RIT | College of Science

DEAN'S BULLETIN

Summer 2021 in Review

New signage on the Gosnell Building casts a fun shadow in the early morning sunlight.

Message from the Dean

This has certainly been a summer to catch our breath and prepare to return to a sense of normalcy as the pandemic ebbs in our region. Our faculty and staff were encouraged to take advantage of the summer to recover and restore their mental health through time off and flexible work arrangements, but that certainly hasn't slowed the progress of this amazing community!

This summer the RIT Board of Trustees voted in favor of approving the **Ph.D. in Cognitive Science**, a joint Ph.D. program between five colleges including the College of Science, the Golisano College of Computing and Information Science, the Kate Gleason College of Engineering, the National Technical Institute for the Deaf, and the College of Liberal Arts. Its administrative home will be the College of Liberal Arts. We are grateful for the contributions of **Mark Fairchild**, **Susan Farnand**, **Elena Fedorovskaya**, and **Jeff Pelz** who represented COS on the interdisciplinary team of faculty that put the proposal together and helped move it forward. The next step is for the degree proposal to be approved by President Munson who will forward it to NYSED for final approval.

Now as we prepare to welcome one of the largest incoming freshman classes in the history of RIT, fueled in part by New Economy Majors like our Imaging Science program, we anticipate a more typical year on campus. More than 1,600 incoming students are getting a taste of college learning through enrollment in the second annual offering of the First Class Academy program, directed by COS's **Sandi Connelly**. Students last year said the courses gave them a low-risk environment to learn about how myCourses works, helped them know more about faculty expectations and how they could best interact with faculty even in an online, asynchronous class. Students are also strongly encouraged to take a course that is outside their major.

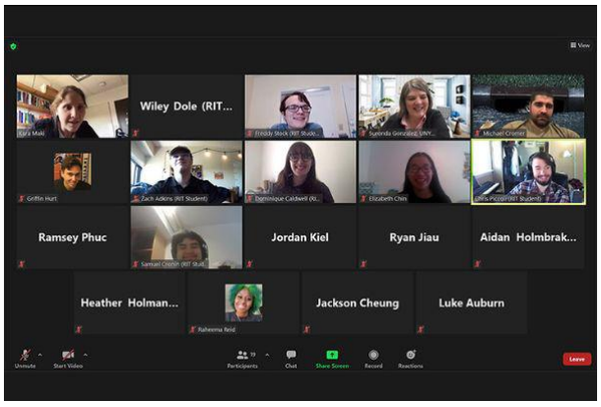
In the face of so much positivity, I'm sorry to share the news that RIT Trustee and philanthropist, **Bruce Bates** passed away at the end of May. In addition to the Bates Study Center in Gosnell Hall, Bruce and his first wife, Nancy, established an endowed NRS merit scholarship for outstanding COS students. He also created the Bates Scholarship Endowment for Admissions and Enrollment Management which is used to attract the best students to RIT, regardless of ability to pay. We are so grateful to Mr. Bates for sharing his wealth and prosperity to enable numerous COS students to fund their education and build their own bright futures. His gifts will create a legacy that lives far beyond his time in this world. We are truly grateful for the generosity of Bruce and are touched by his leadership.

We are excited about the year ahead and hope to see you on campus soon!

SOPHIA MAGGELAKIS

Dean, RIT College of Science

Student & Alumni News



RIT seniors use mathematical modeling to explore COVID-19 questions for policymakers

Mathematical modeling has been a powerful tool for policymakers grappling with COVID-19 to help predict how targeted actions can impact the rates of infections, minimize the risk of exposures, increase recovery rates, and much more. Fifteen seniors who took the **Senior Capstone in Math** course this spring put their modeling skills to the test to help officials evaluate past policies and predict future outcomes.

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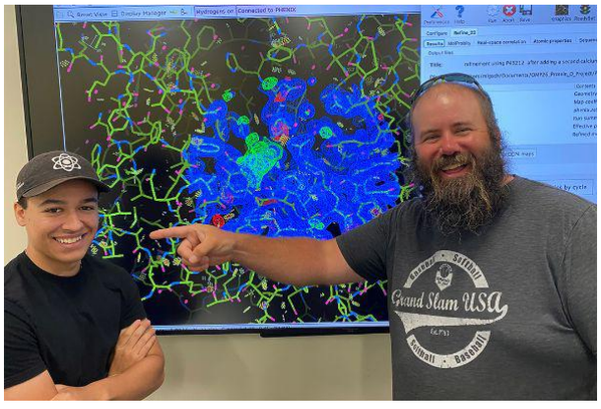

RIT HHMI Inclusive Excellence program offers students an early chance to delve into research

Rhyl Charles and nine other RIT College of Science students received funding to work with faculty mentors on summer-long research projects as part of the HHMI Inclusive Excellence Summer Research Experience. The program is for students who just completed their first year at RIT—including transfer students—and gives preference to students from nontraditional and underrepresented groups to help broaden RIT's research groups to include a greater diversity of culture.

