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INSTITUTE ANNUAL REPORT

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The spiral staircase in Coda (the newest addition to Tech Square) is the world's tallest and is central to the building's collaborative core, connecting different levels of open space.

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The ribbon-cutting for Coda, the flagship building of Tech Square, took place on May 23, 2019.

## LEGACY OF EXCELLENCE PROVIDES A STRONG FOUNDATION AS NEW CHAPTER BEGINS

Since its founding, Georgia Tech has been devoted to serving our community by driving progress. We see technology not as an end in itself, but as a means of improving the human condition. We educate scientists and engineers, professionals, business and policy leaders, who can leverage the power of science and technology to create economic opportunity and help us all live healthier, safer, more productive, more enlightened lives.

Our impact has never been greater. We educate more students, conduct more research, and contribute more to our local economy than ever before. Our graduates are being sought by the most innovative companies in the world and are creating their very own. The story of Georgia Tech's progress continues to be told from multiple perspectives — from our ever-burgeoning physical presence, both locally and overseas; to the numerous accolades amassed by our faculty; to the successes of our alumni and their companies. Our advances continue to be truly impressive, but more than that, they continue to be driven by a key factor that has remained consistent: our commitment to making a difference.

Under the leadership of President G.P. "Bud" Peterson, the legacy of the past decade certainly demonstrates that commitment at every turn. The proof manifested in areas such as the drastic increase in enrollment, with undergraduate applications more than tripling and graduate applications doubling; four consecutive years of a noteworthy first-to-second-year retention rate of 97%; an exceptionally successful capital campaign that exceeded its goal by 20%, raising more than \$1.8 billion; total research expenditures and other sponsored activities nearly doubling from \$532 million in FY 09 to almost \$978 million in FY 19; and Georgia Tech being invited to join the Association of American Universities, the most prestigious higher education association in the world. Since 2012, Tech Square has grown dramatically, with the establishment of 35 corporate innovation centers and research labs. The latest addition to Tech Square, Coda, a 755,000-square-foot high-rise that houses the Institute's high-performance computing center, opened in May 2019 (pictured, left).

Such examples of excellence can serve as a foundation from which Georgia Tech will continue to live up to its motto of Progress and Service. Our presidential transition signals the successful completion of a strategic plan cycle that began in 2009 and the beginning of a new one. In the next few months we will reach out to our entire community to craft a new vision for the next decade, build on our strengths, and take a holistic look at how we want to make our mark on the world from this point.

As one of the world's great technological institutions and most respected public universities, the Institute is a strategic asset for Atlanta and Georgia. It is an engine of economic growth, an invaluable national resource in our system of science and technology. And it is a global innovation hub that holds the key to helping us deal with some of society's most pressing challenges. It is in places such as Georgia Tech, with extraordinary talent and a strong mission of public service, that we will find our best path forward.



Ángel Cabrera President, Georgia Institute of Technology

It is truly a great time to be a Yellow Jacket. As Georgia Tech's 12th president, I am grateful for the opportunity to unite our many constituencies as we build upon the foundation that those who came before us so skillfully laid.

## SHRAHEGY INACTION

In the past year, advances related to the Institute's 25-Year Strategic Plan, launched back in 2010, were steady and varied, with significant headway made on initiatives such as Creating the Next in Education; the promotion of institutional core values; and the Comprehensive Administrative Review, the University System of Georgia's program to assist all universities within its system in improving efficiencies. Progress on all these fronts bodes well for the future that is envisioned for Georgia Tech in time for its 150th anniversary in 2035.



## Building a Solid Foundation for Creating the Next in Education

The 2018-19 academic year was foundational for Georgia Tech's Commission on Creating the Next in Education (CNE). The Institute-wide Commission, composed of more than 50 faculty members, staff, and students, is focused on fostering a vision for a nimble, innovative, and global Georgia Tech that cultivates engagement in learners from kindergarten through the rest of their lives.

After the launch of the Commission's 2018 *Deliberate Innovation, Lifetime Education* report, the Office of the Provost began designing a long-term strategy that would enable the Commission to bring its powerful vision to life. To that end, the provost established a functional CNE Program Office in the Center for 21st Century Universities (C21U).

Led by Rich DeMillo, executive director of C21U, the CNE Program Office immediately began organizing the staffing and resources required to support the Commission's long-term success. In partnership with Georgia Tech Strategic Consulting, the CNE Program Office initially focused on formalizing a portfolio of more than 60 affiliated projects and building a community of practice to address key aspects of the CNE Report: developing an immersive culture of deliberate innovation and realizing the Georgia Tech commitment to lifetime education.

With that in mind, Georgia Tech's Center for Deliberate Innovation, a science-based, cohort-driven, experiential learning environment for highly innovative teams, sponsored Spring 2019 deliberate innovation workshops in conjunction with the CNE Program Office to better equip the innovative capacity of a growing number of Tech faculty members.

With regard to realizing the Tech commitment to lifetime education, Georgia Tech's Center for Education Integrating Science, Mathematics, and Computing (CEISMC), which is nationally reputed for increasing STEM achievement in K-12 education, was reorganized. It is now a center within C21U. CEISMC directly connects the CNE Program Office to K-12 education through research, outreach, and teacher professional development. This change reflects the aspiration for lifelong learning outlined in the CNE Report and further aligns both C21U and CEISMC with the future-oriented vision of the Institute's Strategic Plan. CEISMC programs annually impact more than 39,000 students, 1,720 teachers, 74 school districts, and 200 schools.

Other CNE projects are also underway. A redesign of for-credit offerings to facilitate flexible on-ramps and more agile programs of study is well along a path to widespread availability. "Advising for a New Era" projects aimed at more effective guidance for all Georgia Tech learners are changing the face of student advising. Artificial intelligence tools to support learning are now available to a broad cross-section of students. Blockchain certificates are now available and can be used instead of paper certificates to document training and levels of mastery. And a prototype of the Georgia Tech atrium™ will be launched in 2019-20, creating opportunities for learners of all ages to explore next-generation services and new learning experiences.

In summarizing his sentiments on the Commission's efforts, Provost and Executive Vice President for Academic Affairs Rafael L. Bras said, "Georgia Tech is known for innovative engineering and design, supported by data-driven decision-making and thorough scientific methodology. That is why the CNE Program Office has taken this same approach in its design of support systems for both institutional culture change and practical implementation of the Commission's vision."



Find the report online at provost.gatech.edu/cne-home.



Employees contributed ideas during a Collaborative Solution Workshop, as part of the Comprehensive Administrative Review process at Tech.

#### Comprehensive Administrative Review to Enhance Institute's Efficiency

In an effort to improve administrative service delivery and redirect savings to student instruction and support, Georgia Tech has been developing an action plan for the University System of Georgia (USG)'s Comprehensive Administrative Review (CAR). Sonia Alvarez-Robinson, executive director of Strategic Consulting, has been facilitating the process, working alongside Institute and USG leaders to outline Georgia Tech's phased approach to address the following administrative functions: information technology, human resources, budget/finance, and communications.

To that end, the CAR Working Group has collected a great deal of information to inform the CAR Action Plan, with the Georgia Tech values serving as the starting point and highlighting our commitment to cultivating character and preserving public trust.

The CAR data has provided insight about how administrative services have been delivered and experienced across the campus. The Working Group met several times with leaders of the four functional areas - information technology, human resources, budget/finance, and communications - and Collaborative Workshops were used as a means of providing input to the Working Group about ideas for organizing the work more efficiently. During these large group discussions, those who perform the work in the four areas came together and shared suggested solutions. Faculty roundtables also provided robust discussion about opportunities for improvement and generated some additional ideas about making enhancements. In addition, units and individuals provided suggestions for how to advance our administrative processes.

This multi-pronged assessment revealed that there are many opportunities to improve administrative services through better coordination, cooperation, and consistency. The plan, therefore, is to move toward an operating model for these four administrative services that better utilizes central units to foster organizational excellence across the Institute.

Additionally, across the Institute, interdependent enterprise efforts to improve organizational effectiveness are underway, including projects such as the implementation of ServiceNow, Workday, and OneUSG Connect.

## Survey Provides Clarity for Shaping Ethical Campus Culture

Feedback received from the Ethical Culture Indicator, an employee survey distributed in Fall 2018 to assess the Institute's ethical climate, indicated that the campus community needed clarity regarding the Institute's values. So, the Office of the President convened a working group to clarify and promote the Institute's recommended core values.

Then-President G.P. "Bud" Peterson began the process by asking the Institute's four representative bodies — the Faculty Executive Board, the Staff Council, and the graduate and undergraduate Student Government Associations — to suggest values. Once those were compiled along with values recommended by the Institute's leadership, a working group was formed to determine the final recommended values: integrity, respect, community, accountability, and adaptability.

"More than 30 values were suggested by the representative bodies and the Institute's senior leaders," said Lynn Durham, then-associate vice president and chief of staff for the Office of the President. "The working group discussed each suggested value in the context of how it applies to Georgia Tech's culture and the ethical values and behaviors that should be demonstrated by us all. Ultimately, five values were selected and many other suggested values were incorporated in the final description and expected behaviors."

The five core values with definitions of each are posted to Tech's ethics website.

In May, the Executive Leadership Team began working with Institute Communications and the vice president for Ethics and Compliance to make the core values an integral part of the campus conversation. Leadership will also work with Human Resources and the Office of Faculty Affairs to include the demonstration of the core values in the annual performance evaluation for all employees. Ling-Ling Nie, Tech's general counsel and vice president for Ethics and Compliance, leads a discussion on "Adapting to the Compliance Function in a New Industry."



# OUR SOARING SULUID MANUES

When it comes to Yellow Jackets' accomplishments, the list is wide-ranging from achievements such as superior academic milestones, to the invention of popular consumer products, and the initiation of first-time national community service efforts. With unending pride in our students, the Institute continues to refine its student support to ensure this continued trajectory of excellence.

## Mock Trial Team Makes History at Regionals

In February, Georgia Tech made mock trial history with all three of its teams, for the first time, notching bids to the Opening Round Championship Series of the American Mock Trial Association Tournament.

In Jackson, Mississippi, the A and B teams ranked second and seventh place, respectively. Two members of the A and B teams were named Outstanding Witnesses, while three others were named Outstanding Attorneys. The C team finished fifth at a different regional tournament in Orlando, Florida.

