NJIT
New Jersey Institute of Technology

Annual Institutional Profile Report

2020

Submitted to the
New Jersey
Office of the Secretary of Higher Education
By
The Office of Institutional Effectiveness
New Jersey Institute of Technology

September 2020

September 18, 2020

New Jersey Institute of Technology (NJIT) takes great pride in presenting this Institutional Profile to the State of New Jersey. This report highlights our efforts in education, scholarly and applied research, and economic development during Fiscal Year 2019-2020.

The 2019-2020 academic year saw NJIT join the list of the top 100 national universities according to the highly competitive *U.S. News & World Report* ranking. This achievement reflects our continued success in graduating students ready for the challenges of the 21st century workforce thanks to the efforts of our dedicated faculty and staff.

Our growing research portfolio has placed us on the list of 131 Very High (R1) Research Activity doctoral institutions according to the Carnegie Classification of Institutions of Higher Education, positioning us as one of only three R1 universities in New Jersey. Our contributions to the state in education, research, employment, business incubation, and product development equate to a total economic impact to the State of New Jersey in the amount of $2.81 billion annually.

Despite the challenges we are currently facing, NJIT is committed to continuing and expanding our contributions to our state, the nation, and the world. We continue to support our host city of Newark through a number of initiatives including the Mayor's Scholarship, a collaboration with the Office of Newark Mayor Ras J. Baraka. Another partnership between NJIT, the city of Newark, and the Newark Public Schools offered rising 12th graders an intensive, seven-week program of math enrichment coupled with college and SAT preparation to increase the number of Newark residents who enroll at NJIT for undergraduate education.

This Institutional Profile Report highlights NJIT's continuing commitment to the State of New Jersey and to its citizens. All information supplied in this document is, to the best of my knowledge, complete and accurate.

Sincerely on behalf of NJIT,

Joel S. Bloom
President

TABLE OF CONTENTS

SECTION I – NEW JERSEY INSTITUTE OF TECHNOLOGY

New Jersey Institute of Technology (NJIT) was founded in 1881 as the Newark Technical School, becoming the Newark College of Engineering in 1930. Today, NJIT has seven schools and colleges: Newark College of Engineering (1930), the School of Applied Engineering and Technology (2018), the College of Architecture and Design (1973), the College of Science and Liberal Arts (1982), the Martin Tuchman School of Management (1988), the Albert Dorman Honors College (1993), and the Ying Wu College of Computing (2001).

NJIT has evolved from a commuter school teaching applied engineering skills to a nationally ranked public research university. This evolution 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, microelectronics and life sciences. Enrollment increased from 6,300 students in 1979 (the first year for which there is publicly available federal data) to over 11,500 students in the fall of 2019. Total research expenditures in fiscal year 2019 amounted to over $161 million.

At the same time, NJIT remains true to its urban mission and its commitment to helping motivated and talented students overcome educational challenges. In early 2018, Forbes ranked NJIT #1 among their Best Value Colleges for student economic upward mobility. That is, of Forbes' Best Value Colleges, NJIT had the highest percentage of students from the bottom fifth of the income distribution moving into the top fifth. The study is based on an analysis by The Equality of Opportunity Project, comparing the financial status of a student's family before they enter college and the graduate's earnings after college.

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.

NJIT Mission Statement

NJIT, the state's public polytechnic research university, is committed to excellence and global impact through:

- Education—preparing diverse students for positions of leadership as professionals and as citizens through innovative curricula, committed faculty, and expansive learning opportunities
- Research—advancing knowledge to address issues of local, national, and global importance with an emphasis on high impact basic, applied, and transdisciplinary scholarship
- Economic development—anticipating the needs of business, government, and civic organizations to foster growth, innovation, and entrepreneurship
- Engagement—applying our expertise to build partnerships, serve our community, and benefit society as a whole

These four elements guide NJIT in contributing solutions for the grand challenges of the future and improving the quality of life today.

SECTION II – DATA BY CATEGORY

A. Accreditation Status

II.A.1 Institutional Accreditation

New Jersey Institute of Technology as an institution is accredited by the following organization:

Middle States Commission on Higher Education (MSCHE)

II.A.2 Professional Accreditation

Association to Advance Collegiate Schools of Business (AACSB)

Accreditation Board for Engineering and Technology (ABET)

Council for Interior Design Accreditation (CIDA)

National Architectural Accrediting Board (NAAB)

National Association of Schools of Art and Design (NASAD)

II.A.3 Statement of Accreditation Status

MSCHE
MIDDLE STATES COMMISSION ON HIGHER EDUCATION
3624 Market Street
Suite 2 West
Philadelphia, PA 19104
(267) 284-5000
www.msche.org
Follow us: @mschedorg

STATEMENT OF ACCREDITATION STATUS

The Statement of Accreditation Status (SAS) is the official statement of the Middle States Commission on Higher Education (MSCHE) about each institution's current accreditation status and scope of accreditation. The SAS also provides a brief history of the actions taken by the Commission.

Institution:	**NEW JERSEY INSTITUTE OF TECHNOLOGY** Newark, NJ
Chief Executive Officer:	Dr. Joel Bloom, President
Carnegie Classification:	Doctoral Universities: Higher Research Activity » Four-year, medium, primarily nonresidential
Control:	Public
Former Name(s):	Newark College of Engineering (1/1/1976)
Address:	University Heights Newark, NJ 07102-1982
Phone:	(973) 596-3000
URL:	www.njit.edu
Accreditation Liaison Officer (ALO):	Dr. Eugene Deess
Commission Staff Liaison:	Dr. Kushnood Haq, Vice President

Accreditation Summary

For more information, see the Commission's Accreditation Actions Policy and Procedures.

Phase: Accredited

Status: Accreditation Reaffirmed

Accreditation Granted: 1934

Last Reaffirmation: 2017

Next Self-Study Evaluation: 2021-2022

Next Mid-Point Peer Review: 2026

Alternative Delivery Methods

The following represents approved alternative delivery methods included in the scope of the institution's accreditation:

Distance Education
Approved to offer programs by this delivery method

Correspondence Education
Not approved for this delivery method

Credential Levels

⊘ Approved Credential Levels

The following represents credential levels included in the scope of the institution's accreditation:

- **Bachelor's Degree or Equivalent**
- **Post-baccalaureate Certificate**
- **Master's Degree or Equivalent**
- **Doctor's Degree- Research/Scholarship**

Locations

The following represents branch campuses, additional locations, and other instructional sites that are included within the scope of the institution's accreditation:

Location	Type
Beijing University of Technology Beijing China	Additional Location

Mercer County Community College 1200 Old Trenton Road Windsor, NJ 08550	Additional Location
NJIT@Jersey City 101 Hudson St Jersey City, NJ 07302	Additional Location
Central High School (NPS) 246- 18th Avenue Newark, NJ 07103	Other Instructional Site
East Orange Board of Education 199- 4th Avenue East Orange, NJ 07040	Other Instructional Site
Essex County Vocational Technical Schools 91 West Market Street Newark, NJ 07103	Other Instructional Site
High Point Regional High School 299 Pidgeon Hill Road Sussex, NJ 07461	Other Instructional Site
Hillside High School 195 Virginia Street Hillside, NJ 07205	Other Instructional Site
John E. Dwyer Technology Academy 123 Pearl Street Elizabeth, NJ 07201	Other Instructional Site
Manasquan High School 167 Broad Street Manasquan, NJ 08736	Other Instructional Site
Morris County School of Technology 400 East Main Street Denville, NJ 07834	Other Instructional Site
Mt. Olive High School 18 Corey Rd Flanders, NJ 07836	Other Instructional Site

New Brunswick Public Schools 268 Baldwin Street, PO Box 2683 New Brunswick, NJ 08901-2683	Other Instructional Site
Northern Highlands Regional High School 298 Hillside Avenue Allendale, NJ 07642	Other Instructional Site
Northern Valley Regional High School 162 Knickerbocker Road Demarest, NJ 07627	Other Instructional Site
Passaic Valley Regional High School East Main Street Little Falls, NJ 07424	Other Instructional Site
Paterson School District- John F. Kennedy Complex 61-127 Preakness Avenue Paterson, NJ 07522	Other Instructional Site
Rising Star Academy 4613 Cottage Place Union City, NJ 07087	Other Instructional Site
Roselle Park High School 510 Chestnut Street Roselle Park, NJ 07204	Other Instructional Site
School District High School, Warren County Technical High School 1500 Route 57 Washington, NJ 07882	Other Instructional Site
Sojourn High School 80 Duryea Street Newark, NJ 07103	Other Instructional Site
St. Benedict's Preparatory 520 Dr Martin Luther King Jr Blvd Newark, NJ 07103	Other Instructional Site

The Academy for Math, Science & Engineering- Morris County 520 W Main St Rockaway, NJ 07866	Other Instructional Site
West Morris Central High School 259 Bartley Rd Chester, NJ 07930	Other Instructional Site
West Morris Mendham High School 65 E Main St Mendham, NJ 07945	Other Instructional Site
West Orange School District 179 Eagle Rock Avenue West Orange, NJ 07052	Other Instructional Site
Woodbridge Township District High School (Colonia High School) 180 East Street Colonia, NJ 07067	Other Instructional Site

Accreditation Actions

The following represents the MSCHE accreditation actions taken in the last ten (10) years. For more information, see the **Commission's Accreditation Actions Policy and Procedures** *and* **the Substantive Change Policy and Procedures**.

June 17, 2020

To acknowledge receipt of the substantive change request. To note the institution's decision to close the additional location at 1200 Old Trenton Road, Windsor, NJ 08550. To require immediate notification when instruction ceases at the additional location. To note that the Commission reserves the right to rescind approval of this substantive change if any developments reveal additional information that might have affected the Commission's decision and/or the requested substantive change is not implemented within one calendar year from the date of this action. The next evaluation visit is scheduled for 2021-2022.

April 30, 2019

To acknowledge receipt of the substantive change request. To include the additional location at NJIT@Jersey City, 101 Hudson Street, Jersey City, NJ 07302 within the institution's scope of accreditation. To note that the Commission may rescind this action if instruction does not commence within one calendar year from the date of this action. The next evaluation visit is scheduled for 2021-2022.

November 16, 2017	To accept the Periodic Review Report, to reaffirm accreditation, and to commend the institution for the quality of the report and the PRR process. The next evaluation visit is scheduled for 2021-2022.
July 5, 2017	To acknowledge receipt of the substantive change request. To include the additional location at Mercer County Community College, 1200 Old Trenton Road, Windsor, NJ 08550 within the scope of the institution's accreditation. The Commission requires written notification within thirty days of the commencement of operations at this additional location. Operations at the additional location must commence within one calendar year from the date of this action. To note that the Periodic Review Report has been received and will be acted upon by the Commission at the November meeting.
March 6, 2014	To accept the progress report. The Periodic Review Report is due June 1, 2017.
August 1, 2013	To note the institution never opened the additional locations in Kochi, India and Thiruvanathpuram, India. To also note that approval has lapsed and to remove the contractual agreement with NeST Group of Companies and these additional locations from the institution's accreditation.
June 28, 2012	To reaffirm accreditation. To request a progress report, due December 1, 2013, documenting evidence of steps taken to strengthen shared governance (Standard 4). The Periodic Review Report is due June 1, 2017.
February 28, 2012	To acknowledge receipt of the substantive change request and to include the contractual agreement with NeST Group of Companies and the additional locations in Kochi, India and Thiruvanathpuram, India, provisionally within the scope of the institution's accreditation, pending a site visit to one of these locations within six months of commencing operations. The Commission requires written notification within thirty days of the commencement of operations at these additional locations. In the event that operations at the additional locations do not commence within one calendar year from the approval of this action, approval will lapse. The next evaluation visit is scheduled for 2011-2012.
August 30, 2011	To acknowledge the substantive change request and to include the contractual agreement with Amity University, located at Sector 44, Noida, U.P., India, within the scope of the institution's accreditation. The next evaluation visit is scheduled for 2011-2012.

B. Number of Students Served

NJIT served 11,518 enrolled students in the fall of 2019.

