Institutional Profile Report
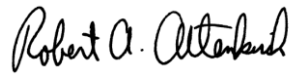## *2009*

Prepared by the Office of Institutional Research and Planning
New Jersey Institute of Technology

September 2009

A. Statement of Accuracy and Completeness

The information contained in this report is, to the best of my knowledge, complete and accurate.

Robert A. Altenkirch

President

B. Table of Contents

I. Introduction

NJIT enrolled 8398 students in Fall 2008. NJIT also awarded 1,968 degrees including baccalaureate through doctorate in the 2008-2009 academic year in an array of engineering and technology disciplines, computer and information science, architecture, management, applied sciences, mathematics and biotechnology. The university offers Ph.D. programs in nineteen professional areas, master's programs in fifty five specialties, and forty five baccalaureate degree programs; conducts research with important commercial and public policy applications; and performs a broad spectrum of economic development and public service activities. NJIT has one of the most computing-intensive campuses in America. NJIT also contributes significantly to New Jersey's economy and economic development. NJIT's students have provided 70,000 hours of community service over the past five years, and the university serves more than 5,000 elementary and secondary school students and teachers annually through an array of pre-college programs.

NJIT was founded in 1881 as the Newark Technical School. Today, the university has six schools and colleges: Newark College of Engineering (1919), the College of Architecture and Design (1973), the College of Science and Liberal Arts (1982), the School of Management (1988), the Albert Dorman Honors College (1993), and the College of Computing Sciences (2001). From the beginning, NJIT has provided government, industry, and the larger community with a technologically educated workforce. Today's emphasis on graduate studies and research builds upon the fine undergraduate programs that have distinguished the institution since its earliest days. Currently, about one-third of NJIT's students are enrolled in master's and doctoral programs.

NJIT's evolution as a significant research university has been achieved through an aggressive faculty recruitment plan matched by an extensive building effort that doubled the size of the main campus over the past decade and added major research facilities for environmental engineering and science, advanced manufacturing, and microelectronics. Annual research expenditures are now more than $92 million. The strong applications orientation of the university's research program has allowed NJIT to respond to state, federal, and industrial initiatives, to help address pressing public policy issues, and stimulate economic growth. Research activities, often carried out by interdisciplinary teams of investigators, are focused especially on manufacturing systems, infrastructure, information technologies, environmental engineering and science, architecture and building science, and management. Major funding for instructional and research programs is obtained from leading corporations, foundations and government agencies including the National Science Foundation, the United States Department of Defense, the U.S. Environmental Protection Agency, the U.S. Department of Transportation, the New Jersey Commission on Science and Technology, the New Jersey Department of Environmental Protection and many others.

NJIT's 48 acre, computing-intensive, residential campus is located in the University Heights section of Newark, less than 10 miles from New York City and Newark

International Airport. It is easily reached by interstate highways and public transportation. Graduate, undergraduate, and continuing education classes are offered at the main campus, at extension sites at colleges and other locations throughout New Jersey and increasingly through a variety of electronically mediated distance learning formats.

I.A. NJIT Mission Statement

NJIT is the ***state's technological research university***, committed to the ***pursuit of excellence***

- in undergraduate, graduate, and continuing professional ***education***, preparing students for productive careers and amplifying their potential for lifelong personal and professional growth;

- in the conduct of ***research*** with emphasis on applied, interdisciplinary efforts encompassing architecture, the sciences, including the health sciences, engineering, mathematics, transportation and infrastructure systems, information and communications technologies;

- in contributing to ***economic development*** through the state's largest business incubator system, workforce development, joint ventures with government and the business community, and through the development of intellectual property;

- in ***service*** to both its urban environment and the broader society of the state and nation by conducting public policy studies, making educational opportunities widely available, and initiating community-building projects.

NJIT ***prepares its graduates*** for positions of leadership as professionals and as citizens; ***provides educational opportunities*** for a broadly diverse student body; ***responds to needs*** of large and small businesses, state and local governmental agencies, and civic organizations; ***partners with educational institutions*** at all levels to accomplish its mission; and ***advances the uses of technology*** as a means of improving the quality of life.

As defined in The Statewide Plan for Higher Education (1981), the programmatic mission of NJIT is:

> ... to provide undergraduate and graduate education in architecture, engineering, engineering technology, applied sciences, management, and related professional fields, and doctoral education specifically, in engineering, the sciences, mathematics, management and related areas. The programs in architecture should be offered solely by NJIT in the public sector. In addition, the university should offer the opportunity for practitioners in the industrial community to pursue part-time evening degree programs from the baccalaureate through the master's to the doctoral degree. It should also play a leadership role in continuing professional education, providing courses ranging from state-of-the-art offerings in new fields to more formal certification programs for state or municipal licensure. NJIT's research programs, as well as its public service activities, should be primarily, but not exclusively, applications oriented.

I.B. Undergraduate Recruitment and Admissions Policies

As a public institution, NJIT strives to achieve three complementary and mutually reinforcing goals through its undergraduate recruitment and admissions policies:

- To attract highly talented students who are fully prepared for the university's rigorous curricular demands and can satisfy the highest academic standards;

- To enroll students from population groups that are under-represented in the professions, while providing the extra academic support they may need; and

- To recruit and admit students who will successfully complete one of NJIT's curricula in numbers large enough to make a substantial contribution toward meeting state and national demands for technological and managerial professionals.

These three goals are complementary and mutually reinforcing. They clearly reflect the responsibilities of a public institution with a public mission. And they are consistent with NJIT's long-range vision of joining the ranks of the nation's leading technological research universities.

There are four avenues to undergraduate admission:

- Admission to the Albert Dorman Honors College
- Regular admission
- Admission to the Educational Opportunity Program (EOP)
- Admission as a transfer student from another college or university

NJIT uses multiple methods to determine an applicant's admissibility. No single measure is sufficient to predict success. Therefore, all of the following are considered: high school transcripts and rank-in-class data; college or university transcripts where applicable; recommendations; SAT scores; interviews of candidates seeking admission to the Honors College or admission through the Educational Opportunity Program; and portfolios for candidates seeking admission to the College of Architecture and Design.

The *Albert Dorman Honors College* program is designed to attract exceedingly able and highly motivated students to NJIT, to provide a rich and challenging educational experience, and to prepare them for positions of leadership. Some NJIT courses are open only to honors students, but most include both honors and non-honors students; by participating in classes and laboratories with others, the honors students raise the level of discourse in all of NJIT's curricula. The SAT profile of the honors students (required minimum composite score of 1250) falls within the range that many people believe is not served by New Jersey's institutions. Enrollment in the *Albert Dorman Honors College* increased from 209 scholars in Fall 1993 to 646 in Fall 2008. The university's plans call for further significant expansion of the Honors College.

NJIT also has outstanding *Educational Opportunity Program* (EOP) with an enrollment of 624 undergraduates in Fall 2008. It is a program of extraordinary importance to the state and nation because the people it typically serves are under-represented in the fields which NJIT prepares students to enter, and successful completion of an NJIT degree program generally leads to a productive career. The success of EOP graduates over a quarter century is further proof that multiple criteria should be used in determining who can benefit from the higher education experience. It should also be noted that the state, through its Educational Opportunity Fund, has by regulation required institutions to admit educationally and economically disadvantaged students in numbers equal to at least ten percent of the New Jersey high school graduates in each entering class. Because of NJIT's specialized mission and sense of commitment, NJIT has historically exceeded this percentage. NJIT firmly believes holding open this door to opportunity is one of the strengths of our state system of higher education.

NJIT is proud of the results achieved with its undergraduate recruitment and admissions policies. *Diversity* is a hallmark of the campus community. As the state's public technological research university, NJIT admits individuals who want to study in the fields it offers, regardless of personal background or family finances. NJIT selects those who indicate a strong desire to succeed. For those who do succeed, the experience is life transforming. We believe this is what a public university should be about in a democratic society.

I.C. Vision Statement

A preeminent technological research university known for innovation, entrepreneurship, and engagement.

Core Values

Our core values reflect our beliefs, guide our behavior, shape our culture, and in so doing establish a sense of community and common purpose.

- Excellence: We pursue excellence in all that we do and will be satisfied with nothing less than meeting and sustaining the highest standards of performance.

- Integrity: We are honest and ethical in all we do, keep our promises, and acknowledge our mistakes.

- Student-Centered: We care for our students as individuals and make every effort to build enduring relationships by responding to their needs.

- Civility: We treat each other with respect and with dignity and communicate frequently and with candor.

- Diversity: We celebrate the diversity of our university community and are sensitive to cultural and personal differences. We do not tolerate discrimination of any form.

Value Proposition

NJIT provides accessible, affordable education for the technological professions to a diverse student body, delivers practical research results to its sponsors, and is an active participant in the life of the community in which it lives.

Goals

NJIT's goals are to 1) enhance our educational programs, 2) enhance and focus our research efforts, 3) strengthen our sense of community, 4) enhance our revenue base, 5) impact the economy, and 6) strengthen our efforts in civic engagement.

Strategic Priorities

-- Enhance and enrich the quality of life of the university community and ensure a focus on the student.

- Develop and implement a landscaping/campus appearance enhancement plan, including improvement of the interior condition of buildings, by 2005 followed by completion of a facilities and infrastructure master plan by 2006.

- Systematically reengineer administrative and academic processes to improve customer and student satisfaction over the next five years.

- Move the men's soccer program to NCAA Division I status by spring 2005 as an integral part of the move of the university's intercollegiate athletics program from NCAA Division II to Division I.

- Implement high-profile, intellectually stimulating on-campus events by 2005.

-- Increase revenue from private sources.

- Increase the percentage of alumni donors from 16% to 21%.

- Increase unrestricted gift revenue from private sources, exclusive of gifts-in-kind, by 5% annually for the next three years.

- Successfully launch and complete two focused capital campaigns within the next three years.

- Launch the quiet phase of a comprehensive capital campaign in three years.

-- Develop a core of nationally recognized programs.

- Build three programs to national prominence by 2008.

- Strengthen by 2005 three niche areas with high potential for NJIT and the State of New Jersey.

- Develop and implement a marketing program by 2005 that impacts constituents and local, regional, and national media.

-- Improve national rankings in research and intellectual property development.

- Double externally sponsored research and development expenditures over the next 5 years.

- Increase number of faculty recognition awards to at least the average of a select set of benchmark peer institutions within five years.

- Increase the number of licenses from university held intellectual property to at least the average of a select set of benchmark peer institutions within five years.

- Reach and maintain a three-year average of 60 Ph.D. graduates per year in 15 disciplines within five years.

-- *Become nationally recognized for attracting high achieving students from diverse national and international populations.*

- Increase enrollment by fall of 2008:

  - in the Dorman Honors College to 1 of 5 freshmen

  - of newly admitted undergraduate students, excluding undeclared, to
    - 25% women, and
    - 15% African-American, and
    - 15% Hispanic.

- Increase the graduation rate of first-time, full-time freshmen (FTFTF) to 55% by fall 2010.

- For an incoming freshman class of at least 750 students, Increase the mean SAT score by 20 points by 2005.

Note: NJIT's Goals and Strategic Priorities are currently under revision for the next five year strategic planning cycle. These changes have not been finalized. The text reflects the 2004-2010 plan.

II. Data for 2008-2009 by Category

II.A. Accreditation Status

II.A.1. Institutional Accreditation

- The Middle States Association of Colleges and Schools (2002)
    - Additional Middle States accredited site in Beijing, China

II.A.2. Professional Accreditation

- American Assembly of the Collegiate Schools of Business (AACSB)
- Computer Accreditation Commission of the Accreditation Board for Engineering and Technology (CAC/ABET)
- Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET)
- National Architecture Accrediting Board (NAAB)

II.B. Number of Students Served

II.B.1. Number of Undergraduates by Attendance Status

NJIT
Table II.B.1:
Undergraduate Enrollment by Attendance Status, Fall 2008

Full-time		Part-time		Total
Num	**Pct**	**Num**	**Pct**	
4,375	78.5%	1,201	21.5%	5,576

II.B.2. Number of Graduates and First-professionals by Attendance Status

NJIT
Table II.B.2:
Graduate Enrollment by Attendance Status, Fall 2008

Full-time		Part-time		Total
Num	**Pct**	**Num**	**Pct**	
1,510	53.5%	1,312	46.5%	2,822

II.B.3. Number of Non-credit Students Served

NJIT
Table II.B.3:
Non-Credit Enrollment by Attendance Status, Fall 2008

Full-time		Part-time		Total
Num	**Pct**	**Num**	**Pct**	
41	8.4%	446	91.6%	487

II.B.4. Unduplicated Number of Students for Entire Academic Year

NJIT
Table II.B.4:
Unduplicated Enrollment, FY 2008

	Headcount Enrollment	Credit Hours	FTE
Undergraduate	6,056	145,923	4,864
Graduate	3,430	43,845	1,827
TOTAL	9,486	189,768	6,691

II.C. Characteristics of Undergraduate Students

II.C.1. Mean Math, reading and writing SAT Scores

NJIT
Table II.C.1:
Mean Math, Reading and Writing SAT for First-Time Freshmen,
by Admission Status and Overall, Fall 2008

	Full-Time Students						**Part-Time Students**					
	Math	**N**	**Reading**	**N**	**Writing**	**N**	**Math**	**N**	**Reading**	**N**	**Writing**	**N**
Regular Admits	609.6	663	544.1	663	536.4	660	497.7	99	426.4	99	428.8	99
EOF Admits	564.8	103	499.1	103	491.0	103	465.4	28	422.5	28	433.7	27
Special Admits												
All Admits	603.6	766	538.1	766	530.3	763	490.6	127	425.5	127	429.8	126
Missing Scores		13		13		16		1		1		2

II.C.2. Enrollment in Remediation Courses by Subject Area

NJIT

IIC.2   ENROLLMENT IN REMEDIATION COURSES

Total Number of Undergraduate Students Enrolled in Fall 2008

Total Fall 2008 Undergraduate Enrollment	Number of Students Enrolled in One or More Remedial Courses	% of Total
5,576	224	4.0%

Total number of First-time, Full-time (FTFT) students enrolled in remediation in fall 2008

Total Number of FTFT Students	Number of FTFT Students Enrolled in One or More Remedial Courses	Percent of FTFT Enrolled in One or More Remedial Course
779	138	17.7%

First-time, Full-time students (FTFT) enrolled in remediation in fall 2008 by subject area