Sarah Jane Lowentritt, a civil engineering major and member of Mock Trial's C team, said, "Getting 100% of our teams a bid at regionals shows how our program is getting stronger." Noting that five of the C team's nine members are first-year students, she said that this is a demonstration of "how [the team is] improving in both recruiting new members and helping new members improve throughout the year."



## Medical Device Wins 2019 Invention Competition

A device to help physicians guide needles into the spine accurately and safely won the 2019 grand InVenture Prize of \$20,000, a free U.S. patent filing by Georgia Tech's Office of Technology Licensing (valued at approximately \$20,000), and automatic acceptance into CREATE-X's Startup Launch program.

Two recent Tech biomedical engineering graduates, Dev Mandavia and Cassidy Wang, and mechanical engineering alumnus Lucas Muller teamed up to develop the medical device using ultrasound technology coupled with a custombuilt guidance tool.

Mandavia, a 2017 InVenture Prize winner, said that the mission of his team, Ethos Medical, is "to get lumbar punctures placed successfully on the first try, every time."

The team had been working full-time to launch the company since inventing the device on campus in 2018. They have also been working closely with Atlanta-area doctors to develop a prototype that medical professionals will use. "The next step for us is to begin the FDA testing process," said Wang.

The team called TremorTrainer placed second with its therapeutic weighted glove invented to help tremor sufferers regain some of their fine motor skills especially for everyday tasks such as eating and writing.

The People's Choice Award and \$5,000 went to Nix for their e-cigarette device, custom-coded to taper, reduce, and ultimately eliminate nicotine intake.

Following their March win of the 11th rendition of Tech's InVenture Prize, Ethos Medical also participated in the spinoffs of the original competition, travelling to North Carolina to face off against inventors from all 15 Atlantic Coast Conference universities at the 2019 ACC InVenture Prize. Additionally, they qualified as finalists in the inaugural Georgia InVenture Prize presented by the Georgia Chamber of Commerce.





TremorTrainer members Colten Spivey, Nicolette Prevost, and Nisha Goddard won second place.



#### Student-Run Conference Unites Colleges on Mental Health

Georgia Tech's first student-run mental health event, the Intercollegiate Mental Health Conference (IMHC), produced a 114-page document with over 70 best practices compiled from the input of peer institutions in attendance at the weekend-long event.

"The creation of a public best practices and policies database for college mental health is, as far as I'm aware, unprecedented," said Collin Spencer, director of Georgia Tech's Mental Health Student Coalition (MHSC).

Students and campus leaders from 10 universities, along with clinical practitioners, researchers, and mental health advocates, convened at the Georgia Tech Hotel and Conference Center and addressed one of the most pervasive issues in American higher education through panel and group discussions, case studies, lectures, and networking. This approach not only succeeded in bringing together a wide cross-section of stakeholders for direct interaction, but also resulted in the creation of a publicly accessible best practices repository and a shareable database of successful college mental health programs.

"My hope is that we will be able to learn from what other universities have tried and adapt the strategies that have proven successful on other campuses," said John Stein, vice president for Student Life and the Brandt-Fritz Dean of Students Chair.

The MHSC first proposed the concept in 2018, and it was quickly embraced by the Student Government Association, Office of the President, Division of Student Life, the Counseling Center, and the Georgia Tech Research Institute. Additionally, Georgia's Department of Behavioral Health and Developmental Disabilities, the National Alliance on Mental Illness, and the Carter Center lent their support.

## Jackie Knee Named the 2019 Marshall Sherfield Fellow

As a Fulbright Fellow in rural Thailand, in the United States at the Centers for Disease Control and Prevention, and at Georgia Tech as a fifth-year Ph.D. student in environmental engineering, Jackie Knee has been singularly focused on making people healthier. Once she finishes her degree in late 2019, she'll continue pursuing that mission in Britain as the 2019 Marshall Sherfield Fellow.

"The burden of infectious enteric disease is too high and disproportionately affects the most vulnerable worldwide young children, the elderly, and the poor," Knee said. "I have worked in the [water, sanitation, and hygiene] sector for over 10 years because I have seen the progress that has been made in terms of disease reductions, and I want to help ensure that progress continues."

The Marshall Sherfield Fellowship offers one engineer or scientist from the United States the chance to do postdoctoral research in the United Kingdom for up to two years. Knee has proposed several new avenues of inquiry, including tracking microbial exposure risk in the food chain.

"The idea is to understand when, where, and how food becomes contaminated and to quantify exposure risks to consumers in Mozambique and Kenya," said Knee, who works with the Carlton S. Wilder Assistant Professor in the School of Civil and Environmental Engineering Joe Brown. "These data will then be used to inform the design and implementation of an intervention aimed at decreasing exposure and health risks." Generally, Knee focuses on how pathogens in the environment get into people's digestive tracts and make them sick. She also studies ways to limit that exposure, looking for the strategies that lead to the lowest human health risks.

Knee will work at the London School of Hygiene and Tropical Medicine (LSHTM), in part because it's one of the world's oldest and most respected schools of public health, but also because it offers her the chance to focus on new skills.

"I also hope to expand my background in epidemiology and biostatistics, and there are few better places in the world than LSHTM to learn and practice these skills," she said.

At Tech, Knee has been working on a three-year evaluation of whether implementing improved sanitation services in Maputo, Mozambique, actually improves the health of young children in low-income neighborhoods.

Brown, her advisor, said Knee is the driving force behind the project.

"Jackie brings an impressive level of dedication and passion to her work, really inspiring all of us in my research group. Her Ph.D. work — where she has applied new approaches to measuring sanitation-related infectious disease represents an outstanding contribution in terms of advancing our understanding of how infrastructure influences health outcomes among the world's most vulnerable populations," he said.





#### Four Yellow Jackets Named Goldwater Scholars

Four Tech students were awarded the scholarship named to honor the late Senator Barry Goldwater. The prestigious award was given to 496 college sophomores and juniors out of an estimated 5,000 applicants for the 2019–20 academic year.

With the recipients awarded up to \$7,500 each, the scholarship is intended to help them continue their education and pursue a research career in the natural sciences, mathematics, or engineering. Those selected at the end of their second year receive two years of funding; those selected in their third year receive one.

**1. Sherry Sarkar**, a computer science major, was selected in the field of computer and information sciences and engineering. She plans to earn a Ph.D. at the intersection of computer science and mathematics, working in academia and developing her passion for teaching.

2. Lee-Kai Sun, a biomedical engineering major, plans to pursue an M.D./ Ph.D. in immunology or biomedical engineering. Sun wants to find new strategies for rewiring the immune system in the treatment of refractory diseases.

3. Eleanor "Lily" Turaski, a materials science and engineering major, was selected for her interest in materials research. She plans to obtain a Ph.D. in materials science and engineering, with a focus on electronic materials and designing more efficient solar cell technology. She also wants to teach as a university professor.

4. Julia Woodall, also a biomedical engineering major, is motivated by her interest in the power of physics in disease. She ultimately wants to work in academia to develop mechanical models of living systems at the cellular and systems levels.



## FIXD Makes Multiple Innovative Gadgets Lists

FIXD is a stellar example of the startup success that comes out of Georgia Tech. It appeared in the No. 1 spot on the *State of Gadgets* list of "17 Genius Tech Gadgets Already Selling Out In 2018" as well as on *My Smart Gadgets*' list of 19 "Insanely Cool Gadgets." FIXD also featured in *Money Inc.*'s "20 Cool Gadgets to Make Life Easier in 2018."

The brainchild of a team of Yellow Jackets with backgrounds in mechanical and biomedical engineering, and computer science, FIXD is a device for affordably monitoring car health and maintenance.

Five years ago, then-undergraduates Rachel Ford and John Gattuso, and recently graduated Kevin Miron, began



John Gattuso (center), CEO and co-founder of FIXD, with COO Frederick Grimm (left) and CTO Julian Knight (right).

working on the sensor. The work was part of the newly introduced Startup Lab designed to teach students to channel their ideas into startups, covering everything from customer discovery to creating sustainable businesses. Later on, a fourth student, Rikin Marfatia, joined the team.

The team was one of eight that also completed Startup Summer, a 12-week Georgia Tech internship for students wanting to launch startups based on their own inventions and prototypes.



## Phase I Construction of Campus Center Project Underway

Four new buildings that promise to dramatically enhance campus will come out of the renovations of Georgia Tech's Student Center.

Dubbed the Campus Center project, the phased undertaking will encompass a 15-acre site from the Campus Recreation Center to the Clough Undergraduate Learning Commons. The outdoor space between buildings will be punctuated by a series of walkways, plazas, and opportunities for social, creative, intellectual, and restorative engagement.

To minimize disruption to the campus community and help ensure continuity of services, construction is being undertaken in two phases. Completion of the entire Campus Center project is expected in late 2022.

Phase I of the construction project focuses on the development of the four new buildings: an exhibition hall, two pavilions, and a standalone café.

When Phase I of the project is complete, the new exhibition hall and pavilions will provide temporary space for the Student Center's critical functions, such as dining, mail services, student organizations, and retail, during Phase II construction. Phase II, renovation of the existing Student Center building, is expected to last from Summer 2020 through late 2022.



#### Campus Creates Gender-Inclusive Single-Occupant Restrooms

More than 150 single-occupant, gender-inclusive restrooms have been designated in 63 buildings, including in housing and athletic facilities, on Tech's campus.

"This step represents continued progress toward creating more open and welcoming campus facilities that are useful for every member of our community," said Jennifer Hubert, interim associate vice president, Institute Planning and Resource Management.

In addition to the restroom conversions and new signage installations, Tech is also updating the online campus map to reflect the location of these restrooms. Moving forward, Georgia Tech will review campus needs for additional genderinclusive restrooms as buildings are renovated or constructed.

#### Georgia Tech Introduces Only Graduate Degree in Georgia Dedicated to Sustainability

Georgia Tech recently launched the only graduate degree in the state fully dedicated to sustainability issues: the Master of Sustainable Energy and Environmental Management (MSEEM).

The highly technical, science-based, and interdisciplinary program was approved by the University System of Georgia's Board of Regents in February. It will prepare students to deliver factbased policy expertise through robust analytical techniques and a deep understanding of energy and environmental issues and sustainability practices. MSEEM students will study topics such as sustainable energy and voluntary environmental commitments, utility regulation and policy, Earth systems, economics of environmental policy, big data and policy analytics, climate policy, and environmental management. They will also learn analytical techniques used to estimate and evaluate sustainability metrics, be able to expertly assess the context of energy and environmental problems, and understand environmental ethics and its implications for sustainability practice.