II.B.1 Number of Undergraduate Students by Attendance Status

Table II.B.1
UNDERGRADUATE ENROLLMENT BY ATTENDANCE STATUS, FALL 2019

	Number	Percent
Full-time	6,878	78.2%
Part-time	1,916	21.8%
Total	8,794	100%

II.B.2 Number of Graduate Students by Attendance Status

Table II.B.2
GRADUATE ENROLLMENT BY ATTENDANCE STATUS, FALL 2019

	Number	Percent
Full-time	1,601	58.8%
Part-time	1,123	41.2%
Total	2,724	100%

II.B.4 FY2019 (12-Month) Unduplicated Enrollments

Table II.B.4
UNDUPLICATED ENROLLMENT, FY2019 (IPEDS 12-MONTH)

	Number	Credit Hours	FTE
Undergraduate	9,769	227,626	7,588
Graduate	3,467	40,113	1,671
Total	13,236	267,739	9,259

C. Characteristics of Undergraduate Students

A total of 9,048 individuals applied for admission as first-time freshmen to NJIT for fall 2019.

II.C.1 Mean Math and Evidence-Based Reading & Writing SAT Scores

Fall 2019 freshmen entered NJIT as either regular admits or Educational Opportunity Fund (EOF) admits. By admitting students using different admissions categories, the university provides opportunities to a broader range of students.

Table II.C.1 contains information on the average SAT scores of NJIT's fall 2019 enrolled full-time and part-time first-time freshmen. It should be noted that the first-time, full-time freshman population differs slightly from the cohort of first-time, full-time undergraduates who are tracked for federal reporting purposes using the IPEDS Graduation Rate Survey (GRS). This is because the IPEDS cohort also includes first-time, full-time students who are admitted above the freshman level because of advanced placement credits.

Table II.C.1
MEAN MATH, READING, AND WRITING SAT SCORES FOR FIRST-TIME FRESHMEN BY ADMISSION STATUS AND OVERALL, FALL 2019

Full-Time Students				
	ERW*	**N**	**Math**	**N**
Regular Admits	629.0	1,031	671.3	1,031
EOF Admits	592.9	97	634.9	97
Special Admits	0.0	0	0.0	0
All Admits	625.9	1,128	668.2	1,128
Missing Scores		135		135
Part-Time Students				
	ERW*	**N**	**Math**	**N**
Regular Admits	605.1	37	645.4	37
EOF Admits	600.0	4	595.0	4
Special Admits	0.0	0	0.0	0
All Admits	604.6	41	640.5	41
Missing Scores		3		3

*Note: ERW is Evidence-Based Reading & Writing.

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

Only 4.3% percent of first-time, full-time students required remediation in English.

Table II C.2
ENROLLMENT IN REMEDIATION COURSES

Total Number of Undergraduate Students Enrolled in Fall 2019

Total Fall 2019 Undergraduate Enrollment	Number of Students Enrolled in One or More Remedial Courses	Percent of Total
8,794	69	0.8%

Total Number of First-time, Full-time (FTFT) Students Enrolled in Remediation in Fall 2019

Total Fall Number of FTFT Students	Number of FTFT Students Enrolled in One or More Remedial Courses	Percent of FTFT Enrolled in One or More Remedial Courses
1,316	57	4.3%

First-time, Full-time (FTFT) Students Enrolled in Remediation in Fall 2019 by Subject Area

Subject Area	Number of FTFT Enrolled In:	Percent of FTFT Enrolled In:
Computation	0	0.0%
Algebra	0	0.0%
Reading	0	0.0%
Writing	0	0.0%
English	57	4.3%

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

In the fall of 2019, 11,518 students enrolled in various programs at New Jersey Institute of Technology. Seventy-six percent (8,794) of these students enrolled at the undergraduate level.

Seventy-eight percent of undergraduates enrolled as full time, and 25% of undergraduates were female. The majority of undergraduates were from the state of New Jersey.

Table II.C.3.a
UNDERGRADUATE ENROLLMENT BY RACE/ETHNICITY: FALL 2019

	Full-Time		Part-Time		Total	
	N	Percent	N	Percent	N	Percent
White	2,387	34.7%	418	21.8%	2,805	31.9%
Black	561	8.2%	157	8.2%	718	8.2%
Hispanic	1,399	20.3%	428	22.3%	1,827	20.8%
Asian*	1,625	23.6%	283	14.8%	1,908	21.7%
American Indian	9	0.1%	5	0.3%	14	0.2%
Alien	450	6.5%	48	2.5%	498	5.7%
Unknown	447	6.5%	577	30.1%	1,024	11.6%
Total* **	6,878	100.0%	1,916	100.0%	8,794	100.0%

**Asian includes Pacific Islanders.*
***Race Unknown includes Two or More Races.*

Table II.C.3.b
UNDERGRADUATE ENROLLMENT BY SEX: FALL 2019

	Full-Time		Part-Time		Total	
	N	Percent	N	Percent	N	Percent
Male	5,153	74.9%	1,467	76.6%	6,620	75.3%
Female	1,725	25.1%	449	23.4%	2,174	24.7%
Total	6,878	100.0%	1,916	100.0%	8,794	100.0%

Table II.C.3.c
UNDERGRADUATE ENROLLMENT BY AGE: FALL 2019

	Full-Time		Part-Time		Total	
	N	**Percent**	**N**	**Percent**	**N**	**Percent**
Less than 18	22	0.3%	234	12.2%	256	2.9%
18-19	2,188	31.8%	177	9.2%	2,365	26.9%
20-21	2,393	34.8%	290	15.1%	2,683	30.5%
22-24	1,592	23.1%	563	29.4%	2,155	24.5%
25-29	495	7.2%	398	20.8%	893	10.2%
30-34	117	1.7%	128	6.7%	245	2.8%
35-39	45	0.7%	51	2.7%	96	1.1%
40-49	20	0.3%	59	3.1%	79	0.9%
50-64	6	0.1%	15	0.8%	21	0.2%
65 and more	0	0.0%	1	0.1%	1	0.0%
Unknown	0	0.0%	0	0.0%	0	0.0%
Total*	6,878	100.0%	1,916	100.1%	8,794	100.0%

**Some totals will be higher than 100.0% due to rounding.*

II.C.4 Numbers of Students Receiving Financial Assistance under Each Federal-, State-, and Institution-Funded Aid Program

During the 2018-2019 academic year, undergraduates at NJIT received financial aid from multiple sources, i.e. Federal, State, institution, and other private sources. Aid was provided in the form of scholarships, grants, loans, and waivers.

Table II.C.4
FINANCIAL AID FROM FEDERAL, STATE, & INSTITUTION-FUNDED PROGRAMS, AY2018-2019

Federal Programs	Recipients	Dollars ($)	$ / Recipient
Pell Grants	3,429	16,016,000	4,670.75
College Work Study	358	1,542,000	4,307.26
Perkins Loans	0	0	--
SEOG	1,009	424,000	420.22
PLUS Loans	394	6,435,000	16,332.49
Stafford Loans (Subsidized)	3,486	14,997,000	4,302.07
Stafford Loans (Unsubsidized)	3,093	11,761,000	3,802.46
SMART & ACG or Other	0	0	--

State Programs	Recipients	Dollars ($)	$ / Recipient
Tuition Aid Grants (TAG)	2,766	21,975,000	7,944.69
Educational Opportunity Fund (EOF)	373	532,000	1,426.27
Outstanding Scholars (OSRP) or other	3	1,000	333.33
Distinguished Scholars	0	0	--
Urban Scholars	31	29,000	935.48
NJ STARS	33	75,000	2,272.73
NJCLASS Loans	140	1,934,000	13,814.29

Institutional Programs	Recipients	Dollars ($)	$ / Recipient
Grants/Scholarships	3,326	33,339,000	10,023.75
Loans	0	0	--

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

Eighty-seven percent of first-time undergraduates were from the state of New Jersey in the fall 2019 cohort.

Table II.C.5

Fall 2019 First-Time Undergraduate Enrollment by State Residence

State Residents*	Non-State Residents	Total	% State Residents
1,193	167	1,360	87.7%

**Residence unknown included with New Jersey residents*

D. Student Outcomes

The one-year retention rate of first-time, full-time freshmen (fall 2018 cohort) is 88%, and the six-year graduation rate has increased by 2% to a total of 67% for the fall 2013 cohort.

II.D.1 Graduation Rates

Table II.D.1.a
FOUR-, FIVE- AND SIX-YEAR GRADUATION RATE OF FALL 2013 FULL-TIME, FIRST-TIME DEGREE/CERTIFICATE SEEKING STUDENTS

Race/Ethnicity		Graduated in 4 Years		Graduated in 5 Years		Graduated in 6 Years	
	Cohort Size	N	Percent	N	Percent	N	Percent
White	348	142	40.8%	231	66.4%	247	71.0%
Black	63	13	20.6%	33	52.4%	35	55.6%
Hispanic	186	37	19.9%	86	46.2%	95	51.1%
Asian	226	105	46.5%	156	69.0%	168	74.3%
Alien	30	16	53.3%	22	73.3%	24	80.0%
Nat. Haw. or Pac. Isl.	1	0	0.0%	0	0.0%	0	0.0%
Two or More Races	37	15	40.5%	23	62.2%	25	67.6%
Unknown	58	26	44.8%	42	72.4%	43	74.1%
Total	949	354	37.3%	593	62.6%	637	67.2%

II.D.2 Third-Semester Retention Rates

Table II.D.2.a
THIRD-SEMESTER RETENTION OF FIRST-TIME UNDERGRADUATES BY ATTENDANCE STATUS, FALL 2018 TO FALL 2019

Full-Time			Part-Time		
Fall 2018 First-Time Undergraduates	Retained in Fall 2019	Retention Rate	Fall 2018 First-Time Undergraduates	Retained in Fall 2019	Retention Rate
1,235	1,087	88.0%	35	12	34.3%

E. Faculty Characteristics

A total of 443 full-time faculty (including tenured/tenure-track faculty and non-tenured University Lecturers) taught classes in Fall 2019.

II.E.1 Full-Time Faculty by Race/Ethnicity, Gender, and Tenure Status

Table II.E.1
FULL-TIME FACULTY BY RACE/ETHNICITY, SEX, TENURE STATUS AND ACADEMIC RANK: FALL 2019

	White		Black		Hispanic		Asian*		American Indian		Alien		Race Unknown*		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	All
TENURED																	
Professors	70	11	4	3	2	0	33	4	0	0	0	0	12	0	121	18	139
Associate Professors	42	9	2	1	3	0	19	7	0	0	0	1	0	0	66	18	84
Assistant Professors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	112	20	6	4	5	0	52	11	0	0	0	1	12	0	187	36	223
WITHOUT TENURE																	
Professors	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Associate Professors	1	2	0	0	0	0	5	1	0	0	2	0	0	0	8	3	11
Assistant Professors	18	14	0	0	1	1	16	6	0	0	19	8	0	0	54	29	83
All Others	58	33	4	1	8	0	7	4	0	0	5	0	1	0	83	38	121
Total	78	49	4	1	9	1	28	11	0	0	26	8	1	0	146	70	216
WITHOUT FACULTY STATUS																	
Total	2	1	0	0	0	0	0	1	0	0	0	0	0	0	2	2	4
TOTAL																	
Professors	71	11	4	3	2	0	33	4	0	0	0	0	12	0	122	18	140
Associate Professors	43	11	2	1	3	0	24	8	0	0	2	1	0	0	74	21	95
Assistant Professors	18	14	0	0	1	1	16	6	0	0	19	8	0	0	54	29	83
All Others	60	34	4	1	8	0	7	5	0	0	5	0	1	0	85	40	125
Total	192	70	10	5	14	1	80	23	0	0	26	9	13	0	335	108	443

**Asian includes Pacific Islanders and Race Unknown incudes Two or More Races.*

II.E.2 Percentage of Course Sections Taught by Full-Time Faculty

Table II.E.2
PERCENTAGE OF COURSE SECTIONS TAUGHT BY FULL-TIME FACULTY FALL 2019

		Taught by Full-Time Faculty		Taught by Part-Time Faculty		Taught by Others*	
	Total	Number	Percent	Number	Percent	Number	Percent
****Total Number of Course Sections**	1,667	873	52.4%	585	35.9%	209	12.5%