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Student researcher focuses on bacteria in Lake Ontario

Marissa Schroeter's summer undergraduate research explores a global health issue with a local twist. Her work prospects for new antibiotic compounds produced by two bacterial strains collected from Lake Ontario.

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First Class Academy whets appetites for hungry RIT freshmen

More than 1,600 first-year Rochester Institute of Technology students are getting a head start accumulating college credit and learning how college works by taking an online course this summer.

The First Class Academy, which was first offered last year as a way to help engage and retain students during the pandemic, is an interactive, tuition-free online experience designed to introduce RIT to incoming first-year students. Students also have opportunities to participate in virtual coffee hours with faculty, explore student life through online webinars and forums, and meet future classmates.

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Nearly 100 College of Science students joined students representing nearly every RIT college and the international campuses to present outcomes and findings from their research work at the virtual Undergraduate Research Symposium, July 29-August 4. The symposium opened with an address from keynote speaker, **Michael Johnson**, assistant professor in the University of Arizona's Department of Immunology on the topic of "Lessons in being wrong and achieving comfort in chaos."

First mathematical modeling Ph.D. student graduates from RIT

From her early days in school, **Nicole Rosato** realized that math was one of her favorite subjects. This past May, Rosato, who is from Paramus, N.J., became the first student to graduate from RIT's new Ph.D. program in mathematical modeling. She also graduated from RIT's master's program in applied and computational mathematics.

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Our Stories

New study finds plastic waste in the sea mainly drifts near the coast

Matthew Hoffman, an associate professor in RIT's School of Mathematical Sciences, is co-author on the study led by Victor Onink at the University of Bern. Hoffman and his colleagues began developing the idea behind the paper while at a workshop on modeling marine debris in 2019 in the Netherlands. Hoffman said the study has major implications for understanding how plastic pollution affects coastal ecosystems and tourist destinations.

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CIBER-2 experiment successfully completes first flight

By sending a Black Brant IX rocket on a 15-minute flight to space and back, researchers from Rochester Institute of Technology, Caltech, Kwansei Gakuin University, and Korea Astronomy and Space Science Institute glimpsed traces of light from the earliest stages of the universe. The Cosmic Infrared Background Experiment-2 (CIBER-2) completed a successful first launch on June 7 at the White Sands Missile Range in New Mexico, the first of four planned over the next several years.

Led by principal investigator Michael Zemcov, an associate professor in RIT's School of Physics and Astronomy and Center for Detectors, the experiment aims to better understand extragalactic background light, which traces the history of galaxies back to the formation of the first stars in the universe. Zemcov said data collected by the study could help resolve discrepancies about how many stars exist in the universe.

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New math model traces the link between atmospheric CO2 and temperature over half a billion years

A Rochester Institute of Technology mathematician helped develop a new modeling method to explore the relationship between the Earth's atmospheric carbon dioxide (CO2) and surface temperature over hundreds of millions of years. Assistant professor Tony Wong is the lead author of an article featured in the journal Nature Communications that outlines the method. He hopes it will help answer fundamental questions about the geophysical processes that drive the Earth's climate.

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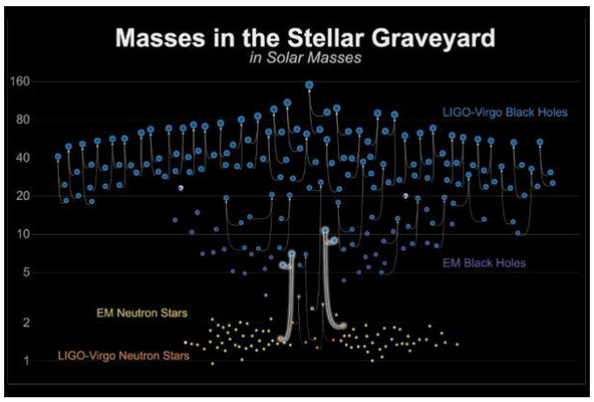

Scientists detect gravitational waves for the first time from black holes swallowing neutron stars

For the first time, scientists detected gravitational waves caused by mergers between black holes and neutron stars. Researchers from LIGO, Virgo, and KAGRA detected the two gravitational wave events—from distances of more than 900 million light-years away—within a span of 10 days in January 2020 during the second half of LIGO and Virgo's third observing run. *Astrophysical Journal Letters* published the results and their implications today.