The program will combine professional instruction from the nationally ranked School of Public Policy with Georgia Tech's top-notch engineering, business, and planning faculties.

Students can complete the degree on campus or online as full-time students. They also have the option to enroll parttime and complete the degree online.

In addition to the master's degree, Tech is also offering a Certificate in Sustainable Energy and Environmental Management, which can be completed in one or two semesters and can be earned separately or in combination with the master's degree.





## New Cybersecurity Master's Degree Offered Online for Less Than \$10,000

Georgia Tech, in collaboration with edX, has launched a new online cybersecurity master's degree that's being offered for less than \$10,000.

The Online Master of Science in Cybersecurity (OMS Cybersecurity), an interdisciplinary collaboration between the School of Computer Science, the School of Public Policy, and the School of Electrical and Computer Engineering, is designed to address a severe global workforce shortage in the field. According to the 2017 Global Information Security Workforce Study, the shortage is expected to reach 1.8 million people by 2022.

Georgia Tech is the only nationally ranked top-10 university to offer such a program at a tuition rate intended to increase accessibility and affordability. The degree has been offered on campus since 2002.

OMS Cybersecurity is Tech's third at-scale online degree program. It follows the same model as the groundbreaking Online Master of Science in Computer Science program, which launched in 2014 and has enrolled approximately 10,000 students overall. Tech followed that success in 2017 with the Online Master of Science in Analytics.

## College of Business and Morehouse School of Medicine Partnership Offers M.D./MBA Program

Tech's Scheller College of Business and Morehouse School of Medicine have partnered to offer an M.D./MBA program. Students complete their first three years as medical students at Morehouse before entering the Scheller College of Business for a rigorous one-year MBA program. The final year, students return to Morehouse to complete their fourth year of medical studies.

By offering this dual degree, Morehouse and the Scheller College are preparing students to provide high-quality health care in a smart, efficient way.

"Tomorrow's physician must be business-savvy, possess a lot of financial and managerial acumen, and also be entrepreneurial in their mindset. Our curriculum not only develops managerial and financial acumen, but also develops techsavvy and entrepreneurial thinking. This combination of skills enables our M.D./MBA students to thrive and excel as physicians," said Scheller College Dean Maryam Alavi.



SHINING

During one of the most active times of transition in Georgia Tech's history, much has changed — but among the most important things that have not: the highquality results and prolific output of our dedicated employees, as evidenced by the continued steady stream of awards and accolades.

## Bhatti Appointed Associate Chair for Innovation and Entrepreneurship in ECE

Pamela Bhatti is the new associate chair for Innovation and Entrepreneurship in the School of Electrical and Computer Engineering (ECE).

In this role, Bhatti leads the School's support of faculty members' entrepreneurial activities. She also manages the programs associated with ECE's large number of corporate partners and affiliates, and supports the partnership with the School's Advisory Board.

Bhatti joined ECE in 2007, established a graduate student peer mentoring program, and served as a co-chair for the recent ECE Strategic Planning/Strategic Doing Committee. She also serves as the ECE representative on the College of Engineering Strategic Planning Committee, and she is a Grand Challenges Faculty Fellow. At the Institute level, Bhatti participated in the Provost's Emerging Leaders Program in 2018 and received the Class of 1934 Outstanding Interdisciplinary Activities Award in 2017. She has also been a Hesburgh Teaching Fellow in the Center for Teaching and Learning and currently serves on the Academic Faculty Senate.

## New Deans for Colleges of Computing and Sciences

In April, the Institute announced that Charles Isbell, then professor and executive associate dean of the College of Computing, would be assuming the role of dean and John P. Imlay Jr. Chair in the College of Computing. In the College of Sciences, Susan Lozier accepted the role of dean and Betsy Middleton and John Clark Sutherland Chair.

Lozier, a faculty member at Duke University since 1992, serving in various leadership roles including department chair, faculty

senate chair, vice provost for strategic planning, and co-chair of Duke's effort to reimagine graduate education, said she is keen "to continue the pursuit of both fundamental and convergent science, and to support mechanisms that encourage bold ideas, entrepreneurial efforts, and productive partnerships."

Isbell shared similar sentiments about his new role: "I am honored to be selected

as the next dean and John P. Imlay Jr. Chair of the College of Computing as we prepare for the next generation of learners. Even in rapidly changing times, I believe Georgia Tech and the College of Computing are well-positioned for the future. I am committed to working with faculty, staff, and students within the College and our colleagues around campus to continue to take risks and effect change

so that Georgia Tech continues to provide global leadership in the field of computing and beyond."

> Since joining Tech as an assistant professor in the College of Computing in 2002, Isbell has helped advance academic, research, and administrative leadership roles and has been instrumental in College of Computing initiatives such as the Threads program, the Online Master of Science in Computer Science,

and the Constellations Center for Equity in Computing.

## More Women Take The Reins

The number of women in high visibility leadership roles increased throughout Georgia Tech in FY 19. This included the addition of three new Vice Presidents and then-Associate Vice President and Chief of Staff Lynn Durham to the Institute Executive Leadership Team (ELT). Later, Durham was named interim vice president for Government and Community Relations and assumed the role of vice president of Institute Relations full time. The other appointments are:

- Kasey Helton Associate Vice President for Campus Services
- Renee Kopkowski Vice President for Institute Communications
- Ling-Ling Nie General Counsel and Vice President for Ethics and Compliance

Clockwise from top left: Lynn Durham, Kasey Helton, Renee Kopkowski,

Ling-Ling Nie

## Renowned Poet Appointed Bourne Chair in Poetry

In August 2018, Professor Illya Kaminsky began his role as the Margaret T. and Henry C. Bourne Jr. Chair in Poetry. In addition to joining the faculty of the School of Literature, Media, and Communication, he became the new director of the Poetry@Tech Program.

Born in Odessa, Ukraine, he is the author of *Dancing in Odessa* and several other books. He has edited many collections of poems and essays, including *Ecco Anthology of International Poetry*, which has been called "a modern classic." In 2018, he was awarded the prestigious John Simon Guggenheim Memorial Foundation Fellowship in Poetry. His poems have been translated into numerous languages around the globe, and his books have been published in multiple countries including Turkey, France, Mexico, Spain, and China, where his poetry was awarded the Yinchuan International Poetry Prize.

#### ATDC, GTRI Welcome New Leadership

In November 2018, Georgia Tech named John Avery as its director of the Advanced Technology Development Center. And in June, it was announced that James Hudgens would become a Georgia Tech senior vice president and director of the Georgia Tech Research Institute, effective September 2.

## Wolf Receives IEEE's Harry H. Goode Memorial Award

Marilyn Wolf, Farmer Distinguished Chair in Embedded Computing Systems and Georgia Research Alliance Eminent Scholar at Georgia Tech, has received the IEEE Computer Society 2019 Harry H. Goode Award for "contributions to embedded, hardware-software co-design, and real-time computer vision systems."

The Goode Award was established to recognize achievements in the information processing field that are considered either a single contribution of theory, design, or technique of outstanding significance; or the accumulation of important contributions on theory or practice over an extended time period.

The IEEE Computer Society is a global leader in providing access to computer science research, analysis, and information.



## Ahuja, Koon Named to National Academy of Engineering

Krish Ahuja, Regents Professor of aerospace engineering, and John Koon, civil engineering professor of the practice, have joined 31 previous inductees from the Institute as members of the prestigious National Academy of Engineering (NAE).

Ahuja's work focuses on areas such as acoustics facilities design, flow control, and advanced signal processing. Koon has built a career as one of the foremost experts in treating industrial wastewaters and has helped develop some of the fundamental practices environmental engineers use today.



#### Four Faculty Members Named AAAS Fellows

Of the 416 members elected as fellows to the American Association for the Advancement of Science (AAAS) – the world's largest general scientific society — the four from Georgia Tech were:

David Gottfried, principal research scientist in Georgia Tech's Institute for Electronics and Nanotechnology, for "distinguished contributions to the field of nanoscale science and engineering, particularly for management of user research facilities and networks at the regional and national level."

**Diana Hicks**, professor in the School of Public Policy, for "distinguished contributions to the evaluation of national and international research and development enterprises, and for outstanding leadership in science and technology policy education."

Satish Kumar, professor in the School of Materials Science and Engineering, for "distinguished contributions to the field of fibers, nanocomposites, and carbon materials; for their synthesis, functionalities, and properties; and for tailoring the interphase in nanocomposites."

Zhiqun Lin, professor in the School of Materials Science and Engineering, for "distinguished contributions to the field of precision synthesis of a rich variety of nanocrystals using nonlinear block copolymer nanoreactors for energy conversion and storage."



## Egerstedt Elected to the Royal Swedish Academy of Engineering Sciences

Magnus Egerstedt, the Steve W. Chaddick School Chair of the School of Electrical and Computer Engineering, has been elected as a Foreign Member of the Royal Swedish Academy of Engineering Sciences. He was honored for his work on multirobot systems and for his previous role as the executive director of Georgia Tech's Institute for Robotics and Intelligent Machines.

The Royal Swedish Academy of Engineering Sciences (IVA) is an independent academy whose mission is "to promote the engineering and economic sciences and the advancement of business and industry for the benefit of society."

Egerstedt has been a member of the ECE faculty since 2001. He holds secondary appointments in the Woodruff School of Mechanical Engineering, the School of Interactive Computing, and the Guggenheim School of Aerospace Engineering.

#### **Five Faculty Members Receive Regents Recognition**

In August 2018, the University System of Georgia (USG)'s Board of Regents appointed four Tech faculty members as Regents Professor and one as a Regents Researcher. The titles represent the highest academic and research recognition bestowed by the USG and demonstrate distinction and achievement in teaching and scholarly research.

#### The four Regents Professors are:

- Ajay Kohli, professor and Gary T. and Elizabeth R. Jones Chair in Management in the Scheller College of Business.
- **Timothy Lieuwen**, professor and David S. Lewis Jr. Chair in the Guggenheim School of Aerospace Engineering, and executive director of the Strategic Energy Institute.
- Catherine Ross, professor and Harry West Chair for Quality Growth and Regional Development in the School of City and Regional Planning, director of the Center for Quality Growth and Regional Development, and deputy director of the National Center for Transportation Systems Productivity and Management.
- John Stasko, professor in the School of Interactive Computing and director of the Information Interfaces Research Group.

