

**SUNY Polytechnic Institute**  
**Academic Year 2019-2020 Annual Report**





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## Executive Summary: Academic Year 2019/2020 Accomplishments

### A Message from the Interim President

I am pleased to present SUNY Polytechnic Institute's 2019/2020 Academic Year Annual Report, highlighting educational, research, and economic engagement efforts to ensure our reputation as a leading catalyst for creative learning. We empower our students to thrive in the innovation economy by addressing critical societal challenges through discovery.

Nowhere is this more apparent than through our proactive approach toward providing education even in the midst of the global pandemic. SUNY Poly adapted quickly to meet all state guidelines, rapidly moving to an all online format in March. Since then, we established detailed plans with on-campus and community stakeholder input and was approved by SUNY so that we could quickly implement the plans for the Fall semester.

In the midst of this complex, challenging global backdrop, SUNY Poly advanced in numerous ways:

**SUNY Poly continues to be highly ranked.** U.S. News & World Report listed the institution 12<sup>th</sup> in its 2020 list of *Best Colleges in the Regional Universities North* category. In the same classification, SUNY Poly was ranked 2<sup>nd</sup> in *Top Public Universities*, 6<sup>th</sup> for *Best Colleges for Veterans* and 2<sup>nd</sup> in *Best Value Schools*.

**SUNY Poly continues strong enrollment.** In the 2019-2020 academic year, we welcomed more than 3,000 students—continuing strong sustained enrollment year-over-year. Offering an exciting, quality education at both of our campuses, we are building academic pipelines with partners ranging from nearby community colleges, Albany Law School, Upstate Medical University, Rome Memorial Hospital, and GlobalFoundries, and, we continue to inspire students at all levels in areas ranging from the liberal arts and nanotechnology to nursing and interactive game design. Simultaneously, the student experience is enhanced by the opening of the first SUNY zero-net carbon-certified residence hall.

**SUNY Poly continues to be a linchpin for enabling research and innovation,** with growing recognition from the research community and general public. Our faculty researchers secured millions in external funding to advance our fundamental knowledge related to areas such as nanobioscience, electronics, photonics, and clean energy. This was highlighted by our partnership with Cree, resulting in the recent announcement of \$3.5 million to support a Cree | Wolfspeed STEM scholarship program and two endowed faculty chair positions.

In these unprecedented times, I want to thank our outstanding faculty, staff, and students. Their dedication and passion for SUNY Poly continues to push this institution toward new heights.

Sincerely,

A handwritten signature in black ink, appearing to read "Grace Wang".

Dr. Grace Wang  
SUNY Polytechnic Institute Interim President



## SUNY Poly 2019-2020 Highlights

### I. SUNY Poly's Proactive Efforts & Responses Related to COVID-19

As the pandemic impacted New York State, SUNY Poly rapidly pivoted to an all online learning format, providing for students' academic needs while fostering safety and clearly communicating to inform students about when they could return to obtain remaining personal items, for example. Health has remained priority number one.

The institution created a dedicated [COVID-19 information page](#) to provide up-to-date communications and important information for parents, students, faculty, and staff, including COVID-19 notices and guidance and directives from health experts and government officials. Additionally, SUNY Poly worked to meet critical needs, for example, providing students the technological tools necessary to complete assignments for courses, with additional learning resources available upon request.

During the summer, approximately 335 faculty, staff, and students collaborated to develop our comprehensive fall 2020 plan: <https://sunypoly.edu/fall2020plan.html>. Countless hours by planning teams, steering committees, and working groups developed the [plan, meeting or exceeding all New York State Reopening Higher Education requirements](#), which are some of the most stringent in the nation.

Ahead of the fall 2020 semester, faculty and staff have diligently provided answers to more than 200 thoughtful questions, many through a new live chat function. The plan continued to be refined as updated guidance and technological advances were provided. These responses are archived at: <https://sunypoly.edu/fall2020plan/faqs>.

Overall, SUNY Poly's plan included:

- Reducing classroom and laboratory density;
- Adapting dining services to provide service that prioritizes health and safety;
- Requiring face coverings be worn at all times, including inside all buildings, classrooms, shared laboratory areas, conference rooms, restrooms, elevators, hallways, etc.;
- Adapting the fall 2020 semester calendar, which began with online instruction on August 24, and, afterward, moving to online/distance instruction and final exams for the remainder of the semester;
- Enacting detailed, daily cleaning protocols and upgrading HVAC systems;
- Employing comprehensive pre-arrival and daily screenings, contact tracing in partnership with local health departments, and testing and quarantine as needed;
- Providing telehealth and telemedicine, including mental health resources, among numerous other efforts; and
- Instituting surveillance testing processes and capacity.

In response to the pandemic, SUNY Poly not only adapted—its faculty, staff, and students worked to make a difference by:



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- Creating [advanced testing](#) for COVID-19. Empire Innovation Professor of Nanobioscience Dr. Nate Cady and Associate Professor Dr. Scott Tenenbaum, Head of Nanobioscience, were awarded funding by SUNY to fabricate a more complex novel coronavirus (COVID-19) diagnostic test that can provide additional data points to arm medical workers with the information they need to potentially improve care.
- Assisting in efforts to [manufacture PPE materials](#) at both our Albany and Marcy campuses. Faculty, staff, and students are utilizing 3D printing technologies to create face shields for health care workers throughout the Mohawk Valley and across New York State.

## II. Framework for A Sustainable Future

### **Establishment of a *Framework for a Sustainable Future***

The Framework for a Sustainable Future process was completed to establish a common vision for SUNY Poly and lay the groundwork for the future. The Framework for a Sustainable Future process was launched in fall 2018 after numerous meetings with faculty, students, and staff that were hosted by Interim President Grace Wang. Based on the input from the SUNY Poly community, 11 committees were established in November 2018 and the Framework process was launched through town hall meetings at both the institution's Utica and Albany campuses, paving the way for a strong pathway forward and supporting a robust search for SUNY Poly's next president.

