

BUILDING ON A STRONG FOUNDATION—NJIT 2025

A Strategic Plan

DRAFT

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Vision

To be a preeminent public polytechnic research university with global impact.

Mission

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

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

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

Core Values

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

Excellence

We innovate in the pursuit of excellence in all that we do and continue to improve in order to meet and sustain the highest standards of performance.

Integrity

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

Civility

We treat each other with respect and with dignity.

Social Responsibility

We pride ourselves on engagement and partnerships to enhance the communities in which we live.

Diversity

We celebrate the inclusiveness of our university community and are sensitive to cultural and personal differences. We do not tolerate discrimination in any form.

Communication

We strive to share information and understand each other's perspectives.

Sustainability

We develop responsibly and respect the needs of future generations.

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From the President

Joel S. Bloom

NJIT is an ascending university, and the success of our *2020 Vision* Strategic Plan has created the foundation for even higher aspirations. As one of only 32 polytechnic universities in the United States, we occupy an enviable position—a position that places our graduates in great demand, allows us to attract the most talented students and faculty, enables close partnerships with the industries that drive national and global economic growth, and allows us to conduct high-impact applied research.

During the course of *2020 Vision*, NJIT's progress has been remarkable. We have attained R1 status—the highest possible ranking—in the Carnegie Classification for research productivity, we are #1 in the entire nation, according to *Forbes*, for the upward economic mobility of students whose families have the lowest incomes, and are one of the top 100 universities as ranked by *US News & World Report*. We have seen the number of applications to NJIT double and the credentials of those applying become even more impressive than they already were. We have improved the graduation and retention rates of our students significantly. We have conducted curricular assessment and enhanced career placement for our students. We have renewed the faculty with more than 150 hires during the last seven years and have provided resources and support for both their teaching and promising research agendas. We also have transformed our campus through the creation of new facilities—Makerspace, the new Life Sciences and Engineering Center, the Wellness and Events Center, and others—as well as the refurbishment of labs and classrooms across the campus.

NJIT now is poised to achieve its vision of becoming a preeminent public polytechnic research university with global impact, and our strategic plan, *Building on a Strong Foundation—NJIT 2025*, is the roadmap that will guide us toward that vision. The strategic priorities we have embedded in this plan are Prominence, Research, Students, Faculty, and Resources. NJIT will be more widely recognized for its leadership in applied research, its student outcomes and learning experiences, and the achievements of its faculty, and *NJIT 2025* will secure the resources necessary to achieve these goals.

I commend the leadership of Provost and Senior Executive Vice President Fadi Deek and all those community members who have shepherded NJIT through *2020 Vision* and have contributed to the development of *NJIT 2025*. Both plans were shaped through broad engagement of students, faculty, staff, alumni, trustees, and others, and they are representative of the priorities that emerged through extensive conversation, research, and analysis. The *NJIT 2025* plan sets forth the objectives, strategies, and tactics established by the planning committees that will guide our resource investments.

As this process comes to a close, I look forward to working with the entire university community to implement *NJIT 2025*. I am pleased to say that our university's foundation is

strong and its outlook is bright. NJIT now enrolls more than 11,800¹ students and conducts over \$170 million in research activity each year. We have a \$2.8 billion impact on New Jersey's economy annually. Philanthropic support of our university has grown, as has awareness of NJIT's reputation and accomplishments. This university is poised for excellence in all that it does, and we are prepared to seize upon the opportunities that await NJIT.

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¹ All Fall 2019 student data will be finalized after the 9th week of the semester; all financial data will be finalized when audited financials are available.

Introduction

Fadi P. Deek

Provost and Senior Executive Vice President

NJIT 2025 builds on the remarkable achievements of *2020 Vision*. Student learning, student support, and research remain central to the plan with many strategies continuing the momentum of *2020 Vision*. One *NJIT 2025* priority, however, stands out as new and critical to the Vision for our university: Prominence. While *2020 Vision* moved NJIT into the ranks of the nation's top research universities based on formal metrics, recognition of NJIT by our peers and the public does not match those accomplishments. Now, NJIT must do more than achieve results; it must tell its story and establish a reputation befitting the achievements of our university.

As we embark on the next phase of our institutional transformation, we first take a retrospective look to learn from the experiences of *2020 Vision*.

The bold initiatives of *2020 Vision* have transformed the nature of NJIT's student population. Growth in applications has nearly doubled, from about 4,500 freshmen applications in 2014 to approximately 9,000 in 2019. Enrollment has experienced similar growth, with the cohort of first-time, full-time freshmen increasing from approximately 1,000 in 2014 to 1,370 in the fall of 2019. Incoming students are also better prepared for the academic rigors of NJIT programs, with higher average SAT scores and high school GPAs. These improvements, combined with enhanced student support provided by effective and efficient staff, have led to higher retention and graduation rates, now comparable to America's best public universities.

NJIT has also seen tremendous achievements in research and scholarly productivity thanks to strategies implemented in *2020 Vision*, despite slow growth in available federal research dollars. Externally funded research has grown beyond all expectations, increasing from \$63M to \$113M in 2019. This growth, reflecting the synergy between NJIT and its public/private research foundation NJII, has moved NJIT into the prestigious list of 131 national doctoral universities with the Very High (R1) Research Activity Carnegie Classification. Growth in research funding has also contributed to NJIT's place among the *US News & World Report* top 100 national universities.

These achievements would not have been possible without the success of the ambitious faculty renewal plan set out in *2020 Vision*. The count of tenured and tenure track faculty stands at 318, almost 50 percent of whom we hired in the last ten years. These faculty have been instrumental in driving NJIT's academic excellence by developing new courses and programs, teaching in new modalities, and implementing innovative pedagogical techniques. These same faculty have also created new research institutes, centers, and laboratories that drive research and innovation, resulting in scholarly publications and intellectual property and raising the profile of NJIT as a leading research university.

2020 Vision represented the collective ideas of our community implemented by the collaborative effort of faculty, staff, and students. The *NJIT 2025* strategic plan similarly reflects input from all community stakeholders. The Board of Trustees, Board of Overseers, Faculty

Senate, and University Senate all contributed challenging objectives for the future of NJIT. A survey based on these ideas compiled input from more than 1,000 faculty, students, staff, and alumni. Interviews and focus groups with engaged community members further elaborated the survey results.