The Regents Researcher is:

• **Michael Rodgers**, principal research scientist in the School of Civil and Environmental Engineering and director of the Georgia Tech Air Quality Laboratory.

## Microbiologists Join Prestigious Leadership Group

The American Academy of Microbiology (AAM), an honorific leadership group within the American Society for Microbiology, elected Joel Kostka and Joshua Weitz among its 109 new fellows in 2019.

Kostka is a professor in the Schools of Biological Sciences and of Earth and Atmospheric Sciences. Weitz is a professor in the School of Biological Sciences. Both are members of the Parker H. Petit Institute for Bioengineering and Bioscience.

AAM Fellows are elected annually through a selective peer-review process based on records of scientific achievement and original contributions that have advanced microbiology.

Kostka is well-known for his research in environmental microbiology. His lab characterizes the role of microorganisms in the functioning of ecosystems, especially in the context of bioremediation and climate change. Weitz's research focuses on the interactions between viruses and their microbial hosts.







#### **Dunham-Jones Among Women in Architecture Award Winners**

Ellen Dunham-Jones, professor and director of the Master of Science in Urban Design program, was selected as one of the 2018 winners of *Architectural Record*'s Women in Architecture awards. Dunham-Jones, a leading urbanist and authority on sustainable suburban redevelopment, was honored for her visibility and contributions to women in field design.

Tech's research enterprise continues to enjoy tremendous growth, with total research expenditures and other sponsored activities increasing from \$908 million in FY 18 to nearly \$978 million in FY 19. Structural changes have been implemented to ensure that the Institute can keep pace with this promising expansion and efficiently continue producing the results that make Georgia Tech one of the world's leading research universities.

# EXPANDING AND REFINING

## Tech's Biomedical Engineers Enable Groundbreaking Pediatric Surgery

In fall 2018, Children's Healthcare of Atlanta performed Georgia's very first procedure to place 3D-printed tracheal splints in a pediatric patient. A crossfunctional team of Children's surgeons used three custom-made splints, which Georgia Tech's biomedical engineers helped create using experimental 3Dprinting technology, to assist the breathing of a 7-month-old patient battling life-threatening airway obstruction.

"Research that can be translated into more effective care at the bedside is why our collaboration with Georgia Tech is so important for the future of pediatric care in Georgia," said Donna Hyland, president and CEO of Children's Healthcare of Atlanta.

The patient who received the surgery was battling both congenital heart disease and tracheobronchomalacia, a condition that causes life-threatening airway obstruction. During his six-month stay in the Pediatric Intensive Care Unit at Children's, he experienced frequent episodes of airway collapse that could not be corrected by typical surgery protocols. The clinical team proposed surgically inserting an experimental 3Dprinted tracheal splint, a novel device still in development, to open his airways and expand the trachea and bronchus.

Scott Hollister, who holds the Patsy and Alan Dorris Endowed Chair in Pediatric Technology (a joint initiative supported by Georgia Tech and Children's), and who is also director of the Center for 3D Medical Fabrication at Tech and a professor in the Coulter Department of Biomedical Engineering, developed the process for creating the tracheal splint using 3D-printing technology at the University of Michigan C.S. Mott Children's Hospital prior to joining Georgia Tech. The Children's procedure was the 15th time a 3Dprinted tracheal splint was placed in a pediatric patient.

## **Research Enterprise Restructured**

A Georgia Tech graduate with master's and doctoral degrees in electrical engineering, husband to a Tech industrial engineering graduate, and father of two current Tech students, Chaouki T. Abdallah is a Yellow Jacket through and through. And the unique perspective that these multidimensional touch points has afforded him in his new role as executive vice president for Research (EVPR) have enabled him to position the research enterprise "to sustain growth, exploit efficiencies where they may exist, and maximize the critical research impact of faculty, staff, and students."

Abdallah announced an organizational restructure in March to provide improved service support for Tech's entire research operation through increased collaboration and resource sharing, as well as a coordinated approach designed to strengthen the administrative ties between the research and academic divisions.

The restructure followed an in-depth assessment by Abdallah that involved several components including a review of the Comprehensive Administrative Review (CAR) report and preliminary CAR Working Group recommendations, and examination of various studies of the EVPR office, Interdisciplinary Research Institutes, the Office of Sponsored Programs, and entrepreneurial activities assessments provided by Tech and outside analysts. Abdallah also reviewed the structure and function of research offices at peer institutions.

"In conjunction with the objectives of the Comprehensive Administrative Review, and building on the many strengths that exist in our current personnel and processes, I believe we have established a new structure with an eye toward better service," Abdallah said.

Additionally, Abdallah oversees the Industry Partnerships portfolio, a new structure combining all current activities related to Tech's industry relationships. And Jennifer Herazy is now chief administrative officer for Academics and Research, reporting jointly to the provost and EVPR.

"These changes will strengthen our current administrative practices and build closely coordinated and streamlined services, reduce duplication of Under the new structure, the following positions have direct reporting lines to Abdallah:

- Senior vice president and director of Georgia Tech Research Institute
- Vice president of the Enterprise Innovation Institute
- Vice president for Research Operations
- Vice president for Research and director of Georgia Tech Research Corporation and Georgia Tech Applied Research Corporation
- Associate vice president
  for Research Computing
- Vice president for Interdisciplinary Research

efforts, and increase overall operational efficiency," said Rafael L. Bras, provost and executive vice president for Academic Affairs and K. Harrison Brown Family Chair.

The splints were created using reconstructions of the patient's airways from CT scans, and in a complex 10-hour surgery, the Children's team of surgeons successfully placed three 3D-printed splints around the patient's trachea. The splints will eventually be absorbed into the body, allowing for expansion of the trachea and bronchus.

The 3D-printed tracheal splint is still under development; safety and effectiveness have not yet been determined and it is, therefore, not available for clinical use. The Children's team sought emergency clearance from the FDA to move forward with the procedure under expanded access guidelines.

In 2015, Georgia Tech and Children's formed The Children's Healthcare of Atlanta Pediatric Technology Center on the Tech campus to further advance pediatric research. <text>

### HEAL Coming to Ivan Allen College Thanks to \$3.3 Million Research Partnership

In 2018, Tech and the American College of Radiology's Neiman Institute announced a five-year, \$3.3 million research partnership to establish the Health Economics and Analytics Lab (HEAL) within the Ivan Allen College of Liberal Arts.

HEAL focuses on applying big data analytics and artificial intelligence to large-scale medical claims databases — with a focus on medical imaging — to better ascertain how evolving health care delivery and payment models affect patients and providers.

"HEAL will provide research to inform the national medical imaging policy debate and develop new approaches for improving population health," said Tech Professor of Economics and Executive Director of the Neiman Institute Danny R. Hughes, who leads the lab. "Drawing on Georgia Tech's unparalleled strength in interdisciplinary research, HEAL is uniquely positioned to exploit the vast stores of medical data now available to ensure we move toward a sustainable health care system."



HEAL supports full-time postdoctoral researchers, graduate research assistants, and affiliated Tech faculty to produce both methodological and policy-oriented research. A secondary aim is to provide training and mentorship to radiologists interested in performing research in health economics and health policy.

In addition to financial support, the Neiman Institute provides HEAL researchers access to their extensive data resources, including largescale medical claims databases covering millions of U.S. residents.

"This partnership provides a tremendous opportunity to leverage the Neiman Institute's policy expertise with the analytical capabilities of a worldclass engineering institution to address the pressing problems of improving population health, increasing access to medical care, and reducing medical costs." said Geraldine McGinty, chair of the American College of Radiology's Board of Chancellors.

#### **Undergraduate-Designed App Helps Fight Human Trafficking**

An updated mobile application designed by undergraduates in the College of Computing for the human trafficking prevention organization Airline Ambassadors International (AAI) could drastically reduce human trafficking via airlines.

First developed in 2015, the TIP Line application received an update from students working in the CS Junior Design class, making reporting to authorities faster and more reliable by bringing trained users directly into contact with local law enforcement at the destination airport rather than depending on largely unreliable national hotlines.

Instead of tipping off one of over 190 global national hotlines, many of which only function during local work hours and also suffer from a high rate of false reporting, TIP Line's trained reporters are automatically connected with the correct authorities, many of whom have also taken a peer-to-peer training class with the airline personnel.

TIP Line challenges state-of-the-art techniques in reporting human trafficking by air because of its peer-to-peer and time-sensitive nature, as well as its capabilities in providing a data-rich format that allows video, photo, voice, and text to be anonymously transmitted to assigned law enforcement in real time.

The app allows a user to choose whom to contact with the information. A geo-location function can help determine which phone number is appropriate, or users can select a destination airport to find the best contact in the app's database. If a different authority is required, users can scroll through a list of available numbers also stored in the database. Then, they are given the option to provide a description, video, audio, or photo as evidence to the local authority, providing additional information to discern the threat and how to apprehend the perpetrator and rescue the victim.

Currently, this version of the app is being used by over 7,000 trainees – airline flight crews, airport staffs, and others.

The TIP team, as the Tech students are affectionately called, aims to present the app to Interpol in hopes of further integrating it with enforcement agencies and, eventually, taking it beyond human trafficking.

## Deep Learning Helps Robot Find Emotions

By combining music with deep learning, Tech researchers have demonstrated that communication simply needs empathy and a tune to take place.

"What we are most excited about is the ability to synthesize various attributes of music, language, and movement through deep learning, and project music as the core element of a robotic communication to show that our robots can understand and convey human emotion," said Gil Weinberg, founding director of the College of Design's Center for Music Technology, School of Music professor, and School of Interactive Computing adjunct professor.

Using deep learning analysis of music and language datasets, the team trained Shimi, a personal robot, to communicate emotions using non-linguistic channels. Shimi can now also analyze a person's tone and speech in order to respond in an emotionally appropriate way. When Shimi debuted in 2012, it played songs from a user's library, analyzed the music, and responded with corresponding gestures. But now, Shimi can learn emotional cues in people's voices and respond with emotive voice and movement.

"By modeling humans' affective communication cues, such as body gestures and vocal prosody, we've created a language focused on emotion. Society has seen countless efforts to recreate humanoid robots to interact with humans. Many of these robots fall prey to the same issue as their predecessors: the 'uncanny valley.' In the uncanny valley, robots simply become too close to human, without being human, which tends to lead to a sense of eeriness and revulsion. What then if a robot wasn't trying to sound exactly like a human? What if we celebrated a robot for what it is, and for the things it can do that humans can't?" Weinberg said.