## III. SUNY Poly on the Rise

### **SUNY Poly Graduates More Than 700 Students**

SUNY Poly graduated 730 students in the 2019-2020 reporting year, including 286 from the College of Engineering, 119 from the College of Arts & Sciences, 142 from the College of Business Management, 142 from the College of Health Sciences, and 41 from the Colleges of Nanoscale Science and Engineering. Among these students, their average time to degree completion was 4.14 years. In lieu of the institutions' annual Commencement, SUNY Poly faculty and staff congratulated graduating students in a massive Zoom-style video shared on the institutional web page and social media channels.

### **SUNY Poly Receives Strong 2020 College Rankings by U.S. News & World Report**

SUNY Poly's year-over-year rankings by U.S. News & World Report continue to soar, having been ranked 2nd in "Best Value Colleges" for Regional Universities - North, 2nd in "Top Public Schools" Regional Universities-North, 12th in "Best Regional Universities-North," and 6th for "Best Colleges for Veterans" in the same category. In addition, SUNY Poly was [ranked #1](#) for "Best Accredited Online Colleges in New York" by EDsmart. SUNY Polytechnic Institute's online program offering a bachelor's in nursing to current registered nurses has been ranked No. 1 in the state and No. 4 in the U.S. by Registerednursing.org.

### **SUNY Poly Continues Steady Enrollment Numbers**

SUNY Polytechnic Institute enrolled 3,002 students in the 2019-2020 academic year. About three-quarters of these students are undergraduates, and approximately 40% are female. Please find additional related information under "SUNY Poly Academic Programs."



## **SUNY Poly Receives AACSB Reaccreditation**

The Association to Advance Collegiate Schools of Business (AACSB) [awarded SUNY Poly](#) reaccreditation for its College of Business Management programs. SUNY Poly also received [continuing accreditation](#) by the Accreditation Board for Engineering and Technology, Inc. (ABET) for its Mechanical Engineering and Nanoscale Engineering programs.

## **SUNY Poly Partnerships Pay Dividends for Innovation and Educational Opportunities**

Cree, Inc., announced a \$1 Billion private-public [partnership with SUNY Poly](#) and investment in the Mohawk Valley through the construction of a state-of-the-art silicon carbide wafer manufacturing facility at the Marcy Nanocenter. Cree has additionally invested \$3.5 million into SUNY Poly through its Cree | Wolfspeed STEM scholarship program and two endowed faculty chair positions.

## **SUNY Poly Looks Toward Opportunities with the New “Innovare Advancement Center”**

Additionally, SUNY Poly is partnering as Oneida County, the Air Force Research Laboratory Information Directorate and Griffiss Institute to create the \$12+ million [Open Innovation Campus research center](#), now [Innovare Advancement Center](#). Here, SUNY Poly will collaborate as a force behind the research and development of next-generation Quantum Information Science, AI/ML, neuromorphic computing, and cyber efforts as the top minds in government, academia and industry partner to solve complex problems and help strengthen our country’s defense.

## **SUNY Poly Builds Numerous Academic Partnerships**

SUNY Poly has made obtaining both baccalaureate and post-baccalaureate degrees easier through increased online distance learning opportunities and partnerships with several institutions including SUNY Upstate Medical University, Rome Memorial Hospital, Mohawk Valley Community College, Herkimer County Community College and Schenectady County Community College.

Additionally, The Albany College of Pharmacy and Health Sciences (ACPHS) and SUNY Poly announced a new partnership that will expand access to high quality educational and research opportunities in the Capital District and Mohawk Valley Region of New York State. This joint endeavor is enhanced by the proximity of ACPHS’ Center for Biopharmaceutical Education and Training (CBET) which will be located at the same Albany NanoTech Complex alongside SUNY Polytechnic Institute.

## **SUNY Poly’s Hilltop Residence Hall is Constructed**

Construction is finished at SUNY Poly’s Marcy campus for [Hilltop Residence Hall](#) - a 257-bed, zero-net, carbon-certified, building which will be the first-ever on a SUNY campus. Hilltop Residence Hall will use equal to or less energy than it can produce on-site through renewable resources.



## IV. SUNY Poly Faculty, Students & Staff Excellence Continues

### **SUNY Poly Faculty, Staff, and Students Receive SUNY'S Highest Honor—Seven Recognized with 2020 Chancellor's Awards for Excellence**

SUNY Poly proudly announced five members of its faculty and staff, and two students, received Chancellor's Awards for Excellence from the State University of New York in 2020. Through these awards, SUNY publicly proclaims its pride in the accomplishments and personal dedication of its instructional faculty and professional staff across its campuses. SUNY Poly's Chancellor's Award recipients include:

- Chancellor's Award for Student Excellence: **Emma Vanderwerken '20 & Gretchen Long '20**
- Chancellor's Award for Excellence in Professional Service: **Sandra Mizerak, NCC, LMHC**
- Chancellor's Award for Excellence in Faculty Service: **Dr. Linda Weber**
- Chancellor's Award for Excellence in Teaching: **Dr. Kathleen Dunn**
- Chancellor's Award for Excellence in Scholarship and Creative Activities: **Dr. Yubing Xie**
- Chancellor's Award for Excellence in Classified Service: **Brian Harris**

### **SUNY Poly Alumna, Assistant Professor in the College of Health Sciences Named 'Nurse Practitioner of the Year' by The Nurse Practitioner Association New York State**

Janice Ceccucci, DNP, FNP-BC, a SUNY Poly alumna and currently an assistant professor of the university's College of Health Sciences, was named "Nurse Practitioner of the Year" by New York State's only professional association of nurse practitioners.

### **Alumnus Honored at 2019 "Excellence in Healthcare Awards"**

2017 graduate and adjunct lecturer, Bikash Regmi, FNP-BC, was recognized at the 2019 Excellence in Healthcare Awards for the positive changes he makes throughout Central New York as a healthcare leader and volunteer. The annual ceremony, hosted by BizEvents and the Business Journal News Network and presented by Bankers Healthcare Group, honored Bikash with the Heart of Healthcare award.