Subject Area	Number of FTFT Enrolled In:	Percent of all FTFT Enrolled In:
Computation	0	0.0%
Algebra	132	16.9%
Reading	0	0.0%
Writing	0	0.0%
English	6	0.8%

II.C.3 Race/ Ethnicity, Gender, and Age

II.C.3.a. By Race/ Ethnicity

NJIT
Table II.C.3.a
Undergraduate Enrollment by Race/Ethnicity, Fall 2008

	White		Black		Hispanic		Asian		American Ind.		Alien		Race Unknown		Total	
	Num	**Pct**	**Num**	**Pct**	**Num**	**Pct**	**Num**	**Pct**	**Num**	**Pct**	**Num**	**Pct**	**Num**	**Pct**	**Num**	**Pct**
Full-time	1,542	35.2%	422	9.6%	821	18.8%	953	21.8%	33	0.8%	238	5.4%	366	8.4%	4,375	100.0%
Part-time	386	32.1%	135	11.2%	224	18.7%	169	14.1%	12	1.0%	24	2.0%	251	20.9%	1,201	100.0%
Total	1,928	34.6%	557	10.0%	1,045	18.7%	1,122	20.1%	45	0.8%	262	4.7%	617	11.1%	5,576	100.0%

II.C.3.b. By Gender

Table II.C.3.b
Undergraduate Enrollment by Sex, Fall 2008

		Full-time					**Part-time**					**Total**		
Male	**Pct**	**Female**	**Pct**	**Total**	**Male**	**Pct**	**Female**	**Pct**	**Total**	**Male**	**Pct**	**Female**	**Pct**	**Total**
3,490	79.8%	885	20.2%	4,375	945	78.7%	256	21.3%	1,201	4,435	79.5%	1,141	20.5%	5,576

II.C.3.c. By Age

Table II.C.3.c
Undergraduate Enrollment by Age, Fall 2008

		LT 18	**18-19**	**20-21**	**22-24**	**25-29**	**30-34**	**35-39**	**40-49**	**50-64**	**65+**	**Unknown**	**Total**
Full-time	Num	22	1,334	1,425	1,136	328	70	28	26	5	0	1	4,375
	Pct	0.5%	30.5%	32.6%	26.0%	7.5%	1.6%	0.6%	0.6%	0.1%	0.0%	0.0%	100%
Part-time	Num	69	189	105	214	247	138	81	100	25	0	33	1,201
	Pct	5.7%	15.7%	8.7%	17.8%	20.6%	11.5%	6.7%	8.3%	2.1%	0.0%	2.7%	100%
Total	Num	91	1,523	1,530	1,350	575	208	109	126	30	0	34	5,576
	Pct	1.6%	27.3%	27.4%	24.2%	10.3%	3.7%	2.0%	2.3%	0.5%	0.0%	0.6%	100%

II.C.4. Numbers of Students Receiving Financial Assistance under Each State-funded Aid Program: Need-based and Merit-based, Grants and Loans

NJIT
Table II.C.4:
Financial Aid from State, Federal & Institution-Funded Programs, FY 2008

	Recipients	Awards	Dollars($)	$/Recipient	$/Award
State Programs					
TAG	1,398	2,515	8,339,356	5,965.20	3,315.85
EOF	395	742	459,525	1,163.35	619.31
Bloustein Scholars	143	277	128,805	900.73	465.00
Urban Scholars	87	167	77,655	892.59	465.00
NJCLASS Loans		555	5,028,481		9,060.33
NJ Stars II	11		33,088	3,008.00	
OSRP	70		176,834	2,526.20	

Federal Programs					
Pell Grants	1,503		4,446,000	2,958.08	
College Work Study	296		374,000	1,263.51	
Perkins Loans	460		414,000	900.00	
SEOG	595		307,000	515.97	
Stafford Loans (Subsidized)	1,839		7,432,000	4,041.33	
Stafford Loans (Unsubsidized)	850		3,302,000	3,884.71	
PLUS Loans	103		1,143,000	11,097.09	

Institutional Programs					
Grants/Scholarships	1,656		11,722,000	7,078.50	
Loans	0		0		

II.C.5. Percentage of Students Who are New Jersey Residents

NJIT
Table II.C.5
Total First-time Undergraduates, Fall 08
by State
Residence

State Residents	Non-State Residents		Total	% State Residents
714	65		779	91.7%

II.D. Degrees Conferred/ Characteristics of graduates

II.D.1. By Race/Ethnicity and Gender

II.D.1.a. By Race/ Ethnicity

NJIT
Table II.D.1.a:
Degrees Conferred by Race/Ethnicity, FY 2008 *

	White		Black		Hispanic		Asian		American Ind.		Alien		Race Unknown		Total	
	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct
Baccalaureate	325	35.1%	97	10.5%	116	12.5%	199	21.5%	3	0.3%	70	7.6%	117	12.6%	927	100.0%
Masters	162	16.5%	56	5.7%	52	5.3%	123	12.5%	1	0.1%	531	54.0%	58	5.9%	983	100.0%
Doctoral	5	8.6%	1	1.7%	0	0.0%	4	6.9%	0	0.0%	42	72.4%	6	10.3%	58	100.0%
Total	492	25.0%	154	7.8%	168	8.5%	326	16.6%	4	0.2%	643	32.7%	181	9.2%	1,968	100.0%

*Note: baccalaureate degrees and post-baccalaureate certificates have been combined as per NJ Commission on Higher Education requirements.

II.D.1.b. By Gender

Table II.D.1.b:
Degrees Conferred by Sex, FY 2008 *

	Men		Women		Total	
	Num	Pct	Num	Pct	Num	Pct
Baccalaureate	724	78.1%	203	21.9%	927	100.0%
Masters	696	70.8%	287	29.2%	983	100.0%
Doctoral	41	70.7%	17	29.3%	58	100.0%
Total	1,461	74.2%	507	25.8%	1,968	100.0%

*Note: baccalaureate degrees and post-baccalaureate certificates have been combined as per NJ Commission on Higher Education requirements.

II.D.2. By General Field

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Table II.D.2:
Degrees Conferred by General Field, FY 2008*

IPEDS CIP Code Major Category		Certificate	Associate	Bachelor	Master	Doctor	1st Pro	Total
03	Agriculture	0	0	3	10	3	0	16
04	Architecture	0	0	97	38	0	0	135
11	Computer Science	0	0	163	309	17	0	489
14	Engineering	0	0	388	403	23	0	814
15	Engineering Related Technology	0	0	128	51	0	0	179
23	English/Letters	0	0	8	18	0	0	26
26	Biological & Biomedical Sciences	0	0	23	6	2	0	31
27	Mathematics	0	0	21	27	4	0	52
30	Multi/Interdisciplinary Studies	0	0	2	0	0	0	2
40	Physical Sciences	0	0	6	6	8	0	20
44	Public Adminstration	0	0	0	6	1	0	7
52	Business/Management	0	0	84	109	0	0	193
54	History	0	0	4	0	0	0	4
	Total	0	0	927	983	58	0	1,968

*Note: baccalaureate degrees and post-baccalaureate certificates have been combined as per NJ Commission on Higher Education requirements.

II.E. Student Outcomes

II.E.1. Graduation Rates by Race/ Ethnicity and Income

II.E.1.a. Four-, Five-, and Six-year Graduation Rate

II.E.1.a.i. By Race/ Ethnicity

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Table II.E.1.a

Four-, Five- and Six-Year Graduation Rates of Fall 2002 Full-time First-time Freshmen by Race/Ethnicity

	White		Black		Hispanic		Asian		Alien		Other *		Total	
	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct
Fall 2002 Cohort	251		61		78		150		23		100		663	
Graduates after 4 Years	36	14.3%	1	1.6%	12	15.4%	32	21.3%	6	26.1%	19	19.0%	106	16.0%
Graduates after 5 Years	112	44.6%	15	24.6%	30	38.5%	81	54.0%	9	39.1%	51	51.0%	298	44.9%
Graduates after 6 Years	130	51.8%	25	41.0%	44	56.4%	96	64.0%	10	43.5%	60	60.0%	365	55.1%

* Other includes American Indian and Unknown Race.

II.E.1.a.ii. By Income

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Table II.E.1.b

Four-, Five- and Six-Year Graduation Rates of Fall 2002 Full-time First-time Freshmen by Income

	Low Income *		Non-Low Income		Unknown		Total	
	Num	Pct	Num	Pct	Num	Pct	Num	Pct
Fall 2002 Cohort	125		392		146		663	
Graduates after 4 Years	17	13.6%	59	15.1%	30	20.5%	106	16.0%
Graduates after 5 Years	49	39.2%	184	46.9%	65	44.5%	298	44.9%
Graduates after 6 Years	67	53.6%	219	55.9%	79	54.1%	365	55.1%

* Low Income is defined as student with a NJ Eligibility Index between 1 and 2,499.

II.E.2. Third Semester Retention Rates

II.E.2.a. By Race/ Ethnicity

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Table II.E.2.a

Third Semester Retention of Full-time First-time Freshmen by Race/Ethnicity, Fall 2007 to Fall 2008

	White		Black		Hispanic		Asian		American Ind.		Alien		Race Unknown		Total	
	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct	Num	Pct
Retained	239	79.4%	55	79.7%	106	82.2%	137	87.8%	9	90.0%	31	83.8%	26	86.7%	603	82.4%
Not Retained	62	20.6%	14	20.3%	23	17.8%	19	12.2%	1	10.0%	6	16.2%	4	13.3%	129	17.6%
Total	301	100.0%	69	100.0%	129	100.0%	156	100.0%	10	100.0%	37	100.0%	30	100.0%	732	100.0%

II.E.2.b. For Low-Income Students

NJIT
Table II.E.2.b
Third Semester Retention of Full-time First-time Freshmen by Income, Fall 2007 to Fall 2008

	Low Income *		Non-Low Inc.		Unknown		Total	
	Num	**Pct**	**Num**	**Pct**	**Num**	**Pct**	**Num**	**Pct**
Retained	85	80.2%	381	84.1%	137	79.2%	603	82.4%
Not Retained	21	19.8%	72	15.9%	36	20.8%	129	17.6%
Total	106	100.0%	453	100.0%	173	100.0%	732	100.0%

* Low Income is defined as student with a NJ Eligibility Index between 1 and 2,499.

II.E.3. Transfers

II.E.3.a. Percentage of Entering Students who are Transfers

NJIT
Table II.E.3:
Entering Undergraduates by Admission Status
and Attendance Status, Fall 2008

	New Transfer		First-time		Total	
	Num	**Pct**	**Num**	**Pct**	**Num**	**Pct**
Full-time	361	31.1%	799	68.9%	1,160	100.0%
Part-time	94	19.9%	378	80.1%	472	100.0%
Total	455	27.9%	1,177	72.1%	1,632	100.0%

II.F. Faculty Characteristics
II.F.1. Full-time Faculty by Race/Ethnicity, Gender, and Tenure Status

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Table II.F.1:

Full-Time Faculty by Race/Ethnicity, Sex, Tenure Status and Academic Rank, Fall 2008

	White		Black		Hispanic		Asian		American Ind.		Alien		Race Unknown		Total	
	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom	Men	Wom
Tenured																
Professors	80	13	3	0	1	0	28	0	1	0	6	0	5	1	124	14
Associate Prof.	40	9	4	3	2	1	9	3	0	0	7	0	5	1	67	17
Assistant Prof.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
All Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	121	22	7	3	3	1	37	3	1	0	13	0	10	2	192	31
Without Tenure																
Professors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Associate Prof.	5	1	0	0	0	0	2	0	0	0	0	0	0	0	7	1
Assistant Prof.	20	4	0	0	1	1	12	4	0	0	1	0	5	0	39	9
All Others	67	22	2	0	3	1	21	8	0	0	3	1	19	2	115	34
TOTAL	92	27	2	0	4	2	35	12	0	0	4	1	24	2	161	44
Total																
Professors	80	13	3	0	1	0	28	0	1	0	6	0	5	1	124	14
Associate Prof.	45	10	4	3	2	1	11	3	0	0	7	0	5	1	74	18
Assistant Prof.	21	4	0	0	1	1	12	4	0	0	1	0	5	0	40	9
All Others	67	22	2	0	3	1	21	8	0	0	3	1	19	2	115	34
TOTAL	213	49	9	3	7	3	72	15	1	0	17	1	34	4	353	75

II.F.2. Percentage of Course Sections Taught by Full-time Faculty

Fall 2008

Total Number of Course Sections	Taught by Full-time Faculty		Taught by Part-time Faculty		Taught by Others*	
	Number	Percent	Number	Percent	Number	Percent
1193	740	62.0%	319	27%	134	11%

Note: Others includes Full-time Administrators and Teaching Assistants

II.F.3. Ratio of Full-time to Part-time Faculty

NJIT
Table II.F.3:
Ratio of Full- to Part-time Faculty by Headcount, Fall 2008

Full-time		Part-time		Total	
Num	Pct	Num	Pct	Num	Pct
428	67.3%	208	32.7%	636	100.0%

II.G. Characteristics of the Trustees or Governors

II.G.1. Race/ Ethnicity and Gender

Board of Trustees by Gender and Ethnicity						
	B	AI/AN	A/PI	H	W	Total
Male	0	0	1	0	7	8
Female	0	0	0	1	3	4
Total	0	0	1	1	10	12

B   : Black/African American, Non-Hispanic   H : Hispanic
AI/AN : American Indian/Alaskan Native   W : White, Non-Hispanic
A/PI   : Asian/Pacific Islander   U : Unknown
NRA   : Non-Resident Alien

II.G.2. List of Trustees/ Governors with Titles and Affiliations

- Hon. John Corzine, Ex-Officio, Non-Voting, Governor of the State of New Jersey
- Hon. Corey Booker, Ex-Officio, Non-Voting, Mayor of the City of Newark
- Kathleen Wielkopolski, Chair, Formerly of The Gale Company
- Stephen P. DePalma, PE '72, Vice-Chair, Chairman & CEO, Schoor DePalma Inc.
- Philip K. Beachem, President, New Jersey Alliance for Action
- Dennis M. Bone, President, Verizon New Jersey, Inc.
- Peter A. Cistaro, '68, Vice President - Distribution, Public Service Electric and Gas Company
- Vincent L. DeCaprio, Ph.D. '72, President, Vyteris
- Elizabeth Garcia, Manager, Public Affairs, Infineum USA, L.P.
- Anthony J. Knapp Jr., Proprietor, Black Horse Restaurant Group
- Diane Montalto, Senior Director Corporate Engineering, Par Pharmaceutical Incorporated
- Mariel O'Brien, Astronomy & Physics Educator, Newark Museum
- Binay Sugla, Ph.D. Chairman & CEO, Mobile Matrix, Inc.
- Derish M. Wolff, Chairman, Berger Group Holdings, Inc.

