's common core courses—the College has transformed its role from one of service to one of education and research. Evidence of this new direction is found in the doubling of its degree-seeking students during the last five years. In the 2007 Faculty Productivity Index, produced by Academic Analytics and published in the *Chronicle of Higher Education*, the Department of Mathematical Sciences was ranked tenth nationally among mathematics programs—an indication of what the *Strategic Plan, 2004-2010* yielded in its strategic priority to develop a core of nationally recognized programs. In addition, with over 200 students, the newly-created Department of Biological Sciences has taken a leadership role in research and education within CSLA.
- Since the Albert Dorman Honors College (ADHC) became an NJIT college in 1995 with support from its namesake and other donors, honors students have deeply enriched the academic community of the university through their university-wide leadership, honors curricula, and undergraduate research. The NJIT *Strategic Plan, 2010-2015*, as well as the ADHC Plan, both call for the university to maintain a minimum of 15 percent Albert Dorman Honors Scholars among first year admitted students; that goal, and the performance of the ADHC students, symbolizes our NJIT core value of academic excellence.
- On February 17, 2010, Robert A. Altenkirch presented to the faculty a plan for a new NJIT initiative: collaboration with St. George's University in Granada to offer a joint MD degree. As a means of strengthening and expanding the research and educational mission of NJIT, the partnership is designed to allow St. George's University to offer the first two years of medical education and NJIT to offer the final two years of clinical practice in New Jersey hospitals. The approach, unique in US medical education, will allow us to leverage St. George's extensive investment in basic science laboratories while providing New Jersey-based university instruction in the clinical sciences. In that NJIT currently enrolls 20 students from our Albert Dorman Honors College in an accelerated BS/ MD degree, expanding this partnership will allow the university to increase the number of students pursuing a medical education within the state. The program, approved by the NJIT faculty and University Trustees, is presently being readied for review at the state level. The program will allow NJIT researchers to develop a more detailed understanding of clinical needs and perspectives in order to better address and serve the state's health

care needs. Additionally, the program will yield opportunities for NJIT faculty to build relationships with medical researchers and clinicians thus increasing the potential for funding from federal agencies such as the National Institutes for Health. In time, the collaboration will allow the university to enhance existing PhD programs in bio-related areas and to offer innovative MD/PhD programs.

- Two targeted fundraising campaigns were also completed since the last MSCHE visit. The first, the ADHC scholarship campaign, exceeded its goal with a total of over \$23 million; and the second campaign for NJIT Athletics, achieved its goal of \$5 million. The university is currently planning a comprehensive campaign which is expected to exceed \$150 million.

In addition, the 2012 evaluation team will find additional fulfilled strategic priorities that strengthen NJIT.

- Just as NJIT is committed to excellence, we are equally committed to diversity. Among our most treasured students are those in our Educational Opportunity Program (EOP), and so the *Strategic Plan, 2010-2015* calls for a minimum of 15 percent of EOP students to be maintained in the entering class. Our EOP students traditionally meet or exceed the retention and graduation rates of regularly admitted students.
- NJIT now holds NCAA Division I status. Effective 2006 and 2007, all Highlander sports were brought to Division I status. As NJIT continues to strengthen its academic offerings and enrich its profile as a residential university, the transition to Division I has allowed the university to align more closely with our academic peers. Because we have been able to attract a high caliber of student-athlete, advancement to Division I has allowed us to recruit students who enrich the campus community.
- The 2005 Landscape Master Plan allowed NJIT to design guidelines for future facility decision making. The plan identified campus areas requiring improvement, provided a phasing strategy to logically implement plans, and defined campus standards for construction materials. The evaluation team in 2012 will note the renovations of Eberhardt Hall, the newly constructed Fenster Hall, and a landscaped campus dotted with signature red umbrellas surrounding the Campus Center.
- Begun in 2008, Project ORBIT (Organizational Reengineering using Banner Information Technology)—a multi-year, campus-wide effort to implement a new enterprise resource planning system—has begun to yield a single integrated database for the university's core student, financial, and human resource operations. The integrated database will eliminate the silo approach often found in university computing processes. The implementation will conclude in April of 2011, in time for the 2012 MSCHE evaluation team visit.

Within NJIT, as is the case nationally, these gains are undertaken in a period of dwindling state support and increased demands for educational service. The housing market decline and the associated credit failure in the summer and fall of 2008 worsened an historic trend in faltering state support. As the National Education Association 2009 analysis of trends in post-secondary

education demonstrates, declining state support in the early 2000s, combined with enrollment increases, reduced 2005 state support per student to 6.6 percent below the 1982 fiscal year level.

Such trends remain. While the state observed that there would be no reduction for higher education in New Jersey for fiscal year 2010, state revenue shortfall nevertheless resulted in a \$3.6 billion deficit, about 10% of state budget. While a one-time appropriation of \$3 million of federal stimulus funds was awarded to NJIT, provided tuition and fee increases for in-state undergraduate students were limited to 3%, such relief does not address long term challenges: personnel-related cost savings will be required for 2011 and 2012; and tuition may have to be increased by over 10%. NJIT's budget plan for FY2011, submitted in January of 2010, requested no appropriation increases above the FY2010 base budget. While this request recognizes the very serious fiscal constraints facing the state, NJIT's expense base nevertheless remains significantly lower than its peers. NJIT will continue to review critically and plan strategically for the needed resources (faculty, staff, and facilities) as enrollment expands to 11,000 students, particularly given the anticipated reductions in state funding. Unfortunately, this trend may continue into the foreseeable future.

At the time of the present writing, the New Jersey Governor announced plans to address a \$2.2 billion state budget shortfall in the FY2010 budget between now and the end of the fiscal year, June 30, 2010. Reductions to individual senior public colleges and universities are prorated on the FY2010 original state appropriation. NJIT's prorated share stands at \$2.65 million.

SUMMARY STATEMENT

The gains of NJIT are demonstrable, and the challenges are real. We have thus designed our self study to allow our university community to document achieved goals and plan a common future. Using the 14 standards presented in the MSCHE's *Characteristics of Excellence in Higher Education*, the steering committee and the working groups have crafted a tailored vision of the MSCHE institutional and educational standards that will yield a decennial self study of high integrity and authentic value.

To that end, we have designed NJIT models for the study design, steering committee membership, working group membership, and communication process. Those models are presented below in this self study design report.

As well, we have worked to make sure that the study design research questions have been drafted and reviewed by a wide variety of shareholders, from the president to the working groups. These working groups are presently using a framework that allows the 14 standards to be understood in ways important to the self study.

- In her 2007 review of *The Future's Edge: New Jersey Institute of Technology Periodic Review Report*, Katherine Mayberry wrote that "the university has set ambitious yet appropriate goals for itself that, if met, could take the school to new levels of excellence and visibility." In investigating the degree to which we have achieved our goals, Working Group 1 will focus on the NJIT Mission and the various ways we pursue our commitment to excellence. In the research questions that appear below, we target mission

differentiation, global initiatives, and the processes surrounding strategic planning. Working Group 1 will focus only on Standard 1 (Mission and Goals).

- Both Standard 2 (Planning, Resource Allocation, and Institutional Renewal) and Standard 3 (Institutional Resources) will be the focus of Working Group 2. Here, we focus on the NJIT resource allocation process. While the MSCHE 2007 review noted that “resource challenges are being approached on multiple fronts,” we want to ensure that these approaches are meeting the desired goals of mission articulation in education, research, economic development, and service. To that end, research questions focus on the emerging priorities, budget allocation, and the forces impacting both. Central to this group will be an analysis of future challenges to resource allocation and identification of new strategies to inform stakeholders of our decision-making processes.
- Working Group 3 will focus on three standards—Standard 4 (Leadership and Governance); Standard 5 (Administration); and Standard 6 (Integrity). The MSCHE 2007 review identified “big ticket” goals for NJIT, such as enhancement of the physical plant, a move to Division I athletics, and building selected programs to national prominence. While we have evidence that we have met these goals, we must address the processes that will ensure their continued success. To assure that these three critical MSCHE standards are integrated into the NJIT context, Working Group 3 will focus on the leadership processes, institutional constituencies, and the assurance of integrity. Of importance to Working Group 3 are questions of leadership identification, checks and balances in governance, the metrics of effectiveness, and the maintenance of ethical conduct in education, research, economic development, and service.
- “Decision-making at NJIT is clearly driven by continuous assessment of institutional effectiveness at multiple levels,” our 2007 review noted, “including comprehensive coverage of student learning outcomes. The thorough assessment mechanism that evaluates progress on all components of the strategic plan is but one instance of the thorough-going culture of evidence that characterizes the institution.” Nevertheless, while the NJIT ViSTa model—a capacious method of strategic planning which attends to vision, strategy, and tactics—has allowed the completion of one strategic plan and the design of a second, there remains a need to formulate a cohesive, university-wide assessment plan for NJIT. Hence, Group 4 will focus on Standards 7 (Institutional Assessment) and Standard 14 (Assessment of Learning) in order to address the need for a unified assessment effort of both institutional context and educational effectiveness. Research questions on the measurement of learning ability, reporting, and impact on curricular design will be addressed within the context of the success that has been achieved in institutional assessment.
- Working Group 5 will focus on both Standard 8 (Student Admission and Retention) and Standard 9 (Student Support Services). As the 2007 review noted, graduation rates remain a challenge to NJIT. While the *NJIT Strategic Plan, 2010-2015* calls for a first-time, full-time retention rate of 86% and a graduation rate of 60%, we want to be certain that we have in place a strategy to assure that these goals will be met. Therefore, Working Group 5 will answer questions designed to allow the creation of an enhanced student-

centered campus. We will focus on issues of diversity, planned enrollment growth, attention to at-risk students, and the potential for an integrated model of student and academic support services.

- Working Group 6 will focus solely on Standard 10 (The Faculty). This group has divided its research questions into three thematic areas: the formation of the faculty regarding qualifications, recruitment, and diversity; the health of the faculty in the areas of resources, support, retention, and growth; and the role of the faculty in the curriculum, research, service, governance, and environment of the university. Just as the *NJIT Strategic Plan, 2004- 2010* identified core thematic areas—recognized in the 2007 MSCHE review as successful—so, too, does the new *NJIT Strategic Plan, 2010-2015* advance thematic areas in applied life sciences and engineering, sustainable systems, digital ubiquitousness, and professional design. Key to the continued integration of these themes is the support of the faculty researchers; hence, Working Group 6 will query faculty recruitment and retention, mentoring processes, and tensions between research and instruction. Of special interest to Working Group 6 is the Faculty Separation Incentive Program designed to facilitate a phased transition to retirement for tenured and tenure-track faculty, allowing the university to reallocate strategically personnel resources.
- MSCHE Standard 11 (Educational Offerings), Standard 12 (General Education) and Standard 13 (Related Educational Activities) will be addressed by Working Group 7. Taking as its theme evidence-centered research and professionally-based instruction, colleagues will document the ways that NJIT is addressing what the 2007 MSCHE review identified as “the single most important factor affecting undergraduate student success at any institution”—student learning. The impact of new degree programs, the relevance and impact of the core curriculum, the significance of eLearning, and the assessment functions associated with such activities will be addressed by this committee.

INTENDED OUTCOMES OF THE SELF STUDY

The NJIT self study is intended to use its research-based models to judge how well the institution is meeting the *Characteristics of Excellence*, an embodiment of the standards of judgment that determine the success of a 21st century science and technology research university.

