

**SUNY Polytechnic Institute**  
**Academic Year 2018-2019 Annual Report**





## Executive Summary: Academic Year 2018/2019 Accomplishments

### Message from the Interim President

I am pleased to present SUNY Polytechnic Institute's 2018/2019 Academic Year Annual Report, highlighting a number of educational, research, and economic development efforts that make this institution a unique and powerful catalyst for creative, experiential learning. We are empowering our students to thrive in the innovation economy by addressing critical societal challenges through discovery.

**SUNY Poly continues to be highly ranked.** U.S. News & World Report listed the institution 18<sup>th</sup> in its 2019 list of *Best Colleges in the Regional Universities North* category. SUNY Poly remained 3<sup>rd</sup> in *Top Public Regional Universities North* for the third year in a row, and I am proud to note SUNY Poly is ranked 8<sup>th</sup> for *Best Colleges for Veterans—Regional Universities North* and 11<sup>th</sup> in *Best Value Schools* within its classification. In addition, SUNY Poly's online Accountancy program (Non-MBA) ranked in the top half of listed institutions at 60<sup>th</sup> out of 150 colleges; several other online programs received notable rankings.

**SUNY Poly focuses on offering exciting student experience.** In the 2018-2019 academic year, we were proud to welcome our largest student body in decades—more than 3,000 students—the most since the early 1980's. Offering an exciting, quality education at both of our campuses, we are building academic pipelines with partners ranging from Mohawk Valley Community College, Herkimer County Community College, Schenectady County Community College, 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. Concurrently, we are bolstering the student experience by building the first new SUNY zero-net carbon-certified residence hall and offering enhanced residential options in Utica and Albany, respectively.

**SUNY Poly thrives in leading-edge research and innovation,** with growing recognition from the research community and general public. Our faculty researchers have secured millions in external funding to advance our knowledge and technologies related to areas such as nanobioscience, electronics, photonics, and clean energy. Additionally, we are excited about IBM and Applied Materials' recent investments to grow their high-tech footprint in New York as a result of the exciting potential of our unique educational and industry ecosystem.

**SUNY Poly continues to build a robust foundation to inspire a bright future.** I am proud of our collective efforts to develop a *Framework for a Sustainable Future*, focusing on our incredible academic, research, and economic development opportunities. While we start a new academic year at SUNY Poly, I want to thank our outstanding faculty, staff, and students whose dedication and passion for SUNY Poly is our true inspiration.

Sincerely,

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

Dr. Grace Wang  
Interim President  
SUNY Polytechnic Institute



## SUNY Poly 2018-2019 Highlights

### I. Framework for A Sustainable Future

#### **SUNY Polytechnic Institute Developing a *Framework for a Sustainable Future***

The Framework for a Sustainable Future aims 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.

### II. SUNY Poly on the Rise

#### **SUNY Poly Graduates Nearly 700 at 45<sup>th</sup> Annual Commencement**

Continuing its mission to offer students the strongest foundation for their career paths, SUNY Poly hosted its 45<sup>th</sup> annual commencement ceremony at the Wildcat Field House in Utica, in addition to a ceremony at the Zero Energy Nanotechnology (ZEN) building in Albany, honoring its nearly 700 members of the Class of 2019. The top three undergraduate degrees awarded at the Utica ceremony by number of students were Computer and Information Science, Nursing, and Business Administration, respectively, with students at Albany's commencement receiving nanoscale science or nanoscale engineering degrees.

#### **SUNY Poly Receives Strong 2019 College Rankings by U.S. News & World Report**

SUNY Polytechnic Institute continues to receive national recognition for its top-tier educational offerings. *U.S. News & World Report* ranked the institution 18<sup>th</sup> in its 2019 list of *Best Colleges in the Regional Universities North* category. Additionally, SUNY Poly remained 3<sup>rd</sup> in *Top Public Regional Universities North* for the third year in a row, was ranked 8<sup>th</sup> for *Best Colleges for Veterans amid Regional Universities North*, and was also ranked 11<sup>th</sup> in *Best Value Schools* within its classification. In addition, SUNY Poly's online Accountancy program (Non-MBA) ranked in the top half of listed institutions at 60<sup>th</sup> out of 150 colleges; its online MBA program ranked in the top 30% of ranked institutions at 82<sup>nd</sup> out of 285 colleges; and its online Graduate Nursing program ranked 88<sup>th</sup> out of 170 ranked college programs—advancing 30 spots from 2018.

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

3,036 students enrolled at SUNY Poly for the fall 2018 semester, the most since 1982. While enrollment numbers are not yet available for the upcoming 2019-2020 academic year, enrollment is expected to remain roughly in line with the 2018-2019 academic year total.



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

SUNY Polytechnic Institute has also been building impactful academic partnerships to enable multiple and differentiated academic opportunity pipelines, including a “Path to Poly” articulation agreement with Mohawk Valley Community College, as well as similar programs with Herkimer County Community College and SUNY Schenectady County Community College that simplify the transfer process for students to earn degrees at SUNY Poly. Additionally, partnerships with Rome Memorial Hospital and GlobalFoundries now provide opportunities and flexibility for their employees to gain advanced career skills, and, with Albany Law School and the Research Foundation for SUNY, an innovative experiential learning program was launched, whereby Albany Law and SUNY Poly students can collaboratively advance technology-focused projects.

## **Governor Cuomo Announces First New SUNY Zero-Net, Carbon-Certified Residence Hall**

To enhance the residential experience for SUNY Poly students, SUNY, in partnership with the Dormitory Authority of the State of New York, began construction of a \$33.5 million, 257-bed, residence hall project at SUNY Poly’s Utica Campus. Expected to open by August 2020, the residence hall will be “zero-net, carbon certified,” meaning in addition to exceeding existing energy codes, the infrastructure to add future on-site renewable energy production systems will be in place. The project coincides with Chancellor Johnson’s plan to retrofit and renovate SUNY’s buildings to achieve greater energy savings.