II.G.3. URLs of WebPages with Information on Trustees/ Governors

- http://www.njit.edu/about/boards/trustees/members.php

II.H. Profile of the Institution

II.H.1. Degree Programs

NJIT currently offers 119 degree programs (45 bachelors degree programs, 55 masters programs, and 19 doctoral programs):

Bachelors Degrees (45 programs, CIP Code listed after program name)

Applied Mathematics[1] (B.A.) 270301	Computational Sciences (B.S.) 261103
Biology[1] (B.A.) 260101	Computer Engineering (B.S.) 140901
Communication (B.A.) 231101	Computer Science (B.S.) 110101
Computer Science[1] (B.A.) 110101	Computing and Business (B.S.) 110199
Digital Design (B.A.) 100304	Electrical Engineering (B.S.) 141001
History[1] (B.A.) 540101	Engineering Science (B.S.) 141301
Information Systems[1] (B.A.) 110401	Engineering Technology (B.S.) 150000
Interior Design (B.A.) 500408	Enterprise Development (B.S.) 529999
Law/Technology and Culture (B.A.) 229999	Environmental Engineering (B.S.) 141401
Science/Technology & Society[1] (B.A.) 301501	Environmental Sciences[1] (B.S.) 030104
Architecture (B.Arch.) 040201	Geoscience Engineering[1] (B.S.) 143901
Fine Arts (B.F.A.) 500701	Human Computer Interaction[1] (B.S.) 110401
Applied Physics[1] (B.S.) 400801	Industrial Design (B.S.) 049999
Architecture (B.S.) 040201	Industrial Engineering (B.S.) 143501
Bioinformatics (B.S.) 261103	Industrial Engineering[1] [Dual B.A. In Physics] (B.S.) 143501
Biology[1] (B.S.) 260101	Information Technology (B.S.) 110103
Biomedical Engineering (B.S.) 140501	International Business (B.S.) 521101
Business (B.S.) 520201	Manufacturing Engineering (B.S.) 143601
Business & Information Systems (B.S.) 110401	Mathematical Sciences (B.S.) 270101
Chemical Engineering (B.S.) 140701	Mechanical Engineering (B.S.) 141901
Chemistry (B.S.) 400501	Science/Technology & Society (B.S.) 301501
Civil Engineering (B.S.) 140801	Web and Information Systems (B.S.) 110401
Communication (B.S.) 231101	

There is now a Mathematical Sciences B.S. that will replace the Applied Mathematics B.S. and the Statistics and Actuarial Science B.S. No new students will be admitted to either the Applied Mathematics B.S. or the Statistics and Actuarial Science B.S; they will both be phased out as students currently in the programs complete.

There are 4 options within Engineering Science (B.S.):
- Materials Science and Engineering
- Pre-medical
- Pre-dental
- Pre-optometry

There are 9 options within Engineering Technology (B.E.T.):
- Computer Technology (not ABET accredited)
- Concrete Industry Management Technology (not ABET accredited)
- Construction Engineering Technology
- Construction Management Technology (not ABET accredited)
- Electrical and Computer Engineering Technology
- Manufacturing Engineering Technology (not ABET accredited)
- Mechanical Engineering Technology
- Surveying Engineering Technology
- Telecommunications Management Technology (not ABET accredited)

There are 4 options within Management (B.S.):
- E-Commerce
- Finance
- Marketing
- Management Information Systems

There are 23 undergraduate minors offered (12-18 credits required for a minor):

Applied Mathematics	History
Applied Physics	Industrial Engineering
Applied Statistics	Information Systems
Biology	Leadership and Aerospace Studies (AFROTC only)
Chemistry	Legal Studies
Communication	Literature
Computer Engineering	Management
Computer Science	Materials Engineering
Drama/Theatre	Philosophy/Applied Ethics
Economics	Science, Technology and Society
Environmental Engineering	Technology, Gender & Diversity
Global Studies	

Masters Degrees (55 programs, CIP Code listed after program name)

History[1] (M.A.) 540101	Enterprise Development (M.S.) 529999
History[1] (M.A.T.) 540101	Environmental Engineering (M.S.) 141401
Architecture (M.Arch.) 040201	Environmental Policy Studies (M.S.) 440501
Management of Technology (M.B.A.) 520299	Environmental Science[1] (M.S.) 030104
Infrastructure Planning (M.I.P.) 040301	Healthcare Systems Management (M.S.) 510702
Public Health[3] (M.P.H.) 512201	Industrial Engineering (M.S.) 143501
Applied Mathematics (M.S.) 270301	Information Systems (M.S.) 110401
Applied Physics[1] (M.S.) 400801	Interdisciplinary Studies (M.S.) 309999
Applied Science (M.S.) 409999	International Business (M.S.) 521101
Applied Statistics (M.S.) 270501	Internet Engineering (M.S.) 110901
Bioelectronics (M.S.) 140501	IT Administration and Security (M.S.) 110103
Bioinformatics (M.S.) 261103	Management (M.S.) 520201
Biology[1] (M.S.) 260101	Manufacturing Systems Engineering (M.S.) 143601
Biomedical Engineering (M.S.) 140501	Materials Science & Engineering (M.S.) 141801
Biostatistics (M.S.) 261102	Mechanical Engineering (M.S.) 141901
Business and Information Systems (M.S.) 110401	Occupational Safety & Health Engineering (M.S.) 142701
Chemical Engineering (M.S.) 140701	Occupational Safety & Industrial Hygiene (M.S.) 150701
Chemistry (M.S.) 400501	Pharmaceutical Bioprocessing (M.S.) 140301
Civil Engineering (M.S.) 140801	Pharmaceutical Chemistry (M.S.) 512004
Computational Biology[1] (M.S.) 261103	Pharmaceutical Engineering (M.S.) 140701
Computer Engineering (M.S.) 140901	Pharmaceutical Systems Management (M.S.) 142701
Computer Science (M.S.) 110101	Power & Energy Systems (M.S.) 141001
Computing and Business (M.S.) 110199	Professional & Technical Communication (M.S.) 231101
Critical Infrastructure Systems (M.S.) 142701	Software Engineering (M.S.) 140903
Electrical Engineering (M.S.) 141001	Telecommunications (M.S.) 141001
Emergency Management & Business Continuity (M.S.) 110199	Transportation (M.S.) 140804
Engineering Management (M.S.) 151501	Nursing - Nursing Informatics[2] (M.S.N.) 511608
Engineering Science (M.S.) 141301	

There are 4 options within Management (M.S.):

- Management Information Systems
- E-Commerce
- Organization Management
- Management of Technology (pending approval)

There are 6 areas of concentration within the M.B.A.:

- Management Information Systems
- Operations Management
- E- Commerce
- Marketing
- Finance

Doctoral Degrees (19 programs, CIP Code listed after program name)

Applied Physics[1] (Ph.D.) 400899
Biology[1] (Ph.D.) 260101
Biomedical Engineering [2] (Ph.D.) 140501
Chemical Engineering (Ph.D.) 140701
Chemistry (Ph.D.) 400501
Civil Engineering (Ph.D.) 140801
Computer & Information Science (Ph.D.) 110101
Computer Engineering (Ph.D.) 140901
Computer Science (Ph.D.) 110701
Electrical Engineering (Ph.D.) 141001
Environmental Engineering (Ph.D.) 141401
Environmental Science[1] (Ph.D.) 030104
Industrial Engineering (Ph.D.) 143501
Information Systems (Ph.D.) 110401
Materials Science & Engineering (Ph.D.) 141801
Mathematical Sciences[1] (Ph.D.) 270101
Mechanical Engineering (Ph.D.) 141901
Transportation (Ph.D.) 140804
Urban Systems[3] (Ph.D.) 459999

NJIT teaches, advises, and mentors doctoral students in one degree program where Rutgers University is the degree-granting institution:

- Management *(Ph.D.)* 520201

NOTES:
1. Joint degree program with Rutgers - The State University of New Jersey, Newark Campus
2. Joint degree program with The University of Medicine and Dentistry of New Jersey.

3. Joint degree program with both The University of Medicine and Dentistry of New Jersey and Rutgers - The State University of New Jersey, Newark Campus.

NJIT's accelerated programs

NJIT offers or participates in 9 accelerated programs:

- B.S./M.S.
- B.Arch./M.S.
- B.S./D.M.D. with the University of Medicine and Dentistry of New Jersey
- B.S./M.D. with the University of Medicine and Dentistry of New Jersey
- B.S./M.D. with St. George's University School of Medicine
- B.S./O.D. with the State University of New York-New York School of Optometry
- B.S./D.D.S. with the New York University-College of Dentistry
- B.S./J.D. with Rutgers School of Law-Newark
- B.S./J.D. with Seton Hall University School of Law-Newark

NJIT's 2+2 and 3+2 programs

NJIT offers 2+2 programs through a joint admissions agreement with 10 county colleges:

- Bergen Community College
- Brookdale Community College
- Burlington County College
- Essex County College
- Hudson County Community College
- Mercer County College
- Middlesex County College
- Ocean County College
- Raritan Valley Community College
- Union County College

NJIT offers 3+2 programs through a joint admissions agreement with 3 colleges:

- Seton Hall University
- Stockton State College
- William Paterson University

NJIT's articulation arrangements

NJIT currently has articulation arrangements with the following 19 institutions:

- Bergen Community College
- Brookdale Community College
- Burlington County College
- Camden County College
- County College of Morris
- Cumberland County College
- Essex County College
- Hudson County Community College
- Mercer County College
- Middlesex County College
- Morris County College
- Ocean County College
- Paul Smith's College
- Passaic County Community College
- Raritan Valley County College
- Union County College
- Seton Hall University
- Stockton State College
- William Peterson University

NJIT currently offers an accelerated B.S. in Information Technology at Camden County College and partners with Camden County College to offer courses leading to masters degrees in Engineering Management, Computer Science, and Information Systems

II.H.2. Continuing and Professional Education Activities at NJIT

Continuing Professional Education (CPE) at NJIT has long been recognized as a leader in industry training and workforce development, as exemplified by the diverse group of companies that rely on NJIT's expertise and understanding of corporate challenges. NJIT academic catalogues dating back to 1950 indicate the existence and important of this function. Indeed the archives of NJIT's history, which began in 1881 when the university was first established as the Newark Technical School, contain documents ascertaining that this university was "founded to meet certain technical education requirements of individuals employed in local industry." Data maintained just since 1990 NJIT reveal that CPE has provided on-site and online corporate training and education programs to more than 72,000 employees at 600 New Jersey companies. Some of the companies that benefited from this training include Verizon Wireless, Dow Jones,

Burlington Coat Factory, Boston Scientific, Franklin Credit, Fletcher Creamer and CIBA. Other training partnerships were established or maintained with organizations such as NJ Transit, NJ Youth Corps, NJ Office of Homeland Security and Preparedness, US Postal Service and the Port Authority of New York and New Jersey. NJIT always partners with companies to accomplish their business objectives, both short term and long term by providing the training their employees need to achieve results.

NJIT is an original partner in North Jersey's $5.1 million US Department of Labor's Workforce Innovation for Regional Economic Development (WIRED) program and is assisting this program in obtaining an estimated $18 million in leveraged funding which will be used to strengthen the workforce of small and large companies in three high growth sectors of New Jersey's economy.

Another example of NJIT's commitment to education and training in partnership with industry need is NJIT's participation in the Innovation Partnership Institutes program, a joint effort of the Commission on Higher Education, the Department of Education, and the Department of Labor and Workforce Development focused on specific NJ business sectors. NJIT both led and participated on teams dedicated to the individual sectors of Financial Services, Advanced Manufacturing, Biotechnology, and Transportation, Logistics and Distribution. The Innovation Partnership Institutes are collaborations among businesses in these key sectors and New Jersey's colleges, universities and public high schools, to develop cutting edge curricula that meet the evolving training needs of businesses. Curricula is developed with input from industry and posted online to best disseminate to high schools and two-year as well as four-year educational institutions.

NJIT's Division of Continuing Professional Education (CPE) is a coordinated unit focusing on the development, management, and execution of five major educational programs that fall into two major categories:

Academic Credit Learning (Degree and Certificate Programs)

- NJIT eLearning Program
- Graduate Certificate Program
- Extension Programs

Non-Credit Learning (Training and Certificate Programs)

- Corporate Training
- Professional Development and License Reviews

II.H.2.a. NJIT eLearning Program

NJIT offers seven complete undergraduate and graduate degree programs, seven graduate certificates completely online, eight graduate certificate partially via eLearning, and more than 218 individual eLearning college courses in an academic year. eLearning courses are available three times per year in the standard NJIT Fall and Spring semesters and in a ten-week Summer Session. NJIT eLearning courses consist of both an electronic lecture component conducted by an NJIT faculty member and an electronic discussion through which students conduct dialogue with their instructor and other classmates at any time of the day or night. Courses utilize computer conferencing platforms (e.g. WebCT, WebBoard), and multimedia methodologies delivered via CD-ROMS, streaming audio/video, and/or videotapes. Over the past five years, the number of eLearners and eLearning course enrollments have grown as much as 21% averaging 16% a year growth. During the 2008-2009 academic year, there were about 4,800 eLearning students who totaled an eLearning enrollment of more than 6,000 in over 190 eLearning academic credit courses during Fall and Spring semesters and Summer sessions. NJIT's has an inventory of over 200 courses produced in-house within 27 academic disciplines:

- Accounting
- Chemistry
- Chemical Engineering
- Computer Science
- Economics
- Electrical and Computing Engineering
- Electrical Engineering
- Engineering Management
- English
- Environmental Engineering
- Finance
- Human Resource Management
- Humanities and Social Sciences
- Industrial Engineering
- Industrial Management
- Information Systems
- Information Technology
- Literature
- Mathematics
- Management
- Management Information Systems
- Manufacturing Engineering
- Marketing

- Physics
- Professional and Technology Communication
- Science Technology & Society
- Social Science

Over 100 NJIT faculties have originated courseware for NJIT's eLearning Program.