### **New York State Senate Recognizes Students Who Earned First Place at 2019 CREATE Symposium**

A team of SUNY Poly engineering students were recognized for taking first place at the 2019 CREATE Symposium for their innovation in designing a device that helps workers with disabilities in the Mohawk Valley do their jobs more easily and efficiently. The team, consisting of students Ethan Mead, Hugh Harwood, JJ Besse, and Vincent Legnetto, took home a \$15,000 award for their invention of a six-pack plastic yoke remover designed for a group of about 20 employees with disabilities who re-package beverage cans at an ARC facility in Marcy.

### **Student Ayuong Arop '20, Awarded Educational Opportunity Program's 1st Norman R. McConney, Jr. Award of Excellence**

SUNY Poly Scholar Ayuong Arop was among a select group of students across New York state to receive the inaugural Norman R. McConney, Jr. Award for Student Excellence. The award, which recognizes outstanding Educational Opportunity Program (EOP) students for their academic achievements, is named for the late Norman R. McConney, Jr., a graduate of the University at Albany and former Assistant Dean for special programs at SUNY.



## V. SUNY Poly Advances Diversity Efforts

### **SUNY Poly Announces Chief Diversity Officer Appointment**

SUNY Poly announced the appointment of Dr. Mark Montgomery as its Chief Diversity Officer to deploy strategic and sustained approaches to further advance a culture of diversity, equity, and inclusion for the institution's students, faculty, and staff.

### **SUNY Poly Continues to Support ProdiG Effort to Increase Diversity among Faculty and Students**

The institution is proud to support SUNY's recruitment of diverse faculty through the PRODiG (Promoting Recruitment, Opportunity, Diversity, Inclusion, and Growth) initiative, which aims to increase the representation of historically underrepresented faculty at SUNY. More information about this program can be found here: <https://www.suny.edu/prodig/>.

### **Diversity Programming Aims to Educate and Uplift**

SUNY Poly held several open information sessions for students, faculty, and staff to share experiences and perspectives, which have helped guide educational efforts for the entire campus community, and together with students, including members of Student Government at Utica (SGU) and the DEI Committee of SGU, SUNY Poly held town halls and a number of other conversations to learn, share, and seek progress together.

### **SUNY Poly Strongly Supports the Grassroots *You Belong at SUNY Poly* Organization**

This group has conducted numerous programming efforts, such as providing information to help members of our campus community learn to use words in ways that uplift, rather than using words to inadvertently or purposefully cause harm.

### **Affirmative Action to Inform Recruitment Strategies**

SUNY Poly's Affirmative Action Plan guides the institution's recruitment strategies. Efforts include training search committees on implicit bias and making recommendations to committees. Additionally, SUNY Poly is ensuring diversity for its search committees and looks at ways to diversify advertising and recruiting in order to gain more diverse applicant pools.

### **SUNY Poly's 'Poly Pantry' Continues to Serve Wildcat Community**

SUNY Poly's campus-based food pantry has provided hundreds of students, faculty, and staff with food and toiletries. Donations for "Poly Pantry" have been provided by Walmart Inc., the Utica-based Compassion Coalition, Dominion Energy, and SUNY Poly faculty, staff, and students. "Poly Pantry" is part of an initiative launched by Gov. Andrew Cuomo to help provide SUNY/CUNY students with "stigma-free access" to a food pantry.

## VI. SUNY Poly Outreach Efforts

### **SUNY Poly Students Donate More Than 200 Care Packages**

As reported by WUTR, SUNY Poly students donated more than 200 care packages to victims of domestic violence. The packages contained personal hygiene products and information on how to help prevent or



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respond to violence. The kits were provided to the Oneida County Sheriff's Office for distribution as part of the "SUNY's Got Your Back" Program.

## **SUNY Poly Takes Part in Back To School Expo to Inspire Children with STEM Educational Opportunities**

SUNY Poly was proud to once again attend the Back to School Expo at the Empire State Plaza in Albany, NY. The institution helped to inspire and share fun STEM-based activities for kids, such as an electrical circuit demonstration, to help children see the incredible science, technology, engineering, and mathematics-centered opportunities that are available in the region and across New York State.

## **SUNY Poly Hosted Annual Strin Stars & Stripes Run/Walk**

SUNY Poly's Utica campus hosted a tribute to veterans as Strin Health Care Center held its 8th annual Stars & Stripes Run/Walk. The event raised \$150,000.

## **VII. SUNY Poly Alumni Achievements**

### **Specialty Pharma Research Company and SUNY Poly Spinoff, Glauconix Biosciences, Announces Board of Directors Appointment**

Glauconix Biosciences, Inc., announced in October the appointment of Robert Dempsey to its Board of Directors. Robert will provide expert advice and insight on the creation of new market pipelines, strategic partnerships and to assist in positioning Glauconix as a lead innovator in the Biotechnology space. Glauconix is located alongside SUNY Poly's campus in Albany and is a partner in the Center for Advanced Technology in Nanomaterials and Nanoelectronics (CATN2).

### **Lux Semiconductors, an Alumni Spinoff, Partners with Alma Mater on Optimized Flexible Electronics**

Lux Semiconductors, an alumni company of SUNY Poly, has partnered with its alma mater and is working with Dr. Harry Efstathiadis' lab, which has received funding from Lux Semiconductors, in pursuit of optimizing its thin-film crystalline silicon platform for flexible electronics. SUNY Poly provides access to world-class semiconductor equipment and talent for the characterization of thin-film layers, a critical component of Lux's flexible wafer-alternative. Ultra-thin films of semiconductor material can be deposited in large sheets, at nanoscale thicknesses, which can result in lower cost, flexible, and high performing material.

