NJIT
New Jersey Institute of Technology

# Fiscal Year 2021 Budget Submission to the Office of Management and Budget

November 2019

njit.edu


# NEW JERSEY INSTITUTE OF TECHNOLOGY
# FY 2021 BUDGET REQUEST

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# SECTION 1

# PRESIDENT'S STATEMENT

NEW JERSEY INSTITUTE OF TECHNOLOGY
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PRESIDENT'S STATEMENT


New Jersey Institute of Technology (NJIT) had a $2.8 billion impact on the economy of New Jersey this past year, as per a study conducted by Econconsult. This was the result of the:

- High demand STEM workforce prepared by NJIT for New Jersey's science and technology economy
- $170 million in applied research expenditures, a 14-fold benefit to business/industry
- 284 patents, provisional and pending, and licenses
- 65 companies being incubated in VentureLink at NJIT, the largest STEM business incubator in New Jersey
- Over 65,000 hours of community service provided by NJIT students
- Direct expenditures due to a 40% increase in enrollment to nearly 12,000 students, the addition of 130 faculty, and over $400 million in new and renovated facilities that have resulted in an additional 1 million square feet of space on campus over the past 7 years.

NJIT also has achieved multiple remarkable outcomes this past year, four of which include:

1. Becoming a **Carnegie R1 research university**, joining Princeton & Rutgers (with whom we jointly won a $29 million NIH translational medical research grant) as the only R1s in New Jersey. There are only 131 R1s in the nation
2. Becoming **a top 100 national university** and **a top 50 public university** in the annual *US News and World Report* college and university rankings.
3. Earning from ***Forbes*** **a #1 rank in the nation for student social mobility**—moving more students from the lowest quintiles of family income to the highest income by the mid-level of the career than any other university in the nation
4. Ranking in the **top 20 nationally for graduating African American engineers,** "Diversity in Higher Education."

To continue this historic growth and economic impact on the behalf of the State of New Jersey and its citizens, NJIT respectfully submits this annual budget request. Aware of New Jersey's financial demands, we limit our FY 2021 budget requests to priorities that will increase STEM enrollments, lead to job creation, support applied research and innovation, and drive economic expansion as well as state GDP growth. If these requests are not supported, it is likely our growth will be inhibited given that the STEM programs NJIT provides are more costly (60% or higher) than the average academic program. The requested priorities are summarized below:

A. **Increase to State Authorized FTE Positions:** NJIT is requesting an increase to our overall State Authorized FTE count. For the 2019 freshman class, over 9,000 applications (more than 80% from New Jersey) were received for a current capacity of 1,400 freshmen. Our capacity is limited by staffing and facilities. To provide needed instruction and services to our expanding student body, we must increase our FTE count accordingly to keep up with student demand. Increasing FTE positions will permit NJIT to expand its instruction and academic resources (i.e. - onboarding more faculty, staff, and graduate assistants), which will facilitate our diverse student population achieving academic success, will result in higher student retention and graduation rates, and will close the achievement

gap for minority students. NJIT is requesting an additional 321 FTEs be added to our current FTE count of 1,187, bringing our new State Authorized FTE total to 1,508.

B. **Medical Devices Innovation Cluster - Phase III:** Phase-III is the final phase of the previously state-funded (phases I & II) Medical Devices Innovation Cluster initiative. Within this stage, NJIT is seeking to fully operationalize the newly renovated Microfabrication Innovation Center (MIC) by incorporating a system integration and testing facility with critically advanced equipment. This will address the need for the New Jersey medical device industry to innovate in order to grow, as well as the need to develop point-of-care technology for high-risk patients and the elderly in order to improve care and lower costs. Components of phase-III include prototyping, characterization and analytics infrastructure, system integration, as well as test and validation infrastructure. In total, NJIT is requesting $5.5 million in funding to support the completion of this regional Medical Devices Innovation Cluster.

C. **Need-Based Retention Awards:** NJIT is requesting need-based retention awards for undergraduate, in-state students and transfer students who face financial hardships. The funding will be applied directly towards helping students with unmet tuition and fees of less than $5,000. Providing this assistance to students with financial hardship, particularly those who are underrepresented in STEM, will help aid in the retention and success of these students. NJIT, in concert with Newark Mayor Ras Baraka, is committing to doubling the enrollment, retention, and graduation of Newark students over the next four years through its Math Success Initiative (MSI). NJIT is requesting funding of $1.03 million to close the gap of outstanding student financial needs.

NJIT's academic and research programs are closely aligned with the computing, engineering, fin-tech, transportation and logistics, pharma, and life sciences clusters identified in the State Strategic Job Growth Plan, and our applied research recognizes the need to apply technology and the sciences in ways that will improve quality of life and spur economic growth. Below are just a few examples of NJIT's success in pursuing each pillar of its four-part mission.

## Education

- NJIT saw its undergraduate applications increase by 12 percent between 2018 and 2019 (over 9,000 applications). The average SAT score for the Fall 2019 entering class was 1297, top 10% nationally. That SAT number climbed to 1487 for students enrolling in NJIT's Albert Dorman Honors College. The Dorman Honors College, celebrating its 25th anniversary, is a major asset in the effort to keep the top 2% of New Jersey STEM students in-state.
- NJIT has hired approximately 130 new faculty during the past 7 years.
- NJIT's undergraduate student population includes 32% white/Caucasian, 21% Asian, 21% Hispanic, 8% black/African American, 6% international, and 12% multi-racial/ undisclosed. The gender distribution of undergraduates is 26% female and 74% male, and about 93% of undergraduate students are from New Jersey.
- NJIT's student retention rate currently is 88%, up 4% since 2014.
- Our graduation rate currently is 67%, up 8% since 2014, and soon to be 70%.
- There is tremendous demand for employees in the STEM fields. In fact, the Wall Street Journal noted that there are 1.3 million STEM jobs available each year and only 600,000 new graduates in the STEM fields.

## PRESIDENT'S STATEMENT

- NJIT students average nearly three job offers in hand by graduation with starting salaries that exceed the national average by almost 20%.

### Research

- **NJIT has joined the 131 most elite research universities in the nation** by attaining an R1 Carnegie Classification. This is the result of growing our research enterprise to approximately $170 million per year.
- It should be noted that NJIT's research is of the applied variety, focused on solving real-world problems in areas that include civil infrastructure, advanced manufacturing, cybersecurity, transportation, medical devices, nanotechnology, clean energy, resilient design, national defense, financial services, health care, materials science, and many others.
- NJIT is **a major producer of intellectual property** with 284 patents, and is expanding its capacity for commercialization.
- NJIT developed the **world's leading solar telescope** at its facility in Big Bear, CA, a property owned by NJIT. Along with NJIT's Owens Valley radio-telescope and South Pole installations this facility makes NJIT an international authority on "space weather" and its impact on the ionosphere and the earth's atmosphere.

### Economic Development

- NJIT generates an annual economic impact of more than $2.8 billion on the State of New Jersey.
- The **New Jersey Innovation Institute (NJII)** is NJIT's portal to partnership with industry and government, generating approximately $80 million in annual revenue.
    - NJII was incorporated to serve as the focal point for NJIT's technology and economic development initiatives.
    - NJII is organized around i-Labs that overlay the State's target industrial clusters: Healthcare Systems, Biotechnology and Pharmaceutical Production, Defense & Homeland Security, Civil Infrastructure and Financial Services.
    - NJII has secured multi-million-dollar contracts with the Department of Defense, JP Morgan Chase, Osler Health IPA, and has funded corporate support from Panasonic, AECOM, Berger International, Cisco, and Torcon.
    - NJII currently is building cell and gene laboratories for developing immunology therapies to treat cancer in partnership with Celgene, Pall, J&J, Novartis, and RBHS.
- NJIT is home to **VentureLink,** which is New Jersey's largest tech and life science incubator and hosts more than 65 companies at present.
- In coordination with New Jersey Governor Phil Murphy's economic development team, NJIT signed an agreement with the Digital Hub Cybersecurity center run by the Fraunhofer-Institute fur Sichere Informationstechnologie in Germany to embark on joint research projects and a variety of scholarly exchanges.
- With support from the State of New Jersey, Makerspace at NJIT was launched in 2018. **Makerspaces** are a significant educational, research and economic development tool, and the NJIT Makerspace has since expanded and is the largest one serving the State of New Jersey. Makerspaces enable hands-on, project-based learning complemented by training on industrial equipment, development of prototyping skills and experience with modern manufacturing technology. Students learn real world, tangible skills that prepare them to enter the workplace and take leading roles in manufacturing and product

development. NJIT's Makerspace also is available to NJIT's industry partners and incubator companies.

- We are in the midst of a $400+ million campus transformation, having added 1 million square feet.

## Service

- Collaborations between NJIT and the City of Newark include the Mayor's Honors Scholars Program, an expansive pre-college program (details below), 65,000+ hours of community service annually, a Smart City program, teacher training, curriculum development and many more educational as well as economic and community development efforts.
- NJIT just celebrated the 40th anniversary of NJIT's Center for Pre-College Programs (CPCP), which has truly been progressive in identifying populations that are underrepresented in the STEM disciplines and in involving faculty in the effort to address those shortfalls.
    - Today, the Center works annually with almost 4,300 pre-college students who are predominantly underrepresented females and minorities from the greater Newark area and northern New Jersey.
        - The CPCP runs camps during the summer and provides programming throughout the year. Examples include:
            - The Panasonic Creative Design Challenge
            - Upward Bound
            - The New Jersey Science Olympiad
            - The Bernard Harris Summer STEM Camp
            - Girls Who Code
            - STEM mentoring after-school programs at elementary schools around the City of Newark
            - ACT/SAT Preparation Programs
            - Teacher professional development programs
            - And many more
- NJIT created the Newark Math Success Initiative (MSI) this year for the purpose of increasing the enrollment of Newark high school graduates at NJIT
    - A partnership involving NJIT, the Office of the Mayor and the Newark Public School District
    - Provides direct mathematics instruction and support to rising 12th graders and mathematics certified teachers at Central, Malcolm X. Shabazz, Science Park and Technology High Schools
    - MSI is designed to strengthen Newark high school students' mathematics knowledge, skills, and preparation for college work with the goal of enrolling them at NJIT as first-semester, first-year college freshmen ready to take MATH 111 Calculus.
    - NJIT's Center for Pre-College Programs and College of Science and Liberal Arts collaborated on MSI's overall design and implementation.
- Volunteerism is a mainstay at NJIT, with students and faculty engaged in a range of initiatives to better the community. Such efforts, amounting to more than 65,000 hours of community service over the past year alone, have been recognized both nationally and locally.

## PRESIDENT'S STATEMENT

- The university has made the President's Higher Education Community Service Honor Roll, "one of the highest recognitions a university can receive for its commitment to volunteering, service-learning and civic engagement," seven times.

NJIT continues to be strongly committed to the Governor's Economic Prosperity Plan and the Secretary of Higher Education's plan to continue to improve higher education. Thank you for your consideration.

Respectfully submitted,

Joel S. Bloom
President

# SECTION 2

# EVALUATION DATA/ENROLLMENT/ ORGANIZATION CHART

NEW JERSEY INSTITUTE OF TECHNOLOGY
FY 2021 BUDGET REQUEST
EVALUATION DATA

| PROGRAM DATA | Actual FY 2018 | Actual FY 2019 | Revised FY 2020 | Budget Request FY 2021 |
|---|---|---|---|---|
| **Institutional Support** | | | | |
| Enrollment total (headcount) | 14,556 | 14,703 | 14,882 | 14,955 |
| Enrollment total FTE's (a) | 9,408 | 9,883 | 10,077 | 10,133 |
| Undergraduate total (headcount) | 8,551 | 8,628 | 9,052 | 9,123 |
| Undergraduate total FTE's (a) | 7,064 | 7,362 | 7,640 | 7,700 |
| Full-time (headcount) | 6,766 | 7,058 | 7,462 | 7,521 |
| Full-time FTE's (a) | 6,450 | 6,608 | 6,879 | 6,933 |
| Part-time (headcount) | 1,785 | 1,570 | 1,590 | 1,602 |
| Part-time FTE's (a) | 614 | 754 | 761 | 767 |
| Graduate total (headcount) | 3,001 | 2,931 | 2,806 | 2,747 |
| Graduate total FTE's (a) | 1,360 | 1,388 | 1,286 | 1,258 |
| Full-time (headcount) | 1,830 | 1,737 | 1,601 | 1,567 |
| Full-time FTE's (a) | 1,032 | 938 | 826 | 808 |
| Part-time (headcount) | 1,171 | 1,194 | 1,205 | 1,180 |
| Part-time FTE's (a) | 328 | 450 | 460 | 450 |
| Extension and Public Service | | | | |
| Enrollment (headcount) (a) | 3,004 | 3,144 | 3,024 | 3,085 |
| Enrollment total FTE's (a) | 984 | 1,133 | 1,151 | 1,175 |
| Undergraduate (headcount) | 2,302 | 2,442 | 2,336 | 2,383 |
| Undergraduate FTE's (a) | 732 | 906 | 923 | 942 |
| Graduate (headcount) | 702 | 702 | 688 | 702 |
| Graduate FTE's (a) | 252 | 227 | 228 | 233 |
| Degree programs offered - All | 112 | 126 | 126 | 126 |
| Courses Offered - Academic Year | 3,920 | 3,818 | 4,069 | 4,073 |
| Student credit hours produced | 266,315 | 270,051 | 275,980 | 280,349 |
| Degrees and Certificates | | | | |
| Granted - Total | 2,773 | 2,896 | 2,896 | 2,940 |
| Ratio: Student/faculty (b) | 17/1 | 16/1 | 16/1 | 16/1 |
| Full-time, First-Time, Degree-Seeking Freshmen who | | | | |
| are Regular Admission Students | 1,125 | 1,296 | 1,372 | 1,400 |
| Average SAT Score - Math | 659 | 662 | 669 | 672 |
| Average SAT Score - Reading/Writing | 626 | 625 | 627 | 628 |
| Average SAT Score - Total '(e) | 1,285 | 1,287 | 1,297 | 1,300 |
| **Outcomes Data (c)** | | | | |
| Third Semester Retention Rates | 88.0 | 88.0 | 88.0 | 88.0 |
| Seven Year Graduation Rates | 66.0 | 68.0 | 69.0 | 69.0 |
| **Student Tuition and Fees** | | | | |
| Total Cost of Attendance (d) | 35,498 | 36,438 | 37,074 | 37,074 |
| Full-Time Undergraduate Tuition State Residents | 13,906 | 14,174 | 14,448 | 14,448 |
| Full-Time Undergraduate Tuition Non - State Residents | 28,926 | 29,586 | 30,160 | 30,160 |
| Full-Time Undergraduate Fees | 2,992 | 3,164 | 3,226 | 3,226 |
| **Operating Data** | | | | |
| **Institutional Support** | | | | |
| Institutional Expenditures | | | | |
| Instruction | 129,028,000 | 122,783,000 | 131,118,000 | |
| Sponsored programs and research | 90,223,000 | 91,383,000 | 92,625,000 | |
| Extension and public service | 2,286,000 | 2,082,000 | 2,259,000 | |
| Academic support | 34,804,000 | 33,155,000 | 35,118,000 | |
| Student services | 30,280,000 | 29,864,000 | 30,382,000 | |
| Institutional support | 61,160,000 | 55,804,000 | 61,568,000 | |
| Physical plant and support services | 30,668,000 | 25,268,000 | 28,635,000 | |
| **Personnel Data** | | | | |
| Position Data | | | | |
| State-funded positions | 1,187 | 1,187 | 1,187 | |

(a) Equated on the basis of 32 equivalant credit hours per undergraduate student and 24 equivalant credit hours per graduate student
(b) Calculated on the number of teaching positions (including adjunct faculty) and equated full-time (weighted) students.
(c) The data of record is the 10th day of the semester.
(d) As reported to the Higher Education Student Assistance Authority. Includes tuition, fees, room and board, transportation, and supp
(e) SAT scores in FY17, FY18 and FY19 reflect the new format.

NEW JERSEY INSTITUTE OF TECHNOLOGY
FY 2021 BUDGET REQUEST

## ENROLLMENT NARRATIVE

As a nationally ranked polytechnic university, NJIT prepares students to be leaders in the technology dependent economy of the 21st century. Our graduates are ready to meet the needs of business and industry globally, nationally and in New Jersey. The annual economic impact of NJIT to the State of New Jersey is $2.8 billion. The university serves its citizens as a critical resource for education, scholarly and applied research, and economic development in the fields of science, technology, engineering and mathematics as well as design and the management of technology.

NJIT enrollment for Fall 2019 hit an all-time record of 11,858. Most of the growth occurred at the undergraduate level. The first-time student applicant pool exceeded 9,000 with more than 1,358 enrollments. We continue to focus on initiatives to improve retention and graduation rates which also contribute to enrollment growth. Efforts with student success have resulted in higher graduation numbers over the past six years (from 59% to 67%). NJIT's student success record reaches beyond graduation as is evidenced by the university's ranking by Forbes as #1 in the nation for upward economic mobility of low-income students. A degree from NJIT changes the lives of students.

NJIT Career Development Services in collaboration with the Office of Institutional Effectiveness annually conducts a First-Destination Survey for our entire graduating class. Results for the Class of 2019 will be completed by December 1, 2019. However, based on a review of the data thus far, we are confident in projecting that 2019 will be our graduates most successful employment rate to date.

### Data Sourcing

For the Class of 2019, data collection began as early as October 2018. To Increase our knowledge rate, multiple data sources and tactics were employed beyond the traditional direct email surveying methods and the results provided directly by our students and employers. As of September 30th we collected information on the post-graduation plans of 1,359 of our 1643 BS/BA graduates for a knowledge rate of 83%. Similarly, among our Masters' recipients we have collected information from 988 of our 1,092 graduates, for a 90.7% knowledge rate.

### Employment Outcomes

We are projecting the full-time employment rate for our baccalaureate degree recipients to be 82%. An important to note, 5% of our BS/BA graduates reported that they have enrolled in full-time graduate study this fall. Taken together, 87% of our graduates have attained their degree completion objective of full-time employment or graduate study within six months of graduation.

Seventy-seven percent of our master's graduates reported full-time employment within six months of graduation. While this percentage is inclusive of graduate students who have remained in a previously attained position, ii is important to note that for the majority of graduates this was a newly attained job.

### NJIT Salary Report of 2019 Graduates

According to the preliminary findings within the National Association of Colleges and Employers 2019 Salary Survey Report, the national starting salary average for all U. S. college

## ENROLLMENT NARRATIVE

graduates increased by 10.6 % this year to $55,280. The average starting salary for all reporting 2019 NJIT BS/BA graduates is $66,275, an increase of 5.4% from last year's class and 20% higher than the national average. The highest paid undergraduate majors this year are degree recipients in Computer Science ($94,161) and Civil Engineering ($87,467). NJIT Master's degree recipients also fared extremely well with the average starting salaries for all majors averaging $76,750

### Employment Source for NJIT May 2019 Graduates

Graduates who reported that they had obtained full time employment were asked to indicate the source of how they found their positions. More than 50% of the respondents reported that they found full time employment through the conversion of a co-op or internship to a full time at graduation. Career Fairs and on-campus interviews accounted for an additional 22% of employer connections leading to job offers.

Career Development Services arranged for 626 organizations (+20% 2018) to conduct on-campus recruitment through our career fairs and on-campus interview programs. The fall and spring career fairs filled to capacity with 225 employers and over 2,600 students attending each students. Our on-campus interview programs increased this year as well. Over 175 employers held over 1,600 interviews for more than 550 students. More than 25,000 technology full time, co-op, and internship job listings were posted to the CDS electronic database. Over 134,000 student and alumni resumes were referred to employers.

Cooperative education and internship learning experiences provided credit-bearing hands-on real world opportunities and exposure to industry for 1,705 undergraduate and graduate students. Moreover, our student co-ops' and interns' earnings exceeded $12 million this year.

Top New Jersey based employers of our students and graduates this year include, Johnson & Johnson, Optum, ADP, Prudential, PSEG, TATA, Stryker, Turner Construction, Picatinny Arsenal, NAVAIR, Mott MacDonald, Cognizant, Lockheed Martin, Infineum, Merck, NJ Transit, NJDOT, and UPS.