## **SUNY Poly Holds Ribbon Cutting for New ‘Hage Family Robotics Lab’**

In December 2018, the institution held a ribbon cutting for the new “Hage Family Robotics Lab,” home to research, development, educational, and collaborative opportunities based on robotics and automation capabilities that are available to faculty, students, and the community. The lab honors the meaningful impact of the Hage family’s donations, time, and service for over a quarter century.

### **III. SUNY Poly Faculty, Students & Staff Excellence Continues**

#### **SUNY Poly Faculty & Staff Receive SUNY’S Highest Honor—Five Recognized with 2019 Chancellor’s Awards for Excellence**

SUNY Poly proudly announced five members of its faculty and staff received Chancellor’s Awards for Excellence from the State University of New York in 2019. 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:

- Zhanjie Li, Assistant Professor of Civil Engineering, Award for Excellence in Scholarship and Creative Activities
- Robert Edgell, Professor of Technology Management, Award for Excellence in Teaching
- Paul LaVine, Plumber Steamfitter, Award for Excellence in Classified Service
- Marye Ianno, Adjunct Professor, Award for Excellence in Adjunct Teaching
- Michael DeCicco, Director of Publications, Award for Excellence in Professional Service



## **Professors Receive Mohawk Valley Community Action Agency's '2019 Community Builder Award'**

The Mohawk Valley Community Action Agency Inc. (MVCAA) presented two SUNY Poly professors with its 2019 Community Builder Award at the organization's 53<sup>rd</sup> Anniversary Gala. Dr. Veronica Tichenor, Associate Professor of Sociology, and Psychology Professor Dr. Joanne Joseph, faculty members of SUNY Poly's Community and Behavioral Health Program, were chosen to receive the award for their longstanding commitment to improving the lives of children throughout the Mohawk Valley. Each year the award is presented to a business or group that has contributed unselfishly to the betterment of the community.

## **SUNY Poly Student Receives SUNY Chancellor's Award for Student Excellence**

Isabel Yangzi Tian received the SUNY Chancellor's Award for Student Excellence after receiving her Ph.D. in nanoscale engineering from SUNY Poly in December 2018. During her graduate career, she served as the president of the SUNY Poly Graduate Student Government, advocating for additional services and more professional development opportunities for soon-to-be graduates. Isabel also led the NANO Mentoring Program, training new mentors and instructing over 300 middle/high school students in hands-on nanotechnology curriculum, and her passion for science communication led to illustrations in more than 15 scientific journals.

## **SUNY Poly Student Awarded NSF's Graduate Research Fellowship Award**

In April of 2019, SUNY Polytechnic Institute student Elena Musteata was awarded the National Science Foundation's Graduate Research Fellowship Award. She was one of 18 students across 5 SUNY campuses to be granted this prestigious research award. During her time at SUNY Poly, Musteata was a member of Dr. Nate Cady's research group, studied Biomechanical Engineering, and spent her undergraduate research working to develop a diagnostic assay for Lyme disease.

## **SUNY Poly Student Startup Competes in AFRL Competition**

Cyber Defense Network Adapter, started by two SUNY Poly students, Kyle Brubaker and Matthew Preisendorfer, pitched their in-line malware prevention hardware at the AFRL Commercialization Academy Demo Day and IDEA NYbusiness accelerator competition, held on March 21, 2019, at Griffiss Institute, in Rome, New York. Their hardware provides a diverse set of cyber-protection as it sits in-line with the network connection, intercepting threats before reaching the host system.

## **SUNY Poly Student Teams Compete in the 2019 NY Business Plan Competition**

Five student-led teams from SUNY Poly pitched their unique business plans in the NY Business Plan Competition final, held in Albany, NY, in April. As New York's premier collegiate regional and statewide business plan competition, the event was established to encourage innovation and entrepreneurship throughout New York's colleges and universities.



## IV. SUNY Poly Advances Diversity Efforts

### **Mohawk Valley Female Leaders Mentor and Empower Female SUNY Poly Students at Second Annual 'Women Who Mean Business' Networking Event**

Female SUNY Poly students met one-on-one with female community leaders from throughout the Mohawk Valley at the "Women Who Mean Business" speed-networking event in Utica. Nearly 20 women from public and private sector industries offered mentorship, insight, and networking opportunities to the students at the second annual event with the goal of networking and inspiring a new generation of female leaders after their graduation from SUNY Poly. The event, sponsored by Hage & Hage Law and Consulting LLC, Nascentia Health, the Bank of Utica, and the SUNY Poly Foundation, came from SUNY Poly Foundation Board Member Heather Hage after realizing the need for an environment to specifically reach female students and ensure they have the opportunity to create a network of like-minded professionals.

### **SUNY Poly ProdiG Committee Convenes to Increase Diversity among Faculty and Students**

The SUNY Poly ProdiG committee, co-chaired by Dean of Arts and Sciences, Andy Russell, and Vice President of Human Resources, Rhonda Haines, developed a proposal to increase diversity among faculty, particularly in the areas of URM (underrepresented minority) and WSTEM (women in science, technology, engineering, and mathematics) fields. The proposal called for an enhanced review of data to inform a recruitment strategy and then support URM and WSTEM faculty members who are successfully recruited. The proposal also outlined a plan to improve recruitment and support of a more diverse student pipeline. The proposal was submitted to SUNY System Administration on July 15, 2019.

### **SUNY Poly Establishes Diversity, Equity and Inclusion Committee**

The SUNY Poly *Framework for a Sustainable Future* includes a committee solely devoted to fostering a diverse, welcoming and inclusive campus community. The committee outlined a number of goals and recommendations and many of them are already underway, promoting an institutional culture that values, promotes, and celebrates diversity, equity, and inclusion. The committee has also identified the need for increased educational opportunities and training for faculty, staff, and students.