* *Others include Full-time Administrators and Teaching Assistants.*
*** Excludes Service Learning, Co-ops, Labs, Seminars, etc.*

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

Table II.E.3
RATIO OF FULL-TIME TO PART-TIME FACULTY, FALL 2019

	Number	Percent
Total number of Full-time Faculty	443	55.4%
Total number of Part-time Faculty	357	44.6%
Total	800	100.0%

F. Characteristics of the Trustees or Governors

II.F.1 Race/Ethnicity and Sex (simultaneously)

Table II.F.1
RACE/ETHNICITY AND SEX OF BOARD OF TRUSTEES AT NEW JERSEY INSTITUTE OF TECHNOLOGY, FALL 2019

	Male	Female	Total
White	9	1	10
Black	1	1	2
Hispanic	0	0	0
Asian	1	0	1
American Indian	0	0	0
Non Resident Alien	0	0	0
Unknown	0	0	0
Total	11	2	13

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

Table II.F.2
MEMBERS OF THE BOARD OF TRUSTEES, FALL 2019

Name	Title	Affiliation
Hon. Philip D. Murphy, ex-officio	Governor	State of New Jersey
Hon. Ras J. Baraka, ex-officio	Mayor	City of Newark
Robert C. Cohen '83, '84, '87 (*Chair*)	Vice President, Global Research and Development Chief Technology Officer	Stryker Orthopaedics
Norma J. Clayton '81 (*Co-Vice Chair*)	Vice President of Learning, Training and Development (Retired)	The Boeing Company
Nicholas M. DeNichilo '73, '78 (*Co-Vice Chair*)	President & CEO	Mott MacDonald
Diane Montalto '82 (*Co-Vice Chair*)	President	DSA Engineering, LLC

Lawrence A. Raia PE '65 (*Co-Vice Chair*)	Partner	Raia Properties
Joseph M. Taylor '11 (HON) (*Co-Vice Chair*)	Chairman and CEO (Retired)	Panasonic Corporation of North America
Dr. Jason R. Baynes	Founding Member/Manager	Baynes Orthopaedics
Peter A. Cistaro '68	Vice President, Gas Delivery (Retired)	Public Service Electric and Gas Company
Gary C. Dahms PE, PP, CME	President and CEO	T&M Associates
Kuo-Lin (Jordan) Hu '89	CEO	RiskVal Financial Solutions, LLC
Richard M. "Rick" Maser '73	Executive Chairman	Maser Consulting P.A.
Demetrios (Jim) Stamatis '85	CEO	Louis Berger (A WSP Company)
Dennis M. Toft, Esq.	Environmental, Regulatory Attorney	Chiesa Shahinian & Giantomasi PC

II.F.3 URLs of Webpages with Information on Trustees/Governors

Table II.F.3
URL OF WEBPAGE WITH INFORMATION ON TRUSTEES

URL
https://www.njit.edu/boards/board-trustees-membership/

G. Profile of the Institution

II.G.1 Degree and Certificate Programs

In Fall 2019, NJIT students were enrolled in 20 Ph.D. programs, master's programs in 46 specialties, 22 Post Baccalaureate Certificate programs and 51 active baccalaureate degree programs.

Table II.G.1
ACTIVE DEGREE AND CERTIFICATE PROGRAMS

College of Architecture and Design

- BA, Digital Design
- BA, Interior Design
- BAR, Bachelor of Architecture
- BS, Architecture
- BS, Industrial Design
- MAR, Master of Architecture
- MS, Architecture
- MS, Infrastructure Planning
- PhD, Urban Systems

College of Science and Liberal Arts

- BA, Biology
- BA, Communication and Media
- BA, History
- BA, Law, Technology & Culture
- BA, Theatre Arts & Technology
- BS, Applied Physics
- BS, Biochemistry
- BS, Biology
- BS, Biophysics
- BS, Chemistry
- BS, Communication & Media
- BS, Environmental Science
- BS, Forensic Science
- BS, Mathematical Sciences
- BS, Science, Technology & Society
- CRT, Applied Statistical Methods
- CRT, Digital Marketing Design Essentials
- CRT, Environmental Science
- CRT, Neuroscience

- CRT, Technical Communication Essentials
- MS, Applied Mathematics
- MS, Applied Physics
- MS, Applied Statistics
- MS, Biology
- MS, Biostatistics
- MS, Chemistry
- MS, Environmental Science
- MS, Materials Science & Engineering
- MS, Pharmaceutical Chemistry
- MS, Professional & Technical Communication
- PHD, Applied Physics
- PHD, Biology
- PHD, Chemistry
- PHD, Environmental Science
- PHD, Materials Science and Engineering
- PHD, Mathematical Sciences

Martin Tuchman School of Management

- BS, Business
- CRT, Finance for Managers
- CRT, Financial Technology
- CRT, Management Essentials
- CRT, Management of Technology
- MBA, Business Administration
- MS, Management
- PHD, Business Data Science

Newark College of Engineering

- BS, Biomedical Engineering
- BS, Chemical Engineering
- BS, Civil Engineering
- BS, Computer Engineering
- BS, Concrete Industry Management
- BS, Electrical Engineering
- BS, Engineering Science
- BS, General Engineering
- BS, Industrial Engineering
- BS, Mechanical Engineering
- BS, Engineering Technology - Computer Technology

- BS, Engineering Technology – Concrete Industry Management
- BS, Engineering Technology - Construction Engineering Technology
- BS, Engineering Technology - Construction Management Technology
- BS, Engineering Technology - Electrical and Computer Engineering Technology
- BS, Engineering Technology - Manufacturing Engineering Technology
- BS, Engineering Technology - Mechanical Engineering Technology
- BS, Engineering Technology - Medical Informatics Technology
- BS, Engineering Technology - Surveying Engineering Technology
- BS, Engineering Technology - Technology Education
- CRT, Biomedical Device Development
- CRT, Construction Management
- CRT, Pharmaceutical Management
- CRT, Project Management
- CRT, Supply Chain Engineering
- CRT, Transportation Studies
- MS, Biomedical Engineering
- MS, Biopharmaceutical Engineering
- MS, Chemical Engineering
- MS, Civil Engineering
- MS, Computer Engineering
- MS, Critical Infrastructure
- MS, Electrical Engineering
- MS, Engineering Management
- MS, Engineering Science
- MS, Environmental Engineering
- MS, Healthcare Systems Management
- MS, Industrial Engineering
- MS, Internet Engineering
- MS, Manufacturing Systems Engineering
- MS, Materials Engineering
- MS, Mechanical Engineering
- MS, Occupational Safety and Health Engineering
- MS, Pharmaceutical Engineering
- MS, Pharmaceutical Systems Management
- MS, Power and Energy Systems
- MS, Telecommunications
- MS, Transportation
- PHD, Biomedical Engineering
- PHD, Chemical Engineering
- PHD, Civil Engineering
- PHD, Computer Engineering
- PHD, Electrical Engineering

- PHD, Environmental Engineering
- PHD, Industrial Engineering
- PHD, Materials Engineering
- PHD, Mechanical Engineering
- PHD, Transportation

Ying Wu College of Computing

- BA, Computer Science
- BA, Information Systems
- BS, Bioinformatics
- BS, Business & Information Systems
- BS, Computer Science
- BS, Computing & Business
- BS, Human Computer Interaction
- BS, Information Systems
- BS, Information Technology
- BS, Web & Information Systems
- CRT, Big Data Essentials
- CRT, Business and Information Systems Implementation
- CRT, Data Mining
- CRT, Information Security
- CRT, Network Security and Information Assurance
- CRT, Software Engineering Analysis and Design
- CRT, Web Systems Development
- MS, Bioinformatics
- MS, Business & Information Systems
- MS, Computer Science
- MS, Computing & Business
- MS, Cyber Security and Privacy
- MS, Data Science
- MS, Information Systems
- MS, IT Administration & Security
- MS, Software Engineering
- PHD, Computer Science
- PHD, Information Systems

Accelerated Programs

- BA/MA
- BS/MS
- BS/MBA

- B.Arch./MS
- BS/PhD
- BA/DMD with Rutgers School of Dental Medicine
- BA/MD with Rutgers NJ Medical School
- BA/MD with American University of Antigua, West Indies
- BA/MD/MBA with American University of Antigua, West Indies
- BA/MD with Poncé Health Science University, Puerto Rico
- BA/DPT with Rutgers School of Health Professions (Physical Therapy)
- BA/PA with Rutgers School of Health Professions (Physician Assistant)
- BA/Clinical Lab Sciences with Rutgers School of Health Professions
- BA/MD with St. George's University Grenada, West Indies
- BA/OD with State University of New York (SUNY) College of Optometry
- BA/DO with New York Institute of Technology College of Osteopathic Medicine
- BA/BS/MPH with Rutgers School of Public Health (Master's in Public Health)
- BS/JD with Seton Hall University School of Law
- BS/JD with Pace University Law School

Agreements with Secondary Schools

Bergen County Technical School, Bergen County Academies
Joint Advancement Standing Admissions Program

Parsippany-Troy Hills Township School District
Joint Advancement Standing Admissions Program

Staten Island Technical School
Qualified Staten Island Tech students will be admitted to the Albert Dorman Honors College

STEM Innovation Academy of the Oranges
Approved NJIT courses offered on site

Union County Vocational-Technical School District
UCVTS AIT and MHS students guaranteed admission into a parallel BS program at NJIT

Articulation Agreements with In-State, Two-Year Colleges

Bergen Community College
Applied Math, Biology, Biomedical Engineering, Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Computer Technology, Electrical Engineering, Industrial Engineering, Information Technology, Mechanical Engineering

Bergen Community College Honors Program
Albert Dorman Honors College

Brookdale Community College
Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Computer Technology, Electrical Engineering, Electrical

Technology, Engineering Science, Industrial Engineering, Mechanical Engineering

Burlington County College

Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Electrical Engineering Technology, Industrial Engineering, Mechanical Engineering

Camden County College

Business, Information Technology

County College of Morris

Business, Computer Technology, Electrical Engineering Technology, Information Technology, Mechanical Engineering Technology

Essex County College

Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Computer Technology, Electrical Engineering, Industrial Engineering, Mechanical Engineering

Hudson County Community College

Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Electrical Technology, Industrial Engineering, Information Systems

Mercer County Community College

Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Computer Technology, Construction Engineering Technology, Industrial Engineering, Mechanical Engineering, Mechanical Engineering Technology, Surveying Technology

Middlesex County College

Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Engineering Technology, Computer Science, Construction Engineering Technology, Electrical Engineering, Electrical Technology, Industrial Engineering

Ocean County College

Applied Mathematics, Biology, Biochemistry, Biomedical Engineering, Business, Business and Information Systems, Chemical Engineering, Chemistry, Civil Engineering, Computer Science, Computer Engineering, Concrete Industry Management, Electrical Engineering, Electrical Technology, Environmental Science, Forensic Science, General Engineering, Industrial Engineering, Information Technology, Information Systems, Law, Technology and Culture, Mechanical Engineering, Web and Information Systems

Passaic County Community College

Business, Computer Technology, Electrical Engineering Technology

Raritan Valley Community College

Applied Mathematics, Biology, Business, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Computer Technology, Electrical Engineering, Engineering Science, Industrial Engineering, Information Technology, Mechanical Engineering, Science, Technology and Society

Sussex County Community College

Web and Information Systems

Union County College

Business, Chemical Engineering, Civil Engineering, Construction Engineering Technology, Computer Engineering, Computer Engineering Technology, Computer Science, Electrical Engineering, Electrical Technology, Industrial Engineering, Mechanical Engineering, Mechanical Engineering Technology, Surveying Technology

Agreements with Out-of-State, Two-Year Colleges

Lincoln Technical Institute

A.A.S. degree students transfer to NJIT to pursue BS in Electrical Technology

Rockland County College

Electrical Engineering Technology

Agreements with U.S. Four-Year Colleges and Universities (Undergraduate)