Specifically, the NJIT community intends to

- launch and sustain a process of community renewal associated with the MSCHE self study, with special attention to use of social media as a way to strengthen web-based community participation;
- document the viability of the NJIT mission and its articulated commitment to education, research, economic development, and service;
- examine the resonance between the university strategic planning process (concretized in the *NJIT Strategic Plan, 2004-2010* and the *NJIT Strategic Plan, 2010-2015*) and

the MSCHE *Characteristics of Excellence* to better understand the relationship between institutional planning and successful accreditation;

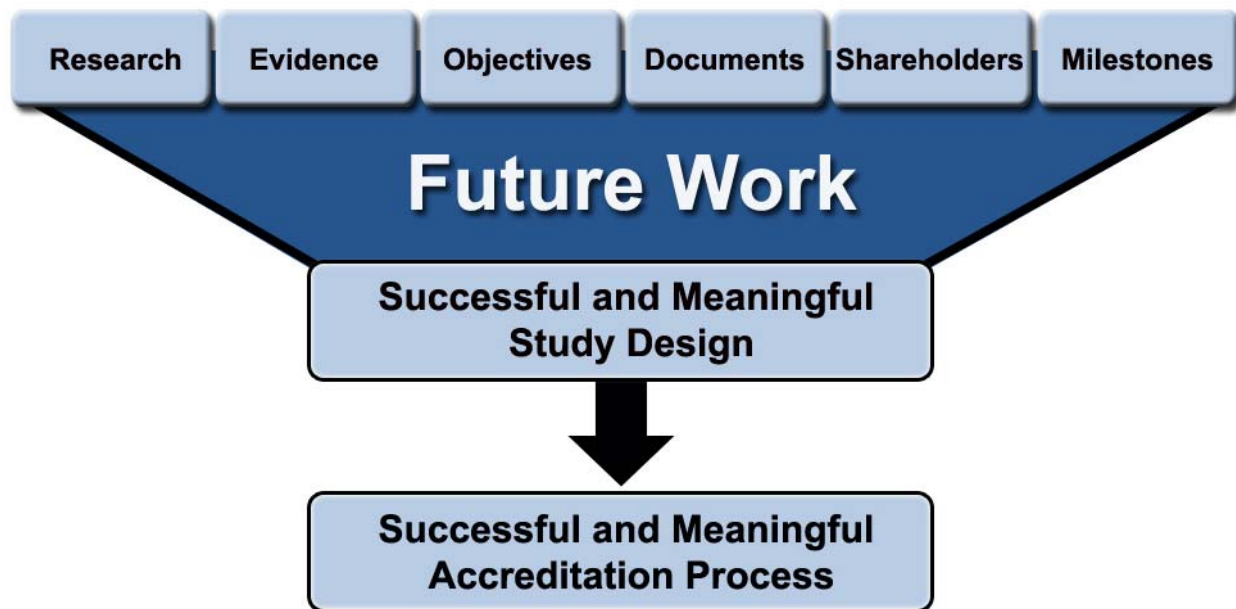
- identify prominent issues that have emerged since the submission and review of *An Emerging Presence: Self Study and Strategic Plan, 2002*; and *The Future's Edge: New Jersey Institute of Technology Periodic Review Report, June 2007*;
- unify existing outcomes assessment efforts in student learning, demonstrate their effectiveness, and explore new methods of gathering evidence and refining curriculum;
- create a final self study report in 2012 that will stand as the centerpiece of a recorded past, a common present, and a planned future; and
- ensure that the MSCHE self study process does not deteriorate to an archiving project but, rather, comes to be viewed as an on-going, vibrant system of information-based decision making that fosters institutional renewal.

THE SELF STUDY DESIGN

Among the continuum of reporting systems offered by MSCHE, NJIT has elected to pursue a comprehensive self study. Because NJIT remains ambitious in its goals, a thorough accounting and review of every aspect of our programs and services, governing and supporting structures, resources, and educational outcomes in relation to our mission will allow us to achieve the intended outcomes of our study.

Because we are approaching the self study as a research venture, we have conceptualized our design as the variable model shown in Figure 1,

Figure 1. The NJIT Self Study Design Model



As Figure 1 shows, the steering committee and working groups have identified and validated six predictor variables (or independent variables) that, when executed successfully, will allow us to achieve a successful self study design (the dependent, or outcome, variable of the model). This design will, in turn, allow us to create a successful and meaningful accreditation process that will conclude in the spring of 2012.

The first variable, research, is congruent with the university’s mission. Since NJIT is driven by an emphasis on applied, interdisciplinary efforts, it is appropriate that the self study be understood as a research project undertaken as a study of institutional effectiveness. Hence, models from the physical and social sciences will provide us with meaningful ways to gather evidence and form heuristics that will, in good scientific fashion, allow us to test the validity of our claims.

The second variable, evidence, is informed by the evidence-centered design movement in educational measurement. Evidence-centered design, as explained by Robert J. Mislevy, yields an articulated framework for designing, producing, and delivering educational assessments (“Validity by Design,” *Educational Researcher* 36.8 [2007]: 463-469). In that Mislevy advocates building models that feature complex learning systems, evidence-centered design has allowed the working groups to establish a cohesive framework for the self study through the research question design process. Adherence to evidence-centered design will also allow our working groups to gather information and report the evidence needed to complete the self study report.

The third element of the model, establishing objectives, lends a behavioral framework to the self study design. This variable of the model is informed by the NJIT ViSTa model. This framework has helped us create a vision for the self study described above in the intended outcomes of the self study, design strategies that will allow us to examine the validity of our work , and identify tactics that will allow us to prepare for the 2012 team visit.

The fourth variable requires that our work be document-centered. At the end of the day, the self study report itself will carry the accountability argument for NJIT. Hence, our model is focused on ways to capture the efforts of our working groups, analyze the information gathered, and design a document that is audience-centered in orientation.

The fifth variable, awareness of shareholders, is informed by the diverse constituencies at NJIT. Indeed, in metaphor, our vision of shareholders—students and faculty, administrators and board members, neighbors near and far—is informed by the work of steering committee member Marguerite Schneider and her proposal for understanding organizations not as hierarchical agencies but, rather, as communities linked by values (“Organizations as Complex Adaptive Systems: Implications of Complexity Theory for Leadership Research,” *The Leadership Quarterly*, 17 [2006]: 351-365).

The sixth variable defines an emphasis on milestones, the time sensitive demands that must be in place as we ask for meetings, reports, and review from the seven working groups who will perform the research and write the final report.

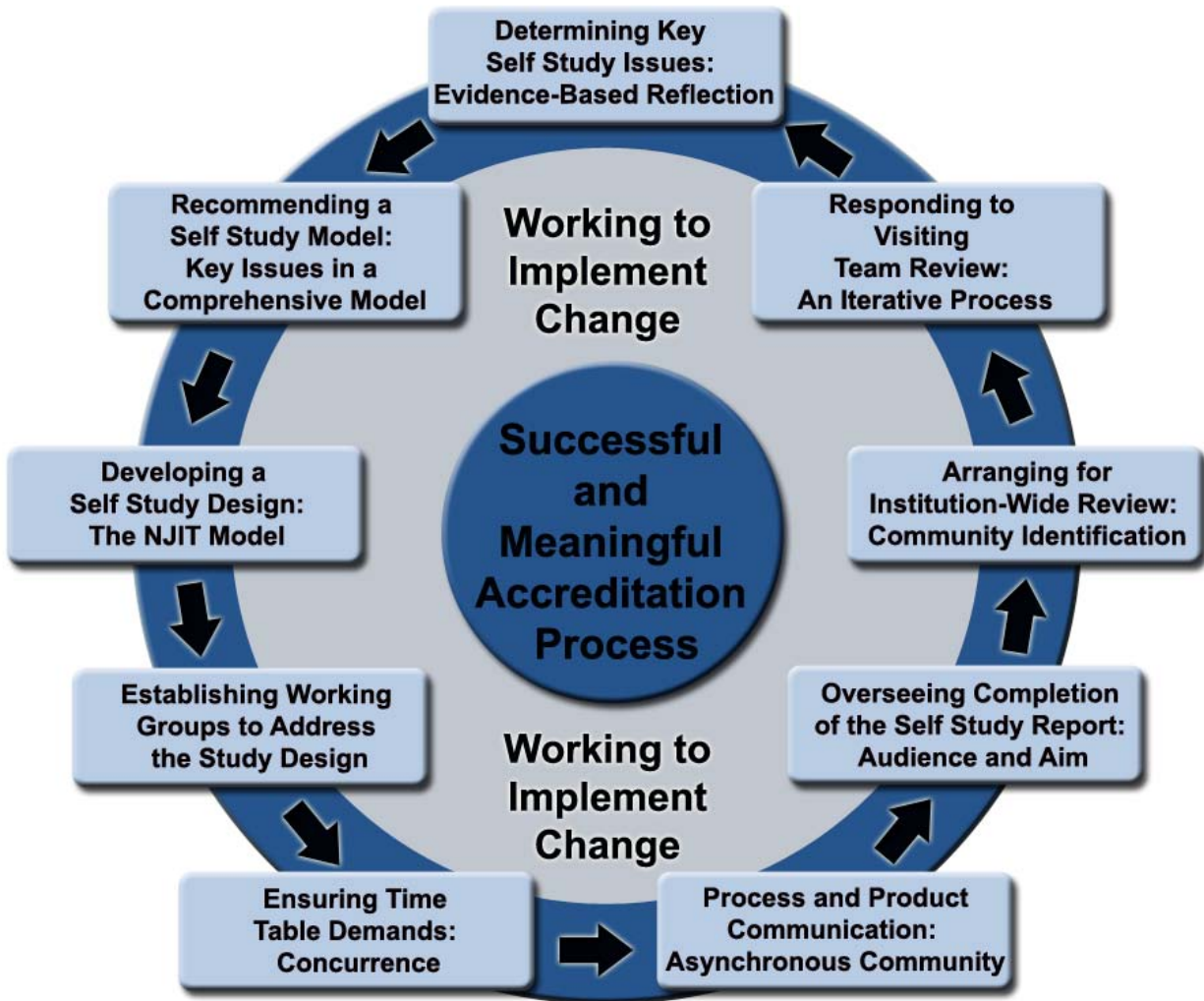
Taken together, the unique study design model will allow NJIT to create a meaningful self study process and an enduring final report.

THE NJIT STEERING COMMITTEE MODEL

From July of 2009 through February of 2010, the steering committee has served a function of providing rapid assessment. During this period, key faculty and administrators have worked in a focused fashion to design the unique NJIT models, define areas in need of study, draft the research questions, and nominate colleagues for working group membership. Comprehensive in membership, the steering committee has a vital role in the self study process and has already demonstrated ownership of all aspects of the effort.

Figure 2 describes the variables that are even now allowing the NJIT community to begin to implement change as a result of the self study process.

Figure 2. The NJIT Steering Committee Model



Because each member of the steering committee is a specialist with defined areas of expertise within the NJIT community, a demand for evidence—not anecdote—has established an environment of accountability that is based on information. In that the committee has advocated a comprehensive self study model, key areas of interest were captured in the research questions. The steering committee drafted, debated, and finalized the variable elements in Figure 1 and nominated chairs, vice-chairs, advisors, and members of the seven working groups. The steering committee finalized the time line and the communication model, both discussed below. Adding validity to the self study, the steering committee is dedicated to the three-year process that lies ahead, including communication with the visiting team after 2012 visit and subsequent articulation of the goals of the self study.

THE NJIT WORKING GROUP MODEL

After considerable steering committee discussion, seven working groups were formed. The NJIT Working Group Model is described in Figure 3.

