

RIT

PRESIDENT'S REPORT 2021

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FROM THE PRESIDENT

Always moving forward even during a pandemic

threw the book at us—a global pandemic, racial unrest, economic uncertainty, a fierce political battle for leadership of our nation. I'm proud to say RIT faced it all head on, pulling together our students, faculty, staff, alumni, and trustees who guided us through—and eventually will guide us out of—these turbulent times.

What kept us going was a committed community and a sharp focus on two major goals. First was to protect the health and safety of our community with a rigorous effort to stem the spread of the coronavirus. We finished the fall semester in person with an infection rate below I percent. The second was to keep RIT on track with its 2025 strategic plan and build on our hard-earned reputation as one of the nation's top universities.

Moving into 2021, RIT is forging ahead as a beacon of hope in higher education, a place where innovation and ingenuity come together to give our students a unique experience that prepares them for success in their chosen careers and as citizens of the world.

In this *President's Report 2021*, you'll read about some of our successes, a record year for research funding, the growing popularity of our Performing Arts Scholars Program, and the programming and education that earned us a Top College for Diversity award from *INSIGHT Into Diversity*.

You'll also hear about many exciting plans for the campus. Our Global Cybersecurity Institute has just opened its doors. The 52,000-square-foot, state-of-the-art center aims to meet the demand for computing security professionals, while developing future technologies

and human understanding needed to address the global cybersecurity crisis.

Design work continues and site preparation has begun on what's been temporarily dubbed the Innovative Maker and Learning Complex, which will connect Wallace Library and the Student Alumni Union. It will include huge makerspaces, a black-box theater, dance studio, and music rehearsal rooms. With its wideopen spaces and glass walls, this complex will become the epicenter of campus, a showcase for the intersection of technology, the arts, and design.

Complementing that project, we're in the process of designing a performing arts center consisting of two theaters. The first will seat 750 and will be designed specifically for musical theater but will accommodate many uses. The new facilities are an essential part of RIT's plan to develop the leading performing arts program in the nation for non-majors, attracting talented and creative students who can continue their passions for music, dance, theater, and other performing arts.

Overseas, construction of the first phase of RIT Dubai's new \$136 million campus is nearly complete. The new campus will be able to accommodate up to 4,000 students. While we work on the present, our eyes are on the future.

Because at RIT, we're always on to something—even during a pandemic.

Sincerely,



David C. Munson, Jr., President munson@rit.edu Twitter: @RITPresident

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Academics

The pandemic may have changed academics at RIT, but our high standards remain the same.



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RIT has created an action plan to grow diversity and create social equity for all.



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The university had its best year ever for sponsored research funding.





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A new Innovative Maker and Learning Complex and a performing arts center are coming to campus in 2023.



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RIT alumni captured compelling moments in 2020. They also continue to give back during the pandemic.



About the Cover

RIT has opened its new 52,000-squarefoot Global Cybersecurity Institute. Photo by Boris Sapozhnikov.



































Pandemic changes academics

Irst, RIT was forced to close campus operations in March and transition to alternative learning methods. Then, faculty and staff were tasked with developing a creative academic portfolio of online, blended, and in-person classes for the fall.

Now, RIT is preparing for the spring, which will be a mix of best practices from the last year aimed at maintaining the high academic standards for which the university is known.

"The health and safety of our students, faculty, and staff are our most important considerations as we navigate through this very complicated academic year, and all have displayed enormous flexibility, creativity, and patience," said Ellen Granberg, RIT provost and senior vice president for Academic Affairs. "We will make it through this and emerge stronger. I could not be prouder of who we are and what we have done."

In all, more than 3,000 classes, including labs and studios, transitioned from in-person to alternative learning modes in the spring

of 2020. How that monumental task would be accomplished kept staff members like Jeremiah Parry-Hill up at night.

"The best practice for transitioning an in-person course to fully online instruction is generally six months. Faculty had roughly two weeks. This was an emergency situation," said Parry-Hill, manager of instructional design for RIT Online.

Staff in the Innovative Learning Institute and RIT Online worked with faculty to bridge the gaps—meeting them where they were in the process of moving coursework

online—and create sane and optimal paths to reaching their learning objectives. "What we learned is that RIT's faculty were happy to be 'in the game' for our students and really rolled with the punches."

After the successful completion of the spring 2020 semester, culminating with a virtual commencement celebration for

graduating students, summer planning allowed several university departments to collaborate on a new look and feel in classroom spaces.

Last fall, new instruction modes, including in-person, blended, split classes, and online, enabled students and faculty to meet the six-foot physical distancing and reduced occupancy requirements for

instructional spaces. Students also added flex options, blended or in-person courses



The best practice

for transitioning an

in-person course to

fully online instruction

is generally six months. Faculty had roughly two weeks.











A Bevier Gallery spaces were transformed into classrooms to allow for physical distancing due to COVID-19.

A. Sue Weisler

Professor Thomas Warfield's modern dance class was held outside on a sunny day to allow for physical distancing.

Gabrielle Plucknette-DeVito

Professor Beth Carle works with a student in the Materials Lab, which features various equipment for testing metals.

Elizabeth Lamark

D John Ward, principal lecturer, introduces himself to the students in his Management 101 class on the first day of classes.

Gabrielle Plucknette-DeVito

Professor Alan Singer meets with students in his Zoological and Botanical Art class using Zoom technology.

A. Sue Weisler

but standards remain the same

noted by the faculty member as those where students can achieve learning outcomes by remote means.

To help mitigate the spread of the virus, the university completed instruction just prior to the Thanksgiving holiday and administered finals online to all students.

Sean Hansen, department chair of management information systems, marketing and digital business in Saunders College of Business, believes in RIT's approach, especially when he compared notes with colleagues at other universities.

"Coming into fall semester, I thought there was no way I would be able to teach the class in-person. But I have been very impressed by the university's efforts to safeguard our environment and create policies and procedures that maximize personal safety while still maintaining an in-person teaching element," he said. "I think the university's leadership

developed a plan that effectively balanced the health concerns of the entire community with the educational needs of our students."

Looking ahead to spring, RIT plans to resume classes on Jan. 25 and will eliminate spring break to keep instruction on track and reduce potential spread of the virus caused by off-campus travel. While course modalities for spring will still include a mix of in-person, blended, and online courses, the number of in-person offerings from fall to spring is increasing by nearly 12 percent, or more than 200 courses.

"Our classrooms have proven to be safe spaces, and this is a credit to the students and faculty who have worn their masks and remained physically distant during in-person instruction," Granberg said.

Vienna McGrain

COVID-19 on campus

From the first day of classes on Aug. 19 through the last day of in-person instruction on Nov. 24 on the main campus:

- RIT had 90 positive student COVID-19 cases out of a full-time student population of about 13,000.
- RIT administered 12,500 COVID-19 tests and also implemented an early surveillance program that included wastewater testing twice a week.
- In-person classes were never canceled.
- Quarantine and isolation availability on campus was above 90 percent for most of the semester.



or too long, cybersecurity has been an afterthought. In a preemptive strike on cybersecurity threats across the world, RIT has created the Global Cybersecurity Institute (GCI).

Late last fall, the GCI opened the doors to its 52,000-square-foot state-of-the-art facility on campus. With the institute, RIT is on its way to becoming one of the best places in the world for cybersecurity education, training, and research.

"Our ultimate mission is to make you and your digital self safer," said Steve Hoover, the Katherine Johnson Executive Director of GCI. "In the 21st century, the physical world is becoming digital. It's a double-edged sword, because there's

tremendous opportunity to improve our lives, but it also significantly increases the attack surface."

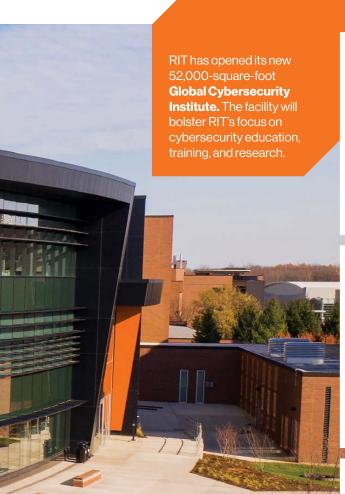
RIT is taking a holistic approach to cybersecurity. The GCI is a space where people from different academic disciplines, industry, and government are collaborating to expand cybersecurity knowledge and make it useable in the real world.

At the heart of the building is the Cyber Range, a virtual and physical lab that allows people to simulate network cyberattacks and problem-solving scenarios. Businesses are coming to the range to prepare their employees for cyber incidents, and students are using the space to conduct ethical hacks during cybersecurity competitions.

In January, students from across the world took part in the annual Collegiate Penetration Testing Competition, which was created by RIT.

"Through competitions, students learn how to balance the technical competence of knowing how to find vulnerabilities and exploit them, with the soft skills of being able to deliver a non-technical report to executives," said Justin Pelletier, a lecturer and director of the GCI Cyber Range and Training Center. "This is what makes our students so attractive to employers."

With GCI, the university's nationally recognized computing security degree programs are also expanding. There are more than 500 students studying computing





The first floor is home to the state-of-the-art Cyber Range. where people can be challenged by cyberattack scenarios for organizations large and small.



Students studying in RIT's computing security degree programs will work with dangerous malware in the AirGap Lab, which isolates the network from the outside world.

Elizabeth Lamark



Faculty and student researchers have millions in funding from government and private organizations to create the next generation of cybersecurity solutions. Binary code decorates glass in the building.

security, and the undergraduate program saw its largest incoming class ever.

"With these modern updated labs in GCI, we are improving the educational experience for our students," said Anne Haake, dean of RIT's Golisano College of Computing and Information Sciences.

Funding for the GCI was made possible in part with a \$5 million Higher Education Capital Matching grant awarded by New York state. The three-story facility also includes student lounges, instructional labs, faculty offices, a Cybersecurity Learning Experience Center for the general public, and five research labs.

Student and faculty researchers have received millions in government and

industry funding to tackle some of the most pressing cybersecurity problems of today and tomorrow.

RIT researchers are creating more secure vehicle-to-vehicle (V2V) communications technology to help make self-driving cars safer. They are also developing methods and tools to help all software engineers develop secure code at the design phase.