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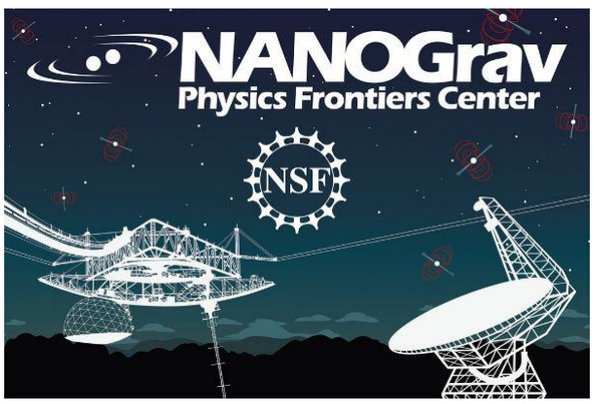

NSF renews funding for RIT to help detect and characterize low-frequency gravitational waves

The National Science Foundation (NSF) renewed its support of the North American Nanohertz Observatory for Gravitational Waves (NANOGrav) with a $17 million grant over five years to operate the NANOGrav Physics Frontiers Center (PFC). Rochester Institute of Technology will receive $703,000 over the next five years to contribute research to the NANOGrav PFC.

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NGA funds RIT researchers to explore the limits of spectral remote sensing imaging systems

The National Geospatial-Intelligence Agency is funding a team of Rochester Institute of Technology imaging scientists to study the limits of spectral remote sensing imaging systems. Led by principal investigator John Kerekes, a professor in the Chester F. Carlson Center for Imaging Science, the team received a grant of up to $1 million to conduct fundamental research on imaging systems over the next two to five years.

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RIT scientists conduct coordinated remote sensing experiments with drones, planes, and satellites

Rochester Institute of Technology scientists and a team of international collaborators recently completed an intricate set of experiments that will help improve remote sensing technology used by drones, airplanes, and satellites. The coordinated flyovers took place over the Tait Preserve of RIT in late July and was a group effort by RIT's faculty, staff, and students from Chester F. Carlson Center for Imaging Science, as well as the National Research Council of Canada, Labsphere, and Maxar. Assistant Professor Emmett Ientilucci, who led RIT's part in the field campaign, said an effort of this scale is uncharted territory.

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CAREER Awards advance promising research for future innovators and leaders

When assistant professors Pratik Dholabhai of the School of Physics and Astronomy and Rui Li from the Golisano College of Computing and Information Sciences received National Science Foundation CAREER Awards this spring, it put them among an elite group of research faculty on campus and across the country.

Given to faculty who have the potential to serve as role models and mentors, and to integrate teaching and research into their careers in academia, a Faculty Early Career Development Program (CAREER) Award is one way of advancing a path in research.

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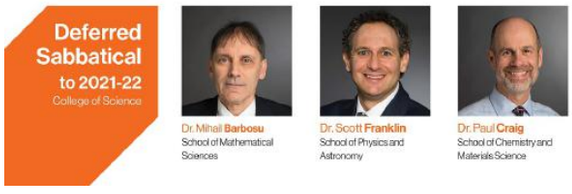
Honors, Awards & Recognitions

Congratulations to our colleagues who have been awarded Leaves of Absence for Professional Development for the Academic Year 2021-22. They are:

- **Manuela Campanelli,** Professor, School of Mathematical Sciences
- **Feng Cui,** Associate Professor, Gosnell School of Life Sciences
- **Moumita Das,** Associate Professor, School of Physics and Astronomy
- **Elizabeth Hane,** Associate Professor, Gosnell School of Life Sciences
- **Darren Narayan,** Professor, School of Mathematical Sciences
- **Julie Thomas,** Associate Professor, Gosnell School of Life Sciences



Additionally, three faculty deferred their Professional Development Leave from the 2020-21 academic year and will take their leave this year:

- **Mihail Barbosu,** Professor, School of Mathematical Sciences
- **Scott Franklin,** Professor, School of Physics and Astronomy
- **Paul Craig,** Professor, School of Chemistry & Materials Science

Congratulations to all and best wishes for a productive sabbatical!

Dr. Larry Buckley has been promoted to **Senior Associate Dean** for the College of Science. In this role, he will continue to guide undergraduate and graduate curriculum, programs, and student success, oversee building facilities and the teams that manage them, and support and manage Dean's Office staff and their operations. Since 2008, Dr. Buckley has worked tirelessly on behalf of the college and is a tremendous asset to faculty, staff, and students for his astute insights and leadership.

RIT student, **Natalie Labbe** (Chemistry), is the recipient of a Marion B. Sewer Distinguished Scholarship for Undergraduates Award from the American Society for Biochemistry and Molecular Biology. This highly competitive national award offers financial support to students who demonstrate an interest in biochemistry and molecular biology and enhance the diversity of science. Natalie works in Dr. Lea Michel's lab on understanding the detailed intermolecular interactions between crystallin proteins from the eye lens.