Analysis of the community input revealed five key priorities: Prominence, Research, Students, Faculty, and Resources. Within this framework, we established the overarching theme of attaining recognition through our achievements. To identify the strategies needed to accomplish our goals, we requested volunteers to serve on five committees, one for each priority. The response from the community was overwhelming, with more than 200 participants representing all aspects of the NJIT community. This strategic plan represents the collaborative work of the committees in translating the community's input into concise strategies and key performance indicators (KPIs), each culminating in a target to be achieved by 2025.

Achieving the ambitious goals of *NJIT 2025* will once again require the collaboration of the entire NJIT community. Priority Committees will work together to implement the strategies described in this plan. Administrators at the vice president level will assume responsibility for achieving the KPI targets in their unit. Holding each area accountable through the *NJIT 2025* key performance indicators will drive our self-assessment and help us realize continuous improvement. By working together to achieve the targets, the year 2025 will see NJIT recognized as a premier academic institution known nationally and internationally for its translational research, outstanding students, dedicated faculty and staff, and world-class resources and facilities.

At the launch of *2020 Vision I* I stated, "Every objective outlined in *2020 Vision* is designed to help move NJIT into the ranks of premier research institutions..." This has happened, and thanks to the efforts of the implementation committees and the entire community, we are poised to build on the strong foundation of students, faculty, research and resources to realize the prominence our university deserves. *NJIT 2025* is the roadmap for that future.

Priority: Prominence

In a few short decades, NJIT has transformed from an engineering school serving commuting students to a national research university awarded the Very High Research (R1) designation by the Carnegie Classification of Institutions of Higher Education. The profile of faculty and students has changed correspondingly. Today, the campus is achievement-oriented and serves as a critical engine of economic development for the region and social mobility for its students. Faculty research has increased dramatically, as has the number of faculty winning prestigious awards and career grants. Student teams have won accolades in national engineering and design competitions and every year several receive recognition through prestigious national and international fellowships and scholarships. The economic impact of the campus today approaches \$3 billion annually. Although prominent by many metrics, the university's reputation has not kept pace with its achievements. In simplest terms, the national reputation of NJIT has not changed significantly in the past two decades despite a fivefold increase in research funding and dramatic improvements in student profiles, faculty scholarship, and university facilities. The first objective of *NJIT 2025* is to alter the university's image to match this transformation while continuing to build upon our strong foundation.

NJIT's Vision is 'to be a preeminent public polytechnic research university with global impact.' The primary challenge for *NJIT 2025* is to achieve this preeminence through an earned reputation for excellence. The strategies outlined in the Prominence Priority build the NJIT brand on the research and academic achievements of faculty and students. The other priorities detail strategies supporting this goal by advancing high impact research, educational innovation and achievement, improved teaching, and more efficient and effective use of university resources.

The Prominence Priority sets four key objectives: 1) Increasing university visibility—a critical element in building an awareness of NJIT as a leading research university. 2) Building a reputation for excellence—establishing the university community as a leader in education and high impact applied research. 3) Supporting the Newark community—affording opportunities to contribute to the city's redevelopment while benefiting from the unique opportunities for collaboration our region offers. 4) Promoting alumni engagement—benefitting current students and graduates by providing opportunities for collaboration and the exchange of ideas within a dynamic knowledge network.

Foundational Accomplishments of 2020 Vision

- Achieved Carnegie Classification Very High Research (R1) rating
- Ranked #1 nationally in upward social mobility by *Forbes* and *New York Times*
- Ranked 97th among *US News & World Report's* Best National Universities (up from 150 in 2013), and 43rd among Public Colleges (up from 68th in 2013)
- \$2.8 billion annually contributed to the New Jersey economy according to independent analysts
- Hosted international VOICE Summit (sponsored by Amazon Alexa) in 2018 and 2019 (<https://www.voicesummit.ai/>)

Increase university visibility

- Recognize and highlight faculty academic memberships, prizes, and awards. Such recognitions will increase the reputation of NJIT faculty nationally and internationally.
- Host international academic conferences, renowned speakers, and student competitions with national and global impact. High profile events will draw positive attention to NJIT and contribute to revitalizing the image of Newark.
- Implement a new university branding campaign to increase recognition of NJIT as a leading academic research institution. An effective branding campaign will create a focused and consistent message to grow NJIT's visibility and reputation.
- Highlight research achievements in the media, particularly in areas of public interest or with high societal or economic impact. Doing so will increase public awareness of the research conducted by NJIT faculty.
- Identify and seize opportunities to improve the university's standing in high-impact rankings and communicate these achievements. Increased standings in high-impact rankings will improve NJIT's public image and strengthen the NJIT brand.
- Raise the profile of NJIT in Washington, DC and with the higher education community by joining The Science Coalition (TSC) and building relationships with the Task Force on American Innovation (TFAI). Relationships with these organizations will position NJIT with other top national research universities and move NJIT towards membership in the Association of American Universities (AAU).
- Communicate student accomplishments by promoting successes in prestigious fellowships and academic competitions, and by featuring profiles of students engaged in prominent and emerging work experiences and community service activities. Highlighting the successes of current students will raise NJIT's visibility and attract other high achieving students to NJIT.
- Promote NJIT faculty, staff, and alumni as experts who can provide commentary on the news. Opportunities to provide subject matter experts will establish NJIT as a knowledge leader in high impact research areas.

Build a reputation for excellence

- Support faculty for recognition in professional societies and national academies. This will advance the reputation and influence of NJIT faculty within their disciplines.
- Provide scholarships to attract students who can represent NJIT in competitive academic activities such as debate, chess, and intellectual eSports, and promote the achievements of these students. Offering scholarships based on such activities will generate interest in NJIT among potential applicants and promote NJIT's reputation as a premier institution for students.

- Cultivate national and international partnerships with aspirational peer institutions. These partnerships will offer opportunities to share best practices and establish NJIT as an influential research university.