New Jersey City University

3+2 Dual Degree Program for NJCU students majoring in Applied Physics to transfer to NJIT to pursue BS in Electrical Engineering

New York Institute of Technology College of Osteopathic Medicine

Early Interview Assurance Program

Pace University

Qualified NJIT students are admitted to Pace University School of Law

Paul Smith College of Arts and Science

2+2 program in Surveying Technology

Ponce Health Sciences University

Undergraduate program leading to BA-MD Degrees

William Paterson University

Students complete coursework in the Pre-Engineering program at WPU, then transfer to NJIT to pursue a degree in one of the engineering disciplines

Seton Hall University

3+2 Dual Degree Program for SHU students majoring in either Chemistry or Physics to transfer to NJIT to pursue a degree in one of the engineering disciplines

Stockton State College

3+2 Liberal Arts/Engineering Dual Degree Program

Thomas Edison State University

ASAST students will pursue BS in Engineering Technology degree program at NJIT

Rutgers University

Qualified Albert Dorman Honors College students will enroll at the Rutgers School of Public Health to pursue the Masters in Public Health degree

Agreements with International Institutions

UNDERGRADUATE		
Germany	**Technische Universitat Dortmund**	Exchange
Ireland	**Galway-Mayo Institute of Technology**	Exchange/ Transfer
Italy	**Universita degli Studi di Parma**	Joint
Korea	**Hanyang University**	Exchange
Netherlands	**University of Twente**	Exchange
Sweden	**Jonkoping University School of Engineering & Business** **Linkoping University**	Exchange Exchange
Turkey	**Istanbul Technical University**	Joint
UNDERGRADUATE/GRADUATE		
Antigua	**American University of Antigua**	Accelerated Degree Agreement
Austria	**Universitat Innsbruck**	Exchange
China	**Beijing University of Chemical Technology** **Beijing University of Technology** **Fujian University of Technology** **Lixin University of Accounting and Finance** **Qingdao University of Technology** **Wuchang University of Technology**	Joint/Exchange Exchange Joint/Exchange NJIT Degree Joint/Exchange Exchange
Denmark	**Aarhus School of Architecture**	Exchange
France	**Centrale Nantes** **ESDES** **SKEMA**	Exchange Joint/Exchange Exchange
Germany	**Hochschule Bremen City University of Applied Sciences** **Technische Hochschule Ingolstadt** **University Hochschule Furtwangen**	Exchange Exchange Exchange
Greece	**University of Piraeus**	Exchange
India	**Indian Institute of Technology Gandhinagar**	Exchange
Ireland	**Cork Institute of Technology**	Exchange

Italy	**L'Universita di Siena**	Exchange
Jordan	**Yarmouk University**	Exchange
Korea	**Pukyong National University**	Exchange
Spain	**University of Cantabria** **Universidad Nebrija** **Universidad Pontificia Comillas**	Exchange Exchange Exchange
Sweden	**Jonkoping University School of Engineering and Business**	Exchange
Taiwan	**National Chiao Tung University**	Exchange
Thailand	**Chulalongkorn University**	Joint/Exchange
Turkey	**Istanbul Technical University**	Exchange

GRADUATE

China	**Beijing University** **Taizhou University**	NJIT Degree NJIT Degree
Germany	**Karlsruge University of Applied Sciences** **Universitat Passau**	Exchange/Degree Joint
India	**Siksha O Anusandhan University**	Joint
Italy	**Politecnico di Bari** **Universita degli Studi di Parma** **Universita di Parma** **Universita degli Studi di Salermo**	Joint Joint Joint Joint PhD
Lebanon	**Holy Spirit University of Kaslik** **Lebanese American University**	Joint Exchange

FACULTY/STAFF

Ireland	**Dublin Institute of Technology**	Exchange

H. Major Research and Public Service Activities

R&D Expenditures: Fiscal Year 2019

Externally Funded R&D Expenditures	$106,000,000
Total R&D Expenditures	$161,000,000

NJIT Research Institutes, Centers and Laboratories

NJIT is proud of its status as an "R1" Very High Research Activity doctoral institution according to the Carnegie Classification of Institutions of Higher Education. NJIT is one of only three R1 institutions in the state of New Jersey, along with Princeton University and Rutgers University – New Brunswick. The R1 classification is the result of NJIT's growth in research in four multidisciplinary areas: Data Science and Information Technology, Life Sciences and Engineering, Sustainable Systems, and other transdisciplinary areas that explore the large systemic changes of innovations such as "smart cities." NJIT's research institutes, centers and laboratories are organized according to these emerging areas.

LIFE SCIENCES AND ENGINEERING

INSTITUTES

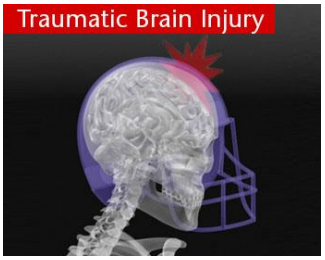
Institute for Brain and Neuroscience Research
Dr. Namas Chandra and Dr. Farzan Nadim, Co-Directors

The Institute for Brain and Neuroscience Research (IBNR) focuses on collaborative basic, applied and translational neuroscience research addressing critical challenges in the interdisciplinary areas of brain health, neural engineering, neural circuits and patterns, neurophysiology, and computational neurobiology.

CENTERS

Center for Brain Imaging
Dr. Bharat Biswal, Director

The long-term goal of the Center for Brain Imaging is to better understand human brain function using integrative neuroimaging and statistical and computational modeling methods.



Center for Injury Biomechanics, Materials and Medicine
Dr. Namas Chandra, Director

The Center for Injury Biomechanics, Materials and Medicine (CIBM3) is a multi- and interdisciplinary research center focused on understanding, diagnosing, and treating brain injuries and concussions using experimental and computational methods.

Center for Membrane Technologies
Dr. Kamalesh K. Sirkar, Director

The Center for Membrane Technologies investigates problems across multiple sectors that use membrane technologies to separate and purify water, air, industrial-fluid streams, solvents, pharmaceuticals, proteins, biopharmaceuticals, cells, particles, and nanoparticles.

Center for Rehabilitation Robotics
Dr. Sergei Adamovich, Director

NJIT and the Kessler Foundation are collaborators in the Rehabilitation Engineering Research Center (RERC), working on wearable robots for independent mobility and manipulation for individuals who have experienced spinal cord injuries, suffer from muscular dystrophy, or have suffered a stroke.

LABORATORIES

Biomaterial Drug Development, Discovery and Delivery Laboratory
Dr. Vivek Kumar, Director

The Biomaterial Drug Development, Discovery and Delivery Laboratory focuses on biomaterials, drug discovery, delivery and development. Specifically, the lab works to develop a number of small molecular and biomaterial-based therapeutics for inflammation modulation, angiogenesis, drug delivery, dental tissue engineering, and soft tissue engineering.

Biophotonics & Bioimaging Laboratory
Dr. Kevin D. Belfield and Dr. Yuanwei Zhang, Co-Directors

The Biophotonics and Bioimaging Laboratory combines diverse chemical and biological approaches to develop novel biomaterials and techniques to explore pathological processes. The lab investigates fundamental principles and develops new methods for the interaction of light with biological organisms, tissues, cells and molecules, an area that is regarded as key science for the next generation of clinical tools and biomedical research instruments.

Cardiovascular Tissue Engineering and Stem Cell Laboratory
Dr. Eon Jung Lee, Director

The Cardiovascular Tissue Engineering and Stem Cell Laboratory has several focuses: 1) developing functional engineered cardiovascular tissues using novel biomaterials and custom-designed bioreactor systems; 2) identifying novel strategies to enhance the growth of cardiac and vascular tissues in vitro by examining the effects of physical, mechanical, and chemical stimuli on stem cell differentiated cardiac and vascular cells using 3D engineered tissue models; 3) investigating tissue engineering approaches to develop microvascular formation in vitro; and 4) developing vascularized insulin-producing tissues for diabetes treatment.

Circadian Clock Laboratory
Dr. Yong-Ick Kim, Director

The Circadian Clock Laboratory researches the detailed biomolecular mechanisms of the circadian clock – the bodily and behavioral changes tied to the 24-hour daily cycle that respond to daylight and darkness.

Computational Biophysics Laboratory
Dr. Cristiano Dias, Director

Research in the Computational Biophysics Laboratory concentrates on the development of computational tools to answer complex questions at the intersection of physics, biology, and chemistry for medical and industrial purposes.

Computational Neuroanatomy and Neuroinformatics (CNN) Laboratory
Dr. Xiaobo Li, Director

The goal of the Computational Neuroanatomy and Neuroinformatics (CNN) Laboratory is to fill the gaps in the field of neurobiology and neuroimaging, particularly the lack of systematic construction of models for quantitative neurobiological criteria that can aid clinical diagnoses of cognitive dimensional deficits associated with severe brain disorders. The research of the CNN Lab focuses on development and implementations of analytic and statistical models for providing quantitative biological criteria that help diagnose cognitive defects by integrating high-dimensional, multi-modal MR neuroimaging, clinical and behavior data and refined imaging analysis and machine learning techniques.

Computational Orthopedics and Rehabilitation Laboratory
Dr. Saikat Pal, Director

The focus of the Computational Orthopedics and Rehabilitation Laboratory is to decode human movement using experiments and mathematical simulations, develop predictive and personalized methods for diagnosis of musculoskeletal disorders, and improve orthopaedic biomechanics and the design of implants.

Computer-Assisted Tissue Engineering and Blood System Biology Laboratory
Dr. Roman Voronov, Director

The Computer-Assisted Tissue Engineering and Blood System Biology Laboratory focuses on high-performance, image-based modeling of complex flows with applications ranging from bone tissue engineering and blood systems biology to drug delivery. The lab's two major projects involve developing computer-assisted tissue engineering technologies through predictive modeling of stem cell behavior and the control of single-cell migration, and investigating the mechanisms of blood clot formation which is relevant to thrombotic disorders such as strokes, heart attaches and hemophilia.

Laboratory of Environmental Microbiology and Biotechnology
Dr. Mengyan Li, Director

The Laboratory of Environmental Microbiology and Biotechnology seeks to make advances in the fields of applied microbiology and molecular biotechnology and to develop innovative techniques to mitigate and address environmental issues related to water and energy.

Fluid Locomotion Laboratory
Dr. Brooke Flammang, Director

The Fluid Locomotion Laboratory takes a multidisciplinary approach, integrating comparative anatomy and physiology, biomechanics, fluid dynamics, and biologically-inspired robotic devices to investigate the ways in which organisms interact with their environment and drive the evolutionary selection of morphology and function.

The Horax BioDatanamics Laboratory
Dr. Horacio Rotstein, Director

The primary interest of the Horax BioDatanamics Laboratory is the understanding of the mechanisms of generation of neuronal rhythmic oscillations in various areas of the brain (e.g., hippocampus, entorhinal cortex, prefrontal cortex, striatum, olfactory bulb) and how this results from the cooperative activity of the dynamic and biophysical properties of the participating neurons, the synaptic connectivity and the network topology. A primary focus of this research is the study of the effects that single cell and network resonances (emergent properties resulting from the interaction between neurons/networks and oscillatory inputs) affect the generation of network oscillations.

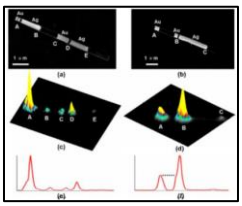
Instructive Biomaterials and Additive Manufacturing Laboratory (IBAM-Lab)
Dr. Murat Guvendiren, Director

The Instructive Biomaterials and Additive Manufacturing Laboratory (IBAM-Lab) develops novel biodegradable polymers and hydrogels and fabricates biomaterials, medical devices and tissue-engineered organs using additive manufacturing. Additionally, IBAM-Lab devises novel strategies for biomimetic material design, stimuli-responsive materials, surface patterning and photopolymerization.

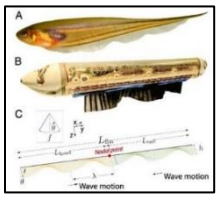
The Keck Laboratory for Topological Materials
Dr. Camelia Prodan, Director

The Keck Laboratory for Topological Materials uses interdisciplinary research to investigate the existence of "topological phonons" in microtubules, a naturally occurring biological material.

