

NEW INSTRUMENTS AND FUNDING EXPAND VIEWS OF THE SUN AT BIG BEAR

A solar telescope that captures images of the entire disk of the Sun, monitoring eruptions taking place simultaneously in different magnetic fields in both the photosphere and chromosphere, obtained first light in September at the Goode Solar Telescope (GST) at NJIT's California-based Big Bear Solar Observatory (BBSO).

The telescope, SOLIS (Synoptic Optical Long-term Investigations of the Sun), collects images from three separate instruments over years and even decades, rather than minutes or hours, giving scientists a comprehensive view of solar activity such as flares and coronal mass injections over the long-term. It complements the GST, which gathers high-resolution images of individual explosions at such detail that researchers are beginning to unveil the mechanical operations that trigger them.

"With this important addition, BBSO becomes a comprehensive observing site that offers not only high-resolution solar observations, but also global data of our star," notes Wenda Cao, an NJIT professor of physics and BBSO's director.



The telescope SOLIS collects images of the Sun over decades, allowing scientists to closely monitor changes.

"By monitoring variations in the Sun on a continuing basis for several decades, we will better understand the solar activity cycle, sudden energy releases in the solar atmosphere, fluxes in solar irradiance, or brightness, and their relationship to global change on Earth."

SOLIS was developed by the National Solar Observatory (NSO), an academic research consortium with backing from the National Science Foundation (NSF). The instrument is moving from its current NSO site in Tucson, Ariz. to Big Bear, because of its ideal setting on the lake, which suppresses ground-level atmospheric turbulence caused by heating thermals, offering exceptional "seeing" for long periods per day on its more than 286 sunny days per year.

In June, BBSO received a \$2.3 million grant from the NSF that will fund continuing scientific study of the Sun using the 1.6-meter GST at Big Bear, which is currently the highest resolution solar telescope in the world. "This grant allows us to continue collecting and interpreting the highest resolution solar data ever taken, while developing and applying analytical tools to attack a number of critical, leading-edge problems in solar research," says Cao, the grant's principal investigator.

Telecommunications, GPS navigation, satellites, space flights with astronauts aboard, airline passengers and the power grid all are vulnerable to damage and disruption caused by solar activity. Some of these events are predictable, such as the 11-year sunspot cycle, but the details are not yet well modeled. ■



NJIT UNVEILS LEIR RESEARCH INSTITUTE FOR BUSINESS, TECHNOLOGY, AND SOCIETY

On hand to celebrate the opening of the new Leir Research Institute were (from left): Fadi P. Deek, provost and senior executive vice president, NJIT; Joel S. Bloom, president of NJIT; Jack S.C. Fong, M.D., The Leir Retreat Center; Margot Gibis, The Leir Charitable Foundations; and Reggie Caudill, dean of NJIT's Martin Tuchman School of Management.

It was a gathering to not only inaugurate a new research institute on the NJIT campus, but also celebrate a longstanding relationship between the university and a committed foundation partner and benefactor. On April 30, NJIT administrators, faculty, staff and students, as well as distinguished guests, joined one another in the Campus Center Ballroom to officially launch The Henry J. and Erna D. Leir Research Institute for Business, Technology, and Society, made possible with a five-year \$1.5 million grant from The Leir Charitable Foundations.

The institute, housed within NJIT's Martin Tuchman School of Management

(MTSM), will develop business data science tools to predict and mitigate risks from global disruptions, such as climate change and other operational events, to corporations' economic security, environmental accountability and social responsibility. Toward this end, it has a dual mission: to conduct business and management research and to establish partnerships with academic and business communities, regional economic leaders and government agencies. It also will support annual research symposia and fellowships for faculty and graduate students.

"I am so honored to be here at the inauguration of The Henry J. and Erna D. Leir Research Institute for Business, Technology, and Society," said Margot Gibis, president of The Leir Charitable

Foundations. "I am very happy to see what has come out of the special partnership with NJIT. I want to thank [NJIT President Emeritus] Saul Fenster, whose relationship with Mr. Leir goes back many, many years."

Noted Jack S.C. Fong, M.D., on the board of directors of The Leir Retreat Center, "At the Leir Research Institute, faculty members along with graduate and undergraduate students will be able to focus on research to help businesses in applied technology so that they will be more efficient, more sustainable, resilient and ecologically supported." This effort, he added "will lead to social prosperity and wellness, bringing pride and fulfillment to the legacy of Mr. and Mrs. Leir."

The institute, located on the second

floor of the MTSM building, is an airy and contemporary space, which features offices, conference rooms and a dedicated lab for Ph.D. students to conduct research. MTSM Dean Reggie Caudill had the honor of unveiling the institute's signage.

"We want to continue to build upon the values of the Leir family and their legacy and...to embed these core virtues into our students, not only today but for future generations as well," he said.

Henry J. Leir was a 20th-century industrialist and philanthropist whose foundations have supported NJIT for more than two decades. Through this generosity, the university has endowed two faculty chairs, held research conferences and established The Leir Center for Financial Bubble Research at MTSM. ■

LOOK WHO'S BACK! ALUMNI RETURN TO NJIT AS RECRUITERS

The Spring 2018 Career Fair held this past February at NJIT's new Wellness and Events Center (WEC) was alumna Whitney Randolph's first time back on campus since she graduated from the university with a bachelor's degree in biomedical engineering in 2017. The reason for her visit was not to look for a job, but rather to find job candidates as a recruiter for her employer, Getinge. Randolph is a production engineer at the global medical technology company.