Support the Newark community

- Undertake service activities to improve the University Heights community, such as monitoring drinking water quality and improving stormwater drainage. These types of activities will underscore NJIT's commitment to improving its local community.
- Expand opportunities to engage students from the local community in STEM fields. Introducing younger students to STEM careers will increase their interest in applying to NJIT.
- Enhance community engagement by working with local economic development, community investment, and business associations such as the Newark Regional Business Partnership to develop meaningful academic experiential learning opportunities matching students with local businesses. Such opportunities will provide students with meaningful work experience and promote local economic development.
- Facilitate NJIT-Newark community interactions by encouraging the development of service-learning projects and monitoring, recording, and broadly communicating such activities for publicity and analysis of outcomes. Increasing service learning within the Newark community will enhance the relationship between NJIT and its host city, while tracking and reporting community engagement will inform decision-making about future efforts and highlight the contributions NJIT makes to its host city.
- Integrate the campus and the surrounding Newark area through the continued implementation of the NJIT Campus Gateway redevelopment plan, creating an environmentally friendly, 24-7 living/learning community. Completion of the redevelopment plan will provide options for students, faculty, and staff to hire, buy, and live locally.

Promote alumni engagement

- Further engage alumni in partnerships with the NJIT community through Highlander Nation. Building a robust alumni network will increase opportunities for alumni to network with one another, mentor current students in a variety of ways including co-ops and internships, and exchange information about NJIT.
- Increase the number and variety of formal alumni affinity groups based on common alumni interests or experiences. Developing a broad array of affinity groups will facilitate the engagement of alumni who have not previously been involved with the university.
- Continue to develop and implement alumni programs and activities tailored to students and graduates of the past decade. Focused programs for young alumni will nurture a culture of engagement and philanthropy among this population.

Priority: Research

Research has propelled NJIT's growth as a leading national research university. During the past two decades, the university and its faculty have dramatically increased their contributions in both basic and applied research and development. This is evident in NJIT's total research expenditures which have grown from over \$40 million in 1999 to more than \$170 million in 2019. This quadrupled growth was achieved despite an increase in total federal R&D expenditures of only 30% during the same period. During *2020 Vision*, significant increases in research expenditures were driven by NJIT's leadership in critical research fields which served to advance knowledge and enhance the economic development of our region. These successes led to all *2020 Vision* key research performance indicators achieving or exceeding targets well before 2020.

The goal of prominence depends on the reality of achievements; therefore, the transformation of NJIT into a leading research institution continues under this strategic plan. Rather than resting on the achievement of a Carnegie R1 classification, NJIT intends to capitalize on opportunities this reclassification makes possible. By cultivating research relationships with federal agencies and other leading universities, NJIT will establish its place as a valued contributor to the national research agenda and an important participant in critical research.

NJIT is poised to not only have a sustained and important impact in our academic and research areas, but to stimulate local, national, and global communities through innovative technologies and economic growth. The following four objectives will propel NJIT forward to further enhance its national and international research prominence: 1) Achieve Prominence in High Impact Research Areas; 2) Promote Collaborative Research; 3) Foster Innovation and Entrepreneurship; 4) Develop Research Support Infrastructure.

Foundational Achievements of *2020 Vision*

- Total R&D expenditures increased from \$92M in 2010 to \$172M in 2019, with total external R&D doubling, from \$61M to more than \$113M during the same period
- 14 faculty members received early career awards since 2010
- Number of doctoral students increased by 34%, from a low of 381 in 2014 to 525 in 2019
- Number of research institutes, centers, and laboratories increased from 31 in 2010 to 105 in 2019

Achieve Prominence in High Impact Research Areas

- Establish leadership in areas of existing strength and high impact: 1) Bioengineering and Bioscience, 2) Data Science and Management, 3) Environment and Sustainability, 4) Materials Science and Engineering, and 5) Robotics and Machine Intelligence. Recognized achievements in these areas will advance NJIT as a leading research university.
- Promote collaborations and invest in faculty, students, staff, and facilities to achieve success in high impact fields. Such efforts will establish NJIT as a research leader in areas critical to technological and economic development.
- Enhance faculty recognition by supporting advancement in research leadership positions and prestigious awards. Recognition of our faculty as top researchers and professionals in their fields will increase the reputation of NJIT.
- Expand externally-funded academic research across the entire spectrum of funding agencies, both public (state, federal, and international agencies) and private (industry and foundations). Such efforts will diversify and expand the funding base for research at NJIT.
- Increase scholarly publications and patents to increase citations and impact factor ratings. These metrics elevate our status as a top-tier research institution among global universities.

Promote Collaborative Research

- Institutionalize collaborative research partnerships through institutes and centers with internal and external resource sharing. Collaborative research partnerships improve efficiency and expand the breadth of research while promoting the exchange of ideas and skills among researchers.
- Develop programs and secure external funding to address problems of greater societal impact. This will enable NJIT to be a competitive candidate for national funding agencies' program-level and training grants in priority areas.
- Facilitate translational research by providing seed funding and investment that allows for pursuing external grants, collaborations, and partnerships. Such efforts will provide additional revenue streams and elevate NJIT's prominence.
- Expand multi- and trans-disciplinary research through collaborative research centers, institutes, and partnerships with other universities. Through such efforts, NJIT will emerge as a leading institution conducting high impact applied research.

Foster Innovation and Entrepreneurship

- Expand entrepreneurial pathways for faculty and students seeking to translate applied research into marketable products. Such pathways will make the research enterprise a continuous process from early-stage investigation to entrepreneurial success.

- Implement an innovation, translation, and acceleration internal seed funding program to help faculty and student innovators pursue preliminary market research, validation, and pre-commercialization. Seed funding will provide support for student and faculty-led startups at the initial stages, which will lead to economic and reputational growth as the startups mature.

Develop Research Support Infrastructure

- Create panels of successful grant recipients to offer workshops and mentor faculty members who will submit proposals to these programs in the future. Drawing on the success of faculty award recipients will help other faculty members also achieve success, for example, when applying for NSF CAREER grants.
- Provide institutional support for high impact research. Institutional funding will allow NJIT faculty to initiate critical research projects before securing external funding.
- Encourage research that challenges current paradigms and develop policies to support the ensuing risk. Doing so will set NJIT apart as a leader in key emerging research areas.
- Improve research management and compliance through the continued refinement of institutional policies setting out clear expectations and ensuring compliance with federal and state regulations. Providing appropriate management and compliance of research efforts will ensure adequate administrative and financial support for the increasing portfolio of research grants and contracts.
- Increase research support services and information systems by investing in appropriate systems that include comprehensive reporting tools to guarantee adequate research management. Investing in appropriate infrastructure will allow for efficient management of financial, legal, and administrative matters related to research.