Figure 3. The NJIT Working Group Model

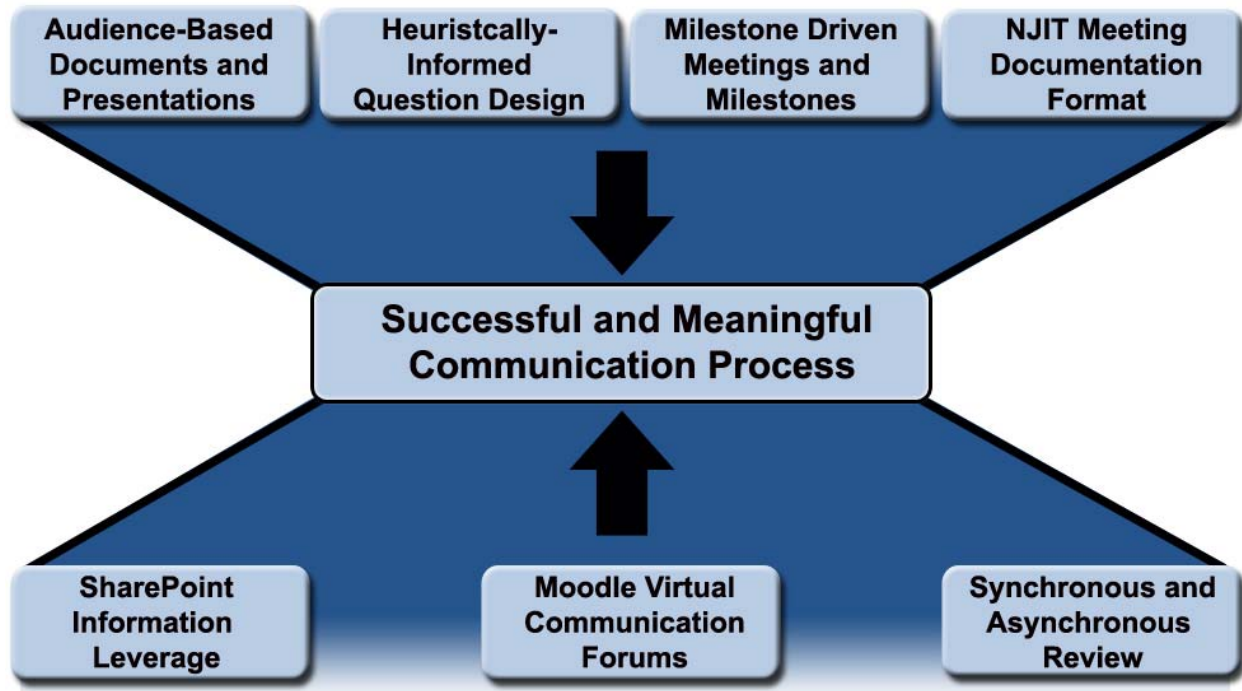


Each working committee member has a demonstrated record of commitment to the university. Special effort was made to identify faculty researchers who, through their scholarship, have achieved a deep bond with the NJIT mission. As individuals with a research-based approach to instruction, each member will demonstrate an investigative approach to the work at hand. The committee members identified below are skilled collaborators within the university, with a firm grasp of the need for evidence-based decision making, an ability to make decisions under complex conditions, and proven talents in creating documents that meet audience needs.

THE NJIT COMMUNICATION MODEL

Early in the self study design, the steering committee recognized that a defined communication model would be required if the three-year process were to be successful. Figure 4 is the result of discussions based on ways to ensure that information would be identified, analyzed, and interpreted in a meaningful fashion.

Figure 4. The NJIT Communication Model



The communication model recognizes the need to create a living document that will serve the needs of the university reaccreditation process as it is articulated to the visiting evaluation team. The research questions, heuristic in design, will allow the working groups to deepen institutional understanding in the context of the MSCHE 14 standards. To meet the demands of the time table, a format has been developed for working group transactions that allows for agenda setting, defined action, and record keeping. SharePoint is being used by the steering committee for document archival and discussion, and Moodle is being used for asynchronous communication among the working groups. The questions provided below were reviewed by the working groups in face-to-face meeting, Moodle forum discussions, or a combination of both modes. In its use of anytime, anywhere digital technology, the university seeks to leverage its national leadership in this field to strengthen the self study process.

ROLE OF THE PRESIDENT AND BOARD

Because of his own commitment to strategic planning, NJIT President Robert A. Altenkirch is a valued colleague in the self study process. His perspectives have been invaluable in the early stages of the self study process, and his experience with evidence-based decision making will be important in ensuring that a nuanced view of the university will be presented throughout the reporting process. Kathleen Wielkopolski, Chair of the Board of Trustees, has been similarly engaged in the planning process and hosted a detailed presentation of the self study design to the Board on November 5, 2009.

PROFILE OF THE STEERING COMMITTEE

We now turn to an identification of the university leaders who are members of the steering committee. Each colleague exceeded the characteristics of university leaders identified in Figure 2.

NJIT Steering Committee			
Name	Title	NJIT Unit	Years of Service
Robert B Barat	Professor, Otto H. York Department of Chemical, Biological and Pharmaceutical Engineering	Newark College of Engineering	20
Edward J Bishof	Associate Vice President, University Budgeting	Senior Vice President for Administration and Treasurer	22
Joel S Bloom	Vice President for Academic and Student Services; Dean, Albert Dorman Honors College	Vice President for Academic Support Program Area	19
Fadi Deek	Dean, College of Science and Liberal Arts	College of Science and Liberal Arts	23
Eugene P Deess	Director, Institutional Research and Planning	President's Area	10
Self Study Chair: Norbert Elliot	Professor of English, Department of Humanities	College of Science and Liberal Arts	21
Laurence A Howell	Executive Director, Educational Opportunity Program	Vice President for Academic Support Program Area	16
Marguerite A Schneider	Associate Professor, School of Management	School of Management	10
Richard T Sweeney	University Librarian	Provost and Senior Vice President for Academic Affairs	14
Self Study Vice Chair: Stephen J Tricamo	Associate Provost for Academic Affairs	Provost and Senior Vice President for Academic Affairs	15
Average Years of Service:			17

PROFILE OF THE WORKING GROUPS

Membership in the working groups is described below. Colleagues in each working group were selected on the basis of the criteria identified in Figure 3; each colleague who accepted exceeded those identified characteristics. As well, student leaders were also identified for group membership, and those students who will graduate before the self study concludes will be invited to remain on committees as other student leaders are added.

Group 1 – NJIT Mission: Commitment to the Pursuit of Excellence			
Name	Title	NJIT Unit	Years of Service
Committee Chair: Nancy W Coppola	Professor of English, Department of Humanities	College of Science and Liberal Arts	25
Committee Vice-Chair: Sanchoy K Das	Professor, Department of Mechanical and Industrial Engineering	Newark College of Engineering	21
Advisor: Joel S Bloom	Vice President for Academic and Student Services; Dean, Albert Dorman Honors College	Vice President for Academic Support Program Area	19
Advisor: Fadi Deek	Dean, College of Science and Liberal Arts	College of Science and Liberal Arts	23
Nirwan Ansari	Professor, Department of Electrical and Computer Engineering	Newark College of Engineering	21
Treena L Arinzeh	Chair and Associate Professor, Department of Biomedical Engineering	Newark College of Engineering	8
Matthew P Deek	Undergraduate Student; Technology Observer Co-Chair, Albert Dorman Honors Council	College of Science and Liberal Arts; Albert Dorman Honors College	N/A
Muhammad Elgammal	Vice President of Administration, Student Senate	Student Senate	N/A
Robert English	Dean, School of Management (Interim)	School of Management	20
Urs P Gauchat	Dean, College of Architecture and Design	College of Architecture and Design	19
Narain Gehani,	Dean, College of Computing Sciences; Program Director, B.S. Information Technology	College of Computing Sciences	6
Jorge P Golowasch	Chair and Associate Professor, Department of Biological Sciences	College of Science and Liberal Arts	8
Shanthi Gopalakrishnan	Associate Dean for Academic Affairs, School of Management	School of Management	10
Kathryn Kelly	Associate Vice President, Enrollment Services and Dean of Admissions	Enrollment Services	24
Scott C Kline	Associate Director, Office of International Students	Enrollment Services	13
James McHugh	Professor, Department of Computer Science	College of Computing Sciences	32
Leean Orama	President, Student Senate	Student Senate	N/A
Peter C Papademetriou	Professor and 3 rd Year Undergraduate Architecture Program Coordinator, College of Architecture and Design	College of Architecture and Design	22
Manuel Perez	Professor, Department of Mathematical Sciences	College of Science and Liberal Arts	38
Sunil Saigal	Dean, Newark College of Engineering	Newark College of Engineering	3
Cheickna Sylla	Associate Professor, School of Management	School of Management	20
Jaskirat Sodhi	President, Graduate Student Association	Graduate Student Association	N/A
Average Years of Service:			18

Group 2 - The NJIT Strategic Planning: The Resource Allocation Process			
Name	Title	NJIT Unit	Years of Service
Committee Chair: Gabrielle Esperdy	Associate Professor, College of Architecture and Design	College of Architecture and Design	8
Committee Vice Chair: Nancy L Jackson	Professor, Department of Chemistry and Environmental Science	College of Science and Liberal Arts	17
Advisor: Edward J Bischof	Associate Vice President, University Budgeting	Senior Vice President for Administration and Treasurer	22
Layek Abdel-Malek	Professor, Department of Industrial and Mechanical Engineering	Newark College of Engineering	23
Lisa B Axe	Associate Dean for Research, Newark College of Engineering	Newark College of Engineering	14
Michael P Bieber	Chair and Professor, Department of Information Systems	College of Computing Sciences	17
Stephen M Eck	Director, University Admissions	Enrollment Services	21
Rose M Federici	Assistant to the Provost, Finance and Budget	Provost and Senior Vice President for Academic Affairs	7
William Garcia	Associate Vice President, Finance and Controller	AVP Finance and Controller	8
Margaret M Kenrick	Assistant to Dean, School of Management	School of Management	1
Burt J Kimmelman	Chair and Professor of English, Department of Humanities	College of Science and Liberal Arts	21
Somenath Mitra	Chair and Professor, Department of Chemistry and Environmental Science	College of Science and Liberal Arts	19
Thomas R Navin	University Lecturer, College of Architecture and Design	College of Architecture and Design	22
Thomas Ogorzalek	University Lecturer and 2 nd Year Undergraduate Architecture Program Coordinator, College of Architecture and Design	College of Architecture and Design	5
Jacquelyn G Rhodes	Associate Vice President for Development	Vice President University Advancement	19
Norma Y Rubio	Director, Sponsored Programs Administration	Senior Vice President Research & Development	18
Anthony W Schuman	Director, Graduate Architecture Program; Associate Professor	College of Architecture and Design	30
Joseph F Tartaglia	Associate Vice President, Facilities Management	Senior Vice President for Administration and Treasurer	20
David F Ullman	Associate Provost for Information Services & Technology and Chief Information Officer	Information Services & Technology	21
			Average Years of Service: 16