One team is creating tools to help journalists better identify deepfake videos. Another team is using tools from machine learning and theories in criminology to develop algorithms and models that learn attack patterns and predict ways to defend.

Since the COVID-19 pandemic struck, concerns about cybersecurity have only grown. With more businesses operating remotely, the FBI reported that complaints about cyberattacks increased 400 percent.

GCI leaders saw this as a chance to serve a different set of learners, while still helping the cyber industry. They created RIT's Cybersecurity Bootcamp—a 15-week training course to help professionals from any background transition into an entrylevel role in the cybersecurity workforce.

"Even with the tremendous job losses we saw in other industries, the demand for cyber talent is continuing to grow," said Hoover. "We have a duty to help improve cybersecurity, any way we can."

Scott Bureau

New economy majors connect with emerging careers

nalytical thinking, complex problem solving, creativity, resiliency, and flexibility are among the top skills needed for emerging careers by 2025, according to the World Economic Forum's "The Future of Jobs Report," released in October.

Anticipating these rapid changes in the workplacefurther accelerated by lessons learned from the COVID-19 pandemic—RIT is seizing on the opportunity to guide students to "new economy majors" that are multidisciplinary, transformative, and future-focused. From the RIT perspective, new economy majors seek to fill a skills gap faced by employers who must pivot quickly to the realities of the pandemic and the disruption caused by the future division of labor between humans and machines.

New economy majors occupy a unique area, somewhere between classic majors and those traditionally described as specialized, said Ian Mortimer, RIT's vice president for Enrollment Management.

For example, packaging science combines elements of engineering, business, design, and sustainability. Imaging science, where disciplines range from the macro (satellite systems) to the micro (medical imaging), combines physics, math, computer science, engineering, and psychology.

In a home-delivery economy, supply chain management is

more than a traditional business degree. Students learn to manage the flow of goods and services around the world by understanding the logistics, planning, inventory demands, transportation, and execution behind moving products from farms and production facilities to their final destinations in warehouses and stores.

"Graduates need to have the skills to stay continuously relevant and have the flexibility, adaptability, and knowledge that allows them to flex in any direction their field requires," said Mortimer. "All of these majors also incorporate essential tools of team building, effective communication, and leadership."

Yet despite all the emerging careers needed to transform global economies, Mortimer explained that most of these opportunities remain unknown to young people as they search for a major.

New economy majors break down traditional boundaries and open students up to a whole new world of possibilities, he said. Here, students can combine different interests into concrete skills and cooperative education experiences, and establish successful career outcomes.

"There is still a disconnect. Why aren't students thinking differently about what they study? I think the answer is because we haven't helped them do it," said Mortimer. "The college search system has not kept pace with the academic evolution occurring at some colleges and universi-

ties. Let's challenge the status quo of how we encourage young people to evaluate academic programs."

New economy majors also align with Generation Z attitudes, where studies show they are driven by purpose and embrace interdisciplinary ways of thinking and working, said Mortimer. "They don't want to be pigeonholed. They don't want to be narrowly defined. They play, they're gadget-y, they explore. They think big and they don't see boundaries."

The workforce is automating faster than expected, displacing 85 million jobs in the next five years, according to the World Economic Forum study. Yet with the right moves, the robot revolution has the potential to create 97 million new jobs.

"The World Economic Forum recommends-and RIT endorses—that we must continue to rethink our educational systems, so that we are building a broad, multidisciplinary skill set where creativity is exercised at every turn," said RIT President David Munson. "As a starting point, each student should choose a discipline for which they have a passion. And then, no matter which discipline is selected, the student should learn about and gain experience in critical thinking, problem solving, creativity, innovation, collaboration, communication, and other high-level skills highlighted by organizations such as the World Economic Forum."

Bob Finnerty and Brian Wetherby

New Economy Majors

Here is a sample of new economy majors, which are not easily discovered by students in their search for a major, yet are in demand by employers.

- Motion Picture Science
- New Media Design
- Packaging Science
- Robotics and Manufacturing Engineering Technology
- Digital Humanities and Social Sciences
- · Imaging Science
- Human-Centered Computing
- New Media Interactive Development
- Microelectronic Engineering
- · Supply Chain Management
- · Individualized Studies

For more information, go to **rit.edu/new-economy**.







Gabrielle Plucknette-DeVito

high academic qualifications

class of Americand Notation and Notation and

American, and

students.

Native American

Rit welcomed 3,129 firstyear students last fall. This year's entering class contained 607 African American, Latino American, and Native American students, a record number, and about 200 more than last year's class.

And similar to past years, the freshman class has high academic qualifications. For students seeking a bachelor's degree, their average SAT score was just under 1300, and the average ACT score was 30. Perfect SAT math scores were achieved by 42 freshmen, and 13 had a perfect SAT or ACT score.

Sixty-three were at the top of their high school graduating class.

In addition, RIT welcomed 386 students who transferred from other colleges, 773 students who are pursuing a master's degree or an advanced certificate, and a record 79 new Ph.D. students.

First-year students are from 49 states (all but Wyoming), with 46

percent of new students coming from New York state. The other most represented states were Pennsylvania, New Jersey, Massachusetts, Connecticut, Maryland, and California. Undergraduates also came from Washington, D.C.; Puerto Rico; and the U.S. Virgin Islands.

International undergraduates represent 31 countries with the largest contingents coming from China, Canada, and India. Graduate students came from 54 foreign countries, with the largest number of international students coming from India, China, Canada, Nigeria, and Taiwan.

Finally, 368 members of the freshman class were recognized as Performing Arts Scholars, more than doubling the 126 program participants of last year's first-year students. (Read more about that on page 19.)

Greg Livadas

New Ph.D. programs

Three new engineering doctoral degree programs

were approved by the New York State Department of Education and will be accepting students this fall. They are electrical and computer engineering, mechanical and industrial engineering, and biomedical and chemical engineering.

The programs are an evolution and replacement of the Ph.D. in engineering, a degree program established in 2014.

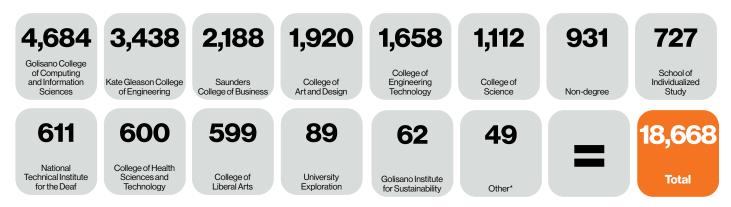
Other Ph.D. programs offered at RIT include mathematical modeling, color science, sustainability, astrophysical sciences and technology, microsystems engineering, imaging science, and computing and information sciences.

Areas of study

RIT students are enrolled in more than 200 programs of study across nine colleges and two degree-granting units.

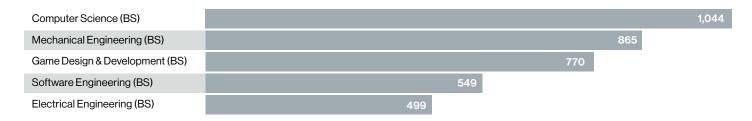
Fall 2020 enrollment by college

Includes international campuses, online, and graduate students.



^{*}Includes students enrolled in the College Restoration Program, English Language Center, and certain study abroad programs.

Fall 2020 degree programs with highest enrollment at RIT's main campus



Login to online

Millions of people are able to learn through RIT's online offerings—and all from the comfort of their own homes. RIT has 35 credit-bearing online programs and delivers RITx offerings on the massive open online course platform, edX. The offerings through RIT Online are specifically designed for fully online students.



1,577,202

RIT has more than 1.5 million total enrollments and growing in RITx offerings on edX. (RITx offerings launched in 2016.)



7

RITx has seven program offerings on edX, including two new Professional Certificate programs in Unreal Engine Foundations and Data Analysis for Decision-Making.



1,185

Total RITx MicroMasters certificates awarded to date, in the areas of project management, design thinking, and cybersecurity.



196

RIT has enrolled learners from more than 196 countries and regions in multiple runs of 38 RITx offerings.



RiT spent more than \$8.2 million to make RIT's campus as safe and clean as possible so that students, faculty, and staff could study and work confidently and comfortably. The university's Infrastructure and Health Technologies Task Force implemented a variety of changes to RIT's academic settings, housing, and dining designed to fight the spread of the coronavirus.

While the immediate concern was fending off COVID-19, the task force was also thinking long term.

"We were being strategic about what we put in place, and many of these changes will continue to benefit the university for years to come," said John Moore, associate vice president of Facilities Management Services and a co-chair of the task force. "For example, the air ionization systems will continue to provide fresher, cleaner air for years, and things like mobile food ordering are introducing new, convenient options for our customers. We put a lot of thought and care into the changes we made."

One project that will continue to provide benefits in the long term capitalized on RIT's legacy and expertise in materials analysis, materials testing, cleaning systems, and manufacturing engineering.

When research demonstrated that copper and the metal's alloys act to kill bacteria and viruses on surfaces—including SARS-CoV-2, which causes COVID-19—a team from Golisano Institute for Sustainability and Facilities Management Services moved quickly to find ways to leverage copper's germ-fighting properties on high-touch



Safety by the numbers

RIT spent more than \$8.2 million to create an environment that was as safe and clean as possible. Here is a look at a number of improvements added across campus last fall, as well as supplies RIT handed out to students, faculty, and staff.

3K+

Thermometers

Air purification units installed in residence halls, apartments, and academic buildings

Pedal-operated hand sanitizer dispensers

1.3K

1.9K

6K

Microwave/ refrigerator units in residence hall rooms

4' x 8' sheets of polycarbonate used for transparent barriers in classrooms

Disinfectant spray bottles for classrooms

surfaces such as door handles and pulls.

Working under tight deadlines, the team evaluated 360 mostly exterior door handles from more than 40 campus buildings to determine their metallic makeup.

When the copper content was verified, the team cleaned the handles using a specialized slurry blast machine from Wet Technologies Inc., whose president and founder is RIT alumnus Frederick Greis '84 (manufacturing technology).

