RIT | College of Science

MONTH IN REVIEW

February 2020

Message from the Dean

February may be a short month, but it is one of the busiest ones of the academic year. Besides the usual classes and club activities, there were multiple events taking place for COS faculty, staff, and students.

The college welcomed two **Distinguished Speakers** this month, and **Inclusive Excellence** hosted a world-renowned photographer specializing in genetic diversity.

It's the right time of year to find a new job in academia! Besides our search to identify a new head for the **School of Chemistry & Materials Science**, we are seeking new faculty in several of our academic units. There were many candidates on campus throughout the month presenting their research and meeting potential new colleagues in the **School of Mathematical Sciences**, the **School of Physics & Astronomy**, and the **Program of Color Science**.

Our students were busy throughout the month brushing up their resumes and practicing their interview skills as they sought co-ops, internships, or first post-college jobs at the **Science Networking Fair** and **RIT Spring Career Fair**. We wish our students the best of luck in their searches. We can't wait to hear what lies ahead for your bright futures!

SOPHIA MAGGELAKIS
Dean, RIT College of Science

Student & Alumni News

Baldwin Scholars Celebrated

The Thomas H. Gosnell School of Life Sciences celebrated six outstanding life sciences students at the annual David M. Baldwin Memorial Scholarship awards. The Baldwin Award winners for 2020 were:

- Alyssa Schoenfeldt
- Alaa Abdelmageed Ahmed
- Rowan Christie
- Emalee Wrightstone
- Lauren Trumpore
- Alexandria Shumway (not pictured)

Congratulations to all of them on their outstanding achievement.

Student to Student: Internship experience

Reid Kamhi, a fourth-year Computational Mathematics major, shares personal insights about the job search and the importance of internship experience for landing that first post-college job.

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Student to Student: Antibiotic resistance

Nicole Cavanaugh recently finished her last semester of undergraduate education at RIT with a BS in Biotechnology and Molecular Bioscience. She studied antibiotic resistant bacteria with **Dr. Andre Hudson**.

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Student to Student: Chiral resolution of cyclopropyl esters

Noah Gubernick, a fifth-year BS/MS Chemistry major, talks about finding his research mentor/advisor, **Dr. Michael Coleman** and the work they are doing.

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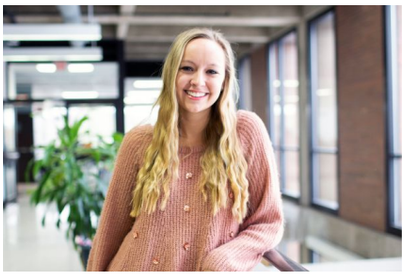

Student to Student: Brittle stars

Fifth year BS/MS student in Bioinformatics, **Alexandria Shumway**, studying with **Dr. Hyla Sweet**, shares her research on marine organisms and her study abroad adventure in Germany.

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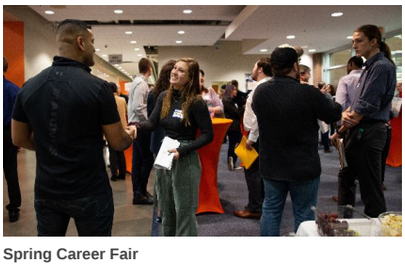
Photo by Daniel Bacon

Imaging Science Club hosts new hackathon

The Imaging Science Club hosted hack.tiff, RIT's first-ever imaging processing hackathon, on Jan. 25 and 26. Seven teams of students competed in the 24-hour challenge to solve an image processing challenge presented by the Rochester-based company EagleView, which offered $5,250 in prizes. EagleView provided the students with a data set of thousands of images of single-family homes across the U.S. and asked them to develop ways to analyze the data and extract meaningful information from it. The interdisciplinary event brought more than 40 participants from undergraduate and graduate programs including imaging science, computer science, computer engineering, motion picture science, American Sign Language and interpreting, management information science, physics and more.



Spring Career Fair

Students from around the college attended activities to prepare for RIT's **Spring Career Fair,** held February 26. Students built their resumes and cover letters during a workshop hosted by the **Office of Career Services**. **Women In Science (WISe)** sponsored a Linked In photo session to give students an opportunity to have a professional head shot taken. And the Office of Career Services coordinated a **networking event** on the eve of the Career Fair specifically for students to connect with companies that are interested in hiring employees with skills in science.