Laboratory of Nanomedicine and Healthcare Biomaterials
Dr. Xiaoyang Xu, Director



The Laboratory of Nanomedicine and Healthcare Biomaterials aims to develop new biomaterials and nanotechnologies for a variety of medical applications, including diagnosis, bioimaging, controlled drug delivery and regenerative medicine.



Laboratory for Neurobiology and Behavior
Dr. Eric Fortune, Director

Research in the Laboratory for Neurobiology and Behavior focuses on the interactions between sensory and motor systems that are used to generate and control animal behavior.

Laboratory for Neuroethology of Locomotion
Dr. Gal Haspel, Director

The Laboratory for Neuroethology of Locomotion studies the neurobiology of locomotion, exploring the question of how nervous systems generate coherent muscle activity to propel animals in their environment.

Laboratory of Neurovascular Inflammation and Neurodegenerative Diseases
Dr. James Haorah, Director

The Laboratory of Neurovascular Inflammation and Neurodegenerative Diseases examines the underlying molecular, biochemical, and cellular mechanisms of damage to blood-brain barrier and neurovascular units during substance abuse, blast-wave brain injury or HIV infection. Specifically, the lab investigates such areas as impairment of glucose transport/metabolism and neurodegeneration, animal modeling of atherosclerosis, and mechanisms of Wernicke's neuropathy in chronic alcohol abuse.

Material Analysis in Biological Systems Laboratory
Dr. Kathleen McEnnis, Director

The Material Analysis in Biological Systems Laboratory investigates the interaction of polymer drug delivery vehicles with the biological environment (cells, blood, proteins, and physiological temperature) using physical chemistry techniques in novel ways to design particles for drug delivery. Specifically, the lab investigates: 1) novel techniques to analyze nanoparticles in blood, 2) nanoparticle aggregation and protein corona

formation in blood, 3) particle glass transition temperature in biological conditions, and 4) cellular uptake of particles and the role of particle material properties.

Neuro Dynamics Laboratory
Dr. Farzan Nadim, Director

The Neural Dynamics Laboratory studies neurons and the circuits they form, as well as neuronal signaling, using both experimental and theoretical approaches to explore the basic patterned electrical activity underlying most rhythmic behaviors like walking and breathing in all animals.

Neural Engineering for Speech and Hearing Laboratory
Dr. Antje Ihlefeld, Director

The Neural Engineering for Speech and Hearing Laboratory examines how the brain processes sound through psychophysical, physiological, and computational modeling experiments, with research focusing in particular on the experience of people with hearing loss who use cochlear implants.

Neural Prosthetics Laboratory
Dr. Mesut Sahin, Director

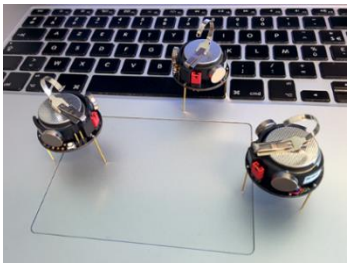
The primary research thrust of the Neural Prosthetics Laboratory is to develop novel and translational neural prosthetic approaches to help restore function in people with disabilities resulting from injuries to the central nervous system such as a spinal-cord injury, traumatic brain injury, and stroke.

Neuroecology of Unusual Animals Laboratory
Dr. Daphne Soares, Director

How do nervous systems evolve and adapt to extreme environments? The Neuroecology of Unusual Animals Laboratory studies the synthesis of neuroethological and ecological principles to understand the evolution of neural adaptation.

Opto and Microfluidics Laboratory
Dr. Sagnik Basuray, Director

The Opto and Microfluidics Laboratory establishes synergies among novel nanostructures, optics, biology, and electrokinetics to develop disruptive new technologies in sensors, diagnostics, drug delivery, and biofilms using cost-effective tools.



SwarmLab
Dr. Simon Garnier, Director

The SwarmLab is an interdisciplinary research unit that explores the mechanisms of Swarm Intelligence, with research focusing on how information is exchanged and transformed

during interactions between members of a group and how this leads to "intelligent" group behaviors.

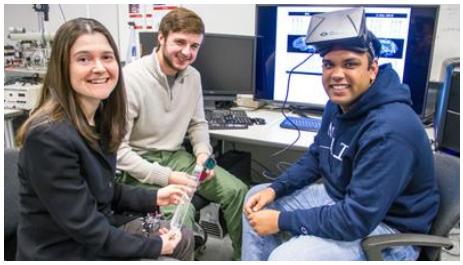
Tissue Engineering and Applied Biomaterials Laboratory
Dr. Treena Livingston Arinzeh, Director

The Tissue Engineering and Applied Biomaterials Laboratory develops functional biomaterials for regenerative medicine applications, developing functional biomaterials that impart cues to stem cells, either already present within the body or implanted, to affect their behavior.

Tissue Innervation and Muscle Mimetics Laboratory
Dr. Jonathan Grasman, Director

The long-term goal of the Tissue Innervation and Muscle Mimetics Laboratory is to design biomaterials and strategies to understand the mechanisms and processes by which tissue innervation occurs, and how to leverage these data to improve skeletal muscle repair outcomes. The lab focuses on developing multi-disciplinary approaches including principles from biomedical, chemical, and mechanical engineering; biology; material science; and chemistry to address the problems of tissue innervation and soft tissue reconstruction.

Vision and Neural Engineering Laboratory
Dr. Tara Alvarez, Director



The Vision and Neural Engineering Laboratory studies two potential mechanisms that may cause the vision disorder Convergence Insufficiency (CI) that researchers believe can be improved through therapy.

Zebrafish Neural Circuits and Behavior Laboratory
Dr. Kristen Severi, Director

The Zebrafish Neural Circuits and Behavior Laboratory investigates the neural circuits in the brain and spinal cord that control locomotion by studying larval zebrafish. Due to the transparency of these fish, neurons can be marked and observed while performing motor actions, providing a greater understanding of the specific circuits that are essential for performing motor actions and how those circuits interact.

SUSTAINABLE SYSTEMS

INSTITUTES

Institute of Space Weather Sciences
Dr. Haimin Wang, Director

The Institute for Space Weather Sciences (ISWS) combines the strengths of three NJIT research centers: Center for Solar-Terrestrial Research, Center for Computational Heliophysics, and Center for Big Data to understand and predict the physics of solar activities and their effects on space weather. ISWS integrates state-of-the-art observations, modeling, and big data analytics.

CENTERS

Center for Building Knowledge
Deane Evans, Director

The Center for Building Knowledge (CBK) is dedicated to generating new knowledge to improve the built environment and enhance the planning, design, construction and operation of facilities, helping individuals and communities make better informed decisions about the performance, sustainability, and resilience of buildings nationwide.

Center for Resilient Design
Deane Evans, Director

The Center for Resilient Design was established in the aftermath of Super Storm Sandy and has become a research, technical assistance, and training institution focused on improving the resilience of buildings and communities in the face of natural disasters and other stresses to inform and support disaster-resilience initiatives in other jurisdictions across the US and beyond.

Center for Energy Efficiency, Resilience and Innovation (CEERI)
Dr. Haim Grebel, Director

The Center for Energy Efficiency, Resilience and Innovation (CEERI) conducts research and development in the area of sustainable technologies and applications related to energy. CEERI provides technical and educational assistance for the deployment of sustainable technologies and applications to manage energy and related resources and promotes public awareness of energy resources.

Center for Natural Resources
Dr. Michel Boufadel, Director

The Center for Natural Resources investigates practical and efficient approaches to environmental and energy resource utilization, including assessment and remediation studies of pollution in natural settings and the evaluation of natural resources for the potential production of energy, especially renewable energy.

Center for Solar-Terrestrial Research
Dr. Andrew Gerrard, Director

The Center for Solar-Terrestrial Research (CSTR) is an international leader in ground- and space-based solar and terrestrial physics, with a particular interest in understanding the effects of the Sun on the geospace environment. CSTR is one of the principal investigators in NASA's Van Allen Probes mission that explores the radiation and plasma environment around Earth, and houses the Space Weather Research Laboratory that conducts scientific research in the area of space weather with the mission to understand and forecast the magnetic activity of the Sun and its impact on Earth.

Center for Solar-Terrestrial Research – Big Bear Solar Observatory
Dr. Wenda Cao, Director

The Center for Solar-Terrestrial Research (CSTR) operates Big Bear Solar Observatory (BBSO) in California, which houses the highest-resolution solar optical telescope in the world at 1.6 meters. With its state-of-the-art adaptive optics and scientific instrumentation, the telescope obtains high-resolution views of the Sun's surface features such as sunspots, filaments, faculae, granulation, spicules and jets.

Center for Solar-Terrestrial Research – Expanded Owens Valley Solar Array
Dr. Dale Gary, Director

The Center for Solar-Terrestrial Research (CSTR) operates the Expanded Owens Valley Solar Array in California, an array that consists of 15 antennae used to image solar flares at hundreds of frequencies within one second.

Center for Structured Organic Particulate Systems (C-SOPS)
Dr. Rajesh Davé, Director

The Center for Structured Organic Particular Systems (C-SOPS) brings together a cross-disciplinary team of researchers from major universities to work closely with industry leaders and regulatory authorities to improve the way pharmaceuticals, foods and agriculture products are manufactured.

CNBM New Energy Materials Research Center
Dr. Ken Chin, Director

The CNBM New Energy Materials Research Center is a public US corporation that recently awarded NJIT a three-year, $1.5M grant to establish a CdTe solar energy research center focused on improving the applications of CdTe semiconductor materials for use in thin-film solar modules.

Electronic Imaging Center
Dr. Haim Grebel, Director

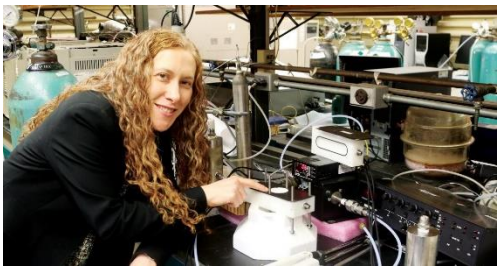
The Electronic Imaging Center is an interdisciplinary center focused on nanotechnology, spectral analysis with sub-wavelength structures, and energy.

The Elisha Yegal Bar-Ness Center for Wireless Information Processing
Dr. Alexander Haimovich, Director

The Elisha Yegal Bar-Ness Center for Wireless Information Processing (CWiP) researches diverse areas of communications, signal processing, and radar including cloud radio-access networks, cooperative networks, distributed radar, and acoustics communications.

Membrane Science, Engineering and Technology (MAST) Center
Dr. Kamalesh K. Sirkar, Director

The Membrane Science, Engineering and Technology Center, a National Science Foundation Industry/University Cooperative Research Center (I/UCRC), conducts basic research and related development on innovative materials and processes that facilitate the use of membrane technology.



New Jersey Center for Engineered Particulates (NJCEP)
Dr. Rajesh Davé, Director

Creation of advanced particulate materials and products through the engineering of particles is a major research focus of the New Jersey Center for Engineered Particulates (NJCEP).

Polar Engineering Development Center (PEDC)
Dr. Andrew Gerrard, Director

The Polar Engineering Development Center (PEDC), housed within NJIT's Center for Solar-Terrestrial Research (CSTR), focuses on instrument and hardware design for deployment at high latitudes and Polar regions. Originally founded in the 1980s as part of the National Science Foundation-supported Automatic Geophysical Observatory (AGO) program, today the PEDC serves the broader astrophysical and geospace scientific communities conducting research in Polar environments, managing instruments at South Pole Station, McMurdo Station, Palmer Station and across the Antarctic ice shelf.

LABORATORIES

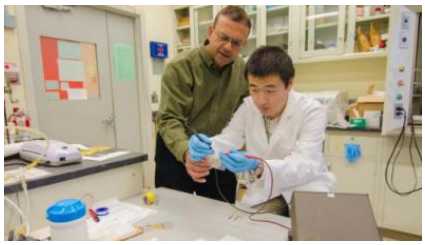
Advanced Energy Systems and Microdevices Laboratory

Dr. Eon Soo Lee, Director

The Advanced Energy Systems and Microdevices Laboratory's research is focused on the non-platinum group of metal (non-PGM) catalysts to replace PGM catalysts for electrochemical-energy systems such as fuel cells and batteries, and industrial applications such as filtering systems and petroleum-processing systems.