### **SUNY Poly Alumnus Supports Family Business Based on His Education**

Helping to carry on the tradition of excellent food, customer service, and dedication to the culinary side of his Lebanese heritage, Elias Zeina, '17, '19, credits his education at SUNY Poly as being the "fuel to the fire" to take his family's business to the next level. A video is located here: [https://youtu.be/v\\_wT4ItPY8M](https://youtu.be/v_wT4ItPY8M).

### **SUNY Poly Alumnus Produces New Show on History Channel**

Long before two-time Emmy Award winner T.J. Allard would share an improv stage with "Parks and Recreation" star Amy Poehler, design video games for the "Batman" series, or pitch the idea for his latest project, History's "The Secret of Skinwalker Ranch," he was a student at SUNY Poly.



## SUNY Poly Academic Programs

SUNY Polytechnic Institute enrolled 3,002 students in the 2019-2020 academic year. About three-quarters of these students were undergraduates, and approximately 40% were female. The overwhelming majority of SUNY Poly's students were from New York State: 98% of the undergraduates and 82% of the graduate students. About five percent of SUNY Poly's students overall were international students.

In 2019-2020, SUNY Poly students were enrolled in 48 different programs. The most popular major areas among undergraduates were Engineering & Engineering Technology, Computer Science, Business, and Health Sciences. Our graduate programs include Ph.D. programs Nanobioscience, Nanoscale Science, Medicine & Nanoscale Science, Medicine & Nanoscale Engineering, and Nanoscale Engineering, an MBA program in Technology Management, and MS programs in Accountancy, Computer Info Science, Information Design & Technology, and Family Nurse Practitioner.

Included in the 2018-2019 student population for which the latest statistics are available, there were 697 new full-time undergraduate students (424 first-year and 273 transfer) who started their academic careers at SUNY Poly. They had a 74% and 81% first-year retention rate, respectively. SUNY Poly graduated 730 students in the 2019-2020 reporting year, including 286 from the College of Engineering, 119 from the College of Arts & Sciences, 142 from the College of Business Management, 142 from the College of Health Sciences, and 41 from the College of Nanoscale Science and Engineering. Among these undergraduate graduates, their average time to degree completion was 4.14 years.

A significant number of our undergraduate students receive financial aid. More than 40% of our undergraduates receive TAP, Pell, or both. Three percent of our undergraduate students participate in EOP, and four-percent received Excelsior Scholarships last year. Selected highlights related to accomplishments for each college are featured below:

### I. College of Arts & Sciences

#### **SUNY Poly Receives Grant to Enhance Community Impact**

Dr. Andrew Russell, Dean of the College of Arts & Sciences at SUNY Poly, received continuing funding from the Alfred P. Sloan Foundation to build upon a two-year-old pilot project, launched in collaboration with Dr. Lee Vinsel, Assistant Professor of Science, Technology & Society at Virginia Tech, and Jessica Meyerson, Director of Research & Strategy at Educopia Institute, to help communities with a variety of challenges, including workforce development and digital infrastructure maintenance. The nearly \$600,000 award will enable the group, The Maintainers, to expand upon its existing framework that merges academic and community-based research to make a sustainable and positive impact.

#### **SUNY Poly's Dr. Andrew Gallup Provides Insight into Contagious Yawning**

Yawning is one of those weird bodily functions that we don't think much about. It just... happens. Science hasn't yet explained why yawns also seem to be "contagious," but there Dr. Andrew Gallup has been featured in a number of publications sharing how in certain situations yawning may be more or less "contagious."



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## **SUNY Poly's Dr. Ana Jofre's 'What's in a Face? Gender Representation of Faces in Time, 1940s-1990s' Published in Journal of Cultural Analytics**

Fluctuations in the visual representation of women in Time magazine reflect the historical context of the era. We observe that the number of images of women's faces in the magazine increases during periods of increased participation in public life and decreases during periods of backlash against feminism. These changing societal attitudes toward women were also reflected in the textual content in Time magazine, but it is particularly interesting that an overview of the faces in the corpus also reflect these attitudes.

## **Latest Ranking From College Consensus Compares I.T. Management Programs From Both Public and Private Higher Education Institutions**

SUNY Poly's online master of science in Information Design and Technology (IDT) has been ranked eighteenth among 25 public and private colleges and universities throughout the United States, based on its reputation, convenience, and affordability. The [latest ranking](#) from College Consensus is a result of a national comparison of universities that offer an online master's in information technology management, information systems and information management, earning SUNY Poly strong scores in convenience (100 percent), and in affordability (93.03 percent).

## **Professors' Physics and Quantum-Focused Research Published in Prestigious Journals**

SUNY Poly's Dr. Emilio Cobanera's 'Deconstructing Effective Non-Hermitan Dynamics in Quadratic Bosonic Hamiltonians' was published in the *New Journal of Physics*.

In addition, SUNY Poly Assistant Professor of Applied Mathematics Dr. Carlo Cafaro's collaborative research efforts culminated in research titled, "Continuous-time quantum search and time-dependent two-level quantum systems," published in the *International Journal of Quantum Information*. "Theoretical analysis of a nearly optimal analog quantum search," was published by *Physica Scripta*, and both research projects were undertaken in partnership with Dr. Paul M. Alsing, Senior Research Physicist at the Air Force Research Laboratory in Rome, New York. These theoretical quantum information works can help us better understand the functioning quantum search algorithms from a physics standpoint.

## **II. College of Business Management**

### **SUNY Poly's Online MBA Program Ranked No. 1 in New York State**

SUNY Polytechnic Institute's (SUNY Poly's) online Master of Business Administration (MBA) program was ranked number one among public and private colleges and universities throughout New York State, based on its affordability, convenience, and reputation. The [latest ranking](#) from College Consensus is a result of a national comparison of 570 online and hybrid MBA programs, placing SUNY Poly's program ahead of three other universities within the state, with a reputation score of 100 percent, convenience score of 75 percent, and affordability score of 89.65 percent.