Our Stories, News & Updates

Announcing Professional Development Leave Awards for 2020-2021

Five College of Science faculty members were awarded Leaves of Absence for Professional Development for the academic year 2020-2021. We wish them all a productive sabbatical. Please join me in congratulating the following faculty:

- **Mihail Barbosu,** Professor, School of Mathematical Sciences
  Project: "*Incorporating Data Analytics and Machine Learning Techniques in Mathematical Modeling*"
- **Mishkat Bhattacharya,** Associate Professor, School of Physics and Astronomy
  Project: "*Collaborative Research on Levitated Optomechanics*"
- **Paul Craig,** Head and Professor, School of Chemistry and Materials Sciences
  Project: *"Expanding Computational Biochemistry at RIT*
- **Scott Franklin,** Professor, School of Physics and Astronomy
  Project: "*Shear of Super-elliptical Granular Materials and Physics Education Research on the Professional Development of Emerging Education Researchers*"
- **Niels Otani,** Associate Professor, School of Mathematical Sciences
  Project: *"New Directions in Imaging and Modeling of the Electrical System of the Heart*"

COS Advisor wins Provost's Academic Advising Award

Lindsay D'Alleva, COS advisor for undergraduate programs in Applied Mathematics and Bioinformatics & Computational Biology, was selected to receive the **Provost's Award for Excellence in Academic Advising** for the 2019-2020 academic year in the category of Experienced Academic Advisor. Lindsay will be recognized during an awards ceremony, reception and dinner on April 14.

AST Director named as AAS Fellow

Joel Kastner, professor in RIT's Chester F. Carlson Center for Imaging Science and School of Physics and Astronomy, and director of the Astrophysical Sciences & Technology Ph.D. program, was named in the first class of American Astrophysical Society Fellows. This accolade was established to honor members for extraordinary achievement and service. AAS Fellows will be recognized for original research and publication, innovative contributions to astronomical techniques or instrumentation, significant contributions to education and public outreach, and noteworthy service to astronomy and to the Society itself.

Color Science faculty member wins prestigious award

Michael Murdoch, assistant professor of Color Science in the Integrated Sciences Academy, was awarded the prestigious Faculty Early Career Development (CAREER) Program Award from the National Science Foundation for his work entitled "Computational Model of Perceived Color and Appearance in Augmented Reality." This is an outstanding achievement and recognition of Mike's research and contributions.

Inclusive Excellence hosts internationally acclaimed photographer

The College of Science **Inclusive Excellence team**, together with campus partners, hosted internationally acclaimed photographer Rick Guidotti on February 7. Guidotti is the founder and director of **Positive Exposure**, an organization that utilizes the visual arts to celebrate human and genetic diversity. The keynote address, titled *Positive Exposure: The Beauty of Our Shared Humanity*, and photo sharing event **celebrating human and genetic diversity was open to RIT and the greater Rochester community.**

Women & Girls in Science

Women in Science celebrated the International Day of Women & Girls in Science by hosting a showing of the movie Hidden Figures on the evening of February 11. The event was held in Fireside Lounge and was open to the entire RIT community.

Members of **WISe** also participated in the annual Girls in STEM fair on February 22. The event was held throughout the Golisano building and highlighted activities from Science, Technology, Engineering and Mathematics for girls in grades 5-12 from throughout the Rochester community.

SMS hosts data science expert

On February 5, COS and SMS hosted **David Bader,** a Distinguished Professor in the Department of Computer Science and Director of the Institute for Data Science at New Jersey Institute of Technology as the 5th Distinguished Speaker of the academic year to give a talk titled *Solving Global Grand Challenges with High Performance Data Analytics*. Dr. Bader is a leading expert in the development of mathematical algorithms which can be efficiently implemented on the world's most powerful computing architectures, and solve some of society's most challenging problems, including cyber-security and human disease prevention.

COS Hosts expert on graduate student mental health

Associate Professor of Education at the University of Southern California**, Julie Posselt** was the 6th distinguished speaker of this academic year. On February 27 & 28, Professor Posselt hosted a series of discussions to explore root causes of mental illness among today's generation of graduate students, the unique barriers experienced by members of minoritized communities, as well as the proactive steps that faculty, friends, and family can take to provide support and challenge toxic norms within academia. On February 28, she presented her talk: *Graduate Student Mental Health: What Faculty, Friends, and Family Can Do.*

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Strong presence by RIT faculty and alumni at Imaging

Science symposium

Imaging Science experts from around the world converged on RIT this February for the International Symposium on Electronic Imaging 2020, a conference for members of the Society for Imaging Science and Technology (IS&T), featuring Food and Agricultural Imaging Systems.
The conference was conceived and organized by Imaging Science Ph.D. alums, **Mustafa Jaber**, '12, **Grigorios Tsagkatakis**, '11, and **Mohammed Yousefhussien**, '19. Professor **Jan Van Aardt** from the Chester F. Carlson Center for Imaging Science and **Kevin Lang**, general manager of PrescisionHawk presented the keynote addresses.