Group 3 – The NJIT Leadership Process: Institutional Constituencies and the Assurance of Integrity			
Name	Title	NJIT Unit	Years of Service
Committee Chair: Dale E Gary	Distinguished Professor, Department of Physics	College of Science and Liberal Arts	13
Committee Vice Chair Vincent Oria	Associate Professor, Department of Computer Science	College of Computing Sciences	10
Advisor: Sunil Saigal	Dean, Newark College of Engineering	Newark College of Engineering	3
Advisor: Richard T Sweeney	University Librarian	Provost and Senior Vice President for Academic Affairs	14
Advisor: Nicholas P. Tworischuk	Associate Treasurer	SR. VP. Admin. and Treas. Area	32
George Abdou	Associate Professor, Department of Mechanical and Industrial Engineering	Newark College of Engineering	16
Asokan Anandarajan	Professor, School of Management	School of Management	15
Matthew Anderson	Major Representative, Applied Physics, Student Senate	Student Senate	N/A
Marybeth Boger	Director, Center for Academic and Professional Enrichment	Student Services	5
Bruce G Bukiet	Associate Dean for Science	College of Science and Liberal Arts	20
Jonathan R Curley	University Lecturer, Department of Humanities	College of Science and Liberal Arts	9
Robert Dresnack	Professor, Department of Civil and Environmental Engineering	Newark College of Engineering	43
Jean E Feeny	Ethics Liaison Officer	Human Resources	2
Clarisa Gonzalez-Lenahan	Associate Director, Graduate Studies	Provost and Senior Vice President for Academic Affairs	22
Leonard I Kaplan	Senior Administrator, Athletics, Intramurals, Physical Education, and Recreation	Vice President for Academic Support Program Area	9
Morty D Kwestel	University Lecturer, College of Computing Sciences	College of Computing Sciences	11
Ellen Lerner	Assistant to Provost, Academic Affairs	Prov. and Senior VP for Academic Affairs	21
Victor N Mwangi	Graduate Student	Newark College of Engineering	N/A
Hindy L Schachter	Professor, School of Management	School of Management	30
Andrew Sohn	Associate Professor, College of Computing Sciences	College of Computing Sciences	18
Georgeen Theodore	Assistant Professor, College of Architecture and Design	College of Architecture and Design	4
Leroy Thomas	Associate Dean of Students	Student Services	15
Average Years of Service:			16

Group 4 - Educational Outcomes: The Measurement of Institutional Effectiveness and Learning Ability			
Name	Title	NJIT Unit	Years of Service
Committee Chair: John K Bechtold	Professor, Department of Mathematical Sciences	College of Science and Liberal Arts	15
Committee Vice Chair: Katia Passerini	Associate Professor, School of Management	School of Management	6
Advisor: Eugene P Deess	Director, Institutional Research and Planning	President's Area	10
William Barnes	Associate Professor, Department of Engineering Technology	Newark College of Engineering	24
Phyllis Bolling	Director, Counseling Center	Student Services	25
Nicholas J Carlson (Adjunct)	Adjunct, Department of Civil and Environmental Engineering	Newark College of Engineering	Adj.
John M Cays	Associate Dean for Academic, College of Architecture and Design	College of Architecture and Design	4
Carol S Johnson	Associate Professor, Department of Humanities	College of Science and Liberal Arts	7
James M Lipuma	University Lecturer, Department of Humanities; Coordinator, Teacher Education Programs	College of Science and Liberal Arts	13
Thomas G Moore	Assistant Director, Center for Academic and Professional Enrichment	Student Services	8
Sharon E Morgan	Associate Dean for First Year Students	Student Services	22
Mary K Naatus	Undergraduate Program Director and Advisor, School of Management	School of Management	7
Marvin K Nakayama	Associate Professor, Department of Computer Science	College of Computing Sciences	15
Naomi G Rotter	Professor, School of Management	School of Management	32
Oleksandr Rudniy	Assessment Analyst	President's Area	2
Mohamad A Saadeghvaziri	Associate Dean for Academic Affairs, Newark College of Engineering	Newark College of Engineering	21
Average Years of Service:			14

Group 5 – Admission and Retention: Designing the Student-Centered Campus			
Name	Title	NJIT Unit	Years of Service
Committee Chair: Sui-Hoi E Hou	Associate Chair for Undergraduate Studies and Associate Professor, Department of Electrical and Computer Engineering	Newark College of Engineering	21
Committee Vice Chair: Barry Cohen	Associate Dean, College of Computing Sciences	College of Computing Sciences	8
Advisor: Eugene P Deess	Director, Institutional Research and Planning	President's Area	10
Advisor: Laurence A Howell	Executive Director, Educational Opportunity Program	Vice President for Academic Support Program Area	16
Piero M Armenante	Distinguished Professor, Otto. H. York Department of Chemical, Biological, and Pharmaceutical Engineering	Newark College of Engineering	26
John D Carpinelli	Professor, Department of Electrical and Computer Engineering	Newark College of Engineering	23
Margaret F Fitzpatrick	Associate Dean for Administration, College of Architecture and Design	College of Architecture and Design	3
Jack G Gentul	Dean of Students	Student Services	8
Amanda Hefferan	Undergraduate Student	College of Science and Liberal Arts	N/A
Ronald S Kane	Dean, Graduate Studies	Provost and Senior Vice President for Academic Affairs	19
Kathryn Kelly	Associate Vice President, Enrollment Services and Dean of Admissions	Enrollment Services	24
Talina N Knox	Assistant Director, Murray Center for Women in Technology	Provost and Senior Vice President for Academic Affairs	14
Jonathan H Luke	Professor, Department of Mathematical Sciences	College of Science and Liberal Arts	20
Gregory Mass	Executive Director of Career Development Services	Career Development Services	24
Rajiv Mehta	Professor, School of Management	School of Management	10
Risa L Ott	Assistant Athletic Director for Compliance	Vice President for Academic Support Program Area	3
Ronald H Rockland	Chair, Department of Engineering Technology	Newark College of Engineering	14
Julian M Scher	Associate Professor, Department of Information Systems	College of Computing Sciences	38
Marc T Sequeira	Associate Director, Information Technology Program	College of Computing Sciences	7
Average Years of Service:16			

Group 6 - Faculty: A Tradition of Instruction, Research and Service			
Name	Title	NJIT Unit	Years of Service
Committee Chair: Robert B Barat	Professor, Otto H. York Department of Chemical, Biological and Pharmaceutical Engineering	Newark College of Engineering	20
Committee Vice Chair: Marguerite A Schneider	Associate Professor, School of Management	School of Management	10
Advisor: Walter Konon	Professor, Department of Civil and Environmental Engineering	Newark College of Engineering	35
Reggie J Caudill	Professor, Department of Mechanical and Industrial Engineering	Newark College of Engineering	20
Janice R Daniel	Associate Professor, Department of Civil and Environmental Engineering	Newark College of Engineering	10
Blake Haggerty	Assistant Director for Instructional Design	Instructional Technology/Media Services	9
Ann D Hoang	Assistant University Librarian	Provost and Senior Vice President for Academic Affairs	3
Boris Khusid	Professor, Otto H. York Department of Chemical, Biological and Pharmaceutical Engineering	Newark College of Engineering	11
Farzan Nadim	Professor, Department of Biological Sciences and Department of Mathematical Sciences	College of Science and Liberal Arts	11
William V Rapp	Professor, School of Management	School of Management	9
Judith A Sheft	Associate Vice President for Technology Development, Enterprise Development Center	Senior Vice President Research & Development	8
Laurent Simon	Associate Professor, Otto H. York Department of Chemical, Biological, and Pharmaceutical Engineering	Newark College of Engineering	8
Nancy L Steffen-Fluhr	Director, Murray Center for Women in Technology; Associate Professor, Department of Humanities	College of Science and Liberal Arts	38
Average Years of Service: 15			

Group 7 - Curriculum: Evidence-centered, Research and Professional-based Instruction			
Name	Title	NJIT Unit	Years of Service
Committee Chair: Robert S Friedman	Associate Dean for Liberal Arts	College of Science and Liberal Arts	16
Committee Vice Chair: Taha F Marhaba	Chair and Professor, Department of Civil and Environmental Engineering	Newark College of Engineering	14
Advisor: Stephen J Tricamo	Associate Provost for Academic Affairs	Acting Provost and Senior Vice President for Academic Affairs	15
Advisor: Gale T Spak	Associate Vice President for Continuing & Distance Education	Continuing Professional Education	17
Raymond A Calluori	Senior Institutional Research Systems Manager	President's Area	10
Jerry L Fjermestad	Associate Professor, School of Management	School of Management	16
Eric D Hetherington	Associate Chair and University Lecturer, Department of Humanities	College of Science and Liberal Arts	8
George G Laskaris	President and CEO, NJEDge.net, New Jersey Higher Education Network	Senior Vice President for Administration and Treasurer	9
Norman Loney	Associate Chair and Professor, Otto H. York Department of Chemical, Biological, and Pharmaceutical Engineering	Newark College of Engineering	18
Swathi Manchikanti	Undergraduate Student; Vice President, Biology Society; Secretary, Albert Dorman Honors Council	College of Science and Liberal Arts; Albert Dorman Honors College	N/A
William F Reynolds	Director, Media Services	Instructional Technology/Media Services	32
James C Robertson	Director, University Web Services	President's Area	17
Haymwantee P Singh	Technical Reference Librarian	Prov. and Senior VP for Academic Affairs	17
Jamil E Wilkins	Major Representative, Communications and Media, Student Senate	Student Senate	N/A
			Average Years of Service: 16

THE RESEARCH QUESTION DESIGN PROCESS

Considerable time has been spent from the summer of 2009 through the spring of 2010 in designing the research questions. We turn now to the four step process we have employed.

In the first step of the process, the steering committee drafted research questions based on the 14 MSCHE standards according to the matrix shown in Figure 5. Heuristic in design, the matrix compelled steering committee members to craft questions that would stimulate thinking about issues central to the NJIT community; to address issues raised by the 14 standards; to identify issues that would reach across standards and, thus, across working groups; and to prompt both documentary and analytic effort within each working group.

Figure 5. The Core Charge Research Questions: Heuristic Analysis

Designing Analytic Charge Questions (process adapted from <i>Self Study: Creating A Useful Process</i> , p. 34)							
MSCHE Standard	Identifying key components of the standards that are most relevant to the institution's own goals and activities.	Determine how this standard relates to other standards and the Seven NJIT Groups.	What assessment has occurred in this area?	What improvements should we consider?	Analytic Charge Questions for the Seven NJIT Groups	What existing documents can be used (and cited) to fulfill this Charge?	What new research, if any, should be undertaken during the self-study?
1. Mission and Goals							
2. Planning, Resource Allocation & Instructional Renewal							
3. Instructional Resources							
4. Leadership & Governance							
5. Administration							
6. Integrity							
7. Institutional Assessment							
8. Student Admissions & Retention							
9. Student Support Services							
10. Faculty							
11. Educational Offerings							
12. General Education							
13. Related Educational Activities							
14. Assessment of Student Learning							

After each question was subjected to detailed scrutiny, the core research questions were posted on NJIT's MSCHE Self Study web site on October 26, 2009, for review by the university community.

In the second step of the process, the steering committee carefully determined how each standard might extend across the working groups. An important part of the design process, this step assured that efforts would not be duplicated across groups. More importantly, this step allowed the steering committee to see how key issues, such as student retention, ranged across working groups—thus prompting more refined questions of cause and effect. An example of this process of analysis across the working groups is shown in Figure 6. The example is drawn from MSCHE Standard 1.