### **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’ Opens at the Start of 2019 Spring Semester**

SUNY Poly celebrated the first step in its fight against food insecurity among students, faculty, and staff with the opening of “Poly Pantry” at the start of the spring 2019 semester. From January to May, the campus-based food pantry has provided nearly 100 students, faculty, and staff with 3,775 pounds of food and 1,281 pounds of 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. Nearly 40 percent of SUNY Poly students during the fall 2018 semester were eligible for Federal Pell Grants; eligibility of Pell Grants is based on a household income of \$30,000 or less.

## **V. SUNY Poly’s Extensive Outreach Continues**

### **SUNY Poly, FIRST®, National Grid, and Oneida County, in Addition to New York State Technology Enterprise Corp. (NYSTEC), Team-Up for CNY FIRST Regional Robotics Competition**

An intensive, six-weeks of designing, building, and programming original robots culminated as teams of students from around the world put their robotic creations to the test at the Central New York 2019 FIRST (For Inspiration and Recognition of Science and Technology) Robotics Regional Competition, presented by The Boeing Company, at SUNY Poly’s Wildcat Field House in Utica in March. The three-day event, in partnership with FIRST, National Grid, and Oneida County, in addition to NYSTEC, saw attendance by 3,000 people, including students in grades 9-12, mentors, parents, event volunteers, and members of the public. As a result of the competition, seven teams comprised of high school students from New York State, Connecticut, and Pennsylvania headed to the FIRST Championship in Detroit.

### **Young Students Visit SUNY Poly’s Albany NanoTech Complex, Gaining Inspiring Nanotechnology-Focused Experience**

Throughout the year, hundreds of students from schools across New York State attended SUNY Poly’s popular programs featuring activities and tours teaching them about exciting nanoscience and broader, related science, technology, engineering, and mathematics-based (STEM) concepts. Each engagement immerses students in nanotechnology-enabled activities, including the chance to gown up in cleanroom “bunny” suits, take tours to see the world-class cleanrooms, and learn how small a nanometer is.

### **SUNY Poly’s Annual ‘Pi Day’ Celebration Features Pi-Themed Activities and Pizza Pie for Visiting Glencliff Elementary School Students**

To commemorate the annual mathematical holiday known as “Pi Day,” on March 14, SUNY Poly hosted 65 4<sup>th</sup> grade students from Glencliff Elementary School; and along with Tech Valley High School student presenters, provided them with educational, Pi-themed activities and slices of pizza (pies), as well as a tour of the institution’s state-of-the-art facilities and information about SUNY Poly’s academic opportunities.



## **SUNY Poly Hosts Manufacturing Day Expo Showcasing Products and Employment Opportunities**

Manufacturers and businesses from across New York State came to SUNY Poly's Utica campus in October 2018 for the free and public annual "Manufacturing Day Expo," in which the institution hosts manufacturers, businesses, and educators, as well as community member and students who are interested in learning more about manufacturing careers. Manufacturers showcased their products and technologies amongst 50+ interactive exhibits and discussed immediate workforce needs and opportunities with students, the unemployed, underemployed, and veterans. SUNY Poly made a concerted effort to attract service members from Fort Drum to the event, ahead of their eventual transition out of military service. Additionally, middle and high school students from more than 25 school districts learned about the importance of STEM studies in preparing for manufacturing careers. The event also included a first-ever "Manufacturing Recruitment Day" for SUNY Poly students to connect directly with potential employers.

## **VI. SUNY Poly Alumni Reaching New Heights**

### **Specialty Pharma Research Company and SUNY Poly Spinoff, Glauconix Biosciences, Completes Pilot Study for Glaucoma Treatment**

Glauconix Biosciences, Inc., announced in March that data generated for Nemus Biosciences Inc. validates the mechanism of action of NB111, Nemus's proprietary prodrug of tetrahydrocannabinol (THC-valine-hemisuccinate, or THCVHS), in lowering intraocular pressure (IOP), a defining symptom of hypertensive glaucoma. Glauconix is a specialty pharmaceutical company located at SUNY Poly's Albany campus and led by SUNY Poly alumna Karen Torrejon that uses its patented platform technology to develop human 3D ocular tissues that mimic the fluid dynamics in the eye to expedite and de-risk the R&D of ophthalmic treatments while reducing development costs.

In addition, SUNY Poly Professors Yubing Xie and Susan Sharfstein received \$312,611 in funding to further develop stem cell-based artificial outflow systems for drug and gene screening in support of Glauconix, which includes developing a stem cell-derived artificial conventional outflow system (ACOS) and developing an ACOS model for drug screening.

### **SUNY Poly Spinoff Eonix Takes Part in Capitol Hill Innovation and Entrepreneurship Showcase**

SUNY Poly alumnus Don DeRosa showed off how SUNY Poly spinoff Eonix's powerful technology is leading to more efficient and cost-effective energy storage, after Eonix was selected to take part in "The University Innovation and Entrepreneurship Showcase" on Capitol Hill, which was hosted by the Association of Public and Land-grant Universities and the Association of American Universities.





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## **SUNY Poly Alumna Alexandria Dodge Now a Well-Known Voice in the Mohawk Valley**

Marcy native Alexandria Dodge '17, whose well-known voice can be heard throughout the Mohawk Valley as a radio personality for Kiss FM 97.9/105.5 and Bug Country 99.7/101.1 FM, is utilizing the skills she gained while at SUNY Poly as part of an exciting career in her hometown. She now edits video and uses her graphic design skills often, and reported that her time at SUNY Poly allowed her to hone in on experiential learning relevant to her specific interests while making the connections necessary to be where she is today. "I wish I went (to SUNY Poly) my freshman year," she said. "I'm still in debt because of that year."