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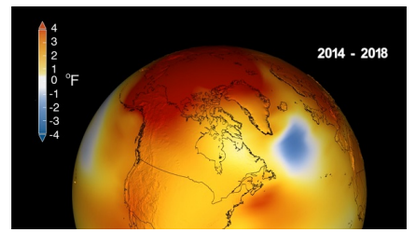

Coming soon: new immersion receives approval

The Integrated Sciences Academy recently received approval from RIT's General Education Committee to roll out a new immersion called **Climate Change: An Interdisciplinary Problem**.

Statistics professor shares knowledge far and wide

Ernest Fokoué, professor of statistics in the School of Mathematical Sciences published the cover article in the February edition of the American Mathematical Society Notices titled, *Model Selection for Optimal Prediction in Statistical Machine Learning.* Ernest is currently on sabbatical in Kigali, Rwanda where he is guest-teaching a course on statistical machine learning at the African Institute for Mathematical Sciences.

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Global lemur expert speaks about technology in conservation

World-renowned conservationist, **Patricia Wright**, visited RIT on February 27 to give a talk, *Building Forests and Saving Lemurs with Technology in Madagascar*. Wright is collaborating with the Seneca Park Zoo and Center for Imaging Science **Professor Tony Vodacek**, a remote sensing expert, to use technology to aid in conservation efforts in Madagascar.

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Sponsored Research

Joshua Faber, SMS, is the PI with co-PI **Jeyhan Kartaltepe** (SoPA) on a $402,579 grant from National Science Foundation to support a project titled "REU Site: Multimessenger Astrophysics."

Matthew Hoffman, SMS, is the PI on a $25,958 grant from NSF-National Science Foundation / Georgia Institute of Technology to support a project titled "Collaborative Research: Developing a quantitative three-dimensional understanding of cardiac arrhythmias."

Seth Hubbard, SoPA, is the recipient of a $25,000 gift from Facebook Reality Labs to support a project titled "Regrowth Capabilities Research."

Michael Murdoch, ISA-PoCS, is the PI on a $549,892 grant from NSF-National Science Foundation to support a project titled "Computational Model of Perceived Color and Appearance in Augmented Reality."

Jie Qiao, CIS, is the PI on a $137,526 grant from NSF-National Science Foundation / University of Rochester to support a project titled "Ultrafast-laser-based polishing/forming of glass materials."

David Ross, SMS, is the PI with co-PI **Kara Maki** (SMS) on a $22,000 grant from Bausch & Lomb / Vision Care and a $11,000 grant from NYS.NYSTAR / University of Rochester [URMC Imaging Science] to support a project titled "Mathematical Modeling of 2-D, Upper and Lower Eyelid Driven Contact Lens Motion & Computer Simulation of the Resulting Toric Contact Lens Recentering Dynamics."

Carl Salvaggio, CIS, is the PI with co-PI **Joseph Sirianni** (CIS) on a $287,027 grant from the Department of Energy and Savannah River Nuclear Solutions, LLC to support a project titled "Mechanical Draft Cooling Tower Water Vapor Plume Volume Estimation."

Yosef Zlochower, SMS, is the PI on a $144,457 grant from NASA-National Aeronautics and Space Administration / Brigham Young University to support a project titled "Binary black hole waveforms for LISA using numerical relativity."

COS in the Media

Wired.com

Astronomy Expands Its Scope from the Heavens to Humans

The National Academies panel that **COS Associate Dean for Research & Faculty Affairs**, **Casey Miller,** serves on was mentioned in this article from Wired.com, calling out their work on Graduate Admissions. Mentioned by name in the article was Astrophysical Science & Technology Ph.D. graduate, **Grant Tremblay, '11.**

WROC-TV

Most bacteria found on touch screens is resistant to antibiotics

WROC-TV talks to Professor **André Hudson**, head of the Thomas H. Gosnell School of Life Sciences, about antibiotic-resistant bacteria found on touch screens.

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