Priority: Students

Nothing underscores the transformation of NJIT more powerfully than the quality and achievements of our students. During *2020 Vision*, the number of freshmen applicants doubled. The profile of enrolling students has also changed with average SAT scores rising more than 150 points in the past decade, to almost 1300 in 2019. As a rigorous STEM university challenging its students to excel in engineering and mathematics, NJIT has also dramatically improved student outcomes. The four-year graduation rate has increased from 19% reported in 2010 to 47% in 2019. The average time to degree for first-time, full-time freshmen fell from 5.1 years to 4.5 over the same period. The profile of our students has also changed. Today, they compete with the nation's best to win prestigious fellowships, including Fulbright, Goldwater, and Truman scholarships. They win engineering competitions such as steel bridge and concrete canoe, and compete in the Pan-American chess championship and the international solar decathlon.

As an educational institution, NJIT has undergone a profound metamorphosis. Today's NJIT guides well-prepared students toward successful careers as professionals in the knowledge economy. Our students make great contributions as engineers, scientists, technologists, architects, and as entrepreneurs and knowledge workers across the economy. Nationally and globally, however, the perception of NJIT has only begun to catch up with this reality. Our university is ranked among the top 100 universities in the nation by student outcome, achievement, and mobility metrics, but the perception of our university does not accurately and fairly recognize this reality.

While aligning the perception of NJIT with real accomplishments, we continue to seek improvement as an educational institution. We will promote student achievement as we enhance student support, increase diversity and accessibility, develop opportunities for experiential learning, enhance the curriculum, improve advising, and attract, admit, and enroll a community of students who succeed.

Foundational Achievements of *2020 Vision*

- First-time, full-time undergraduate (FTFTU) average SAT Composite score increased from 1141 in 2010 to 1296 in 2019
- Four-year graduation rate increased from 19% in 2010 to 47% in 2019, with the six-year graduation rate increasing from 55% to 67% during that same period
- Retention rate increased from 79% for freshmen entering in 2010 to 88% for freshmen entering NJIT in 2018
- 81% of graduates are either employed full-time or planning to attend graduate school three months after graduation, up from 55% in 2010
- Total enrollment increased 33%, from 8,931 in 2010 to 11,859 in 2019
- 62% of students participated in milestone learning experiences in the 2018-2019 academic year, up from 20% in 2014

Become nationally recognized for student achievements

- Build a nationally prominent, best practice co-op and internship program that utilizes the established rapport between academic departments and industry to increase opportunities for all students, including underserved, under-resourced students, students with disabilities, and at-risk student populations. Strong experiential learning programs will prepare all students for successful careers, provide meaningful learning experiences outside the classroom, and enhance industry engagement with NJIT.
- Encourage and support students in applying for prestigious awards such as Fulbright, Boren, and Watson fellowships while also attracting students with prestigious scholarships from abroad. Such awards will allow students to pursue exciting opportunities after graduation while simultaneously raising the profile of NJIT nationally and internationally.
- Support student participation and achievement in academic competitions such as solar decathlons, engineering challenges, hackathons, debate, and chess with dedicated funding and scholarships. Encouraging students to take on challenging extracurricular activities will enhance student learning while also bringing recognition to the university.
- Support students' transition from the university into today's diverse technological, global workplaces and communities through high-impact programs, services, and employer/alumni connections. Such programs will help students develop the knowledge, experience, skills, and professional networks needed to succeed after graduation.

Support student success

- Implement an innovative, nationally recognized holistic advising model, particularly for freshmen and sophomores, that takes into account personal, social, emotional, developmental, and cultural issues beyond the traditional focus on class scheduling and program requirements. Holistic advising, particularly for sophomores and students changing majors, will put students on the path to academic and career success.
- Implement a flexible individual education plan (IEP) that serves as a roadmap for students and their advisors. A customized IEP will guide students through their coursework and enable timely graduation.
- Initiate proactive advising, implement programs to identify and support at-risk students not performing at their full potential, and develop a better understanding of the reasons students leave NJIT without graduating. Identifying and supporting students who may be struggling will improve educational outcomes.
- Support transfer students as they integrate into the NJIT community and adjust to the rigorous academic environment. Transfer students face many challenges that can be eased through targeted services, resulting in a smooth transition to NJIT.
- Increase living and learning opportunities for women in the residential dorms. This will promote a sense of community for women students.

- Conduct analyses of student cohort(s) to identify challenges, needs, and trends. The results of such analyses will guide decision-making to improve student outcomes.

Promote and facilitate experiential learning

- Expand financial support for international and domestic exchange programs by increasing the range of exchange options available and providing scholarships to fund travel and housing expenses. Financial support for exchange programs will make these milestone experiences more accessible to all students.
- Enhance opportunities for students to participate in milestone experiences within NJIT by including appropriate capstone experiences in all curricula and expanding the Provost's Summer Research Program. Integrating at least one experiential learning opportunity into every degree program will better prepare students for success after graduation.
- Provide student professional/career development opportunities such as workshops and community service experiences outside the classroom. These experiences will help students develop the skills and expertise important for their future careers.

Innovate programs and pedagogy

- Develop a virtual, global campus offering engaging graduate programs. This will increase accessibility of such programs to populations with limited access to higher education and allow NJIT to grow beyond the limits of its physical infrastructure.
- Offer competitive tuition rates for online programs. Discounted tuition rates will make NJIT's online programs competitive in the national and international markets.
- Increase the number of courses accessible through multiple delivery modes, and ensure that instructors receive support and training for teaching in other modalities. Flexible delivery modes will facilitate student learning regardless of physical location.
- Support innovative curricular experiences that engage students by extending instruction beyond the classroom. Supporting new initiatives with targeted funding will help NJIT establish itself as an innovative leader in education.
- Offer an ESL pathway program and bridge courses to prospective students who meet NJIT's academic profile but lack sufficient preparation to be successful. Transition support will increase the number of qualified applicants and ensure their success at NJIT.
- Attract a broader pool of students by developing new programs in areas with career growth potential that are related to existing NJIT strengths. New programs will attract a broader population of students and keep NJIT current with new career opportunities.
- Formalize feedback from Advisory Boards to facilitate the review and implementation of recommendations regarding the relevancy and value of our courses and programs. A formal process for reviewing and archiving such reports will enable the university to focus on continuous program improvement.