While increasing the number of graduates entering our workforce is paramount to meet business and industry demands, we must not only enroll but also graduate as many students as possible. Increasing the number of students who graduate is therefore as critical to workforce demand as is recruitment. In order to achieve our goal of graduating each and every student we enroll, we must provide the infrastructure and support necessary to do so. If we continue to grow our enrollment at the present rate, we will soon reach capacity to deliver quality instruction and essential services, both in facilities and personnel. Indeed, we have already reached capacity in a number of science and engineering fields. Our laboratories, technology and learning facilities must provide 21st century experiences for our students for them to be competitive, nay superior, to those of other states.

NJIT continues to recruit highly qualified students. Our efforts are focused on ensuring that those students admitted have the right academic background to success. Initiatives to support retention and persistence will fuel a portion of our enrollment growth as we strive to further improve graduation rates.

NEW JERSEY INSTITUTE OF TECHNOLOGY
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## ENROLLMENT NARRATIVE

We strive to foster a diverse student enrollment and are proud to rank #1 in New Jersey for the number of degrees in engineering awarded to African-American and Hispanic students. International students add to the diversity of the student community and we are actively working to reverse declines in this population brought on by global competition. We continue to make more graduate programs available online to provide working professional with flexibility to enhance their education and career opportunities. Our PhD enrollment are fueled by NJIT's new classification as an 'R1' research university, one of just three in New Jersey, as well as the university's nearly $170 million annually in research expenditures.

Highlights of retention efforts that have been initiated or expanded in the current year:

- The Learning Communities initiative involves twenty-two (22) discipline-focused student cohorts, each of which include linked courses, organized to foster and encourage collaboration. While the program initially aims to address students' transitional needs, the over-arching goal is much greater. By way of active and collaborative learning students will harness a greater understanding of their major and recognize the daily functions associated with their career aspirations.

- Through the instrumental support of upper classmen, better known as Peer Mentors, students gain the necessary confidence to express themselves actively in the campus community and throughout various professional networks. Peer Mentors are dynamic members on campus who are readily available to provide resourceful insight, based on their personal experience. They connect first year students with a variety of services, while highly encouraging them to network throughout NJIT.

- Revising institutional procedures, practices and policies to make our procedures more student friendly, enhancing student satisfaction.

- Focusing more support to students who need academic support through tutoring centers in departments, with The Learning Center offering supplemental instruction in certain math classrooms and assistance with improving learning strategies.

- Engaging students by increasing the number of clubs and organizations.

- Continuing to expand the number of activities and events on campus to build community.

- Enriching the new student orientation programs to encourage incoming students to participate in high-impact educational activities, such as undergraduate research, internships and co-ops, and study abroad opportunities. The program is further enhanced by including sessions tailored to supporting specific populations, including first-generation college students, women in STEM, and military veterans.

- Creating a Highlander Handbook to serve as a convenient reference for all students to know their campus resources, summarize policies and procedures, and familiarize themselves with NJIT and the surrounding community.

## ENROLLMENT NARRATIVE

- Implementing the Navigate web platform to maximize retention and increase tracking of student touchpoints and academic risk through student demographic profiles, advisement, tutoring, and faculty feedback.

Highlights of the recruitment efforts that have been initiated or expanded in the current year:

- Enhanced and expanded on-campus and online Open House events for prospective undergraduate students and their parents as well as prospective graduate students.
- Attended recruiting events at over 700 high schools, as compared with 500 the previous year, throughout New Jersey and the region.
- Engaged alumni in the conversion of admitted students at corporate alumni events.
- Refined our competitive scholarship program to attract highly qualified students as well as students with need.
- Expanded scholarship programs assistant those students approaching graduation but are in need of financial help to complete their studies.
- Increased enrollment opportunities in the Albert Dorman Honors College.
- Expanded on-line degree programs and offerings.
- Added the BS in Forensic Science program as well as a concentration in Cyberpsychology within the BS in Science, Technology and Society program.
- Implemented Professional Science Master's (PSM) programs in Information Systems and IT Administration and Security as well as 9 new graduate certificate programs.
- Opened a satellite site in Jersey City to offer the MS in Data Science along with graduate certificate programs in Big Data Essentials, Data Mining, Data Visualization, and Business Analytics. The site also offers non-credit training courses.
- The total anticipated student enrollment in programs sponsored by the Center for Pre-College Programs in FY21 is 4,500 which includes Academy, Options, Early College Preparatory Programs, Talent Search, Upward Bound I, Upward Bound II, Upward Bound for English Language Learners, NJ GEAR UP/College Bound, NJIT/Newark Math Success Initiative, Family STEM Workshops, NJIT Regional NJ Science Olympiad, TSA/TEAMS Competition, REAP, Open Houses, Red Bank Charter School Student Program, STEM Family Workshops, Newark Public Schools STEM Day.
- The total anticipated enrollment of educators and parents in Center for Pre-College Programs sponsored events in FY21 is 400 and includes Showcase for Teachers and

## ENROLLMENT NARRATIVE

Administrators, NJIT/Newark Math Success Initiative, STEM School Leadership Forum, STEM Family Workshops, TSA/TEAMS Competition and school consultations.

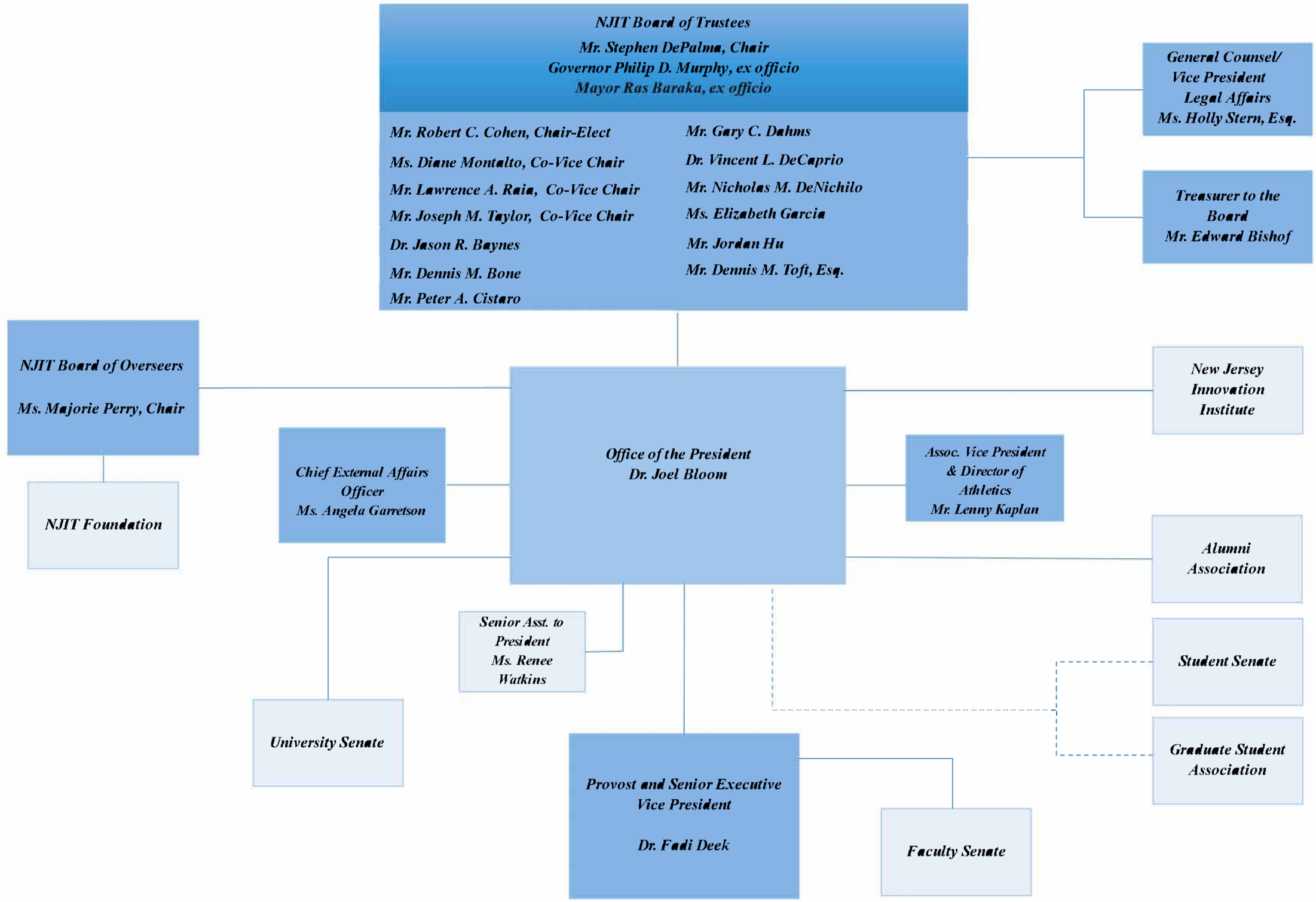
- Continuing collaboration with NJ community colleges to increase transfer enrollment as well as implementation of reverse transfer.

- Expanded the BS/MS programs with four-year institutions.

- Increased the number of applicants and enrollment of women in our undergraduate and graduate programs.

- Continued partnerships with the National Action Council for Minorities in Engineering, corporate and other science association programs to boost minority enrollments, Garden State LSAMP (Louis Stokes Alliance for Minority Participation) and the GEM Program.

All of these efforts have contributed significantly to NJIT's appreciating national reputation for providing a quality education to those seeking careers in science, technology, engineering and mathematics. NJIT will continue to provide an increasing number of highly qualified graduates to serve New Jersey businesses and industry in the years to come.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# NJIT SENIOR LEADERSHIP

Fall 2019

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Provost and
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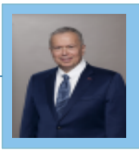
Dr. Fadi Deek



Dean, Newark
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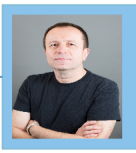
Dr. Moshe Kam



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Design
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Dean, College of
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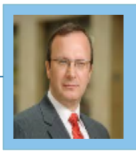

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Tuchman School of
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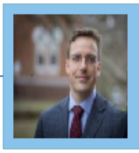
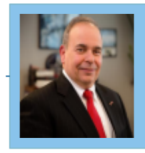
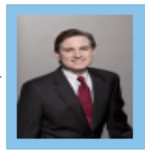


Dean, Albert Dorman
Honor's College
Dr. Louis I. Hamilton



Senior Vice President,
Finance and CFO
Mr. Edward Bishof



Senior Vice President,
Tech & Business
Development
Dr. Donald Sebastian

Senior Vice President,
Real Estate Development
& Capital Operations
Mr. Andrew Christ, P.E.

Vice President, Dev &
Alumni Relations/Pres.
Foundation at NJIT
Dr. Kenneth Alexo, Jr.

General Counsel/
Vice President,
Legal Affairs
Ms. Holly Stern, Esq.

Vice President,
Human Resources
(Interim)
Ms. Holly Stern, Esq.

Vice President and
Chief Commercial
Officer
Mr. Simon Nynens

Dean of Students
and Campus Life
Dr. Marybeth Boger

Chief Strategy Officer
Dr. Matthew Golden

# Provost & Senior Executive VP

Fall 2019

*Provost and Senior Executive Vice President*
*Dr. Fadi Deek*

*Dean, Newark College of Engineering*
*Dr. Kam*

*Dean, Hillier College of Architecture & Design*
*Dr. Kolarevic*

*Dean, College of Science & Liberal Arts*
*Dr. Belfield*

*Dean, Ying Wu College of Computing*
*Dr. Gotsman*

*Dean, Martin Tuchman School of Management*
*Dr. Tukel*

*Dean, Albert Dorman Honors College*
*Dr. Hamilton*

*Senior Vice Provost, Academic Affairs & Student Services*
*Dr. Baltzis*

*Senior Vice Provost, Research*
*Dr. Dhawan*

*Vice Provost, Grad Studies/Dean, Grad Faculty*
*Dr. Ziavras*

*Vice Provost, Undergraduate Studies*
*Dr. Simon*

*CIO (Interim)*
*Mr.Chottiner*

*University Librarian*
*Ms. Hoang*

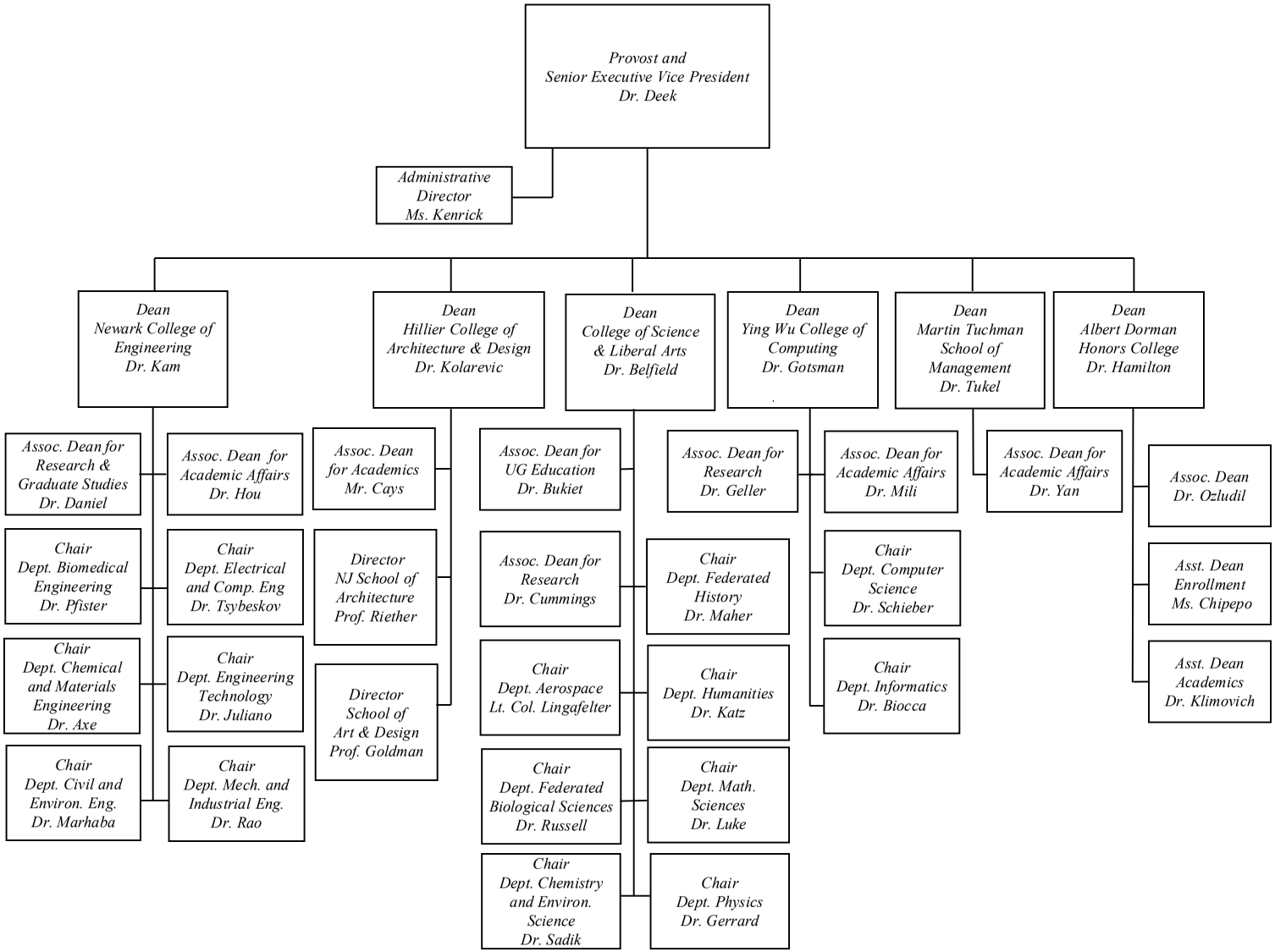
*Executive Director, Office of Institutional Effectiveness*
*Dr. Brooks*

*Director, Planning & Accreditation*
*Dr. Deess*

*Director, Murray Center & Univ Faulty Diversity Liaison*
*Dr. Steffen*

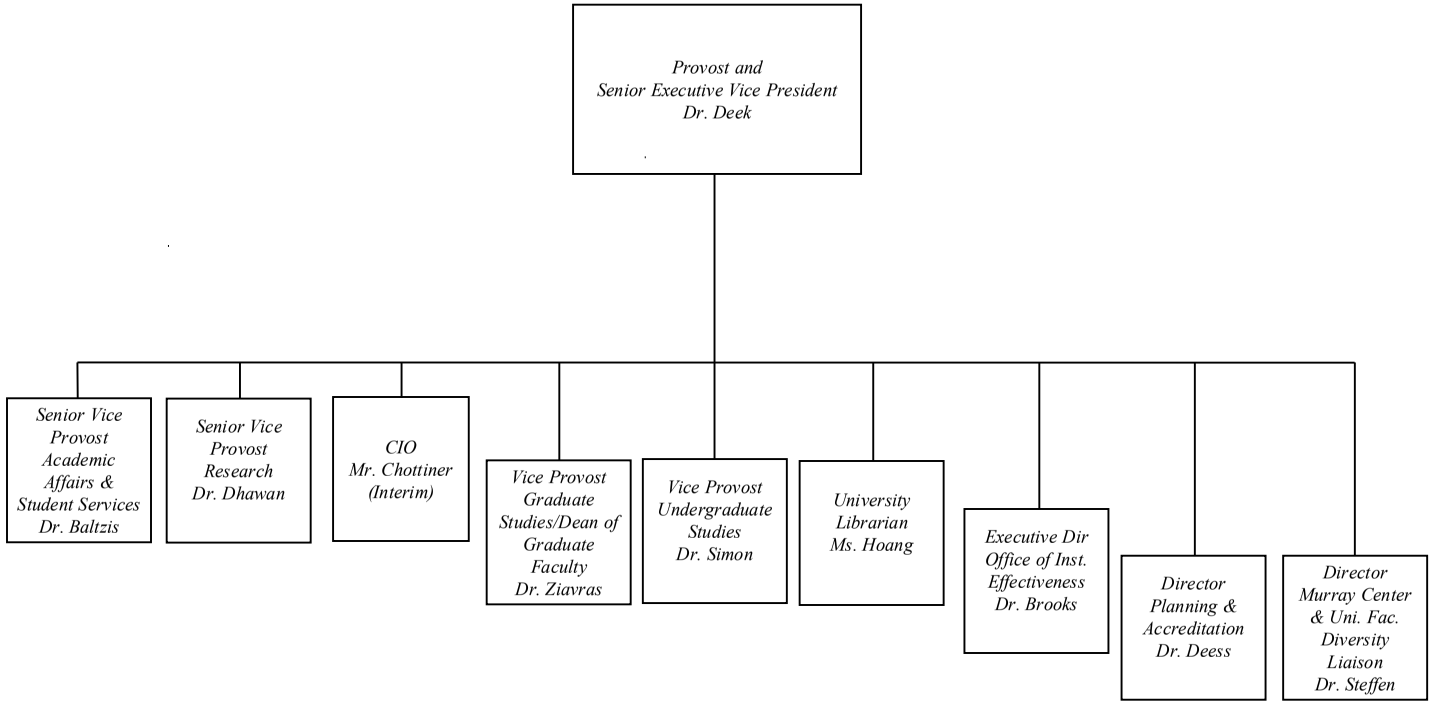
# PROVOST & SENIOR EXECUTIVE VP-Academic