Seven undergraduate and graduate degree programs are available through eLearning as well as, seven graduate certificates completely online and eight graduate certificates offered partially via eLearning:

Undergraduate Degrees via eLearning in whole or in part
- Computer Science (B.S.)   134 credits
- Information Systems (B.A.)   129 credits
- Information Systems (B.S.)   130 credits
- Information Technology (B.S.)   127 credits

Graduate Degrees via eLearning
- Engineering Management (M.S.)   30 credits
- Information Systems (M.S.)   36 credits
- Professional & Technical Communication (M.S.)   30 credits

Graduate Certificates in whole or part via eLearning (each 12 credits)
- Bioinformatics
- Business Management Fundamentals
- Construction Management
- Health Communications
- Information Assurance
- Information Systems Auditing
- Information Systems Design
- Information Systems Implementation
- Internet Applications Development
- Management Essentials
- Management of Technology
- Operations Productivity
- Pharmaceutical Management
- Pharmaceutical Technology
- Practice of Technical Communications
- Project Management
- Sustainable Architecture
- Telecommunications Networking
- Virtual Tools for Professional Communities

In the last five years, the number of NJIT learners and eLearning course enrollments in academic programs has increased an average of 16% each year and over the last ten years has grown nearly 2600%.

II.H.2.b. Graduate Certificate Program

Structural shifts in the economy have caused many individuals in technological and managerial specialties to feel insecure about their jobs. Others see a reduction in opportunities for advancement in their current careers. For many, education is the key to career transition but earning a Master's degree is not always necessary or appropriate. The NJIT Graduate Certificate Program is designed to facilitate a return to formal advanced education for people whose schedules are too busy to enroll in a more traditional program.

Key features of the Graduate Certificate Program include the following: 12-credit Graduate Certificates are milestones in their own right or springboards to MS degrees at NJIT or elsewhere. Graduate Certificates are offered in fields of study designated by outside authorities as likely to offer the highest growth opportunities for employment. Program duration is one calendar year.

Study is possible through distance learning, which provides greater flexibility for the busy professional to study any time, anywhere. Entry is open to applicants with a BA/BS degree with a satisfactory grade point average.

The following is the list of the 26 current Graduate Certificates offered during Academic Year 09-10:

- Applied Statistical Methods
- Biostatistics Essentials
- Business and Information Systems Implementation
- Business and Computing
- Construction Management
- Data Mining
- Emergency Management and Information Assurance
- Emergency Management Design Essentials
- Engineering Soft Skills
- Environmental Sustainability
- Finance for Managers
- Firmware Engineering
- Information Management for Managers
- International Commerce
- IT Administration

- Management Essentials
- Management of Technology
- Network Security and Information Assurance
- Pharmaceutical Management
- Pharmaceutical Technology
- Physiology and HCI
- Power Systems Engineering
- Project Management
- Sustainable Architecture
- Technical Communications
- Web Systems Development

II.H.2.c. Extension Programs

NJIT's Division of Continuing Professional Education provides access to their courses and programs to part-time, evening students who prefer to attend classes at locations throughout the state. The extension program began in 1974 when courses in Computer and Information Science were offered at Drew University.

During AY09-10, NJIT will offer courses at 6 extension sites throughout New Jersey including:

Public Extension Sites:

Communiversity at Brookdale Community College- Lincroft
        Courses Leading to Degree(s) in:
- B.S. in Information Systems,
- B.S. in Computer Science,
- B.S. in Information Technology

Department of Environmental Protection - Mercer
        Courses Leading to Degree(s) in:
- M.S. in Environmental Science and Environmental Policy Studies

Department of Transportation - Mercer
        Courses Leading to Degree(s) in:
- M.S. In Transportation

Gloucester County College, Sewell, NJ
        Courses Leading to Degree(s) in:
- BSET

New Jersey City University, Jersey City, NJ

Courses Leading to Degree(s) in:
- M.S. Computer Science,
- M.S. Information Systems

Certificate Programs:
- Data Mining,
- Information Systems Implementation

Weekend University - Newark, NJ with online components
Courses Leading to Degree(s) in:
- B.S. in Information Technology,
- B.S. in Information Systems,
- M.S. Engineering Management,
- M.S. Information Systems

Certificate Programs:
- Project Management,
- Information Systems Implementation

II.H.2.d. Private Extension Sites

- Schering Pharmaceutical
- Wyeth Pharmaceuticals - Pearl River, NY (Open to employees only)
  Certificate Programs: Pharmaceutical Manufacturing

II.H.2.e. Customized Corporate Training

For fifty years, NJIT has been designing and conducting customized non-credit courses that meet technology-based organizations' needs for high-quality, lifelong workforce education. Representing the arm of NJIT that brings the university's areas of academic specialization into the workplace, this unit has developed particularly close relations with the NJ Department of Labor (DOL). The DOL's Office of Customized Training implements aspects of the NJ Workforce Development Partnership Program through which eligible New Jersey companies can receive state subsidization for sixty percent of the cost of initiating on-site training programs. Qualified educational providers (such as NJIT's Customized Corporate Training Program) oversee these programs. In FY 08-09 NJIT's Customized Corporate Training program executed training contracts with over 50 companies and trained over 2,000 employees.

II.H.2.f. Professional Development and License Review

The Professional Development and License Review Program offers non-credit short courses, certificates, and license reviews. In AY 08-09 over 145 non-credit courses were offered.

In Academic Year 08-09 many new courses were added to the program, bringing the total number of courses offered to over 60 courses. Among the new offerings, a Certification in Open Source Unix was initiated. At this time, NJIT is the only University nationwide that offers this program and is endorsed to offer a professional development certificate in Open Source Operating Systems

Also added was an expansive Architecture Program for Review and Professional Development. NJIT is the only facility in New Jersey to offer this array of courses and NJIT is an approved provider in the American Institute of Architects' Continuing Education System.

The non-credit Professional Development program escalated in course demand and variety. Additional courses were added to the program and include:

Architecture
- Architecture Review Courses
- Design of Steel and Wood Structures
- Marketing/Communications for Design Firms

Cable Telecommunications Industry
- Introduction to the Cable Telecommunications Industry
- Cable Telecommunications Installation
- Digital and High Speed Data
- Customer Service
- Broadband Telephony

Cisco Networking Academy
- Preparing for the CISSP Credential

Computing and Technology
- A+ Certification
- .Net Comprehensive
- C Sharp Basics and Advanced C# programming
- Fireworks MX
- Windows Application Programming using Visual C#
- Web Application Development using Visual C#
- XML Comprehensive

- Voice XML
- Introduction to EDI – Electronic Data Interchange
- Advanced EDI Concepts

Open Source UNIX Operating Systems – NJIT is the only University nationwide that offers and is endorsed to offer a professional development certificate in Open Source Operating Systems
- Introduction to UNIX Free BSD
- UNIX Administration I
- UNIX BSD Administrator II

Oracle Database Technology

Safety and Environment
- Hazwoper Refresher
- Supervisor Training
- OSHA Hazwoper Training
- Certified Hazardous Materials Manager (CHMM)
- NJ's Underground Storage Tanks Regulations

Web Master
- Web Manager
- Web Developer
- Web Author
- Dreamweaver
- Flash
- Fireworks MX
- Programming for the Web
- Visual Basic Programming
- Multimedia:SMIL

II.H.3. Pre-College Programs

The Center for Pre-College Programs at NJIT is a comprehensive academic service department that provides technical assistance to schools and districts in New Jersey helping them expand and develop innovative educational programs and help for K-12 teachers as they create connections between the science and mathematics used in engineering applications in the workplace, careers in the STEM (science, technology, engineering, and mathematics) disciplines, and the standards-based curricula that teachers must adhere to in the classroom. Serving a widening geographical audience of over 4,000 students, teachers, parents and educational professionals from kindergarten through twelfth grade, The Center has established many partnerships and collaborations with schools and districts across New Jersey. Among the recent activities of the Center related to career awareness and workforce development:

- A three-year effort funded by the New Jersey Commission on Higher Education helped established the Pre-Engineering and Outreach Program (PrE-IOP) to inform students, teachers, parents, and school counselors about careers in engineering, and to provide training programs for hundreds of secondary school teachers with pre-engineering curricula that not only better prepared students to study engineering but helped increase their attitudes towards engineering. The curricula, aligned with State Content Standards, focused on pre-engineering skills and included instructional strategies that emphasized connections between science, mathematics and real-world engineering.

- A 3-year grant from the National Science Foundation (NSF), entitled Medibotics (Merging of Medicine, IT, and robotics) that introduce teachers and students to bio-medical applications of robotics using LEGO Mindstorms Robotics kits for Schools and NXT Software. The Medibotics pre-engineering curricula incorporates grade-appropriate prototypes of robotic surgeries into middle and high school pre-engineering curriculum providing students with hands-on experiences that simulate real-world problems to encourage their interest in engineering and information technology and provide information on careers in these fields.

- For the past three-years, CPCP, in collaboration with the Engineering Research Center at NJIT, has hosted a Research Experiences for Teachers (RET) program, in which high school science teachers are part of research groups in the pharmaceutical engineering research labs of NJIT, as they participate in research and gain knowledge about the pharmaceutical industry. CPCP faculty and staff guide the teachers in the development of instructional modules, related to their research experience, and which they can use in their classrooms.

- The Center has collaborated with colleagues in Industrial and Mechanical Engineering, with funding from the State to develop instructional materials in manufacturing engineering for high school teachers and their students.

- The Center recently developed a career skills database as part of the Northern NJ WIRED program. The STEM Resource Database is designed to inventory and connect skill development programs on a national, state, and local level, with an emphasis on northern New Jersey. The purpose of the STEM Resource Database is to raise awareness of the career possibilities and job opportunities in the fields of transportation, logistics, and delivery; health care and life sciences; and entertainment, arts, and retail.

Methodologies and instruments for measuring Attitudes toward Engineering, and Knowledge of Engineering, as well as instruments for measuring teacher change have been developed or adapted during the operation of these programs. These instruments are still in use and adapted as necessary for other programs. Also, these instruments are also

being used in other universities across the country and have been cited in the professional literature. These instruments and methodologies have been utilized to document the successes of all our programs.

II.H.4. Affordability

II.H.4.a. Cost of Attending NJIT

Table II.H.3.a.:
Cost of Attending NJIT

AY 2008-2009 Full-Time Undergraduate Student

	In-State	Out-of-State
Tuition	10,500	19,960
Fees	1,982	1,982
Room & Board	9,206	9,206
Total	21,688	31,148

AY 2008-2009 Full-Time Graduate Student

	In-State	Out-of-State
Tuition	13,780	19,580
Fees	1,956	1,956
Room & Board	9,206	9,206
Total	24,942	30,742

II.H.4.b. Financial Aid

Award Type	Total Awards	Sub-Totals	Totals	Percent of Grand Total
NJIT Financial Aid Profile Academic Year 2008-2009				
Need-Based Aid				
Federal Grants:				
Pell	1,604	5,378,649		
ACG	171	138,648		
SMART	98	283,371		
SEOG	460	257,235		
	2,333		**6,057,903**	**7%**
State Grants and Scholarships:				
TAG	1,472	9,443,073		
EOF	561	698,151		
DSS	224	202,275		
NJ GEAR UP	4	16,562		
OSRP	38	88,081		
	2,299		**10,448,142**	**13%**
Merit-Based Aid				
Scholarships and Grants:				
NJIT – Institutional Undergrad.	2,961	12,751,939		
NJIT – Other	72	185,735		
Endowed	961	1,776,341		
Alumni	146	209,500		
Annual	181	406,397		
NJIT Graduate Tuition Remiss.	569	4,971,020		
NJIT Graduate Fees Remiss.	180	582,840		
Private Scholarships (external)	53	304,581		
	5,123		**21,188,354**	**26%**
Self-Help Aid				
Work:				
FCWS	318	415,426		
IWS	924	2,046,886		
Stipend	733	7,114,038		
	1,975		**9,576,350**	**12%**
Loans:				
Direct Subsidized	2,652	11,400,832		
Direct Unsubsidized	2754	10,570,420		
Direct PLUS	137	1,288,728		
Perkins	352	300,863		
NJIT Loan	26	120,497		
NJCLASS	322	3,748,189		
Other Loan	563	6,825,898		
	6,806		**34,255,427**	**42%**
GRAND TOTAL	**18,536**		**81,526,177**	**100%**

Figure II.H.4.b. Student Financial Aid from All Sources

Aid from All Sources

Loans, 42%

Federal Grants, 7%

State Grants and Scholarships, 13%

Work, 12%

Scholarships and Grants, 26%
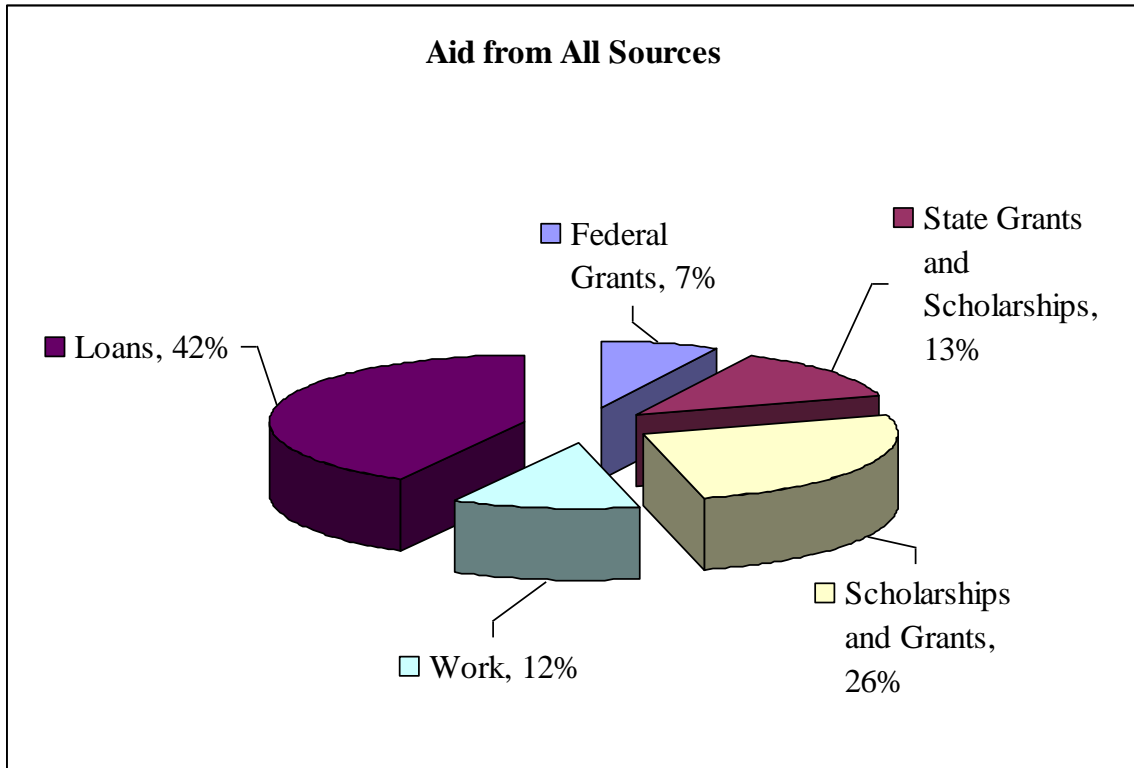
II.H.4.c. Loans

The average loan debt for students who received their bachelors degree in AY 2008-2009 was $25,322.