Enroll a diverse population of students who succeed

- Analyze student profiles and performance using data analytics to identify predictors of success beyond test scores and GPA, particularly for URM students. Developing more robust decision-making tools for university admissions will provide opportunities for more students while also improving retention and graduation rates for admitted students.
- Offer engaging and challenging summer-intensive programs for high school students. This will increase the visibility of NJIT among high schools nationally and expand the pool of applicants.
- Become a Hispanic-serving institution (25% of total enrollment) through targeted recruitment of qualified prospective Hispanic students. Designation as a Hispanic-serving institution will enable the university to serve a critical underrepresented group through expanded grant funding opportunities.
- Develop recruitment and yield events targeting potential women and URM applicants. Targeted recruitment and yield events will increase enrollment of underrepresented student populations at NJIT.
- Increase support for workshops, activities, and conferences encouraging women high school students to pursue careers in STEM. Such events will promote NJIT to local and regional high schools while simultaneously addressing a societal need.
- Increase the number of international and out-of-state students, particularly at the graduate level. This will increase net tuition revenues while also attracting highly qualified students from across the nation and the globe.
- Develop strategic school to school partnerships at all levels. Building relationships with other schools will establish pathways for students planning to transition to NJIT and create stable and predictable revenue from regular enrollment streams.
- Address the achievement gap by developing an EOP-type cohort program to serve all undergraduate URM students. The services and support of EOP have a long history of success and can help improve the retention and graduation rates for all regular admission URM students.
- Recruit and enroll an increasing number of students from Newark. This will expand NJIT's commitment to its host city, develop a strong local STEM workforce, and contribute to the economic development of New Jersey.
- Support an environment promoting gender identity and expression. A welcoming climate will enable students to self-identify on a campus that allows all students to feel comfortable being who they are.

Increase yield of admitted students

- Increase high-quality interactions between admitted and current students, faculty, alumni, and recruiters. Such interactions will allow admitted students to learn about NJIT from multiple perspectives.

- Target aid distribution by reviewing the scholarship matrix and need-based aid to focus on increasing yield. Strategic aid distribution will help the university meet its enrollment goals, increase net revenue, and remain competitive.
- Build admitted student communities based on region and interest using social media and other means. Students are more likely to choose a school that makes them feel they belong.
- Design an interactive NJIT marketing presentation highlighting NJIT's strengths in all its focus areas. This will help NJIT stand out in a crowded marketplace.

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Priority: Faculty

As a leading public research university, NJIT depends on its faculty to educate the next generation of professionals and expand knowledge through focused research and development. To achieve this goal, the renewal of our faculty has been a key element of *2020 Vision*. Over the past nine years, NJIT has hired 156 new faculty members, nearly 50% of our current faculty. This renewal has offered an unparalleled opportunity for educational innovation and the advancement of research as recently hired faculty members bring new ideas and techniques to the classroom and the laboratory.

This offers NJIT a unique opportunity to position faculty as experts and leaders in their fields. With appropriate mentoring and support, they can represent NJIT in the media and take on leadership positions in professional societies, agencies, and foundations. They can serve as the new, vibrant faces of a university growing into its leading role. They will also anchor our reputation through research citations and their influence on the emerging new pedagogies of higher education.

In *NJIT 2025*, we pursue a robust program to develop a more engaged, recognized, and diverse faculty community. Although the rate of faculty growth will not match the previous strategic plan, we will continue to expand the faculty in areas of high impact research and education. By hiring faculty in theoretical and computational areas we will complement our established tradition of applied research. We will also emphasize teaching by increasing its importance in hiring and promotion decisions. This will include the creation of faculty teaching positions that integrate current University Lecturers and Professors of Practice into a new cohort of instructors with superior pedagogical ability. The success of the teaching and research initiatives established in *NJIT 2025* depends on effective support and mentoring to propel new faculty toward successful careers. Finally, *NJIT 2025* must address the issue of diversity. Building a robust and diverse community of educators and researchers who serve our students, the state, the nation, and the globe is critical to NJIT's continuing status as a premier institution of higher education and a leading polytechnic university.

Foundational Achievements of *2020 Vision*

- 156 new tenured/tenure-track faculty, nearly 50% of the current total, hired since 2010
- 100% of new faculty have terminal degrees
- Number of scholarly publications per faculty increased by 69% since 2010, from 1.54 to 2.60
- Average number of citations per faculty increased by 18% since 2010

Increase tenured/tenure-track faculty

- Seek new positions for faculty who conduct theoretical or computational research. Such faculty will advance NJIT's knowledge and reputation in key research areas while minimizing space or laboratory requirements.
- Identify and address the need for faculty in areas of existing strength and high impact. Targeted increases in faculty will allow NJIT to maximize its research and teaching potential in these areas.
- Increase the emphasis on the role of teaching in faculty hiring, promotion, and tenure by incorporating benchmark teaching standards and rewarding teaching excellence in the review process. The university's commitment to research and teaching will be reflected in the promotion and retention of our best educators.

Expand the category of teaching faculty

- Create a category of full-time, non-tenured Teaching Professors (Assistant, Associate, and Full) that would integrate the present University Lecturers and Professors of Practice. This will increase recruitment and retention of quality teaching faculty by providing more opportunities for advancement while recognizing teaching faculty as full partners in the mission of the university.
- Reduce dependence on adjunct instructors by creating more full-time teaching positions. Increasing full-time teaching faculty will improve predictability of course scheduling and enhance student learning conditions.
- Include full-time teaching faculty as voting members of the faculty. Demonstrating that the members of the teaching faculty are important stakeholders in the university whose voices are appropriately represented in university governance will increase faculty recruitment and retention.
- Include demonstrated excellence in teaching when hiring postdocs with teaching responsibilities. The hiring of high-quality postdocs will affirm the university's commitment to research and teaching.