### **The Association to Advance Collegiate Schools of Business (AACSB) Awarded Reaccreditation for SUNY Poly's College of Business Management Programs**

SUNY Poly announced its College of Business Management programs earned another full five-year term of accreditation by The Association to Advance Collegiate Schools of Business (AACSB).



## **Rome Sentinel: SUNY Poly Online MBA Program Receives High Ranking**

SUNY Poly's online Master of Business Administration program has been ranked among the top 25 online MBA programs on the east coast by the "Online MBA Report" website. The ranking is a result of a regional comparison of 300 online MBA programs. SUNY Poly placed 24th based on five criteria: Program quality and rigor; admissions selectivity; relative MBA program enrollment numbers; value as it relates to tuition; and academic reputation of a school's online and campus-based MBA program.

## **SUNY Poly Introduced Online Bachelor's Degree Program in Business Administration**

SUNY Poly has announced online delivery of its Bachelor of Science in Business Administration, which started summer 2020. The online degree program is an effort to enable learners or professionals who have job obligations, service duties, or family responsibilities to earn the degree from anywhere they need to be.

## **SUNY Poly Launched Online Delivery of Bachelor of Science in Accounting**

SUNY Poly announced online delivery of its Bachelor of Science in Accounting starting fall 2020. The flexibility enabled by the new online environment empowers learners to earn the degree from anywhere.

### **III. College of Engineering**

#### **Dr. Michael Reale Begins AI Technology Research to Measure Student Interest Levels in the Classroom**

The levels of interest among SUNY Poly students in Dr. Michael Reale's computer science classes may soon actually be measured by artificial intelligence, with data recording and testing to develop system software already underway. Dr. Reale, whose "Real-Time, Automatic Facial Expression Recognition in Mixed Reality Environments for Enhancing Education" seed grant was approved last year, has purchased equipment to begin the research. Dr. Ibrahim Yucel, Associate Professor of Communication and Information Design and Interactive Media and Game Design, is a co-principal investigator (PI) for the grant.

#### **College of Engineering Interim Dean Dr. Michael Carpenter's Research Published in 'Faraday Discussions'**

The performance of existing gas sensors often degrades in field conditions because of the loss of measurement accuracy in the presence of interferences. Thus, new sensing approaches are required with improved sensor selectivity. SUNY Poly is developing a new generation of gas sensors, known as multivariable sensors, that have several independent responses for multi-gas detection with a single sensor. In this study, Dr. Carpenter analyzed the capabilities of natural and fabricated photonic three-dimensional (3-D) nanostructures as sensors for the detection of different gaseous species, such as vapors and non-condensable gases.

#### **Dr. Asif Ahmed Named ISSMGE's Young Educator 2020, Gains Society's Technical Committee Membership**

Dr. Asif Ahmed, an Assistant Professor in SUNY Poly's College of Engineering, has been named as the recipient of the Young Geotechnical Engineering Educator 2020 Award by the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE), along with earning membership in the society's Technical Committee. Dr. Ahmed is one of only three committee members from the USA; the award was announced during the ISSMGE's International Conference on Geotechnical Engineering Education, held June 23-25 in Greece, which was livestreamed this year due to the COVID-19 pandemic.

#### **Interim Dean Dr. Michael Carpenter Highlights PPE Manufacturing Efforts**

SUNY Polytechnic Institute is using 3D printing technology to help mitigate a national shortage of personal



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protective equipment (PPE) for health care workers by manufacturing parts for face shields, enabled by funding from Oneida County, in addition to receiving PPE provided by the Wal-Mart Distribution Center in Marcy that will also be distributed. As of fall 2020, 3,362 masks have been distributed to Oneida County, SUNY Upstate Medical University, SUNY Downstate Medical Center, the Neighborhood Center in Utica, and Clark Mills Fire Department. It's just one of several ways the institution is assisting to help slow the spread of the novel coronavirus (COVID-19), in addition to donating bedding to support area medical personnel.

## **Professors Receive Award to Develop Pavement Monitoring System**

Drs. Korkut Bekiroglu, Ali Tekeoglu, and Jiayue Shen received a total of \$36,000 from the Virginia Transportation Research Council (VTRC), supporting their efforts focusing on the development of an efficient Internet of Things (IoT)-centered system to monitor the condition of asphalt in state roadways.

## **Visiting Professor Dr. Sherif Hashem Takes His Expertise from SUNY Poly to the United Nations**

Computer and Information Science Department Visiting Professor Dr. Sherif Hashem gave a talk on capacity building in the area of cybersecurity to a United Nations Open-Ended Working Group (OEWG) at the United Nations Headquarters in New York, N.Y., which was well-received. Though he has consulted for several government projects throughout his professional career as a university professor, Dr. Hashem has specifically worked to assist U.N. countries in helping to adopt solutions for cybersecurity threats over the past seven years

## **Research Published in European Polymer Journal**

Research by SUNY Poly Assistant Professor of Mechanical Engineering Technology Dr. Jagannath (Jay) Upadhyay, who employed the Michael addition of a multifunctional thiol to a multifunctional acrylate in conjunction with bulk modifiers acrylate to produce stable tunable hydrophilic microfluidic devices, has been published in the *European Polymer Journal*. The novel polymer has “opened a plethora of opportunities in the field of microfluidics even beyond the highly desirable stable hydrophilic nature of the material (For example, to produce a consumer-manipulatable microfluidic device via avidin-biotin interactions).”

## **IV. College of Health Sciences**

### **Alumnae of SUNY Poly’s Nursing Program Race to the Front Lines to Assist in Fight Against COVID-19**

Graduates of the College of Health Sciences nursing program have served on the front lines against the COVID-19 pandemic, assisting in hospitals and testing sites throughout New York State and across the country. Though each nurse’s specialty has drawn them to different areas to serve a diverse range of needs, their determination and preparedness as graduates of SUNY Poly’s nursing program has called them to be great leaders and heroes in this fight of our time.

