

R·I·T Science+Math

MONTH IN REVIEW

Message from the Dean

We're approaching the final weeks of class, and for many of our students, their last days at RIT. I am so proud of the accomplishments of our young scientists and mathematicians who have already begun a lifetime career of discovery.

This is also the time of the year when RIT and our college recognizes the excellent work of faculty, staff, and students. In this issue of the newsletter, you will see many award recipients who have contributed their time and talents to our university and scientific community. When you pass your colleagues in the hall, please take a moment to congratulate them.



Sophia Maggelakis, Dean

RIT College of Science

Soon, our buildings will be prepared for celebration as we say farewell to the Class of 2017. I encourage you to take time to savor these last days together before we depart for the summer.

April 2017

COS faculty awarded tenure

The following COS faculty were awarded tenure in Spring 2017:

- Dr. Gregory Babbitt, GSoLS
- Dr. Charles Bachmann, CIS
- Dr. Mishkat Bhattacharya, SoPA
- Dr. Baasansuren (Basca) Jadamba, SMS
- Dr. Matthew Hoffman, SMS
- Dr. Kara Maki, SMS
- Dr. Michael Pierce, SoPA



COS hosting five REUs in 2017

The RIT College of Science will be the home of five Research Experiences for Undergraduates funded by the National Science Foundation.

- [NSF-REU in Extremal Graph Theory and Dynamical Systems at RIT](#), PI: Dr. Darren Narayan
- [REU Site: Imaging in the Physical Sciences](#), PI: Dr. Roger Dube
- [Materials, Application and Development for Organic Photovoltaic Devices](#), PI: Dr. Christopher Collison
- [Research Experiences for Undergraduates in Model-based Reasoning in STEM](#)



[Education at the RIT College of Science](#), PI:

Dr. Leslie Kate Wright

- [REU Site: Multimessenger Astrophysics](#), PI:

Dr. Joshua Faber

Summer Undergraduate Research Fellows announced

The College of Science funded 25 students for Summer Undergraduate Research Fellowships in 2017. The program is designed to increase the number of available research opportunities at RIT to work with our COS faculty.



Paul Craig named Chemical Pioneer

Dr. Paul Craig, SCMS school head, has been honored with the Chemical Pioneer Award from the American Institute for Chemists. He was invited to present a talk at the Chemical Heritage Foundation museum in Philadelphia on May 11. The award recognizes chemists, chemical engineers, or their associates who have made outstanding contributions which have had a major impact on advances in chemical science and industry and/or the chemical profession.



[American Institute of Chemists >](#)

Lea Michel named 2017 Edwina Award recipient

Dr. Lea Michel, SCMS, was given this year's RIT Edwina Award. The award is named for Edwina Hogodone, who had a 37 year career at RIT, beginning as an instructor in Sales, Personnel, and Advertising and ending as the first woman in the nation to be named as dean of a college of



business. It recognizes a faculty or staff member for his/her significant contributions to enhance gender diversity and inclusiveness.

[Center for Women and Gender >](#)

Two COS students recognized as 2017 Legacy Leaders

Emily O'Connor, applied statistics major, and **Ali Prengaman**, applied mathematics BS/MS student are among 16 Legacy Leaders recognized by the RIT Center for Women and Gender Leadership and Engagement. The award recognizes female graduating seniors or graduate students who have significantly contributed to the RIT community during their academic careers.



[Centers for Women and Gender and Leadership and Civic Engagement >](#)

Two COS students earn Goldwater Award honorable mentions

Benjamin Catalano and **Ryan Le**

Tourneau, both SCMS, received honorable mentions in the 2017 Barry Goldwater Scholarship competition. This year 1286 students from 470 institutions were nominated for a Goldwater scholarship. The award committee named 240 new Goldwater Scholars and identified 307 students as honorable mentions.

[Goldwater Scholarship list >](#)



Indiana Drones: Unmanned aerial vehicle gives archeologist a cool tool

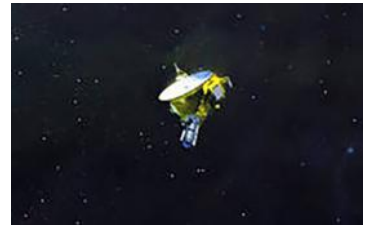
An off-the-shelf drone customized for archeological surveys by Rochester Institute of Technology students was on exhibit at the 10th annual Imagine RIT: Innovation and Creativity Festival on May 6. Members of the senior design team from the Kate Gleason College of Engineering and the College of Science developed the [Multispectral Imaging Drone](#) as an archeological survey tool to locate potential artifacts prior to a dig. Data taken off the drone could be used to locate objects on the ground or buried a few meters below the surface.