Strengthen training and mentoring programs

- Develop and implement a multi-level, university-wide mentoring program that provides support for doctoral students, new/junior faculty, and senior faculty. Mentoring will ensure that faculty have the necessary tools for success and that doctoral students are well prepared for their future roles in academia.
- Develop and implement (or identify available) formal programs to train faculty in pedagogy, emerging learning strategies, and best classroom practices to help students succeed in their courses. This will provide faculty with formal training in teaching and education while also benefitting our students.

- Create an internal incentive program to encourage faculty participation in training to improve teaching effectiveness, and facilitate participation in such programs by offering training in multiple delivery modes. Increasing opportunities for training will encourage faculty to continually enhance their teaching skills.
- Provide training and support to develop a stronger faculty presence in traditional media and social networks. Supporting faculty in such activities will highlight the university and position faculty as professional and academic leaders.

Develop a more diverse faculty

- Create and train an institutional Diversity Committee and include a representative in every search process. Diversity Committee members will ensure fair and unbiased treatment of all candidates by every search committee.
- Require the presentation of search committee plans to the dean and new Diversity Committee; plans must include representation from the new Diversity Committee, percentage of women and URM applicants to be included in the pool, and ranking criteria for all candidates. Together, such efforts will standardize search committee processes to ensure fairness and will create accountability for committees and deans to report and track their diversity and inclusion efforts in faculty hiring.
- Develop family-friendly programs, resources and policies detailing issues important to families, women and underrepresented minorities, members of the LGBTQ+ community, and candidates with spouses/partners. Developing a family-friendly environment will create a more welcoming atmosphere for all new and existing faculty.
- Develop a Diverse Faculty Fellow Program to provide fellowships for underrepresented minority group members who wish to gain valuable teaching and research experience. This program will provide an opportunity to identify potential faculty members who can be competitive candidates for future faculty positions.
- Develop a category of “Special Hire,” such as a waiver of a search, target of opportunity hire, or spousal hire, to recruit faculty of diverse backgrounds. This flexibility will create additional opportunities to hire highly qualified and sought-after diverse faculty members.
- Create Institute postdoc positions that are research-focused (including discipline-based pedagogical research) and fully funded by administration in return for limited (2:2) teaching load, focusing on women and URM candidates. Postdocs can serve as a pipeline for diverse faculty candidates that will allow us to improve teaching effectiveness and increase diversity in hiring.

Priority: Resources

Success in higher education builds on a strong foundation of human, digital, physical, and fiscal resources. Throughout *2020 Vision*, NJIT has built the components for a strong future. In addition to renewed faculty, the staff supporting all university operations are committed to achieving the university vision and mission. The information technology serving as a backbone for the university is now undergoing a systematic transition to serve the needs of a research-focused faculty and a digitally sophisticated student body. The physical facilities have grown with the addition of more than one million square feet of buildings and a concentrated renewal plan for existing classrooms and laboratories. Finally, steadily growing enrollment and rapidly expanding research and development have served to strengthen the fiscal position of the university.

The achievements of *2020 Vision* offer NJIT a unique opportunity to transform its image. The new facilities themselves present a different picture for the university, one which can impress students and visitors alike. The increasingly accomplished staff contribute to the culture of a leading institution aware of its potential for success. Finally, the strong fiscal position of NJIT offers opportunities to invest in the digital resources critical to standing out in a crowded higher education marketplace.

Over the five years of this strategic plan, NJIT will enhance human resources, improve information technology, renew physical facilities, and develop alternative sources of revenue. We will develop human resources by further increasing diversity for administrative positions and promoting training and an internal career trajectory for professionals. Information technology will undergo a complete transformation with selected outsourcing of services and infrastructure and a renewed focus on meeting the computational needs of the university. Throughout *NJIT 2025*, we will also improve common spaces, innovate classrooms, renew academic facilities, accommodate planned growth, and promote sustainability. Finally, to increase the financial resources of NJIT we will commercialize intellectual property and maximize revenue from new and innovative programs.

Foundational Achievements of *2020 Vision*

- Completed major capital projects including the Wellness and Events Center, Life Sciences and Engineering Center, Makerspace, Science and Technology Parking Deck, and renovation of Central King Building, totaling more than 1 million square feet
- Expanded learning opportunities with the new NJIT @ Jersey City
- Increased the number of new computer labs and smart classrooms by 26%
- Upgraded technology in 44% of the registrar-scheduled classrooms

HUMAN

Develop the strengths of NJIT's human capital

- Develop the NJIT employer “brand” and strengthen the recruitment process through strategic marketing and social media. Effective branding and recruiting will broaden our reach to attract top, diverse talent.
- Develop and sustain a diverse talent pool by increasing the degree of diversity (women and underrepresented minorities) across all employee groups through intentional recruiting and strategic selection processes. Intentional efforts to hire diverse employees will enable the university to benefit from unique perspectives at all levels.
- Assess management and leadership skill levels for professional employees and provide increased opportunities for development. Effective management and opportunities for professional development will ensure staff have the knowledge, skills, and attributes to excel.
- Become a more family-friendly employer by providing back-up childcare for faculty and staff as an employee benefit. Emergency childcare will be attractive to potential employees who are parents, particularly women.
- Support a holistic wellness strategy to improve employee health and wellbeing. A wellness program will show NJIT's commitment to its employees and improve employee performance.
- Provide succession planning and career opportunities for employees identified as high performers or who have high potential. Offering an internal career path will allow the university to retain exemplary employees and provide opportunities for growth.

DIGITAL

Provide technologies to support teaching, learning, and research

- Maintain and enhance existing classrooms with up-to-date learning technologies and learning management systems, collaborative workspaces with best-practice classroom audio/visual technology, and furniture enabling group-based academic activities. Such efforts will enable faculty to engage students through meaningful learning activities.
- Optimize the use of existing technology-enhanced spaces and create distinct new spaces that support pedagogical innovations such as virtual labs. Using virtual and augmented reality technologies in learning spaces will enhance instruction and engage students in unique learning experiences.
- Develop flexible technology services and facilities to provide students, faculty and staff access to innovative technology including high-performance computing that enables cost-effective and at-scale provisioning of on-premise and cloud-based computing technologies. Flexible technology services are critical to meeting the current and future computing needs of all university stakeholders.