*Fall 2019*

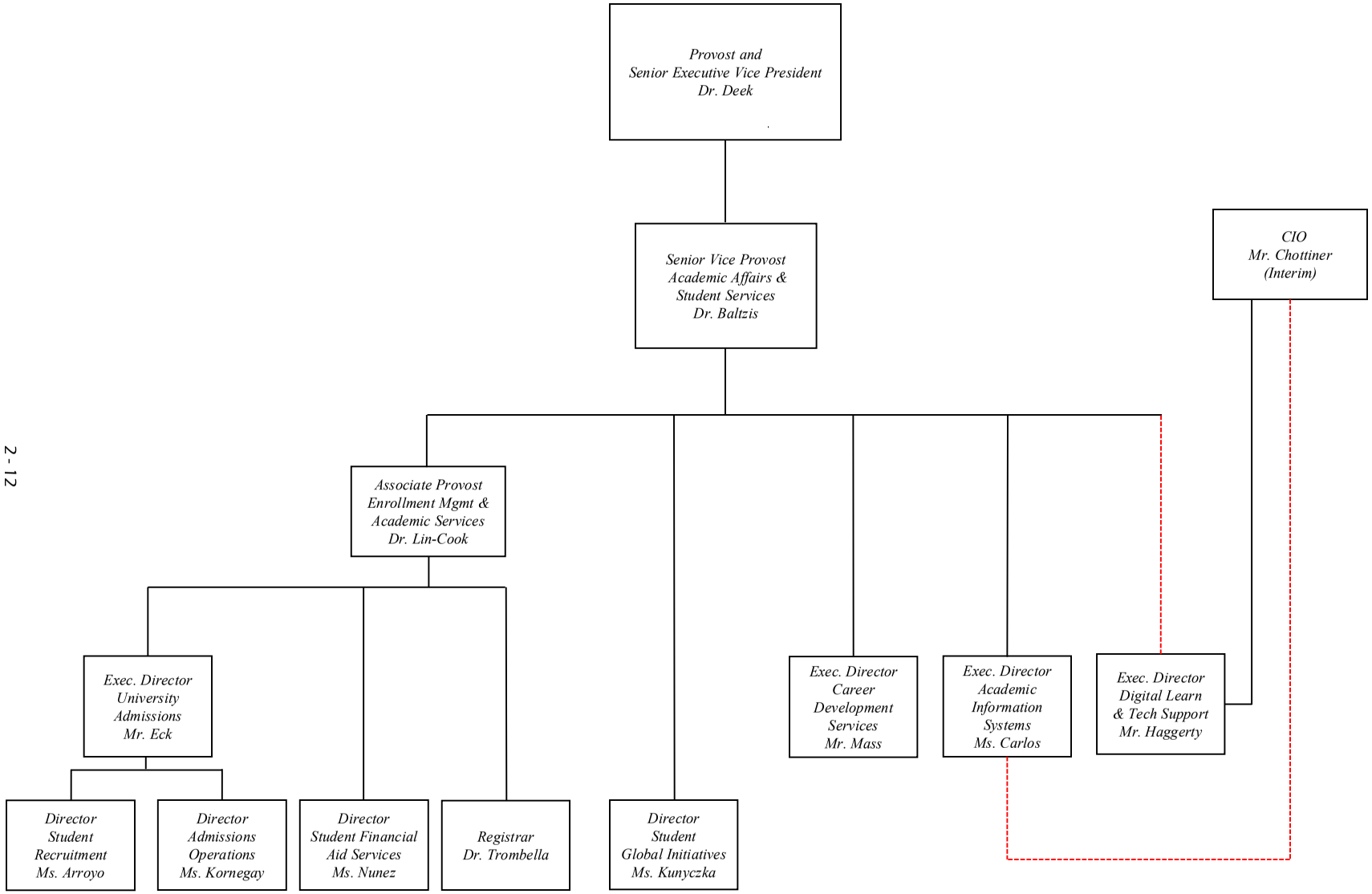


# PROVOST & SENIOR EXECUTIVE VP-Administration

*Fall 2019*

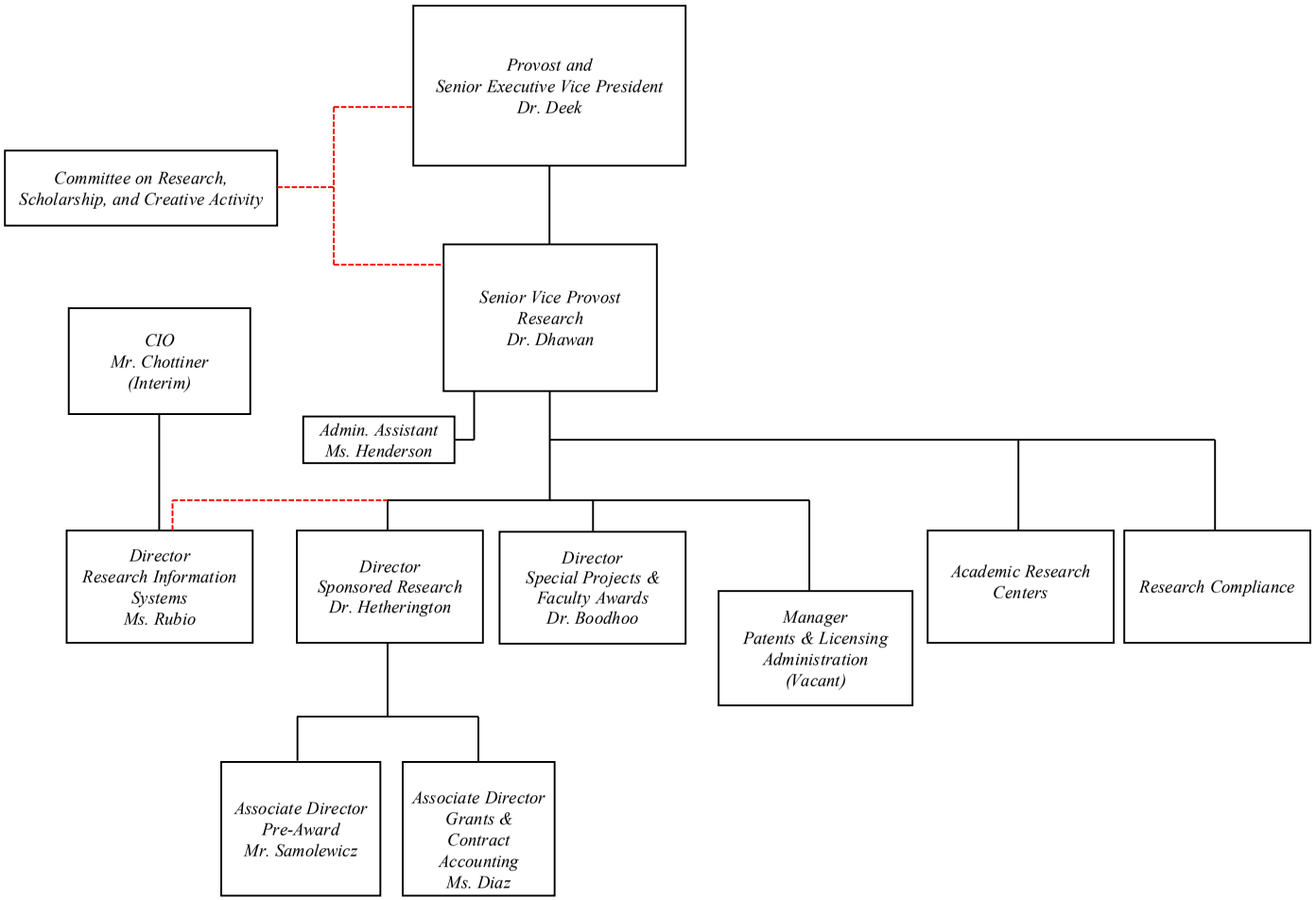


# PROVOST & SENIOR EXECUTIVE VP-Academic Affairs & Student Services *Fall 2019*



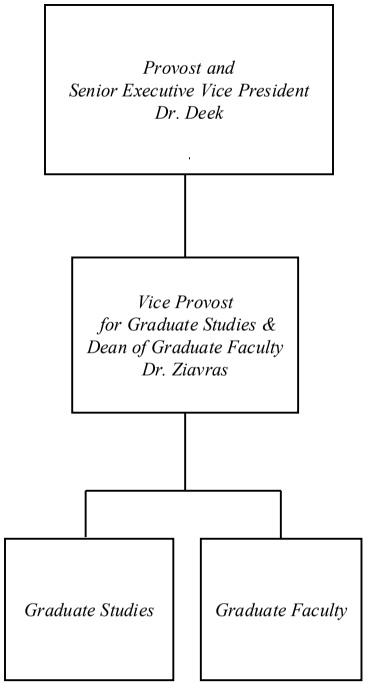
# PROVOST & SENIOR EXECUTIVE VP-Research

*Fall 2019*



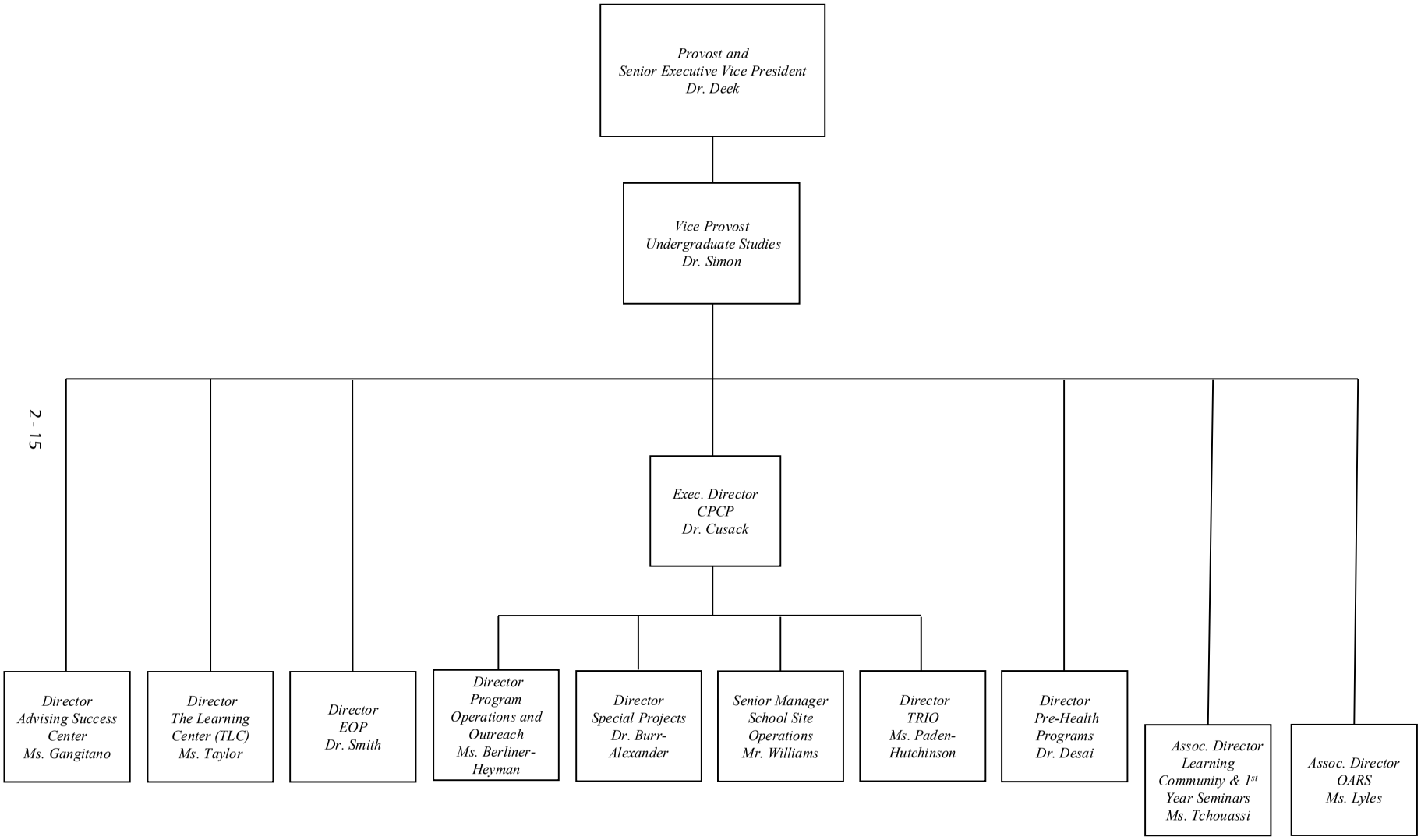
# PROVOST & SENIOR EXECUTIVE VP-Graduate Studies

*Fall 2019*



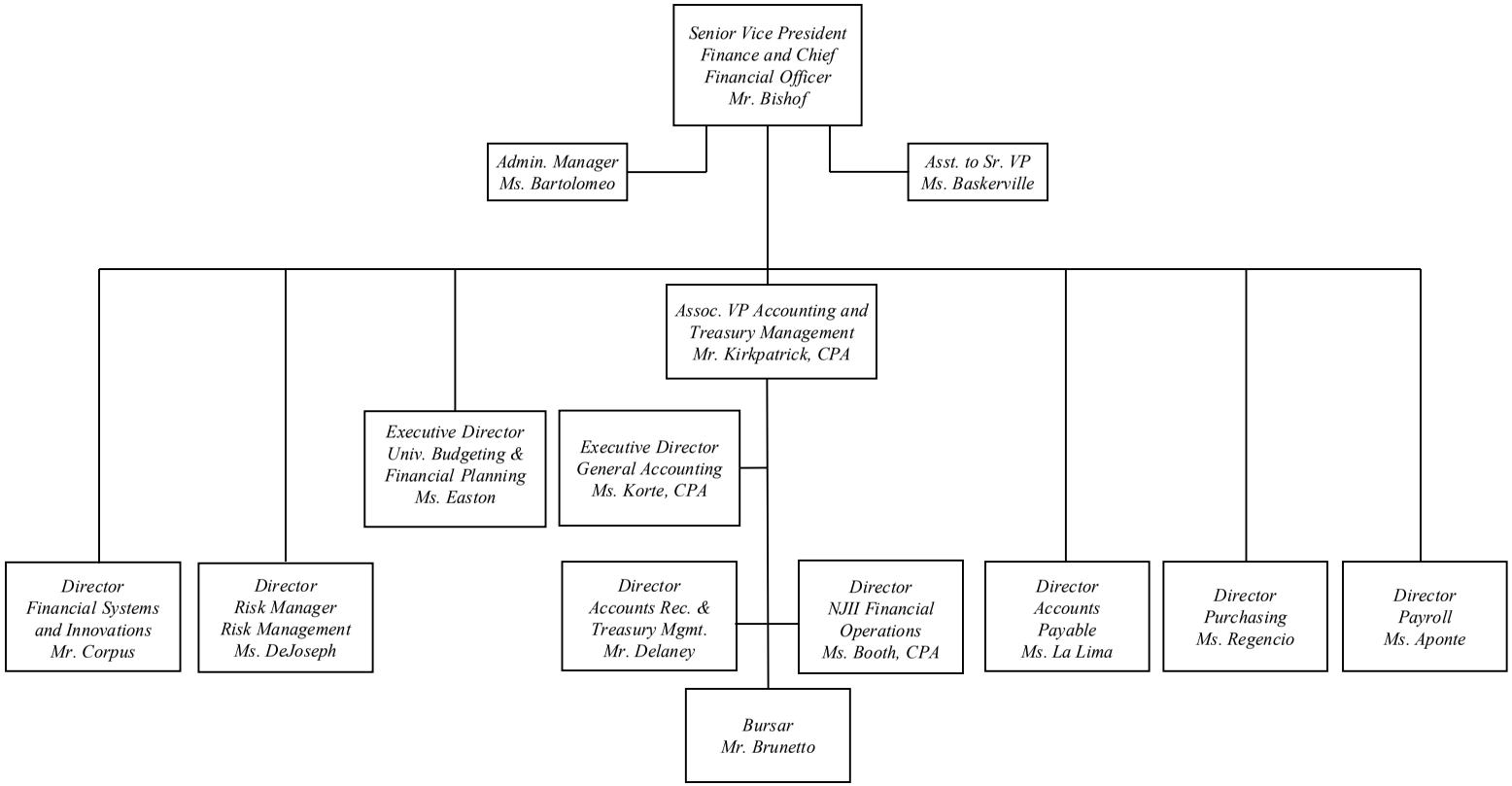
# PROVOST & SENIOR EXECUTIVE VP-Undergraduate Studies

*Fall 2019*



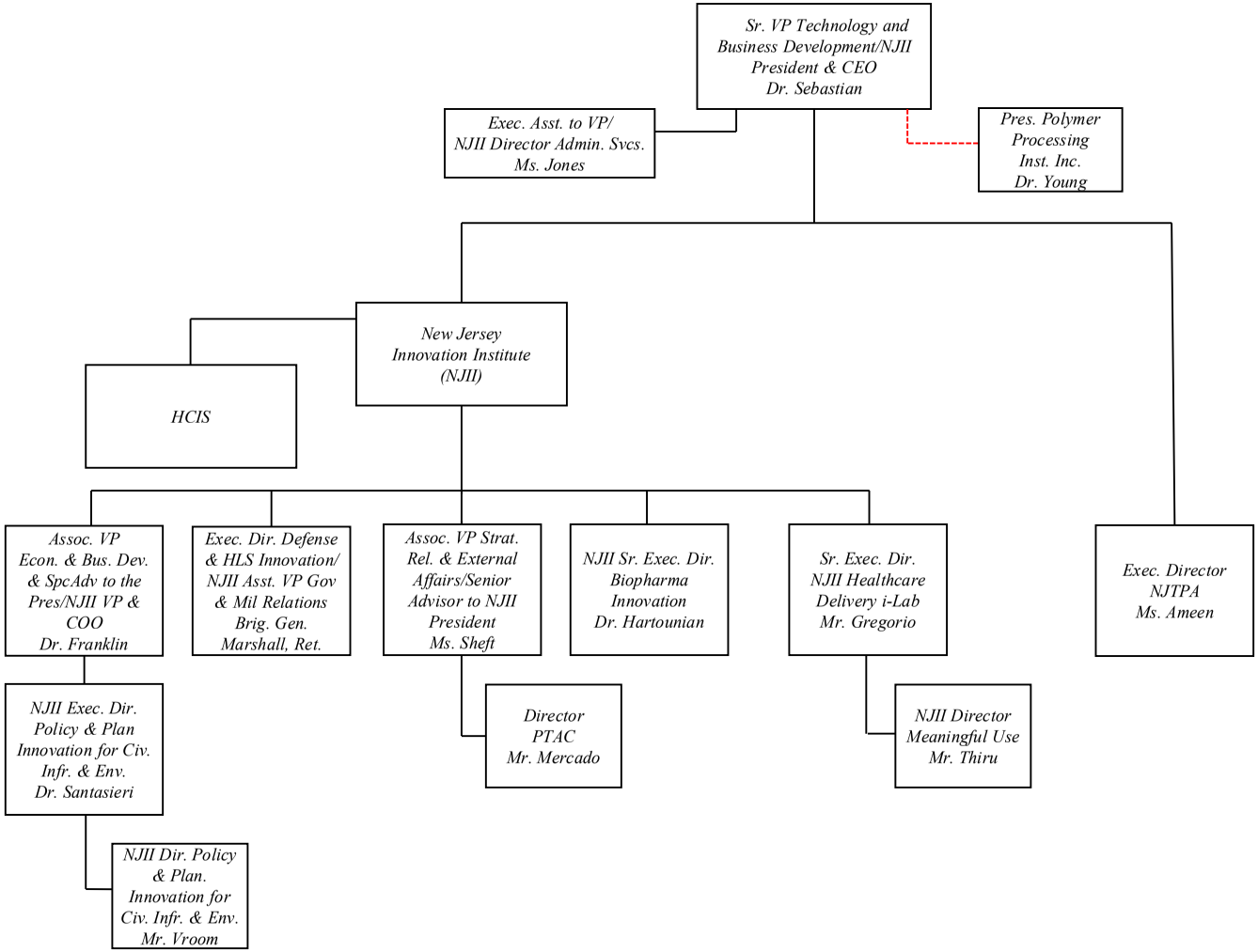
# SENIOR VICE PRESIDENT FINANCE & CFO

*Fall 2019*



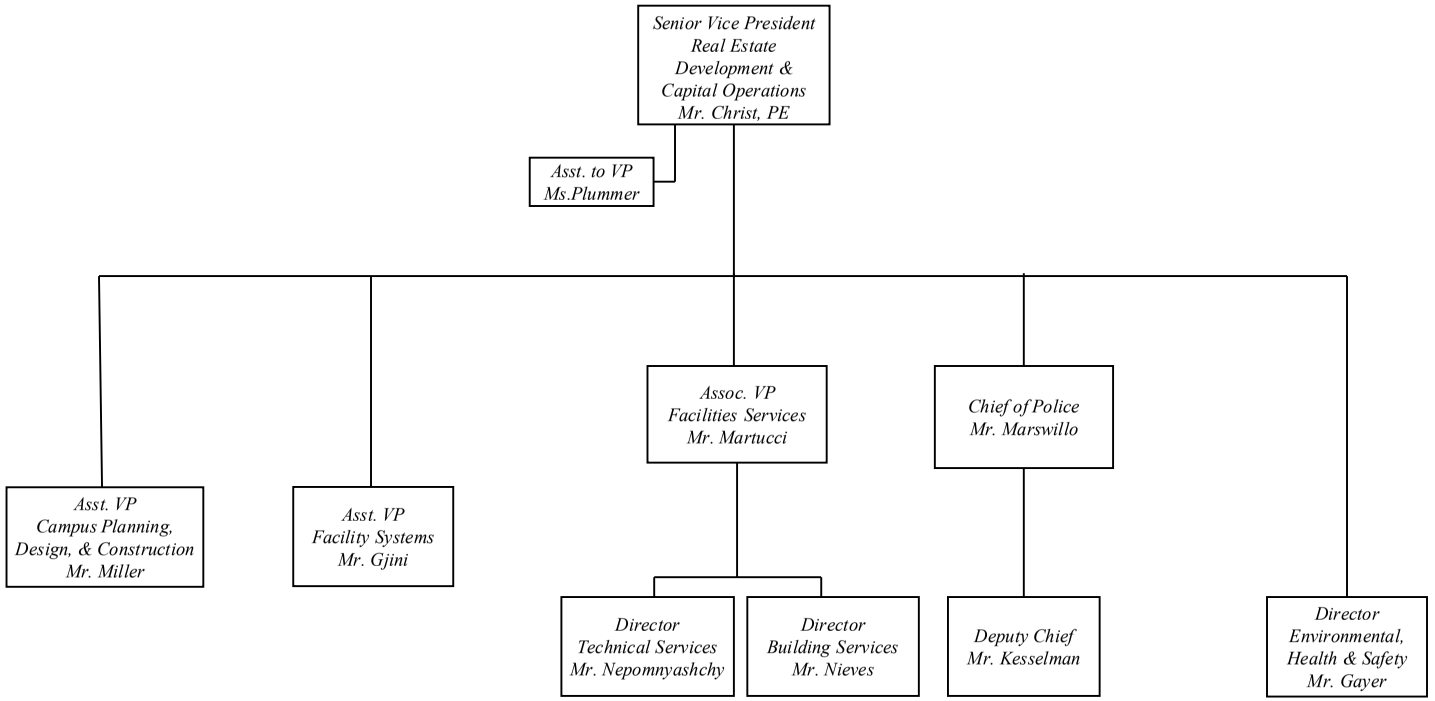
# OFFICE OF TECHNOLOGY & BUSINESS DEVELOPMENT