II.I. Major Research and Public Service Activities

R&D EXPENDITURES : Fiscal Year 2009

Institution: New Jersey Institute of Technology

	Amount ($)
Federally Financed Academic R&D Expenditures	42,656,035
Institutionally Financed Academic R&D Expenditures	31,394,838
State, Industry & Other Financed R&D Expenditures	18,840,577
Total Academic R&D Expenditures	92,891,450

Note: Draft Audit results to be reported to the National Science Foundation (NSF) on Form #411
(Survey of Research and Development Expenditures at Colleges and Universities).

Research and development is a fundamental component of the NJIT mission. NJIT is one of the three public research universities within the state system – that is, mission directed to offer a comprehensive array of Ph.D. programs – and of the three the only one specifically oriented towards professional studies including engineering, the physical sciences, computing sciences, the design professions and management. It is "New Jersey's Science and Technology University".

While *research* activity may be viewed as end unto itself, it is also a powerful enabler for all of the university's mission elements. Faculty members engaged in research bring real-world application and a contagious enthusiasm to the classroom, and in some cases even advance the technologies used in *instructional* activities. The competency built through independent scientific research allows the university to assist the state in a wide variety of public service activities that range from community planning and transportation policy to child-safe hand gun technology legislation. With strong roots in the application of scientific discovery to practical purpose that comes from a 126 year-long heritage in engineering, the university recognizes the importance of contributing to the local, regional and national *economic development*. The university fosters an intimate connection between its faculty and student researchers and the business community in the form of formal partnerships with companies ranging from start-ups in our own Enterprise Development Center, the state's oldest and largest technology business incubator, to global OEMs.

NJIT research is "at the edge of knowledge". By that we mean our researchers are at the forefront of their professions and proactively working to connect scientific discovery to practical application. Some examples follow that are organized around thematic areas of particular significance to new Jersey – healthcare and the life sciences, alternative energy and sustainable systems homeland security, and information and communication technology.

II.I.1. Healthcare Systems and Applied Life Science and Engineering

Amazing progress is occurring in the life sciences as improved understanding of the molecular origins of life move medicine from heuristic and statistical approaches to predictive models. This is the province of engineering, math, physics chemistry and computing that are the defining disciplines of NJIT. From miniaturized, implantable sensors and advanced imaging through new bio-inspired materials to biological and pharmaceutical drug discovery NJIT has the disciplinary tools to break new ground. Some examples of NJIT research at the edge of healthcare systems follow.

A critical element of healthcare improvement pertains to the reduction of cost for bringing new pharmaceuticals to market. Nano-particulate technology offers many benefits for increased potency and targeted drug delivery. The NSF-supported Engineering Research Center in Structured Organic Composites will establish cutting-edge research, technology transfer, and educational/outreach to transform products and processes used for pharmaceutical, nutraceutical, and agrochemical delivery applications. The Center is a partnership between Rutgers University, NJIT, Purdue and the University of Puerto Rico, Mayaguez. Improved technology will result in reduced cost and more consistent and reliable manufacture of biocompatible products as well as science-based, faster development of new products, and a more competitive US industry. Impact will be maximized by focusing on six technology test beds (integrated manufacturing platforms) that focus on multiple methodologies for synthesis of functionalized materials and finished products.

Treena Livingston Arizneh, associate professor and interim chair of biomedical engineering, winner of an NSF Presidential Early Career Award for Scientists and Engineers (PECASE) award, the highest national honor for young scientists and engineers, for her research with adult stem cells received a $700,000 grant from the New Jersey Commission on Spinal Cord Research, a state agency that funds spinal cord research. She will use the grant to build a laboratory to test if stem cells taken from adult bone marrow can be made to turn into neurons. If her research shows that the cells can turn into neurons -- the nerve cells in the body that control brain and spinal cord function -- patients with spinal cord injuries could be healed with injections of stem cells. Arinzeh's second $300,000 grant, from the New Jersey Commission on Science and Technology, will allow her to apply her stem cell techniques to help patients who have cartilage damage. She and Jaffe will spur cartilage regeneration by combing stem cells with bio-degradable scaffolds that mimic fibers found in human cartilage tissue. They will test different scaffolds and determine which biomaterial is the best catalyst for stem cell differentiation. Again, their hope is that stem cells can soon be used to treat patients with damaged cartilage.

NJIT researchers Iqbal Zafar, PhD, research professor and Somenath Mitra, PhD, acting chair and professor, department of chemistry and environmental sciences have developed the concept for a biologically powered fuel cell that would utilize sugars in the blood steam as a renewable energy source for implanted medical devices. The approach integrates micro- and nano-fluidic platforms, electrodes and membrane/electrolyte separator into a biologically compatible, encapsulated biomedical device. It utilizes aligned single wall carbon nanotubes with high ballistic electrical conductivity, and rapid, green microwave-assisted enzyme covalent functionalization of nanotube tips or sidewalls to provide for stable long term performance.

Tara Alvarez, associate professor of biomedical engineering, received a prestigious Faculty Early Career Development Award from the NSF to support her work in neural engineering and vision research and to enhance the Vision and Neural Engineering Laboratory. The grants support the early career development of teacher-scholars who integrate research and education. Her research focuses on how the brain learns when visually locating objects in three dimensional space to gain a better understanding of basic motor control and motor learning. She also plans to offer courses for undergraduates and to develop educational programs for pre-college girls to attract them to the field of neural engineering.

Michael Jaffe, research professor of biomedical engineering and chemistry directs collagen research at the Medical Device Concept Laboratory (MDCL). MDCL projects focus on reconstituted collagen fiber formation, collagen characterization -- both as a "material" and as tissue engineering substrate, collagen mechanical properties and transport of small molecules through skin. One project of special interest is a collaboration among Treena Arinzeh and Sam Hessami (OB/GYN) and Fred Silver (pathology) of UMDNJ, aimed at understanding the collagenous failure that leads to uterine prolapse, a major problem in women's health.

Biomedical engineers at NJIT will use new technology to help children with cerebral palsy improve their movements, reduce stiffness in their joints and live fuller and more independent lives. Small robots mounted on wheelchairs, interactive video games and a robotic arm that can be programmed to guide and aid human motion – these are just a few of the technologies the engineers will use to help these children improve their muscular control and movements. The program led by BME associate professor Richard Foulds is part of a the newly formed Rehabilitation Engineering Research Center (RERC) at NJIT, funded by a $4.75 million grant from the National Institute on Disability and Rehabilitation Research, in Washington, D.C. The institute supports research for the rehabilitation of people with disabilities. The grant, awarded on Nov. 1, 2005, will run for five years.

New Jersey Institute of Technology (NJIT) computer scientist Yehoshua Perl, PhD, creates elegant logical structures to track down errant or misplaced medical terms. The errors creep into documents and databases developed by corporations,

government agencies, hospitals and academic institutions that design, maintain and use terminologies throughout a variety of systems. Perl's research is funded by a three-year $1.43-million grant from the National Library of Medicine (NLM), a branch of the National Institutes of Health.

Interactions among neuropeptides and microglial cells in the brain are the research focus of G. Miller Jonakait, dean of the College of Science and Liberal Arts and professor of biological sciences. With grant support from the National Science Foundation, she is looking at how neurons and glia interact both in the normal brain and in the damaged or diseased brain. Several specific neuropeptides seem to play a role in regulating microglial responsiveness, particularly in dampening the inflammatory response. Dr. Jonakait is exploring this neuronal/glial cross-talk hoping to understand the ways in which neurons affect glia and glia affect neurons.

II.I.2. Sustainable Systems Technology

New Jersey is prototypical of many areas where the co-location of dense population centers and industrial systems needs to be successfully managed to maintain quality of life while promoting economic development. Preservation of air, water and land quality; efficient transportation systems for goods and people; affordable, environmentally benign housing and office space; disaster resistant infrastructure; are all empowered through the technological developments at NJIT. The combustion of petroleum-based fuels is the least thermodynamically efficient technique for powering the global demands for energy. The oil crisis of the 70's, repeated now, and the recognition that global warming due to the accumulation of the products of combustion has at least some scientific merit makes it clear that disruptive technology is required. Alternative energy research is actively underway at NJIT. Were these not enough, creating a safe and secure environment for our citizens in the face of international terrorism creates new challenges to develop and depoy sustainable models for homeland security. Some examples of NJIT research at the edge of sustainable systems technology follow.

Conventional solar cells are made of silicon. But the material that is deposited on the silicon chips cannot be coated. Professor Som Mitra, acting chair of the department of chemistry and environmental science, however, is experimenting with polymers that when dissolved in a solvent become like a paint, and thus can be used as a coating. Developing organic solar cells from polymers is a cheap and potentially simple alternative energy. Solar cells can be inexpensively printed or simply painted on exterior building walls or roofs of houses and buildings. The solar cell uses a carbon nanotube complex, which is just a molecular configuration of carbon in a cylindrical shape and tiny carbon buckyballs (a circular-shaped carbon structure) to form snake-like structures. Buckyballs trap electrons, although they can't make electrons flow. But when you add sunlight to excite the polymers, the buckyballs will grab the electrons. Nanotubes, behaving like copper wires, will then make the electrons or current flow.

Chemical engineer Kamalesh Sirkar, PhD, a distinguished professor and an expert in membrane separation technology, is leading a team of researchers to develop a breakthrough method to desalinate water. Sirkar holds more than 20 patents in the field of membrane separation. Using his technology, engineers will be able to recover water from brines with the highest salt concentrations. The process will work especially well with brines holding salt concentrations above 5.5 percent. Currently, 5.5 percent is the highest percentage of salt in brine that can be treated using reverse osmosis. The Bureau of Reclamation in the Department of Interior is funding the project.

Michael Jaffe, research professor of biomedical engineering and director of the Medical Device Concept Laboratory has teamed with the Iowa Corn Promotion Board to identify polymer opportunities based on monomers derived from corn. The study will look at the potential of corn derivatives as readily available and inexpensive sources of new polymeric materials. Materials to be investigated range from new, bio-erodible polymers for medical applications to improved, bio-compatible coatings and plastics.

A better understanding of the solar flares that can interfere with wireless communication and damage satellites in Earth's orbit is the focus of research by the Center for Solar-Terrestrial Research. Professor Phil Goode directs the Big Bear Solar Observatory on a mountaintop in California. In the fall of 2008 he completed a multi-year, multi-million dollar, federally financed construction project that resulted in the world's largest ground-based optical solar telescope. CSTR research will lead to new understandings of the sun's complex behavior and its effect on our own environment. Dale Gary, professor of physics and specialist in radio solar physics, is leading a design study for the Frequency Agile Solar Radiotelescope (FASR). The project, supported by the National Science Foundation, will construct a new radio telescope capable of making high-resolution images of the solar corona. The telescope, which will consist of 100 receiving dishes, will allow scientists to study the birth of coronal mass ejections, violent phenomena associated with the Sun's magnetic fields that can cause sudden, intense fluctuations in the solar wind and serious consequences on Earth. The high-energy particles that characterize these ejections have the potential to destroy satellites. The satellites in turn may impact television viewing, pagers, cellular phones and other wireless devices. With the ability to observe these phenomena, especially those on the near face of the sun that most affect Earth, researchers will be able to provide better information on the space environment to airlines, power companies and satellite operators. Eventually, solar researchers may be able to predict the severity of such incidents and when they will occur.

The New Jersey Applied Water Research Center, directed by Taha Marhaba, associate professor of environmental engineering, has been established by NJIT in partnership with the American Water Works Association to unite industry, government and academia in a common effort to research and improve the state's

drinking water. Researchers from NJIT and the Water Works Association, a non-profit group dedicated to providing the state with safe drinking water, expect to have a significant impact on the state's water infrastructure. The center's emphasis on applied research specific to New Jersey will fill in the gaps that national research programs have not addressed. Researchers will also work to assure that the region's water supply is safe from bio-terrorist attacks, developing monitoring systems to identify biological agents deposited in the water infrastructure.

NJIT has been designated as the Liberty Corridor Planning Institute. In this capacity, NJIT researchers are engaged in creating the framework under which over $100M in federal funds will be invested to improve New Jersey's transportation infrastructure to support the ten-fold growth in containerized shipping that is projected as part of the Port Newark expansion. The objective is to facilitate the movement of import and export goods within the already congested Port district to facilitate job growth and economic development in the associated trades.

One of the most significant spurs to the growth of NJIT's research program has been the university's emphasis on technologies to assist in homeland security. NJIT is home to New Jersey's Homeland Security Technology Systems Center. The center works to identify faculty expertise as well as technologies under study within the university that have potential to assist in the nation's security programs and to facilitate partnerships with local, state and federal agencies for homeland security initiatives. One of the first projects undertaken by the Homeland Security Technology Systems Center was smart camera surveillance system at the Garden State Plaza Mall in Paramus, directed by Donald H. Sebastian, the university's senior vice president for research and development. The system, developed as a national prototype, uses mall security cameras in combination with special software designed to search for suspicious objects or behavior and alert local authorities. With special funding from Acting Governor Richard Codey, a similar model system has been installed at the Beatrice Gilmore School in West Paterson. NJIT has funding from the N.J. Department of Law and Public Safety to protect schools and shopping malls.