### **SUNY Poly Foundation Donors Raise \$75K for College of Health Sciences Synthetic Cadaver**

The College of Health Sciences, in collaboration with the College of Arts and Sciences, was gifted a synthetic cadaver to enable hands-on educational opportunities for students related to anatomical studies. Known by its brand name, SynDaver, and made out of silicone, the health sciences educational tool is the result of four private donors who collectively raised \$74,658.

### **Delivering Joy to Mohawk Valley Health Care Workers**

SUNY Poly's College of Health Sciences has helped to spread cheer to Mohawk Valley health care workers



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through the donation of gift baskets and notes of encouragement. Utica Coffee Roasting Co. partnered with the college to donate baskets that contained bags of assorted coffees, Hershey's Kisses, pens, and encouraging messages to workers at hospitals in the cities of Rome and Utica. The donations were delivered to Rome Memorial Hospital and John Forbes, vice president of philanthropy for the MVHS Foundation, came to SUNY Poly to pick up the donations.

## **Health Information Management Baccalaureate Degree Program Earns Continuing CAHIIM Accreditation**

The Commission on Accreditation for Health Informatics and Information Management (CAHIIM) awarded continuing accreditation for seven years to SUNY Poly's Health Information Management baccalaureate program. "We are honored that SUNY Poly continues to receive CAHIIM accreditation for our top-tier Health Information Management program which notably provides both a 100 percent student and employer satisfaction rate for program outcomes," said SUNY Poly Interim President Dr. Grace Wang. "At this critical time when the entire world is recognizing the heroic roles healthcare workers play during our greatest times of need, this program helps our students to continue to rise to such challenges."

## **SUNY Poly Online Nursing Program Receives High Ranking**

SUNY Polytechnic Institute's online program offering a bachelor's in nursing to current registered nurses has been ranked [No. 1 in the state](#) and [No. 4 in the U.S.](#) by [Registerednursing.org](http://Registerednursing.org). SUNY Poly's online RN to BSN program is designed to allow for nurses to comply with the state's "BSN in 10" law which requires RNs to attain a bachelor's degree within 10 years of initial licensure, the college explained.

## **V. College of Nanoscale Science and Engineering**

### **SUNY Poly Scientists Work on Advanced COVID-19 Test**

Scientists at SUNY Polytechnic Institute are working with the state's public health lab and a Connecticut company to develop an advanced COVID-19 test that would check both for the disease and also the body's immune response. The State University of New York is funding the research, which will be done in collaboration with Dr. Klemen Strle, an infectious disease expert at the state's Wadsworth Center, and with Ciencia, Inc., a small medical device company based near Hartford, Conn. The testing technology will be loaded on special chips that will be made in a SUNY Poly cleanroom. Two top research professors at SUNY Poly, Nate Cady and Scott Tenenbaum, are leading the project.

### **SUNY Poly Professor of Nanoscale Engineering Dr. Ji Ung Lee Awarded \$6.25 Million by Naval Research Laboratory for Advanced Electronic Devices and AI-Specific Hardware Development**

Professor of Nanoscale Engineering Dr. Ji Ung Lee was awarded \$6.25 million in federal funding from the Naval Research Laboratory (NRL) to leverage the state-of-the-art 300mm fabrication facility located at SUNY Poly's Albany campus and use new nanoscale materials to fabricate advanced electronic devices in order to impart more functionalities to future computer chips. Please see more about this grant under the "SUNY Poly Innovative Research and Economic Engagement" section.

### **SUNY Poly Awarded \$276,000 by Air Force Office of Scientific Research for Quantum Mechanical Switching to Advance Next-Gen Electronic Devices**

Professor of Nanoscience Dr. Serge Oktyabrsky received \$276,000 in funding from the Air Force Office of Scientific Research as part of a collaboration with the University at Buffalo's (UB) SUNY Distinguished Professor



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Vladimir Mitin. The joint SUNY Poly/UB team aims to develop principles and technologies enabling the direct manipulation of electronic quantum states within semiconductor ballistic waveguides by external electric field. The overall project will also provide exciting student and internship opportunities.

### **SUNY Poly Professor Partners with Leading Institutions on NSF Award for Quantum Research**

Assistant Professor of Nanoengineering Dr. Spyros Gallis (Spyridon Galis) is part of a collaborative cross-institutional research team led by Stony Brook University's Dr. Eden Figueroa, Associate Professor in the Department of Physics and Astronomy with a joint appointment at Brookhaven National Laboratory, that has secured a Conceptualization Grant of \$150,000 from the National Science Foundation (NSF) Quantum Leap Challenge Institutes program.

### **SUNY Poly Professor and Ph.D. Candidate Publish Cell Signaling Research in Nature Chemical Biology**

A team of researchers from SUNY Poly, led by Associate Professor of Nanobioscience Dr. Ben Boivin, has published an article in *Nature Chemical Biology* entitled, "Regulation of PTP1B activation through disruption of redox-complex formation." The paper, first authored by Ph.D. candidate Avinash Londhe, focuses on how cells respond to their environment, and specifically, how signals transferred from a cell's surface to its nucleus are tightly controlled by proteins called protein tyrosine phosphatases. This groundbreaking research not only allows us to better understand the ways in which signals are communicated, but also provides important insights into how these intracellular signals can be turned off as they make their way through the cell. This could ultimately help stop potentially harmful signals, such as those causing cancer and other diseases.

### **Student, Professors' Stem Cell Therapy Research Published in Nature: Scientific Reports**

Research by award-winning SUNY Poly M.D. and Ph.D. candidate Zachary Olmsted, along with Drs. Yubing Xie and Janet L. Paluh of SUNY Poly's College Nanoscale Science and Engineering, has been published in *Scientific Reports*. This research in the Paluh laboratory is funded by the New York Spinal Cord Injury Research Board (NYSCIRB). The research, conducted in collaboration with Michigan State University, Rensselaer Polytechnic Institute, and Houston Methodist Research Institute, is a first-of-a-kind method for the generation, handling, imaging, and CNS in vivo delivery of homotypic neural ribbons. By refining and advancing use of alginate-based hydrogels and the generation of homotypic hiPSC-derived spinal cord-enhanced NSCs (scNSCs), the team combined two critical technologies.