## Open Source Machine Learning Tool Could Help Choose Cancer Drugs

The selection of a first-line chemotherapy drug to treat many types of cancer is often a clear-cut decision governed by standard-of-care protocols, but what drug should be used next if the first one fails?

That's where Georgia Tech researchers believe their new open source decision support tool could come in.

Using machine learning, the open source tool could help clinicians choose the chemotherapy drug most likely to attack the disease in individual patients.

"By looking at RNA expression in tumors, we believe we can predict with high accuracy which patients are likely to respond to a particular drug," said John McDonald, a professor in the School of Biological Sciences and director of its Integrated Cancer Research Center. "This information could be used, along with other factors, to support the decisions clinicians must make regarding chemotherapy treatment."

The research, which could add another component to precision medicine for cancer treatment, was reported in the journal *Scientific Reports*. The work was supported in part by the Atlanta-based Ovarian Cancer Institute, the Georgia Research Alliance, and a National Institutes of Health fellowship.

The system will be made available as open source software, and McDonald's team hopes hospitals and cancer centers will try it out. Ultimately, the tool's accuracy should improve as more patient data is analyzed by the algorithm. He and his collaborators believe the open source approach offers the best path to moving the algorithm into clinical use.

"To really get this into clinical practice, we think we've got to open it up so that other people can try it, modify if they want to, and demonstrate its value in real-world situations," McDonald said. "We are trying to create a different paradigm for cancer therapy using the kind of open source strategy used in internet technology."

Open source coding allows many experts across multiple fields to review the software, identify faults, and recommend improvements, said Fredrik Vannberg, an assistant professor in the School of Biological Sciences. "Most importantly, that means the software is no longer a black box where you can't see inside. The code is openly shared for anybody to improve and check for potential issues."

Vannberg envisions using the decision-support tool to create "virtual tumor boards" that would bring together broad expertise to examine RNA data from patients worldwide.

"The hope would be to provide this kind of analysis for any new cancer patient who has this kind of RNA analysis done," he added. "We could have a consensus of dozens of the smartest people in oncology and make them available for each patient's unique situation." Sample tubes from sequencing equipment in Georgia Tech's Petit Institute for Bioengineering and Bioscience.

# ECONOMIC DEVELOPMENT

Key to Georgia Tech's overall success as an institution is our success in helping boost the economies of the communities we serve in and around Georgia. By tapping into and engaging local businesses and communities. we have been maximizing our collective strengths and meaningfully fostering economic development.

## GTRI Celebrates Opening of Cobb County Research Facility South Campus

The Georgia Tech Research Institute (GTRI) celebrated the grand opening of its Cobb County Research Facility (CCRF) in spring with a ribbon-cutting ceremony.

Located on Lockheed Martin's Marietta campus and adjacent to Dobbins Air Reserve Base, the south campus, named CCRF-South, now houses four newly renovated buildings — plus 20 acres of undeveloped land — that have been developed into large testing and research spaces as well as renovated offices.

The estimated \$42 million expansion has allowed GTRI to fit its growing portfolio and staffing needs, doubling its original footprint established in 1978.

CCRF-South is home to four of eight GTRI laboratories: the Aerospace, Transportation, and Advanced Systems Laboratory (ATAS); the Cybersecurity, Information Protection, and Hardware Evaluation Research Laboratory (CIPHER); the Electronic Systems Laboratory (ELSYS); and the Sensors and Electromagnetic Applications Laboratory (SEAL). Laboratories on the campus will continue to research solutions and engineer technologies that support national security, economic development, health analytics, and food processing.

For more than 40 years, GTRI and Lockheed Martin have collaborated on groundbreaking projects. The expansion of GTRI's campus facilitates an even closer relationship between the two organizations. GTRI, in partnership with Lockheed Martin, is building a community that will not only change the economic landscape of south Cobb County but also continue to strengthen GTRI's impact on the nation's technological advances.

## Smart Communities Address Housing, Transportation, Flooding Issues

As part of the Georgia Tech-led Georgia Smart Communities Challenge begun in September 2018, four Georgia communities collaborated with local partners and Georgia Tech research teams on yearlong projects to help drive the state's smart development.

"We define 'smart development' as the integration and application of technologies to improve the quality of life," said Debra Lam, managing director of Smart Cities and Inclusive Innovation at Georgia Tech. "There is a misconception that smart community innovations always must start in a major city and trickle down to smaller places, but innovations can trickle up as well. They can be developed more quickly in smaller communities because you have all stakeholders in the room: the mayor and city manager, public agencies, community and neighborhood groups, industry and business."

Each community received \$50,000 in grants and \$25,000 from Georgia Tech in research support. The communities also raised matching funds.

"A next step will be to spread what's learned from these smart development projects to other Georgia communities and beyond," said Lam.

- The four localities chosen for 2018 were: • **Albany**, a city in the southwest corner of
- the state, drew on Smart Communities

support to develop and evaluate an automated housing registry that could help answer the question: Why do public investments in housing and infrastructure fail to revitalize some blighted neighborhoods?

- **Chamblee** used its funding to study how improving urban design and passenger experiences can help build ridership for the shared autonomous vehicle.
- Chatham County in coastal Georgia used its Smart Communities support to develop a sensor network partnered with data analytics for more accurate localized flooding forecasts for improved emergency planning and response.
- **Gwinnett County** chose to engage multiple stakeholders across the state to set the standard for application of connected vehicle technology. This will improve mobility and traffic safety by working toward implementing a master plan for autonomous real-time data sharing among connected vehicle applications, signals, and other roadway sensors. On June 18, the 2019 winning proposals were named: Columbus Smart Uptown, Macon Smart Neighborhoods, Milton Smarter Safer Routes to School, and Wood-

stock Smart Master Plan and Corridor Study. Georgia Power is the lead sponsor of the Georgia Smart Communities Challenge, and additional financial support is provided by the Atlanta Regional Commission.



Georgia Tech's Christopher Le Dantec presents at the Georgia Smart Communities Challenge meeting in Chamblee. (Inset: An artist's rendering of an autonomous vehicle.)



#### \$4.3 Million Secured to Advance Tech Square Phase III

The University System of Georgia's FY 2020 budget included \$4.3 million in planning and design funds for Phase III of Technology Square.

Tech Square Phase III will be located on the northwest corner of West Peachtree and Fifth streets. Initial programming envisions a two-tower complex, which will likely contain graduate and executive education for the Scheller College of Business and the Stewart School of Industrial and Systems Engineering, and other programming. The project may also include a large plaza with street-level retail and an underground parking deck.

At an estimated cost of about \$200 million, Phase III would provide more than 400,000 gross square feet. The earliest the building could open would be 2022.

The overarching purpose behind Tech Square, which was established in 2003, is to foster solid connections and collaboration between the Institute and the business community. Today, the area is recognized as a thriving innovation ecosystem thanks to a robust network of students, faculty, researchers, startup entrepreneurs, and global corporations. Dover's Mindsparq and Georgia-Pacific's PointA are the latest corporate innovation centers to take up residence in Tech Square.

## Ports Authority, Tech, and Center of Innovation for Logistics Sign Memorandum of Understanding

Through a 2018 Memorandum of Understanding (MOU), Georgia Ports Authority (GPA), Georgia Tech, and the Georgia Center of Innovation for Logistics have created a new relationship aimed at supporting the state's logistics industry in economic development, research, and education.

The goal of the MOU is to bring advanced research, evolving global logistics trends, and analysis from the world to Savannah. By tapping into the hands-on expertise at GPA and the Georgia Center of Innovation for Logistics — as well as the high-tech analysis and research at Georgia Tech's Supply Chain and Logistics Institute — cargo owners and third-party logistics providers will gain insight into everything from when and where to build infrastructure to improved efficiency in cargo routing.

Matt Markham, director of the Georgia Center of Innovation for Logistics, said the collaborative effort further strengthens the state's position as an economic development leader.

"Most companies that choose Georgia as their home depend on its world-class logistics for their success," Markham said. "Our new relationship builds on our center's goal of providing company-specific analyses and facilitating connections between logistics providers and potential clients."

The multi-modal network is designed to combine ocean, truck, rail, and air transportation to create optimal conditions for an easier and faster network.





#### New Energy Management Improvement Program Helps Manufacturers Improve Competitiveness

The Georgia Manufacturing Extension Partnership (GaMEP), an economic development program of Georgia Tech's Enterprise Innovation Institute, has launched a new program to help manufacturers boost their competitiveness by implementing ISO 50001 energy management best practices.

The Southeast MEP Energy Management Program is being funded with a grant from the U.S. Department of Commerce's National Institute of Standards and Technology Manufacturing Extension Partnership (MEP).

"[It] aims to help companies in the Southeast accelerate their energy and cost savings, and reduce greenhouse gas emissions by incorporating best practices as outlined by ISO 50001," said Bill Meffert, GaMEP's group manager for energy and sustainability projects.

The ISO 50001 Energy Management System, an international standard that GaMEP had a role in developing, provides business and industry with an energy performance improvement framework.

Participants in the Southeast MEP Energy Management Program will take a series of classes and webinar sessions, and receive onsite coaching over a 12-month period. Completing the program allows them to be certified by the U.S. Department of Energy as 50001 Ready by showing they've implemented the standard into their operations.

"This energy management system is applicable to a whole host of industries from textiles and floor coverings, to food and beverage, to automotive manufacturing," Meffert said. "Incorporating these standards and changing processes for energy usage can really make a difference to the bottom line, while also helping companies meet their competitiveness and sustainability objectives."

A medium- to large-sized company with 250 employees or more could spend more than \$1 million a year on energy, including electricity, natural gas, fuel, and water.

Since the ISO standard's adoption in 2011, the GaMEP has helped more than 70 facilities in North America to implement ISO 50001. With offices in 10 regions across the state, the GaMEP has been serving Georgia manufacturers since 1960.

## Coda Opens for Collaboration

On May 23, Georgia Tech and Portman Holdings officially opened Coda, the flagship building for the Institute's Technology Square — an area dubbed "the Southeast's premier innovation neighborhood."

Developed by Portman Holdings and Databank, the 755,000-square-foot structure is believed to be the largest of its kind: a facility built to actively encourage the kind of collaboration between university researchers — including students — and industry that can lead to new technologies.