RIT faculty from across the university contributed in other ways to help ensure RIT made sound long-term decisions.

Professor André Hudson, head of the Thomas H. Gosnell School of Life Sciences. tested products ranging from air ionization devices to titanium dioxide surface treatments to evaluate their effectiveness in killing and filtering microorganisms such as viruses, bacteria, and fungi.

Jennifer Schneider, the Eugene H. Fram Chair of Applied Critical Thinking and a professor in the Department of Civil Engineering Technology, Environmental Management and Safety, is a certified industrial hygienist whose background is in disaster science and HAZMAT.

She advised the task force on putting the right mix of controls in place—engineered systems, behavioral expectations, and personal protective equipment.

While many are hoping the pandemic will soon be a distant memory, it caused changes at RIT that will continue to make it a cleaner, safer place for years to come.

Luke Auburn



Gabrielle Plucknette-DeVito

Research takes flight at Tait Preserve

Rit scientists began conducting research at the Tait Preserve of RIT for the first time this summer. Researchers from the Chester F. Carlson Center for Imaging Science's Digital Imaging and Remote Sensing Laboratory were the first to use the site, collecting data using imaging technology flown on unmanned aerial systems (UAS), or drones.

In 2019, Amy Leenhouts Tait and Robert C. Tait, Rochester natives and highly successful real-estate entrepreneurs, gifted RIT their 177-acre property, which includes a 60-acre lake and a private mile of Irondequoit Creek adjacent to Ellison Park. The site, home to a former

Dolomite sand quarry, was dedicated as the Tait Preserve of RIT.

The researchers were excited to take advantage of the site, which provided an expansive, geographically diverse area in which to work.

"This is a perfect location for us to collect UAS hyperspectral imagery over targets deployed in and out of different types of shadows, both man-made and natural," said Assistant Scientist Nina Raqueno, who was part of a team collecting data at the Tait Preserve of RIT.

The Tait Preserve of RIT is located 25 minutes from RIT's Henrietta campus and 10 minutes from downtown Rochester. Given its convenient location, RIT expects to use the facility for a wide variety of education, research, and conservation activities including:

- Environmental education and research, incorporating K-12 programming;
- Agriculture and aquaculture research and education, including sustainable agriculture and community engagement;
- Conservation, sustainability, and urban ecology research and training;
- Events and hospitality community functions;
- · Youth recreation.

The site contains the Leenhouts Lodge, named in honor of Leenhouts family members, which has geothermal heating and air conditioning, a chef's kitchen, a massive stone fireplace, and an open concept interior with huge sections of glass walls that mechanically open to the outdoor patios, firepit, and view of the lake.

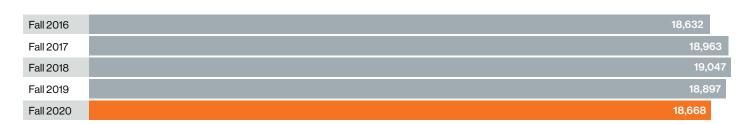
The initial imaging science project, conducted in support of the defense intelligence community, is expected to be the first of many activities at the Tait Preserve. Activity is expected to increase after coronavirus restrictions are lifted.

Luke Auburn

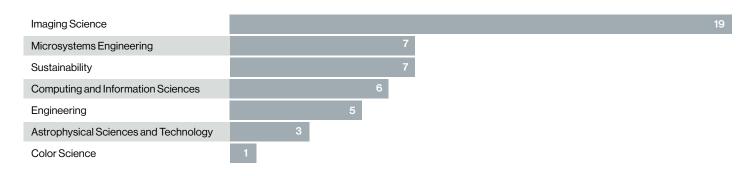
Who's learning

While RIT's overall enrollment has remained steady over the past five years, the university is growing its Ph.D. programs at a rapid pace. The university now has 387 Ph.D. students, up from 210 in 2015, and new programs are being developed.

Fall 2020 enrollment from all RIT campuses

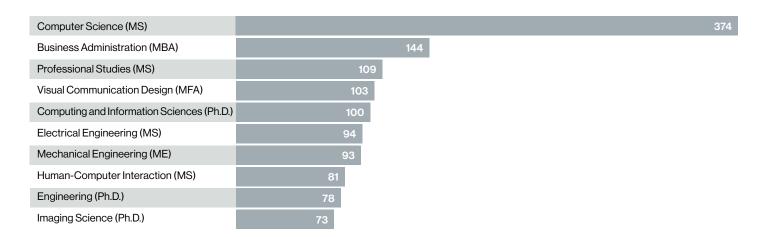


Ph.D. degrees awarded 2019-2020



Fall 2020 graduate programs with the highest enrollment

RIT enrolled 2,929 graduate students across all locations last fall. Here are the top 10.



Making co-ops count: Work experiences

Work experiences continue during pandemic

tudents on co-op are picking up more than occupational and professional skills. As the pandemic unfolded last spring and summer, they saw firsthand how companies manage even in the midst of a crisis.

Isabel Stoeckley and Emma Junga were only two of the hundreds of RIT students who adjusted to limits to co-op activities because of the pandemic.

Stoeckley worked at PepsiCo's facility outside New York City. Junga began work this summer at New York State Pollution Prevention Institute (P2I). Both work experiences were part of required co-ops for their respective programs, packaging science and mechanical engineering. What they may have lost in travel or direct interaction with co-workers, they gained in alternatives that allowed them to apply classroom work to real-world experiences.

After completing a fall 2019 co-op with Johnson and Johnson, Stoeckley started her second co-op with PepsiCo research and development from January to June of 2020. She was assigned to the company's New York Beverage Packaging site in Valhalla, N.Y.

"Day to day, I was able to do package testing, with some of PepsiCo's newer products, materials testing, and also several transportation tests," said Stoeckley, a fourth-year student from Bethlehem. Pa.

PepsiCo was flexible and adaptive, said Stoeckley, who returned to RIT for fall classes and started work in the Packaging Dynamics Lab.

"PepsiCo was very willing to let me explore different areas in the company further, and do training while I was there. I was able to get my Institute of Packaging Professionals Certification. They are willing to support professional development and had the virus not hit, I don't know if I would have had the time to do that. I took advantage of the opportunity."

The 2019-2020 academic year opened with a strong employment market, which made for many opportunities for RIT's students.

When the pandemic hit, it raised challenges, but RIT's Office of Career Services and Cooperative Education was able to complete its spring career fairs, allowing employers the opportunity to proceed with many summer co-op and full-time hires, said Maria Richart, director of the office.

Richart and the Career Services team hosted for the first time Virtual Career Fairs during September and October to connect students with co-op and full-time positions.



Emma Junga,
a mechanical engineering
student, worked at the
campus hydroponic
farm and then with
New York State Pollution
Prevention Institute.

Five tracks featuring prospective employers were available in the areas of business processes, computing, creative, engineering and manufacturing, and science and research. More than 2,600 students participated in 67 sessions during the first week's Virtual Career Fair and more than 1,600 took part in 90 sessions the second week.

RIT departments such as Simone Center for Innovation and Entrepreneurship and MAGIC Spell Studios quickly created more than 150 on-campus/ virtual opportunities for students who had lost summer co-ops, Richart said. Academic departments became flexible in what they would accept to fulfill co-op requirements.

In August, Junga began work at P2I, a significant contributor to environmental impact assessment, resources, and practices.

"I'm working in P2I's green technology accelerator program. We are working with a start-up that is trying to commercialize a new solar panel technology. By doing greenhouse gas and energy impact assessments, we figure out how environmentally friendly their product could be compared to products already on the market," said Junga, a fourth-year student from Madison, Wis.

"Just having my foot in the door to something I can definitely see as a long-term career, where I feel like I am really making a difference, is beyond valuable for me."

Michelle Cometa

Students find ways to stay active in clubs

espite restrictions due to the COVID-19 pandemic, RIT students still found ways to participate in hundreds of clubs and organizations last fall, like dancing, designing games, and even skydiving.

Some clubs offered live meetings and activities if they could be held safely. Others had members meet online, and others had combinations of inperson and online interactions.

Members of the RIT Robotics Club began talking over the summer on Zoom to see what they'd be doing once the fall semester started.

They reopened their club room and limited capacity to three members at a time to work on physical components, and showed members actual robots instead of only sharing pictures, said Gillian Doolittle, the club's president and a thirdyear applied arts and sciences major from Napanoch, N.Y.

Members of Delta Sigma Pi, the co-ed professional business fraternity in Saunders College of Business, met virtually to make cards for healthcare heroes and held a professional event with alumni and faculty about working through COVID-19.

They did other community service projects where they could spread out, such as cleaning Mt. Hope Cemetery, said Madeline Tremblay, club president and a fourth-year new media marketing and management information systems dual major from Park Ridge, N.J.

Chat rooms connected members of the Asian Deaf Club. Its president, Youngjin Yi, said members met virtually at first but hoped to have in-person

meetings for future events.

"Communication is very important for us to stay connected," said Yi, an interior design major from Fairfax, Va. "COVID-19 is not stopping us. We're using Slack, Zoom, Facebook, and email to stay connected and are staying positive to growing our club."

Online meetings were just fine with Andrew Brook, a fourth-year game design and development major from Duxbury, Mass. He attended weekly meetings of the Game Dev Club via Zoom on Thursday nights, which featured lectures with speakers who teach game development skills. Members were allowed to chat and discuss their progress.

While this may not have been the best time to start a new club, that didn't stop Colton Brown, a fourth-year computer science major from Tunkhannock, Pa. He formed the RIT Skydiving Club.

"We do, of course, meet in person when we actually skydive. It would be a bit more difficult to do that virtually," Brown joked.

Eight RIT students made their first jumps with an instructor in September. Everyone wore masks along with their parachutes, and they took separate flights, mainly due to the size of the available airplane.

"Starting anew during this time has definitely been a challenge, from getting new members in the club, to getting events approved, there is a lot we have to do to make sure we are being safe in regards to COVID. But I wasn't going to allow COVID to stop us."

Greg Livadas





RIT Concert Band members took advantage of good weather in September and held practice outdoors.

