

### January 2018



Winter is here, and with it, the beginning of our Spring Semester. The College of Science is buzzing with activity despite the snow and bitter temperatures outside. Renovations continue in the Gosnell laboratories, our faculty travel to workshops and conferences all over the world to present their work and collaborate with colleagues, and our students and alumni continue to distinguish themselves through outstanding research that is recognized through their professional organizations. We are building the future and leading through example here in the College of Science.

SOPHIA MAGGELAKIS

Dean, RIT College of Science



## American Physical Society Conference for Undergraduate Women in Physics hosted at RIT

The American Physical Society Conference for Undergraduate Women in Physics (CUWiP) was held at RIT January 12-14, 2018. The goal of CUWiP is to help undergraduate women continue in physics by providing them with the opportunity to experience a professional conference, information about graduate school and professions in physics, and access to other women in physics of all ages with whom they can share experiences, advice, and ideas. The program included research talks by faculty, panel discussions about graduate school, careers in physics and inclusivity, presentations and discussions about women in physics, laboratory tours, student research talks, a student poster session, various interactive workshops and discussions, and several meals during which presenters and students interact with each other. Despite some fierce winter weather, there were over 150 students in attendance to discuss physics, learn about their career options, and increase their pre-professional networks. SoPA assistant professor, **Jeyhan Kartaltepe**, headed the planning group that brought the conference to RIT and Astrophysics Technology Ph.D. candidate, **Brittany Vanderhoof** was instrumental in shaping the event. The opening reception on Friday afternoon was sponsored by WISE.



## 2018-2019 Sabbatical Announcements

Please congratulate our colleagues who have been awarded sabbaticals for all or part of the 2018-2019 academic year!

- **Dr. Linlin Chen**, Associate Professor in the School of Mathematical Sciences will be working on her proposal entitled, “Statistical Methods and Applications in Biostatistics and Data Analysis”.
- **Dr. Baasansuren (Basca) Jadamba**, Associate Professor in the School of Mathematical Sciences will be working on her proposal entitled, “Elliptic Regularization for Noncoercive Elliptic Inverse Problems Under Data Perturbation”.
- **Dr. Hyla Sweet**, Associate Professor in the Thomas H Gosnell School of Life Sciences will be working on her proposal entitled, “Molecular Mechanisms of Echinoderm and Spiralian Development”.
- **Dr. Peter Bajorski**, Professor in the School of Mathematical Sciences will be working on his proposal entitled, “Predictive Analytics Approaches to Imaging Science Applications”.
- **Dr. Scott Williams**, Professor in the School of Chemistry and Material Sciences will be working on his proposal entitled, “Next Generation Functional Materials for Printed Electronics”.



## **2018 Dean's NTT-Faculty Development Grant Recipient**

Congratulations to Bernadette Lanciaux, SMS Lecturer, this year's recipient of the Dean's Non Tenure Track Faculty Professional Development Grant. Bernie will be working on her proposal entitled Revising Introductory Statistics. She plans to attend conferences that bring together Data Scientists and Statisticians to support the development of programs to incorporate "big data" into introductory statistics courses.

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## What's New with RIT Drones?

On January 30, **Dr. Jan van Aardt**, Professor at RIT's Chester F. Carlson Center for Imaging Science, gave a thought-provoking presentation on the applications of unmanned aerial systems and the latest drone research being conducted at RIT. Those in attendance witnessed a demonstration of lidar technology from a working drone model and had the opportunity to ask the questions that were flying around in their minds.

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## Chambliss Astronomy Achievement Student Award Winner

In a coup for RIT's AST PhD program, **Yashashree Jadhav** and **Chi Nguyen** won two of the six [Chambliss Astronomy Achievement Student Awards](#) out of 70 total entrants for their posters at the January meeting of the American Astronomical Society in Washington DC. The Astronomy Achievement Student Awards are given to recognize exemplary research by undergraduate and

graduate students who present at one of the poster sessions at the meetings of the AAS. Congratulations!

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## **RIT Connect Grant Award Winners**

We are pleased to recognize four outstanding COS faculty who are among the recipients of RIT's Connect Grants for the 2017-18 academic year.

**Hyla Sweet**, Thomas H Gosnell School of Life Sciences

Co-PIs: Marla Schweppe, Glen Hintz

Project Title: Applying 3D Modeling Techniques to Help Understand the Developmental Biology of Echinoderms

**Kara Maki**, School of Mathematical Sciences & DT Ogilvie, Saunders College of Business

Co-PIs: **Christy Tyler (GSoLS)**, **Kate Wright (GSoLS)**

Project Title: Developing Reflective, Instrumental and Transformational Women Leaders

Area: Leadership Development

The Connect Grants Program award is offered by the AdvanceRIT project and Office of the Provost, with advisory support from the Division of Diversity and Inclusion, Faculty Career Development Services (FCDS) within the Innovative Learning Institute, and Sponsored Research Services. The Connect Grants drive discovery and learning within an environment that supports the development of project proposals and the process of peer review. These mini-grants encourage leadership and career development, mentoring, networking and research collaboration, while enhancing and advancing the university's multifaceted initiatives and scholarship infrastructure.