Georgia Tech is the anchor tenant, occupying about 50% of the available space. The rest will be leased to companies such as ThyssenKrupp, Keysight Technologies, and WeWork, which will be home to several startup companies. Coda is also directly responsible for attracting Anthem Technology to the area. The company aims to move some 1,000 employees to Tech Square.

In 2016, Invest Atlanta, the City of Atlanta's development authority, estimated that Coda could have an economic impact of \$813.8 million over the next two decades.

"Collaboration among different disciplines, and between academia and industry, will be critical to developing solutions to the complex societal challenges facing us in the years ahead," said Chaouki Abdallah, Georgia Tech's executive vice president for Research. "Coda is intended to facilitate that through a unique design including a collaborative core with a spiral staircase that creates opportunities for unanticipated collisions and constructive interactions among those working in the building."

Coda will also be Tech's headquarters for research involving data analytics. Because data analytics requires significant expertise in computing, Tech has relocated its Office of Information Technology to Coda. In addition, Coda will feature a data center that will be home to much of the high-performance computing architectures Georgia Tech uses in its analytics research. Access to the data center is expected to draw additional collaborations from within Atlanta and around the country.

Coda is now home to Georgia Tech "research neighborhoods." These include three of the university's Interdisciplinary Research Institutes (IRIs), which bring together researchers from across campus to address topics too broad to be covered by a single school or program. The IRIs in Coda are the Institute for Data Engineering and Science, the Institute for Information Security and Privacy, and the Institute for People and Technology. The research

neighborhoods are spread over 11 floors of the 21-story building. To encourage collaboration between Tech researchers and industry, "We purposefully left room on many floors for like-minded companies to rent space near a given neighborhood," said Tony Zivalich, executive director of Georgia Tech's Office of Real Estate Development.

Amanda Foster (left), a research scientist in the Georgia Tech Research Institute, collaborates with research associate Megan Denham at Coda.



While enhancing our local and regional economies is a strategic priority of Georgia Tech's, so too is the priority of positioning ourselves on the international stage. As an institution of higher learning, we remain fiercely committed to ensuring that we are graduating engaged global citizens.

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# OUR CONTINUING GLOBAL

## Transitional Campus Opens in China

April saw the opening of Georgia Tech Tianjin University Shenzhen Institute (GTSI), a partnership between Georgia Tech and Tianjin University in the city of Shenzhen, often referred to as China's Silicon Valley. Some 100 people — representing Georgia Tech, Tianjin University, and students, alumni, and friends of both universities — attended the opening ceremony.

Three buildings with a total area of 208,260 square feet on 19 floors, including a dormitory building, form the transitional campus. The main building has state-of-the-art classrooms, faculty and staff offices, a library and reading rooms, an auditorium, cafeteria space, conference rooms, and faculty apartments.

The transitional campus is being provided to GTSI on a complimentary basis by the Shenzhen government until a future permanent campus can be built on nearby governmentallocated land so the two universities can offer collaborative education programs in Shenzhen. Although the city — which a mere 40 years ago was no more than a collection of fishing villages — is considered the hightech capital of China, it lacks higher education capacity for its population of 12 million.

Georgia Tech-Shenzhen has been offering the M.S. in Electrical and Computer Engineering since Fall 2014. The intention with this new facility is to offer five additional degrees that have already been approved by the University System of Georgia: a Master of Science in Environmental Engineering, a Master of Science in Computer Science, a Master of Science in Analytics, a Master of Industrial Design, and a Ph.D. in Electrical and Computer Engineering.

These additional programs are awaiting approval from the Chinese Ministry of Education, which requires educational programs to satisfy certain space and educational resource requirements before being offered.

In conjuction with the campus opening was the inaugural Sino-U.S. Symposium on Emerging Engineering Education, which brought together academic, government, and business leaders to examine the global challenges of 21st century engineering education and to enhance the dialogue between academic institutions and industry. The 208,260-squarefoot transitional campus in Shenzhen will facilitate Tech's offering of some graduate degree programs in China, as well as the Georgia Tech China Summer Program, for the next four to five years.

#### Tech Places 34th Among Hundreds Cited in Global University Rankings

Georgia Tech placed 34th among 1,258 institutions in a new ranking of world universities. Evaluation criteria included teaching, research, and the impact of publication citations. The 2019 *Times Higher Education* World University Rankings also ranked Tech 21st among 172 U.S. institutions. According to the rankings, research was Tech's strongest area, where it placed above 90% of others evaluated. Tech also ranked well in teaching, citation impact, industry income, and international outlook. Overall, the rankings considered 13 metrics ranging from teaching and research reputation to industry income and percentage of international students.

## Spring Breakers Serve Their Country and the World

In keeping with Tech's strategy of expanding Yellow Jackets' international footprint and influence, students and faculty scattered across the country — as well as the globe to serve, research, and educate during Spring Break 2019.

#### Biloxi, Mississippi

Students visit Delta Works in

the Netherlands

on a trip with the

School of Civil and Environmental

Engineering.

Alternative Service Break volunteers worked with Community Collaborations, as well as local Head Start and Boys and Girls Clubs, on early education initiatives.

#### China and Japan

The International Disaster Reconnaissance Studies class from the School of Civil and Environmental Engineering explored Chengdu, China, including a flood-control system created thousands of years ago and a city devastated by an earthquake that was preserved in tribute to those who died. They also traveled to Japan to learn more about tsunamis and human-made disasters such as the atomic bomb the U.S. dropped over Hiroshima.

#### Cozumel, Mexico

The Campus Recreation Center organized a scuba trip in partnership with Professional Education and Student Life. The trip's mission was to inspire environmental and multicultural awareness.

#### Denver, Colorado

Alternative Service Break volunteers served with GRID Alternatives to implement solar power projects.

#### Jacksonville, Florida

For the 10th year, students worked with Beaches Habitat for Humanity as part of a collegiate challenge.



### Hungary, Israel, South Africa, and China

Scheller College of Business MBA students fanned out across the globe to complete client projects as part of their international practicums. Students in the Denning Technology and Management Program visited Shenzhen University to participate in an annual undergraduate forum.

#### La Paz, Bolivia

The Environmental Technology in the Developing World class spent the week collecting water samples and conducting research on water quality.

#### Maryville, Tennessee

Volunteers worked with Once Upon a Time, a wilderness retreat located in the Cherokee National Forest, providing trail maintenance, creek cleanup, and habitat restoration.

#### Medina Bank, Belize

Students visited a rural Mayan village to expand a local community health center, working with the local organization 7Elements.

#### Monte Cristi, Dominican Republic

Volunteers helped prepare English lessons for local children, in partnership with the group Outreach360.

#### South Carolina

The Trailblazers student group explored Devils Fork State Park and Hunting Island State Park, doing environmental volunteering, hiking, and camping.

#### The Netherlands

Kari E. Watkins, the Frederick Law Olmsted Associate Professor in the School of Civil and Environmental Engineering, and her students biked through the Netherlands. The students were from her Sustainable Transportation Abroad class. They traveled about 15 miles daily, exploring what it means to be a bike-first culture where cycling receives preference as a mode of transportation.

## Georgia Tech and Georgia State Establish Atlanta Global Studies Center

Georgia Tech and Georgia State University have established the Atlanta Global Studies Center (AGSC), a national resource center and a Foreign Language and Area Studies (FLAS) Fellowship program.

The interdisciplinary center, funded by a \$2.25 million grant from the U.S. Department of Education, will focus on research and instruction geared to student populations that are underrepresented in international and advanced language studies.

It will engage college students throughout Atlanta — including STEM students; community college students; and minority, first-generation, and low-income students — with a goal of educating them for careers in business, education, security and defense, and public and governmental sectors.

AGSC will foster specialized instruction in international education and less commonly taught languages such as Arabic, Korean, Portuguese, and Hindi. In addition, the AGSC will manage FLAS fellowships for undergraduate and graduate students. Prospective fellows must enroll in language programs and will receive a full-tuition waiver and stipend.

Anna Westerstahl Stenport, chair of Tech's School of Modern Languages, spearheaded the grant proposal. She said that AGSC priorities will encompass curriculum enhancement, faculty professional development, public events, conferences, language instruction, and K-12 and community outreach.

"Our mission is to enhance access to advanced language learning and deepen knowledge of global and intercultural issues for the benefit of Atlanta-region students, faculty, and the public," said Stenport, AGSC codirector. "This will be facilitated through robust collaborations in research and instruction with Atlanta universities and with international organizations, consulates, refugee organizations, and institutions of public service and higher education in the Southeast and nationally."





Georgia Tech is a co-founder of the six-year-old Atlanta Science Festival.

Community engagement remains a top priority for the Institute in its efforts to be a thoroughly accessible and practical resource to stakeholders both on campus and beyond.

# CONNECTING WITH THE CONNECTING WITH THE

### Atlanta Science Festival Attracts Over 55,000 in Its 6th Year

Continuing to grow in popularity, the Atlanta Science Festival — of which Georgia Tech is a founding partner attracted more than 55,000 attendees to various locations throughout metro Atlanta for the 2019 rendition of this science carnival.

Over a two-week period, science lovers had the opportunity to attend more than 100 events. Many of them featured Georgia Tech faculty or groups, were hosted on campus, or had some other type of connection to Tech. The festival ended in Piedmont Park with the Exploration Expo, Atlanta's biggest interactive family science event. Georgia Tech contributed \$75,000 to help make the 2019 iteration of the festival possible.

#### 'Let's Talk' Program Introduces Informal Walk-In Consultations

In an effort to connect with students who might be unlikely to seek traditional mental health services on campus, Georgia Tech launched "Let's Talk," an outreach program designed to engage students by



providing informal walk-in consultations with Georgia Tech Counseling Center counselors at various sites across campus. It differs from formal counseling in that there is no clinical paperwork to complete, no formal intake, and no scheduled appointments. Students are encouraged to drop by and talk about whatever is important to them, in the same way they might talk with a teaching assistant, residence hall director, or academic advisor.

The service is open to all Georgia Tech undergraduate and graduate students and is appropriate for those who may be unsure about formal counseling; have a specific problem and would like someone with whom to talk it through; have a concern about a friend and want some thoughts about what to do; or are not interested in ongoing counseling but would like the perspective of a counselor.