*Fall 2019*



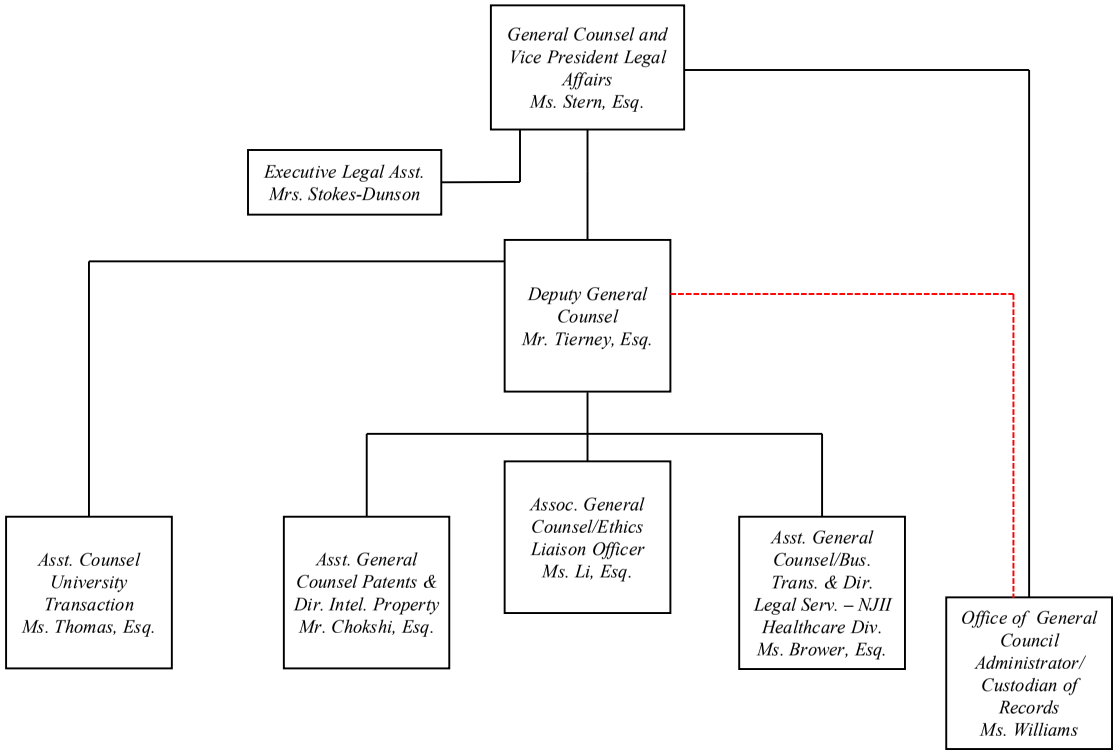
# REAL ESTATE DEVELOPMENT & CAPITAL OPERATIONS

*Fall 2019*



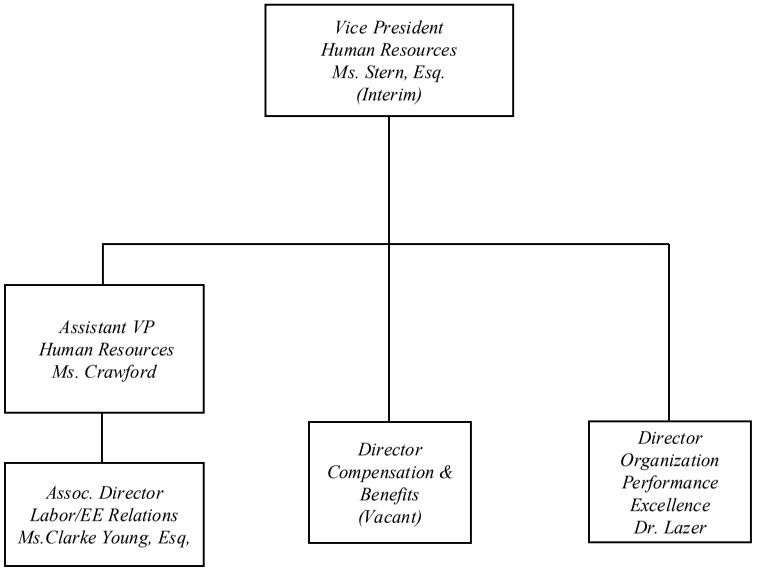
# OFFICE OF GENERAL COUNSEL

*Fall 2019*



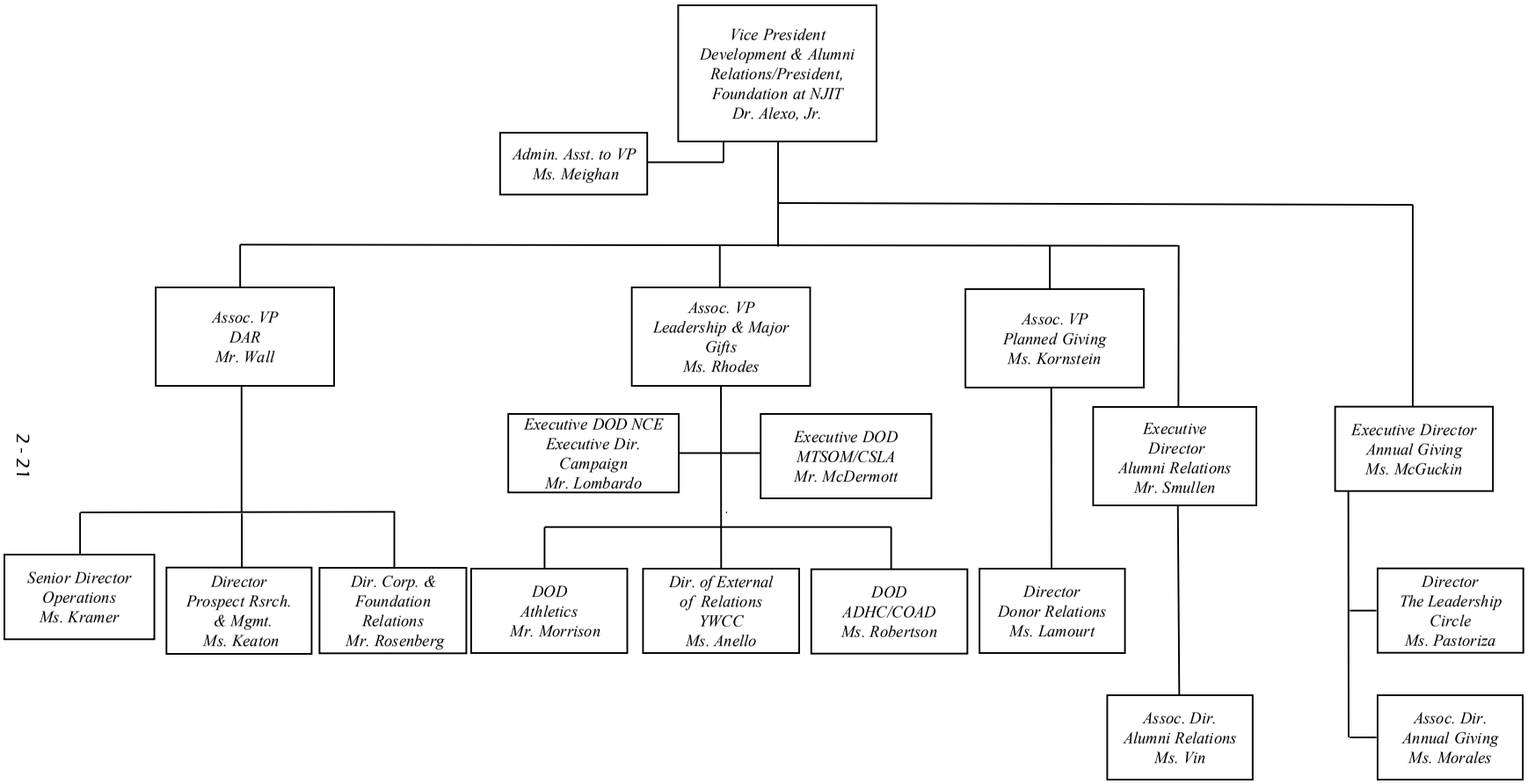
# HUMAN RESOURCES

*Fall 2019*



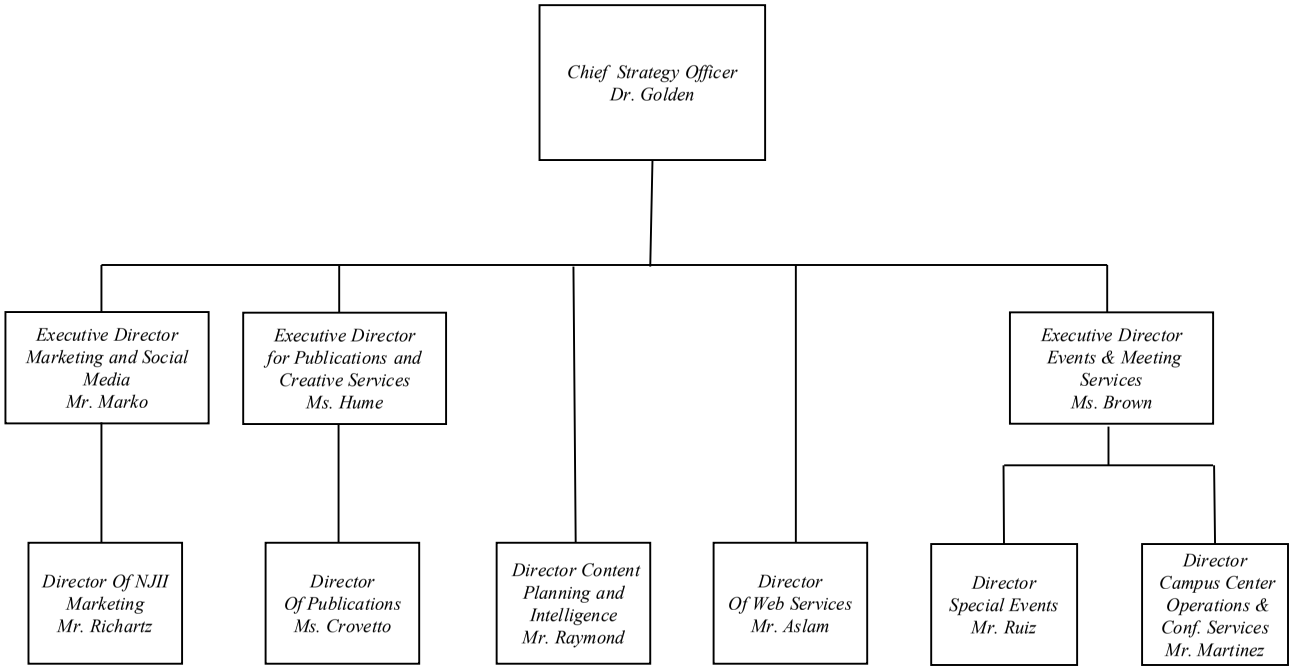
# DEVELOPMENT & ALUMNI RELATIONS

*Fall 2019*



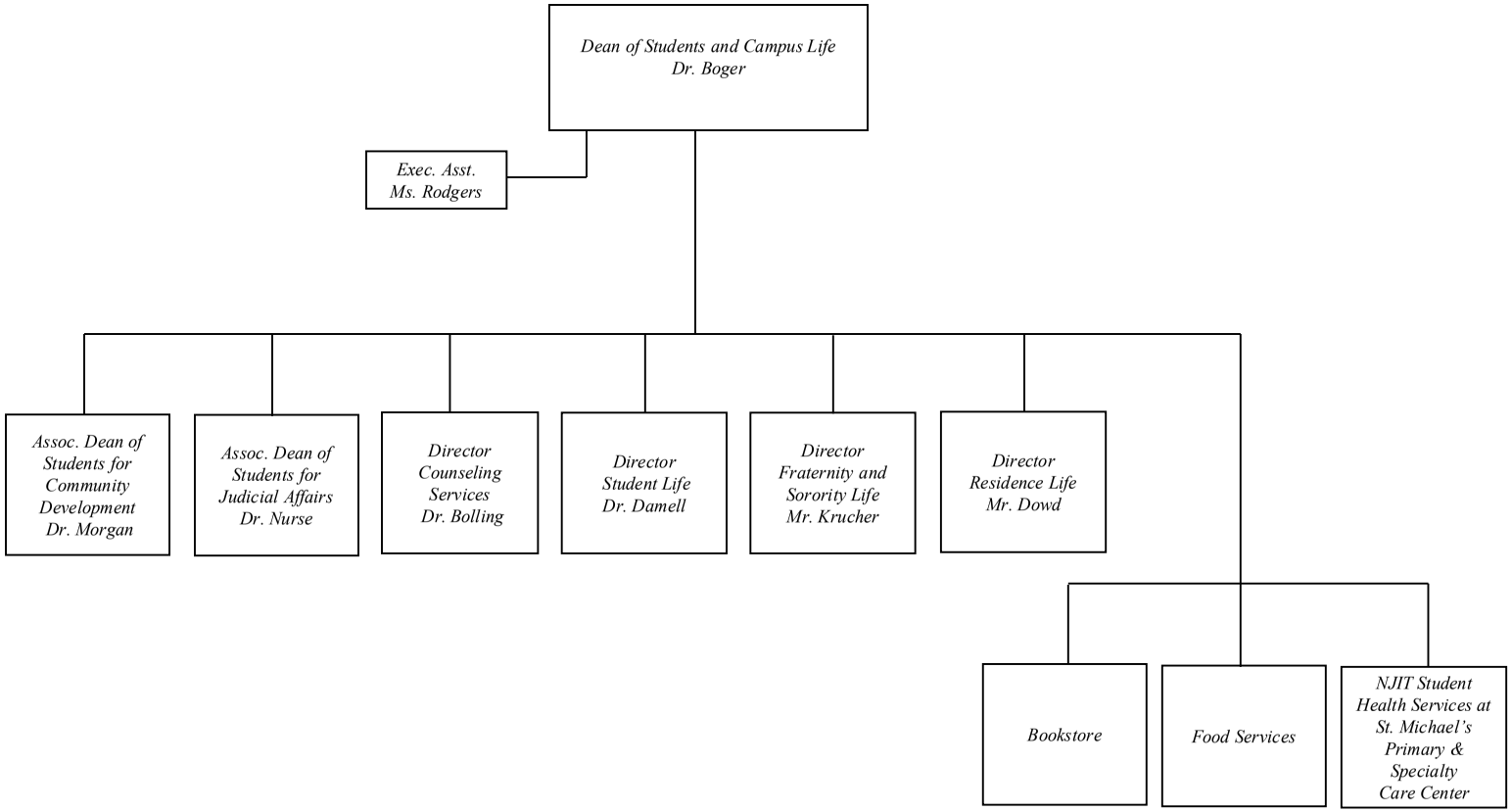
# OFFICE OF STRATEGIC INITIATIVES

*Fall 2019*



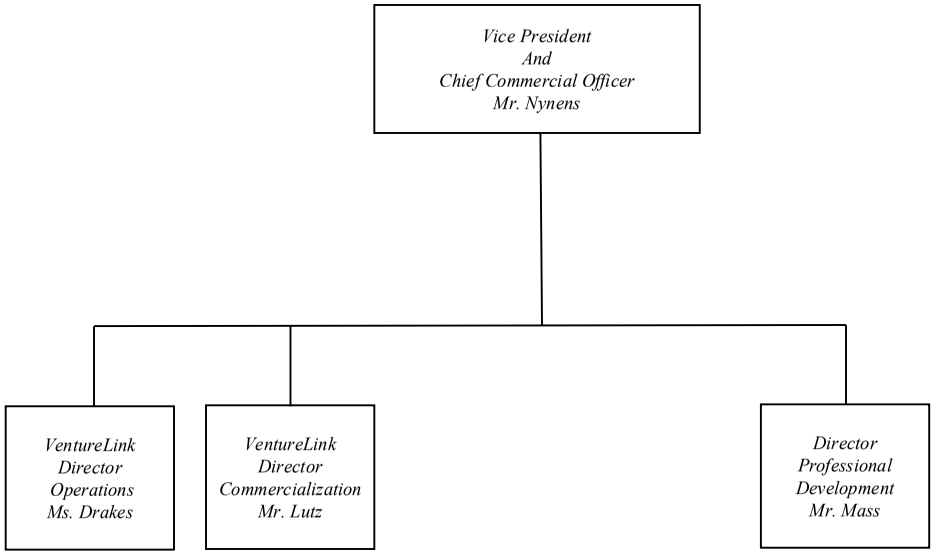
# DEAN OF STUDENTS & CAMPUS LIFE

*Fall 2019*



# BUSINESS INCUBATION & COMMERCIALIZATION

*Fall 2019*



# SECTION 3

# BUDGET INFORMATION

State of New Jersey
Department of the Treasury
Office of Management and Budget
FY2021 Budget Request (BB-102)

Date:

Department: New Jersey Institute of Technology

Citation:

Approved by:
Director

To the State Treasurer:
Appropriations as follows are requested for the above agency for fiscal year 2020. Attached are data covering the present and preceding fiscal years. The statements given are true and correct to the best of my knowledge and belief. I certify that the request submitted is in accordance with instructions contained in the Budget Instruction Manual.