## New Patent for Chemistry Professor

Chemistry Professor **KSV**

**Santhanam** is the lead researcher on a new patent that was issued in mid-December for "Electrochemical Process for Producing Graphene, Graphene Oxide, Metal Composites, and Coated Substrates."

Congratulations to the inventors, Kalathur S. V. Santhanam, Satish Kandikar, Valentina Mejia, and **Yang Yue** (Material Science & Engineering alumni), for bringing this technology forward!

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## Fuel Cell workshops

**Alla Bailey**, senior lecturer, and **Gerald Takacs**, professor, SCMS, have begun holding workshop sessions and hands-on lab experiments at RIT for high school students and teachers as a part of their grant to teach about "Clean Energy Generation Using Fuel Cells," from Constellation's E2 Energy to Educate program.



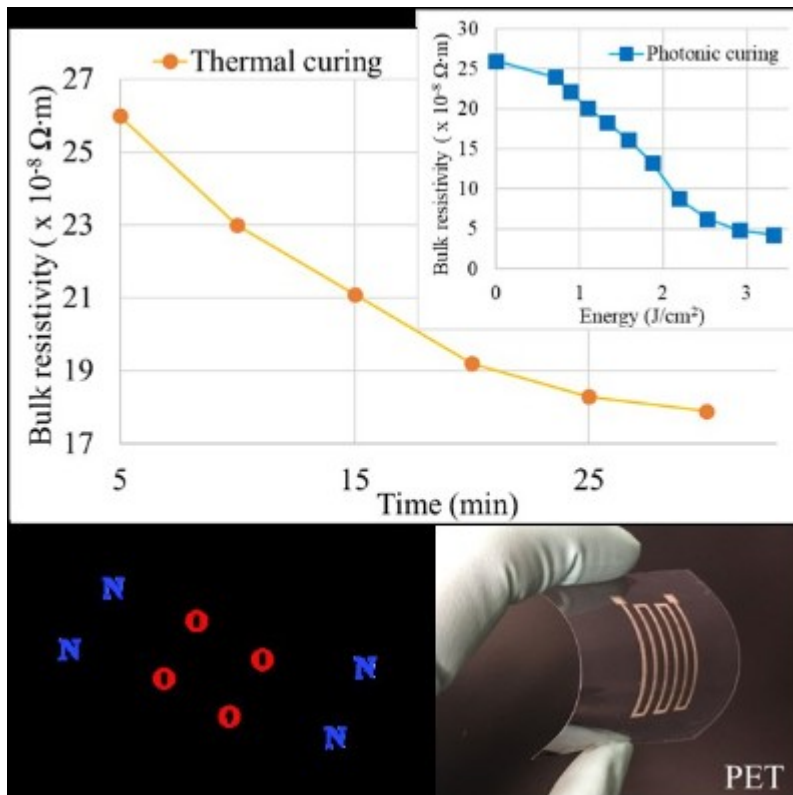
## **GSoLS Alumnus Established Student Research Fund**

GSoLS alum **Dr. Rich Kittles (1989)** has established a summer undergraduate/graduate research fund to provide funding to RIT students enrolled in programs within the College of Science, with a preference for African American students. Funding will be used to support students who wish to conduct summer research with an RIT COS professor. In addition, the fund will support registration, travel, lodging, and meals for students who present at conferences.

Dr. Kittles is currently a professor and founding director of the Division of Health Equities within the Department of Population Sciences at City of Hope in California.

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## Printing on Any Surface

**Scott Williams**, Professor, SCMS, has a new paper entitled, “*Reactive Silver Oxalate Ink Composition with Enhanced Curing Conditions for Flexible Substrates*” accepted for publication this month in the American Chemical Society (ACS) journal *Applied Materials and Interfaces*, which is regarded as one of the top 10 Materials Science journals. The photo here illustrates that this technology may be ink jet-printed onto any substrate, such a plastic film used in packaging, and with little energy (like a light flash). The lead author on the paper, **Khushbu Zope**, is a 2017 graduate of the Material Science and Engineering MS program and currently in the KGCOE PhD program. The second author is Denis Cormier of the ISEE program and AMPrint Director.