ASBMB AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY

The American Society for Biochemistry and Molecular Biology (ASBMB) awarded the 2021 ASBMB Student Chapters Outstanding Chapter Award to RIT. This award is given in recognition of the chapter's leadership in biochemistry and molecular biology educational activities, exceptional commitment to increasing public awareness of science, collaboration with other campus activities and events, and participation in regional and national meetings.

College Updates

We are pleased to welcome two outstanding new colleagues to fill our open academic advisor positions, Erica Ford and Tess Tomanovich.

Erica Ford joins us from RIT's International Student Services office and will begin Thursday, Aug. 19th. She will take the advising role vacated by **Rosanne Klingler's** retirement. Erica holds a Bachelor of Arts in Cultural Anthropology from The Ohio State University, and a Master of Arts in Counseling from Dallas Theological Seminary. Erica's previous professional roles include many years in higher education as an academic advisor and international student specialist at Richland College, Dallas Theological Seminary, the University of Texas at Dallas, and RIT.

Tess Tomanovich joins us from RIT's Admissions office beginning Tuesday, Aug. 17th. She will fill the advising role that will be vacated by Larissa Barresi's departure. Tess holds a Bachelor of Arts in English/minor in Education from Bucknell University, and a Master of Science in Education and Counseling from Alfred University. Tess's previous professional roles include many years in K-12 and higher education as a school counselor and many years at RIT as an admissions counselor.

We are very pleased Erica and Tess are joining our team. Please join me in welcoming Erica and Tess!

College of Science welcomes Margaret Rollins as she joins RIT as the new **Director of Advancement** for our college starting July 1st. Margaret takes over the role vacated by **Mark Gaul's** retirement. Margaret has served in a variety of fundraising positions, most recently as the Associate Director of Gift Planning at Nazareth College. In that role, she worked in corporate and foundations fundraising which has given her a broad skill set. Prior to her work in higher education, Margaret served in various non-profit leadership roles for several years. Her strategic planning and organizational leadership skills will be an invaluable addition to the University Advancement team as they diligently work to expand the fundraising efforts for our college. Margaret received her undergraduate degree from Ithaca College and a masters from the University of Cincinnati.
Welcome, Margaret! We are looking forward to a successful collaboration with you!

There are several changes happening in the Center for Advancing STEM Teaching, Learning and Evaluation (CASTLE) and the Inclusive Excellent Initiative (IE). This summer we welcomed Matt Sayre to RIT as the new **CASTLE Staff Specialist**. Matt comes to RIT via Kansas State University where he served as a Scholarship Administrator and Building Scheduler for the College of Business. We're glad to have Matt's higher education experience keeping the group moving forward while CASTLE Director Scott Franklin begins his Sabbatical year. Leadership in CASTLE will be divided between Dina Newman, Emily Mehlman and Larry Buckley until Scott returns next fall.

At the end of August, CASTLE/IE will say goodbye to Rita Margarida Almeida Magalhaes, program coordinator for the Inclusive Excellence Initiative. Rita served in this role from July of 2020 after transitioning from a postdoc position with the group amidst the pandemic. Under her leadership, IE was able to continue to offer monthly seminars on topics surrounding diversity and inclusion, provide summer research opportunities for College of Science students and REUs in the DBER program, extend the reach of IE programming throughout the university in collaboration with Advance RIT, the Division of Diversity and Inclusion, Title IX and other RIT student service organizations and outside of the university through the publication of two peer-reviewed journal articles. We wish Rita well in the next stage of her career as she joins her husband in Seattle, WA. She will work remotely through the end of August, by which time we hope to be able to announce Rita's replacement.

College of Science partner Keisha Burton, who has served for the past two years in the role of Financial Analyst for the college, has been promoted to Senior Analyst in Sponsored Programs Accounting and will take over the role that has been held in recent years by Daniel Mancuso, providing financial support to the **Chester F. Carlson Center for Imaging Science**.

Since joining RIT two years ago, Keisha quickly learned RIT's processes and procedures and continues to share her knowledge from her many years of prior experience in accounting and finance with higher education. Keisha brings a positive, inquisitive approach to her work and we are excited that she will remain with COS in a new role, continuing to build on her established relationships with CIS and SPA colleagues.
We thank Daniel for his dedicated service to CIS and wish him well in his new role with the College of Engineering Technology.

GSoLS Insider
RIT Thomas H. Gosnell School of Life Sciences

The Thomas H. Gosnell School of Life Sciences published Spring 2021 edition of the GSoLS Insider Newsletter, a collection of all of the stories about GSoLS Faculty, Staff and Students that made headlines in the spring semester.