In one of the most promising homeland security initiatives, university researchers continue to develop applications that utilize terahertz (THz) electromagnetic radiation to detect and identify explosives and biological agents. A team of researchers led by John Federici, professor of physics, received a patent for a terahertz imaging system that could be used in airports to detect potentially harmful materials even if they are concealed in clothing, sealed packages, or suitcases. The team also has funding from the Army Research Office, and their industrial collaborator, Picometrix, Inc., of Ann Arbor, Mich., a manufacturer of high-speed optical receivers and ultrafast instrumentation, has a Phase II Small Business Innovative Research (SBIR) grant to develop the system. Above, Federici displays one of the homodyne modules developed by Picometrix that will

collect data for the system. Other projects related to homeland security include: •
With NSF funding, Haim Grebel, professor of electrical and computer
engineering, is developing new concepts for producing infrared filters based on
intergrated circuit microstructure technology. His group plans to develop and test
filters for all types of spectral sensors applied to a broad range of monitoring and
detection systems from the visible to the THz region.

A new technology that can verify a person's identity using facial images is the
goal of research by Chengjun Liu, assistant professor of computer science. He
has developed a face recognition system that improves on previous technology by
taking into account such factors as lighting and facial expressions. The system
has tested 100 percent effective in matching videotaped images to those stored in
government databases by comparing 62 features or facial landmarks. Such a
technology can be used as a security system with facial identification replacing a
physical key or a password. An effective face recognition system could also
assist law enforcement officials in locating fugitives by means of video cameras
strategically placed in public places such as airports. Liu recently received
funding from the Department of Defense to support his research as part of the
government's effort for combating terrorism using face recognition technologies.

A biometric identification system based on Dynamic Grip Recognition developed
in NJIT's personalized weapons project could also be effective in preventing
skyjackers from taking control of aircraft. The research team is developing a
prototype "smart gun" using silicon-based piezo-electric pressure sensors
embedded in the gun grip. The system can identify the user based on the unique
"signature" of the individual hand during the first instant of trigger pull. On-board
decision electronics and micro-mechanical systems-based actuators then react to
either enable or block the firing mechanism. Biometrics expert, Michael Recce,
professor of information systems, has also applied for a patent to adapt his hand
grip technology for use by airplane pilots. Since operation of modern aircraft
frequently shifts between the pilot and ground controllers, Recce reasoned that the
installation of his grip sensors in the cockpit controls could be achieved with
relative ease because only the authenticated grips of the pilot or copilot could be
programmed to operate the plane. When the pilot releases his or her grip, control
of the plane would revert to the ground.   The concept of dynamic biometrics is
also being extended to other devices such as keypad entry systems where the
rhythmic pattern of data entry reveals an underlying structure that is unique to the
individual, reproducible and detectable.

M. Ala Saadeghvaziri, professor of civil and environmental engineering, has
received start-up funding from the Multidisciplinary Center for Earthquake and
Engineering Research at the University of Buffalo to develop proof of concept for
an innovative water-based protective technology that could be used to mitigate the
effects of explosions or earthquakes on public buildings such as schools and
hospitals.

David Mendonca, assistant professor of information systems, is investigating how training in improvisation can help improve the tactical response to large-scale emergencies like the 2001 World Trade Center attack. With a prestigious NSF Faculty Early Career Development award, he hopes to develop software that can help emergency response personnel to make the right decisions under pressure.

The work of Associate Professor Eliza Michalopoulou in ocean acoustics has a compelling and timely bottom line — national defense. With expertise in both mathematical analysis and signal processing, she studies how sounds move in the ocean and how they are affected by factors like temperature, ocean depth, seafloor composition and currents. The main goal is to help the U.S. Navy, which supports her research through the Office of Naval Research, to identify better techniques for detecting underwater vehicles, particularly along the nation's seacoasts. The end products of her work are algorithms that can be used in developing next-generation security systems.

Dr. Michael Chumer of the Information Systems department is working on a variety of advanced software architectures to support emergency response and homeland security applications. By developing interoperability standards these architectures facilitate rapid integration of high performance software applications into a virtual command and control support system. With direct support from the US Army, some of these concepts are being demonstrated in conjunction with combat unmanned systems management. The concepts are being field tested in a Business Emergency Operation Center operating at Picatinny Army base. In a partnership with ARDEC and the New Jersey Business Force, the team is developing and implementing private sector integration with the public sector emergency management function. Software and communications interoperability standards are emerging that will facilitate a more resilient response and recovery should New Jersey face any mass casualty event.

II.I.3. Information and Communication Technology

The mass-impact of computing technology and the ultimate delivery on the promise of digital convergence will only come when information is available anywhere, anytime and for anyone (or anything!). The development of ubiquitous broadband connectivity will in turn drive transformational products based on distributed intelligence and novel human interface concepts. Some examples of NJIT research at the edge of information and communications technology follow.

Envisioning a future in which wearable computers help students locate their friends on campus and even facilitate introductions to new acquaintances with similar interests, a team of researchers led Quentin Jones, associate professor of information systems and Christian Borcea from computer science, are working to make NJIT a national prototype SmartCampus. The project is supported by funding from the National Science Foundation and Hewlett-Packard. The team will develop a mobile, wireless NJIT campus community system along with the

software and protocols to support a wide range of location-based computing services. The team will create privacy-sensitive applications that make use of contextual factors — the properties of people and places and the relationships between them — that are unique to people to people to places, or P3 systems such as SmartCampus. The project will also enrich the curriculum — the team foresees the development of masters programs in human-computer interaction and information assurance and new courses in such areas as wireless security and wearable computing.

Breakthrough discoveries by research professor Reggie Farrow may make the dream of ubiquitous computing a near-hand reality. He has devised a technique for creating nano-transistors by building functionalized carbon nanotubes one element at a time. Using electrophoresis, his research has been able to create nano-devices in the though holes of conventional micro circuitry. This means that the tremendous size reduction and performance gains of nanotechnology can be immediately take advantage of the technology base for conventional micro-fabrication to produce fully functional devices without waiting for advances in nano-wiring or other ancillary process steps. The work has received over $1M in external support, principally from US DOD's DARPA.

NJIT is advancing wireless technology on many fronts as well as bringing related social issues into sharper focus. Wireless innovations have flowed from NJIT's Center for Wireless Communications and Signal Processing Research (CWCSPR), affiliated with the Electrical and Computer Engineering Department, for more than twenty-five years. The center's founder, Yeheskel Bar-Ness, continues to direct the group's initiatives. Bar- Ness, distinguished professor and Foundation Chair, exemplifies the creative thinking that has generated dozens of patentable improvements in wireless. Bar-Ness' name is on many of the patent applications filed over the years, and his pioneering research led to being honored as a New Jersey Inventor of the Year in 2006 and receiving a 2008 Edison Patent Award from the Research and Development Council of New Jersey.

Alex Haimovich, professor of electrical engineering, is developing a new type of network using multiple antennas that could accommodate both a high-speed information link and a sensor network for security or medical monitoring within the same frequency space. With NSF funding, his research team is seeking to develop solutions that can support a wide variety of applications simultaneously within a home or business. The team's goal is a new type of network characterized by multiple antennas and multiple appliances (MAMA).

Roberto Rojas-Cessa, assistant professor of electrical and computer engineering, is leading a team of researchers who are developing a new service model concept, called service vector, as a solution for providing quality of service support for a large variety of traffic classes — Internet, video, audio, business and data services — that challenge the next-generation information networks. The study has NSF funding.

Data watermarking, intrusion alarm systems and distortionless data hiding are some of the techniques under study at the Center for Wireless Networking and Internet Security. A partnership between NJIT's Department of Electrical and Computer Engineering and Princeton University, the center was supported by a $2.6 million R&D Excellence Grant from New Jersey Commission on Science and Technology. Professor Yun Shi of the department of electrical and computer engineering has been awarded a number of patents based on his work in steganography and data watermarking, and these are now being commercialized.

Functional nanostructures for novel electron devices are the focus of the Integrated Nanostructures Laboratory, headed by Leonid Tsybeskov, associate professor of electrical and computer engineering. In one project supported by the National Science Foundation, the team is investigating links between structural and optical properties in three-dimensional nanostructures made of silicon and germanium, the most common materials for semiconductors. Visible photo luminescence from Si nanocrystals and different forms of organization in Ge nanocrystals grown on a Si substrate are recent discoveries, and Dr. Tsybeskov is exploring the feasibility of novel devices that make use of efficient light emission in these nanostructures. Hewlett-Packard and IBM are partners on the project.

II.I.4. Research Centers and Specialized Labs

NJIT's research program focuses on applied research in the most promising of emerging technologies, with emphasis on technology transfer and commercialization. Research at NJIT is organized around multi-disciplinary centers of excellence that encourage partnerships among various disciplines, as well as with other educational institutions, private enterprise and government agencies.

APPLIED LIFE SCIENCES

- Newark Institute for Regenerative Healthcare develops process technology to bring stem cell – based therapies to practical, reproducible, commercial scale.
- Biomedical Engineering: Stem cell applications in tissue regeneration, vision and neural engineering, bioMEMS, motion analysis and rehabilitation engineering, biomaterials and biopolymers.
- Center for Applied Genomics: Development and application of DNA microarray technology.
- The Medical Device Concept Laboratory : Synthetic materials in biomedicine.
- Membrane and Separation Technologies: Micro- and nanoporous filters for medicine and pharmaceutical manufacture.

- The Vision and Neural Engineering Lab: Oculomotor dynamics, vergeance eye movements.

ARCHITECTURE AND BUILDING SCIENCES

- Center for Architecture and Building Science Research: Educational facilities, health care and aging environments, developmental disabilities planning, historic preservation, housing and community development.
- Concrete Testing Laboratory: Reinforced and high-strength concretes.

COMPUTING, MATHEMATICS AND TELECOMMUNICATIONS

- Center for Applied Mathematics and Statistics: Mathematical biology, fluid dynamics, wave propagation.
- Center for Wireless Communications and Signal Processing Research: Multi-carrier systems, Turbo Coding techniques, ultra-wideband communications, MIMO systems.
- Cryptography & Telecommunication Laboratory: Cryptography, computer security and telecommunications networks.
- electronic Arts Habitat (eArtH): Multimedia, social computing, human-computer interaction.
- New Jersey Center for Wireless Networking and Internet Security: Intrusion detection, watermarking, mobile networks.

ENVIRONMENTAL SCIENCE AND ENGINEERING

- York Center for Environmental Engineering and Science: Hazardous substance management, pollution remediation and prevention, sustainable manufacturing.
- Geoenvironmental Engineering Laboratory: Solid waste management and disposal, environmental systems, waste water treatment, site remediation.
- Laboratory for Process and Field Analytical Chemistry: On-line process analysis, environmental monitoring, portable instruments for on-sire environmental measurement.

MATERIALS SCIENCE AND MANUFACTURING

- Bearings and Bearing Lubrications Laboratory: Hydrodynamic, hydrostatic, rolling element bearings and novel designs of unique bearings.
- Computational Fluid Dynamics: Particulate flows, mixing enhancement, suppression/enhancement of turbulence, drag minimization, thermal management.

- Electro-hydrodynamics Laboratory: Sensors and separation devices for a wide variety of systems for environment monitoring, health care, and medical diagnostics
- Electronic Imaging Center: Infrared filters, sensors and detectors utilizing terahertz radiation, carbon nanotubes.
- W.M. Keck Laboratory: Manipulation of liquid flows and the small particles/microorganisms they transport in biological and biomedical technologies.
- Materials Characterization Laboratory: Elemental. organic and structural analysis
- Metal Combustion Laboratory: Propellants, explosives, pyrotechnics, and incendiaries.
- Microelectronics Fabrication Center: Application-specific integrated circuits, optical switches, pressure sensors, and MEMS for biomedical, biometrics, and microfluidics application.
- New Jersey Center for Engineered Particulates: Tailored particle coatings for pharmaceuticals, food, cosmetics, ceramics, defense, electronics and specialty chemicals.
- New Jersey Center for Microflow Control: Fluidic devices, with a focus on miniaturized flows, and miniaturized sensors and actuators.
- Polymer Processing Institute: Modification of polymers processing into special property products for the medical, health care, automotive, electronics, construction, and packaging industries
- Waterjet Technology Lab: Waterjet machining and cleaning applications.

SOLAR PHYSICS

- Center for Solar-Terrestrial Research: Solar optical astronomy, solar radiophysics, terrestrial science.
- Big Bear Solar Observatory: Solar observation, helioseismology.
- Owens Valley Solar Array: Transient energetic phenomena, coronal magnetic fields.
- The Frequency-Agile Solar Radiotelescope (FASR) Project: Nature and evolution of coronal magnetic fields, physics of solar flares, drivers of space weather, the quiet Sun.
- Global High-Resolution H-Alpha Network: Round-the-clock solar observation.
- Space Weather Project: Monitoring and forecasting solar activity that may affect Earth's climate and technologies.

TRANSPORTATION

- Liberty Corridor Planning Institute: Port Newark, Elizabeth, Bayonne redevelopment; Freight transportation, brownfields and passenger transportation
- North Jersey Transportation Planning Authority: Maintaining and improving transportation systems.
- Transportation, Economic and Land Use System (TELUS): Computerized transportation planning and programming.

II.I.5. NJIT Research Expenditures

NJIT research expenditures since 1991 have grown six-fold and Federally funded research expenditures have grown even more dramatically – more than ten fold in eighteen years.