## AST Colloquium

On January 29, the School of Physics and Astronomy hosted Elizabeth McGrath of Colby College who gave a talk entitled “The Prevalence of Massive Quiescent Disks in the Early Universe.”

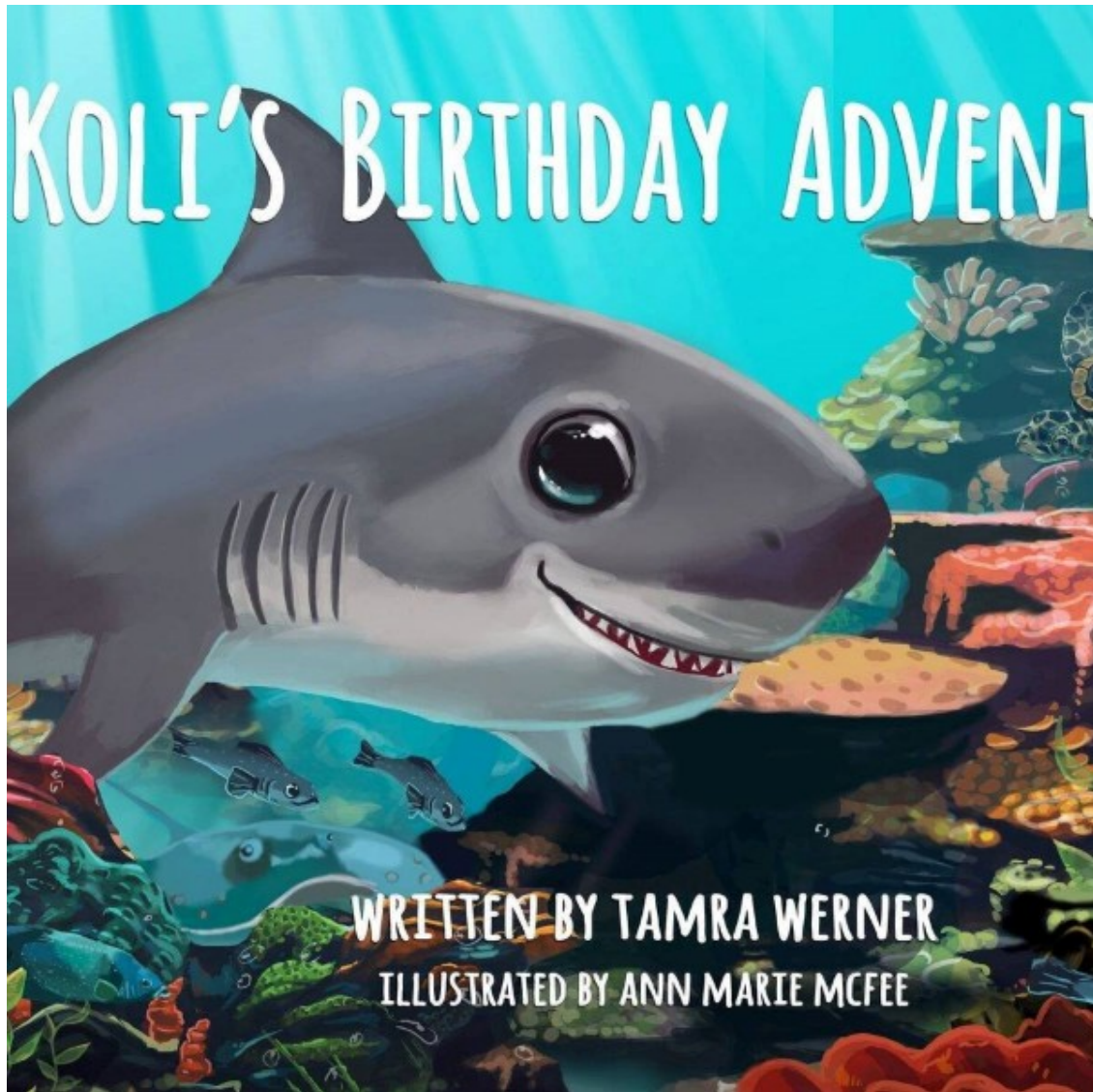
Upcoming AST events can be found at

<https://www.rit.edu/science/sopa/events>

## CIS Seminar

On January 31, Harold Weaver of Johns Hopkins University was an invited speaker at the Chester F. Carlson Center for Imaging Science. His talk was entitled “The Exploration of Pluto and the Kuiper Belt by New Horizons.”

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## Baby shark alert! RIT alumnae write and illustrate children's book for shark lovers

Rochester Institute of Technology alumna and self-described “shark whisperer” **Tamra Werner, director of alumni relations for the colleges of Science and Health Sciences Technology**, shares her love for the ocean in

her debut children's book, [\*Koli's Birthday Adventure: Koli the Great White Shark\*](#).