## Petersons Log 7,500 Miles around State after 10 Years

What began as a way for then-President G.P. "Bud" Peterson and first lady Val Peterson to learn more about Georgia turned into an event that mobilized several arms of campus every year to execute a four-day road trip.

"When Val and I first arrived at Georgia Tech in 2009, we looked forward to it as a way to get to know our new state so that we could better serve its needs on behalf of Georgia Tech," said Peterson.

Since that first time, the Petersons enjoyed nine subsequent annual Georgia tours that helped acquaint them with the state's citizens, community leaders, current and prospective students, and entrepreneurs and business leaders whose companies Georgia Tech had helped create or improve.

From meeting with valedictorians and salutatorians benefitting from the Georgia Tech Scholars Program to mingling with state officials, visiting manufacturing and other business operations, and networking with Tech alumni in the farthest reaches of the state, the Petersons have connected with Georgia on multiple levels through communities in every corner. All told, they traveled nearly 7,500 miles through virtually each one of Georgia's 159 counties, and held 250 events or meetings in more than 100 cities throughout the state. In 2018 alone, they traversed nearly 650 miles through 27 counties with 30 events or meetings in 12 cities.

#### CEISMC Partnerships Support K-12 Education

Georgia Tech's Center for Education Integrating Science, Mathematics, and Computing (CEISMC) has collaborated with Code.org, a nonprofit founded in 2013 to expand access to computer science for K-12 students. Together, they will offer professional development sessions for K-12 teachers with little or no background in computer science so they can adequately prepare to offer computer science courses at the elementary, middle, and high school levels.

Through this partnership, CEISMC supports Georgia computer science teachers and trains facilitators of the Code.org curriculums. The training is meant to alleviate fears that teachers may have of teaching a subject they do not have much experience with.

Once enrolled in the program, teachers come to Tech for a five-day intensive summer workshop. After the event, the teachers receive additional long-term support through quarterly just-in-time follow-on training sessions.

Code.org has evolved and expanded in the last five years. It now has partners in all 50 states and Puerto Rico, and its curriculum is used in over 180 countries.

Besides Code.org, CEISMC's current K-12 outreach efforts extend to Atlanta's M.R. Hollis Innovation Academy. Through the partnership with Hollis Academy, CEISMC is strengthening the connection between Georgia Tech and its surrounding community and supporting the development and implementation of a high-quality STEM curriculum. Georgia Tech's direct involvement in the Academy is guided by four main priorities: strengthening the instructional program, aligning systems and resources to school needs, preparing and developing knowledgeable staff focused on quality teaching, and building a positive and engaged school culture.





## **Living Building Coming Alive**

In recent months, construction activity on one of the most innovative and sustainable buildings in the Southeast advanced rapidly in preparation for welcoming the campus community for the Fall 2019 semester.

As a building pursuing Living Building Challenge 3.1 status, The Kendeda Building for Innovative Sustainable Design has as its main purpose going beyond doing less harm. The aim is to give back to the environment — as well as to the users and occupants of the building, including The Kendeda Building director, Office of Campus Sustainability, Global Change Program, and the anticipated thousands of students and visitors expected annually. From the very beginning, the human element of this unique high performance building has helped drive the planning and design decisions.

As Americans spend approximately 87% of their time indoors, how buildings are constructed and the materials used to build and maintain them can have a profound impact on the health and wellbeing of the occupants. Access to natural elements, such as sunlight and clean air, matters when it comes to improving the human experience. Since the 1990s, researchers have been drawing correlations between access to natural light and increased test scores in the academic setting. Improving air quality (via natural and mechanical ventilation) is also associated with increases in occupant productivity — not to mention a decrease in sick building syndrome, the range of nonspecific acute illnesses or discomfort linked to time spent in a building.

#### The northwest view of The Kendeda Building demonstrates how its "porch" integrates with the building's Eco-Commons to the west.



## 

The excellence that brands Yellow Jackets in the academic arena is also clear in the world of athletics. And with new leadership and funding opportunities in the pipeline, the campus community eagerly awaits what lies ahead in the coming year.

## Coach With Impressive Track Record Heads Up Tech Football

An Atlanta-area native and former Georgia Tech football staff member, who also led Temple University to two bowl games in two seasons as the Owls' head coach, is Tech's 20th football head coach.

Geoff Collins compiled a 15–10 record in his two seasons at Temple, including an 8–4 record and 7–1 mark in the American Athletic Conference 2018. His 15 victories at Temple were the most ever by a head coach in the first two seasons at the school.

Prior to becoming head coach at Temple, Collins was one of the nation's most respected defensive coordinators, serving in the role at Florida (2015–16), Mississippi State (2013–14, co-defensive coordinator: 2011–12), FIU (2010), and his alma mater, Western Carolina (2002–05).

Collins' 26-year career also includes stints at Georgia Tech, first as a graduate assistant and tight ends coach under head coach George O'Leary from 1999–2001, then as director of player personnel under head coach Chan Gailey in 2006. During his first assignment at Tech, the Yellow Jackets were 25–12 with threeconsecutive bowl appearances during those three seasons, which were capped with a 24–14 victory over Stanford in the 2001 Seattle Bowl.

As a recruiter, he helped Georgia Tech land the highest-rated recruiting class in program history in 2006 and, in 2007, helped Alabama sign the No. 1 class in the nation, which included running back Mark Ingram, who went on to become the first Heisman Trophy winner in Crimson Tide history in 2009.

As a student-athlete, Collins totaled 194 career tackles as an outside linebacker and defensive back at Western Carolina (1989–92).



## Yellow Jackets to Play Home Games at Mercedes-Benz Stadium

Georgia Tech Athletics, AMB Sports & Entertainment, and Peach Bowl Inc. have entered into an agreement that will allow for Georgia Tech football to play one home game per year at Mercedes-Benz Stadium, from 2020 to 2024, as follows:

- 2020 Nov. 14 vs. Notre Dame
- 2021 Date/opponent TBA
- **2022** Sept. 5 (Labor Day) vs. Clemson – Chick-fil-A Kickoff Game
- **2023** Date/opponent TBA
- 2024 Oct. 19 vs. Notre Dame

Located less than one mile from the Tech campus, Mercedes-Benz Stadium opened in 2017 and is one of the world's premier sports venues. In addition to being home of the National Football League's Atlanta Falcons and the 2018 Major League Soccer champion Atlanta United, Mercedes-Benz Stadium also hosted Super Bowl LIII and the 2018 College Football Playoff championship game. In addition, it will be the site of the 2020 NCAA Final Four, with Georgia Tech serving as the host institution.

"The city of Atlanta goes hand in hand with the brand of Georgia Tech football, so taking advantage of the opportunity to play in Atlanta's premier sports venue on an annual basis is a great development for our program. Being able to play the majority of our home games in the greatest setting in all of college football, Bobby Dodd Stadium, while also having the opportunity to showcase our program in one of the finest facilities in the entire world - located nine-tenths of a mile from our campus - each season is a win-win and will be a unique feature of Georgia Tech football. It will be great motivation for our team, exciting for our fans, and a great selling point for recruits to play on a stage as big as Mercedes-Benz Stadium," said head football coach Geoff Collins.



#### Francesca Pan (center left) and Kierra Fletcher (center right) face off against Syracuse in January 2019.

## All Teams Above National Average on NCAA Academic Progress Rate

Each of Georgia Tech's 15 athletics programs boasts a multiyear NCAA Academic Progress Rate (APR) higher than the national average in their respective sports, according to data released by the NCAA. Georgia Tech is the only institution from a Power Five conference (Atlantic Coast Conference, Big Ten, Big 12, Pac-12, Southeastern Conference) that has a multiyear APR higher than the national average in each of its sports.

APR is an annual scorecard of academic achievement calculated for all Division I sports teams. It measures eligibility, graduation, and retention each academic term and provides a clear picture of the academic performance for each team in every sport. The most recent multiyear scores are based on the 2014–15, 2015–16, 2016–17, and 2017–18 academic years.

APR scores are measured on a scale of 1,000 with the threshold for penalties set at 930. In the latest APR data, two Georgia Tech teams (golf and men's tennis) posted perfect multiyear scores of 1,000. In addition, 14 out of 15 programs had scores of 980 or higher, and all 15 of the Yellow Jackets' squads came in at 971 or higher. Six teams (women's basketball, men's cross country, football, golf, men's tennis, and women's track and field) have multiyear APR scores that are 10 or more points higher than the national average for their sports.

Additionally, six of Tech's 15 programs recorded a perfect single-year APR for 2017–18: baseball, men's basketball, golf, softball, women's swimming and diving, and men's tennis.

"Each of our sports having an APR that is higher than the national average is a great point of pride for our athletics department and our Institute," Director of Athletics Todd Stansbury said. "I congratulate and thank our student-athletes and coaches for their continued dedication to academics, and also thank our academic support staff, as well as the Institute's administration and professors, for all that they do to help develop our student-athletes — the young people who will change the world."

Stansbury also singled out two Georgia Tech programs (golf and men's tennis) for receiving NCAA Public Recognition Awards for ranking among the top 10 nationally in their respective sports.





## Junior and Sophomore Named to All-ACC Women's Basketball Academic Team

Georgia Tech women's basketball junior Francesca Pan and sophomore Kierra Fletcher were named to the 2018–19 All-ACC Women's Basketball Academic Team.

This is the third consecutive year Pan has been honored on the All-ACC Academic Team; she becomes the first Yellow Jacket in women's basketball history to earn the recognition three times. The accolade is the first for Fletcher.

Minimum academic requirements for selection to the All-ACC Academic Team are a 3.0 grade point average for the previous semester and a 3.0 cumulative grade point average for the entire academic career. Athletic achievements for the 2018–19 season were also considered.

#### Athletics Passes Halfway Mark of \$125 Million Goal

Intercollegiate Athletics is one of four key areas of fundraising efforts that are part of Initiative 2020. The Atheltics goal is \$125 million during the period January 1, 2018–December 31, 2020.

"The funds will not only continue to develop Everyday Champions," according to Director of Athletics Todd Stansbury, "they will launch the Yellow Jackets toward new heights of excellence and innovation while helping us strengthen key areas and target strategic priorities in a fashion true to our Georgia Tech DNA — with determined spirit, minus excess and frills."

Fundraising for the initiative has reached \$89.6 million (as of June 30, 2019).