Department Head/Officer
Joel Bloom
President

| Positions Budgeted by fund (1,2) | Budgeted FY2020 | Agency Request FY 2021 |
|---|---|---|
| State Funded (per Appropriations Act Language) | 1,187 | 1,508 |
| Non State Funded (per Appropriations Act Language) | | |
| Total Positions | 1,187 | 1,508 |

| Expended 2019 | | | | | Recapitulation | FY2020 | Request |
|---|---|---|---|---|---|---|---|
| Original and Supplemental | Reappro. and Receipts | Transfers and Emerg. | Total Available | Expended | By Department By Fund Category | Appropriated | Agency Request |
| 480,726 | (2,908) | $ - | 477,818 | 477,818 | Institutional Support | 496,768 | 496,768 |
| | | | | | Total Grants-In-Aid | | |
| | | | | | Less: | | |
| | (3,574) | 0 | (3,574) | (3,574) | Receipts from Tuition Increases | (3,391) | |
| (194,385) | (14,337) | 0 | (208,722) | (208,722) | General Services Income | (216,506) | (219,897) |
| (21,431) | (1,397) | 0 | (22,828) | (22,828) | Auxiliary Funds Income | (23,423) | (23,423) |
| (187,438) | 26,198 | 0 | (161,240) | (161,240) | Special Funds Income | (172,850) | (172,850) |
| (42,032) | (3,981) | | (46,013) | (46,013) [1] | Employee Fringe Benefits | (46,013) | (46,013) |
| **(445,286)** | **2,908** | **0** | **(442,378)** | **(442,378)** | **Total Income Deductions** | **(462,183)** | **(462,183)** |
| **35,440** | - | **0** | **35,440** | **35,440** | **Total State Appropriation** | **34,585** | **34,585** |
| | | | | | Special Purpose | | |
| 480,726 | (2,908) | 0 | 477,818 | 477,818 | General Institutional Operations | 496,768 | 496,768 |
| | | | | | Outcomes Based Allocation | 2,070 | 2,070 |
| 3,700 | | | 3,700 | 3,700 | Grants in Aid Appropriation | 3,700 | |
| | | | | | State Authorized FTEs | | - |
| | | | | | Medical Devices Innovation Cluster: Phase 3 | | 5,500 |
| | | | | | Need Based Retention Awards | | 1,030 |
| **(445,286)** | **2,908** | **0** | **(442,378)** | **(442,378)** | **LESS: Income Deductions** | **(462,183)** | **(462,183)** |
| **39,140** | - | **0** | **39,140** | **39,140** | **Grand Total State Appropriation** | **40,355** | **43,185** |

[1] Per OMB, fringe amount is fixed. Audited financial statements reflect fringe benefits totaling $58,914 million for FY19.

New Jersey Institute of Technology
FY 2021 Budget Request

Spending Agency: New Jersey Institute of Technology

Appropriations Data

($000)

| —Year Ending June 30, 2019— Original | Reapprop. & Receipts | Transfers & Emerg. | Total Available | Expended | GRANTS - IN - AID Distribution by Fund & Program | FY 2020 Adjust. Approp. | FY 2021 Request | FY 2021 Recom-mended |
|---|---|---|---|---|---|---|---|---|
| 480,726 | (2,908) | 0 | 477,818 | 477,818 | Institutional Support | 496,768 | 496,768 | |
| | | | | | Total Grants - in - Aid | | | |
| | | | | | ***LESS:*** | | | |
| | (3,574) | 0 | (3,574) | (3,574) | Receipts from Tuition Increase | (3,391) | | |
| (194,385) | (14,337) | 0 | (208,722) | (208,722) | General Services Income | (216,506) | (219,897) | |
| (21,431) | (1,397) | 0 | (22,828) | (22,828) | Auxiliary Funds Income | (23,423) | (23,423) | |
| (187,438) | 26,198 | 0 | (161,240) | (161,240) | Special Funds Income | (172,850) | (172,850) | |
| (42,032) | (3,981) | 0 | (46,013) | (46,013) | Employee Fringe Benefits | (46,013) | (46,013) | |
| (445,286) | 2,908 | 0 | (442,378) | (442,378) | ***Total Income Deductions*** | (462,183) | (462,183) | |
| 35,440 | 0 | 0 | 35,440 | 35,440 | *Total State Appropriations* | 34,585 | 34,585 | |
| | | | | | **Distribution by Fund and Object** | | | |
| | | | | | Special Purpose | | | |
| 480,726 | (2,908) | 0 | 477,818 | 477,818 | General Institutional Operations | 496,768 | 496,768 | |
| | | | | | Outcomes Based Allocation | 2,070 | 2,070 | |
| 3,700 | 0 | 0 | 3,700 | 3,700 | Grants in Aid Appropriation | 3,700 | | |
| | | | | | Medical Devices Innovation Cluster: Phase 2 | | 5,500 | |
| | | | | | State Authorized FTEs | | | |
| | | | | | Need Based Retention Awards | | 1,030 | |
| | | | | | ***LESS:*** | | | |
| (445,286) | 2,908 | 0 | (442,378) | (442,378) | **Income Deductions** | (462,183) | (462,183) | |
| | | | | | **Grand Total State Appropriation** | 40,355 | 43,185 | |
| 39,140 | 0 | 0 | 39,140 | 39,140 | **TOTAL ALL FUNDS** | 40,355 | 43,185 | |

State of New Jersey
Department of the Treasury
Office of Management and Budget

New Jersey Institute of Technology
FY 2021 Budget Request

Revenue Statement (BB-103)

The following information should be reconciled to the "Statement of Revenues, Expenses, and Change in Net Assets" from the audited financial statements for fiscal years indicated as "actual."

| Institution: NEW JERSEY INSTITUTE OF TECHNOLOGY | FY 2019 Ending June 30, 2019 ACTUAL | FY 2020 Ending June 30, 2020 ESTIMATED | FY 2021 Ending June 30, 2021 ESTIMATED |
|---|---|---|---|
| **EDUCATION & GENERAL REVENUE** | | | |
| **General Services:** | | | |
| **Tuition and Fees** | | | |
| Gross Tuition | 164,378 | 173,566 | 176,957 |
| Receipts from Tuition Increase (BB-102 & BB-105) | 3,574 | 3,391 | |
| Required fees | 32,753 | 34,161 | 34,161 |
| **Subtotal Tuition and Fees (Gross)** | **200,705** | **211,118** | **211,118** |
| Less student awards | (64,419) | (67,640) | (67,640) |
| **Subtotal Tuition and Fees (Net)** | **136,286** | **143,478** | **143,478** |
| **Operating & Non - Operating Revenue** | | | |
| Investments | 5,470 | 2,168 | 2,168 |
| Operating & nonoperating revenues | 6,122 | 6,611 | 6,611 |
| **Subtotal Non - Operating Revenue** | **11,592** | **8,779** | **8,779** |
| **Subtotal General Services Income; excluding rate increase (BB-102 & BB-105)** | **208,722** | **216,506** | **219,897** |
| **Subtotal General Services Income; including rate increase** | **212,297** | **219,897** | **219,897** |
| **Other Non - Operating Revenue** | | | |
| Base State Appropriation | 35,440 | 34,585 | 34,585 |
| Outcomes Based Allocation | | 2,070 | 2,070 |
| Employee Fringe Benefits (Per OMB) | 46,013 (1) | 46,013 (2) | 46,013 |
| Medical Devices Innovation Cluster | 3,700 | 3,700 | 6,530 |
| FY Critical Needs Request | | | |
| **Subtotal, Other Non - Operating Revenue** | 85,153 | 86,368 | 89,198 |
| **TOTAL EDUCATION & GENERAL REVENUE** | **297,450** | **306,265** | **309,095** |
| **NET EDUCATION & GENERAL REVENUE** | **233,031** | **238,625** | **241,455** |
| **Auxiliaries** | | | |
| Resident Life | 18,290 | 18,584 | 18,584 |
| Bookstore | 146 | 160 | 160 |
| Other | 4,392 | 4,679 | 4,679 |
| **Total Auxiliaries (BB-102 & BB-105)** | **22,828** | **23,423** | **23,423** |
| Less student awards | (5,875) | (6,016) | (6,016) |
| **Subtotal Auxiliaries (Net)** | **16,953** | **17,407** | **17,407** |
| **Special funds** | | | |
| Grants & Contracts | 141,915 | 152,559 | 152,559 |
| Other operating revenues | 2,746 | 2,883 | 2,883 |
| Nonoperating revenues | 2,817 | 2,958 | 2,958 |
| Other revenues | 13,762 | 14,450 | 14,450 |
| **Subtotal Special funds(BB-102 & BB-105)** | **161,240** | **172,850** | **172,850** |
| **TOTAL REVENUE** | **411,224** | **428,882** | **431,712** |

(1) Actual FY2019 expense for Employee Fringe Benefits per the audited financials is $58,914
(2) FY2020 Operating Budget for Employee Fringe Benefits is $66,492.

NEW JERSEY INSTITUTE OF TECHNOLOGY

Revenue Reconciliation To Annual Financial Statement

(Dollars in thousands)

For the year ended June 30, 2019

| Financial Statement Description | E & G Revenue | Auxiliaries | Special Funds | | Subtotal | Additions/ Deductions | | FY19 Financial Statement |
|---|---|---|---|---|---|---|---|---|
| **Operating revenues:** | | | | | | | | |
| Student tuition and fees | 200,705 | - | - | | 200,705 | (64,419) | (1) | 136,286 |
| Federal grants and contracts | - | - | 106,754 | | 106,754 | - | | 106,754 |
| State grants and contracts | - | - | 26,109 | | 26,109 | - | | 26,109 |
| Other grants and contracts | - | - | 3,629 | | 3,629 | - | | 3,629 |
| Auxiliary enterprises | - | 22,828 | - | | 22,828 | (5,875) | (2) | 16,953 |
| Other operating revenues | 4,163 | - | 2,746 | | 6,909 | - | | 6,909 |
| **Total operating revenues** | **204,868** | **22,828** | **139,238** | | **366,934** | **(70,294)** | | **296,640** |
| **Nonoperating revenues:** | | | | | | | | |
| State appropriations | 98,054 | - | - | | 98,054 | - | | 98,054 |
| Gifts and bequests | - | - | 7,146 | | 7,146 | - | | 7,146 |
| Investment income | 5,470 | - | 6,616 | | 12,086 | - | | 12,086 |
| Other nonoperating revenues, net | 1,959 | | 2,817 | | 4,776 | - | | 4,776 |
| **Net nonoperating revenues** | **105,483** | **-** | **16,579** | | **122,062** | **-** | | **122,062** |
| **Other revenues:** | | | | | | | | |
| Capital grants and gifts | - | - | 162 | # | 162 | - | | 162 |
| Additions to permanent endowments | - | - | 5,261 | | 5,261 | - | | 5,261 |
| Total other revenues | **-** | **-** | **5,423** | | **5,423** | **-** | | **5,423** |
| **Total revenues** | **310,351** | **22,828** | **161,240** | | **494,419** | **(70,294)** | | **424,125** |

(1) Deductions for student awards: -$64,419 (tuition & fees).

(2) Deductions for scholarship awards: -$5,875 (Auxiliary)

(3) Employee Fringe Benefits totalled $58,914 versus $46,013 as reported by OMB

New Jersey Institute of Technology
FY 2021 Budget Request

FY 2020 Projected Tuition Revenue
Based Upon FY 2020 FTE Estimates

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A. In-State | | | | | | | |
| 7,134 | FTE Undergraduate (Est.) | X | $ | 14,448 | (FY 2020 Tuition Rate) | = | $103,072,032 |
| 567 | FTE Graduate (Est.) | X | $ | 20,624 | (FY 2020 Tuition Rate) | = | $11,693,808 |
| B. Out-of-State | | | | | | | |
| 506 | FTE Undergraduate (Est.) | X | $ | 30,160 | (FY 2020 Tuition Rate) | = | $15,260,960 |
| 572 | FTE Graduate (Est.) | X | $ | 30,540 | (FY 2020 Tuition Rate) | = | $17,468,880 |
| | | | | | | SUBTOTAL | $147,495,680 |

FTE Undergraduate is equated to 32 student credit hours.
FTE Graduate is equated to 24 student credit hours.

| | Y | N |
|---|---|---|
| Is full - time undergraduate tuition a flat rate? | X | |
| If yes, the flat rate applies to students taking at least 12 credits, but not more than 19 credits. | | |
| Is full - time graduate tuition a flat rate? | X | |
| If yes, the flat rate applies to students taking at least 12 credits, but not more than 19 credits. | | |

| | | | |
|---|---|---|---|
| C. | FTE Executive Management Programs (Est) | 20 | 636,000 |
| D. | FTE E-Tuition Rate (Est) | 12 | 315,000 |
| E. | FTE Pearson Programs | 115 | 3,586,000 |
| F. | Continuing Professional Education - Non-Credit | | 225,000 |
| G. | Summer / Winter Session Tuition | 1,151 | 9,282,000 |
| | | SUBTOTAL | 161,539,680 |
| | | ADJUSTMENTS: (1) | 15,417,320 |
| NET TUITION REVENUE ANTICIPATED FOR FY 2020 | | | 176,957,000 |

(1) Adjustments represent the difference between the block rate tuition for full-time students charged (based on 12 credits, not 16 credits) versus the per credit hourly rate for part-time students as well as fluctuations between resident and non-resident enrollment, cancellations, and withdrawls.

New Jersey Institute of Technology
FY 2021 Budget Request

FY 2020 Tuition & Fee Schedule

| | Charge Per Credit Hour | Annual Rate For Full-Time Student | Charge Per Occurrence (If Applicable) |
|---|---|---|---|
| **Tuition** | | | |
| Resident | | | |
| Undergraduate | 549 | 14,448 | N/A |
| Graduate | 1,122 | 20,624 | N/A |
| Non-Resident | | | |
| Undergraduate | 1,289 | 30,160 | N/A |
| Graduate | 1,613 | 30,540 | N/A |
| **Fees Required Of All Students** | | | |
| University Fee [1] | 184 | 3,226 | N/A |
| Student Activity - UG | 6 | 110 | N/A |
| Student Activity - G | 5 | 88 | N/A |

| **Other Fees** | Undergraduate | Graduate |
|---|---|---|
| Application | 75 | 75 |
| Commencement [2] | 120 | 120 |
| Matriculation [2] | 160 | 160 |
| Payment Plan Set-up | 100 | 100 |
| Payment Plan Late Fee | 100 | 100 |
| Re-instatement | N/A | N/A |
| Late Registration | 100 | 100 |
| Late Payment Penalty | 500 | 500 |
| First Year Student Fee | 230 | N/A |
| F/T Commuter Parking | 325 | 325 |
| P/T Commuter Parking | 182 | 182 |
| Parking- On Campus Resident | 490 | 490 |
| Thesis | N/A | 75 |
| Dissertation Binding | N/A | 100 |
| Maintaining Registration | 25 | 50 |
| Transfer Student Orientation | 30 | N/A |
| International Student | 125 | 125 |
| Optional Practical Training Application Fee | 200 | 200 |
| Health Insurance - if needed: | 1,543 | 1,543 |
| **Room And Board - Academic Year** | | |
| Typical Student Housing | 9,110 | 9,110 |
| Typical Meal Plan Charge | 3,888 | 3,888 |
| | **12,775** | **12,998** |

[1] The 'University Fee' is charged to students enrolled in college-credit courses at NJIT. The purpose of this fee is to continue to help support a portion of the costs associated with an array of varied, but integral services and projects that directly affect our students. Some of these important areas include: Student Health Services Office, Campus Center, computer Labs and technology infrastructure, campus facilities, Admissions, Student services, and Career Services offices, and an array of academic, student, and athletics programs.

[2] A one-time matriculation fee will be assessed to all new matriculating students (full or part-time) beginning with their first registration (fall 2014 semester). Students assessed this fee would not be assessed the commencement fee once they apply for graduation. The commencement fee will continue being assessed to all students who had been previously registered prior to fall 2014 semester.

## FY 2020 Projected Tuition and Fee Schedule (FEES)

**Institution: New Jersey Institute of Technology**

Use appropriate column for each fee

| | Charge per credit hour | | Annual rate for full-time student | Undergraduate Charge per occurrence (if applicable) | Graduate Charge per occurrence (if applicable) | Estimated Gen Services Revenue for FY 2020 | Estimated Auxiliary Revenue for FY 2020 | NJIT Estimated Total Revenue for FY 2020 | Estimated Restricted/ Agency Revenue for FY 2020 |
|---|---|---|---|---|---|---|---|---|---|
| **TUITION:** | | | | | | | | | |
| **Resident** | | | | | | | | | |
| Undergraduate | 549 | | 14,448 | N/A | N/A | N/A | N/A | N/A | N/A |
| Graduate | 1,122 | | 20,624 | N/A | N/A | N/A | N/A | N/A | N/A |
| **Non-Resident** | | | | | | | | | |
| Undergraduate | 1,289 | | 30,160 | N/A | N/A | N/A | N/A | N/A | N/A |
| Graduate | 1,613 | | 30,540 | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | | | |
| **REQUIRED FEES: (Required for all students)** | | | | | | | | | |
| University Fee - Academic Year Fall & Spring | 184 | (a) | 3,226 | N/A | N/A | 30,535,000 | - | 30,535,000 | - |
| Summer Fee | | | | | | 541,000 | | 541,000 | |
| Winter Fee | | | | | | 59,000 | | 59,000 | |
| Student Activity - UG | 6 | | 110 | N/A | N/A | - | - | - | 850,000 |
| Student Activity - GR | 5 | | 88 | N/A | N/A | - | - | - | 180,000 |
| **OTHER FEES:** | | | | | | | | | |
| | | | | | | 250,000 | | 250,000 | |
| | | | | | | 364,000 | | 364,000 | |
| | | | | | | 8,000 | | 8,000 | |
| | | | | | | 57,000 | | 57,000 | |
| Application/Re-admission/Non-Matriculation | N/A | | N/A | 75 | 75 | 679,000 | - | 679,000 | - |
| Commencement | N/A | | N/A | 120 | 120 | - | - | - | - |
| Matriculation Fee | N/A | | N/A | 160 | 160 | 494,000 | | | |
| Payment Plan Set-Up | N/A | | N/A | 100 | 100 | 358,000 | | 358,000 | |
| Re-instatement | N/A | | N/A | N/A | N/A | - | - | - | - |
| Late Registration | N/A | | N/A | 100 | 100 | 20,000 | - | 20,000 | - |
| Late Payment Penalty | N/A | | N/A | 500 | 500 | 444,000 | | | |
| First Year Student Fee | N/A | | N/A | 230 | N/A | 330,000 | - | 330,000 | - |
| Schedule Change | N/A | | N/A | N/A | N/A | - | - | - | - |
| Make-Up Exam | N/A | | N/A | - | - | - | - | - | - |
| Thesis | N/A | | N/A | N/A | 75 | 5,000 | - | 5,000 | - |
| Dissertation | N/A | | N/A | N/A | 100 | 6,000 | - | 6,000 | - |
| Transfer Student Orientation | N/A | | N/A | 30 | N/A | 36,000 | - | 36,000 | - |
| Health Insurance (Resident, Non-Resident, International) | N/A | | N/A | 1,543 | 1,543 | - | - | - | - |
| International Student | N/A | | N/A | 125 | 125 | 363,000 | - | 363,000 | - |
| ID Card Replacement | N/A | | N/A | 25 | 25 | 25,000 | - | 25,000 | - |
| | | | | | | - | - | - | |
| | | | | | | - | - | - | |
| Optional Practical Training | | | | 200 | 200 | 266,000 | - | | |
| Distance Learning | N/A | | N/A | N/A | N/A | - | - | - | - |
| Commuter Parking - FT | - | | - | 325 | 325 | - | 2,078,000 | 2,078,000 | - |
| Commuter Parking - PT | - | | - | 182 | 182 | - | 420,000 | 420,000 | - |
| On-Campus Resident Parking | - | | - | 490 | 490 | - | 315,000 | 315,000 | - |
| Other Programmatic Fees | - | | - | - | - | - | - | - | - |
| | - | | - | - | - | - | - | - | - |
| **TOTAL FEE REVENUE:** | | | | | | **34,161,000** | **2,813,000** | **35,770,000** | **1,030,000** |
| | | | | | | | | | |
| **ROOM AND BOARD:** | | | | | | | | | |
| Typical Student Housing | N/A | | 9,110 | N/A | N/A | | 18,584,000 | N/A | |
| Typical Meal Plan Charge | N/A | | 3,888 | N/A | N/A | | 1,808,000 | N/A | |