## SUNY Poly Academic Programs

SUNY Polytechnic Institute enrolled 3,036 students in the 2018-2019 academic year. About three-quarters of these students are undergraduates, and approximately 40% are female. The overwhelming majority of SUNY Poly's students are from New York State: 97% of the undergraduates and 83% of the graduate students. About five percent of SUNY Poly's students overall are international students.

SUNY Poly students are enrolled in 48 different programs. The most popular major areas among undergraduates are Computer Science, Engineering & Engineering Technology, 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 2017-2018 student population for which the latest statistics are available, there were 729 new full-time undergraduate students (463 first-year and 266 transfer) who started their academic careers at SUNY Poly. They had a 78% and 85% first-year retention rate, respectively. SUNY Poly graduated 752 students in the 2018-2019 reporting year, including 309 from the College of Engineering, 104 from the College of Arts & Sciences, 144 from the College of Business Management, 150 from the College of Health Sciences, and 45 from the Colleges of Nanoscale Science and Engineering. Among these undergraduate graduates, their average time to degree completion was 4.00 years.

A significant number of our undergraduate students receive financial aid. More than 40% of our undergraduates receive TAP, Pell, or both. Two-and-a-half percent of our undergraduate students participate in EOP, and four percent received Excelsior Scholarships last year.

### I. College of Arts & Sciences

- Total research expenditures increased by 82% in fiscal year 2019 compared to fiscal year 2018.
- The College saw growth of its Interactive Media & Game Design outreach center, VIM (for Visualization, Game Design & Interactive Media). Funded by the SUNY Performance Improvement Fund, VIM is a hub of activity that connects students in SUNY Poly's IMGD program with applied learning experiences and community partners. Funds support full-time staff; new laboratory facilities; professional grade equipment for Virtual Reality, Augmented Reality, and 3D animation; and connections with upstate NY healthcare providers, museums, and K-12 schools. The IMGD program, which started in June 2016, has grown rapidly and now has 120 students enrolled.



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- Faculty and students have had a number of publications in theoretical, high energy, and quantum physics journals. Faculty members in the Department of Math & Physics collaborated with peers and with SUNY Poly undergraduate students to publish articles in the *International Journal of Modern Physics* (Prof. Amir Fariborz and SUNY Poly student Maria Lyukova); *International Journal of Geometric Methods in Modern Physics* (Prof. Carlo Cafaro and SUNY Poly student Steven Gassner); and *Physical Review B* (Prof. Emilio Cobanera).
- Students and faculty in the Psychology program presented their work at national and international conferences and published in leading journals such as *Nature Scientific Reports*. Prof. Kazuko Behrens published three articles in developmental science journals in 2018, including one co-authored by an alumna of SUNY Poly. Dr. Behrens will spend the Fall 2019 semester as a visiting research fellow in the Department of Public Health and Primary Care at the University of Cambridge in the UK.
- Prof. Andrew Gallup, Psychology program coordinator, was frequently featured in national and international news media such as *The New York Times*, *Washington Post*, and CBC Public Radio for his research on yawning and emotional contagions.

## II. College of Business Management

- In December 2018 SUNY Poly completed a comprehensive report, which summarized the impact the College of Business Management (CBM) has made since 2013 through academic and professional engagement that aims for high-quality intellectual capital and fosters innovation in degree programs, pedagogies, and student services. The report was submitted to the Association to Advance Collegiate Schools of Business (AACSB) for reaccreditation review.
- In February 2019, SUNY Poly hosted AACSB's review team on the Utica campus. The team met with students, faculty, staff, CBM's Advisory Board, and SUNY Poly's leadership to learn about all aspects of the CBM's academic and professional engagement activities. The review team acknowledged the CBM's impressive progress and achievements in recent years, and offered recommendations for further advancement.
- SUNY Poly's "Innovation Challenge New York" program (ICNY) is a unique student competition that generates novel ideas for the economic and social wellbeing in New York State, especially in the greater Mohawk Valley REDC region. The program conducted its sixth iteration in October 11 through 13, 2018, and included the challenge topic for 2018: "Reimagining Greater Old Forge." The goal for this three-day project was to address economic and social complexities within the "Blue Line" boundary of the Adirondack Park. Seventy-seven students participated, with 69 from SUNY Poly, six from Hartwick College, one from Utica College, and one from Green Mountain College. Professor Edgell worked with the local Old Forge community through several meetings starting more than one year in advance of the event and student-generated concepts were presented to a group of Old Forge community leaders who are beginning to implement some of them. Since 2014, more than 600 students, judges, experts, tour site hosts, steering committee



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members, supporting faculty, volunteers, and other community leaders have participated in six ICNY iterations. Sixty concepts have been generated and shared with various communities.

- The rankings of SUNY Poly’s online MBA and online MS Accountancy programs continue to advance. The 2019 U.S. News & World Report ranked SUNY Poly’s online MBA #82 (versus #125 in 2018), and MS Accountancy #60 (versus #79 in 2018) among Best Online Programs in their respective categories.

## III. College of Engineering

- The Center for Global Advanced Manufacturing (CGAM) saw newly installed tools including, among others, a 5-axis mill, an advanced machining tool, as well as a biocompatible 3D printer in the 3D additive manufacturing lab.
- During the summer of 2019, Dr. Michael Reale, an Assistant Professor in the College of Engineering’s Computer Science Department, and Dr. Ali Tekeoglu, an Assistant Professor in the College of Engineering’s Network and Computer Security Department, explored research topics as part of the Rome Air Force Research Laboratory (AFRL) Information Directorate’s Visiting Faculty Research Program (VFRP) and Summer Faculty Fellowship Program (SFFP).
- The Mechanical Engineering program received ABET accreditation.
- Research expenditures in fiscal year 2019 increased by 2% from the previous year.
- A team of SUNY Poly engineering students won first place and \$15,000 in an annual assistive technology competition held by The New York State Industries for the Disabled (NYSID). The team invented a technology that helps workers with disabilities remove plastic six-pack yokes from beer cans as part of their packaging plant duties.