A. Sue Weisler

Performing Arts Scholars Program flourishes

ow in its second year, the Performing Arts Scholars Program at RIT has more than doubled in participants, with 368 first-year students involved in classical or jazz instrumental music, voice, musical theater, acting, technical theater, dance, or video game composition.

That's up from 126 first-year students last year who received partial scholarships, renewable for up to five years as long as the student is involved in performing arts.

RIT is striving to develop the leading performing arts program in the nation for non-majors.

David Hult, director of the Performing Arts Scholars Program, said that number grew so much, in part, because "word of the program is quickly spreading. Our performing arts program has quickly captured the attention of students around the world who are looking at colleges."

One recipient, Daniel Zeznick, a firstyear engineering exploration student from the Rochester suburb of Pittsford, said the scholarship was one reason he chose RIT.

"Of all the schools I applied to, none of them offered a performing arts scholarship," he said. "It definitely enticed me that I could experience performing arts

on campus."

Zeznick plays alto saxophone in the RIT Jazz Ensemble, takes private lessons via Zoom, and has attended an outdoor meeting of the RIT Jam Club.

Another scholarship recipient, Abby Wojehowski, a first-year biomedical engineering student from Marlboro, N.Y., is a member of RIT's Vis Viva Dance Company and performing team, which she says has given her the opportunity to branch out and meet people from outside her major.

"I have been dancing for 15 years and this scholarship allows me to do that with the addition of a coach to help guide me, and so many chances to further my dance education," Wojehowski said. "It allows me to continue doing something I love, while simultaneously helping me pursue my goals academically."

And Jordan Reeves, a new media interactive development major from Saline, Mich., is taking vocal lessons and plans to audition for a cappella groups.

"I didn't actually know about the scholarship before deciding on RIT, but when I found out about it, I was delighted," she said. "I did know RIT had a good music program and that is part of why I chose RIT." Jonathan Kruger, chair of RIT's Department of Performing Arts, said RIT President David Munson and the administration proposed the idea for the scholarships to help find more engaged and creative students. Only 10 percent of RIT students were involved in performing arts, compared to many more in some other technological universities.

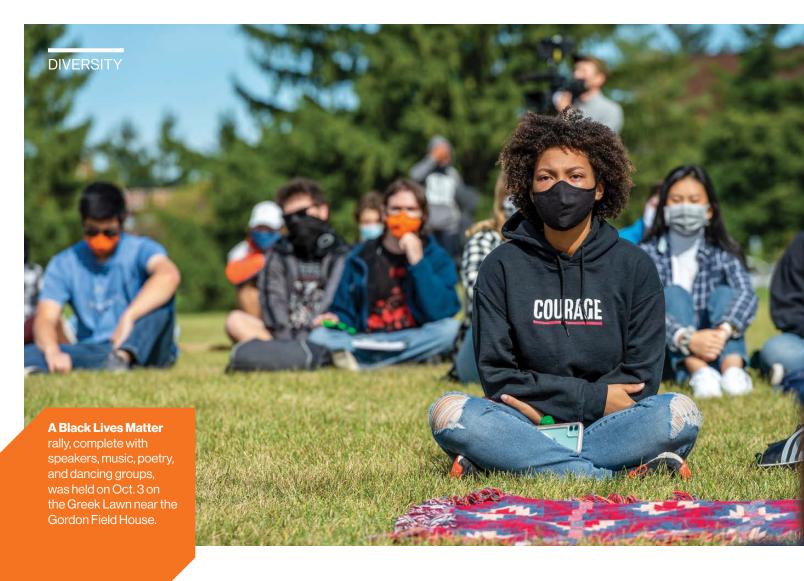
Hult calls the scholarship recipients "talented, bright, highly motivated, self-starters, high achievers, disciplined, and academically gifted. They are truly an impressive group of students and want to leave space in their lives for the performing arts."

Today, well over 1,000 students, from all nine colleges, participate in RIT-recognized performance groups and activities.

More venues are in the works for students to practice and perform, including a black box theater, music rehearsal space, and a dance studio in the Innovative Maker and Learning Complex.

Plans are in the design phase for a new performing arts center on campus that will feature two theaters. Read more about both projects beginning on page 32.

Greg Livadas



RIT creates action plan for race and ethnicity

Pollowing the slayings of Ahmaud Arbery, Breonna Taylor, and George Floyd, the nation was challenged to change its ways in response to systemic racism and social inequity.

University leaders spent the summer engaging with students, faculty, staff, and alumni groups—including Student Government, the ALANA Collegiate Association, Black Awareness Coordinating Committee, Global Union, Academic Senate, Staff Council, and National Technical Institute for the Deaf Advisory Group—to generate a list of roughly 100 ideas of ways RIT can do more on these fronts.

"RIT was challenged to reexamine how

we deliver education in the midst of a global pandemic as well as reexamine our own history and commitment deficiencies regarding Black, Indigenous, and people of color—whether regarding access and success of students, staff, and faculty or effectively creating the climate of inclusion we endeavor to establish," said Keith Jenkins, vice president and associate provost for Diversity and Inclusion.

"RIT's response as a university against this backdrop? Stay the course regarding actions already implemented through decades to move us forward in creating a more diverse and inclusive university and take immediate action against systemic racism and for social equity for all."

In the fall, university leadership shifted focus to prioritizing the recommendations and working to take more immediate action to move forward. This work resulted in the RIT Action Plan for Race and Ethnicity.

The action plan focuses on three key areas: student recruitment and success; faculty and staff recruitment, retention, and advancement; and culture, communication, and leadership.

RIT has already acted upon several of the recommendations submitted by the committee. During a "Calls for Justice at RIT" interfaith vigil in June in response to the killings of Floyd, Taylor, and Arbery,









INSIGHT Into Diversity magazine recognized RIT as a 2020 Higher Education Excellence in Diversity (HEED) Award recipient and a 2020 Diversity Champion. This is the seventh year RIT has been named a HEED Award recipient and sixth year as a Diversity Champion.

Photos by Elizabeth Lamark

President David Munson announced that four flags representing cultural and historical significance to RIT would be permanently mounted in the Student Alumni Union: the Haudenosaunee flag, the Black Lives Matter flag, the Rainbow or Pride flag, and the Sign Union Flag. Those flags were unveiled during a special ceremony in October.

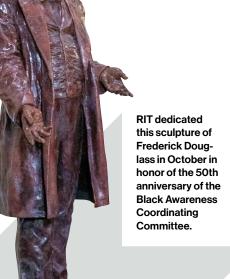
During the same ceremony, RIT dedicated a sculpture of Frederick Douglass that was commissioned in 2019 by Munson and Jenkins in celebration of the 50th anniversary of the Black Awareness Coordinating Committee-RIT's first cultural club-and in honor of the 200th birthday of the great orator and abolitionist. The statue was

created by Olivia Kim, an adjunct professor in the College of Art and Design who teaches figure sculpture.

In addition, there have been Black Lives Matter rallies on campus, complete with speakers, music, poetry, and dancing.

"People need to be educated about the actual purpose of the Black Lives Matter movement and why we're behind the movement," said Olivia Morgan, a thirdyear biomedical sciences major who helped coordinate a rally in October. "It's not about saying 'all lives matter' and moving on."

Learn more at rit.edu/diversity. Luke Auburn





Elizabeth Lamark

LSAMP and McNair Scholars programs provide important research opportunities

iamond Guy, a fourth-year biomedical sciences student from Rochester, and Associate Professor Robert
Osgood spent the fall creating PCR primers for identifying three types of bacteria that are linked to cardiac disease, oral infections, and other issues.

The researchers aim to create a multiplex test that dental offices can use to detect the presence and concentration of Streptococcus mutans serotypes c, e, and f in patients' saliva.

For Guy, performing research at this level has been a long-term goal that is part of a larger plan to become an M.D.

"Since I was a high school senior, I knew I wanted to do research as an undergrad," said Guy. "I heard that Dr. Osgood has a good rapport with students and is very helpful and takes new students under his wing, teaching them to become strong and independent researchers. I really like this project because it seems like it has a lot of great clinical applications. I've been learning a lot from it."

Guy was one of a record 15 students participating in fall research projects thanks to support from the Louis Stokes Alliance for Minority Participation (LSAMP) and Ronald E. McNair Post-Baccalaureate Achievement programs. Both programs provide opportunities for research, funding to travel to and present at professional conferences, information about graduate school, and help connecting students with faculty mentors.

Together, the programs currently serve 49 students—31 are in the McNair Scholars Program and 38 are in LSAMP, with several students enrolled in both. The programs also continue to help alumni who may have gone off to work in industry and decided they want to go back to graduate school and need help with the application process.

LSAMP is funded by the National Science Foundation and available to STEM students from underrepresented groups with a strong interest in attending graduate school. McNair Scholars program is funded by the Department of Education and offered

to second- or third-year students who are first-generation college students and low income or a member of an underrepresented group.

Osgood has served as a mentor to LSAMP and McNair students since he joined RIT 13 years ago. He said the programs provide opportunities for students who would not otherwise have access to research.

"A lot of the students who come in through the program don't really have much prior experience, so we have to meet them where they're at," said Osgood. "If they don't know how to do something, it is on us to become that teacher who can show them how to do it, what's important about it, so that when they're doing it, they're confident. But if they come in with enthusiasm, I can take it and add to that some skills and abilities, throw in some confidence, and what comes out on the other side is someone who can do research."

Luke Auburn

Growing diversity

Last fall, enrollment of underrepresented students of color hit an all-time high. The Destler/Johnson Rochester City Schoolars program has provided nearly 250 graduates of the Rochester City School District and Rochester charter schools with the opportunity to attend RIT tuition-free since it was founded in 2010. The National Technical Institute for the Deaf is the world's first and largest technological college for deaf and hard-of-hearing students.