Analytical Chemistry and Nanotechnology Laboratory

Dr. Somenath Mitra, Director



The Analytical Chemistry and Nanotechnology Laboratory researches the fields of analytical chemistry, nanotechnology, and water treatment, focusing on developing instrumentation for environmental monitoring as well as developing carbon nanotubes as adsorbents for various environmental/pharmaceutical pollutants.

Applied Electrohydrodynamics Laboratory

Dr. Boris Khusid, Director

The Applied Electrohydrodynamics Laboratory explores electric and magnetic field-driven phenomena in suspensions that are mixtures of solid particles and a liquid. Ongoing projects focus on understanding how the electric and magnetic interactions between particles affect their arrangement and thereby their suspension properties.

Assistive and Intelligent Robotics Laboratory

Dr. Lu Lu, Director

The Assistive and Intelligent Robotics Laboratory focuses on two areas: intelligent robotics and assistive robotics. Intelligent robotics deal with the novel design and control of robots that intelligently execute various tasks. Assistive robotics focuses on using robots to help humans in need.

Atmospheric Chemistry Laboratory

Dr. Alexei Khalizov, Director

The Atmospheric Chemistry Laboratory investigates the origins of atmospheric pollution and evaluates its environmental impacts.

Biophotonics Sensing and Imaging Laboratory

Dr. Xuan Liu, Director

The Biophotonics Sensing and Imaging Laboratory investigates biomedical optics including optical coherence tomography, endoscopic microscopy, fiber optics for biomedical applications, optical image processing, and coherent scattering.

Computational Laboratory for Porous Materials
Dr. Gennady Gor, Director

The main focus of the Computational Laboratory for Porous Materials is nanoporous materials - solids with pores of 100 nanometers and below - that play a significant role in both nature and technology. The lab's approaches are purely theoretical, using various modeling techniques to represent phenomena at the nanoscale: Monte Carlo simulations, molecular dynamics, density functional theory and finite element analysis.

Computational Nanomechanics and Materials Science Laboratory
Dr. Dibakar Datta, Director

The Computational Nanomechanics and Materials Science Laboratory models energy storage systems such as rechargeable batteries, investigates mechanics and electronics of nanomaterials (e.g. graphene) and other two-dimensional materials, models imperfections in crystalline materials, and studies nanomaterials for biological problems.

Controls, Automation, and Robotics Laboratory
Dr. Cong Wang, Director; Dr. Lu Lu, Co-Director

The Controls, Automation, and Robotics (CAR) Laboratory focuses on the development of control theories and their applications to automation and robotics.

Environmental Science Laboratory
Dr. Yong Kim, Director

The Environmental Science Laboratory studies the biochemical mechanisms underlying circadian rhythms, the bodily and behavioral changes tied to the 24-hour daily cycle that are responsive to light and darkness. Research to date has focused on pinpointing the activation and inhibition of proteins integral to regulating the circadian clock and on the biochemical mechanisms that reset it.

Environmental Systems Laboratory
Dr. Lisa B. Axe, Director

The Environmental Systems Laboratory focuses on investigating chemical and physical processes in environmental systems using a suite of analyses to study the effects of surface chemistry on contaminant transport and attenuation. A primary goal is to advance understanding of interfacial processes, the interaction between minerals and chlorinated solvents, and their impact on water quality and contaminant mobility and bioavailability.

Controls, Automation, and Robotics Laboratory
Dr. Cong Wang, Director; Dr. Lu Lu, Co-Director

The Controls, Automation, and Robotics (CAR) Laboratory focuses on the development of control theories and their applications to automation and robotics.

Geo-resources and Geotechnical Laboratory
Dr. Bruno M. Goncalves da Silva, Director

The focus of the Geo-resources and Geotechnical Laboratory is the experimental and numerical study of the fracturing processes of rocks subject to various loading conditions in the context of resource exploitation. Other areas of interest include the development of materials, as well as design and construction methods to improve the resilience of underground structures such as tunnels and caverns.

High Performance Concrete and Structures Laboratory
Dr. Methi Wecharatana, Director

The High Performance Concrete and Structures Laboratory researches the fatigue and durability of high-performance, fiber-reinforced concrete and microstructures of high-performance concrete using scanning electron microscopes and transmission electron microscopes.

Intelligent Transportation Systems Laboratory
Dr. Jo Young Lee, Director

The Intelligent Transportation Systems (ITS) Laboratory explores Connected Vehicles (CV) and their applications to traffic management (i.e. CV-based traveler information system), traffic signal controls (i.e. CV-based real-time intersection control), and cooperative vehicle intersection control (CVIC) for autonomous cars.

Laboratory for the Mechanics of Advanced Materials
Dr. Shawn A. Chester, Director

The primary research goal of the Laboratory for the Mechanics of Advanced Materials is to understand phenomena in solid mechanics, particularly multiphysics material behavior.

Laboratory for Numerical Turbulence
Dr. Simone Marras, Director

The research of the Laboratory for Numerical Turbulence concentrates on the development of numerical methods for the simulation of turbulent compressive flows and aerodynamic sound generation.

Laboratory of Applied Biogeochemistry for Environmental Sustainability
Dr. Lucia Rodriguez Freire, Director

The Laboratory of Applied Biogeochemistry for Environmental Sustainability investigates the mechanisms of interaction between biological and inorganic systems to examine the effect of contaminants on natural biogeochemical cycles in order to predict, avoid, and remediate current and future pollution, engineer highly efficient and

sustainable resource-recovery technologies from agricultural, industrial and mining waste, and design state-of-the-art wastewater treatment systems to remove persistent contaminants in the environment using ubiquitous, inexpensive materials.

Mass Spectrometry Research Laboratory
Dr. Hao Chen, Director

Mass spectrometry is a fascinating analytical and biological technology. The Mass Spectrometry Research Laboratory focuses on new mass-spec innovation based on newly discovered ion chemistry and novel instrumentation.

Micro and Nano Mechanics Laboratory
Dr. Siva Nadimpalli, Director

The Micro and Nano Mechanics Laboratory seeks to provide a fundamental understanding of the mechanics of deformation, fracture, degradation, and the failure of solid materials such as metals, ceramics, polymers, and other emerging materials using a combined experimental and modeling approach.

Multiphase Mixing Laboratory
Dr. Piero Armenante, Director

The Multiphase Mixing Laboratory is dedicated to the study of single- and multi-phase mixing phenomena, such as those occurring in industrial stirred tanks and reactors, involving single fluids – primarily liquids with different rheological properties – in the presence or absence of one or more additional phases, such as fine solid particles, a dispersed gas or an immiscible liquid. Additionally, numerical tools, including computational fluid dynamics and theoretical process modeling such as mass transfer models are used to determine how mixing affects processes and how it can be modified to improve outcomes.

Nanoelectronics and Energy Conversion Laboratory
Dr. Dong-Kyun Ko, Director

Research in the Nanoelectronics and Energy Conversion Laboratory focuses on the discovery of new nanomaterials, the design of novel high-performance device structures, and the experimental demonstration of device prototypes.

Nanomaterials for Energy and Environment Labs (NEEL)
Dr. Xianqin Wang, Director

The goals of the Nanomaterials for Energy and Environment Labs (NEEL) are to develop advanced functional nanomaterials for sustainable energy production and environmental protection, and to investigate the structure and reactivity of catalytic systems under operational conditions such as high pressure and temperature.

Nano-Optoelectronic Materials and Devices Laboratory
Dr. Hieu P. Nguyen, Director

The Nano-Optoelectronic Materials and Devices Laboratory develops high-performance nanophotonic and nanoelectronic devices for lighting and energy storage applications.

Operations Management Laboratory
Dr. Wenbo Selina Cai, Director

The Operations Management Laboratory aims to advance the understanding of the impact of key players' decision-making processes on the design, pricing, and management of products and services in supply chain management.

Optimized Networking Laboratory
Dr. Abdallah Khreishah, Director

The Optimized Networking Laboratory engages in research to improve the performance of wireless and wireline networks and to utilize these networks in emerging applications. The goals of the lab are to identify, model, simulate and demonstrate proof-of-concept setups for next generation networking technologies.

Organic Reactions and Mechanisms Laboratory
Dr. Pier Alexandre Champagne, Director

The Organic Reactions and Mechanisms Laboratory focuses on the evaluation of organic synthesis to develop new chemical reactions in the field of organoboron chemistry. They also employ physical organic and computational tools to understand the mechanisms of organic reactions and develop models of selectivity for enantioselective organocatalyzed or transition metal-catalyzed reactions.

Particle Engineering and Pharmaceutical Nanotechnology Laboratory
Dr. Ecevit Bilgili, Director

The Particle Engineering and Pharmaceutical Nanotechnology Laboratory designs advanced particulate formulations and processes for various high-value-added product industries such as the pharmaceutical, flavors and fragrances, nutraceuticals and agrochemical industries. The lab couples experimentation with population balance modeling, discrete element modeling, computational fluid dynamics and microhydrodynamic modeling to elucidate complex non-linear rate processes that occur in manufacturing operations.

Reactive and Energetic Materials Laboratory
Dr. Edward L. Dreizin, Director

The focus of the Reactive and Energetic Materials Lab is to design and characterize new metal-based reactive materials with accelerated reaction rates. The lab also works on mechanistic models describing ignition and combustion of metals and metal-based

reactive materials that can be used to describe the performance of complex energetic systems.

Resilient and Sustainable Infrastructure Materials and Structures Laboratory
Dr. Matthew P. Adams and Dr. Matthew J. Bandelt, Co-Directors

The Resilient and Sustainable Infrastructure Materials and Structures Laboratory is a research center focused on improving the knowledge base of materials and structures in the built environment and reengineering them for the future.

Sustainable Environmental Nanotechnology and Nanointerfaces Laboratory
Dr. Wen Zhang, Director

The Sustainable Environmental Nanotechnology and Nanointerfaces Laboratory integrates concepts and principles of nanotechnology and sustainability into the research and education activities of the environmental engineering discipline.

DATA SCIENCE AND INFORMATION TECHNOLOGY

INSTITUTES

Institute of Data Science
Dr. David Bader, Director

The Institute for Data Science initiates collaborative, inter-disciplinary research by bringing existing research centers in big data, medical informatics and cybersecurity together with new research centers in data analytics and artificial intelligence, cutting across all NJIT colleges and schools to conduct both basic and applied research.

CENTERS

Center for Big Data
Dr. Chase Wu and Dr. Yi Chen, Co-Directors

The mission of the Center for Big Data is to synergize the strong expertise in various disciplines across the NJIT campus and build a unified platform that embodies a rich set of big data-enabling technologies and services with optimized performance to facilitate research collaboration and scientific discovery.

Center for Computational Heliophysics
Dr. Alexander Kosovichev, Director

The primary goal of the Center for Computational Heliophysics is to develop data analysis and modeling tools in the area of heliophysics – the study and prediction of the Sun's magnetic activity – by combining expertise from computer scientists in the Ying Wu College of Computing and from physicists and mathematicians in the College of Science

and Liberal Arts. The Center works in partnership with NASA's Advanced Supercomputing Division at the NASA Ames Research Center.

Cybersecurity Research Center
Dr. Kurt Rohloff and Dr. Reza Curtmola, Co-Directors

The Cybersecurity Research Center seeks to address ongoing and long-term future cybersecurity needs for protection and further economic development across the State of New Jersey, nationally, and internationally by developing new methods for understanding how modern cyber systems can be compromised and fail, how to design cyber systems so they are secure, and how to improve or fix the cyber infrastructure that has already been deployed.

Leir Center for Financial Bubble Research
Dr. William Rapp, Director

The Leir Center for Financial Bubble Research seeks to understand through quantitative and qualitative research how a financial bubble can be identified, including its stages of development, and what policies can best manage its impacts.