## IV. College of Health Sciences

- A number of programs were redesigned in fall 2017 and approved in spring 2018 by SED, including RN to BS, which was also approved as a completely online program; Accelerated RN to MS in Nursing Education; and MS in Nursing Education.
- SUNY Poly received approval from SUNY Board of Trustees for a Master Plan amendment for the DNP (Doctor in Nursing Practice) in May 2019.
- The online nursing courses are being reviewed to be certified for Quality Matters and will be the standard for the campus regarding Quality Matters courses.



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- In March 2019 SUNY Poly announced a new graduate program in Transformational Leadership in Nursing for current baccalaureate nurses. This degree will allow nurse leaders in middle-management positions to become even better equipped for the challenges of today's healthcare system. It was concurrently announced that applications were made available for the fall 2019 semester.
- SUNY Poly and Rome Memorial Hospital announced an agreement to offer nurses baccalaureate and Master's degrees to meet New York State's new educational standards while also providing a new deferred tuition option for nurses who meet certain requirements. The memorandum of understanding (MOU) between SUNY Poly and Rome Memorial Hospital designates the hospital as SUNY Poly's nursing practicum site, offering current registered nurses (RNs) the opportunity to obtain a Bachelor of Science in Nursing (BSN) degree completely online at their convenience. With the hospital in close proximity to SUNY Poly, students have resources close at hand and can easily arrange to meet with faculty. The Master of Science in Family Nurse Practitioner (MSN-FNP) will be a hybrid program and the Master of Science (MS) in Nursing Education, and recently announced MS in Transformational Leadership in Nursing program, will be offered online to provide busy healthcare leaders a convenient way to obtain higher-level nursing degrees.

## V. College of Nanoscale Engineering and Technology Innovation

- Launched the "Bridge to Nano" program, which allows seamless transfers of students from across SUNY and SUNY Poly's Utica campus into the Nanoengineering/Nanoscience (NENG/NSCI) programs.
- Launched the "Semester at Nano" program, which provides a mechanism for students seeking a semester "away" from their home institution to have an experiential learning experience with SUNY Poly's faculty and/or industry partners while taking both upper level courses as well as gaining research credits.
- Research expenditures increased by 33% with 63% more new awards in fiscal year 2019 as compared to fiscal year 2018.
- SUNY Poly's Nanoscale Engineering program earned accreditation by ABET.

## VI. College of Nanoscale Sciences

- Obtained SUNY and subsequent SED approval to offer an M.S. and Ph.D. degree in Nanobioscience and are already presently accepting students for these degrees.



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- Research expenditures in fiscal year 2019 totaled more than \$4.5 million, with 18% more new awards as compared to fiscal year 2018.

### VII. Office of Research Advancement and Graduate Studies

- SUNY Poly, in partnership with GlobalFoundries, announced that it has developed a number of undergraduate and graduate educational programs that provide a hands-on, targeted workforce development experience for employees of GlobalFoundries through their Fab Degree Partnership Program (FDPP). The program, based at SUNY Poly's Albany campus, not only offers a cutting-edge education to enhance employees' advanced skills, but it was also developed with consideration for employee schedules and with flexible billing to facilitate participation and further enable GlobalFoundries' high-tech R&D operations.
- Through the generosity of the John J. Sullivan Fellowship Professional Development Award, approximately 10 fellowships were bestowed to graduate students to further enable experiential and scholarly opportunities within nanotechnology. Graduate students with strong academic records were selected to attend training events, gain research experience, and to give conference presentations.
- The Office of Graduate Studies hosted over a dozen fellowship and writing workshops resulting in an increase in fellowship applications.
- In addition, the Office hosted informal discussion luncheons, called "Chat & Chew," to engage with graduate students and hear from and engage the student population on a myriad of topics, including research as well as student life.



## SUNY Poly Leads in Innovative Research and Economic Development

SUNY Polytechnic Institute's annual sponsored program expenditures for the cumulative fiscal year ending 6/30/19 totaled \$352M. SUNY Poly received 136 awards during this period and boasted 47 distinct project principal investigators, with federal, state, and private funds supporting nearly 200 organized research projects and everything from fellowships to public service and training.

### I. Research Highlights

- **SUNY Poly Professor Awarded \$2,078,000 U.S. Army Research Laboratory Grant to Manufacture Ultra-High Voltage Power Electronics Chips for Next-Gen Military and Commercial Applications**

Associate Professor of Nanoengineering Dr. Woongje Sung received \$2,078,000 in total federal funding from the U.S. Army Research Laboratory (ARL) for advancing the "MUSiC," or the Manufacture of Ultra-high-voltage Silicon Carbide devices. By developing higher voltages compared to traditional silicon-based devices and enabling more reliable and robust switching devices in SiC, this research will establish a leading-edge process for the creation of power electronics chips with a range of military and commercial applications, from solar energy and electric vehicles to the electrical grid, for example.

- **Dr. Nate Cady Awarded \$1.7M from AFRL for Next-Gen Computer Systems Research and Development**

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

- **Dr. Janet Paluh Receives \$970,000 from New York State Health Department to Address Spinal Cord Injury with Nanotechnology**

Associate Professor of Nanobioscience Dr. Janet Paluh received more than \$970,000 from the New York State Department of Health—Spinal Cord Injury Research Board (NYSCIRB) for collaborative research using nanotechnology and human stem cell-derived neural cell therapies to create an effective treatment platform for spinal cord injuries in patients.