"Being on the other side...I was anxious, I was excited, I was nervous," she said of the experience. "But being in the WEC was absolutely amazing. Being an alumna and seeing NJIT growing was absolutely amazing."

Randolph, who attended career fairs as a student, sought out the opportunity to represent and help recruit for Getinge, which was looking primarily for interns, co-ops and a few full timers for a new two-year rotational program. "Graduating from NJIT, I know that the students here are capable of being great employees," she remarked. "I thought that it was awesome to be an actual engineer from the company recruiting, because a lot of students ask

questions like 'what do you do on a daily basis?' and sometimes the recruiter doesn't have the answer for that...I did and I loved it!"

Also returning to NJIT for the first time since graduating to recruit at the career fair was Nick DeSantis '17, a mechanical engineer at Mack Boring & Parts Co., a diesel engine distributor. "I was extremely impressed by the new facility and look forward to being back there in the future," said DeSantis, who earned a B.S. in mechanical engineering technology (MET) at NJIT. "And I know the hands-on experience that MET students receive [here], and that is very important to our company."

According to Jane Gaertner, associate director of employer relations in NJIT's Office of Career Development Services, alumni volunteering to recruit for their employer at their alma mater has been a growing trend over the past few years. It's a movement that has proven to be a successful strategy for organizations to secure talent. Approximately 100 NJIT alumni now participate in the university's career fairs



Whitney Randolph '17 recruited for her employer, Getinge, at the Spring 2018 Career Fair.

as recruiters.

"More corporations are sending their recent alums back to campus to create a recruiting relationship with their peers, with whom they may have shared a dorm room or classroom in the last year or two. The peer-to-peer relatability greatly impacts a current student's understanding of the job and company they are considering for employment," pointed out Gaertner.

As for the alumni recruiters themselves, they "love to come back to campus not only to see their friends and professors, but to brag about the cool things they are learning and doing at their organization," Gaertner noted. ■

NJIT Soars 34 Spots in Ranking of Best Colleges

NJIT has risen 34 spots — third most in the nation — in the 2019 U.S. News & World Report Best Colleges rankings, which identify the top colleges in the nation offering the best education for students.

In the rankings, NJIT is ranked 106th in the National Universities category, climbing from 140th in the 2018 edition of the publication. NJIT also has risen 18 places to number 46 on U.S. News' list of Top Public Schools. Additionally, NJIT was named on the Best Undergraduate Engineering Programs, Best Value Schools, and Most Ethnically and Economically Diverse lists compiled by U.S. News in the 2019 edition.

U.S. News & World Report bases its rankings on 16 measures of academic quality, which include graduation and retention rates, faculty resources, student selectivity, reputational assessment by peers and guidance counselors, financial resources and alumni giving rate.

"The improvement in NJIT's U.S. News ranking is indicative of the upward trajectory of our university and the growing recognition of its strength," said NJIT President Joel S. Bloom.

"Every major industry across the global economy is reliant upon technology, and NJIT excels in the disciplines that meet their workforce, research and economic development needs. That's why NJIT has been able to develop so many mutually beneficial partnerships with industry, and it's why our students are in such great demand — receiving multiple job offers prior to graduation and starting salaries nearly 20 percent above their peers at other universities across the nation. ■



NJIT Freshman Class 2018

1287 average overall SAT score	3.58 average GPA	
1,296 freshmen selected out of 8,126 applications		
MOST POPULAR MAJORS: Computer Science, Mechanical Engineering, Computer Engineering		
36% first- generation students	24 states and 30 countries represented	Albert Dorman Honors College Students 1475 average overall SAT score 3.93 average GPA
10,042 MILES FROM INDONESIA Farthest distance traveled to attend NJIT		
<small>Disclaimer: For first-time full-time degree-seeking undergraduate students only. Data is preliminary as of the 10th day of the semester and is not the official final enrollment.</small>		

New Jersey Institute of Technology



Civil Engineering graduate Muhammad Elgammal '12, M.S. '15 atop World Trade Center 1.

The Civil and Environmental Engineering (CEE) program at NJIT now ranks second in the nation, according to College Factual, an outcomes-based data analytics and research company.

NJIT jumped six places from last year, landing behind Georgia Tech (1) and ahead of MIT (3), on the list of the 206 programs evaluated. The university's CEE program ranked in the top 20 in numerous areas, including education for veterans, popularity and graduates' earnings, among others.

In its 2019 report, the company described NJIT as "among your best bets if you're planning on studying Civil Engineering."

NJIT JUMPS TO NUMBER 2 ON COLLEGE FACTUAL'S LIST OF BEST CIVIL ENGINEERING PROGRAMS NATIONWIDE

"I am very proud of the department's accomplishments. I attribute our place near the top of a list of excellent schools to our dedicated students, faculty, staff and alumni, who work around the clock to make our program better year after year," said Taha Marhaba, chairman of NJIT's CEE department. "I'm also pleased that the ranking acknowledges the overall quality of a program, taking into account the success of students both on campus and after graduation."

College Factual's metrics include the caliber of the student body, educational resources and graduation and retention rates, as well as post-graduate earnings, among others, "metrics that measure the overall success of a graduate's educational and career life-cycle," Marhaba noted. ■