## OUTGOING PRESIDENT G.P. "BUD" PETERSON INSPIRED LEADERSHIP SPURRING A DECADE OF STRATEGIC GROWTH

On August 31, 2019, G.P. "Bud" Peterson concluded his tenure as Georgia Tech's 11th president, having announced, in January, his plans to return to teaching and research.

The Peterson era will undoubtedly be remembered as a seminal age — a time characterized by thoughtful and robust planning for Georgia Tech's future; visionary thinking to help realize long-term strategic goals; and dynamic and innovative engagement with the state, the nation, and the world.

Peterson began his presidency by encouraging the entire Tech community to look beyond current constraints and develop a bold 25-year Strategic Plan, *Designing the Future*. This plan would serve as an important framework for many of the advances and accomplishments under his leadership and was aligned with the launch of the public phase of the \$1.5 billion Campaign Georgia Tech.

Leading the charge to strengthen endowments for need-based undergraduate scholarships, President Peterson and first lady Valerie H. Peterson focused their efforts on significantly expanding the G. Wayne Clough Georgia Tech Promise program. Since 2009, more than 550 Tech Promise scholars all of them Georgia residents, many of them the first in their families to attend college — have earned Tech degrees.

This focus reflects the Petersons' passionately held belief that Georgia Tech offers students the experience of a lifetime and a lifetime of opportunity. They have consistently demonstrated a commitment to encouraging, mentoring, and inspiring the next generation of leaders.

To honor the decade-long legacy of Georgia Tech's 11th president, the G.P. "Bud" Peterson and Valerie H. Peterson Scholarship Endowment Fund was announced at the June meeting of the Georgia Tech Foundation. The fund was established to help students with demonstrated financial need from across the nation. The Foundation is directing a grant of \$5 million to support the initiative. Combined with initial gifts and commitments of over \$12 million provided by more than 100 Foundation trustees, along with members of the Georgia Tech Advisory Board and the Alumni Association executive committee, it will be the largest single scholarship endowment in Georgia Tech's history.

Future recipients of the Peterson Scholarship will join first-year classes that are growing increasingly strong academically and more diverse. In the past decade, overall Tech enrollment has increased by 69%. The number of women in the first-year class has increased from 32% to 40%, a historic high.

During the Peterson era, the Institute's Atlanta campus has grown to meet the changing needs of these gifted students. With 21 new facilities and 25 renovated facilities since 2009, the campus has added nearly 3 million square feet of cutting-edge space where Tech students, faculty, and researchers are pushing the boundaries of their disciplines. Research expenditures have increased by 78%, and Tech is on the leading edge in robotics, cybersecurity, manufacturing, energy, biomedical engineering, and many other disciplines.

Augmenting the events on the Atlanta campus, Georgia Tech experienced an expansion across the globe during the past decade that was unparalleled in its history. From Europe, to Asia, to Latin America, the Institute has established new programs, research centers, and campuses. This growth has created extraordinary new opportunities for students to broaden their horizons and sharpen their skills to compete in a global economy, with 58% of Georgia Tech undergraduates having an international experience before graduating.

In addition to his focus on students and the facilities that support them, Peterson also partnered with economic development agencies to attract businesses to the state and promote economic growth. These efforts have brought thousands of high-quality, 21st century jobs to Georgia and to metro Atlanta.

The story of the Peterson decade will be remembered as one in which the Institute became a globally recognized leader while remaining firmly grounded in its Georgia roots and the heart of Atlanta.

#### VALERIE H. PETERSON

#### A Legacy of Caring for Students' Well-Being

Students, alumni, faculty, and staff know firsthand how devoted to the Georgia Tech community Valerie H. Peterson was during a decade of service as first lady. Mrs. Peterson became renowned across the Atlanta region and the state as a tireless ambassador for and advocate of Georgia Tech and its people.

Among the countless campus initiatives and causes that Mrs. Peterson enthusiastically supported over the years, one effort, in particular, stands out: the mental health and well-being of Tech students. As advisory chair for Tech Ends Suicide Together, Mrs. Peterson devoted significant amounts of her time and energy speaking on campus and at national events, proving to be an invaluable partner to the Georgia Tech Counseling Center and the Division of Student Life. Tech Ends Suicide Together is a plan based on an international initiative that represents a paradigm shift from suicide prevention to suicide elimination. Working in close collaboration and cooperation with campus colleagues, students, and the entire Georgia Tech community, Tech Ends Suicide Together represents both an aspirational goal and a call to action to create a campuswide linkage of programs and support that work together to end suicide at Georgia Tech.

Although her tenure as first lady has come to a close, Valerie H. Peterson will be remembered for her passionate and inspiring leadership and her compassionate devotion to Tech's students.

## INCOMING PRESIDENT ÁNGEL CABRERA TECH ALUMNUS ASSUMES PRESIDENCY

A new chapter in Georgia Tech's 134-year history started on September 1, 2019, when Ángel Cabrera began serving as the Institute's 12th president.

Prior to his arrival at Georgia Tech, Cabrera had served as president (since 2012) of George Mason University (GMU), the largest public university in Virginia. During his tenure, GMU accounted for more than half of all public university enrollment growth in Virginia in the past decade. Under Cabrera's leadership, GMU joined the top tier of research universities in the Carnegie classification and founded the Schar School of Policy & Government, the Institute for Biohealth Innovation (a U.S. Department of Homeland Security Center of Excellence), the Potomac Center of Environmental Studies, the Point of View Center for Conflict Analysis and Resolution, and a campus in South Korea. In addition, during his administration, GMU established partnerships to expand online programs and international recruitment, and received a credit rating upgrade. Also, philanthropic gifts more than doubled, and a \$500 million campaign was successfully completed with a total of \$690 million.

Prior to becoming president of GMU, Cabrera led Thunderbird School of Global Management (now part of Arizona State University) and IE Business School in Madrid. He has been recognized as a Young Global Leader by the World Economic Forum, a Henry Crown Fellow by the Aspen Institute, and was among Carnegie Corporation's 2017 class of "Great Immigrants."

Cabrera's educational background includes studies at Georgia Tech: He earned doctoral and master's degrees in cognitive psychology at Georgia Tech, which he attended as a Fulbright Scholar. He also has a telecommunications engineering degree (the equivalent of a B.S. and M.S. in computer and electrical engineering) from Universidad Politécnica de Madrid, which has also awarded him an honorary doctorate.

For most of the past decade, Cabrera has served on the Georgia Tech Advisory Board (which he chaired in 2011) and the Council for the International Exchange of Scholars (Fulbright program). He is also a member of the Council on Foreign Relations and has served on the board of NSF's Education and Human Resources directorate, the academic board of the Monterrey Institute of Technology and Higher Education in Mexico, as chairman of International Initiatives of the Association of Public and Land Grant Universities, and as past chairman of Virginia's Council of Presidents.

"Georgia Tech will continue to excel under the leadership of Dr. Cabrera," said University System of Georgia Chancellor Steve Wrigley. "His experience, skillset, and deep ties to his alma mater will serve the campus community well, and his vision for the future will help lead Georgia Tech to new heights."

Board of Regents Chairman Don Waters echoed similar sentiments, saying, "Dr. Cabrera is an excellent choice to lead Georgia



## " It is an absolute privilege to be asked to lead this remarkable institution into its next chapter."

ÁNGEL CABRERA

Tech as its next president. I am confident that he will work diligently on behalf of students while advancing Georgia Tech's growth, priorities, and world-class reputation. On behalf of the Board of Regents, I welcome Dr. Cabrera back to Georgia Tech and look forward to working with him."

Cabrera is married to management scholar and Tech classmate Beth Fraser Cabrera and is the father of Alex (a Tech graduate and incoming doctoral student at Carnegie Mellon University) and Emilia (a junior at Harvard University). He described this latest development in his career as somewhat of a homecoming: "I am thrilled to serve as Georgia Tech's new president," he said. "My academic career was shaped here as was my personal life. My wife and I met in graduate school at Tech and our son, Alex, just finished his undergraduate degree here this year.

"In many ways, this is a wonderful homecoming for us. As a member of the Georgia Tech Advisory Board for about a decade, I have witnessed Georgia Tech's emergence as one of the leading technological universities in the world and admired its role in making Atlanta a thriving hub of innovation. It is an absolute privilege to be asked to lead this remarkable institution into its next chapter."

Cabrera is the first Spanish-born president of an American university.

## ENROLIMENT AND DEGREES

#### TOTAL HEADCOUNT ENROLLMENT

Masters

Ph.D.

Total

ENROLLMENT	FY 2009	FY 2019	% CHANGE
Undergraduate	12,973	16,047	24%
Graduate	6,440	16,675	159%
Total	19,413	32,722	69%
Full-time Equivalent (FTE) Enrollment	18,319	26,366	44%
DEGREES AWARDED			
LEVEL	FY 2009	FY 2019	% CHANGE
Bachelor's	2,695	3,719	38%

1,876

5,061

490

#### NEW DEGREE PROGRAM

Georgia Tech began enrolling students in the online M.S. in Cybersecurity degree program in the 2018–19 academic year.

## Comparison of Headcount Enrollment by Level FY 2009 & FY 2019



## Comparison of Degrees Awarded by Level FY 2009 & FY 2019

73%

7%

69%



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3,238

7,483

526

# THE PRESIDENT'S **CABINET**



Barrett H. Carson Vice President for Development



EXECUTIVE LEADERSHIP TEAM Lynn M. Durham Associate Vice President and Chief of Staff



EXECUTIVE LEADERSHIP TEAM

Chaouki T. Abdallah

**Executive Vice President for Research** 

Archie W. Ervin Vice President for Institute Diversity



EXECUTIVE LEADERSHIP TEAM

Bonnie H. Ferri Vice Provost for Graduate Education and Faculty Development



EXECUTIVE LEADERSHIP TEAM James G. Fortner Interim Executive Vice President for Administration and Finance



Renee Kopkowski Vice President for Institute Communications



Ling-Ling Nie General Counsel and Vice President for Ethics and Compliance



**Colin Potts** Vice Provost for Undergraduate Education



Dene H. Sheheane Vice President for Government and Community Relations; Interim Vice President for Institute Communications



John M. Stein Vice President for Student Life and Dean of Students

#### ALSO SERVING ON THE PRESIDENT'S CABINET IN FY19:

#### **Aisha Oliver-Staley**

Interim Vice President for Ethics, Compliance, and Risk Management

#### Lora G. Weiss

Interim Senior Vice President and Director of Georgia Tech Research Institute

## **CREATING THE NEXT®**



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