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

SUNY Poly announced that Associate Vice President for Research and Adjunct Professor of Nanoscience Dr. Satyavolu Papa Rao and Professor of Nanobioscience Dr. Nate Cady were awarded \$900,000 in funding from the Rome-based Air Force Research Laboratory (AFRL) to



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conduct research on brain-inspired (neuromorphic) computing systems comprised of quantum devices operating at cryogenic (below -450 °F) temperatures. Research and development of such neuromorphic computing systems that mimic the functioning elements of a human brain will be conducted in SUNY Poly's 300mm wafer fabrication facility using the same tool platforms on which advanced computer chips are built. This research can accelerate the development of large scale, fab-friendly superconducting optoelectronic systems (harnessing both superconductivity and light) that could compute 30,000 times faster than the human brain, but at the same level of energy efficiency.

- **NIH-NIEHS Grant for \$446,000 Supports Colon Cancer Research by Professor Michael Fasullo**  
SUNY Poly Associate Professor of Nanobioscience Dr. Michael Fasullo was awarded \$446,000 by the National Institutes of Health National Institute of Environmental Health Sciences (NIH-NIEHS) to investigate with a number of partners how genetics can increase the risk of diet-associated colon cancer. This effort could lead to the creation of improved diagnostics to help prevent colon cancer in the first place.
- **Dr. Shadi Shahedipour-Sandvik Receives \$360,000 for More Advanced Batteries Research**  
Professor Shadi Shahedipour-Sandvik was selected to receive \$360,000 in federal funding from the U.S. Army Research Office—U.S. Army Contracting Command-Aberdeen Proving Ground to develop more advanced batteries with greater energy storage capabilities compared to conventional batteries. In partnership with a team of collaborators at the Army Research Laboratory, Dr. Shahedipour-Sandvik's team will explore the potential of "betavoltaic" (BV) and "beta photovoltaic" (BPV) devices, which use beta particles, or electrons, that are produced by a radioactive source to generate electricity that can be especially useful for applications in environments where a long battery life is required, such as in remote sensing and space applications.
- **U.S. Dept. of Energy Grant to Dr. Serge Oktyabrsky of \$200,000 to Enable Medical and Nuclear Security Applications**  
Professor of Nanoscience Dr. Serge Oktyabrsky was awarded \$200,000 from the U.S. Department of Energy (DOE) for research aiming to demonstrate a novel type of scintillation detector that upon detection of small particles, can emit measurable light with unsurpassed speed and yield. This greater sensitivity and speed is essential for several DOE High Energy Physics areas of research, and could help to detect the interaction of quantum particles to better understand their properties and actions, for example, in addition to the potential for medical and nuclear security applications.
- **Dean Andrew Russell Received \$198,000 to Investigate Maintenance**  
College of Arts & Sciences Dean Andrew Russell was the Principal Investigator for a \$198,000 award from the Alfred P. Sloan Foundation for a project that explores the significance of maintenance, infrastructure, and repair in contemporary society. Together with his collaborator Lee Vinsel (Virginia Tech), Russell's research and scholarship on this issue was featured in *The New York Times* and *Education Week*, and Russell presented invited lectures at Georgia Tech,





Texas Tech University, and Rensselaer Polytechnic Institute.

- **Dr. Janet Paluh’s \$162,000 Award from NYS Dept. of Health Supports Traumatic Brain Injury Research**

Associate Professor of Nanobioscience Dr. Janet Paluh received a \$162,000 award from the New York State Department of Health—Stem cell science NYSTEM Innovative, Developmental, or Exploratory Activities (IDEA) program for collaborative research with the University at Albany to identify new types of injury and repair biomarkers based on cell communication to benefit prognosis or diagnosis of traumatic brain injuries. More than 2.8 million Americans annually and more than 400 people daily in New York sustain a brain injury.

- **Dr. Spyros Gallis Awarded \$130,000 by NSF for Quantum-Related Research**

Assistant Professor of Nanoengineering Dr. Spyros Gallis (Spyridon Galis) was awarded \$130,000 by the NSF—Directorate of Engineering for research which will help develop critical physical properties and provide a fundamental understanding of new silicon carbide photonic nanostructures that have erbium ions added to them for the realization of high-temperature CMOS-compatible quantum emitters at telecommunications wavelengths. The emission from erbium ions at telecommunication wavelengths can be controlled and amplified by these photonic nanostructures and can improve light-based devices, with applications in areas such as biological imaging and sensing, quantum storage of single-photons, and long-distance quantum communications.

- **Dr. Zhanjie Li Awarded \$75,000 NSF Grant for Advanced High-Strength Steels Research**

SUNY Poly’s Assistant Professor of Civil Engineering Dr. Zhanjie Li was awarded \$75,000 as part of an overall \$400,000 National Science Foundation (NSF) grant with collaborating researchers at Johns Hopkins University for ongoing work to further increase material efficiency and lower initial and life-cycle costs by optimizing the building structural system with careful application of Advanced High-Strength Steels (AHSS), while still maintaining the cost-effectiveness and the competitiveness of domestic steel production.

- **SUNY Poly Professors Receive Slocum Dickson Foundation Grant for Research into Blindness**

A grant from the Slocum Dickson Foundation is supporting faculty researchers at SUNY Poly and could lead to the next steps as part of an eventual cure for blindness. The project has two parts: the image analysis program using deep learning algorithms developed by Assistant Professor of Computer Science Dr. Michael Reale and his students, and the physically based model of the blood flow in the retina of the eye developed by Dr. Andrea Dziubek, Associate Professor of Applied Mathematics as well as Associate Professor of Applied Mathematics Dr. Edmond Rusjan and students, in collaboration with researchers at the University of Missouri and University of Illinois at Urbana-Champaign. The goal is to increase the accuracy of the blood flow model by treating both velocity and pressure as primary variables. On the image analysis side, the team will enhance the detection and repair of vessel discontinuities, in addition to starting the preliminary work necessary to couple the two pieces.



