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DR. FADI DEEK
ON BRINGING NJIT TO A HIGHER
LEVEL OF PROMINENCE AS A NEW
**CARNEGIE R1
INSTITUTION**





DR. FADI DEEK ON BRINGING NJIT TO A HIGHER LEVEL OF PROMINENCE AS A NEW CARNEGIE R1 INSTITUTION

New Jersey Institute of Technology (NJIT) recently achieved a new level of distinction by being named a “Very High Research Activity (R1)” institution by the Carnegie Classification®. The R1 ranking is the highest category among doctoral universities and is considered the gold standard for comparing American colleges and universities for educational and research purposes. NJIT is now one of only three R1 research universities in New Jersey. “This designation reflects the transformation NJIT is undergoing,” says Dr. Fadi P. Deek, Provost and Senior Executive Vice President. “Being named an R1 institution is a reflection of the excellent research and scholarship opportunities that involve our faculty and students. When you have agencies, like the National Science Foundation or the National Institutes of Health, funding your research initiatives, this indicates their confidence in the work you are doing.”

Achieving R1 status has been decades in the making. In 1979, the total for both internal and external research expenditures was \$375,000. Through specialized research centers and laboratories, NJIT conducted nearly \$170 million in research in 2019. In recent years, NJIT researchers have received numerous research awards, including 12 National Science Foundation (NSF) CAREER awards. The University has also established many new research centers, including the Institute for Brain and Neuroscience

Research, The Henry J. and Erna D. Leir Research Institute for Business, Technology, and Society and the Institute for Space Weather Sciences.

Achieving the 2020 Vision

At the beginning of 2015, the NJIT community implemented a *2020 Vision* strategic plan outlining the University’s development over the next five years. This plan was built upon five core strategic priorities: excellence in student performance, a curriculum meeting the highest professional standards, nationally and internationally recognized scholarly research, a community rich in diversity, and investments in a spectrum of assets. Through a community effort involving many University faculty members, students, administrators, staff, alumni, and board members, NJIT has made impressive strides in achieving this vision. The University has experienced significant progress in graduation rates, curricular reform, faculty renewal, and scholarly research accomplishments. “When the University created the *2020 Vision*, we had 268 faculty members. Today we have 320,” shares Deek. “In looking at our students, we’re approaching our goal of 12,000 and our Ph.D. population has grown by 38% since 2014. Combining all these factors, including the investments made in our laboratories, equipment, and University infrastructure, has helped us advance to where we are today.”

R1

VERY HIGH RESEARCH ACTIVITY
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12 National Science Foundation (NSF) CAREER awards



Nearly \$170 million in research in 2019



320 Faculty Members



Approaching 12,000 students. Growth of 33% since 2010.

Embracing the Title

Nearing the endpoint of *2020 Vision*, NJIT has begun the next cycle of strategic planning and is taking a retrospective look to explore the lessons learned and the steps needed to continue to guide the University's mission. "I remember the euphoria of the community the day that we learned we became R1," reflects Deek. "I thought to myself that we now have to act like the University we've become." Deek says achieving the goals included in the strategic plan is a long journey and new goals will be added to keep raising NJIT to new heights. "NJIT aims to become a preeminent public polytechnic research university with global impact," shares Deek. "Our next strategic plan will guide us toward that vision by focusing on five key priorities: prominence, research, students, faculty, and resources. Given what we have accomplished in our *2020 Vision*, we have a solid foundation for NJIT to become more widely recognized for the student experience we provide and our leadership in research and faculty achievement."

Positive outcomes in NJIT's key performance indicators of increasing research output, improving retention and graduation rates, and growing the faculty, and the R1 designation, provide even further evidence of the growth and success of achieving the 5-year vision. "We are very proud of what we have accomplished in reaching an outcome that we had hoped to achieve," says Deek. "The R1 designation affirms NJIT's strong foundation and bright outlook."

Building the Research Brand

NJIT continues to expand the University's national and international presence in the research world and foster increased faculty participation in scholarly research. *2020 Vision* has enabled NJIT to take a prominent research role in three emerging areas of multidisciplinary research: nexus of life sciences and engineering, data science and information technology, and sustainable systems. "Our faculty

in every one of our colleges are engaged in this research," says Deek. "They are exploring relevant research questions and being responsive to the needs of our region and the global community. For example, our physics faculty are engaged in solar and space weather research. Others in engineering and science are advancing clean energy and improving water purification. In biomedical engineering, they are working on understanding and treating brain injuries and developing the science of regenerative medicine. NJIT's computing faculty are strengthening the security and resiliency of our cyberspace. We hope to accelerate this kind of meaningful work by continuing to grow our faculty and Ph.D. programs."