**NOTES:**

**(a) Per semester charge for part time students.**



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NEW JERSEY INSTITUTE OF TECHNOLOGY
SALARY PROGRAM FY2020 AND FY2021 (State)

ESTIMATED SALARY PROGRAM BY BARGAINING UNIT:

| Union Totals | FY20 FTE | FY20 Base Salary | FY20 Estimated Salary Program | FY20 Anticipated Cash Need | FY21 Base Salary | FY21 Estimated Salary Program | FY21 Anticipated Cash Need |
|---|---|---|---|---|---|---|---|
| afscme | 107.00 | 5,371,693 | 112,806 | 5,484,499 | 5,484,499 | 115,174 | 5,599,673 |
| aft-ucan | 2.50 | 117,609 | 2,940 | 120,549 | 120,549 | 3,013 | 123,563 |
| fop | 25.00 | 1,356,946 | 46,136 | 1,403,082 | 1,403,082 | 49,108 | 1,452,190 |
| fop - soa | 10.00 | 931,155 | 43,764 | 974,919 | 974,919 | 19,498 | 994,418 |
| njsolea | 3.00 | 331,087 | 10,264 | 341,351 | 341,351 | 6,827 | 348,178 |
| non-aligned | 180.78 | 25,485,543 | 573,425 | 26,058,967 | 26,058,967 | 586,327 | 26,645,294 |
| opeiu | 115.53 | 5,840,907 | 131,420 | 5,972,327 | 5,972,327 | 134,377 | 6,106,704 |
| psa Faculty | 302.00 | 45,374,915 | 1,020,936 | 46,395,851 | 46,395,851 | 1,043,907 | 47,439,757 |
| psa Lecturer | 106.75 | 7,758,927 | 174,576 | 7,933,503 | 7,933,503 | 178,504 | 8,112,007 |
| psa non tenure Faculty | 7.00 | 636,739 | 14,327 | 651,066 | 651,066 | 14,649 | 665,715 |
| psa Staff | 327.45 | 26,121,418 | 587,732 | 26,709,150 | 26,709,150 | 600,956 | 27,310,106 |
| **Grand Total** | **1187.00** | **119,326,939** | **2,718,325** | **122,045,264** | **122,045,264** | **2,752,340** | **124,797,605** |

SALARY PROGRAM PARAMETERS:

| | FY20 | FY21 |
|---|---|---|
| | Est. Salary Program | Est. Salary Program |
| afscme | 2.10% | 2.10% |
| aft-ucan | 2.50% | 2.50% |
| fop | 3.40% | 3.50% |
| fop - soa | 4.70% | 2.00% |
| njsolea | 3.10% | 2.00% |
| non-aligned | 2.25% | 2.25% |
| opeiu | 2.25% | 2.25% |
| psa Faculty | 2.25% | 2.25% |
| psa Lecturer | 2.25% | 2.25% |
| psa non tenure Faculty | 2.25% | 2.25% |
| psa Staff | 2.25% | 2.25% |

DISTRIBUTION BY ELEMENT:

| Element | FY2020 Estimated Salary Program | FY2021 Estimated Salary Program |
|---|---|---|
| Instruction | 1,363,523 | 1,394,192 |
| Research | 83,717 | 85,603 |
| Public Service | 17,427 | 17,819 |
| Academic Support | 285,593 | 292,018 |
| Student Services | 264,726 | 270,679 |
| Institutional Support | 532,665 | 517,656 |
| Operation and Maintenance of Plant | 170,674 | 174,373 |
| Auxiliary Services | 0 | 0 |
| **Grand Total** | **2,718,325** | **2,752,340** |


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# SECTION 4

# FY2020 PRIORITY REQUESTS

## NEW JERSEY INSTITUTE OF TECHNOLOGY
## FY2021 BUDGET PRIORITY REQUESTS

This section identifies budgetary needs above our current appropriation that are defined as initiatives to enable New Jersey's polytechnic university to strategically provide a quality STEM workforce, applied science and technology research, community service, and economic development-industry partnerships to meet New Jersey economic and societal goals. Below is a summary of our priority requests for FY2021 which support these objectives.

### Total FY2021 Priority Requests ($000's)

| Priority Request: | Total $ | FTE |
|---|---|---|
| 1) State Authorized FTE | $0 | 321 |
| 2) Medical Devices Innovation Cluster: Phase-III Proposal | $5,500 | 0 |
| 3) Need Based Retention Awards | $1,030 | 0 |
| Grand Total | $6,530 | 321 |

NJIT is one of 32 polytechnic universities in the United States and is New Jersey's public comprehensive STEM University. It enrolls more than 11,800 students annually in bachelor's, master's, and doctoral degree programs; expends approximately $170 million on research activity, and generates an economic impact of more than $1.74 billion on the State of New Jersey each year. The university's academic and research programs are closely aligned with the design, computing, engineering, and life sciences clusters identified in the State Strategic Job Growth Plan that recognizes the need to bring technology and the sciences to bear on in ways that will improve quality of life and spur economic growth. The Medical Devices Innovation Cluster will serve as a beacon for economic growth for the greater Newark area and the State of New Jersey.

NEW JERSEY INSTITUTE OF TECHNOLOGY
FY2021 BUDGET PRIORITY REQUESTS

## 1) State Authorized FTEs

In FY09, after a detailed review of NJIT authorized positions by NJ OMB, the State increased NJIT's State authorized FTE count to 1,246 (95% of 1,313 requested). During the FY11 State budget process, the authorized FTE count was then reduced to 1,187, a decrease of 59, or 4.7%.

NJIT continues to display significant growth in enrollment, research, and operations. Total student headcount for the academic year has increased from 8,934 in FY11 to 11,859 for FY20, an increase of 32.7%. Research and associated expenses have increased from $100.5M in FY11 to nearly $170M by the conclusion of FY19, an increase of 69.1%. Total operations have grown from $281.9 Million in FY11 to $585.8 Million in FY20, an increase of $303.9 million, or 107.8%.

Our FY20 budget request includes 126 additional professional staff FTEs. First, to provide the proper support services for our growing and evolving student body, as many of the requested FTEs will be rolled out as academic advisors, financial aid specialists, counseling center staff, disability services professionals, lecturers and other student life staff. The ability to provide the right support structure for our students will continue to help improve retention and graduation rates as these are key metrics for both NJIT and the State's higher education system as a whole. Secondly, additional staff is required to support and also enable NJIT to partner with industry to create research and development opportunities for technological solutions to our society's most pressing challenges.

NJIT is also requesting recognition of our UCAN Teaching/Research Graduate Assistants which currently total 340; these doctoral students work 20 hours a week would equate to an additional 195 FTEs. Therefore NJIT requests that our State Authorized FTE count be increased to 1,508, an increase of 321 above our current 1,187 FTE count.

### Summary of State Authorized FTE Budget Request

| Priority Request | FTE |
|---|---|
| Professional Staff FTEs | 126 |
| UCAN TA/RA Grad Assistant FTEs | 195 |
| **Total State Authorized FTE Increase** | **321** |

## 2) Medical Devices Innovation Cluster: A Technology Development Ecosystem for New Jersey's Life Sciences Industry Phase-3 Proposal

New Jersey Institute of Technology gratefully acknowledges the partial funding support from the State of New Jersey to develop a medical devices innovation cluster as Phase-1 and Phase-2 of the Technology Development Ecosystem for New Jersey's Life Sciences Industry. The Phase-1 funding has enabled the ongoing renovation and repurposing of the Microelectronics Research Center (MRC) to Microfabrication Innovation Center (MIC) providing the necessary basic microfabrication infrastructure facility. Phase-2 funding has provided equipment at the MIC core facility for fabrication of microelectronic and microfluidic devices and sensors.

This Phase-3 proposal, submitted by New Jersey Institute of Technology, is to further expand the newly renovated MIC facility to include a system integration and testing facility with critically needed advanced equipment to complete the development of medical devices innovation cluster. The proposed innovation cluster as a model for economic growth will yield a transformative solution addressing a two-part problem:

1. The need for the New Jersey medical device industry to innovate in order to grow; and
2. The need to develop point-of-care technologies for high risk patients and the elderly in order to improve care and lower costs.

### Status of New Jersey's Medical Device Industry

New Jersey's Life Sciences Industrial cluster has a total economic impact of nearly $110 billion, representing a quarter of New Jersey's gross domestic product. The Medical Device sub-sector includes 700 companies responsible for 65,000 direct and indirect jobs in the state. Big pharmaceutical companies that market directly to consumers may be better known, but New Jersey's med-tech firms are no less dominant in global markets. Johnson & Johnson, founded in New Brunswick in 1886, and Becton Dickinson, established in East Rutherford in 1897, launched med-tech as a US industry, and their annual revenues are among the top five in the world. Other major brands now in New Jersey include: Abbott Laboratories, Honeywell International, Inc., Integra Life Sciences, Micro Corp., Oticon, Inc., Roche Molecular Systems, Inc., SafiloUSA, Inc., Sivantos, Inc., and Stryker Orthopaedics. The medical device industry is diverse, spanning medical electronics and equipment, surgical supplies, prosthetics, and diagnostics. Comprised of primarily manufacturing firms, the medical device industry provides employment across a wide range of skill levels, with jobs in this sector paying twice the statewide average.

New Jersey's Life Sciences sector has long been the envy of other states and is increasingly the target of their business attraction efforts. Changing business models and the emergence of disruptive technologies dilute some factors that have kept this industry rooted in New Jersey for over a century. States seeking to poach New Jersey companies have recognized these trends and are creating conditions for business success that will prove to be attractive. New Jersey needs to respond in kind to anchor this industry and all of the positive contributions it makes to the state economy.

## Societal and Economic Impacts of Medical Technologies

Some of the most exciting and challenging recent developments in medical devices are the point-of-care technologies that provide monitoring and specific diagnostic testing at home to improve patient care, therapeutic intervention, and rehabilitation, specifically for high-risk patients and elderly individuals living alone. Using devices networked with electronic healthcare record (EHR) systems, point-of-care technologies can alert healthcare providers in real time regarding changes in a patient's condition, allowing for immediate interventions and follow-up to reduce hospitalization, improve patient outcomes, and deliver precision medicine for maximal efficacy[1]. This is of particular concern for New Jersey, where healthcare is a critical issue that carries with it a high societal and economic impact. According to the NJ Department of Labor and Workforce Development's recent study [2], the elderly population (65 & over) in New Jersey is projected to grow by 62% between 2010 and 2030, accounting for 19.9% of the state's total population in 2030 (up from 13.5% in 2010). At the same time, a recent study on healthcare costs published by the *Journal of the American Medical Association* finds that healthcare spending in the United States rose nearly $1 trillion between 1996 and 2013[3]. The leading factor in this increase was the growing elderly population.

## Innovation Ecosystem

The task of keeping Life Sciences companies rooted in New Jersey while also addressing the state's increasing health care needs is a complex problem. One solution is the development of a medical devices innovation ecosystem that would facilitate the efforts of both large and small companies in innovating, developing, and commercializing technologies in the medical device sub-sector. Such an ecosystem would serve to anchor existing Life Sciences companies in the State of New Jersey, attract small to medium enterprises from other states, and support startup companies seeking to enter the medical device and technology market (see Appendix A for additional details).

However, there are three significant barriers to building a corporate-driven innovation ecosystem for the medical device industry. The first *barrier* is generic to any cluster – it is difficult to assemble a critical mass of new businesses in any technology area such that a given original equipment manufacturer (OEM) will find a useful and willing partner. The second *barrier* reflects the expense of any proposition seeking to nurture new companies from inspiration to profitability. While the first barrier makes it difficult for even large companies to sustain captive incubator programs, the second has caused many of the state's incubators to fold under the cost of operating a facility as a public good. The third *barrier* is specific to technology-rich product sectors. Fabrication of working prototypes and early stage commercial products,

[1] https://allofus.nih.gov/
[2] http://lwd.dol.state.nj.us/labor/lpa/content/njsdc/2013WU%20PopLFProj2030.pdf
[3] https://jamanetwork.com/journals/jama/article-abstract/2661579?redirect=true

particularly medical devices, takes a daunting investment in specialized equipment that is beyond the capacity of a start-up or small company to bear.

For example, many OEMs have tried to solve the innovation pipeline by creating their own start-up clusters. Johnson & Johnson started multiple J-Labs across the country, Celgene plans an incubator in Summit, Wells Fargo launched its fin-tech Startup Accelerator in San Francisco, and Barclay's announced a similar venture in New York. All of these companies recognize the value of co-location and densification around a common end market. What they are learning, however, is that even with a single application focus, the cost of running such an enterprise is greater than the value of deal flow for the single company running the incubator/accelerator. At the same time, the traditional supply chain model is rapidly changing as large firms find themselves without the internal resources to master emerging technologies. New advances such as nano-systems, materials, sensors, machine learning, and advanced robotics are revolutionizing medical devices of all types; however, these technological advances fall outside the core competency base upon which most companies have relied over the last century. In order to embrace change without bearing all of the developmental risks, large companies increasingly rely on small companies to mature new technologies to readiness for commercialization. Thus, the old supply chain model is giving way to a new innovation network model that relies on increased intimacy between technology developers and commercializing firms in the form of partnerships formed at the earliest stages of ideation.

On the other hand, the small to medium enterprises (SMEs) upon which large companies rely for innovations consist of companies of fewer than 500 employees, representing 99.7% of US employer firms and accounting for more than 60% of all employment. New Jersey's medical device sector reflects those statistics. Even with the presence of so many global leaders in the state, the average company size is less than 50 employees, and companies of this scale and orientation have never possessed the resources to maintain and equip dedicated R&D facilities, let alone the advanced material synthesis and characterization, nano-structuring, and micro electro-mechanical device fabrication equipment that is required for medical device innovation – expensive, specialized equipment. Such demands are beyond the capabilities of most SMEs, making them particularly vulnerable to dramatic shifts in the technology base for their sector and creating a tension between the need to innovate and the tools required to do so.

The public-private model proposed here addresses these difficulties by using the target market focus to attract a critical mass of related small to medium sized enterprises (SMEs), but offers them to all the companies of a sector, not just a single enterprise. As such models are in their infancy, there is an opportunity for New Jersey to take a lead in pro-actively forming and sustaining public-private innovation clusters that secure the state's Life Sciences industrial base – this proposal addresses an approach to accomplish that end.

## Medical Devices Innovation Cluster– A New Jersey Network for Technology Translation to Healthcare

With its expertise and history in the Life Sciences industry, New Jersey is well positioned to take the initiative in developing a public-private medical devices innovation cluster with the New Jersey Institute of Technology (NJIT), the state's premier public polytechnic institution, as its

partner. NJIT is uniquely qualified to work with the state in developing the medical devices innovation cluster, particularly given the university's mission of economic development. NJIT will focus its full array of technology business services to expedite the nucleation, acceleration and maturation of medical technologies. It will provide access to advanced prototype fabrication, characterization and analytic equipment to support innovators. Finally, it will make available its talent pool of faculty researchers and well trained students to support the needs of this sector, a sector that will become a hub in NJIT's business incubation center VentureLink, a motivation for expanding university investment in analytic and fabrication equipment, and a theme for new faculty recruitment and for creation of related instructional programs addressing workforce needs.

NJIT has a long history of supporting technology business incubation. Its Enterprise Development Center (EDC), opened in 1989 and renamed as VentureLink in 2019, is the state's oldest and largest such operation, having grown to 90 companies in residence that generate $145 million in total output for the state, supporting roughly 910 jobs and creating $3.4 million in tax revenues for New Jersey.

In 2014, NJIT formed the New Jersey Innovation Institute (NJII) to execute the university's technology based economic development mission. NJII has developed cluster formation and growth services as part of its "innovation as a service" suite. These services are designed to build and grow business clusters around NJII's core market verticals and connect these clusters to anchor industries through agile strategy sessions, open innovation challenges, shared technology development partnerships and supply chain initiatives. As an example, a JP Morgan Chase $3M Small Business Forward grant supported the NJII Health IT Connections program that guided over 100 companies in the last three years to achieve 46% annual revenue growth and over 40% annual employee growth as a result of the cluster building activities.

The proposed medical devices innovation cluster will be supported by an NJIT-NJII-EDC Technology Translation Ecosystem (TTE), a hub that will facilitate innovation by providing expertise and resources in advanced materials, sensors, communications, and machine intelligence – that is, technologies that stand to revolutionize medical devices of all types. NJIT would provide companies in the cluster with expertise in related research areas, drawing on the more than 50 faculty and researchers from at least ten NJIT departments already engaged in ongoing research projects in the following areas:

- Biomaterials, Scaffolds and Tissue Engineering
- Biosensors and Labs on a Chip
- Biosensors, Wearable Biosensors, and Point-of-Care Technologies for Monitoring and Therapeutic Intervention
- Polymers and Membrane Technologies
- Particle Engineering and Particulate Composites
- Advanced Materials and Nanotechnologies
- Artificial Intelligence (AI) and the Internet of Things (IoT)

Equipment providing advanced research and technology development capabilities focused in the fields of biomedical engineering and materials science and engineering would be available to member companies of the medical devices innovation cluster through NJIT's new Life Sciences and Engineering Center (LSE) that features state-of-the-art materials-characterization equipment including a Scanning Electron Microscope (SEM), a Tunnel Electron Microscope (TEM) and an X-ray Diffraction (XRD) Spectroscope. The laboratory space in the LSE Center is further designed to foster collaborative research in biomaterial, biosensor and tissue engineering through its open lab design. With the current funding, renovations to the new NJIT Microfabrication Innovation Center has been completed as the micro- and nano-fabrication facilities for the development of semiconductor and microfluidic sensors and devices.

In summary, through the development of a Medical Devices Innovation Cluster and the NJIT-NJII-EDC Technology Translation Ecosystem (TTE) Center, NJIT would lead New Jersey's efforts to accelerate the innovation and translation of point-of-care medical devices and healthcare applications. The TTE Center would provide infrastructure support, foster the development of interdisciplinary clusters of research expertise, and promote collaborations among the stakeholder groups including innovators, developers, entrepreneurs, investors and users. The TTE Center will foster a new model of innovative translational research that will leverage technological expertise from academia, industry, and federal and regulatory agencies to target unmet healthcare needs with a high societal impact. The ecosystem will target transformative improvements in diagnostics and treatments for complex diseases and medical conditions that could not be met by researchers working alone, but instead require close collaborations among innovative engineers, scientists, clinicians, and implementation experts. In the long run, the Medical Devices Innovation Cluster and TTE Center will provide not only improved healthcare outcomes and reduced healthcare costs but also rapid growth in New Jersey's economy, opportunities to attract students and researchers to the state through cutting-edge healthcare expertise, and the generation of new healthcare-related STEM jobs in the state.

## Phase-1 and Phase-2 Funding Report for the Development of Medical Devices Innovation Cluster

NJIT submitted the original proposal for the development of Medical Devices Innovation Cluster and Technology Translation Ecosystem (TTE) Center In February 2018 with a total budget repost of $12.5 million. The original proposal was well received but partially funded for $3.7 million. The Phase-1 funding has enabled NJIT to renovate and re-purpose of the previously decommissioned Microelectronics Research Center to new Microfabrication Innovation Center (MIC) to provide a state-of-the art cleanroom class 1000 facility for the fabrication of micro-and nano-electronic devices along with a basic microfluidic sensor fabrication facility. Phase-2 finding of $9 million was requested in Feburary 2019 to complete the renovation with the purchase of basic photolithography and mcrofuidic fabrication equipment to build, integrate and test microelectronic and microfludic devices and sensors, and to provide seed funding for advanced research and translation of the tested medical devices and sensors to healthcare applications. The pHase-2 proposal was well acclaimed but partially funded for $3.7 million for the purchase of the equipment for fabrication of microelectronic and microfluidic devices.