- Create a research computing investment strategy to support a growing research portfolio. Strategic investment in research computing will facilitate successful faculty recruitment and retention and enable more faculty to integrate computing resources into their research and scholarship.

Align IT and data resources with institutional mission, strategies, and goals

- Establish an effective IT governance framework to inform, direct, manage, and monitor IT resources and activities. An IT governance framework will increase strategic alignment, mitigate the risks associated with IT, improve IT resource and performance management, and increase overall IT value.
- Adopt and implement a data governance program to ensure comprehensive management of data resources. A data governance program will improve the quality, accessibility, and security of data, enhance data literacy, and ensure that institutional data meets the needs of all stakeholders.
- Establish a functional data ecosystem including appropriate repositories for data at all stages. A data ecosystem will support business intelligence and analytics and enable data-informed decision-making throughout the university.
- Re-engineer critical operational processes to be more effective and increase university-wide collaboration. Effective processes will reduce operational friction and drive efficiencies across the university.

Ensure secure and reliable enterprise applications and infrastructure systems

- Develop and enhance identity management processes and technology to authenticate and authorize individuals or groups of people to access NJIT applications, systems, or networks based on roles and rights. Doing so will protect university systems and data through global access control.
- Proactively engage in information and systems security evaluations and provide training to the NJIT community regarding cybersecurity threats. Such actions will enhance understanding of system security and ensure compliance with security measures.
- Continually improve and maintain the disaster recovery and business continuity technology and processes. In the case of a catastrophic event, such processes will ensure that the university's critical databases and information systems will be operational within an established period of time.

PHYSICAL

Improve the quality of life on campus

- Identify and implement physical improvements to create a special sense of place at the NJIT campus. Creating a welcoming physical environment will build a stronger sense of community across all stakeholders.
- Create more learning commons spaces in academic buildings for group work and quiet study that will also meet the needs of commuter students. Such areas will provide increased opportunities for students to study and learn together.
- Develop new student residence options on and near campus to include space designed for graduate and non-traditional students. Additional housing options will encourage more students to apply from beyond the local area.
- Add green spaces to the campus for passive and active recreation. Green spaces will improve the campus appearance and provide recreation/relaxation space for the NJIT community.
- Acquire strategic properties to foster campus expansion consistent with the facilities master plan. The acquisition of strategic properties is critical to planned university growth.
- Create science and engineering displays to inspire interest in STEM fields. Visual displays will inspire students and campus visitors with the beauty of STEM.

Promote sustainability

- Create a baseline and plan from which NJIT will reduce its carbon footprint and execute energy conservation projects to reduce the use of fossil fuels and electricity. A baseline is necessary to allow the university to track the outcomes of its sustainability efforts, and the plan will guide strategic efforts toward a more sustainable campus.
- Develop an internal Energy Savings Improvement Program so projects with demonstrated energy savings are funded by NJIT outside of the annual capital renewal and replacement budget and repaid through energy cost savings. Energy saving projects will illustrate NJIT's commitment to green initiatives and reduce energy usage and costs for the university.
- Provide sufficient parking, including appropriate accessible parking, to meet demand while recognizing the impact of ride-sharing and autonomous vehicles on future parking needs. This will ensure that parking services and capacity are in line with the university's planned growth.
- Expand opportunities for electric and hybrid-electric vehicle use by providing preferred parking locations and increasing subsidized vehicle charging capacity. Offering more charging capacity will encourage students, faculty, and staff to invest in electric and hybrid-electric vehicles for their daily commutes.

- Promote alternative transportation options, including mass transit and ride-sharing. Facilitating ride-sharing and mass transit use among students and employees will reduce congestion around campus and in Newark during peak hours.
- Expand the use of renewable energy through the implementation of solar and wind energy systems. Investing in alternative energy sources will provide cost savings and will position NJIT as a leader in the use of renewable energy while offering student opportunities to contribute directly to the green economy.

Integrate digital knowledge with the library

- Create a model digital knowledge environment enabling all forms of digital scholarship, teaching, and learning. A digital knowledge environment will support students and faculty in locating, using, and enhancing knowledge in a digital format that can be easily stored and shared.
- Update the content, programming, and physical infrastructure of the library to better align with digital resources and the needs of digital scholarship. By meeting the ever-changing information needs of students and faculty, the library will increase its importance as a resource for the NJIT community.
- Create a Learning Commons for students, faculty, and partners to immerse themselves in interactive computing, multimedia creation, and large-scale visualization—tools that are enabling new ways to process and use information. A Learning Commons within the library will support new ways of teaching and learning.
- Establish policies, procedures, and infrastructure to move NJIT’s academic materials and scholarly endeavors into a more open and accessible format. This will ensure access to knowledge resources is equitable and sustainable.
- Increase the use of open textbooks, open educational resources, and digital learning materials in courses and programs throughout the university. The use of open educational resources will achieve significant savings for students.

FISCAL

Build a sustainable financial model

- Commercialize NJIT/NJII intellectual properties and services. Deriving revenue from intellectual property will provide additional revenue streams while also highlighting the innovations developed by NJIT faculty.
- Expand the use of data analytics, such as dashboards, for functional areas. Dashboards and other analytical tools will allow managers to assess and improve efficiency within their departments.
- Identify and develop alternative revenue streams that tie into the mission of the university and reflect positively on future enrollment, brand recognition, and research

opportunities. Alternative revenue streams will reduce the university's reliance on tuition and state funding.

- Strengthen our program of private philanthropic fundraising to unlock the potential of NJIT's successful alumni and other constituents including corporations and private foundations. This will provide additional revenue streams to support NJIT's continuing efforts in education and research.
- Support student, faculty, and alumni start-up enterprises through business incubation and product acceleration in VentureLink. Encouraging new businesses will provide an economic benefit to the university and the regional economy.
- Manage tuition increases to not exceed the Higher Education Pricing Index (HEPI) national average. This will ensure NJIT's tuition remains competitive with other institutions.
- Foster a culture of efficiency across the university. This will allow us to make the most of all available resources.