Total Research Expenditures (in Millions of Dollars)
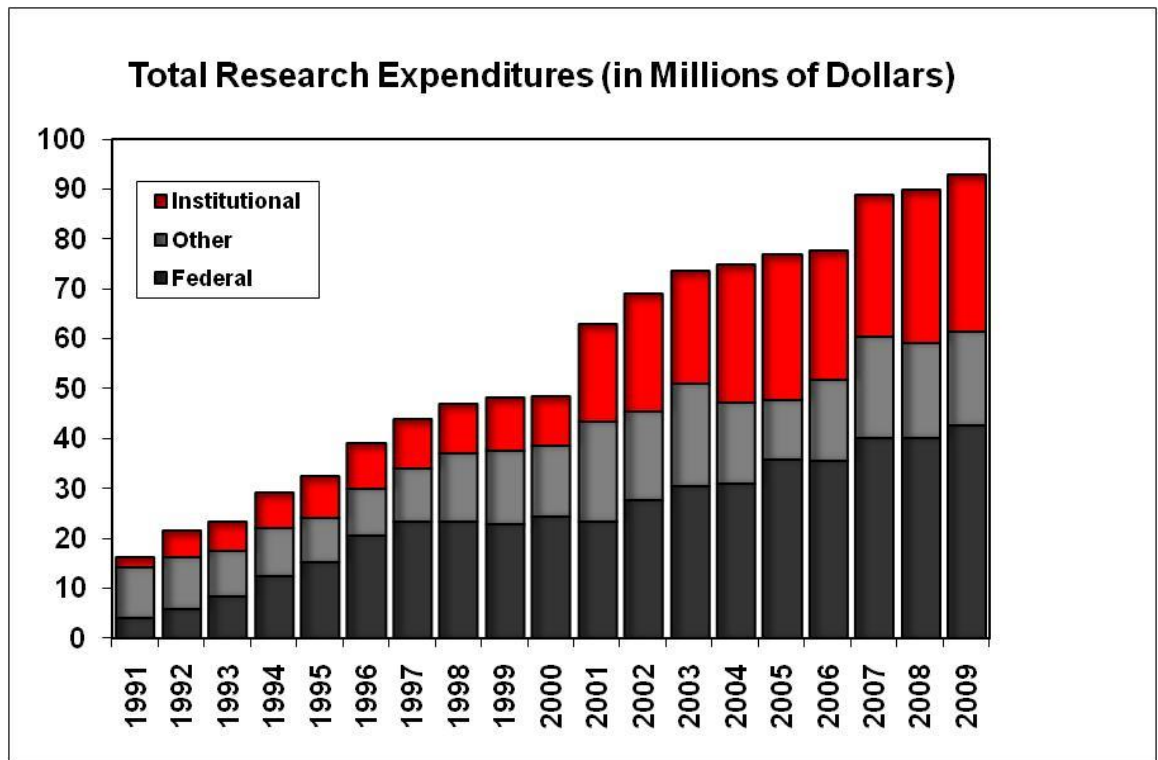
II.I.6. Incubator Expansion

The opening of a third Enterprise Development Center (EDC III) in 2002 makes NJIT's small business incubation program one of the largest in the nation. With 80,000 square feet in five stories, EDC III doubles the previous incubation space. Three floors in the new structure are earmarked for technology start-up businesses, while the remaining two floors will provide "graduation" space for companies that have outgrown an incubation program.

EDC, founded in 1988 by NJIT, with assistance along the way from Prudential, the New Jersey Commission on Science and Technology, the New Jersey Economic Development Authority, and the U.S. Economic Development Administration, is the oldest and largest incubator facility in New Jersey, which is currently serving more than 80 client businesses. EDC provides a broad base of support and acts as a "proving ground" for new and developing high-tech products. Many client companies are developing commercial enterprises that reflect the university's major thrusts in information technology, health sciences, environmental science and engineering, and materials science and engineering. The university provides the latest technical information, including access to the university's specialized equipment, faculty experts and students. The success rate for EDC businesses is higher than 85 percent; more than 50 businesses have graduated from the incubator facility.

Based on its experience in high-tech business incubation, NJIT has placed a focus on increasing the depth and breadth of services that these incubators can offer to resident firms.   In particular, the objective should be to promote business acceleration – growing companies more rapidly from business concept to fledgling business. On the technological front, underwriting the expense of access to university based personnel and equipment assets and facilitating the ability to compete for federal and foundation grant funding will more rapidly move companies to critical "proof of concept" and reduce the inherent risk to investors. In addition, adding new professional services liked shared support for marketing, information technology infrastructure, management team building and other critical growth items will increase the flow of successful businesses from existing incubators. NJIT has won several grants from the NJCS&T and has application spending with the National Science Foundation to further enhance its concepts for new business acceleration – and these are viewed as critical competitive advantages for the NJ-EDA led Innovation Zone program in Newark.

II.I.7. Helping Businesses Get Lean

More that 100 New Jersey manufacturing firms benefited this year from the technical assistance programs of the Center for Manufacturing Systems (CMS). The center, directed by Wayne Chaneski, offers services that range from identifying short-term productivity improvement opportunities to long-term

engagements geared toward streamlining entire operations. CMS also assisted companies with product design and prototyping, process development, plant layout, machining of complex parts, and training in modern manufacturing concepts.

Training in lean manufacturing is one of the center's most popular services. Lean techniques -- inventory reduction, reduced lead time, continuous flow, increased flexibility -- are critical to the small and mid-sized manufacturing businesses that are the center's clients. One project for Purepac Pharmaceutical, an Elizabeth-based manufacturer of generic drugs, focused on reducing setup time -- the time a machine is out of service for changeover between the end of one run and the beginning of another. The CMS team videotaped an actual machine setup, then helped employees to review the process and identify solutions to problems. One department also got 5S training (Sort, Set-in-Order, Shine, Standardize, and Sustain) for improving efficiency by reorganizing workspace.

II.I.8. New Jersey Immunization Information System and the New Jersey Local Information Network & Communications System

NJIT has put into production for statewide use the New Jersey Immunization Information System (NJIIS) and the New Jersey Local Information Network and Communications System (NJLINCS) for the New Jersey Department of Health and Senior Services (NJDHSS).

NJIIS is an on-line immunization registry capable of enrolling all New Jersey children at birth and recording and evaluating their immunization histories for completeness under the Center for Disease Control and Prevention's current guidelines. Over 150,000 children are currently in the registry and more than 150 health departments, clinics and private physician's offices are currently participating via dial in modems or the Internet. NJIT installs client software at user sites, operates the servers and provides administrative and technical support for the NJIIS.

NJLINCS is an Internet based communications system that will link all local health departments with the NJDHSS in Trenton. NJLINCS provides rapid, two-way communication between state health officials and local health officers for dissemination and collection of health related information and data.   NJIT operates the servers and provides administrative and technical support for the NJLINCS.

II.I.9. Assistance to Business

NJIT offers direct assistance to business through several services to small- and medium-sized businesses to encourage their growth and success. These services are delivered primarily through NJIT's six-business assistance centers:

- Technology Extension Program in Manufacturing Engineering (a component of the New Jersey Manufacturing Extension Partnership – NJMEP): a statewide manufacturing extension program to help small- and medium-sized manufacturing businesses to modernize and become more competitive
- Center for Information Age Technology (CIAT): integrates computer technology into the operations of New Jersey business, government, non-profit and educational organizations
- Center for Manufacturing Systems: assists manufacturers with prototype product development, process improvement and modernization with high speed machining center, advanced CAD/CAM and rapid prototyping facilities.
- Defense Procurement Technical Assistance Center: helps New Jersey small businesses obtain defense and other federal contracts
- Enterprise Development Center: small business incubators that help new and developing enterprises survive the typically difficult start-up stages;
- New Jersey Technical Assistance Program (NJTAP): helps New Jersey small- and medium-sized businesses comply with state and federal pollution prevention regulations;
- Micro-fabrication Center: serves to assist businesses with design and fabrication services related to silicon processing technologies in the university's clean room for MEMS and CMOS processing;
- Polymer Processing Institute: provides assistance to small businesses in processing of polymers and plastics.

NJIT also provides assistance to business through workforce development activities, research activities, economic development activities, and public service activities.

II.I.10. Sports/Sport Events

The 2008-09 year saw the Athletic Department clear the last major check by the NCAA in our bid to reclassify our Athletic Program to the NCAA Division I level. In February, we received notice from the national office, that we successfully completed the self study certification process, and received full certification.

In 2009-10 we also continue to increase our national visibility. Our men's basketball team played in their first ever nationally televised game, on the Big Ten Network vs. Penn State, and the first regionally televised game on Comcast vs Monmouth. Stories of our teams were discussed nationally on ESPN and the Today Show, and locally on many radio and TV stations, plus written articles in the Star Ledger, Wall Street Journal, and New York Times. We continue to play a

national schedule with our teams facing teams in California, Hawaii, Utah, Texas, Florida, and many other states.

Athletic Highlights include our tennis teams better than .500 records, our women volleyball team's 19 victories, fencing sending two people to the NCAA regionals, and one of our cross country runners winning the university division race at the ECAC Championships.

The university upgraded the athletic training and weight room facilities, also renovations began on new locker-room facilities for the men's and women's basketball teams, in addition to a new locker room area for women's track, swimming, and tennis. The men's and women's basketball teams played some games at the new Prudential Center in Downtown Newark., and baseball continues to play their home schedule at Bears & Eagles Riverfront Stadium.

NJIT joined six other independent Division I schools and formed the all sports Great West Conference. Other conference members include: Chicago State, Houston Baptist University, University of North Dakota, University of South Dakota, University of Texas at Pan American, and Utah Valley University

In 2008-09 there were 214 student-athletes. The profile includes 140 males and 74 females. Full and partial athletic scholarships were given to 131 student-athletes whose sum totaled just over $2.2 million. During 2008-09 academic year, 119 scholar-athletes (55%) who participated in varsity sports and earned a GPA of at least 3.0 during the fall 2008. in addition 49 (23%) student athletes are members of the Albert Dorman Honors College. In 2008-09, the university will once again sponsor 19 intercollegiate varsity sports: baseball, M/W basketball, M/W cross country, M/W fencing, M/W soccer, M/W swimming, M/W tennis, M/W indoor and outdoor track, and M/W volleyball.

II.J. Facilities and Major Capital Projects/Improvements

The NJIT campus consists of 2.6 million gross square feet of built environment on a 48 acre campus. With the recently completed construction and major rehabilitation, the average age of campus facilities is about 22 years. This is in spite of the original building dates of the 1964-1967 expansion campus, Eberhardt Hall built in 1897, Colton Hall in 1911 and Campbell Hall in 1930.

In concert with the development of University Heights Science Park, NJIT was able to consolidate a whole block just west of the major portion of the campus, but contiguous to the land acquired for its Enterprise Development Center II, in a "land swap" with the NJ Economic Development Agency of several disparate parcels that NJIT had acquired over time with land the EDA was acquiring on behalf of Science Park. The third building in Science Park Newark, a 170,000 square foot laboratory building and an addition have been completed.

NJIT completed EDCIII, an 80,000 gross square for incubating businesses as well as next stage companies which have graduated from the incubator spaces.

NJIT, with active participation of area stakeholders, has recently embarked on a major project to lead a redevelopment effort in a portion of the historic James Street section of Newark adjacent to campus. This project will involve repurposing some facilities from NJIT, Saint Michael's Hospital, the relocation of Greek housing to campus land along Warren Street, and the systematic creation of a model residential and small business zone within walking distance of Newark's central business district. NJIT has been selected and the work plan was submitted to the city for the selection of a planner / developer of this project. The Newark City Council recently adopted a redevelopment plan for the Broad Street Station Area which includes the NJIT gateway plan. The Council also confirmed NJIT as the redeveloper for the Gateway Project. Most recently, the City Council approved the Redevelopment Agreement naming NJIT as the sole developer for the land within the footprint of the Gate Way Area.

II.J.1. Planning, the next step

In 2005 the previous building phase was completed and NJIT has embarked on a comprehensive facilities planning project to identify facilities needs for the next five to ten years. This effort will take a comprehensive look at the curriculum and instructional needs for a growing campus in addition to the student service infrastructure that growing campus will require.

The Plan provides plans for the orderly growth to accommodate up to 12,000 students. The Plan and an Executive Summary have been placed on the Web With all the expansion and new facilities, can there be further needs? In a growing technological university the answer is a firm yes. As NJIT continues to place greater emphasis on the use of technology in the life sciences, new spaces

will be needed. Further, as new research oriented faculty join NJIT, more laboratory space will be necessary. The overall enrollment is projected to have modest growth in the next 5 to 10 years. The new Master Plan addresses these issues in more detail. NJIT has utilized almost all of the available land as building sites. Further, the Facilities Master Plan does not expand the general campus footprint beyond the four blocks that currently surround the campus.

To meet the challenge of limited building sites, NJIT will continue to pursue multiple paths. Limitations on funding and available land make it imperative that alternative solutions be found. As a critical element of its planning process, NJIT has developed and strengthened strategic alliances with its university neighbors. The Council for Higher Education in Newark (CHEN) consists, in addition to NJIT, of the Newark campus of Rutgers University, the University of Medicine and Dentistry of New Jersey and Essex County College. This consortium has developed both joint academic and administrative programs. For example, a researcher in the College of Computing Sciences may test computer models on learning curves in laboratory animals by using the animal facilities just across the street. There are several federated departments at NJIT and Rutgers University, , which permit NJIT to have a faculty critical mass without the full facilities burden.

The Master Plan also cal for "re-using" land by replacing low density structures with larger/taller structures. This would continue the program started with the expansion of the Campus Center

In addition, NJIT and the Newark Public Schools have executed a purchase agreement for NJIT to acquire the adjacent public Central High School. It will not be needed by the School system after completion of a replacement of another (West Side) high school. "Old Central" may be needed by the School Board as swing space during the construction of the new West Side High School.

Central High has about 208,000 square feet. While it is in need of substantial rehabilitation, the lower floors could provide future classroom space, relieve a growing demand on physical education facilities as well as space for our math, science teacher education efforts.

II.J.2. Deferred Maintenance

Another critical element of the facilities plan addresses the outstanding major items of deferred maintenance. To this end, a significant allocation of resources has been made. It should be noted that NJIT has, on an annual basis, continually made progress on this important issue. Even in these difficult economic times, funds have been allocated to major system, e.g., HVAC upgrades as well as refurbishing well used areas.

II.J.3. Sustainability

NJIT sustainability efforts include environmental pollution control, recycling, water conservation, energy efficient equipment installation ,demand limiting strategies roof top vegetation systems, a solar voltaic grid for production of 50 megawatt hours of electricity per year, solar heating for domestic hot water needs, use of synthetic turf, compressed summer schedule, building shading and occupancy sensors. NJIT is among the leaders in producing the fewest tons of emissions per square foot of campus area in New Jersey.

II.J.4. Financing

The financing for the recent projects came from several sources. Several of the projects have multiple sources of funding reflective of certain restrictions on funds. For example, the US Economic Development funds could only be used for Enterprise Development III. While the overall debt of the university has risen owing to this construction, the annual debt service is covered from operating revenues, including student fees, residence hall rentals and tenant income from EDCIII. The university issued general obligation bonds through the NJ Educational Facilities Authority. Moody's Investors Service and Standard and Poor's Ratings Group have assigned bond ratings of "Aaa" and "AAA," respectively to our insured issues. Moody's Investors Service and Standard and Poor's Ratings Group have issued underlying ratings of "A2" and "A+," respectively.