Fostering Collaborative Research

To increase the capacity and the range of scholarly research, NJIT identifies and disseminates grant and fellowship opportunities to members of the University community and helps facilitate faculty collaboration. NJIT faculty often form research groups or centers and these centers then come together to form institutes. This concerted approach allows researchers to maximize external funding as well as seek external collaborations. The University looks to expand their involvement in multi-institutional research projects that address issues of greater impact. "NJIT is promoting both the curiosity-driven research of individuals as well as the multi-disciplinary team culture for solving larger problems," says Deek. "Partnerships with other institutions are important because they bring critical mass together. They combine expertise and bring diverse and innovative ideas to research."

NJIT has created specialized research centers and institutes that allow the University to address cross-disciplinary problems, both inside and outside of NJIT. "One example of this is an NIH-funded partnership with Rutgers University as a lead, Princeton, and NJIT," shares Deek. "In this project,

each institution bring their strength and disciplinary leadership to the project. For example, we bring data science strength to this collaboration.”

Aligning with Edge

NJIT has partnered with Edge as the University creates an IT infrastructure that is secure, resilient, and adaptable to meet both current and future needs. In addition, Edge is helping to further establish a computing strategy that aligns with national trends and provides NJIT with the necessary structure, hardware, software, and personnel to maintain their R1 status. “We are pleased to have a relationship with Edge and we look forward to continuing to advance our research through data-informed decisions,” says Deek. “We have a number of joint collaborations with Edge, up through the Chief Information Officer level. As we continue to develop our education and research support infrastructure, particularly in the domain of digital and data resources, we will continue to call on the expertise of Edge.”

Looking Ahead

In the institution's next strategic plan, *NJIT 2025*, the University will keep driving toward ever increasing goals and build upon the gains and achievements of the past five years. “NJIT aspires to reach new heights,” shares Deek. “The next strategic plan will allow us to intensify our past gains—which will require further investment in education and research infrastructure. To achieve prominence, we aim to be leaders in important areas of research. Bioscience, data science and management, environmental sustainability, materials science and engineering, robotics and machine intelligence will be synonymous with NJIT's research program.”

NJIT is also dedicated to continuing to foster innovation and entrepreneurship. The University encourages faculty to engage in entrepreneurial activities on behalf of NJIT to expand the application of research outcomes. NJIT will also grow the University's presence in

state, regional, and national economic development activities to increase job creation and visibility. One way of accomplishing this objective is through the New Jersey Innovation Institute (NJII). NJII is a NJIT corporation that provides a link between industry and the University's top researchers and state-of-the-art facilities. NJII serves as a catalyst for collaboration among the academic, private, and public sectors.

The University is helping to drive economic development and enterprise expansion by applying its intellectual prowess to challenges identified by industry partners. “By providing our faculty and students with opportunities to engage in such innovations and to develop the right entrepreneurial skills, we facilitate the translation and acceleration of research results into actual products,” says Deek. “To achieve this goal, we offer competitive programs that provide seed funding to faculty and students to pursue market research and validation for their ideas.” Another NJIT initiative, VentureLink, provides in-residence companies with programming, workspace, and expert mentorship toward commercialization. This community hub for technology companies supplies an environment for innovation and collaboration and offers start-up companies a place to grow. VentureLink's startup incubation program provides the resources, support, and mentoring a business needs to get up and running and helps companies gain traction while preparing for investment.

Enriching the Student Experience

All of these accomplishments in research and economic development enrich the student experience because NJIT's top priority remains

the success of their students. The University's focus on programs in science, technology, engineering, and mathematics (STEM) and the close partnerships with business and industry make NJIT a prime draw for talented students. “Seeing the number of freshman applications double over the last four years is encouraging as this trend reflects a confidence in an NJIT degree and bodes well for the country's economy. The profiles of these students are also very impressive,” says Deek. “As the state's public polytechnic university, we will continue to offer challenging and relevant curricula and enhance the career placement for our students.”

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Recognizing that research is an integral part of STEM education, NJIT is dedicated to enriching the experience of both faculty and students and inspiring innovation with impact both locally and globally. “Research is embedded in our academic programs and plays a significant role in advancing new knowledge in the classroom as well as in the research laboratory,” says Deek. NJIT has evolved from a technical university serving commuting students to a prestigious university over the last four decades. “The transformation underway at NJIT has positioned us as a leading research university with R1 designation. We at NJIT fully expect the status of the University to continue to grow in new directions as NJIT develops into an even stronger and more prominent University.”