## Budget Justification: Phase-3 Priority Request
## Medical Device Prototyping, Characterization and Analytics Infrastructure

*Micro & Nano Device Fabrication and Prototyping*

The use of micro-electronic cleanroom technology to fabricate functioning micro-electro-mechanical systems (MEMS) has increased in sophistication, facilitating its applicability to med-tech. Even more recently, researchers at NJIT have demonstrated practical applications of nano-technology to assemble implantable fuel cells deriving power from the sugars metabolized in the blood stream, and probes making measurements on single cells. Such new micro- and nano-fabrication technologies would be enablers for the development of medical sensors and devices. These sensors and devices include MEMS (Micro-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 (AI) algorithms are expected to transform medical device industry and the practice of medicine. With the proposed TTE Center, medical sensors and devices will be prototyped, tested and characterized with data communication protocols though advanced IT and Internet of Things (IoT) technologies. The ability to design and build prototype smart medical sensors and devices that reflect the latest technologies in each of these areas is critical to rapidly growing the medical devices startup industry from concept to commercial operation.

*Advanced Prototyping, Machining & Additive Manufacturing*

Small companies do not have the resources to equip, maintain and operate prototyping centers that can take an idea from blueprint to execution. Leveraging university investments in such resources to support instructional and scientific research needs is the proposed solution to this problem. NJIT's recently opened Makerspace is designed to support academic and commercial use. The current suite of metal-working and additive manufacturing technologies includes a spectrum of advanced 3-D printing and machining technologies suitable for building small to micro-scale prototype devices efficiently and economically.

This Phase-3 proposal therefore requests funds to complete the development of Medical Device Innovation Cluster and TTE Center to develop, test and validate advanced micro- and nano-device fabrication technologies to develop biomarkers-based medical sensors such as Lab-on-a-Chip for detection of HIV and other infectious diseases as well as specific types of cancers.

## Medical Device Prototyping, Characterization and Analytics Infrastructure

As medical device technology moves from the macro- to micro- and even nanoscales, it is necessary to be able to test the device and validate its performance using various forms of advanced imaging equipment. NJIT's new Integrated Life Sciences and Engineering Center expands the university's complement of leading-edge analytical tools to include a High-Resolution Tunnel Electronic Microscope, a Scanning Electron Microscope (SEM), an Atomic Force Microscope (AFM), a 2-Photon Fluorescence Microscope, an NMR Spectroscope, and a Raman Spectroscope for advanced material characterization. However, additional equipment

including an Rapid Prototyping Direct Laser Writer, Biocore SPR system, an Epifluorescent Imaging Microscope System and an Electrochemical Microprobes necessary for testing and characterization of micro/nano electronic and microfluidic sensors and devices are requested. The proposed set of tools would be critical for the validation and translation of medical sensor and device technologies that address unmet needs for the robust growth of medical device companies in New Jersey. An itemized budget for medical device characterization and analytics laboratory for prototyping, system integration, test and validation infrastructure is attached in Appendix B.

### Faculty Seed Grants for Technology Translation to Market and Acceleration to Commercialization

The proposed medical devices innovation cluster and TTE will help identify and facilitate interdisciplinary collaborative teams fostering a path of technology translation along the healthcare innovation cycle. As the NJIT-NJII-EDC ecosystem brings these groups of researchers, developers and stakeholders together, the following types of collaborative projects would be promoted and funded in acceleration of the innovation cycle:

**Early Innovation Translation and Proof-of Value Projects** will include collaborative pilot projects to demonstrate proof-of-concept/principle for improving patient care that typically involves devices, procedures, and diagnostic systems for existing medical fields and practices. The objective is to scientifically explore a novel idea by showing early-stage proof of concept, thereby justifying advancement to the proof-of-value stage to generate a viable candidate for further pre-commercial development. At this stage, all risks associated with the target device must be recognized and addressed directly. The collaborative project will investigate existing medical fields and practices, and show the clinical value for the unmet healthcare need in order to license the technology or to receive additional funding for prototyping, technical de-risking, or early-stage clinical studies. This would be pursued through technology research clusters at NJIT working with market research clusters and stakeholder groups.

**Commercial Accelerator Projects** will focus on business plan development and technology transfer to an existing company or forming a new start-up company establishing market channels. These projects, often called incubation stage, include advanced clinical studies and trials for validation of potential impact on patient care. The projects typically require investment and/or business development expertise to attract interest from an entrepreneur or commercial entity for licensing and commercialization. This will be pursued with the resources available at NJIT, NJII, partner institutions, EDC, and NJIT Highlander and other angel investor groups.

**Advanced Translation and Commercial Growth Projects** will involve technical, medical, and business development experts in the development and implementation of regulatory, random clinical trials, and medical practice adoption plans to demonstrate potential transformational changes in healthcare for further investment funding and large-scale commercialization. This will be pursued with the resources available at NJIT, NJII, partner institutions, EDC, and NJIT Highlander and other angel investor groups.

## Infrastructure for Acceleration of Technology Translation for New Start-Ups and Workforce Development

The most critical aspect of training future leaders and innovators in establishing new startup companies as well as growing new startups is to provide them an accelerated translation to market experience. The proposed TTE Center will provide an integrated experience to owners of potential new or recently established startups to help them navigate through the translation pathway from innovation to market. NJIT has effective graduate courses and certificate programs in entrepreneurship and business and risk management. A cohort of applicants would be provided entrepreneurship training with the objective of scientifically de-risking a novel idea showing early-stage proof of concept, and then proceeding on to the proof-of-value stage to establish a viable start-up for further pre-commercial development with investment funding.

## Full Request

In total, NJIT requests $5,500,000 in funding from the New Jersey FY21 Budget to support the creation of a regional medical devices innovation cluster.

### Summary of Medical Devices Innovation Cluster – Phase-3 Proposal Budget Request

| Priority Requests ($000's) | Total $ |
|---|---|
| Medical Device Prototyping, Characterization & Analytics Requirements | $2,000 |
| Enterprise Development Center (EDC-II) Building 4th Floor Renovation for Medical Device Prototyping, Characterization and Analytics Laboratory | $2,500 |
| Early Innovation Translation and Proof-of-Value Projects | $250 |
| Commercial Accelerator Projects | $250 |
| Advanced Translation & Commercial Growth Projects | $500 |
| **Total** | **$5,500** |

## Appendix A – Technology Development Ecosystem: Transitioning Technology Innovation to Market

NJIT will form a hub with its Life Sciences and Engineering Center, Microelectronic Research Center, the New Jersey Innovation Institute, and Enterprise Development Center for expanding university investment in innovative device fabrication and data analytics. This initiative is well aligned with NJIT's *2020 Vision* strategic plan for new faculty recruitment, translational research clusters, and creation of related instructional programs addressing workforce needs.

The technology innovation, acceleration, and translation process includes: identifying and understanding the unmet market needs of stakeholder groups, developing an innovative idea, brainstorming feasibility with expert stakeholders, building prototypes, and developing resources to facilitate and accelerate translation towards technology validation. For identifying market needs, stakeholder groups include domain experts and users (for example, healthcare providers, clinicians, and patients for healthcare applications), researchers, industry leaders,

innovators, and entrepreneurs. In the later stages of the innovation and translation cycle, other stakeholders, such as policymakers, regulatory agency providers, and environment and infrastructure experts will be added.

To help investigators navigate the translation process, customized Key Performance Indicators will be used in collaboration with assigned stakeholder groups in the following areas:

**Market/Business Need Assessment:** This area determines if there is a significant unmet need with enough buyers willing to acquire the innovation at a sustainable price. Market needs will be defined with respective stakeholder groups for healthcare technologies and applications.

**Innovation**: This area determines whether an innovation will be accepted and adopted in the healthcare market based on improved outcomes or lowered costs.

**Technology Development and Integration:** This area determines if the technology is feasible and will work better and at lower cost than the alternatives.

**Regulatory Compliance:** This area determines standards and regulations to be followed and proven, the best pathway to gain regulatory approval, and how long it will take/how much it will cost.

Each of the above areas will have review panels of stakeholder groups for the respective application area (clinical/industry/business) to assess and mentor technology translation from research to commercialization with the development of necessary resources for the following stages of the healthcare innovation cycle:

1. **Need and Market Assessment:** Insights into unmet clinical or market needs and available solutions.
2. **Ideation:** Potential solution described to meet the need.
3. **Proof of Concept:** Key component concepts validated in models and value proposition articulated.
4. **Proof of Feasibility:** Feasibility of whole solution demonstrated in models and feedback from stakeholders.
5. **Proof of Value:** The potential of the solution to work and create value for all stakeholders is demonstrated.
6. **Initial Clinical/Market Assessment**: Development of prototypes and collection of clinical and impact data.
7. **Validation of Solution**: The solution is shown to be effective, and its value to all stakeholders is validated.
8. **Approval and Launch**: Institutional and regulatory approval for pre-commercial entity.
9. **Commercialization and Use:** The technology is produced and used in practice.

## Appendix B – Itemized Budget

The itemized requested budget for the creation of a Medical Devices Innovation Cluster, including the Medical Device Prototyping, Characterization and Analytics Infrastructure Requirements, is provided below.

### Medical Device Prototyping, Characterization and Analytics Infrastructure

| | |
|---|---|
| Rapid Prototyping Direct Laser Writer | $500,000 |
| Biocore SPR system | $150,000 |
| 3D Lithographic System | $250,000 |
| Epifluorescent Imaging Microscope System | $100,000 |
| High Speed Camera | $50,000 |
| Micro PIV System, Probe Station and Electrical Characterization | $200,000 |
| Plate Reader for Validation Studies | $100,000 |
| Electrochemical Analyzer System | $150,000 |
| Profilometer | $100,000 |
| 3D Optical Profilometer | $150,000 |
| Laminar Hood for carrying out small wet studies (with no needed hookups) (about 2 hoods totaling 20 feet) | $100,000 |
| DI Water System with storage | $50,000 |
| Glove Box for Sensitive Studies | $50,000 |
| Gas System with Manifold | $50,000 |

**Total Medical Device Prototyping, Characterization and Analytics Infrastructure** **$2,000,000**

Faculty Seed Grants for Technology Translation to Market and Acceleration to Commercialization $1,000,000

VentureLink Building 4th Floor Renovation for Medical Device Prototyping, Characterization and Analytics Laboratory $2,500,000

**Budget Request Summary:**

| | |
|---|---|
| **Total Equipment** | **$2,000,000** |
| **Total Renovation and Facility Upgrade** | **$2,500,000** |
| **Faculty Seed Grants for Technology Translation to Market and Acceleration to Commercialization** | **$1,000,000** |
| **Grand Total** | **$5,500,000** |

## 3) Need Based Retention Awards

There is an unmet obligation at NJIT for need based aid for undergraduate in-state students and transfer students. These are students with financial hardships that require additional aid to close the gap between unmet Tuition and Fees greater than $500 but less than $5,000 after federal, state and institutional aid.

### Regular Admitted Students

An analysis of the entering freshman class data revealed that for students with a remaining need greater than $500, but less than $5,000, the first year retention rate was 5 points below freshman with a remaining need of less than $500. Consequently, this gap persisted, and in fact became slightly higher by their junior year. The earlier we are able to provide financial assistance to this population, the more impactful those dollars become in improving the likelihood of retention and ultimately graduation from NJIT with reduced student debt. NJIT would like to request funding to support need-based retention scholarships, totaling $750,000 to fill a gap in remaining student need.

### Transfer Admitted Students

A similar, but larger, performance gap exists among entering transfer students. On average, students with a remaining need gap of $500 to $5,000 have a 1-year retention rate of seven percentage points below their peers. This gap remains consistent when 2-year retention rates are considered. The cost of filling the need gap for this population of transfer students is estimated at $280,000.

With a total cost of $1,030,000 to support all students (regular and transfer admits) in their first and second year of studies, this program aims at increasing the retention rates by 5% (regular admits) and 7% (transfer students) with similar eventual increases in the four- and six-year graduation rates.

### Summary of Need Based Retention Award Budget Request

| Priority Requests ($000's) | Total $ |
|---|---|
| Regular admitted students | $750 |
| Transfer admitted students | $280 |
| **Total** | **$1,030** |

**STATE OFNEW JERSEY**
**DEPARTMENT OF THE TREASURY**
**OFFICE OF MANAGEMENT AND BUDGET**
**FISCAL YEAR 2021**
**PLANNING DOCUMENT BUDGET INITIATIVE FORM (BIF)**
**For**

**DEPARTMENT OF STATE**
**NJ INSTITUTE OF TECHNOLOGY**

**Title:** **State Authorized FTEs**

**Type:** Growth

**CIC:** Potential Growth (Discretionary) ☐ **Legislation** ☐ **Capital Request** ☐ **It Component**

**Space Needs:** No Effect **Rank:** 1

**Initiative Description:**

In FY09, after a detailed review of NJIT authorized positions by NJ OMB, the State increased NJIT's State authorized FTE count to 1,246 (95% of 1,313 requested). During the FY11 State budget process, the authorized FTE count was then reduced to 1,187, a decrease of 59, or 4.7%.

NJIT continues to display significant growth in enrollment, research, and operations. Total student headcount for the academic year has increased from 8,934 in FY11 to 11,859 for FY20, an increase of 32.7%. Research and associated expenses have increased from $100.5M in FY11 to nearly $170M by the conclusion of FY19, an increase of 69.1%. Total operations have grown from $298M in FY11 to $585.8M in FY20, an increase of $287.8M, or 97%.

**Impact**

As the University continues to grow, we need to add additional faculty and staff, as we have exceeded our State authorized FTE maximum of 1,187. The low state authorized FTE count is causing financial strain to the university through reduced FICA reimbursement, and high payout for additional employee state pensions, health and other fringe benefits. The financial impact for this fiscal year is estimated to be 600K being paid back the state.

**Out-year Considerations**

Our FY20 budget request includes 126 additional professional staff FTEs. First, to provide the proper support services for our growing and evolving student body, as many of the requested FTEs will be rolled out as academic advisors, financial aid specialists, counseling center staff, disability services professionals, lecturers and other student life staff. The ability to provide the right support structure for our students will continue to help improve retention and graduation rates as these are key metrics for both NJIT and the State's higher education system as a whole. Secondly, additional staff is required to support and also enable NJIT to partner with industry to create research and development opportunities for technological solutions to our society's most pressing challenges.

NJIT is also requesting recognition of our UCAN Teaching/Research Graduate Assistants which currently total 340; these doctoral students work 20 hours a week would equate to an additional 195 FTEs. Therefore NJIT requests that our State Authorized FTE count be increased to 1,508, an increase of 321 above our current 1,187 FTE count.

**Language**

**FY Funding**

| | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
|---|---|---|---|---|
| **Total Fiscal Year Funding:** | $0 | $0 | $0 | $0 |
| **Change:** | $0 | $0 | $0 | $0 |
| **Total FY Budget Request:** | $0 | $0 | $0 | $0 |

**Position:**

**Saving initiative start date:** 7/1/2020

| Position Type | Positions # | Positions $ | Comments |
|---|---|---|---|
| Increase FTE | 321 | $0 | |
| **Total Positions** | 321 | $0 | |

**STATE OFNEW JERSEY**
**DEPARTMENT OF THE TREASURY**
**OFFICE OF MANAGEMENT AND BUDGET**
**FISCAL YEAR 2021**
**PLANNING DOCUMENT BUDGET INITIATIVE FORM (BIF)**
**For**

**DEPARTMENT OF STATE**
**NJ INSTITUTE OF TECHNOLOGY**

**Title:** **Medical Devices Innovation Cluster-Phase 3**

**Type:** Growth

**CIC:** Potential Growth (Discretionary) ☐ **Legislation** ☐ **Capital Request** ☐ **It Component**

**Space Needs:** No Effect **Rank:** 2

**Initiative Description:**

Some of the most exciting and challenging recent developments in medical devices are the point-of-care technologies that provide monitoring and specific diagnostic testing at home to improve patient care, therapeutic intervention, and rehabilitation, specifically for high-risk patients and elderly individuals living alone. Using devices networked with electronic healthcare record (EHR) systems, point-of-care technologies can alert healthcare providers in real time regarding changes in a patient's condition, allowing for immediate interventions and follow-up to reduce hospitalization, improve patient outcomes, and deliver precision medicine for maximal efficacy.

**Impact**

The task of keeping Life Sciences companies rooted in New Jersey while also addressing the state's increasing health care needs is a complex problem. The development of a medical devices innovation ecosystem would facilitate the efforts of both large and small companies in innovating, developing, and commercializing technologies in the medical device sub-sector. This ecosystem would serve to anchor existing Life Sciences companies in the State of New Jersey, attract small to medium enterprises from other states, and support startup companies seeking to enter the medical device and technology market. With its expertise and history in the Life Sciences industry, New Jersey is well positioned to take the initiative in developing a public-private medical devices innovation cluster with the New Jersey Institute of Technology (NJIT), the state's premier public polytechnic institution, as its partner. NJIT will focus its full array of technology business services to expedite the nucleation, acceleration and maturation of medical technologies. It will provide access to advanced prototype fabrication, characterization and analytic equipment to support innovators. Finally, it will make available its talent pool of faculty researchers and well trained students to support the needs of this sector, a sector that will become a hub in NJIT's business incubation center VentureLink, a motivation for expanding university investment in analytic and fabrication equipment, and a theme for creation of related instructional programs addressing workforce needs.

**Out-year Considerations**

In total, NJIT requests $5,500,000 in funding from the New Jersey FY21 Budget to complete the creation of a regional medical devices innovation cluster.

**Language**

**FY Funding**

| | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
|---|---|---|---|---|
| **Total Fiscal Year Funding:** | $0 | $5,500 | $5,500 | $5,500 |
| **Change:** | $5,500 | $0 | $0 | $0 |
| **Total FY Budget Request:** | $5,500 | $5,500 | $5,500 | $5,500 |

**STATE OFNEW JERSEY**
**DEPARTMENT OF THE TREASURY**
**OFFICE OF MANAGEMENT AND BUDGET**
**FISCAL YEAR 2021**
**PLANNING DOCUMENT BUDGET INITIATIVE FORM (BIF)**
**For**

**DEPARTMENT OF STATE**
**NJ INSTITUTE OF TECHNOLOGY**

**Title:** **Need Based Retention Awards**

**Type:** Growth

**CIC:** Potential Growth (Discretionary) ☐ **Legislation** ☐ **Capital Request** ☐ **It Component**

**Space Needs:** No Effect **Rank:** 3

**Initiative Description:**

NJIT recognizes the financial hardship faced by many undergraduate students. NJIT is requesting need-based aid for undergraduate in-state students and transfer students. Particularly, students with financial hardships that require additional aid to close the gap between unmet Tuition and Fees need greater than $500 but less than $5,000 after federal, state and institutional aid.

An analysis of the entering freshman class data revealed that for students with a remaining need greater than $500, but less than $5,000, the first year retention rate was 5 points below freshman with a remaining need of less than $500. Consequently, this gap persisted, and in fact became slightly higher by their junior year. The earlier we are able to provide financial assistance to this population, the more impactful those dollars become in improving the likelihood of retention and ultimately graduation from NJIT with reduced student debt. NJIT would like to request funding to support need-based retention scholarships, totaling $750,000 to fill a gap in remaining student need.

A similar, but larger, performance gap exists among entering transfer students. On average, students with a remaining need gap of $500 to $5,000 have a 1-year retention rate of seven percentage points below their peers. This gap remains consistent when 2-year retention rates are considered. The cost of filling the need gap for this population of transfer students is estimated at $280,000.

**Impact**

NJIT is requesting $1,030,000 to support all students (regular and transfer admits). This program aims at increasing the retention rates by 5% (regular admits) and 7% (transfer students) with similar eventual increases in the four- and six-year graduation rates.

**Out-year Considerations**

NJIT is requesting $1,030,000 to support all students (regular and transfer admits). This program aims at increasing the retention rates by 5% (regular admits) and 7% (transfer students) with similar eventual increases in the four- and six-year graduation rates.