III. Other Institutional Information

III.A. Number of Collaborative Academic Programs

Collaborative Academic Programs

Joint Programs

- Rutgers - The State University, Newark Campus
- University of Medicine and Dentistry of New Jersey (UMDNJ)

Joint programs with Rutgers - The State University, Newark Campus include:

- Applied Mathematics *(B.A.)* 270301
- Applied Physics *(B.S.)* 400899
- Biology *(B.A.)* 260101
- Biology *(B.S.)* 260101
- Computer Science *(B.A.)* 110101
- Environmental Science *(B.S.)* 030102
- Geoscience Engineering *(B.S.)* 141601
- History *(B.A.)* 450801
- Human Computer Interaction (B.S.)
- Information Systems *(B.A.)* 110401
- Industrial Engineering (B.S.) 143501
- Applied Physics *(M.S.)* 400899
- Biology *(M.S.)* 260101
- Computational Biology (M.S.)
- Environmental Science *(M.S.)* 030102
- History *(M.A.T.)* 131328
- History *(M.A.)* 450801
- Public Health *(M.P.H.)* 512201
- Applied Physics *(Ph.D.)* 400899
- Biology *(Ph.D.)* 260101
- Environmental Science *(Ph.D.)* 030102
- Mathematical Sciences *(Ph.D.)* 270101
- Public Health (M.P.H.)
- Urban Systems (*Ph.D.*)

Joint programs with the University of Medicine and Dentistry of New Jersey include:

- Nursing (M.S.N., Nursing Informatics Track only)
- Public Health *(M.P.H.)* 512201
- Biomedical Engineering (Ph.D.) 104501

- Urban Systems (Ph.D.) 459999

Joint Research Programs – Centered at NJIT

- Center for Solar Research (NJIT, Cal. Tech.)
- Hazardous Substance Management Research Center (NJIT, UMDNJ, Rutgers, Princeton, Stevens)
- Microelectronics Research Center (NJIT, Rutgers, Columbia)
- Multi-Lifecycle Engineering Research Center (NJIT, Rutgers, Princeton, Stevens)
- National Center for Transportation and Industrial Productivity (NJIT, Rutgers)
- New Jersey Program for Engineered Particulates (NJIT, Princeton, Rutgers)
- New Jersey Center for Micro-Flow Control (NJIT, Princeton)
- New Jersey Center for Multimedia Research (NJIT, Princeton)
- New Jersey Center for Transportation Information and Decision Engineering (NJIT, Princeton)
- New Jersey Center for Internet Security (NJIT, Princeton, Stevens)
- New Jersey Center for Wireless Telecommunications (NJIT, Rutgers, Princeton, Stevens)
- New Jersey MEMS Initiative: From Concept to Commercialization (NJIT, Rutgers, Columbia)
- Northeast Hazardous Substance Research Center (NJIT, UMDNJ, Rutgers, Princeton, Stevens, Tufts, MIT)
- Polymer Engineering Center (NJIT, Stevens)

Research Partnerships Centered at Other Institutions

- Center for Airborne Organics (MIT, NJIT, Cal. Tech.)
- Center for Applied Genomics (NJIT, UMDNJ)
- Center for Embedded System-On-a-Chip Design (Princeton, Rutgers, NJIT)
- Center for Ultra-fast Laser Applications (Princeton, Rutgers, NJIT, UMDNJ)
- New Jersey Center for Biomaterials and Medical Devices (Rutgers, UMDNJ, Princeton, NJIT)
- Collaborative Telemedicine Environments (Rutgers, NJIT, UMDNJ)
- New Jersey Center for Optoelectronics (Princeton, NJIT)
- New Jersey Center for Pervasive Computing (Princeton, NJIT, Rutgers)
- Particle Processing Research Center (Rutgers, NJIT)
- Phytoremediation of Dredge Spoils Using Living Plants/Associated Microorganisms (Rutgers, NJIT)
- Software Engineering for Distributed Computing and Networking (Stevens, Rutgers, NJIT)

NJIT's articulation arrangements

NJIT currently has articulation arrangements with the following 18 institutions:

- Bergen Community College
- Brookdale Community College
- Burlington County College
- Camden County College
- County College of Morris
- Cumberland County College
- Essex County College
- Hudson County Community College
- Mercer County College
- Middlesex County College
- Ocean County College
- Passaic County Community College
- Raritan Valley County College
- Union County College
- Lincoln University of Pennsylvania
- Seton Hall University
- Stockton State College
- William Peterson University

III.B. Number of Collaborative Student Service and Administrative Programs

Collaborative Student Service and Administrative Programs

- South Jersey Economic Development Network (NJIT, Burlington, Cumberland, Georgian Court, Ocean, Salem, UMDNJ)
- Council for Higher Education in Newark (NJIT, Rutgers-Newark, Essex, UMDNJ)
- University Heights Science Park (NJIT, Rutgers-Newark, UMDNJ)
- Cross registration of courses (NJIT, Rutgers-Newark, Essex, UMDNJ)
- Joint student cultural events (NJIT, Rutgers-Newark)
- Joint shuttle bus service (NJIT, Rutgers-Newark)
- Joint library privileges and interlibrary loan arrangements (NJIT, Rutgers-Newark)
- Coordination of security and public safety programs (NJIT, Rutgers-Newark)
- Federated Department of History (NJIT, Rutgers-Newark)
- Federated Department of Physics (NJIT, Rutgers-Newark)
- Southern CIM Consortium (NJIT, Camden + 5 additional county colleges)
- Northern/Central Advanced Technology Consortium
- Joint admissions programs (NJIT, Bergen, Burlington, Essex, Hudson, Mercer, Middlesex, Ocean, Union) Cooperative agreement on B.S. in Engineering Science/M.D. or D.M.D. sequence (NJIT, UMDNJ)
- Articulation agreements (NJIT, 18 county colleges)
- Sharing of facilities: extension sites (NJIT, Bergen, Drew, Mercer, Paterson, Ramapo, Raritan)
- Energy Conservation Committee (NJIT, Rutgers-Newark)
- Joint street cleaning program (NJIT, Rutgers-Newark)
- Consortium for Pre-College Education in Newark (NJIT, Rutgers-Newark, UMDNJ)
- Communiversity
- New Jersey Higher Education Network

III.C. The Process for Assessing Outcomes for Graduates

NJIT assesses outcomes for graduates through a program that includes multiple measures and surveys. Most programs of the college include exit examinations and projects completed in capstone courses. In addition, all graduates have the opportunity to participate in the survey program conducted by the Office of Institutional Research and Planning. In order to help in assessing outcomes for graduates, the program surveys graduating students, alumni, and employers of NJIT graduates. General results from the surveys include the Graduating Student Survey, and Alumni Survey.

III.C.1. Graduating Student Survey

The Graduating Student survey was redesigned in Fall 2007 to improve its assessment effectiveness in its delivery via the web. The survey instrument consists of 36 questions relating to achievement of goals, self-assessment of acquired skills and knowledge, and items evaluating academic programs and student services. Graduates were also asked to describe current employment and educational plans

For Spring 2009, both graduating undergraduate and graduate students rated NJIT highly on a five point scale (5=high, 1=low). The current difficult economic climate has had an effect on our graduates. Compared to last year, the mean for the educational goal, improved ability to make more money declined for graduating undergraduate students (3.73 to 3.48) and graduate students (3.52 to 3.24). There was also a decline in the ratings of preparation to enter job market and helpfulness of financial aid services especially for graduating graduate students.

The National Association of College and Employers reported that 19.7 percent of college seniors who were seeking a job got one. Previously, 26 percent of those graduating in 2008 who had applied for a job had one in hand by the time of graduation (see http://www.naceweb.org/press/display.asp?year=&prid=301). The NJIT under-graduate full-time employment rate is substantially better than the national average.

Our graduating undergraduate full-time employment rate is about 36 percent or about 16 percent higher than the national average (19.7 percent). It is interesting to note that the overall average starting salary for undergraduates is about 2.5 percent higher than last year.

More undergraduates are planning to go to graduate school. About 78 percent of the undergraduate graduates plan on attending graduate school. This is a 12 percent increase from last year. While the rate of attending graduate school immediately within the year is the same as the previous year, 58 percent will be full-time students which is an increase of 19 percent. See table on next page.

Graduating Undergraduate Students Spring 2009 Survey
Q30. Are you planning to attend graduate school?

Forty-two percent of graduating undergraduate students plan on attending a graduate program in engineering. As compared to last year, more of them intend to enroll in computer/information technology programs, engineering and liberal arts.
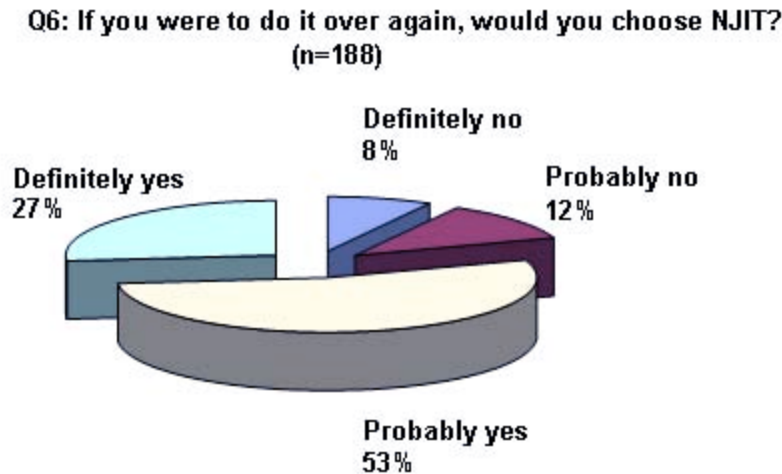
Compared to our undergraduate employment rate, graduating graduate students have fared better in the competition for jobs. Forty percent reported full-time employment which is only a 5 percent decrease from last year. Ninety-four percent has a job related to their field. Compared to last year, the overall average starting salary for graduating graduate students fell from $63,350 to $57,979. Fifty percent of the graduating graduate students found new employment.

III.C.2. Alumni Survey

In Spring of 2008, after an environmental scan of our peers, the Alumni survey was revised with input from Advancement and Career Development services. The instrument consisted of 26 items that asked alumni to rate their overall experience, assess their skill development, academic program and alumni services. Alumni were also asked if they had undertaken further formal education and their employment status. An email invitation and subsequent email reminders were sent to all alumni who graduated in the last three years. Many of the respondents reported that classes, professors and classmates were the most meaningful part of their university experience. If they had to choose a

college again, 80 percent of the respondents would choose NJIT, this is identical to the Fall 2005 Alumni survey response.

Alumni Survey Spring 2008

Q6: If you were to do it over again, would you choose NJIT?
(n=188)

Definitely no
8%

Definitely yes
27%

Probably no
12%

Probably yes
53%

General professionalism of the program, *faculty relationship with the students*, *relevance of the program in major to job performance* and *intellectual atmosphere* were rated good/excellent by approximately 60 percent or more of the respondents. More than 65 percent rated their skills (i.e., problem solving, computer skills, science, program specific skills and mathematics) as good/excellent. Nearly 80% percent are satisfied with their NJIT experience. Fifty-eight percent reported that NJIT prepared them well for their career/profession.

Within three years of graduation, 85 percent of NJIT graduated were employed full-time, and 82 percent have job related to their major. Since graduating, 30 percent have undertaken further formal education. More than 50 percent sought a Master's degree and 24 percent pursued a doctorate or other professional degree. Seventy-one percent plan on seeking further formal education in the future.

III.C.3. Tracking by Office of Career Development, Faculty & Others

In addition to the survey program, numerous other mechanisms are in place that help to provide NJIT with feedback and information about graduates. The Office of Career Development conducts a survey of graduates at the time of graduation, and this survey occurs approximately 1 month after the graduating student survey. At the time of graduation, the number of students reporting that they are employed increased several percentage points across all levels. Many alumni of NJIT continue to participate in the life of the NJIT community through membership in the alumni association, advisory boards established for academic programs, and through other events. Such participation generally includes the opportunity to advise NJIT on the graduate's experiences, achievements, and recommendations regarding programs.

III.D. Degrees

III.D.1. Bachelor's Degrees Awarded 2008

CIP Code	Institutional Program Title	Total
030104	Environmental Science	3
040201	Architecture	92
110101	Computer Science	62
110103	Information Technology	72
110401	Information Systems	20
140501	Bio Med Engineering	49
140701	Chemical Engineering	39
140801	Civil Engineering	55
140901	Computer Engineering	48
141001	Electrical Engineering	68
141301	Engineering Science	9
141901	Mechanical Engineering	80
143501	Industrial Engineering	20
150000	Engineering Technology	128
231101	Professional & Technical Communication	4
260101	Biology	19
261103	Computational Biology	4
270101	Mathematical Sciences	20
301501	Science Technology and Society	2
400501	Chemistry	4
400899	Applied Physics	2
520201	Management	76
540101	History	4
	Total	880

III.D.2. Master's Degrees Awarded 2008

CIP Code	Institutional Program Title	Total
030104	Environmental Science	10
040201	Architecture	33
040301	Infrastructure Planning	5
110101	Computer Science	201
110401	Information Systems	108
140501	Bio Med Engineering	67
140701	Chemical Engineering	11
140801	Civil Engineering	57
140804	Transportation Engr	7
140901	Computer Engineering	11
141001	Electrical Engineering	146
141301	Engineering Science	1
141401	Environmental Engr	6
141801	Materials Science and Engineering	3
141901	Mechanical Engineering	34
143501	Industrial Engineering	12
143601	Manufacturing Engr/Manufacturing Systems Engineering	8
149999	Internet Engineering & Pharmaceutical Engineering	40
151501	Engineering Management	51
231101	Professional & Technical Communication	18
260101	Biology	1
261103	Computational Biology	5
270301	Applied Math	17
270501	Applied Statistics	10
400501	Chemistry	4
400899	Applied Physics	2
440501	Environmental Policy Studies	6
520201	Management	30
520299	Management of Technology	79
	Total	983

III.D.3. Doctoral Degrees Awarded 2008

CIP Code	Institutional Program Title	Total
030104	Environmental Science	3
110101	Computer Science	7
110401	Information Systems	10
140501	Bio Med Engineering	2
140701	Chemical Engineering	2
140801	Civil Engineering	1
140804	Transportation Engr	2
140901	Computer Engineering	2
141001	Electrical Engineering	7
141801	Materials Science and Engineering	2
141901	Mechanical Engineering	4
143501	Industrial Engineering	1
260101	Biology	3
270101	Mathematical Sciences	4
400899	Applied Physics	8
440401	Public Administration[1]	1
	Total	59

Notes:

1. Joint degree program with Rutgers - The State University of New Jersey, Newark Campus