Fall enrollment of underrepresented students of color (AALANA)*

*Excludes RIT global campuses

AALANA = African American, Latino American, and Native Amercan



Destler/Johnson Rochester City Scholars

249

Rochester City Scholars have enrolled at RIT since the program began in 2010. 147

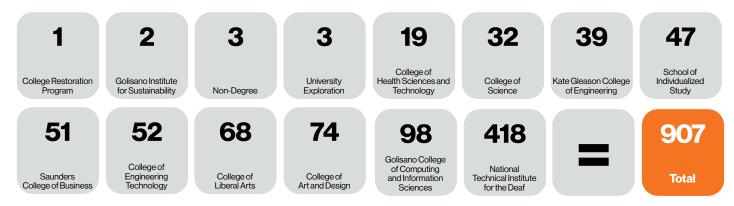
Rochester City Scholars participated in the Summer Bridge/DDI Summer Experience Pre-College Immersion Program. 96

Rochester City Scholars were enrolled in the fall of 2020. 90

Rochester City Scholars have graduated.

Fall 2020 deaf/hard-of-hearing student enrollment by college

More than 400 deaf and hard-of-hearing students are enrolled in National Technical Institute for the Deaf degree programs and even more are enrolled across RIT's other colleges and degree-granting units.



RIT around the world



Construction of the first phase of RIT Dubai's new \$136 million campus is nearly complete. Most of the buildings are up and work is in its final stages. The hope is to start the spring semester there.

RIT Dubai

RIT Dubai began the year by being named the Best American University for Engineering in the UAE, 2019 by *Global Brands Magazine*. This achievement strengthens the aspiration of the RIT Dubai campus to be the region's university of choice for engineering, computing, and business students.

Established in 2009 and growing enrollment to more than 900 students, this vision has not wavered through the pandemic. The university offered a first-of-its-kind international virtual consulting bootcamp this past summer. The program engaged students from RIT Dubai, RIT Croatia, RIT China, RIT Kosovo, and students from the main campus in Rochester. Students participated in intensive training workshops followed by placements in international consulting teams working with local and global organizations.

Construction of the first phase of RIT Dubai's new \$136

million campus is nearly complete. The hope is to start the spring semester there.

RIT Croatia

RIT Croatia enrolls almost 900 students between two locations. The Dubrovnik location was opened in 1997 and Zagreb in 2011. RIT Croatia has focused efforts on developing new and innovative opportunities for students to engage in academic programming and cooperative education. This resulted in record summer course enrollment and a 95 percent employment rate for RIT Croatia co-op students.

It has been a year of firsts for the RIT Croatia campus. RIT Croatia introduced the MS in information sciences and technologies as the newest graduate degree offered at the Zagreb campus last fall. Additionally, RIT Croatia welcomed the largest number of incoming exchange students from Austria, Czech Republic, France, and Spain, and secured its larg-

est amount of Erasmus funding, 99,470 EUR (~\$120,000 USD). These funds will be used to further develop transnational partnerships as well as student and faculty opportunities throughout Europe.

Martin Žagar, a web and mobile computing faculty member, received the EIT Health InnoStars RIS Innovation 2020 grant for his work on 3D virtual navigation, integrating high-resolution stereo-depth cameras for medical imaging systems with over-the-air, real control of a surgeon's hands.

RIT China

Established in 2015, RIT China is the most recent global campus with nearly 500 students enrolled between the Weihai and Beijing locations. Students earn a dual degree from RIT and its international partner Beijing Jiaotong University (BJTU), one of the top public universities in China. At the Weihai location, students recently established Tiger House, a club for RIT

China students to connect with other students and faculty through virtual and in-person activities focused on preparation for graduate school and strengthening the RIT spirit. Approximately 70 percent of RIT China graduates continue on for graduate education at top-ranked universities around the world—including RIT.

The Beijing location also enrolled its sixth and largest cohort of new students (31) and is approaching 100 graduates from RIT's Saunders College of Business. Students benefit from a newly developed experiential entrepreneurship program including monthly virtual workshops, professional mentors, organized industry visits, and individual support.

RIT Kosovo

This year, RIT Kosovo received a \$1.16 million gift from the Biberaj Foundation Inc. This is the largest gift received from a private foundation to the Kosovo campus. The donation established the Biberaj Family Scholarship, a full scholarship for 40 students to earn a bachelor's degree from RIT and complete one semester of study at the main campus in Rochester. The scholarship program will primarily support students from rural locations in Kosovo with a strong focus on women interested in STEM disciplines.

RIT Kosovo, founded in 2003, currently enrolls nearly 500 students and its largest freshman class in five years. RIT Kosovo expanded its degree program offerings in 2020 to include the BS in computing and information technologies and an MS in professional studies, with a concentration in strategic foresight and innovation. The offerings enhance the RIT Kosovo goal to be a leader in academic excellence, research. and innovation within Kosovo and the region.

Going global

The most popular study-abroad destinations in the 2019-2020 academic year were Estonia and Finland, where Executive MBA students traveled in October 2019 for International Seminar, a credit-bearing course that takes students on an international trip to apply their classroom education in a global setting. Study-abroad experiences were suspended in March due to COVID-19, but the university adjusted by introducing virtual intercultural experiences.

Students who participated in education abroad in-person or virtually in 2019-2020

Despite the pandemic, last year 299 students participated in education abroad, either in-person or through virtual intercultural experiences.

Other (i.e., independent study abroad)	3		
RIT research	10		
Global campus (direct enroll only)	30		
Affiliate programs		7	74
Faculty-led (non-global campus)			91
Virtual intercultural experiences			91
Total			

Students studying at RIT's global campuses

Enrollment at RIT's global campuses in China, Croatia, Dubai, and Kosovo continues to grow steadily.



Top study abroad destinations in 2019-2020







Sponsored research garners \$82 million

Rithad its best year ever for sponsored research funding. For fiscal year 2020, which ended June 30, RIT received 382 new awards totaling \$82 million. The record funding follows almost \$58 million in research expenditures in fiscal year 2019, also a record.

During this most recent fiscal year, RIT had 339 principal investigators associated with 669 active research awards.

"In these challenging times, RIT is quite fortunate to have obtained a record amount of support for its research programs," said Ryne Raffaelle, RIT's vice president for research and associate provost. "One thing that we have definitely learned through this pandemic, and the other challenges facing our society, is the importance of academic research. It is gratifying to note that we are doing our part."

Among the funding sources, RIT received:

• \$44 million from federal agencies, including \$15 million from the National Science Foundation, \$12.7 million from the Department of Defense, \$6.6 million from the Department of Health and Human Services (most of that

from the National Institutes of Health) and \$4 million from the National Aeronautics and Space Administration;

• \$16 million from New York state.

The university also submitted 723 research proposals, totaling \$200 million this past fiscal year. Some of the research highlights include:

- Donna Burnette, director of RIT's K-12 program, received a \$3.5 million Army Education Outreach Program (AEOP) award to support high school apprentices displaced by the COVID-19 pandemic.
- Bo Yuan, professor and chair
 of the Department of Com puting Security, received
 \$2.4 million from NSF for
 the Scholarships for Service
 Program, which takes excep tional BS students majoring
 in computer science, software
 engineering, or computing
 security and places them in
 accelerated BS/MS programs
 in computing security.
- Matt Dye, assistant professor in the Department of Liberal Studies at RIT/NTID and Department of Psychology, received a \$1 million award from NIH to examine the effects of auditory development, cognitive function, and language outcomes in a large group of young deaf adults.
- Jeanne Christman, associate professor in the College of Engineering Technology, received a \$1 million NSF award to use self-determination theory to inform practice on a proposed project, Critical Mass of Engineering Technology Scholars. Its purpose is to recruit and retain a more diverse pool of students to engineering technology by addressing factors that contribute to the underrepresentation of women, students of color, and those who are deaf or hard of hearing.

College of Science experiences boom in sponsored research



A ssociate Professor
Moumita Das is using
data-driven mathematical modeling informed by state-

of-the-art experiments to better understand the fundamental rules that allow bacteria to compartmentalize the functions within their cells.

Cells use compartmentalization to create spatial organization, allowing them to carry out biochemical processes and control biomolecular structures. While compartmentalization within cells is often facilitated by

membranes, bacteria do not typically contain membrane-

Researcher opens behavioral health clinic

Rit's behavioral health program is expanding in new directions with a clinic on campus and federal funding to deliver addiction treatment in rural communities in upstate New York and New Hampshire.

These partnerships and services create momentum for the Priority Behavioral Health & Clinical Psychology Internship led by Caroline Easton '90 (biotechnology), professor of biomedical sciences.

The program was funded in 2018 by the U.S. Department of Health and Human Services' Health Resources and Services Administration to fill a shortage of mental health professionals, especially with addiction expertise. in the Rochester area.

The RIT Priority Behavioral Health clinic gives therapy in-

terns experience conducting inperson and telehealth sessions and assessment services under the supervision of licensed clinical psychologists. The training clinic is open to anyone at RIT and in the wider community, and services are free of charge.

The clinicians practice cognitive behavioral therapy, motivational enhancement therapy, and mindfulness skills, as well as behavioral health screenings and consultations, psychological testing, digital therapies, and tele-behavioral health.

Easton sees the clinic as a resource for the community, especially for people who have lost their jobs during the CO-VID-19 pandemic and who may not have health insurance or money for co-pays. "The clinic is not only for people struggling with addiction, anxiety, and

depression," she said. "Right now, people are dealing with grief and loss, social isolation, and health anxiety. We will take clients who just need somebody to talk to."

RIT behavioral health researchers in the biomedical sciences program—Easton; Cory Crane, associate professor; and Cassandra Berbary, visiting assistant professor—won additional funding from the Health Resources and Services Administration to deliver mental health and addiction treatment to underserved populations.

The federal agency is supporting a \$1.4 million telehealth program for homeless residents at the House of Mercy shelter, which was deployed during the New York state shutdown, and more recently, a \$1 million telehealth outreach for rural and underserved communities in New York and in New Hampshire, addressing opioid addiction and other forms of substance abuse.

Residents of New York's Genesee County, Wyoming County, and Cayuga County and New Hampshire's Grafton County may be eligible for the program. The participating clinical sites were selected through RIT's strategic alliance with Rochester Regional Health and a new partnership with Ammonoosuc Community Health Services in New Hampshire, facilitated by the CEO and RIT alumnus Ed Shanshala II 'oo MS (health systems management).