Figure 6. Heuristic Questions across the Working Groups

2	NJIT Middle States RASC							
3	September, 2009							
4								
5		Work Groups						
6								
7	Standards,			3: Leadership Process:	4: Educational	5: Admissions and	6: Faculty:	7: Curriculum: Evidence-
8	Questions, and Other Standards			Institutional	Outcomes:	Retention:	A Traditional of	centered, Research &
9	Related to each Question	1: NJIT Mission:	2: Strategic Planning:	Constituencies & the	Measurement of	Designing the Student:	Instruction,	Professional-based
10	(in parentheses)	Commitment to the	The Resource	Assurance of Integrity	Learning Ability	Centered Campus	Research, & Service	Instruction
11	1: Mission and Goals	Pursuit of Excellence	Allocation Process					
12	How does the NJIT mission achieve uniqueness within the state?							
13	How has the mission of NJIT changed with the new millennium? (also 2)	1		2				
14	Have the institution's stated goals evolved since the 2002 accreditation visit? If there has been evolution, at which level has this evolution occurred? (Related to Standards 2, 7, and 14)							
15	Are we identifying markets that are congruent with our mission, and are we reaching those markets?							
16	Are the institution's goals clearly communicated? How?							
17	What are the internal and external barriers to mission realization?							
18	Which new opportunities has NJIT included in its mission, and which has it excluded, given the need for strategy to be focused due to limited resources? (also 4, 5, 7)	1	2	3				
19	How has the mission changed over the last 5 years?							
20	How will it likely change over the next 5 years?	1						

Figure 6 exemplifies the critical thought that has gone into the self-study design. Working across standards, steering committee colleagues defined aspects of each standard that impacted a spectrum of institutional contexts. While Working Group 1 would focus on Standard 1 (Mission and Goals), attention would have to be paid to the ways that the mission drove resource allocation—the domain of Standard 3 (Institutional Resources). Similarly, questions regarding opportunity cost are clearly related to Standard 2 (Planning, Resource Allocation, and Institutional Mission); hence, Working Group 2 (addressing both Standards 2 and 3) would have to draft its reports with Working Group 1. By means of such an iterative process, the self study questions have become sufficiently robust to allow vigorous analysis of the university’s context and its educational effectiveness.

Once questions that ranged across groups were identified, they were again reviewed and placed into the matrix shown in Figure 6. This third step, a quality assurance measure, allowed the steering committee to be certain that the questions were sufficiently well designed so that the working groups would be able to provide a detailed analysis of the strengths of the university, as well as identify areas for improvement. Showing a charge question for Standard 1, Figure 7 demonstrates the analysis the questions received before they were released by the steering committee.

Figure 7. The Heuristic Questions within Groups

MSCHE Standard	Identify the key components of the standards that are most relevant to the institution's own goals and activities.	Determine how this standard relates to other standards and the Seven NJIT Groups.	What assessment has occurred in this area?	What improvements should we consider?	Analytic Charge Questions for the Seven NJIT Groups.	What Existing documents can be used (and cited) to fulfill this charge?	What new research, if any, should be undertaken during the self-study?
I. Mission and Goals	The institution's stated goals, consistent with the aspirations and expectations of higher education, clearly specify how the institution will fulfill its mission	Standard 2: How do we get the resources to execute the stated goals? Standard 5: Is the strategic plan administration or faculty governed? Standard 7: How is the Strategic Plan assessed? 2004-2010? 2010-2015?	How does resource planning occur at various levels – university, college, department/administrative units? How do we know if the resource allocation plans are effective? What is the impact of decreasing state support on the resource allocation process?	Does the university community know we are engaged in strategic planning? How can we identify ways to increase knowledge of – and participation in – the process?	Group 1 (Coppola & Das; Deek); Have the institution's goals evolved since the 2002 accreditation visit? If there has been evolution, at which level has this evolution occurred? <i>A reflective and documentary charge.</i>	University Strategic Plan 2004-2010? 2010-2015? Board Actions? CSS Actions Accreditation reports from ABET, AACSB, NAAB? CSLA Strategic Plan, September 2004 through June 2009 and January 2009 through June 2014	How do our benchmark institutions engage in strategic planning? Which appears to be the best methods of planning, engagement and assessment? <i>A progressive charge</i>

In the fourth and final internal step, the research questions were reviewed by the seven working groups. This unusual step allowed the working groups to become owners of the self study.

After the March 9 visit of Dr. Petrisko, the Working Group Chairs and Vice Chairs, along with the Steering Committee, participated in a question design workshop held on March 24, 2010, in which the questions were reviewed a final time. The final form of the questions was made more explicit by this peer review and, thus, more valuable.

Detailed and exhaustive, this process yielded the carefully constructed questions that follow.

THE RESEARCH QUESTIONS

The final research questions for each working group are provided below.

Group 1	NJIT Mission: Commitment to the Pursuit of Excellence
----------------	--

- 1.0 How has the institution's stated mission evolved since the 2002 publication of *An Emerging Presence: Self Study and Strategic Plan*? What evidence is there that the NJIT mission statement reflects this evolution?
- 1.1 How has the *NJIT Strategic Plan, 2004-2010* been shaped by the NJIT mission, vision, core values, value proposition, and goals?
- 1.2 Besides the NJIT strategic planning process, what other existing planning processes have influenced the NJIT mission? To what extent do these other planning processes complement the university mission?
- 1.3 What are the causal factors—external and internal forces that impact the university—for change? How can we determine the strength and influence of these forces?
- 1.4 To what extent have the strategic priorities of the *NJIT Strategic Plan, 2004-2010* been incorporated throughout the NJIT community?
- 1.5 What strategies are used to assure mission differentiation for NJIT within the state and region? How effectively have we achieved mission differentiation—and thus mission focus—in relation to other universities in New Jersey?
- 1.6 What is the process by which NJIT seeks new opportunities, and excluded others, given the desire for a focused mission strategy?
- 1.7 In that we are identifying markets that are congruent with our mission, how effective are we in reaching those markets?
- 1.8 What are the strategies by which NJIT deals with the challenges of global initiatives while serving its traditional community?
- 1.9 How effectively are NJIT's mission and goals communicated to the NJIT community?
- 1.10 How does the NJIT mission allow our schools and colleges to maintain their unique identities?
- 1.11 What is the relationship between the present MSCHE self study and the emerging *NJIT Strategic Plan, 2010-2015*?
-
-

Questions Regarding Strategic Planning Initiatives

2.0 How has the institution's planning process—as opposed to the elements of the strategic plan—changed since *An Emerging Presence: Self Study and Strategic Plan, 2002*? What has been the impact of that planning process on strategic planning?

2.1 What new strategic priorities, objectives, and metrics have been developed since *An Emerging Presence: Self Study and Strategic Plan, 2002* regarding the allocation of resources? How do these priorities, objectives, and metrics effectively serve the NJIT mission?

2.2 What process does the institution use to develop and prioritize its strategic planning initiatives?

2.3 Who are NJIT's major constituencies, both internal (e.g., students, faculty, staff, and the NJIT Board of Trustees) and external (e.g., alumni, NJIT Boards of Visitors, the city of Newark, and the state of New Jersey) which inform the planning process? How are these groups identified, how is their input provided, and how is their input subsequently incorporated into the strategic planning process?

2.4 What strategies are used to incorporate differences in perspectives among constituencies included in the strategic planning process?

2.5 To what extent are the strategic planning, resource allocation, and assessment processes at NJIT transparent? What strategies might be used to make these processes increasingly transparent?

Resource Allocation: Integration and Evaluation

2.6 What methods are used to integrate NJIT's strategic planning process with the resource allocation planning process?

2.7 What forms of fiscal accountability (processes, strategies, and controls) are in place to assure that resources are allocated in a manner consistent with the strategic plan?

2.8 By what process does the institution launch its strategic planning initiatives? What procedures inform the design and implementation of these planning processes, and what is the nature of the resonances among these processes?

2.9 How are resource allocations balanced with strategic planning given available operating and capital resources?

2.10 What processes are applied by the institution to assess success in meeting its strategic priorities and objectives?

2.11 How effective is NJIT in evaluating and assessing post-resource allocation decisions and how does this process influence institutional renewal for NJIT shareholders?

Meeting Institutional Resources and Challenges

2.12 What are the most significant current and near-term challenges facing NJIT regarding its human, fiscal, technological, and facility resources? How are these challenges identified, prioritized and addressed?

2.13 In light of challenges to human, fiscal, technological, and facility resources, how effectively does NJIT manage institutional resources to achieve mission success?

2.14 In support of the present strategic plan, how will NJIT assure that sufficient resources are allocated to foster education, research, economic development, and service?

Group 3

The NJIT Leadership Process: Institutional Constituencies and the Assurance of Integrity

Questions Regarding Leadership and Governance

3.0 How may we best describe the leadership and governance processes at NJIT, and are those processes captured in the *Faculty Handbook*?

3.1 What strategies does NJIT use to ensure that its governance promotes adequate checks and balances among shareholders?

3.2 What challenges do the evolving roles of the governing and advisory boards at NJIT present, and how is NJIT preparing to meet those challenges?

3.3 What is the balance of diversity in the governing and advisory boards in terms of domain backgrounds (e.g. profit, not-for-profit, and non-profit sectors)? How is organizational and domain diversity ensured and maintained?

3.4 What evidence can be provided that effective strategies are in place to assure the leadership future of NJIT in the areas of education, research, economic development, and service?

3.5 What strategies are used to identify early career faculty, instructional staff, and administrators for their leadership potential? How does the institution effectively develop

the potential of these future leaders?

3.6 What strategies are used to incorporate gender and ethnic issues of diversity in decision making? Given the diverse environment at NJIT, how effective are these strategies?

3.7 What strategies are in place for communication between the university community and the governing or advisory boards? Given the increasingly complex educational environment within the state, how effective are these strategies?

Questions Regarding Administration

3.8 How well does the NJIT administrative structure address present challenges, and is that structure sufficiently adaptable to deal with future growth presented in the strategic plan?

3.9 Since the 2002 self study, what have been the most significant changes in the structure of NJIT's administration? How can the impact of these changes best be analyzed?

3.10 To what extent have changes in NJIT's administrative structure been driven by the university's strategic priorities, objectives, and metrics?

3.11 How effectively does NJIT adjust its administrative organization to meet newly emerging enrollment patterns and demand for new academic programs?

3.12 What metrics are used in assessing the effectiveness of administrative units at all levels, and how were they selected? How have these metrics changed since the 2002 self study?

3.13 What evidence is there that the current administrative structure facilitates productivity improvements in education, research, economic development, and service?

Questions Regarding Integrity

3.14 What strategies are used by NJIT to achieve and communicate its integrity as the state's public science and technology university?

3.15 Employing processes such as those determined by the internal review board, how does the university maintain an effective framework for ethical conduct in the areas of education, research, economic development, and service?

3. 16 What evidence is there that NJIT fosters, assesses, and maintains the integrity of faculty, instructional staff, and administrators?
3. 17 What strategies are used at NJIT to foster a climate that demonstrates respect among students, faculty, staff, and administration for a range of backgrounds, ideas, and perspectives?
3. 18 What mechanisms are used by NJIT to meet the standards set by the New Jersey State Conflict of Interest statutory mandates, as well as ensure that the NJIT community is aware of, and complies with, New Jersey State ethics laws, regulations, and executive orders?
3. 19 How effectively does NJIT demonstrate integrity in faculty selection, promotion, tenure, retention, compensation, and administrative review?
3. 20 How effective are the strategies used by NJIT to instill integrity across its colleges, student athletics, and other endeavors so that students adhere to principles of academic integrity while enrolled in our academic programs?
3. 21 How do NJIT's integrity policies compare to science and technology universities nationwide?
-
-

Group 4	Educational Outcomes: The Measurement of Institutional Effectiveness and Learning Ability
----------------	--

Questions Regarding Institutional Assessment

- 4.0 How can NJIT best expand its university-wide assessment activities?
- 4.1 What processes are in place to assure that NJIT's comprehensive assessment plan serves as a guide to university-wide, cohesive strategic planning?
- 4.2 How might NJIT's comprehensive assessment plan for institutional effectiveness be described in its relationship to the strategic planning process?
- 4.3 In what ways has NJIT's institutional assessment resulted in authentic institutional renewal as a result of assessment reports and balanced scorecards?
4. 4 How does institutional assessment inform the strategic planning process?
4. 5 How does institutional assessment influence resource allocation?
4. 6 What evidence exists that the NJIT community understands and embraces existing institutional assessment efforts?