[University News >](#)

RIT scientist measures brightness of the universe with NASA's New Horizons spacecraft

In the study, "Measurement of the Cosmic Optical Background using the Long Range Reconnaissance Imager on New Horizons," lead author **Michael Zemcov**, School of Physics and Astronomy, used archival data from the instrument onboard New Horizons—the Long Range Reconnaissance Imager, or LORRI—to measure visible light from other galaxies. The light shining beyond the Milky Way is known as the cosmic optical background. Zemcov's findings give an upper limit to the amount of light in the cosmic optical background.



[University News >](#)

COS student wins CIEE Global Scholarship

Gwendolyn Doherty, an applied mathematics student in the College of Science currently studying in London, Rome, and Paris, was the winner of a \$10,000 scholarships from the Council on International Educational Exchange, or CIEE, Study Abroad. She is engaging in comparative learning experiences at the three locations during the 18-week program.

[University News >](#)



RIT student presents research at Posters on the Hill in Washington, D.C.

RIT student William Marmor presented his undergraduate research at the [Posters on the Hill](#) event in Washington, D.C., April 25-26. Marmor, of Sugar Loaf, N.Y., is senior biomedical sciences major in RIT's College of Health Sciences and Technology. His poster, "Transforming the Undergraduate Lab Experience at Two- and Four-year Institutions: Reformed Experimental Activities (REActivities)," summarizes research he conducted with Christina Goudreau Collison, associate professor in the School of Chemistry and Materials Sciences in RIT's College of Science.



[University News >](#)

COS bioenergy research project noted in RIT food waste recycling efforts

RIT, a city unto itself, is combating food waste across all corners of the campus and beyond. RIT and Synergy Biogas, a high-tech anaerobic digester located on Synergy Farms in Covington, N.Y., conducted a three-month pilot program led by Jeff Lodge, Gosnell School of Life Sciences. The project explored the environmental benefits of using microalgae to clean agricultural wastewater and produce biofuels.



[University News >](#)

Ph.D. students explore the invisible effects car tailpipe emissions have on the environment at Imagine RIT

Visitors to this year's [Imagine RIT: Innovation and Creativity Festival](#) on Saturday, May 6, will see first-hand the effects of car tailpipe emissions using infrared light at the [EZ-GAS: Imaging for Car Emissions Characterization](#) exhibit. Twenty-three Ph.D. students from the Chester F. Carlson Center for Imaging Science have been working on the project since the fall.



[University News >](#)

National Science Foundation awards Graduate Research Fellowships to Brendan John

Brendan John, a graduate student from Salamanca, won a three-year, \$34,000 stipend from the NSF for research in science or engineering. John graduates this spring with a BS in computational mathematics and an MS in



computer science. His goal is to finish a Ph.D. and motivate other Native American students to pursue STEM fields.

[University News >](#)

Provost announces Connect Grants, Learning Innovation Grants, and Faculty Leadership Program awardees

The *Connect* Grants encourage leadership and career development, mentoring, networking and research collaboration, while enhancing and advancing the university's multifaceted initiatives and scholarship infrastructure. The following COS faculty members have been awarded AdvanceRIT Connect grants:

- **Leslie Kate Wright, GSoLS.** Co-PI(s) - Christy Tyler, GSoLS; Moumita Das, SoPA; Scott Franklin, SoPA; Jeyhan Kartaltepe, SoPA; Hyla Sweet, GSoLS; and Julie Thomas, GSoLS. Project Title: Developing from Within - Creating Mindful Leaders and Mentors in the College of Science
- **Lea Michel, SCMS.** Co-PI- Kara Maki, SMS. Project Title: Formal Evaluation of WISe
- **Jie Qiao, CIS.** Project Title: Increase Women Leadership in STEM and Entrepreneurship
- **Eileen Bushnell, CIAS.** Co-PI - Jennifer Liedkie, GSoLS. Project Title: An exploration of biological and cultural paradigms through the use of microbes in printmaking



The Provost also announced winners of his [Provost's Learning Innovation Grants](#), or PLIG.

- **Sandi Connelly**, Assistant Professor, (Dawn Carter, Elizabeth DiCesare, Jeff Mills, Joe Lanzafame) “Dear Professor, Do I really have to write in science? Yes, you do, dear student!”
- **Michael Cromer, Assistant Professor**, “ALAMODE (Active Learning Aided by Modeling with Ordinary Differential Equations)

Additionally, Michael Coleman, SCMS, and Christopher Kanan, CIS, will be attending the Faculty Leadership and Professional Development Program at Cornell University on June 19-23. This program offers participants an opportunity to gain professional and leadership skills, reflect on career and personal goals, and connect with other academic colleagues. Funding for this program is provided by Faculty Career Development in The Wallace Center.