Structural Analysis of Biomedical Ontologies Center
Dr. Yehoshua Perl and Dr. James Geller, Co-Directors

The Structural Analysis of Biomedical Ontologies Center (SABOC) is an interdisciplinary research center linking computer science and medicine, dealing specifically with medical terminologies and ontologies, a subject of study that is a sub-field of Medical Informatics.

LABORATORIES

Advanced Communication and Signal Processing (aCASP) Research Laboratory
Dr. Nirwan Ansari, Director

The advanced Communication and Signal Processing (aCASP) Research Laboratory conducts research in domains including wireless high speed underwater vector communication; source location using vector sensors and microphones; and systems biology of cell signaling, molecular networks and disease.

Advanced Networking Laboratory
Dr. Nirwan Ansari, Director

The Advanced Networking Laboratory (ANL) engages in research to improve the performance, dependability, and trustworthiness of telecommunications networks.

Big Data Analytics Laboratory (BDaL)
Dr. Senjuti Basu Roy, Director

The Big Data Analytics Lab (BDaL) is an interdisciplinary research laboratory focusing on large-scale data analytics problems that focus on man-machine collaboration in

domains such as social networks, healthcare, climate science, retail and business, and spatial data.

Face Recognition and Video Processing Laboratory
Dr. Chengjun Liu, Director

The Face Recognition and Video Processing Laboratory develops advanced theoretical methods and applies them to solve problems such as facial recognition, image search, video retrieval, big data analytics and visualization.

Gender-Inclusive Design, Game, and Educational Technology (GIDGET) Laboratory
Dr. Michael Lee, Director

The (G)ender-(I)nclusive (D)esign, (G)ame, and (E)ducational (T)echnology (GIDGET) Lab investigates the use of technology to effectively and measurably teach novices basic programming concepts using an online puzzle game.

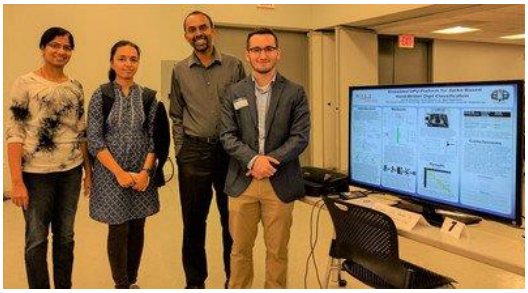
GIScience and Remote Sensing Laboratory
Dr. Huiran Jin, Director

The GIScience and Remote Sensing Laboratory focuses on the advancement of geospatial analysis and quantitative modeling of environmental changes at regional to global scales. Remotely sensed data acquired by various airborne and spaceborne sensors are intensively used (e.g. spectral, SAR, LiDAR and UAVs). Topics of interest include land cover/land use mapping, wetland inundation monitoring, urban growth detection, and crop characterization.

High Performance Computing Laboratory
Dr. Qing Liu, Director

The High Performance Computing (HPC) Laboratory investigates high performance computing, big data in data-intensive science, and high speed networking. In particular, the lab focuses on scalable data storage and analysis solutions on emerging architectures for HPC applications.

Intelligent Computing Laboratory
Dr. Bipin Rajendran, Director



The Intelligent Computing Laboratory investigates the following areas: biomimetic engineering and computation, architectures and systems for intelligent computing, novel materials and devices for next-generation computing applications, and algorithms and analytics for urban challenges.

Networking Research Laboratory
Dr. Roberto Rojas-Cessa, Director

The Networking Research Laboratory pursues research topics in the broad area of computer communications and networks, particularly theoretical and experimental research that leads to the understanding of the impact and future of communications networks such as the Internet.

Robotics and Data (RAD) Laboratory
Dr. Pramod V. Abichandani, Director

Researchers at the Robotics and Data Laboratory (RADLab) work on problems centered around optimal, multi-dimensional, data-driven decision making for systems involving multiple aerial, terrestrial, underwater, and manipulator robots. Techniques from mathematical programming, linear and nonlinear systems theory, statistics, and machine learning are leveraged to create theoretical frameworks and associated real-time embedded systems to solve these problems.

Social Interaction Laboratory
Dr. Donghee Yvette Wohn, Director

The Social Interaction Laboratory is an interdisciplinary research hub that combines psychology, communication, computing, and design to understand how people interact with technology, a field known as human-computer interaction (HCI).

Systems Optimization and Analytics Laboratory
Dr. Ismet Esra Buyuktahtakin-Toy, Director

The Systems Optimization and Analytics Laboratory (SOAL) conducts theoretical and applied research on large-scale mathematical optimization, including model formulation and analysis, algorithmic development, and software implementation to tackle complex systems and develop optimal decision strategies. SOAL applies data analytics and optimization techniques in production planning and supply chain systems as well as energy, healthcare, agricultural, and other systems.

TRANSDISCIPLINARY AREAS

INSTITUTES

Henry J. and Erna D. Leir Research Institute for Business, Technology and Society
Dr. Yi Chen, Director

The Leir Research Institute for Business, Technology and Society has an integrated, dual mission of innovative business research and targeted outreach necessary to realize the Institute's overarching goal of helping business and industry to become more eco-efficient, resilient and sustainable.

New Jersey Innovation Institute
Simon Nynens, CEO

The New Jersey Innovation Institute (NJII) is an NJIT corporation focused on helping private enterprise meet the grand challenges shared across an entire sector while also helping individual companies innovate new product or market opportunities and develop new strategic business partnerships that embrace emerging technology. The five initial iLabs serving as the catalyst for collaboration among the academic, private, and public sectors are healthcare delivery systems, biotechnology and pharmaceutical production, civil infrastructure, defense and homeland security, and financial services.

CENTERS

Center for Applied Mathematics and Statistics

Dr. Lou Kondic, Director

The Center for Applied Mathematics and Statistics (CAMS) is an interdisciplinary research center dedicated to supporting research in the mathematical sciences focusing on modeling and simulations of the systems belonging to a general category of soft matter, including thin liquid films of nanoscale thickness, liquid crystals, granular matter and, more recently, colloids.

Center for Ethics and Responsible Research

Dr. Brit Holbrook, Director

The Center for Ethics and Responsible Research helps advance knowledge of how to ensure ethical and responsible research at a STEM-focused institute. NJIT serves as a test bed for tools and methods developed by the National Ethics Project (NEP). Through its partnership with NEP, NJIT transforms its approach to Ethical and Responsible Research (ER2) from its current state to a model for other institutions to emulate.

Intelligent Transportation Systems Resource Center

Dr. Lazar Spasovic, Director

The Intelligent Transportation Systems (ITS) Resource Center utilizes roadside sensing, information and communication technologies and integrates them into traffic-engineering and management practices with the goals of reducing congestion and improving the mobility, safety, and efficiency of the transportation system in support of sustainable regional growth and economic development.

Newark Innovation Acceleration Center

Dr. Michael Ehrlich, Director

The New Jersey Innovation Acceleration Center (NJIAC) is a collaborative resource for entrepreneurs with a focus on helping ventures accelerate their development, achieving

more rapid time to market and time to profitability milestones. Another goal of the center is to intensify the connections between the academic and entrepreneurial communities.

Otto H. York Center for Environmental Engineering and Science
Dr. Somenath Mitra, Director

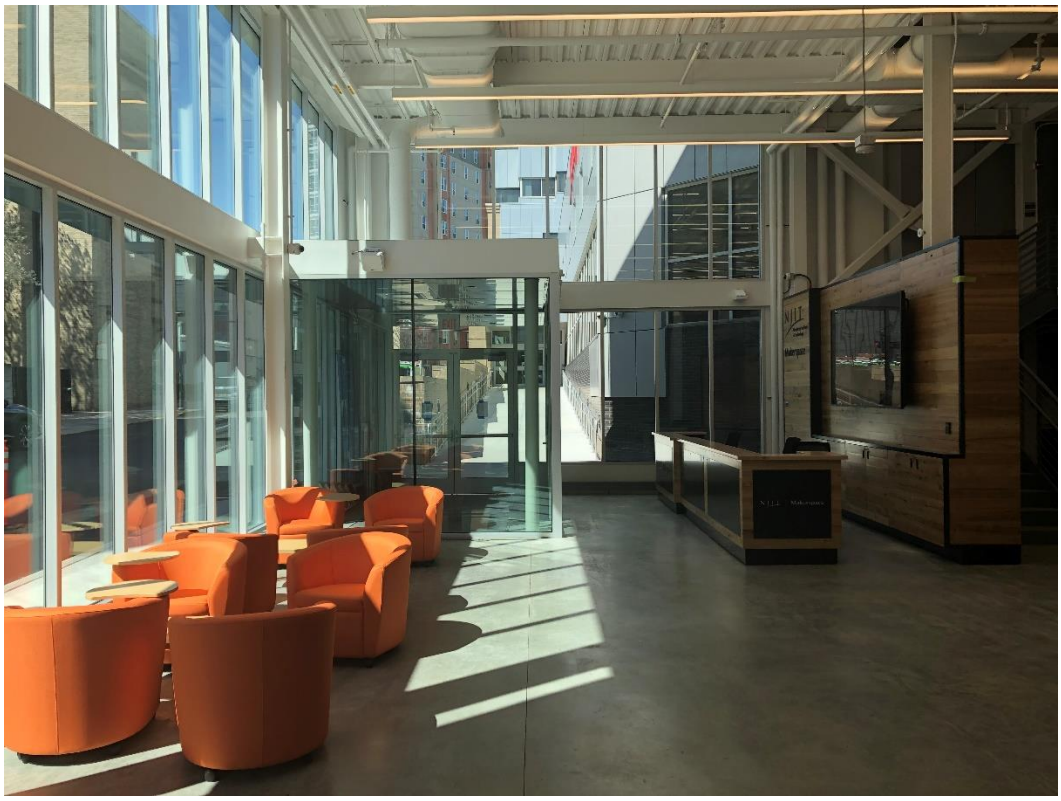
The Otto H. York Center for Environmental Engineering and Science offers core and shared research laboratory facilities as a resource for many interdisciplinary research programs and initiatives including research projects in nanotechnology, drug delivery systems, particle engineering, microfluidics, membrane science, environmental science and engineering, and biomedical engineering.

VentureLink
Simon Nynens, Executive Director

VentureLink is a community hub for technology companies at all stages of development, providing companies with weekly programming, workspace, and expert mentorship.

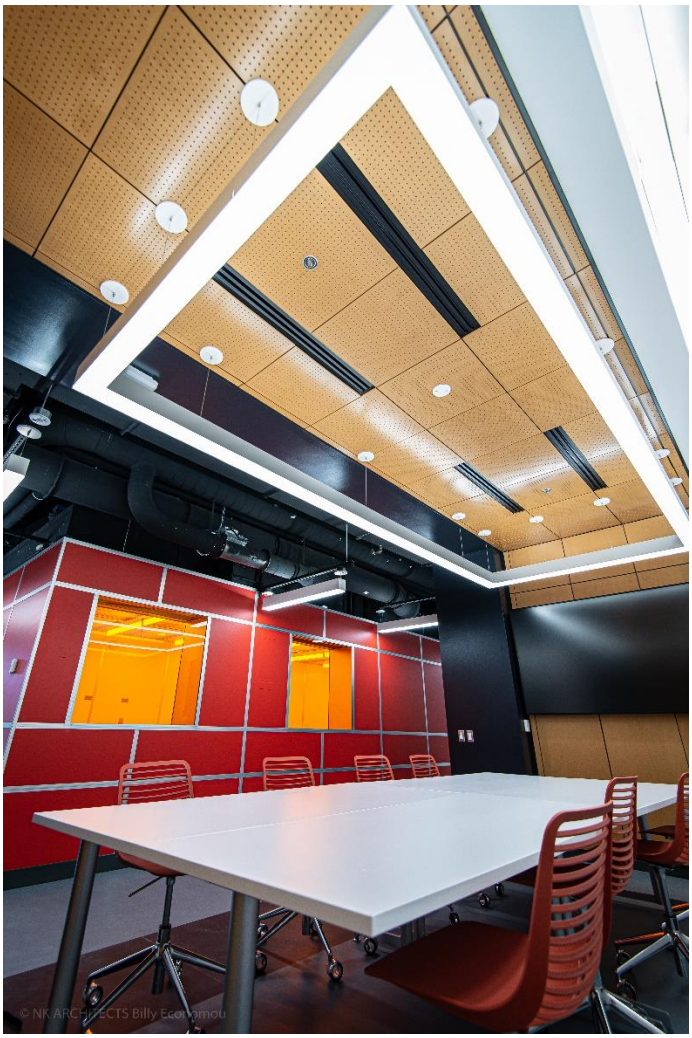
I. Major Capital Projects Completed in Fiscal Year 2019

Makerspace II



The NJIT Makerspace has been a tremendous success and with the help of funding from the State of New Jersey, an approximately 10,000 square foot addition expanded the capacity and impact on our students. The added space provides for more 3D printing, along with electronic testing, measuring, soldering stations, laser cutting and collaboration space. This expanded facility was key in the NJIT response to COVID-19, making face shields for emergency responders and for campus use.