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- **SUNY Poly 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. The CATN2 completed the first-round competition of fiscal year 2018-2019 for funding under the CATN2 MIP to catalyze faculty/staff-led projects that can lead to commercial success in collaboration with a NYS company by leveraging and expanding SUNY Poly's research, development, and deployment capabilities.
- **Collaborative Research Grant Aims to Remediate Fibrosis**

In collaboration with UAlbany, who received \$3.4 million from the National Institute of Dental and Craniofacial Research (NIDCR) to research the causes of fibrosis and find ways to remediate it, SUNY Poly professors, Dr. Yubing Xie and Dr. Susan Sharfstein, will engineer scaffolds to grow mesenchymal stem cells (MSCs).
- **Professor of Psychology Dr. Andrew Gallup Shares New Findings Related to Human Behavior in Virtual Reality**

Prof. Gallup, Psychology program coordinator, in partnership with the University of British Columbia (UBC), revealed that human behavior in virtual reality (VR) can be altered by social cues in the real world, but that the same cues placed in VR leave behavior unchanged.
- **The American Institute for Manufacturing Integrated Photonics (AIM Photonics)**

AIM Photonics features research, development, and commercialization nodes in Albany, NY, at SUNY Polytechnic Institute, as well as in Rochester, NY, where state-of-the-art equipment and tools are being installed at AIM Photonics' TAP (Test, Assembly and Packaging) facility. The program also includes an outreach and referral network with the University of Rochester, Rochester Institute for Technology, Columbia University, Massachusetts Institute of Technology, University of California-Santa Barbara, University of Arizona, as well as New York State community colleges. In total AIM Photonics includes more than 100-signed members, partners, and additional interested collaborators.
- **NSF AIM Photonics Announces Best-in-Class 300mm Silicon Photonics Multi-Project Wafer (MPW) Performance**

AIM Photonics announced a number of technical updates leading to best-in-class 300mm silicon (Si) photonics-based multi-project wafer (MPW) performance for the initiative. Complementing these developments, AIM Photonics' Si photonics process design kit (PDK) continues to advance, enabling industry-leading performance as a result of AIM Photonics' library of both active and passive high-performance photonic components, as well as interfaces, schematics, and models for the development of optical modules and systems.



## II. SUNY Poly Research Partnerships Highlights

- **Governor Cuomo Announces IBM Investment to Create Artificial Intelligence Hardware Center at SUNY Poly's Albany Campus**

Governor Andrew M. Cuomo announced in February that IBM, a long-time anchor tenant at SUNY Poly's Albany campus, plans to invest over \$2 billion to grow its high-tech footprint at the campus and throughout New York State. This includes the establishment of an "AI Hardware Center" at SUNY Poly for artificial intelligence-focused computer chip research, development, prototyping, testing, and simulation. Once established, the AI Hardware Center will be the nucleus of a new ecosystem of research and commercial partners, and further solidify the Capital Region's position as a global hub for innovative research and development. Empire State Development will provide a \$300 million capital grant over five years to the Research Foundation for SUNY to purchase, own, and install tools necessary to support the AI Hardware Center.

- **Empire State Development and SUNY Announce New Research Partnership with Applied Materials**

Empire State Development (ESD) and SUNY, with SUNY Poly, announced that Applied Materials Inc., will partner with New York State to establish the Materials Engineering Technology Accelerator (META Center) on SUNY Poly's Albany campus. ESD will provide a five-year, \$250 million capital grant for the Research Foundation for SUNY to purchase and install tools in an advanced research and development facility that will further position the Capital Region to be a global materials engineering research hub. Applied Materials will bring in \$600 million investment through META Center. Additional high-tech partners are also expected to locate at the META Center.

- **SUNY, SUNY Poly, Griffiss Institute, and Air Force Research Laboratory (AFRL) Partner to Connect and Advance New York's Quantum Information Science and Engineering Capacity and Community**

Experts in quantum information science and engineering, representing academia, government, and industry from across New York State, convened on November 29 and 30, 2018 at Griffiss Institute to take part in an intensive, two-day Quantum Science and Engineering Workshop. Hosted by The State University of New York, Griffiss Institute, and the Air Force Research Laboratory's Information Directorate, this inaugural workshop brought together leading scientists, engineers, industry executives, and policymakers to develop a comprehensive strategy for interdisciplinary collaboration in quantum information science research, innovation, and workforce development. SUNY Poly was highlighted for supporting a wide-range of research, development, and commercialization efforts, and providing capabilities for quantum solutions as well as supporting the development of a quantum-smart workforce.