Questions Regarding Assessment of Student Learning

4. 7 What evidence demonstrates that there is campus support for the assessment of student learning?
4. 8 How do our current student learning outcomes ensure that there is consistent quality of admitted students?
4. 9 How does NJIT document that the institution's students have levels of knowledge and skills that are consistent with the NJIT mission?
4. 10 What evidence is used to document that the General University Requirements are assessed through performance-based measures?
4. 11 What evidence is used to document that degree programs are assessed through performance-based measures?
4. 12 What evidence exists that our current student learning outcomes lead to curriculum transformation in terms of consistently achieved program objectives?
4. 13 How has assessment of student learning influenced instruction?
4. 14 What strategies have we used to demonstrate that current student learning outcomes lead to curricular adjustments in terms of increased student engagement?
4. 15 How do our current student learning outcomes lead to adjustments in terms of increased student retention?
4. 16 How do our current student learning outcomes lead to informed decisions about curricular planning and resource allocation?
4. 17 During the period of the present self study, how have we articulated the need to develop a university-wide outcomes assessment plan that unifies existing efforts? How is such a plan being developed?

Group 5

Admission and Retention: Designing the Student-Centered Campus

Questions Regarding Admissions

5. 0 What is the record of admissions at NJIT since the previous self study with attention to quality, diversity, and growth? In terms of admissions, how have we met the challenges of quality, diversity and growth? How will we meet these challenges during the period of the present self study?

5. 1 In a period of planned growth, how are we aligning our academic standards and admission goals? How are we meeting the challenges of enrollment growth and student quality?
5. 2 Despite current growth trends, are we prepared to meet possible future decline in enrollment cohorts?
5. 3 How are our current measures of predicting success understood and communicated to faculty and students? What new measures might we consider as predictors of success, and how might these new measures best be communicated and implemented?
5. 4 What strategies might improve our admissions patterns regarding the following student groups since the last self study: men, women; African American; Native American; Asian; Hispanic; and white students?
5. 5 What strategies might improve our admission patterns for students in the Albert Dorman Honors College?
5. 6 What strategies might improve our admission patterns for students in the Educational Opportunity Program?
5. 7 What strategies might improve our admission patterns for students in the athletic program?
5. 8 How well does the SAT Reasoning Test predict student success?
5. 9 How are resources sufficiently allocated to undergraduate and graduate admissions?
5. 10 What strategies are used to assess the NJIT admission function?
5. 11 What strategies has the institution employed to assess its recruiting material, website, and processes so that they are geared toward both undergraduate and graduate admission goals?
5. 12 How effective, well formulated, and consistently implemented are our strategies for the recruitment of international graduate students?
5. 13 How effective, well formulated, and consistently implemented are our strategies for the recruitment of domestic graduate students?
5. 14 What strategies are in place to assure that full-time MS and PhD student support is competitive with peer research universities?
5. 15 How may we demonstrate that NJIT's enrollment projections are sufficient to support the institution's projected financial needs?

5. 16 What is the relationship between retention and revenue?

Questions Regarding Retention

5. 17 What is the record of retention at NJIT since the previous self study? In terms of retention, how have we met the challenges of attending to quality, diversity and growth in the past? How will we meet these challenges during the period of the present self study?

5. 18 How effectively do we identify barriers for retention? What strategies, informed by barrier analysis, would facilitate increased retention?

5. 19 How do our retention rates compare to peer and aspirant schools?

5. 20 What do we learn from our study of the relationships among admissions growth, enrollment trends, and student retention?

5. 21 What is the relationship between new academic programs and student recruitment?

5. 22 What is being done to identify and address the needs of students who are at risk of leaving the institution?

5. 23 What are the variables that most impact retention at NJIT, and what is being done to improve retention as these variables are identified?

5. 24 What steps, such as E-Learning and distributed scheduling, have been taken to improve retention by improving curriculum delivery? How may we demonstrate that curriculum delivery is a factor in retention?

5. 25 How can we design and structure the following to improve retention and graduation: placement procedures; curriculum reform; and advancement and progression guidelines within the academic major?

5. 26 What is the impact of NJIT's financial aid on student retention?

5. 27 What best practice advisement models would facilitate retention?

Questions Regarding Student Support Services

5. 28 What changes in student services have occurred since the previous self study? What are the reasons for these changes?

5. 29 How might the functions and impacts of the following student support services best be described: admissions, financial aid, registration, orientation, advising, counseling, tutoring, academic discipline, health, housing, placement, student organizations and activities, cultural programming, child care, security, and athletic activities? What metrics are used to assess these impacts?
5. 30 To what degree have each of these student support services improved NJIT student satisfaction?
5. 31 What evidence exists that there is a need for an integrated model of student support services? What steps might be taken to achieve this need?
5. 32 How convenient is access to NJIT's various student support services?
5. 33 How effective are student support services? What metrics are used to measure them?
5. 34 Given projected enrollment growth, how does NJIT plan to serve greater numbers of students?
-
-

Group 6

Faculty: A Tradition of Instruction, Research, and Service

The Formation of Our Faculty: Qualifications, Recruitment, and Diversity

6. 0 How has the university implemented plans for faculty recruitment and retention as a result of the *NJIT' Strategic Plan, 2004-2010*? How was this plan designed to meet the needs of NJIT's academic programs?
- 6.1 How do the current demographics of our faculty compare to those of our peer universities? If there are differences between departments, what is the cause and effect of these differences?
- 6.2 How effective are our present strategies for ensuring a diverse faculty?
6. 3 In light of the new Faculty Separation Incentive Program, what is the institution's strategic plan for the replacement of retiring faculty?
- 6.4 How has the utilization of lecturers and adjunct faculty changed since the previous self study? What is the impact of such changes?

The Health of Our Faculty: Resources, Support, Retention, Growth

- 6.5 Given expectations for scholarship and service, how effectively are faculty assignments designed regarding teaching load?

6.6 How might mentoring plans be enhanced and communicated to assist new faculty in developing and refining their skills to achieve excellence in instruction, research, and service? Are these plans developed and communicated at departmental, college-wide, and institute-wide levels? Are the plans comparable to those at our peer institutions?

6.7 How might comparable mentoring plans be put into place to assist established and mid-career faculty?

6.8 How sufficient are the internal resources available to help early career faculty obtain financial support for their research?

6.9 How might sufficient resources be made available for mid-career and senior faculty sufficient to allow exploration of new research initiatives?

6.10 What reasons are given for any existing imbalance in internal resource allocation, and are these reasons valid?

6.11 What are the mechanisms and resources in place for maintaining and supporting faculty productivity, and are these mechanisms and resources sufficient to ensure research growth?

6.12 How effectively is success measured in terms of faculty productivity?

6.13 When differences are observed in departments in faculty appointment, tenure, and promotion, how are these differences identified and evaluated? Do we know that the evaluation is valid?

The Role of Our Faculty in the Life of NJIT: Curriculum, Research, Service, Governance

6.14 How effectively are the processes by which faculty are involved in academic program development, assessment, and improvement? How is such involvement recognized and encouraged?

6.15 To what extent are faculty adopting new technologies to enhance instruction and curriculum delivery? Is this extent sufficient to allow students to succeed in the marketplace?

6.16 What mechanisms are in place to document and evaluate faculty participation in curriculum development?

6.17 What evidence exists that faculty research interests are considered during the formation of research plans on the departmental, college, and institute levels?

6.18 What are the strategies by which faculty research interests are integrated into the curriculum?

6. 19 What is the state of faculty governance at NJIT? Is NJIT faculty governance consistent with governance at our peer universities?

6. 20 How extensively does our faculty provide service to the institute? How are such efforts recognized and rewarded?

Group 7	Curriculum: Evidence-centered Research and Professionally-based Instruction
----------------	--

Questions Regarding Educational Offerings

7.0 How do NJIT's academic programs display academic content, rigor, and coherence appropriate to our mission?

7.1 How does the university ensure the maintenance of academic content, rigor, and coherence? What role do accreditation agencies play in this assessment process?

7.2 By what strategies does each degree program have articulated core competencies, learning outcomes, student advancement and progression standards, and an outcomes assessment plan?

7.3 How well do we disseminate the purpose and interrelationship of the requirements of their students' degree programs?

7.4 Through what articulated strategies are students taught to think critically, analytically, and creatively within their majors?

7.5 How has the curriculum been improved since the last self study in order to increase student engagement and retention?

7.6 How effective are the processes that allow new degree programs to emerge at NJIT? Are the standards and processes required for program approval on the institutional and state level sufficient to facilitate NJIT's needed mission differentiation?

Questions Regarding General Education

7.7 How do the General University Requirements (GUR)—NJIT's undergraduate general education program—lead to students acquiring and demonstrating college-level proficiency in general education and essential skills, including oral and written communication, scientific and quantitative reasoning, critical analysis and reasoning, information literacy, and technological competency?

7.8 How are learning outcomes demonstrated in the GUR?

7. 9 How does the GUR serve the NJIT mission?
7. 10 What is the orientation of the GUR? Is the general education program designed to meet the needs of students in their respective professional degree programs? Or is the general education program designed to be a cohesive force independent of student major?
7. 11 As learning outcomes and assurance of learning are integrated into the GUR, how is the validity of the interaction established?
7. 12 As NJIT assesses that students are meeting the institution's goals for written communication, quantitative reasoning, and information literacy, how is that assessment process validated?
7. 13 How and why has the GUR changed since the previous self study? How have these changes reflected a planned system of development aimed to provide a common core of study for a 21st century science and technology university?
7. 14 Since there is an on-going need to undertake review of the GUR in light of new degree program initiatives during the period of the current self study, how can the GUR be structured to engage and retain students?

Questions Regarding Related Educational Activities

7. 15 How are the existing efforts and future direction for our basic skills placement, instructional, and assessment efforts in writing and mathematics communicated to students and validated by faculty?
7. 16 When admitted students lack proficiency in written and oral English, are the programs and procedures in place sufficient to ensure that these students are prepared and engaged? Are the procedures in place sufficient to assist international students in securing communicative competencies?
7. 17 How sufficient are the existing efforts, future directions, and outcomes assessment strategies for each of the following: E-Learning, Experiential Learning, Non-Credit Offerings, and Graduate Certificate Programs?
7. 18 Are existing quality assurance measures sufficient to ensure instructional and student competency in certificate programs?
7. 19 What evidence exists that the achievements of learning goals of students in distance learning courses is comparable to that of students in face-to-face courses?
7. 20 How has the NJIT concept of distance learning evolved since the last self study?
7. 21 How has the impact of E-Learning upon NJIT's student engagement and retention measured?

7. 22 What are the processes by which affiliate relationships between NJIT and other educational institutions maintained?

CHALLENGES OF THE NJIT SELF STUDY

In its rapid assessment role, the steering committee has identified three challenges that must be addressed in the emerging self study process.

In her 2007 review of NJIT periodic review report, Katherine Mayberry recommended that a systematic review of the *Faculty Handbook* needed to be executed. Systematic revision of the *Faculty Handbook*, with specific focus on assuring that the tenure and promotion processes are rigorous, clear, and consistent across all colleges and departments, was recommended. Especially, the review recommended, the role of the deans in the promotion and tenure process needed to be well defined to ensure consistently formal roles in the tenure and promotion process. In 2008, a former faculty member and co-chair of the 2002 self study, Robert E. Lynch, voluntarily undertook the required systematic review. The resulting document, however, was not embraced by the NJIT Faculty Council. A section-by-section review of the handbook is now taking place, and the NJIT community realizes that an updated handbook will support compliance with Standard 4 (Leadership and Governance). While the present handbook is, of course, approved, a written statement of collegial governance, composition, duties, and responsibility held by both administration and faculty is needed. Present Faculty Council Leadership is working ardently to draft and approve revisions that will allow the Faculty Handbook to reflect more fully the contemporary institutional context.