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Guiding Principles for NJIT 2025

The development of *NJIT 2025* was driven by a vision of establishing NJIT as a preeminent academic institution known nationally and internationally for its leadership in education, research, engagement, and economic development. To achieve this vision, *NJIT 2025* is guided by the following principles:

Transformation – Based on the many accomplishments resulting from *2020 Vision*, NJIT is poised to take the next step in its transformation. This principle motivates efforts in:

- Innovating classroom spaces and pedagogy to continuously improve the education of our students
- Appointing and supporting faculty and staff through the development of a diverse pool for recruitment, a culture of continuous learning, and improved talent management and workforce planning
- Transforming NJIT digital resources, infrastructure, and data ecosystems to foster world-leading technological innovation by enhancing digital teaching and learning, supporting high-impact digital and computational research, and cultivating an NJIT digital community
- Restoring and renovating existing facilities for quality of life and function by upgrading classrooms and investing in research facilities and equipment, particularly in high impact research areas

Recognition – *NJIT 2025* will develop national and global recognition for NJIT by promoting and communicating the institution's strengths through a full 'branding' plan. This principle drives NJIT's achievement of the recognition it deserves by:

- Promoting academic achievement through faculty and student scholarship, awards, and accomplishments
- Branding high-impact applied research areas including Bioengineering and Bioscience, Data Science and Management, Environment and Sustainability, Materials Science and Engineering, Robotics and Machine Intelligence
- Developing innovative curricula and inspiring pedagogy through best practices in co-op, internship, and apprenticeship programs

Community – A thriving academic community is crucial to student success and satisfaction. This principle promotes the NJIT community by:

- Nurturing connections by involving alumni in university activities, particularly mentoring and internships for students; connecting students and the NJIT campus, especially through learning-oriented activities; and actively engaging the local Newark community through student recruitment and service projects
- Developing a diverse community through recruitment and retention of female and underrepresented minority students, faculty, and administrators
- Initiating partnerships and programs to better connect NJIT to the Newark, state, national, international, and business communities

A Lasting Foundation – As a preeminent university, NJIT will provide an enduring legacy in education and scholarship. This principle establishes NJIT’s legacy by:

- Following a sustainable plan for renewal and growth by building a lasting reputation focused on education and scholarship, growing and replacing faculty to support high-impact research, and enabling technology-oriented pedagogy
- Planning for facilities investment and renewal, including development of adjacent properties, to accommodate growing enrollment consistent with human, digital, physical, and fiscal resources
- Ensuring a fiscally sustainable university model by maintaining a solid financial position and cultivating alternative revenue streams
- Making a positive lasting impact on the lives of students and alumni

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Key Performance Indicators

Objective	Metric	Baseline	Target
PROMINENCE			
Visibility	Media exposure (market share ² /advertising value equivalency)		
	Google searches for NJIT		
	Number of national/international conferences held on campus attended by more than 300 people		
	Placement of students in high visibility co-op and internship programs ³		
	Web traffic to njit.edu		
Academic Reputation	Average citations per faculty member		
	Academic reputation composite index		
Alumni Engagement	Undergraduate alumni giving rate		
	Overall alumni giving		
	Total endowment		
	Percent of alumni with engagement score of 4 or higher		
RESEARCH			
	Total externally funded research and development (millions) (FY)		
	Externally funded academic research (millions) (FY)		
	Total NJII external funding (millions) (FY)		
	Number of faculty receiving early career and other prestigious awards		
STUDENTS			

² In comparison to identified peer institutions

³ High visibility implies positions in companies such as IBM, Exxon, and Google

Guide Students to Success	FTFTU retention rate		
	6-year graduation rate		
	Number of students applying for / receiving prestigious fellowships or awards		
	Retention of transfer students into their 3rd semester at NJIT		
Promote Diversity	URM retention rate		
	URM graduation rate		
	Pell recipient retention rate		
	Pell recipient graduation rate		
	Equity gap ⁴		
	Number of students from Newark who attend NJIT		
Attract successful students	Average SAT Composite Score ⁵		
	Number of freshman applications		
	Number of transfer applications		
	Number of master's applications		
	Number of doctoral applications		
	Number of credit hours taught through online programs		
FACULTY			
Faculty Renewal	Total tenured/tenure-track faculty		
	Number of new teaching professor positions		
	Total number of postdocs		

⁴ The equity gap measures the difference between the average 6-year graduation rates for non-URM students and URM students in the same cohort.

⁵ SAT scores will be tracked but anticipated growth will be modest as the university focuses on other aspects of the student profile.

Diverse Faculty	Percent of women new faculty hires		
	Percent of URM new faculty hires		
RESOURCES			
Human	Percent of administrative leadership who are URM		
	Percent of administrative leadership who are women		
	Employee career advancement		
	Employee satisfaction ⁶		
	Percent of non-instructional staff receiving 20 or more hours per year of professional development/training		
Digital	Percentage of scheduled classrooms equipped with digital learning technologies ⁷		
	Perceptions of students regarding experience with IT ⁸		
	Perceptions of faculty regarding experience with IT ⁹		
	Perceptions of staff regarding experience with IT ⁹		
	Average time to resolution of IT projects		
Physical	Facilities Condition Index		
	Percent of capital renewal spent on academic facilities		
	Number of classrooms and teaching laboratories added/comprehensively renovated		
	University carbon footprint		
	Average number of items from library collection accessed per researcher (faculty + doctoral students)		

⁶ From employee satisfaction survey

⁷ Digital learning technologies include technologies supporting converged instruction, virtual labs, and other emerging pedagogical technologies.

⁸ Baseline and target will be established based on the revised Survey of the Student Experience.

⁹ Baseline and target will be established based on a new survey of faculty and staff experience with university IT.

	Number of courses using open educational resources/textbooks		
Fiscal	Ratio of tuition increase to Higher Education Pricing Index national average		
	Alternative revenue sources as percentage of total revenue		
	Total revenue generated by intellectual property or commercialized products		
	Number of student/faculty/alumni-led companies in VentureLink		
	Number of startups graduating from VentureLink		
	Total revenues generated by companies in VentureLink		

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