Peer Reviewed Publications

Dr. Raluca Felea, professor in the School of Mathematical Sciences, published 'FIOs with cusp singularities and open umbrellas' in the Journal of Pseudo-Differential Operators and Applications. The journal is a forum for high-quality papers in the mathematics, applications, and numerical analysis of pseudo-differential operators.

Nourridine Siewe, assistant professor in the School of Mathematical Sciences, is the lead author of a publication in the PLOS ONE journal. "TGF-ß inhibition can overcome cancer primary resistance to PD-1 blockade: A mathematical model" introduces two cancer-specific biomarkers and, correspondingly, develops a mathematical model which explains how primary resistance to PD-1 blockade occurs and can be overcome.

Gregory A. Babbitt, associate professor in the Thomas H. Gosnell School of Life Sciences, is co-author of two papers in Elsevier journals. "Behavioral impacts on residential food provisioning, use, and waste during the COVID-19 pandemic" and "A framework for modeling fraud in E-waste management" investigate the behavioral ecology of human industrial systems.

Both papers are collaborative projects with **Callie Whitfield Babbitt**, associate professor in the Golisano Institute for Sustainability. Student **Jessica M. Oehman** worked on the former project while the latter project was led by **Daniel Salmon** and **Christopher Wilmer** from the University of Pittsburgh.

RIT student **Prateek R. Srivastava** (imaging science) is the lead author in the European Physical Journal Plus along with Grover Swartzlander, professor in the Chester F. Carlson Center for Imaging Science. "Optomechanics of a stable diffractive axicon light sail" demonstrates how a laser-propelled light sail is expected to follow a stable trajectory in space when the sail is made from a diffraction grating that scatters light toward the axis of the sail.

Patrick Rynkiewicz (bioinformatics BS/MS '21), who is a scientist at Regeneron Pharmaceuticals, and Gregory A. Babbitt, associate professor in the Thomas H. Gosnell School of Life Sciences (GSoLS), are the lead authors on a comparative computational study of the binding function (i.e. mechanism of infection) of various past and present coronaviruses including SARS-CoV-2 and its relatives in humans and bats. The work was a collaborative effort, including Associate Professor Feng Cui (GSoLS), Professor Andre Hudson (GSoLS), and **Dr. Miranda Lynch** (Hauptman-Woodward Medical Research Institute, Buffalo, NY).

Lili Zhang, Ph.D. candidate in the color science program, published "Color appearance shift in augmented reality metameric matching" in the Journal of The Optical Society of America A. The paper describes experiments exploring humans' visual interpretation of objects displayed in transparent augmented reality with illuminated real-world backgrounds. The research collaboration was accomplished while Zhang was a co-op with Facebook Reality Labs, working with FRL's Romain Bachy and RIT Assistant Professor Michael Murdoch.

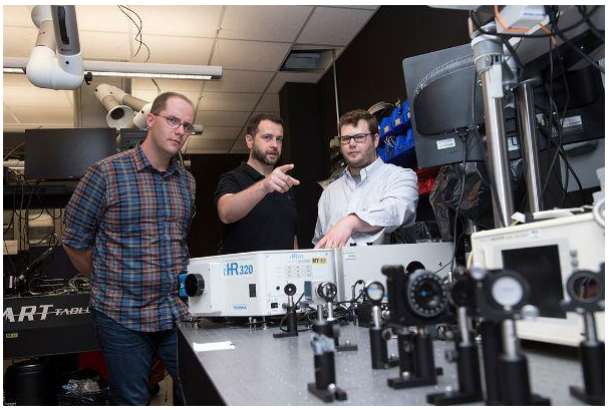
Several RIT students published "Surface Modification of Polyethersulfone (PES) with UV Photo-Oxidation," in the journal Technologies. The lead author is **Ibrahim Cisse** '19 (environmental science), '21 MS (sustainable systems). Co-authors include **Sarah Oakes** '21 (chemical engineering), '21 MS (materials science and engineering); **Kristen Margaret Atkinson** '20 (chemistry), a graduate student in the chemistry program; **Shreen Sachdev** '20 (packaging science); **Marc Toro** '18 (civil engineering technology); **Shin Lutondo** '18 (chemistry); and **Devon Shedden** '20 BS/MS (chemistry), along with Gerald Takacs, professor in the School of Chemistry and Materials Science.

Nicole Cavanaugh '20 (Biotechnology & Molecular Bioscience) was lead author on a publication in the journal *BMC Research Notes* titled "Exiguobacteriam sp.Is endowed with antibiotic properties against Gram positive and negative bacteria." Other authors were Anutthaman Parthasarathy, **Narayan Wong**, **KayLee Steiner** '20 (Biotechnology & Molecular Bioscience), **Jonathan Chu** '21 (Biotechnology & Molecular Bioscience), **Joseph Adjei** (4th year Biomedical Sciences) and Professor André Hudson.