The 2007 report also recommended that the library staff draw up a plan for adding 5,000 to 7,000 volumes to the Robert W. Van Houten Library collection. Since that time, it has been increasingly clear that the future of the academic library rests in digital technology. While the NJIT community has not “taken its eye off the ball,” as the 2007 report phrases the effort, it is nevertheless true that skyrocketing database cost and declining state support have created a condition in which library resources remain scaffolded from year to year. While this condition may indeed be a part of the foreseeable future, the final self study report must nevertheless give voice to the complexities of database maintenance within a research university in a period of a continued decline in state support.

While the 2007 report noted that “the practices that NJIT applies to learning outcomes assessment are varied, exemplary, and, in some cases, unique,” it is now time to advance a more cohesive view of outcomes assessment at NJIT. Central to this new paradigm of assessment will be a re-designed program review process that will focus on the demonstrations of institutional effectiveness offered by Michael. F. Middaugh in *Planning and Assessment in Higher Education* (San Francisco: Jossey-Bass, 2010). All of the outcomes assessment research identified in the 2002 self study and the 2007 periodic review report has been maintained and augmented, but a more unified reporting structure now needs to be established. The institutional planning process for the assessment of student learning, described by George Kuh and Stanley Ikenberry in *More Than You Think; Less Than We Need: Learning Outcomes Assessment in Higher Education*

(Champaign, IL: National Institute for Learning Outcome Assessment, 2009), remains a challenge for NJIT.

REPORTING FRAME FOR THE SELF STUDY

In order to provide a detailed comprehensive review of the university, the working groups are using the research questions to study the university in the period from the spring of 2002 (the time of the last MSHCE Team Visit) to the fall of 2011 (the semester before the forthcoming Team Visit). This time frame will allow us to undertake a self study that will allow us to demonstrate our successes, meet our challenges, and plan for the future. Equally important, this timeframe will allow the MSCHE self study to inform, and be informed by, the emerging *Strategic Plan, 2010 to 2015*.

INVENTORY OF SUPPORT DOCUMENTS

During the spring of 2010, the working groups will be involved in identifying existing documents and new studies needed to answer the charge questions. Among the documents that have thus far been identified, we include the following: all Institutional Resource and Planning Reports from 2002 onward; all data analyses, including enrollment information, migration studies, retention comparisons, and revenue analyses; all annual reports and university planning documents; and reports specific to academic planning, such as the recent study of placement into first-year writing courses; all reports from program accreditation agencies (i.e., Accreditation Board for Engineering and Technology, Association to Advance Collegiate Schools of Business, and the National Architectural Accrediting Board); and all handbooks and catalogues. We will also include all information pertaining to our participation in the Voluntary System of Accountability (VSA) and the National Survey of Student Engagement (NSSE), including our forthcoming information from our new participation in the NSSE Consortium for the Study of writing in College.

Among the studies we have recently undertaken in Institutional Research and Planning, we include the following as representative:

- Grade Distribution Report
 - Spring 09: S09 NJIT by Section, S09 NJIT by Instructor
 - Summer 09: U09 NJIT by Section, U09 NJIT by Instructor
 - Fall 09: F09 NJIT by Section, F09 NJIT by Instructor
- FTFTF who received GPA less than 2.0 (Fall 2009 FTFTF).
- Average section sizes by type and term for fall semesters.
 - With concurrent sections (Fall 05—Fall 09 Average Section Sizes)
 - Without concurrency (Average Section Size F05-F09)
- Faculty Load Reports, multiple types (Spring 2009 Credit Hours Summary by School, Department and Faculty Rank)
- Newly Added Programs (New Programs rev 2)
- Enrollment by Program and Class Level 5 years
- FTFTF Retention by Department 5 years

- Fall to Spring Retention Study 06.07.08
- Fall to Fall Retention Study 06.07.08
- Estimated Degrees 2009-2010 (Degrees Aug 09, Jan 10, May 10)
- 5 years section count, enrollment, credit hours, load hours report (Section, LH, CH, Enr Summary)
- Fall 2009 Non-Honor Student Study (Breakdown of Non-Honors)
- Excelsius Estimation Project
- F08—F09 Full-Time Degree-Seeking Undergraduate Students Retention Rates (F08—F09 Full-Time Deg-Seeking Undergraduate Retention)
- F08-F09 Major Migration by School and Program
- F08—F09 Degree-Seeking Undergraduate Students Retention
- All Levels Retention: Fall 2008—Fall 2009 by Multiple Metrics (Retention F08-F09 Report)
- FTFTF Average SAT Scores by School (F09 and F08 Average FTFTF SAT Scores by School)
- Fall 2009 Study
- Fall 2006—Fall 2008 School of Engineering Enrollment by Ethnicity (NCE ethnicity breakdown 2006-2008)
- Graduation Rates Study: by Program, by Honor, by EOP, by Athletics (Graduation Rates)
- Retention Rates Study: by Program, by Honor, by EOP, by Athletics (Retention Rates)
- Percentage of Women Students F08 by level
- CSLA Students with Undeclared Major Study
- Chemical Engineering Study
- IE and ME Departments Comparison: Undergraduate and Graduate Data
- Application, Acceptance, Matriculation, Retention, Graduation Rates
- Fall to Spring Retention Report: 2006—2007, 2007—2008, 2008—2009
- Information System Study on International Students
- Southern Jersey Enrollment and Transfers

Because of the university's commitment to the use of digital media for reporting transparency, all supporting documents are presently available for review on the Web. Studies containing information that might be linked back to individual groups will be available during the visit.

ORGANIZATION OF THE SELF STUDY REPORT: PROPOSED OUTLINE

While seven working groups will write a report that will be coordinated by the steering committee, the final report will provide a chapter-by-chapter analysis based on each of the 14 MSCHE standards. The report will also contain an executive summary, an introduction to the university, and a summary of conclusions based on the 14 chapters of analysis. Each chapter will begin with précis (a map of the chapter, highlighting significant changes since the 2002 self study), followed by an exposition of the content of the chapter. The exposition will be followed by a critical analysis and a summary of conclusions. The proposed report outline, sufficiently flexible to allow for modification during the self study period, follows:

Executive Summary

Précis: A Vision for the Technological Research University of the 21st Century

Introduction: NJIT at its Decennial Review

Précis: The University from 2002 through 2012

A Portrait of NJIT in 2012

The NJIT Self Study Design Model

The NJIT Steering Committee Model

The NJIT Working Group Model

The NJIT Communication Model

Role of the President and Board

Profile of the Steering Committee

Profiles of the Working Groups

Outcomes of the Self Study

Chapter 1. Standard 1: Mission and Goals

Précis: The NJIT Mission and the Commitment to the Pursuit of Excellence

Mission Articulation since 2002

Impact of *NJIT Strategic Plan, 2004- 2010*

Causal Factors Associated with Change

The NJIT Mission and the Campus Culture

Mission Differentiation for Existing and Potential Markets

Captured and Potential Opportunities

The Traditional NJIT Community

The Challenges of Global Initiatives

Potential Impact of *NJIT Strategic Plan, 2010-2015*

Critical Analysis

Summary of Conclusions

Chapter 2. Standard 2: Planning, Resource Allocation, and Institutional Renewal

Précis: NJIT Planning and the ViSTa Model of Vision and Strategy

The Design of NJIT Strategic Planning Processes and the ViSTa Model

New Directions of Strategic Priorities, Objectives, and Metrics since 2002

An Evolved Strategic Planning Process

Communication of Strategic Planning Processes

Integration of Perspectives

Strategic Planning and Renewal

Strategic Planning and Budget Allocation

Strategic Planning, Mission, and Controls

Strategic Planning and Sustainability

Strategic Planning and Transparency

Internal Variables Impacting Strategic Planning

External Variables Impacting Strategic Planning

Critical Analysis

Summary of Conclusions

Chapter 3. Standard 3: Institutional Resources

Précis: NJIT Planning and Resource Allocation under Conditions of Scarcity

Presentation of NJIT Institutional Resources

Finance

Budget

Fiscal Planning

Internal Audit

Physical Plant

Security

Facilities Planning

Construction

Risk Management

Human Resources

Compliance

Training

Community Relations

Analysis of NJIT Institutional Resources

Human, Financial, Technological, and Facilities Challenges

Resource Allocation, Effective, and Efficient Planning for the Future

Critical Analysis

Summary of Conclusions

Chapter 4. Standard 4: Leadership and Governance

Précis: Planning for a Common NJIT Future

The NJIT Leadership and Governance Process

The Assurance of Checks and Balances

Roles of the Governing Board

Roles of Advisory Boards

Balance of Board Membership

Leadership Processes

Gender, Diversity, and Leadership

Communication Processes

Critical Analysis

Summary of Conclusions

Chapter 5. Standard 5: Administration

Précis: The NJIT Reporting Structure

The NJIT Administrative Structure

Office of the President

Academic Affairs

Research Administration

Fiscal Administration

Academic and Student Services

University Advancement

Human Resources

Strategic Planning and Administrative Needs

Administrative Functions and Enrollment Growth
Assessment of Effectiveness of Institutional Units
Administrative Structure and the Facilitation of Productivity
Critical Analysis
Summary of Conclusions

Chapter 6. Standard 6: Integrity

Précis: The NJIT Model of Integrity
NJIT Core Values: Excellence, Integrity, Student-Centeredness, Civility, and Diversity
Benchmarking the NJIT Model of Integrity
Role of the Ethics Liaison Officer
Fostering, Assessing, and Sustaining the Core Values
Fostering Diversity
Integrity and the Faculty Review Process
Integrity and Campus Culture
Integrity and the Graduated Student
Critical Analysis
Summary of Conclusions

Chapter 7. Standard 7: Institutional Assessment

Précis: NJIT Planning and The ViSTa Model of Tactics and Metrics
A University-wide, Cohesive Plan for Institutional Assessment
The ViSTa Model and Institutional Renewal
The NJIT Strategic Plan, 2004- 2010
The NJIT Strategic Plan, 2010-2015
Institutional Assessment and the Strategic Planning Process
Institutional Assessment and the Resource Allocation Process
Institutional Assessment and the NJIT Community
Critical Analysis
Summary of Conclusions

Chapter 8. Standard 8: Student Admissions and Retention

Précis: The Emerging NJIT Model of Growth and Sustainability
The NJIT Admissions Record, 2002 through 2012
Challenges of Enrollment Growth for a Science and Technology University
Barriers to Enrollment Growth
Measures of Success Prediction
Admission Patterns and Diversity
Admission Patterns and the Albert Dorman Honors College
Admissions Patterns and Student Athletes
Admissions Patterns and the Educational Opportunity Program
Admissions Patterns and Standardized Testing
Admissions Patterns and Undergraduate Remediation
Admissions Patterns and International Students
Admissions Patterns and Graduate Students
Resource Allocation and the Admissions Function

- Assessment of the Admissions Function
- Retention and Revenue Analysis
- The NJIT Retention Record, 2002 through 2012
- Time to Graduation Studies
- Benchmarks of Time to Graduation Studies
- Challenges to Retention at NJIT
- Enrollment and Retention Studies
- New Program and Retention Studies
- Identification of the At-Risk Student
- Models of Improvement: Placement Procedures
- Models of Improvement: Curriculum Reform
- Models of Improvement: Academic Advancement and Progression Guidelines
- Retention and Tuition
- Retention and Financial Aid
- Traditional Advisement Models and Retention
- Innovative Advisement Models and Retention
- Critical Analysis
- Summary of Conclusions