### **SUNY Poly's Dr. Fatemeh (Shadi) Shahedipour-Sandvik and Isra Mahaboob's 'Drain Voltage Induced Secondary Effects in AlGaN/GaN HEMTs with Integrated Body-Diode' published in IEEE Transactions on Electron Devices**

Integration of body-diode-based back-gate control in AlGaN/GaN high-electron mobility transistors (HEMTs) was recently demonstrated by the authors to enable dynamic control of the device characteristics. The team presented an experimental study of drain-voltage-induced secondary effects in AlGaN/GaN HEMTs with integrated body-diode. Both the three-terminal and four-terminal device characteristics were studied to understand the secondary effects in this configuration.



## VI. Office of Research and Graduate Studies

### **Academic/Industry Partnership Engagement**

The Office of Research and Graduate Studies has continued to engage with industry to further its academic partnerships. Despite COVID-19, many events were hosted online; short course webinars and admission related information sessions for private sector companies such as TEL and GlobalFoundries were provided. Going forward, the intent is to expand and broaden the impacts of these events throughout the semester/upcoming year. In addition, the Office hosted virtual events and research presentations for incoming fall 2020 graduate students to enable faculty engagement that would otherwise not be possible due to social distancing. Subsequently, many new PhD students have joined research labs in the first semester.

### **Graduate Student Entrepreneurial Opportunities and Scholarships**

In an effort to continue to move forward with promoting entrepreneurial opportunities for graduate students, the Office is offering scholarships to as many as five graduate students per year, not to exceed \$6,000/year to enroll in the course NNSE 525 – Innovation and Commercialization. This can facilitate student development, particularly those who have an entrepreneurial spirit, innovation, and drive. The Office of Graduate Studies scholarship would be part of the John J. Sullivan Professional Development Award for SUNY Poly CNSE graduate students. Currently, the scholarship enables graduate students to participate in professional development activities and the course is a natural fit.

### **Professors Awarded \$1.25 Million by NYS Center for Advanced Technology in Nanomaterials and Nanoelectronics Investment Program**

SUNY Poly announced that five faculty-led research projects in areas ranging from semiconductors to nanobiotechnology and energy received a total of \$1.25 million in funding from five companies with operations in New York State, and as part of the inaugural New York State Center for Advanced Technology in Nanomaterials and Nanoelectronics (CATN2) Matching Investment Program (MIP) to further leading-edge faculty research through these critical industry partnerships.

### **Dr. Shahedipour-Sandvik Featured in Albany Business Review Article, "Preparing for AI: Albany leaders highlight need for adaptability, resilience and continuous learning"**

Dr. Shadi Shahedipour-Sandvik, SUNY Poly Interim Vice President of Research and Graduate Studies was featured in the Albany Business Review as part of a discussion on the future and potential of AI, in which she particularly highlighted the AI Hardware Center, led by IBM and located at SUNY Poly's Albany campus.

### **SUNY Poly Faculty and Student-Led Research Published in Nature Scientific Reports**

Graduate student Emma Rocco and Dr. Shadi Shahedipour-Sandvik published collaborative research in *Nature Scientific Reports*, which shows for the first time the evidence for segregation of dopant acceptors in N-polar Gallium Nitride, a material used as a platform for the creation of power electronics, which are more robust than the typical silicon-based electronics. This is an important topic for its scientific value but also for various device technologies for high power, high temperature, and high-speed electronics. Researchers from SUNY Poly, University at Buffalo, Virginia Commonwealth University, and California Institute of Technology's Jet Propulsion Laboratory collaborated on this research effort.



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## **Virtual Workshop for NIH Grant Writing, Renewals, and Resubmissions**

In collaboration with the SUNY Vice Chancellor for Research and Economic Development, the SUNY Poly Office of Research facilitated a 1.5 day virtual workshop for writing NIH grants, renewals, and resubmissions. This workshop, presented by Dr. John Robertson of Grant Writer's Workshops and Seminars was attended by nearly 200 faculty from over a dozen SUNY campuses.



## SUNY Poly Innovative Research and Economic Engagement

SUNY Polytechnic Institute's annual sponsored program expenditures for the cumulative fiscal year ending 6/30/20 totaled \$362M (an increase of \$10M from the previous fiscal year). SUNY Poly received 55 awards during this period and boasted 48 distinct project principal investigators, with federal, state, and private funds supporting 180 organized research projects and everything from fellowships to public service and training.

### I. Research Highlights

#### **SUNY Poly Professor of Nanoscale Engineering Dr. Ji Ung Lee Awarded \$6.25 Million by Naval Research Laboratory for Advanced Electronic Devices and AI-Specific Hardware Development**

SUNY Poly announced Professor of Nanoscale Engineering Dr. Ji Ung Lee was awarded \$6.25 million in federal funding from the Naval Research Laboratory (NRL) to leverage the state-of-the-art 300mm fabrication facility and use new nanoscale materials to fabricate advanced electronic devices in order to impart more functionalities to future computer chips. During the course of this five-year grant, Dr. Lee's team will also develop artificial intelligence (AI)-specific hardware, which could lead to greater efficiency for AI applications, such as pattern and voice recognition. Notably, this grant represents SUNY Poly's largest single investigator-faculty award to-date.

#### **SEMI, SUNY Poly Awarded \$6M National Science Foundation Grant for Pilot Program to Grow Electronics Industry Talent Pipeline**

SEMI, the global industry association representing the electronics manufacturing and design supply chain, and [SUNY Polytechnic Institute](#) today announced that they have been awarded a \$6 million [grant](#) from the [National Science Foundation](#) (NSF) to fund workforce development initiatives for the microelectronics manufacturing industry. The funding, to be provided over three years, will support the development and implementation of a semiconductor workforce certification program designed to meet the industry's most pressing needs.