Microfabrication Center



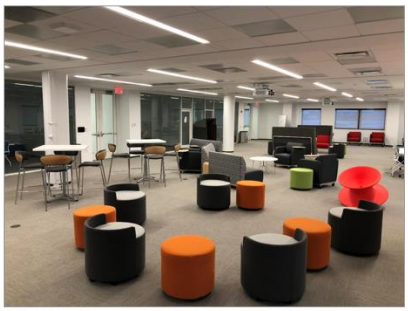
The $3.7 million renovation of the Microelectronics Research Center provides a state-of-the art cleanroom class 1,000 facility for the fabrication of micro-and nanoelectronic devices along with a microfluidic sensors. These sensors and devices include miro-electro-mechanical systems and microfluidics systems such as lab-on-a-chip. Smart medical devices with specific biomarkers can sense, monitor and control physiological processes with embedded communications connected to medical information systems and servers to support point-of-care diagnostics and therapeutic intervention. Such smart connected sensors and devices with advanced data analytics and artificial intelligence algorithms are expected to transform medical device industry and the practice of medicine. Equipment installation will continue into the fall semester and be operational later this year.

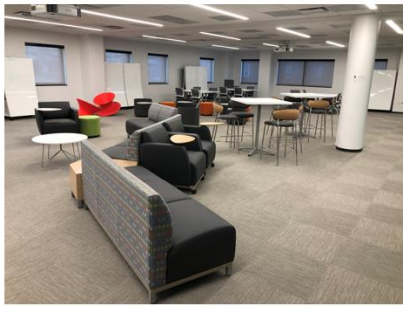
Forensic Science Laboratory

With the only forensic science undergraduate program in New Jersey, NJIT will provide the theoretical foundation in the natural sciences and mathematics, as well as hands-on training in field methods, analytical skills and laboratory procedures currently used by forensic scientists in crime and investigative laboratories at the state and federal level. The new laboratory, located in room 209 in Tiernan Hall, will give our students access to the best equipment, providing real world experience in a state-of-the-art laboratory setting. Construction of this new lab was completed in the fall of 2019 with new equipment installed during the fall semester.

GITC 3rd Floor – Ying Wu College of Computing

GITC 3rd Floor
Ying Wu College of Computing





This newly renovated space provides student collaboration space, club rooms and a 70-seat seminar room for the Ying Wu College of Computing. The project also provides a modern office space for the Informatics Department.

GITC Lecture hall 1400

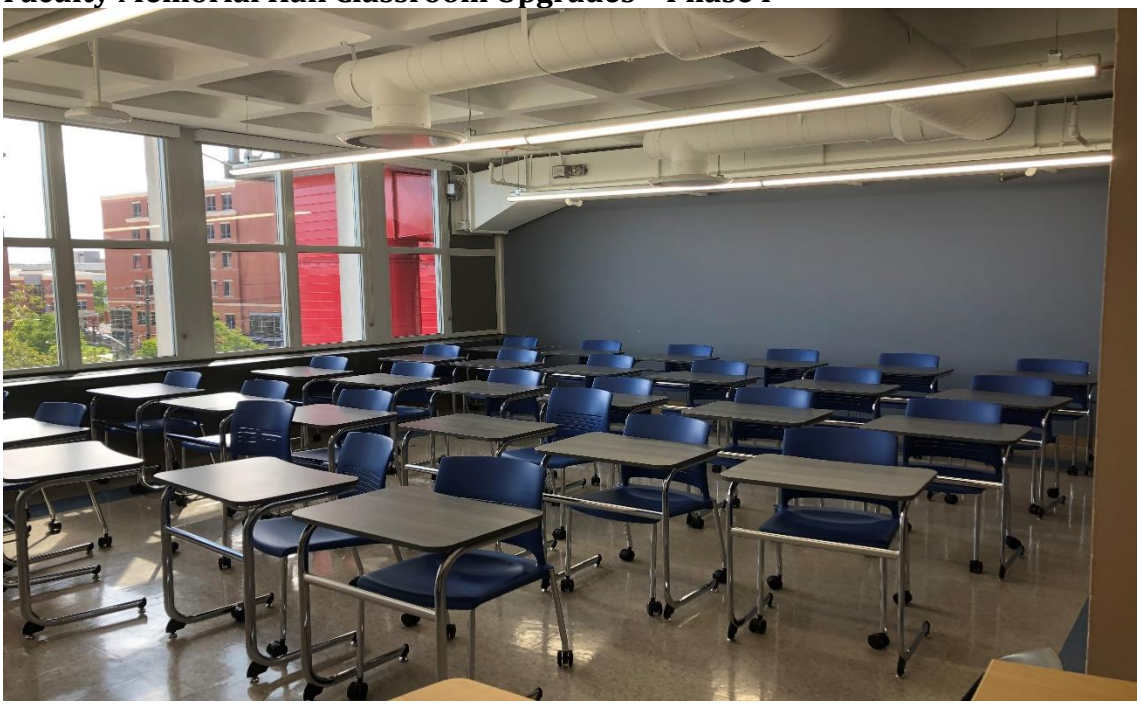
A complete renovation of the GITC 1400 lecture hall was completed in the summer of 2019. The project included upgraded finishes, new furniture and additional capacity. A new audiovisual system, additional power and high-capacity wireless connectivity will provide students a modern learning environment.

Weston Hall Roof Replacement A collaborative effort resulted in a new roof for Weston Hall, but will provide a real life experience for some of the College of Architecture and Design students this fall. Working through a national cooperative purchasing consortium, NJIT created a program to teach current and future architecture students through leveraging the expertise of our alumni in the field. This will create new career paths and impart knowledge that many cannot receive until they are practicing.

Tiernan Hall Classrooms – 1st Floor

Renovation of eight classrooms on the first floor was completed during the summer of 2020. The room upgrades included, new energy efficient lighting, paint, upgraded furniture, and window treatments. Mobile power stations provide additional power within the classrooms supporting our bring your own device initiative. Smart classroom technology was installed to support converged learning.

Faculty Memorial Hall Classroom Upgrades – Phase I



Twenty-four classrooms were upgraded with new finishes, energy efficient lighting, and improved audiovisual technology. These rooms were outfitted with upgraded furniture, promoting collaborative learning while maintaining better academic integrity.

SECTION III – OTHER INSTITUTIONAL INFORMATION

The New Jersey Institute of Technology has exceptional faculty who educate top students for rewarding careers. In FY2019-2020, NJIT conferred 2,868 degrees and certificates, listed in Section A. Highlights of faculty efforts, including patents, publications and awards are provided in Section B.

A. Degrees Awarded

Bachelors	Degrees Awarded
BA	**142**
Biology	77
Communication	3
Computer Science	3
Digital Design	24
History	7
Information Systems	7
Interior Design	9
Law, Technology, & Culture	8
Theater Arts and Technology	4
BAR	**50**
Architecture	50
BET	**214**
Computer Technology	28
Concrete Industry Management	1
Construction Engineering Technology	31
Construction Management Technology	7
Electrical & Computer Engineering Technology	61
Mechanical Engineering Technology	66
Medical Informatics Technology	8
Surveying Engineering Technology	12
Technology Education	0
BGS	**6**
General Studies	6
BS	**1,341**
Applied Physics	10
Architecture	7
Biochemistry	14
Bioinformatics	0
Biology	19
Biomedical Engineering	74
Biophysics	0
Business	83

Business & Information Systems	24
Chemical Engineering	71
Chemistry	7
Civil Engineering	169
Communication	5
Computer Engineering	71
Computer Science	183
Computing & Business	6
Concrete Industry Management	7
Electrical Engineering	86
Engineering Science	0
Environmental Science	9
General Engineering	3
Human Computer Interaction	9
Industrial Design	14
Industrial Engineering	37
Information Technology	191
Mathematical Sciences	30
Mechanical Engineering	195
Science, Technology & Society	9
Web & Information Systems	8
Grand Total	**1,753**

Masters	Degrees Awarded
MAR	**8**
Architecture	8
MBA	**57**
Business Administration	57
MS	**911**
Applied Mathematics	4
Applied Physics	3
Applied Statistics	9
Architecture	4
Bioinformatics	8
Biology	3
Biomedical Engineering	32
Biopharmaceutical Engineering	2
Biostatistics	4
Business & Information Systems	39
Chemical Engineering	21
Chemistry	4
Civil Engineering	93

Computer Engineering	14
Computer Science	174
Computing & Business	2
Critical Infrastructure	2
Cyber Security & Privacy	25
Data Science	61
Electrical Engineering	65
Emergency Management & Business Continuity	0
Engineering Management	69
Engineering Science	0
Environmental Engineering	4
Environmental Science	2
Healthcare Systems Management	1
Industrial Engineering	22
Information Systems	64
Infrastructure Planning	4
Internet Engineering	1
IT Administration & Security	30
Management	30
Manufacturing Systems Engineering	5
Materials Science & Engineering	5
Mathematical & Computational Finance	0
Mechanical Engineering	62
Occupational Safety & Health Engineering	3
Pharmaceutical Chemistry	7
Pharmaceutical Engineering	8
Pharmaceutical Systems Management	0
Power and Energy Systems	5
Professional & Technical Communication	4
Software Engineering	11
Telecommunications	1
Transportation	4
Grand Total	**976**

Doctoral	Degrees Awarded
Applied Physics	2
Biology	2
Biomedical Engineering	8
Chemical Engineering	6
Chemistry	2
Civil Engineering	6
Computer Engineering	0

Computer Science	4
Electrical Engineering	10
Environmental Engineering	0
Environmental Science	2
Industrial Engineering	0
Information Systems	1
Materials Science & Engineering	2
Mathematical Sciences	5
Mechanical Engineering	2
Transportation	0
Urban Systems	2
Grand Total	**54**

Post Baccalaureate Certificates	Degrees Awarded
Applied Statistical Methods	2
Big Data Essentials	3
Biomedical Device Development	1
Biostatistics Essentials	0
Business and Information Systems Implementation	3
Construction Management	13
Data Mining	9
Finance for Managers	1
Information Security	3
Instructional Design, Evaluation & Assessment	0
IT Administration	0
Management Essentials	0
Management of Technology	7
Network Security and Information Assurance	1
Pharmaceutical Management	2
Pharmaceutical Manufacturing	0
Power Systems Engineering	1
Project Management	16
Social Media Essentials	0
Software Engineering Analysis/Design	0
Supply Chain Engineering	19
Technical Communication Essentials	1
Transportation Studies	0
Web Systems Development	3
Grand Total	**85**

B. Faculty

Faculty of the New Jersey Institute of Technology are productive in developing intellectual property, conducting research, and publishing and presenting scholarly research. Faculty receiving prestigious awards in 2019 and 2020 are listed below.

III.B.1 Faculty & Administrator Awards 2019-2020

T. Alvarez	Fellow, American Academy of Optometry
N. Ansari	Member, National Academy of Inventors
C. Diekman	NSF CAREER Award
B. Flammang	Steven Vogel Young Investigator Award
S. Garnier	DARPA Young Faculty Award
M. Li	NSF CAREER Award
D. Misra	Fellow, Institute of Electrical and Electronics Engineers
H. Nguyen	NSF CAREER Award