"Our telehealth training program is especially relevant during the pandemic and the new risk factors it has created for rural residents with addiction

enclosed organelles and instead rely on alternate mechanisms such as phase separation. The cytoplasm within bacteria cells consists of mixtures of complex, structured fluids.

"The main goal is to gain an understanding of how the phenomena of phase separation helps bacteria with compartmentalization, organization, and bacterial function, but also connecting genotype to phenotype," said Das. "We want to see how chromosomes in bacteria organize, and what are the consequences in terms of bacterial functions and properties. Doing a map of that is important."

Das received a \$559,000 NSF grant to work on the project, collaborating with biology researchers from the University of Rochester.

She said that many of the outstanding questions in biology require input from quantitative disciplines like physics and that the next generation of researchers needs to be comfortable working in multiple fields.

Das was one of several School of Physics and Astronomy faculty who secured large grants as principal investigators during a banner summer. Five of her colleagues from the school received grants of \$200,000 or more during that time.

Professor Scott Franklin received a three-year, \$587,000 NSF Building Capacity in STEM Education Research grant; Professor Seth Hubbard received nearly \$200,000 to develop low cost, high-efficiency solar cells; Assistant Professor Jeyhan Kartaltepe received \$444,000 from NSF to perform an in-depth analysis of galaxies over the full COSMOS 2 square degree field using archival spectroscopic data; Assistant Professor Michael Lam secured a \$347,000 award to construct a pulsar interstellar medium array detector; and Andrew Robinson, director of the astrophysical sciences and technology Ph.D. program, received \$371,000 from NSF to model light echoes from hot dust in the broad line region in active galactic nuclei.

The College of Science as a whole is coming off a record year in sponsored research. In the 2019-2020 fiscal year, the college received more than \$15.6 million in grants for re-

search, up more than \$5 million from the year before.

The Chester F. Carlson Center for Imaging Science brought in the largest portion of last year's funding—\$7.3 million, up from \$4.6 million in 2018-2019.

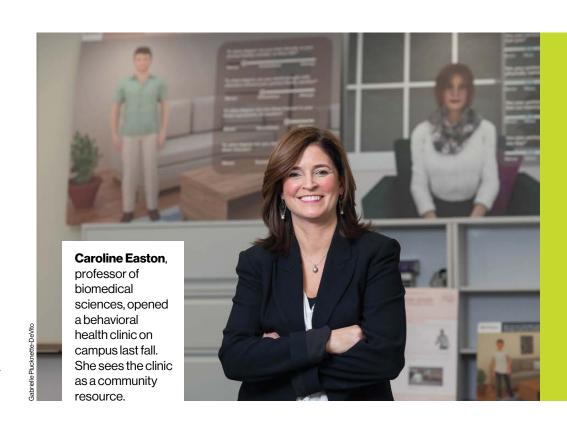
"The growth we've experienced in research funding is a testament to the quality of work of our faculty, students, and staff," said Sophia Maggelakis, dean of the College of Science. "We are seeing success not only in our well-established strong areas like imaging science, color science, and astrophysical sciences, but also in emerging areas including mathematical modeling, optics, STEM education, and biotechnology."

Luke Auburn

issues and for their families," she said. "The pandemic has led to unemployment, loss of health insurance, opioid/substance relapse, anxiety and depression, grief, and personal loss."

Easton's research connects the dots between intimate partner/domestic violence, mental health, and substance abuse. Her Substance Abuse-Domestic Violence Behavioral Model reduces clients' drug and alcohol use while teaching coping skills for handling negative emotions. Grounded in cognitive behavioral therapy, the client-centered approach has measurable outcomes proven in randomized control trials funded by the Donaghue Foundation and the National Institute of Drug Abuse.

Susan Gawlowicz



RESEARCH

Shaun Foster

is leveraging \$160,000 from an Epic Games MegaGrant to explore and develop dynamic virtual content that is opening the eyes of RIT faculty and students—and many others—to Unreal Engine's myriad, multidisciplinary possibilities.



Elizabeth Lamark

Professordriving multidisciplinary research with real-time technology

ife has been a bit of a whirlwind for Shaun Foster '02 (MFA) since securing a MegaGrant from Epic Games, the creators behind Unreal Engine and popular video games such as Fortnite.

The undergraduate program director of 3D digital design in RIT's College of Art and Design is leveraging the \$160,000 from Epic Games to explore and develop dynamic virtual content that is opening the eyes of many to the software's myriad possibilities.

As part of the grant funding, Foster launched a new course called Cinematography and Pre-visualization during the spring 2020 semester.

The 3D digital design students learned to combine new virtual production elements with existing film and gamelanguage conventions.

In all, the game engine's advanced technologies, realtime graphics, and interactive tools are fueling a "multi-field convergence," said Foster, an associate professor in the School of Design.

"There's a huge amount of buzz and desire to learn Unreal, which has only been accelerated by Unreal Engine 5's huge leaps in technology when it comes out early next year," said Foster, noting more than 14 million views of the North Carolina company's announcement plans on YouTube.

Foster's multidisciplinary approach and early adoption of Epic Games' Unreal Engine is expanding the software's possibilities in numerous areas across RIT.

Working with multidisciplinary teams of students, he is developing a greater understanding of Unreal Engine and its advanced workflows and ability to provide real-time feedback.

His work is allowing the versatile software to be leveraged as an integral tool for interactive visualization, next-gener-

ation filmmaking, and training in many fields—including medical, interior and industrial design, virtual production, urban planning, geographic information systems, and human-computer interaction.

Foster also is furthering the synergy between the 3D digital design program and the MAGIC Center to integrate his research inside and beyond RIT's College of Art and Design.

Last summer, a grant he cowrote with David Long, MAGIC Center's director, for the development of a multi-departmental Virtual Production Curriculum (using Unreal) was funded by Epic Games for \$275,000.

Virtual production blends filmmaking, computational photography, and real-time game engine rendering to produce in-camera visual effects similar to those seen in the groundbreaking work on Disney's *The Mandalorian*.

Soon, students at RIT will be learning and researching these

state-of-the-art techniques at MAGIC.

That grant along with his participation in an Epic Educators Twitch Livestream in mid-August resulted in an invitation to a panel on virtual production at the international SIGGRAPH conference only weeks later.

Last fall, Foster also began offering classes to professionals interested in learning how to use Unreal Engine to create interactive 3D. The online classes were part of RIT's Unreal Engine Foundations Professional Certificate program on edX.

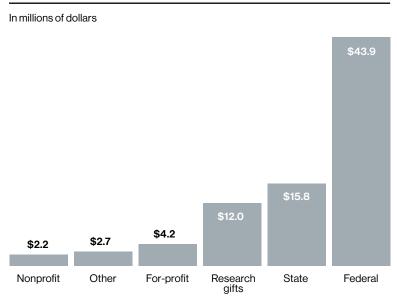
"It's not only higher education looking at the course; an industry trainer from a large film studio contacted me to let me know they were taking it as well," Foster said. "I'm also meeting with other contacts who have received Epic MegaGrants, which has made for wonderful opportunities, not only for me but for our students as well."

Rich Kiley

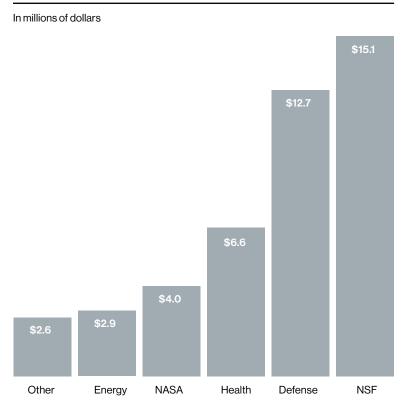
Research portfolio

RIT is listed as a "high research activity institution" or "R2" under the updated Carnegie Classification of Institutions of Higher Learning. RIT had its best year ever in sponsored research funding in fiscal year 2020.

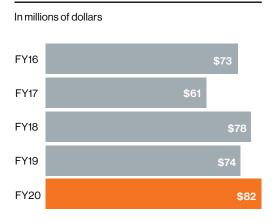
FY20 awards by sponsor type



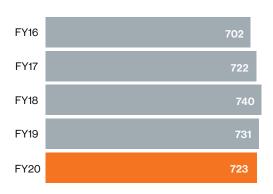
FY20 federal awards by agency



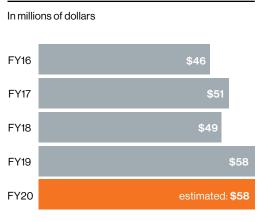
Sponsored research awards



Research proposals



Research expenditures





Plans for the Innovative Maker and Learning Complex remain on schedule, with a design that will centralize RIT's makerspace and performing arts and provide much needed classroom and study spaces.

Design work on the multipurpose facility continued after the COVID-19 pandemic closed the campus in March.

Architects from the Boston-based firm William Rawn Associates Architects Inc. had already visited campus several times to meet with administrators, faculty, staff, and students.

Architects from Rawn and RIT, working with Rochester-based HBT Architects, then presented design reviews and milestone

presentations to RIT leadership via Zoom and moved the project forward, noted James Yarrington, RIT university architect and director of Planning and Design Services. When the New York state restrictions eased in June, Welliver, the construction manager, began to relocate the underground utilities, an essential first step before the official groundbreaking.

The next phase of the project will finalize the detailed designs and complete the bidding packages. The current plan is for work on the foundation to start in spring 2021, and the building to open in fall 2023.

RIT President David Munson envisions the building as a creative hub that will capture the spirit of the Imagine RIT: Creativity and Innovation Festival. The complex will embody RIT's focus on technology, the arts, and design and give visitors a way to "understand RIT in 15 minutes," Munson said.

The complex will include a large makerspace component and project team spaces with glass garage doors that will enable the student work to flow into the public space, Yarrington said. Pieces of the makerspace and performing arts components are connected to Monroe Hall and Wallace Library with glass bridges.

"They are not little links—they are curvilinear, and one is two stories—and they create together an oval public space that is open air in between," Yarrington said. "That space will be regraded so it's an ADA-acces-



The courtyard will serve as a hub in the new Innovative Maker and Learning Complex. The complex will include a large makerspace component.

A black-box/glassbox theater will seat 180 people. It can be reconfigured to allow for, or block, light into the space.