RIT student **Amber L. Dubill** (mechanical engineering) is the lead author of a publication in the Acta Astronautica journal along with Grover Swartzlander, professor in the Chester F. Carlson Center for Imaging Science. "Circumnavigating the sun with diffractive solar sails" describes a future space mission that will image the polar regions of the sun for the first time and demonstrates that an ideal diffractive sail is more efficient at reaching the desired orbit than a traditional reflective sail.

A multi-disciplinary team of College of Science students and faculty members published "Modular Synthesis of Peptide-Based Single- and Multimodal Targeted Molecular Imaging Agents." Lead author, Hans Schmitthenner, research faculty in the School of Chemistry and Materials Science coordinated the team which includes Chemistry students **Taylor M. Barrett '15**, **Stephanie A. Beach '15**, **Chelsea Weidman '15**, **Damien E. Dobson '18**, **Emily R. Mahoney '21**, **Nicholas C. Schug '18**, **Kelsea G. Jones '18**, **Ceyda Durmaz '20**, and **Osarhuwense Otasowie '20**, Life Sciences students **Lauren E. Heese '16. Sean Aronow '15**, **Yin Peng Lee '13**, and **Henry D. Ophardt '15**, Imaging Science student **Amy E. Becker '16** and faculty, Joseph P. Hornak, **Irene M. Evans**, and Maureen C. Ferran.

Presentations & Workshops



RIT and SPIE partner on 2021 Photonics for Quantum event

SPIE, the international society for optics and photonics, and Rochester Institute of Technology will present the 2021 Photonics for Quantum Digital Forum July 16-20. Previously an RIT initiative, this year marks a new iteration of this event in the form of a partnership between RIT and SPIE.

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RIT hosts virtual conference on compact binary mergers for computational astrophysicists

RIT's Center for Computational Relativity and Gravitation (CCRG) hosted a virtual conference to discuss the cutting-edge science of binary neutron star and neutron star-black hole mergers.
More than 30 participants on three continents took part in the Theoretical and Computational Astrophysics Network (TCAN) virtual event on July 12-16.

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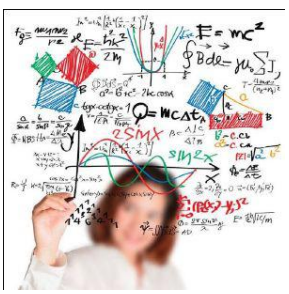

Dr. Raluca Felea, professor in the School of Mathematical Sciences, organized the RIT Math Summer Workshop for talented high school students. The workshop's goal was to expose high school students to different and complex math topics related to math competitions and challenge them to attain higher understanding and skills. This year, the subjects were math biology, polynomials, number theory, linear optimization, game theory, solving problems, the math properties of the Faro shuffle, and the Preferential Attachment Algorithm.

Lucia Carichino, assistant professor in the School of Mathematical Sciences, presented “Effect of altitude on retinal hemodynamics: A physiology-enhanced theoretical analysis” at the ARVO 2021 Revolutionary Eye and Vision Research annual meeting. ARVO advances research worldwide to understand the visual system and prevent, treat, and cure its disorders.

Dr. Tina Goudreau Collison, professor in the School of Chemistry and Materials Science, and Ms. Jennifer Swartzenberg, lecturer in the National Technical Institute for the Deaf (RIT/NTID) lead a research effort called Sign Language Incorporation in Chemistry Education and guide a research team of Deaf students to develop advanced ASL signs in organic chemistry. **Chemical and Engineering News** recently interviewed two students, **Kaitlyn Clark** '20 (chemistry) and **Asma Sheikh** '20 (biomedical sciences), who worked on the project for inclusion into the NTID website ASLcore.

Anjali Yelikar, an astrophysical sciences and technology Ph.D. student; **Jacob Lange '18 MS** (astrophysical sciences and technology), **'20 Ph.D.** (astrophysical sciences and technology); **Aasim Jan,** a student in the graduate physics program; and School of Mathematical Sciences faculty members Carlos Lousto and Richard O'Shaughnessy presented at the American Physical Society's “Quarks to Cosmos” conference. The presentations are part of the work developed by scientists at RIT's Center for Computational Relativity and Gravitation.

Olivia Kuzio, a Ph.D. student in the color science program, presented “Color Accuracy-guided Data Reduction for Practical LED-based Multispectral Imaging” at the 2021 IS&T Archiving Conference. This work, supervised by Assistant Professor Susan Farnand, is informing the development of practical systems and strategies that reduce the complexity of spectral imaging for routine digitization of cultural heritage materials.