Chapter 9. Standard 9: Student Support Services

Précis: The NJIT Student-Centered Campus

Portrait of NJIT Support Services, 2012

- Financial Aid
- Registration
- Orientation
- Counseling
- Tutoring
- Academic Discipline
- Health
- Housing
- Student Organizations and Activities
- Cultural Programs
- Child Care
- Athletic Activities
- Assessment of Support Services
- Expansion of Support Services
- Critical Analysis
- Summary of Conclusions

Chapter 10. Standard 10: Faculty

Précis: The NJIT Mission and the University Faculty

Portrait of the NJIT Faculty, 2010

A Cohesive, Institute-wide Plan for Faculty Recruitment and Retention

Strategies for Ensuring Faculty Diversity

Strategies for Replacement of Retiring Faculty

The Role of Lecturers at NJIT

- The Role of Adjunct Instructors
- Expectations of Faculty Mission Fulfillment
- Faculty Mentoring Processes
- Equity in Recruitment of Faculty
- Equity in Resource Allocation to Faculty
- Measuring Faculty Mission Fulfillment
- The Faculty and Education
- The Faculty and Research
- The Faculty and Economic Development
- The Faculty and Service
- The Faculty and Outcomes Assessment
- The Faculty and Student-Centered Learning Technologies
- The Role of Faculty Governance
- Critical Analysis
- Summary of Conclusions

Chapter 11. Standard 11: Educational Offerings

- Précis: The NJIT Mission and the University Curriculum
 - The NJIT Mission and its Academic Programs
 - The Role of Program Accreditation at NJIT
 - The Role of Program Review at NJIT
 - The MSCHE Outcomes Assessment Process at NJIT
 - Communication with Students Regarding Academic Expectations
 - Analysis of Curriculum Improvement Processes
 - The Process for New Program Approval
- Critical Analysis
- Summary of Conclusions

Chapter 12. Standard 12: General Education

- Précis: The NJIT Mission and the General University Requirements
 - The General University Requirements and the NJIT Mission
 - GUR Changes Since 2002
 - Outcomes Assessment and the General University Requirements
 - The Future of the General University Requirements
- Critical Analysis
- Summary of Conclusions

Chapter 13. Standard 13: Related Educational Activities

- Précis: The NJIT Student-Centered Effort
 - Placement Processes for Admitted Students
 - Placement Processes for English as Second Language Students
 - The Role of E-Learning
 - The Role of Experiential Learning
 - The Role of Non-Credit Offerings
 - The Role of Graduate Certificate Programs

Inter-institutional Relationships with Two-Year Colleges
Inter-institutional Transfer Relationships
Inter-institutional Accelerated Program Relationships
The Center for Pre-College Programs
Critical Analysis
Summary of Conclusions

Chapter 14. Standard 14: Assessment of Student Learning

Précis: The NJIT Outcomes Assessment Model: A Cohesive Presence
The Office of Institutional Research and Planning and the Assessment of Student Learning
The ViSTA Model of Institutional Assessment and the Assessment of Student Learning
Towards a Cohesive Plan for the Measurement of Learning Ability
Outcomes Assessment within the NJIT Colleges
Newark College of Engineering and the Accreditation Board for Engineering and Technology
The College of Art and Design and the National Architectural Accrediting Board
The School of Management and the Association to Advance Collegiate Schools of Business
The College of Computing Sciences and the Accreditation Board for Engineering and Technology
The College of Science and Liberal Arts and *The Strategic Plan for the College of Science and Liberal Arts, 2009-2014*.
The Albert Dorman Honors College Strategic Planning Process
Innovative Outcomes Research in Student Performance
Closing the Loop in Outcomes Assessment
Critical Analysis
Summary of Conclusions

Chapter 15: Conclusions

Précis: A Realized Vision for the Technological Research University of the 21st Century
Conclusions for the 14 Standards
Goals for the *Periodic Review Report, 2017*
A Roadmap for the Future of NJIT

EDITORIAL STYLE AND FORMAT

The final report will follow the guidelines for manuscript preparation, editing, and documentation specified by the 15th edition of *The Chicago Manual of Style*. The format will follow those evidenced in the present document.

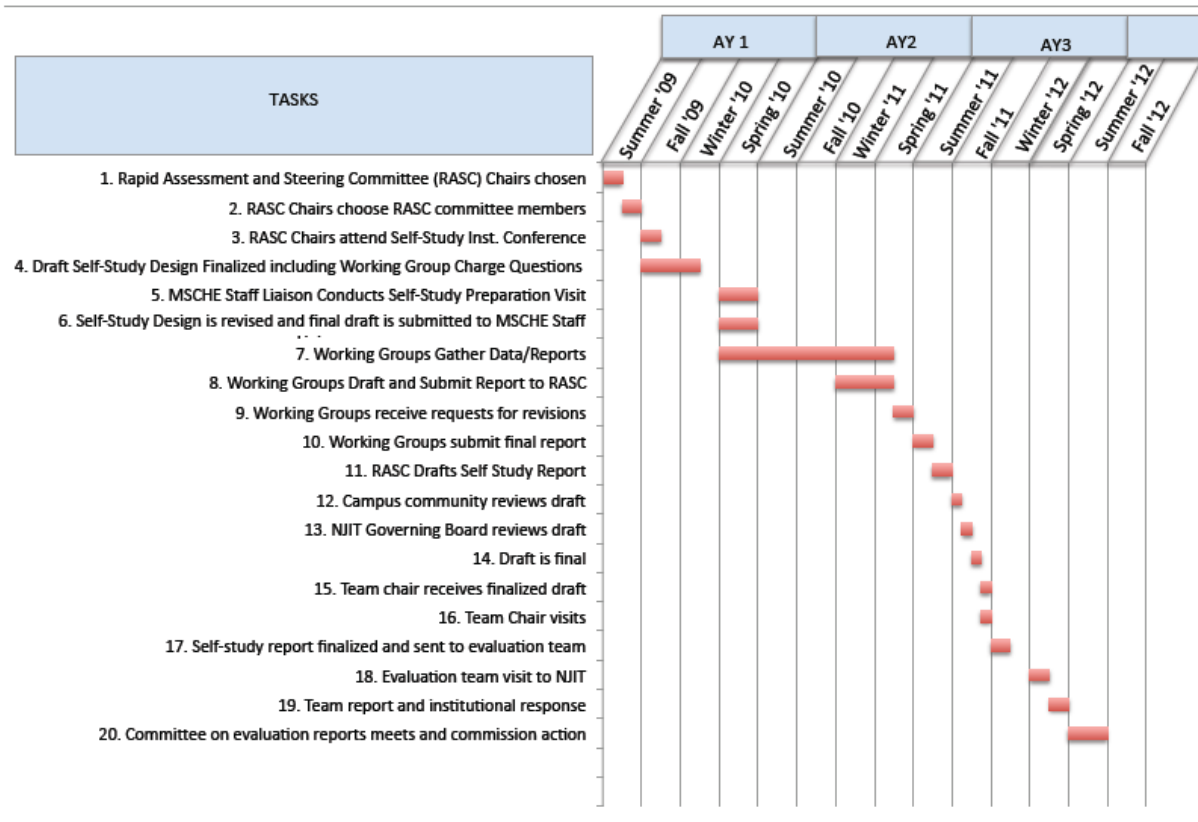
BUDGET

The steering committee has prepared a detailed three year budget to cover the costs associated with the self study process. At present, the total budget allocation is \$144,109 (AY1: \$42,088, AY2: \$38,364, and AY3: \$63,657)—a substantial re-allocation of resources from the 2002 budget of \$35,504 for the last decennial self study.

TIME LINE

The time line for the self study is shown in Figure 8.

Figure 8. NJIT Self Study Milestones



The timeline is divided into three phases: Invention—Summer 2009-Spring 2010; Arrangement—Fall 2010-Spring 2011; and Delivery—Fall 2011-Spring 2012.

As we present this self study design in April of 2010, we have been hard at work since July of 2009. We have attended both the fall self study institute hosted in Philadelphia by the Middle States Commission, and we have attended the annual conference. Our MSCHE staff liaison, Vice President Mary Ellen Petrisko, PhD, has been selected, and we have drafted a self study model, formed the steering committee and working groups, and received the benefit of review of our efforts. We have now revised and finalized our peer review of these questions with our seven working groups. Our progress is documented on our Middle States home page at NJIT.

In our arrangement stage, we will continue to address the research questions posed by the self study committee and identify documents and needed studies that will be required to answer our research questions. By the spring of 2011, our working groups will have their reports finalized and ready for review by the steering committee.

Because 2011-2012 is a very busy period, the table below identifies the final stages of our project.

Task	Start	End	Duration
Submission of self-study design to Liaison	March 9, 2010	April 6, 2010	1 month
Working groups gather data/reports	April 1, 2010	January 1, 2011	9 months
Working groups draft and submit report to RASC	January 1, 2011	April 30, 2011	3 months
Working groups receive requests for revisions	April 30, 2011	May 31, 2011	1 month
Working groups submit final report	June 1, 2011	July 1, 2011	1 month
RASC drafts self study report	July 1, 2011	August 31, 2011	2 months
Campus community reviews draft	September 1, 2011	September 30 2011	1 month
NJIT governing board reviews draft	October 1, 2011	October 31, 2011	1 month
Draft is final	October 31, 2011	November 8, 2011	1 week
Team chair receives finalized draft	November 8, 2011	November 11, 2011	3 days
Team chair visits	November 11, 2011	Week of December 12, 2011	1 month open
Self-study report finalized and sent to evaluation team	Week of December 12, 2011	February 10, 2012	2 months
Evaluation team visit to NJIT	March 1, 2012	Week of April 9, 2012	1 month open

Because ours is a document-based approach to MSCHE review, by the third year, we will concentrate in the fall of 2011 on completing a near-final draft of our self study report and seeking review from the visiting team chair. During that fall, our appointed team chair will visit our campus and meet with our NJIT community; during the spring, we will host the visiting team. That will be a time of celebration for us as we present the results of the work of three years from a wide spectrum of NJIT shareholders.

In essence, we see the self study process timeline as an opportunity for institution-wide review of the documents we will produce. As committees meet and text is produced, we are certain that we will gain an enhanced sense of community. Together, the self study will allow us a unique opportunity to document our institutional effectiveness and to plan a common future within the NJIT community.

REQUESTED PROFILE OF THE VISITING TEAM

NJIT would like to have a Visiting Team with the following expertise: administrators knowledgeable in the area of public science and technological institutions; researchers dedicated to innovative forms of instruction; outcomes assessment specialists interested in traditional and innovative methods; student services professionals committed to diversity and retention; specialists in urban university planning; and a representative from a large state university with a mission encompassing science, technology, and athletics.

CONCLUDING STATEMENT

As we submit our self-study design, we are increasingly aware that we must make decisions in a period of contingency. We are dedicated to planned enrollment growth as we prepare to admit a first year 2010 undergraduate class larger than the 923 students we admitted in the fall of 2009. At the present writing, we have just admitted a total headcount of 8,840 students; by the time the visiting team arrives, we plan to admit 10,200 students.

Planning for the assurance of an excellent institutional context and superior educational effectiveness is paramount to the NJIT mission. We therefore welcome the self study process as a time of reflection, analysis, and planning—undertaken within the context of MSCHE accreditation.