Here's a view of the black-box/glass-box theater in blackout mode. Along with the theater, the performing arts components will include individual rehearsal spaces, a dance instruction studio, and a music rehearsal studio.

William Rawn Associates

sible pathway and landscaped courtyard on the hillside. The transition from the Gleason Circle transportation plaza up to the Quarter Mile will be exciting."

The performing arts component will include individual rehearsal spaces, a large dance instruction studio, and a music rehearsal studio. A black-box/glass-box theater seating 180 can be reconfigured to allow for, or block, light into the space.

The facility will also add 1,500 classroom seats to the campus, with 22 standard-size flexible classrooms and five extra-large classrooms that can seat 150 students each.

Construction costs will exceed \$100 million, making it the largest undertaking since building the Henrietta campus,

which opened in 1968. The facility will be funded, in part, by \$17.5 million from RIT trustee and alumnus Austin McChord, part of his record \$50 million gift to RIT in 2017, as well as financing through the Dormitory Authority of the State of New York.

Constructing the building implies a lot of changes and renovations to the RIT Libraries.

Current plans, Yarrington said, shift most of the space on the third and fourth floors of the library to classroom and study space. At this time, the RIT Archive Collections will be renovated and remain on the third floor.

Changes to the Cary Graphic Arts Collection on the second floor are necessary to

accommodate access between the library and the IMLC, Yarrington noted. Browsing collections will remain on the first and second floors.

Renovations will open up the first floor of the library and add classrooms and a large makerspace to the A level. The ground floor will connect to the IMLC and still lead to the transportation plaza. The corridors will be widened to accommodate the increased traffic.

"The design has continued to evolve very nicely," Yarrington said. "I can't think of an academic institution that has a building anything like this. We're excited about it."

Susan Gawlowicz



Labella Associates

Saunders College renovation, expansion to begin soon

The \$18 million project will add more than 35,000 square feet of space to the building.

transformational gift from serial entrepreneur and philanthropist E. Philip Saunders will help fund a major renovation and expansion to Max Lowenthal Hall, home of RIT's Saunders College of Business. The \$18 million project will add more than 35,000 square feet of space to the building.

This expansion will transform the learning environment for students, with the addition of collaborative student spaces, flexible case analysis rooms, and applied research labs—all in support of experiential-based, interdisciplinary learning and research

The project will also include space for the hospitality and

service innovation programs, as well as event spaces that will accommodate distinguished speakers, conferences, receptions, and lectures.

Construction plans for the four-story expansion will increase the existing building by about 80 percent and include outdoor patios with expansive views of campus, an auditorium and adjacent reception areas, a food venue, and a large, multifunctional event space with a catering kitchen.

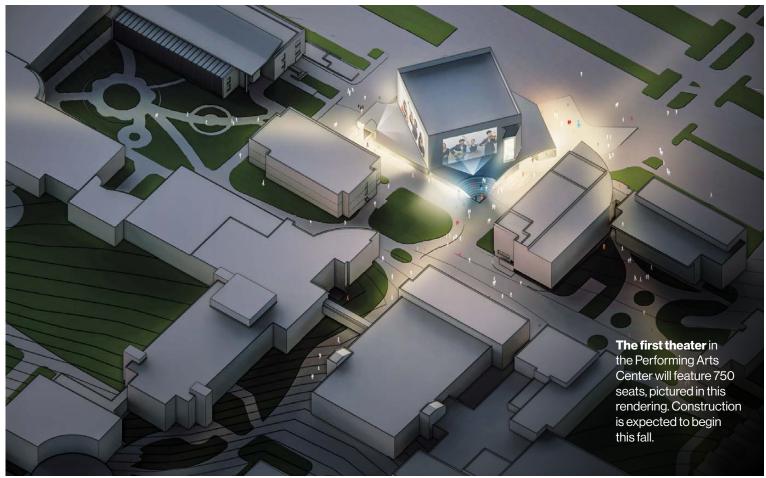
New administrative offices, including the dean's office, will be centralized, allowing for the creation of an Executive MBA and Executive Education suite in the existing facility.

A behavioral research lab, integrated business technology lab, graduate student space, conference rooms, and additional offices will be added.

Informal gathering spaces and student meeting rooms will be placed throughout the building.

"All of us at Saunders College are excited to transform the learning experiences and applied research environment for our students, faculty, and staff," said Dean Jacqueline Mozrall. "The expansion and renovations will further enhance student and faculty collaborations and expand our ability to engage with the Rochester community and beyond."

Vienna McGrain



Michael Maltzan Architecture Inc., Los Angeles

Performing Arts Center to add creative stages at RIT

Plans are being developed to build a performing arts center that will feature a 750-seat theater and, in a second phase, a 1,500-seat orchestra hall for larger audiences.

The project is intended to provide more practice and performing venues for the RIT community as well as options for community groups to hold concerts, talks, and other events.

RIT intends to develop the leading performing arts program in the nation for non-majors, attracting talented and creative students who can continue their passions for music, dance, theater, and other performing arts.

This past year, partial

performing arts scholarships were awarded to 368 first-year students, more than doubling the number of students given performing arts scholarships in the previous, inaugural year of the scholarship.

James Yarrington, RIT's university architect and director of Planning and Design Services, said the complex will be erected adjacent to Institute Hall and Engineering Hall.

Construction on the 750-seat theater, designed for musical theater but useful for a range of programming, is expected to begin in the fall of 2021, with a completion date of fall 2023.

Yarrington said it will be more than 40,000 square feet,

three stories tall and have truck access. It is expected to have two balconies and feature a historic, restored theater pipe organ. It will also have costume and scene shops, as well as offices.

Yarrington said the Rochester area has numerous theaters that can seat a couple hundred audience members, but there are few options for venues that seat between 700 and 1,500 people. By comparison, the Robert F. Panara Theatre in Lyndon Baines Johnson Hall has 440 seats.

The first phase comes with an estimated \$40 million price tag—part of the approved capital bond project. Additional funds will be sought to restore and install the pipe organ.

The second phase, which is funding dependent, will feature an expanded lobby and more than double the size of the building with a 1,500-seat theater and a stage big enough to accommodate a large philharmonic orchestra, major events, and lectures.

The Los Angeles-based firm of Michael Maltzan Architecture, which has designed performing arts buildings for other clients, is the design architect.

The architect of record is SWBR, a local company that also was involved in construction of the MAGIC Center.

Greg Livadas



Athletic facilities

on deck for improvements



Plans to upgrade RIT's outdoor athletic facilities continue to unfold.

The first phase of the department's multimillion dollar stadium project is scheduled to begin this year with the relocation of the outdoor track across the street from its current location in front of Gordon Field House with an upgraded synthetic running surface. The baseball and softball fields are also slated to be upgraded to all-weather artificial turf fields.

Future phases include the installation of a state-of-the-art artificial turf field as well as the construction of a full stadium complex featuring locker rooms, training facilities, and concessions, as well as a press box and premium suite accommodations.

RIT has two Division I teams—

men's hockey and women's hockey—and 22 Division III teams that compete in the Liberty League. In addition, thousands of students participate in club and intramural sports.

RIT's student-athletes continue to lead in the classroom. They had an overall GPA of 3.45 last academic year; 135 athletes had a perfect 4.0 in the spring 2020 semester.

"These plans are an extension of RIT's continuous and sustained efforts over the years, which included the Gordon Field House, the Gene Polisseni Center, and the Ritter Arena Extension project, and much more," said Lou Spiotti Jr., executive director of Intercollegiate Athletics. "RIT and RIT Athletics have a very exciting and bright future."

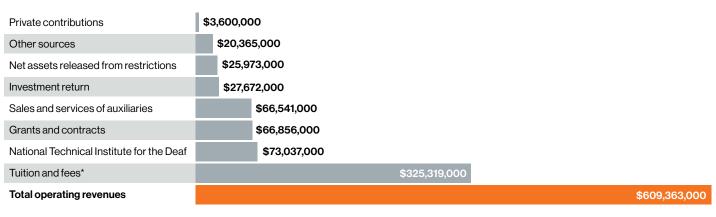
Tim Volkmann

Financially sound and growing

RIT's future success depends upon strong financial results and a growing endowment.

Operating revenues

Fiscal year 2020



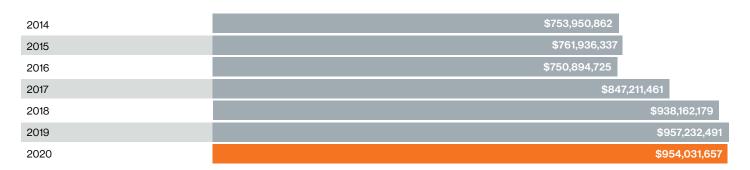
*\$558,382,000 less \$233,063,000 in financial aid and scholarships.

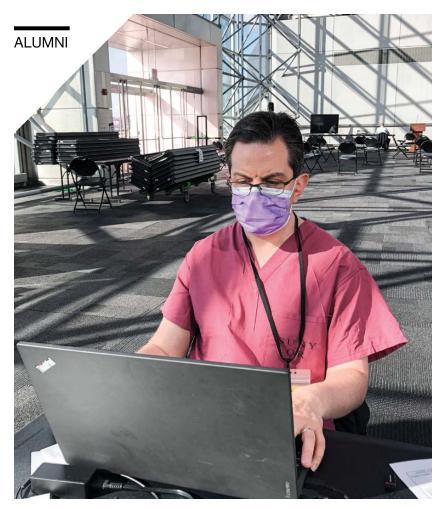
Operating expenses

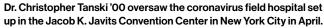
Fiscal year 2020



Total endowment by fiscal year (as of June 30 each year)









Callie Donahue '18 was part of a team testing drugs on human cells infected with COVID-19 to find a treatment.

Alumni use talents during pandemic

R IT alumni continue to give back during the pandemic, helping people, companies, and health care facilities in need.

Here are a few examples:

Christopher Tanski '00 (information technology) oversaw every medical professional treating coronavirus patients at the Jacob K. Javits Convention Center field hospital in New York City.