Wade Pines '21 (imaging science) presented research from his senior capstone project at the SPIE Defense and Commercial Sensing Symposium and was awarded Best Student Paper for "Automated Calibration Pipeline for Agricultural sUAS Based Remote Sensing." Pines was the lead author, and co-authors were **Ryan LaClair** and **Chris Willey** from BeamIO; **Baabak Mamaghani** from Perspecta Incorporate; and Carl Salvaggio, professor in the Chester F. Carlson Center for Imaging Science.

Kimberly Dautel, a mathematical modeling Ph.D. student, presented her research at the Southern Georgia Mathematics Conference. “Modeling education campaign impact during an Ebola outbreak” involves modeling infectious diseases, including Ebola and COVID-19. School of Mathematical Sciences faculty who were present included Associate Professor Ephraim Agyingi and assistant professors Lucia Carichino, Blessing Emerenini, and Nourridine Siewe.

Andy Gonzalez, a second-year student research fellow in the Inclusive Excellence program, has won a poster award at the Microfluidics and Energy Symposium 2021. His poster presentation was entitled: "Exploring the Limits of Dynamic Permeability Modifications in Porous Media." He is a second-year double major in physics and applied mathematics. Andy worked with faculty mentor, Dr. Shima Parsa Moghaddam in the Inclusive Excellence research mentoring program.

Sponsored Research

Peter Bajorski, SMS, is the PI on a $17,365.00 contract from DHHS - National Institutes of Health / Rochester General Hospital Research Institute to support a project titled “Immune biomarker discovery in children susceptible to recurrent otitis media.”

Gregory Howland, SoPA, is the PI with co-PIs **Edwin Hach** (SoPA) and **Stefan Preble** (KGCOE) on a $50,000.00 contract from L3Harris Technologies to support a project titled “RIT/L3Harris QIST Collaboration.”

André Hudson, GSoLS, is the PI on a $16,720.00 grant from Iridium Biosciences to support a project titled “Solution phase Protein NTA to His Tag

protein study."

Emmett Ientilucci, CIS, is the PI with key personnel **Michael Gartley** (CIS) on a $264,837.00 contract from Intelligence Advance Research Projects Activity / Applied Research Associates, Inc. to support a project titled "ARA IARPA SMART."

Jeyhan Kartaltepe, SoPA, is the PI on a $16,100.00 contract from NASA-National Aeronautics and Space Administration / Jet Propulsion Laboratory to support a project titled "CANDELS-Herschel Environmental Spectroscopic Survey: Part III."

Jeyhan Kartaltepe, SoPA, is the PI on a $82,329.00 grant from NASA-National Aeronautics and Space Administration to support a project titled "Redshift Wrangler: Citizen Science Analysis of Extragalactic Spectroscopy."

Joel Kastner, CIS, is the PI on a $35,000.00 grant from NSF-National Science Foundation / Nation Radio Astronomy Observatory to support a project titled "An ALMA Archival Study of Bipolar Planetary Nebulae."

John Kerekes, CIS, is the PI with co-PI **Scott Brown** (CIS) and **Emmett Ientilucci** (CIS) on a $394,897.00 grant from DOD.National Geospacial-Intelligence Agency (NGIA) to support a project titled "Fundamental Research on Detection and Classification Limits in Spectral Imagery."

Michael Kotlarchyk, SoPA, is the PI with co-PIs **Pratik Dholabhai** and **George Thurston** (SoPA) on a $250,000.00 grant from NSF-National Science Foundation to support a project titled "Combining Nuclear Magnetic Resonance and Neutron Scattering for Determining Macromolecular and Liquid Structure: Towards Development of the Novel NMR-PNS Technique."

Carlos Lousto, SMS-CCRG, is the PI with co-PIs **Manuela Campanelli, Yosef Zlochower, Richard O'Shaughnessy** (SMS-CCRG) on a $374,540.00 continuing grant from the National Science Foundation to support a project titled "Fully Relativistic Studies of Black Hole Binaries with Applications to Gravitational Wave Observations."

Kaeti Stoss, GSoLS, is the PI with co-PI **Christy Tyler** (GSoLS) on a $25,000.00 contract from NYS Department of Environmental Conservation / Cornell University to support a project titled "Plastics MWEE for In and Out School Settings."

Jan van Aardt, CIS, is the PI on a $102,658.00 grant from NYS Department of Agriculture & Markets / New York Farm Viability Institute to support a project titled "Transformation of the New York Table Beet Industry through Digital Agriculture."

Anthony Vodacek, CIS, is the PI with key personnel **Robert Kremens** (CIS) on a $255,000.00 contract from National University of Rwanda to support a project titled "Creation of Sensor Networks and Embedded Systems Laboratory Facilities for the ACEIoT."