## STUDENT LIFE

### Residential Life and Housing Highlights

- SUNY Poly's Office of Student Affairs established, for the first time, three fully engaged Residence Hall Councils, and applied for and achieved the SUNY Residential Hall Association's affiliation with NACURH, the National Association of College and University Residence Halls. SUNY Poly Residence Hall Councils, and their overarching governing board, the SUNY Poly Residence Hall Association, provide the institution's residential students with the opportunity to participate in residential decision making and programming. The Residence Hall Councils and Associations also developed their own branding and marketing materials, and SUNY Poly's professional staff members have used and expanded those materials during Open Houses, Visit Days, and other engagements.
- A groundbreaking was held for Hilltop Hall, the first new SUNY zero-net, carbon-certified residence hall with 257-bed residential capacity, to be located at SUNY Poly's Utica campus. The event featured SUNY Poly leaders and area dignitaries.
- The Office of Student Affairs also oversaw expanded commuter programming which included:
  - Completion of focus groups with commuter students;
  - Partnering with Student Activities to establish Commuter Appreciation Week;
  - Laying the groundwork for a Commuter Student Organization; and
  - Assisting with the advocacy and planning for a Commuter Lounge, which is scheduled to open 2019-2020.
- The Assistant Director of Residential Life for First Year Residential Programming partnered with the Director of Community Standards and Leadership to establish the First Year Leadership Experience in 2018-2019.
- Residential Student Satisfaction Surveys for the 2019-2020 year highlighted the continued positive feedback that students have for the department and the positive impacts that SUNY Poly's RAs (Residential Assistants) have on a day-to-day basis. Response rate on the survey is 41%, and a number of resultant highlights from the survey are provided below:
  - *My one-to-one conversation with my RA was meaningful to me:* 95% agree to strongly agree
  - *My RA is someone I trust and respect:* 97% agree to strongly agree
  - *My RA fosters an environment that is conducive to study:* 91% agree to strongly agree
  - *I believe my residence is safe and secure:* 97% agree to strongly agree
  - *My experience with the Central Residential Life Office is positive:* 91% agree to strongly agree



## Community Standards and Leadership Highlights

- As part of a First Year Leadership Experience, 30 first year students participated in a seven-part workshop series in the fall/spring semester with a capstone project at the conclusion. They explored leadership, skill development, and personal growth, as well as contributed to student life at SUNY Poly with projects and initiatives. Their projects connected them to an office on campus to learn the basics of program planning and execution.
- Fifty-four students participated in a two-day intensive leadership experience. “Leadership Institute 2019” was focused on self-awareness using the “The Five Practices of Exemplary Leadership” and “The Student Leadership Practices Inventory”, a 360-degree leadership measurement tool. This program helps student leaders explore the necessary skills to utilize in their student clubs and organizations while the building “soft skills” employers are looking for in college graduates.

## Athletics and Recreation Highlights

- In recent years, Athletics has taken the initiative and implemented strategies to assist student athletes with their academic progress, making a difference in SUNY Poly’s student athletes’ overall performance. A record number of student-athletes were honored for their academic success this past year, with key highlights noted below:
  - The overall average fall term GPA was 3.01;
  - 17 student athletes made the President's Excellence List (GPA 3.80+);
  - 27 student athletes made the President's Achievement List (GPA 3.60-3.79);
  - 62 student athletes made the Dean's List (GPA 3.20-3.59);
  - 121 student athletes (more than half) had higher than a 3.00 GPA; and
  - The four-year graduation rate is 70% for the 2013 cohort.
- SUNY Poly’s women’s cross-country team won its first-ever Conference Championship. “Coach of the Year Award” was awarded to Head Coach Bill Tylutki for the first time in women’s cross-country.
- SUNY Poly women’s basketball won their third Conference Championship in four seasons, sending the Wildcats to the NCAA Tournament for the third time in program history. Kiersten Leos was named the Conference Tournament MVP.
- The SUNY Poly men’s and women’s lacrosse teams were Conference runner up, with both making it to the Conference Championship Game for the first time in SUNY Poly’s history. The men’s playoff run was the first time that the team has qualified for postseason play in the history of the program.



## Career Services

- Throughout the 2018-2019 Academic Year, the Office of Career Services provided innovative and custom programming to both SUNY Poly campuses, serving over 700 students.
- Additionally, Career Services provided the following to support and enhance SUNY Poly’s academic experience:
  - Over 30 career development and success workshops, which included employer information sessions;
  - Twelve campus-wide events such as SUNY Poly’s first ever Fall Career & Internship Fair that drew over 50 employers from the CNY region and beyond;
  - Two diversity weeks (fall and spring) with organizations seeking to provide internships and career preparation opportunities to underrepresented students;
  - “Mock Interview Day”, providing students an opportunity to enhance their interviewing skills, resulting in two hires from the event and over 40 participants;
  - A Career Week program at SUNY Poly’s Albany campus that included employer information sessions, workshops, and a career-networking mixer for students and employers.

Program Title	Number of Employers	Number of Students
Graduate Information Fair	12	30
Fall Career & Internship Fair	60	210
Etiquette Dinner	2	40
Mock Interview Day	26	47
Spring Career Fair	110	300

- In addition to the programming listed above, SUNY Poly Career Services conducted a First Destination Survey (FDR) resulting in a significant response rate from the Class of 2019 (May graduates) and a Student Experience Survey (SES), assessing students perceptions, learning experiences, and outcomes of career services programming for the past year. Both surveys are being analyzed by the Office of Institutional Research to inform future programming design.

## Student Affairs Highlights

SUNY Poly's Office of Student Affairs highlights for academic year 2018-2019 also include the following:

- The Graduate Student Government at Albany (GSGA) held its first annual Art Showcase, bringing together students, staff, faculty, and industry partners who showcased their own art pieces in a variety of mediums.
- The SUNY Poly Women Engineers Club at SUNY Poly’s Albany campus held a Women’s Luncheon for students, staff, faculty, and industry partners.
- A Senior Send-off Series involved the completion of a series of events targeted at graduating seniors to celebrate their success and continue to foster a strong affinity for SUNY Poly, sending



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them off with support as they become alumni.

- Wildcat Weekend, with homecoming for alumni and a family weekend, all saw strong attendance throughout the weekend, with record numbers at a number of community-oriented events that included fireworks, S'mores, and a root beer float event in the pavilion, with more than 200 in attendance.
- As part of a "Day of Service" on September 28th, 2018, multiple locations around Utica/Rome areas were secured as volunteer opportunities for our students, faculty, and staff to conduct outreach in the community. This involved the coordination of transportation and location assignments to those who signed up to participate in order to make this event successful for both those taking part and also for the community SUNY Poly impacted.

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