Tanski works at SUNY Upstate Medical University, where he is an attending physician and assistant professor of emergency medicine. He started serving as the chief medical officer for field hospitals on April 9 and completed the job on May 9.

The Javits Center was transformed into a field hospital with the capacity to treat up to 3,000 patients in early April. It alleviated stress on the New York City hospital system when the state had more coronavirus cases than any country in the world.

Corey Mack '11 (mechanical engineering technology) built emergency ventilators with help from other alumni, former faculty members, and friends

of the university.

Former Student Government president Nick Giordano '16 (management information systems) created a website template that helps communities track and manage the spread of the virus.

Maria Romero-Creel '17 (biomedical engineering) and Wendy Salamone '10 (biotechnology) contributed to the antibody test that was launched by Ortho Clinical Diagnostics.

Callie Donahue '18 (biotechnology and molecular bioscience), a Ph.D. student at Boston University, was part of a team of researchers testing drugs on human cells infected with COVID-19 to find medicine that can be used as a treatment.

Ron Ricotta '79 (accounting) retooled his injection molding company, Century Mold, to produce thousands of face shields for medical workers.

Jeff Benck '88 (mechanical engineering) is the president and CEO of Benchmark, a global provider of engineering, design, and manufacturing services. The company worked with multiple clients making products that will help treat patients infected with COVID-19.

Tigers capture historic moments across the country

These photos were taken by RIT alumni and faculty members.





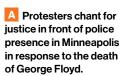
B Kaliah Harden, 11,

to the People rally

Rochester, Minn.

on June 13, 2020, in

speaks during a Power





Protester James Luckey poses for a portrait in Bushwick. Brooklyn, on June 11,



A June 14, 2020, protest at the Wendy's in Atlanta where Rayshard Brooks was shot and killed by police.





Protesters David and Daniella Dacosta pose for a portrait in Bay Ridge, Brooklyn, on June 10, 2020.

hen demonstrations calling for police reform and racial equality occurred in cities across the country in 2020, alumni and faculty of RIT's nationally recognized School of Photographic Arts and Sciences (SPAS) were there to capture the gripping moments through their camera lenses.

While the protests in Minneapolis; New York City; Rochester, Minn.; and elsewhere originally were in response to the killing of George Floyd in May, the Black Lives Matter movement continued its push for change and justice as other disturbing police-involved deaths came to light.

"It is essential to say why people are protesting," said Joshua Rashaad McFadden, assistant professor and photographic artist in SPAS in the College of Art and Design. "George Floyd was unjustly killed in Minneapolis, Minnesota, by police officers; Rayshard Brooks was wrongly killed in Atlanta, Georgia, by police; Breonna Taylor was unjustly killed in her home in Louisville, Kentucky, by police; and Daniel Prude

was unjustly killed in Rochester, New York, again by police. I felt compelled to be on the scene to document the demonstrations in each of these cities."

McFadden called it a "necessity to capture and document the fight for justice and bear witness to the pain that a community has experienced for many years."

"I traveled to Minneapolis out of my own will and finances to be there to document." he said. "After a week of documentation, I was contacted by The New York Times to cover George Floyd's funeral."

Traci Westcott '18 (photojournalism), who captured demonstration scenes as a digital content producer at the Post-Bulletin in Rochester, Minn., said, "it's unfortunate that so many people have waited for this national uprising to really assess racism in every aspect of American culture, but I'm happy this conversation seems to have a fire underneath it."

"As journalists, we are taught to be objective, to 'check our biases at the door," observed Westcott, who also captured images

of George Floyd's funeral. "Well, I refuse to believe that being passionate about human rights is considered biased. I'm sad. I'm sad that in 2020, our country is still fighting for basic human rights. I'm sad that we as photojournalists haven't fully embraced diversity. We haven't always listened."

Brittainy Newman '18 (photojournalism), a photojournalist at The New York Times, took pictures of youth protesters in her native New York City.

"They call this their personal turning point," she said. "For many, it's their first movement. It's their chance to be a part of history, they say, and for some, a moment to examine who they are."

Even as time passes since the protests, McFadden said "the trauma and the pain stick with me ... the emotions themselves."

"Regardless of where I go to capture these images, I can't help but hear the same phrases ringing ... 'Black Lives Matter' and 'I can't breathe."

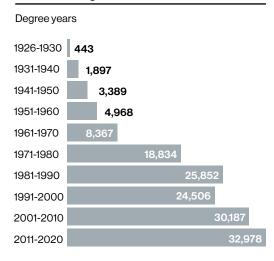
Rich Kiley

Alumni

RIT has more than 136,000 living alumni, and they are active in chapters across the U.S. and around the globe.

1,724

Alumni by decade

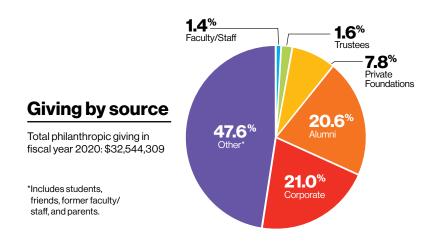


Where alumni live globally

Top 20 locations Country **Alumni Total** Croatia Kosovo 1,115 India 674 Canada 394 Dominican Republic 367 United Arab Emirates 256 China 242 Czechia 178 Taiwan, Province of China 145 Malaysia 132 Bosnia and Herzegovina 126 Japan 112 Thailand 108 Saudi Arabia 98 Turkey 89 Korea, Republic of 89 Kazakhstan 74 Montenegro 67 United Kingdom 60 Spain 59 Germany 59 44 Brazil Hong Kong 36 Mexico 35

Alumni population by chapter





University Advancement focuses on future



Phil Castleberry,

a 20-year veteran of higher education advancement, began at RIT last February as the vice president for Development and Alumni Relations, now called the Division of University Advancement.

In 2018, RIT publicly launched a \$1 billion campaign. The campaign is unique in that it's blended, meaning RIT is seeking support from a variety of investors, including alumni, government and corporate partners, and research foundations and agencies. The campaign, titled Transforming RIT: The Campaign for Greatness, has raised \$740 million to date.

Here are Castleberry's thoughts on philanthropy and engagement at RIT.

Just a few months after you started at RIT, the pandemic hit. How has philanthropy and engagement changed at RIT? What about the national landscape?

Philanthropy and engagement have both been impacted by the pandemic. Most noticeably, on the engagement front, is our inability to conduct in-person events and meetings in the manner we are accustomed. While the team has been very creative in creating virtual opportunities, nothing quite compares to being face-to-face with our alumni and friends. We have slowly begun to re-engage, mask-to-mask, in very small groups, but we are eager for when we can return to RIT gatherings of all sizes on campus and around the world.

Philanthropy, thankfully, has been less impacted. Alumni and friends stepped up in the early days of COVID-19 to provide support for our students, addressing technology and other unanticipated needs. The response was overwhelming and our students are very appreciative. Fundraising for some other initiatives did slow down, but conversations continued. It takes a lot to stop philanthropy; sometimes timelines are disrupted, which is what we're seeing today, but the intent and desire to give remains.

Nationally, we're seeing some shift in where people are giving. As you might expect, health care and community agencies like food banks are seeing increases in giving. The long-term effect of the pandemic on giving nationally remains to be seen, but data shows that charitable giving has historically rebounded quickly following economic downturns.

How has Transforming RIT: The Campaign for Greatness been affected by the pandemic?

Transforming RIT continues to make good progress toward our \$1 billion goal. For the fiscal year that ended June 30, 2020, we added \$92.8 million to the Campaign total, an increase of nearly 5 percent over the prior year. Our colleagues in Sponsored Research Services, working with our outstanding faculty, had a record year for funding, and the Government and Community Relations team also had a strong year. As of today, we've raised \$740 million.

What initiatives are in the works for 2021?

Development and Alumni Relations at RIT has a rich history and many years of strong performance, but I think we can take this to an even higher level. For the last several months, I have been developing a comprehensive reorganization plan that will position RIT to reach significantly more alumni and friends, tell our story more broadly, and secure far more resources for the university. The first step in this plan was our divisional rebranding to University Advancement, which better reflects the breadth of our work to advance the mission of RIT. We'll be executing the rest of the plan in 2021, including making several key, strategic hires.

We're also launching a new leadership annual giving program, Sentinel Society. Members will be able to support one of 18 different areas on campus with a five-year pledge of \$1,000 or more annually. Together, these donors will play a pivotal role in providing unrestricted gifts to financial aid scholarships and RIT's other most pressing needs. I'm excited about the collec-

tive impact our donors will have on RIT by joining Sentinel, as well as the chance to provide them with a global network of RIT philanthropists for networking.

What are your goals for 2021?

I am looking forward to the reorganization and key hiring being completed and having the full University Advancement team assembled. Then, it is full speed ahead so that we stay on track to exceed the \$1 billion Transforming RIT campaign goal. This year we will actively secure gifts for the Innovative Maker and Learning Complex (IMLC) and our performing arts initiatives, as well as the Saunders College expansion, just to name a few of the many transformative projects happening, none of which is possible without philanthropic support.

How has your background helped you lead RIT?

I was fortunate to have spent my most formative professional years at two top private research universities, Washington University in St. Louis and the University of Rochester. I learned much about higher education, advancement, and the power of philanthropy. That prepared me well for my first vice presidency at a liberal arts college, St. John Fisher College. It was there that I learned the complexities that come with being a chief advancement officer, but perhaps more importantly, I discovered how much I missed the research university setting. As I reflect on the last 15 years of my career, those three experiences prepared me for this role in a way that I never would have imagined when my career began over 20 years ago. This is an exciting new chapter for me at RIT.

Experience the Future



At RIT, we're always on to something—even during a pandemic. Imagine RIT: Creativity and Innovation Festival is the university's signature event that showcases the spirit and ingenuity of RIT students, faculty, and staff.

A Free Festival For Everyone

Day of Discovery

Saturday, May 1. An in-person festival is being planned, but will pivot to an online virtual experience, if necessary.

Explore

Upwards of 400 interactive exhibits, research projects, hands-on demonstrations, and performing arts.

Updates and more

Visit www.rit.edu/imagine for the latest news and information related to the festival during the coronavirus pandemic.

What will we think of next?