**Language**

**FY Funding**

| | FY 2021 | FY 2022 | FY 2023 | FY 2024 |
|---|---|---|---|---|
| **Total Fiscal Year Funding:** | $0 | $1,030 | $1,030 | $1,030 |
| **Change:** | $1,030 | $0 | $0 | $0 |
| **Total FY Budget Request:** | $1,030 | $1,030 | $1,030 | $1,030 |

# SECTION 5

# CAPITAL BUDGET

# NEW JERSEY INSTITUTE OF TECHNOLOGY
# FY 2021 CAPITAL BUDGET REQUEST

## Executive Summary

The FY21 Capital Budget Request of the New Jersey Institute of Technology was crafted following an examination of its facilities master planning needs as they align with the ***2020 Vision*** Strategic Plan. Based on this study, including the ongoing and recently completed projects, together with the capital renewal and replacement projects funded by the University, provided the needed facilities to implement the ***2020 Vision*** Strategic Plan and look forward to "Building on a Strong Foundation" through ***NJIT 2025***. The capital request has been prepared for submission to the New Jersey Commission on Capital Budgeting and Planning in accordance with State guidelines. While the submission was crafted with all of the strategic priorities as a basis, we specifically focus on the strategic priority of investments, which is outlined below:

> Investments: NJIT will ensure that the human, physical and technological resources for student learning and faculty research have the highest priority. The university's faculty will continue to grow in numbers and renown. They will work in the best laboratories with the highest-quality equipment and technology infrastructure. All classrooms will accommodate a variety of instructional layouts and will offer the latest technology. A multiyear campus plan for student learning, faculty, research and community investment will propel NJIT to state, regional, national and international prominence.

Chartered by the State of New Jersey in 1881 as Newark Technical School, NJIT has grown into a major research University and premier educational institution. The University has grown it enrollment from 6,300 students in 1979 to11,859 in fall 2019, which is an all-time high for NJIT. This growth has been accomplished without compromising quality of the NJIT student. Students entering in the 2019 fall semester had average SAT scores for critical reading and mathematics of 1297. Research has grown during the same period from $375,000 to nearly $170,000,000 making NJIT one of the preeminent research universities in the region. The NJIT campus now encompasses approximately 47 acres. Its 37 buildings contain approximately 3.5 million gross square feet. Of the total building space on campus, about 80% was constructed after 1965 with several new or fully rehabilitated structures having come on line in the past few years.

The physical facility of the campus continues to improve and expand. NJIT completed in June, 2009 the purchase of the historic Central High School building, which is now called the Central King Building. The complete renovation and renewal of this approximately 200,000 square foot, collegiate gothic building was completed in April 2017 providing flexible and adaptive facilities for the modern teaching and learning pedagogies. The first phase, completed in 2014, renovated the 3rd and 4th floors into bio-teaching laboratories and classrooms to accommodate approximately 900 students. The Department of Biology is now housed on the 4th floor, with laboratories and offices. Open spaces, whiteboards, pinup panels and audio/visual have been provided throughout the building to promote collaborative work and research by faculty, undergraduate and graduate students throughout the building. The balance of the academic and student support spaces opened in January 2017, providing classrooms, break out spaces, collaboration rooms, and student congregation spaces throughout the facility. Finally, the Martin Luther King Level opened in April 2017 as the home for the New Jersey Innovation Institute.

NJIT recently completed two major campus facilities, funded through the 2015 Series A Bonds: the

Wellness and Events Center and Science and Technology Park Parking Garage. The new 984 space parking deck was completed in August of 2016 and provided much needed capacity to the University. The 209,000 square foot Wellness and Events Center opened in January 2018. This multipurpose facility supports campus events, conferences, such as the international VOICE summit, sponsored by Amazon, recreation, intramural, and the intercollegiate athletic needs of NJIT.

Through the issuance of recent State bonds, NJIT completed in 2017, the 24,000 square foot addition to the York Center for Environmental Science for the integration of life sciences and engineering, adding multidisciplinary research and collaboration space. In July 2016, NJIT was awarded $20M from the 2015 Higher Education Capital Facilities Program for the Integrated Makerspace project, which funded the upgrade the infrastructure of Faculty Memorial Hall. Completed in January 2019, the project renewed the 97,000 square foot facility, originally constructed in 1967. In addition, the 9,100 square foot Makerspace in the Guttenberg Information Technology Center, renovated and opened in 2017, encourages active learning, creativity, and skill development through practice and training. Students learn real world, tangible skills such as product design and prototyping, manual and computerized metal and wood work, industrial metrology, and computer aided design. The success of the Makerspace prompted the State of New Jersey to further support this initiative through a $10M supplemental appropriation, allowing an additional 10,000 square foot to be constructed, opening later this year.

In July 2019, the University completed the acquisition of two strategic properties on our north border. The former Mueller family properties include the 156 Central Avenue parcel, a 42,455 square foot property bordering the campus and the 11-21 Sussex Avenue parcel, a 33,000 square foot property containing a warehouse just across Central Avenue. As outlined by the 2018 Facilities Master Plan, NJIT will need to expand the campus physical plant to accommodate growth. The acquisition of these two parcels provides the land area to allow expansion without displacing critically important parking capacity. Until NJIT realizes the projected growth, the warehouse will be used for University storage and student clubs, such as our Steel Bridge and Solar Car teams, while the 156 Central Avenue property will be cleared of the existing structures and transitioned into a "Campus Gateway" green space.

To continue the growth trajectory in both education and research, the NJIT FY21 request reaches across all aspects of the University as we work to steward our existing resources as well as adding new facilities. As the State of New Jersey's only polytechnic university, NJIT has facilities that require more resources and technology than the traditional educational institution. The total request outlines $502,450,000 in capital projects through 2027. The FY21 projects range from $4,300,000 to renew our existing capital assets, a priority of the ***2020 Vision***, to a $111,021,000 investment for a new multi-purpose academic building to provide instructional and academic support space for a growing array of disciplines and multi-disciplinary learning. This facility would also include space for online and converged classroom experiences, incorporating the latest technologies for digital course instructional design.

NJIT has continued to invest in it is physical assets in order to deliver on our promise of a premier educational experience to our highly competitive students. The FY21 request is in alignment with our strategic plan and our facilities mission to provide a healthy, safe and helpful campus experience for students, parents, faculty, staff and alumni. We will maximize the use of human and financial resources to create an environment for learning, research, and innovation for the NJIT family through the incorporation of teamwork, communication, and creativity. The projects requested herein will continue the good work of the institution for generations of students to come.

## Department Priority Summary Report- All Fund Sources

| Department Priority | Project Title | Organization | Project Number | FY 2021 | FY 2022 | FY 2023 | FY 2024 - 2027 | Total |
|---|---|---|---|---|---|---|---|---|
| **75 C** | **New Jersey Institute of Technology** | | | | | | | |
| 1 | CURRENT/DEFERRED MAINTENANCE | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 838 | $25,000 | $25,000 | $25,000 | $25,000 | $100,000 |
| 2 | MODERNIZATION OF LABORATORY AND INI | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 1091 | $4,300 | $0 | $0 | $0 | $4,300 |
| 3 | THE IDEAS CENTER: INNOVATION, DESIGN, | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 1230 | $66,545 | $0 | $0 | $0 | $66,545 |
| 4 | LIBRARY | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 324 | $7,750 | $10,490 | $21,439 | $38,250 | $77,929 |
| 5 | ACADEMIC BUILDING | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 27 | $0 | $5,000 | $50,510 | $55,511 | $111,021 |
| 6 | EXPANSION OF THE LIFE SCIENCES AND EI | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 1253 | $0 | $0 | $5,150 | $56,635 | $61,785 |
| 7 | ENGINEERING FACILITY EXPANSION | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 1254 | $0 | $0 | $0 | $66,870 | $66,870 |
| 8 | LAND ACQUISITION | NJIT - NEW JERSEY INSTITUTE OF TECHNOL | 24 | $0 | $0 | $0 | $14,000 | $14,000 |
| | | **Department Total** | | $103,595 | $40,490 | $102,099 | $256,266 | $502,450 |

# Project Status Report

## Capital Improvement Projects FY2013 - FY 2019

*(000's)*

| Project Name | Proj No. | Start Year | Status | Total Available | General | Bond | Federal | Other |
|---|---|---|---|---|---|---|---|---|
| **New Jersey Institute of Technology** | | | | | | | | |
| **NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY** | | | | | | | | |
| LABORATORIES, CLASSROOMS AND STUDIO FOR STEM | 32 | 2013 | Completed | 79,137 | 0 | 66,342 | 0 | 12,795 |
| CENTER FOR INTEGRATIVE LIFE SCIENCES | 33 | 2014 | Completed | 19,000 | 0 | 13,500 | 0 | 5,500 |
| WELLNESS EVENTS CENTER | 34 | 2015 | Completed | 102,000 | 0 | 92,000 | 0 | 10,000 |
| PARKING DECK | 35 | 2015 | Completed | 23,800 | 0 | 23,800 | 0 | 0 |
| INTEGRATED MAKERSPACE | 36 | 2016 | Completed | 20,000 | 0 | 20,000 | 0 | 0 |
| **TOTAL FOR: NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY** | | | | **$243,937** | **$0** | **$215,642** | **$0** | **$28,295** |
| **Department Totals** | | | | **$243,937** | **$0** | **$215,642** | **$0** | **$28,295** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **838** | ***Project Title:*** | CURRENT/DEFERRED MAINTENANCE |
| ***Project Type:*** | **A06** Preservation-Other | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **1** | ***Facility Name:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***New Project:*** | Yes | ***Project Location:*** | NJIT NEWARK |

**PROJECT DESCRIPTION AND JUSTIFICATION**

The university has continued to extend the standard replacement lifecycle for campus facilities. NJIT has invested resources to begin the mitigation of the deferred maintenance backlog; however, the resources are limited and have been addressing the most emergent issues. Current identified backlog includes, but is not limited to, the following: Tiernan Hall ($35M), Mechanical Engineering Center ($9M), Cullimore Hall ($5M), Campbell Hall ($5M), Colton Hall ($4M), Cypress Hall ($12M), and Laurel Hall ($12M).

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| No | $0 | $0 |

**EXPLANATION:**

Cost avoidance by installing more energy efficient equipment and systems. If funds are not available, tuition rates will be increased to cover required repairs.

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| CONSTRUCTION | $100,000 |
| ***Total Estimated Cost:*** | **$100,000** |

(000's)

| PRIOR YEARS' APPROP. | FUND TYPE | FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | *General* | $25,000 | $25,000 | $25,000 | $25,000 | $100,000 |
| | ***TOTALS*** | **$25,000** | **$25,000** | **$25,000** | **$25,000** | **$100,000** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **1091** | ***Project Title:*** | MODERNIZATION OF LABORATORY AND |
| ***Project Type:*** | **E03** Construction-Renovations and Rehabilitation | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **2** | ***Facility Name:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***New Project:*** | Yes | ***Project Location:*** | NJIT |

**PROJECT DESCRIPTION AND JUSTIFICATION**

The frontier areas of science and engineering are increasingly dependent upon experimental studies, after decades in which computer modeling and simulation were the dominant tools. Nano-systems technology and molecular biology are examples in which the underlying scientific principles are not well enough understood to use model based approaches to discovery. Hands-on and eyes-on are needed and this requires a new generation of analytic and imaging systems to support both research and instruction. The expansion of this research will be incorporated into existing renovated space and coupled with the expansion recently funded through two phases of supplemental appropriations for the Medical Devices Cluster.

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| No | $0 | $0 |

**EXPLANATION:**

Renovation of existing space.

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| CONSTRUCTION | $2,000 |
| FURNISHING AND FIXTURES | $1,000 |
| OTHER | $300 |
| FEES | $1,000 |
| ***Total Estimated Cost:*** | **$4,300** |

| PRIOR YEARS' APPROP. | FUND TYPE | (000's) FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | *General* | $4,300 | $0 | $0 | $0 | $4,300 |
| | ***TOTALS*** | **$4,300** | **$0** | **$0** | **$0** | **$4,300** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **1230** | ***Project Title:*** | THE IDEAS CENTER: INNOVATION, DESIGN, |
| ***Project Type:*** | **E03** Construction-Renovations and Rehabilitation | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **3** | ***Facility Name:*** | |
| ***New Project:*** | Yes | ***Project Location:*** | |

**PROJECT DESCRIPTION AND JUSTIFICATION**

The project converts Tiernan Hall into an IDEAS Center and transforms the entire building. Currently, Tiernan Hall is an aging building in need of an overhaul of all mechanical and electrical systems. It also requires renovation and modernization of twelve classrooms, including a large lecture hall, and thirteen instructional laboratories (five for chemistry, four for physics, and four for chemical engineering). When complete, the building will provide state of the art homes for three departments: Chemistry and Environmental Science; Physics; Chemical, Biological, and Pharmaceutical Engineering.

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| No | $0 | $0 |

**EXPLANATION:**

Cost avoidance due to new, modern equipment

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| CONSTRUCTION | $53,550 |
| FURNISHING AND FIXTURES | $6,307 |
| FEES | $6,650 |
| ***Total Estimated Cost:*** | **$66,507** |

(000's)

| PRIOR YEARS' APPROP. | FUND TYPE | FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | ***Bond*** | $59,895 | $0 | $0 | $0 | $59,895 |
| | ***Other*** | $6,650 | $0 | $0 | $0 | $6,650 |
| | ***TOTALS*** | **$66,545** | **$0** | **$0** | **$0** | **$66,545** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **324** | ***Project Title:*** | LIBRARY |
| ***Project Type:*** | **E03** Construction-Renovations and Rehabilitation | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **4** | ***Facility Name:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***New Project:*** | Yes | ***Project Location:*** | VAN HOUTEN LIBRARY - NJIT NEWA |

**PROJECT DESCRIPTION AND JUSTIFICATION**

Planned renovation and expansion of existing library to create a learning commons with additional student support services and on-line/multimedia library material and access. It will provide a new learning environment including provisions for group projects utilizing current technologies. The expansion is necessary based on the increase in student population through year 2025 and is outlined in the NJIT facilities master plan.

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| No | $544 | $0 |

**EXPLANATION:**

Additional operating and maintenance cost.

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| CONSTRUCTION | $57,989 |
| FURNISHING AND FIXTURES | $10,000 |
| OTHER | $1,700 |
| FEES | $8,240 |
| ***Total Estimated Cost:*** | **$77,929** |

| PRIOR YEARS' APPROP. | FUND TYPE | (000's) FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | *General* | $7,750 | $10,490 | $21,439 | $38,250 | $77,929 |
| | ***TOTALS*** | **$7,750** | **$10,490** | **$21,439** | **$38,250** | **$77,929** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **27** | ***Project Title:*** | ACADEMIC BUILDING |
| ***Project Type:*** | **E04** Construction-Other | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **5** | ***Facility Name:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***New Project:*** | Yes | ***Project Location:*** | NEWARK |

**PROJECT DESCRIPTION AND JUSTIFICATION**

A new multi-purpose facility, constructed to meet current and projected demand, providing much needed instructional, academic and academic support space for a growing array of disciplines and multi-disciplinary areas of activity. This facility provides for teaching and learning, including facilities for online and converged classrooms, accommodating NJIT's growth.

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| Yes | $1,480 | $0 |

**EXPLANATION:**

Additional operating and maintenance costs.

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| CONSTRUCTION | $111,000 |
| FURNISHING AND FIXTURES | $8,000 |
| OTHER | $2,500 |
| FEES | $10,250 |
| ***Total Estimated Cost:*** | **$131,750** |

| PRIOR YEARS' APPROP. | FUND TYPE | (000's) FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | *General* | $0 | $5,000 | $50,510 | $55,511 | $111,021 |
| | ***TOTALS*** | **$0** | **$5,000** | **$50,510** | **$55,511** | **$111,021** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **1253** | ***Project Title:*** | EXPANSION OF THE LIFE SCIENCES AND |
| ***Project Type:*** | **E03** Construction-Renovations and Rehabilitation | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **6** | ***Facility Name:*** | |
| ***New Project:*** | Yes | ***Project Location:*** | |

**PROJECT DESCRIPTION AND JUSTIFICATION**

The Life Sciences and Engineering Center, constructed in 2016, supports multi-discipline, collaborative research between the life sciences and engineering disciplines. The NJIT Facilities Master Plan outlines the need for space to accommodate further growth in these critical areas through 2025. The 24,000 GSF facility, planned for future expansion, provides for 50,000 GSF in additional space on the current site to support the critical integration of these fields.

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| Yes | $400 | $0 |

**EXPLANATION:**

Additional operating and maintenance costs.

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| CONSTRUCTION | $51,500 |
| FURNISHING AND FIXTURES | $4,635 |
| OTHER | $500 |
| FEES | $5,150 |
| ***Total Estimated Cost:*** | **$61,785** |

| PRIOR YEARS' APPROP. | FUND TYPE | (000's) FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | ***Bond*** | $0 | $0 | $5,150 | $56,635 | $61,785 |
| | ***TOTALS*** | **$0** | **$0** | **$5,150** | **$56,635** | **$61,785** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **1254** | ***Project Title:*** | ENGINEERING FACILITY EXPANSION |
| ***Project Type:*** | **E03** Construction-Renovations and Rehabilitation | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **7** | ***Facility Name:*** | |
| ***New Project:*** | Yes | ***Project Location:*** | |

**PROJECT DESCRIPTION AND JUSTIFICATION**

The Newark College of Engineering remains NJIT's largest college providing education to half of our students in the various engineering disciplines. The Facilities Master Plan outlines a need for additional space to accommodate teaching laboratories and support spaces to serve our students. The 65,000 GSF facility will be constructed on land currently owned by NJIT and will add to the engineering complex created by Faculty Memorial Hall, Tiernan Hall, and the Electrical and Computer Engineering Center.

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| Yes | $520 | $0 |

**EXPLANATION:**

Additional operating and maintenance costs.

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| CONSTRUCTION | $51,500 |
| FURNISHING AND FIXTURES | $6,025 |
| OTHER | $2,650 |
| FEES | $6,695 |
| ***Total Estimated Cost:*** | **$66,870** |

| PRIOR YEARS' APPROP. | FUND TYPE | (000's) FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | ***Bond*** | $0 | $0 | $0 | $66,870 | $66,870 |
| | ***TOTALS*** | **$0** | **$0** | **$0** | **$66,870** | **$66,870** |

# *Capital Project Report by Org & Priority*

*9/6/2019*

| | | | |
|---|---|---|---|
| ***Project Number:*** | **24** | ***Project Title:*** | LAND ACQUISITION |
| ***Project Type:*** | **D04** Acquisition-Other | ***Department:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| | | ***Organization:*** | NJIT - NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***Department Priority:*** | **8** | ***Facility Name:*** | NEW JERSEY INSTITUTE OF TECHNOLOGY |
| ***New Project:*** | Yes | ***Project Location:*** | NEWARK |

**PROJECT DESCRIPTION AND JUSTIFICATION**

A critical element of the campus master plan is to acquire a limited amount of land to permit the construction of new facilities and to complete the campus edge at the intersection of Central Avenue and Martin Luther King BLVD. The area is within the Campus Gateway Development Plan, which is a subset of the City approved Broad Street Station District Redevelopment Plan. NJIT is the designated Redeveloper by the City of Newark. In addition, acquisition of another adjacent, strategically located property allows for future campus expansion exists on the west side of campus. Each will enhance the capabilities of NJIT and accommodate growth.

**PROJECT ANNUAL OPERATING IMPACT** (000's)

| IMPACT | INCREASE | DECREASE |
|---|---|---|
| No | $0 | $0 |

**EXPLANATION:**

| *PROJECT PHASE* | *ESTIMATED COST (000's)* |
|---|---|
| OTHER | $14,000 |
| ***Total Estimated Cost:*** | **$14,000** |

(000's)

| PRIOR YEARS' APPROP. | FUND TYPE | FY-2021 | FY- 2022 | FY- 2023 | FY 2024 - 2027 | TOTAL PROJECT COST |
|---|---|---|---|---|---|---|
| | *General* | $0 | $0 | $0 | $14,000 | $14,000 |
| | ***TOTALS*** | **$0** | **$0** | **$0** | **$14,000** | **$14,000** |