#### **Professor Awarded \$2.1 Million by the Advanced Research Projects Agency-Energy (ARPA-E) for Collaborative Next-Gen Power Electronics Integrated Circuits R&D**

Associate Professor of Nanoengineering Dr. Woongje Sung received \$2,103,000 in total funding from the Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) as part of a collaborative research effort with teams from Ohio State University and North Carolina State University. Professor Sung aims to develop Scalable, Manufacturable, and Robust Technology (SMART) for Silicon Carbide (SiC) Power Integrated Circuits (SMART SiC Power ICs) that open the door to robust switching capabilities in a range of high-performance energy applications, including automotive and industrial, as well as for electronic data processing and energy harvesting.

#### **Professor Awarded \$1,768,000 by Rome-Based Air Force Research Laboratory to Develop Next-Gen Computing Systems**

Professor of Nanobioscience Dr. Nate Cady received \$1,768,000 in funding from the Rome-based Air Force Research Laboratory (AFRL) to enable future generations of computing systems by using memristors (or "memory resistors"), which are nanoscale electronic switching devices that act like synapses in the human



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brain. This will allow Dr. Cady and his research team to fabricate an overall hardware architecture and capability which can lead to computing that can be as much as 1,000 times as powerful as is currently available.

## **SUNY Poly Researchers Awarded \$1.5M by U.S. Department of Energy's Vehicle Technology Office for Highly Efficient and Reliable Power Electronics Devices**

SUNY Polytechnic Institute (SUNY Poly) announced today that Interim Vice President of Research and Graduate Studies Dr. Shadi Shahedipour-Sandvik and Associate Professor of Nanoengineering Dr. Woongje Sung were selected to receive \$1,500,000 in total federal funding from the U.S. Department of Energy's Vehicle Technology Office (VTO) for the development of 1200V silicon carbide metal-oxide-silicon-field-effect-transistors (MOSFET), and for reliability studies of Aluminum Gallium Nitride-based high electron mobility transistors (HEMT), the switch components of power electronic chips, which are superior to their silicon-based counterpart in areas such as cost, performance, and reliability. This could lead to highly efficient and reliable power electronics for electric drive trains for a range of applications, including improved electric vehicles.

## **SUNY Poly Research Team Awarded \$900,000 by Rome-Based Air Force Research Laboratory to Advance Quantum Technologies for Next-Generation Computing Systems**

Associate Vice President for Research and Adjunct Professor of Nanoscience Dr. Satyavolu Papa Rao and Professor of Nanobioscience Dr. Nathaniel Cady have been awarded \$900,000 in funding from the Rome-based Air Force Research Laboratory (AFRL) to conduct research on brain-inspired (neuromorphic) computing systems comprised of quantum devices operating at cryogenic (below -450 °F) temperatures.

## **Professor Receives \$625,000 from U.S. Department of Energy for Collaborative Research to Reduce Power Electronics Manufacturing Costs**

Associate Professor of Nanoengineering Dr. Woongje Sung has been awarded \$625,000 in funding from the U.S. Department of Energy's Advanced Manufacturing Office as part of a collaborative research effort with the National Renewable Energy Laboratory (NREL). Leveraging SUNY Poly's state-of-the-art capabilities, this research seeks to reduce the cost to manufacture silicon carbide (SiC) -based power devices, which can be used in a variety of high-performance applications, including automotive, industrial, and aeronautical. Silicon carbide-based power devices are currently more expensive to fabricate than the more conventional silicon (Si) -based chips that, because of their inherent properties, are unable to support operations in more extreme heat, and which are also less energy efficient.

## **SUNY Poly Professors Awarded Grant to Continue Mohawk River Contamination Research**

Civil Engineering Assistant Professor Dr. Carolyn Rodak and Assistant Professor of Biology Dr. Lauren Endres may be one step closer to finding the source of fecal contamination in areas of the Mohawk River after being awarded a grant funded by the New York State Water Resources Institute at Cornell University and the New York State Department of Environmental Conservation.

## **II. SUNY Poly Research Partnerships Highlights**

### **SUNY, SUNY Poly, Griffiss Institute, Air Force Research Laboratory Information Directorate Partner to Advance Quantum-Focused Research Opportunities Through New Innovare Advancement Center**



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With Innovare Advancement Center launched in fall 2020, it is emerging as a global catalyst to converge world-class talent with cutting-edge facilities and focused technology challenges to accelerate the development of game-changing capabilities that protect and empower our country. SUNY Poly is looking forward to additional ways to partner through this innovative collaboration, working closely with the key partners to launch the Center, with Dr. Spyros Gallis among the 36 researchers from around the world who was selected to pitch his quantum-focused research for a portion of the more than \$1M in funding through Innovare’s Million Dollar International Quantum U Tech Accelerator.



## Athletics

### I. Athletics Fall 2019 Highlights

- The SUNY Poly women's basketball team won their fourth NEAC title in the last five years with a 71-58 win over Morrisville State. Jaida Washington (Elmira, N.Y.) was named the tournament MVP. The win sent the Wildcats to their fourth NCAA Championship Tournament.
- Sixty-eight SUNY Poly student-athletes were named to the NEAC's 2019-20 Scholar-Athlete List.
- The overall student-athlete GPA at SUNY Poly for the spring semester was 3.19. 121 Wildcat student-athletes were named to academic excellence lists at SUNY Poly. 31 were named to The President's Excellence List, 26 to the President's Achievement List, and 64 were named to the Dean's List.
- Twenty-three Wildcats were named to NEAC All-Conference Teams. Eight were first-team selections, six were second-team selections, and nine were third-team selections.
- Six out of the seven competing teams qualified for post-season competition in the 2019-20 academic year.
- Additionally, SUNY Poly introduced an exciting new Esports program and joined the Eastern College Athletic Conference

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