COS faculty awarded with research and program development grants

Congratulations to the following faculty who have been awarded research agencies:

- **Sukanya Chakrabarti** was awarded an \$186,000 NASA Astrophysics Theory Program grant to conduct research on "Galactoseismology: From the Milky Way to XUV Disks".
- **Benjamin Zwickl**, was awarded \$98,696 from the Air Force and Massachusetts



Institute of Technology for "Integrated Photonics Workforce Needs Assessment."

- **Mishkatul Bhattacharya**, was awarded \$22,000 from the U.S. Navy Office of the Chief of Naval Research, for a project titled "Theory of Precision Quantum Sensing with Levitated Optomechanics: Hybrid, Multimode and Mie Systems."

Social Media



CCRG 10th Anniversary

The Center for Computational Relativity and Gravitation celebrated its 10th anniversary with a ribbon-cutting for its new office suite. [Facebook Album >](#)



March for Science

Faculty, staff, and students from the RIT College of Science and the Kate Gleason College of Engineering traveled to Washington D.C. to take part in the national March for Science April 22, a celebration of academic inquiry that took place in dozens of American cities. Below, Dr. Scott Franklin, SoPA, addresses the crowd that participated in March for Science in Rochester.





Internships in Industry and for Research Projects
Students met with Dean Dr. Sophia Maggelakis and Associate Dean for Industrial Partnerships Dr. Nathan Cahill April 19 for pizza and a discussion of opportunities for experiential learning.





Biotech Club merchandise sale

The RIT Biotech Club held its spring merchandise sale on April 26, selling quarter zips, beanies, plastic pins, metal pins, and stickers.



CASTLE Recruitment Fair

The CASTLE Learning Assistant (LA) Recruitment Fair drew a large number of interested students and faculty on April 12.





Outstanding Undergraduate Scholar

Brody Kutt, a computational mathematics major, received the 2016-17 Outstanding Undergraduate Scholar Award. He is pictured here with his teacher, Mark Oglesby, and RIT President William Destler. After graduation, Brody will be working for Palo Alto Networks as a Machine Learning Engineer and will also likely to pursue a Ph.D. in Artificial Intelligence at Stanford University.



Women in Science luncheon

RIT Women in Science (WiSE) hosted a luncheon April 7 with Alena Talkachova, an Associate Professor in the Biomedical Engineering at the University of Minnesota Department of Biomedical Engineering.



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Newsmakers



Equal Pay Day

Lea Vacca Michel, right, associate professor in chemistry, explains some ways to negotiate starting pay to Kelsea Jones, a third-year chemistry student from Avon, N.Y., during an Equal Pay Day awareness event hosted by Women in Science (WiSe) on April 4. Tables and posters were set up to demonstrate differences in starting salaries and how they become bigger differences over time.

[Spectrum TV >](#)

[Rochester First >](#)

Michael Zemcov, SoPA, was featured in a Forbes.com article titled "[NASA's](#)

[New Horizons Surprises With Whole New View Of Cosmos](#)".

Gabriel Diaz, CIS, has been invited to be a subcommittee chair for the Vision and Color Section of Frontiers in Optics, the annual meeting of the Optical Society of America, that will be held Sept. 17-21 in Washington, D.C.

Matt Hoffman, SMS, was a guest on [WXXI's Connections with Evan Dawson](#) to discuss his involvement in the Washington D.C. March for Science.

Dennis Bowen, Manuela Campanelli, Vassilios Mewes, and Scott Noble, all from CCRG were featured in AAS Nova, a website that highlights interesting results published in the journals of the American Astronomical Society. Their article is titled ["Relativistic Dynamics and Mass Exchange in Binary Black Hole Mini-disks."](#)

Scott Franklin, SoPA, was quoted in the Christian Science Monitor in a story titled ["March for Science: Can science and political activism coexist?"](#)

Casey Miller, SCMS, published a guest essay in the Rochester Democrat and Chronicle titled ["Trump's proposed cuts to scientific research are dangerous"](#)

Susan Smith Pagano, GSOLS, was quoted in a Rochester Democrat and Chronicle story titled ["Emerald ash borers doom most trees in Island Cottage Woods"](#)

Roger Dube, SEP, was interviewed on WROC for a story titled ["Electric Vehicle Popularity."](#)

NanoDays student presenters, led by **Kalathur Santhanam**, SCMS, participated in an April 8-9 event at the Rochester Museum and Science Center titled "Small Wonders: Big Impact." The museum presented each of the 12 student with a free pass to the museum. The group also presented their exhibition at the Bruce and Nora James Atrium in Gosnell Hall on April 5.