Lea Michel, associate professor in the School of Chemistry and Materials Science was awarded a two-year R21 grant ($417,032) from NIH NIAID for the project "Using nanopocket membranes to capture bacterial outer membrane vesicles from biofluids." Lea is PI of the grant, along with **Tom Gaborski** (RIT, Biomedical Engineering) and Co-I Anthony Pietropaoli (the University of Rochester, Department of Medicine). The team will create a novel purification technology to capture bacterial vesicles for the purpose of diagnosing sepsis in the early stages.

Emmett Ientilucci, assistant professor in the Chester F. Carlson Center for Imaging Science, was awarded several new grants over the summer:

- $148,976 for Phase II research with Austin Powder Inc., titled, "Quantitative Analysis of Nitrous Oxide after Blast Fumes by Drone Monitoring."
- $132,419 from Applied Research Associated Inc. to work on a new Intelligence Advanced Research Projects Activity (IARPA) program performing atmospheric compensation of multi-spectral, multi-temporal, multi-sensor satellite imagery.
- a two-year $10,000 grant from the Geoscience and Remote Sensing Society to perform work in "Segmenting Cloud/Smoke Plume from Background Clutter in Video Imagery using Machine Learning Tools." The Western NY GRSS Chapter partnered with the GRSS Kolkata, India Chapter to perform such work.
- $232,271 for follow-up research with Oak Ridge National Laboratory (ORNL). These funds cover research into cloud shadow mitigation, UAS data collections, EO and SAR imagery, and atmospheric compensation.

COS in the Media

Adobe Creative Cloud
A Glimpse into the future of color
Adobe talks to Mark Fairchild, professor and graduate program director, Munsell Color Science Laboratory, about color perception.

NASA.gov
Rocket Team to Discern if Our Star Count Should Go Way Up
NASA talks to Michael Zemcov, associate professor of physics and astronomy, about the amount of light in space coming from outside of galaxies.

WXXI
Connections: What bees can tell us about the spread of microplastics
WXXI's "Connections" program features Christy Tyler, professor in the Thomas H. Gosnell School of Life Sciences.

Chemical & Engineering News
Expanding American Sign Language's scientific vocabulary
Chemical and Engineering News interviews **Asma Sheikh** '20 (biomedical sciences) about ASLCore, a group of interpreters and deaf students based out of NTID that has developed advanced ASL signs in several disciplines.

The Conversation
A mix-and-match approach to COVID-19 vaccines could provide logistical and immunological benefits
Essay by Maureen Ferran, associate professor in the Thomas H. Gosnell School of Life Sciences, published by *The Conversation*.

KCBS
The Mix and Match Approach Could Be the Way to Vaccinate Every County Against Covid-19
KCBS Radio talks to Maureen Ferran, associate professor in the Thomas H. Gosnell School of Life Sciences, about how to speed up the COVID-19 vaccine rollout around the world.

WROC-TV
What Bezos' space launch could mean for space tourism
WROC-TV talks to Michael Richmond, professor of physics and astronomy, about the future of commercial services for space travel.

WROC-TV
RIT mathematician uses modeling to map greenhouse gases going back millions of years
WROC-TV talks to Tony Wong, assistant professor of mathematical sciences, about Earth's atmospheric carbon dioxide and surface temperature over hundreds of millions of years.

WROC-TV
How global climate change is impacting Rochester
WROC-TV talks to Tony Wong, assistant professor of mathematical sciences, about climate change.

News 18
Eye Patches on Pirates, World War II Pilots: Stereotype, Truth and Science Behind It
News 18 mentions Mark Fairchild, color science professor at RIT, as he discusses cones and rods in the eye.

Crain's Detroit Business
Swimming in Plastic
Crain's Detroit Business interviews Matthew Hoffman, associate professor of mathematical sciences, about how microplastics are appearing in a disturbingly wide range of places in the Great Lakes Basin.

Winds of Change
Mentoring Young Native Professionals
Winds of Change talks to Professor Emeritus **Roger Dube** about the importance of young Native professionals to have a mentor.

Photonics Media
Industry-Academia Partnerships Exceed the Sum of Their Parts
Photonics Media features Don Figer, director of the Center for Detectors, computer engineering BS/MS student **Irfan Punekar**, and **Stefan Preble**, professor in the Department of Electrical and Microelectronic Engineering.

Do you have news you want amplified? Submit the details using the new COS Newsmakers Form, and we'll help you share it. "COS Newsmakers" is a quick and easy way to acknowledge the professional and academic accomplishments of COS faculty, students, and staff for acknowledgement in upcoming monthly newsletters, web and social media, or even RIT news! Examples of achievements may include:

- publishing an article in a scholarly peer-reviewed journal
- presenting research at a conference
- sponsored research awards
- earning a scholarship
- winning an award
- …and more!

COS Newsmaker Submission Form

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