The factually based story unfolds with the birth of Koli, a great white “pup,” and the lessons he must learn to survive. Even great white sharks are vulnerable when young and must discover what is safe to eat and where not to venture while they are small. *Koli* is intended for children ages 3 to 10, or for any shark lover.

“I’m thrilled that Koli is swimming into the hearts of so many readers,” said Werner. “It gives me inspiration to write his sequel and create other endearing marine life characters for children to love and learn from.”

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## In the News

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### Excitable Systems Workshop

**Nate Hedden**, a second-year computational math student at RIT and Ula Widocki, a fourth-year applied math student at The College of New Jersey,

work on an experiment during the Workshop on Dynamics of Excitable Systems in early January. The workshop introduced students to using biology, math and engineering disciplines, especially electrophysiology, for understanding the heart's functions. Through lectures and collaborations, 17 students from RIT and other universities learned how mathematical models and computer simulations can advance research in medical cyber-physical systems and lead to future cardiac therapies. **Elizabeth Cherry, associate professor in the RIT School of Mathematical Sciences and director of the mathematical modeling Ph.D. program,** led the outreach effort associated with her National Science Foundation grant, Cyber Physical Systems: Frontier, Collaborative Research: Compositional, Approximate and Quantitative Reasoning for Medical Cyber-Physical Systems.

[Read More >](#)



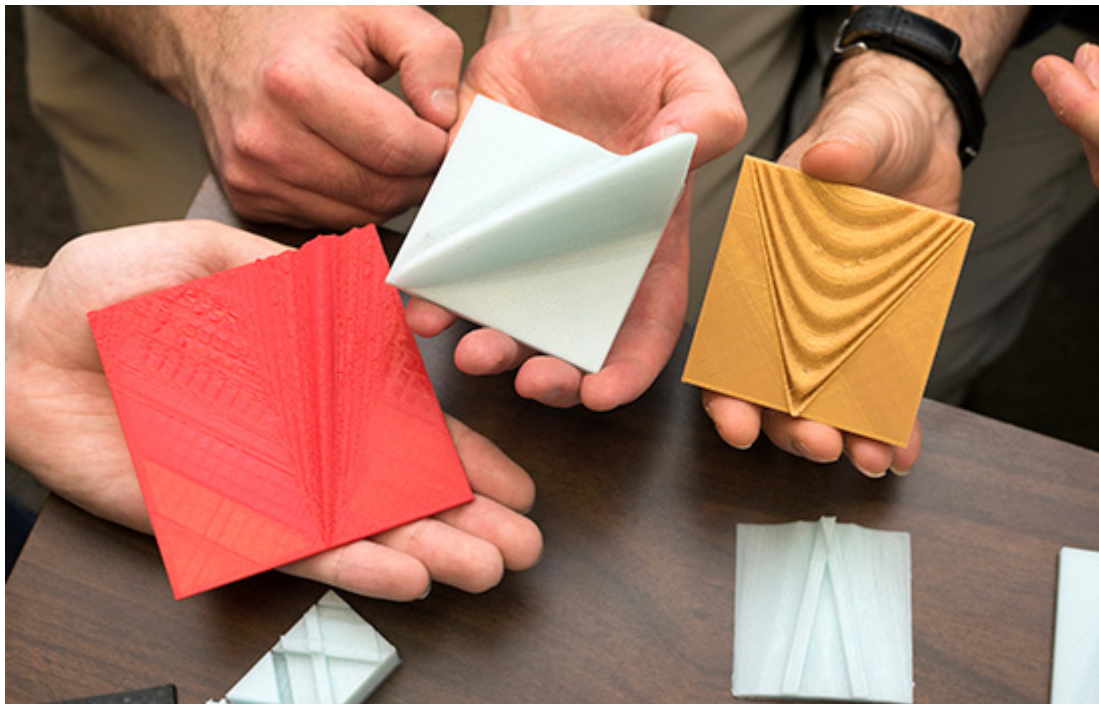
## **WISe supports event to promote women in science**

Some 200 students from Our Lady of Mercy School for Young Women in



Rochester visited RIT Jan. 17 for a daylong enrichment experience. The girls were able to design video games in the MAGIC Center lab, learn about engineering models and conduct simple science experiments. They also toured campus and were able to ask questions to RIT female students studying in these areas. The day was sponsored by RIT's MAGIC Center and University Center for Engaging K-12, and **WISe** participated in the day's events.

[Read More >](#)



## RIT Researchers are Making Waves

**Nate Barlow**, assistant professor, SMS, and **Steve Weinstein**, professor, KGCOE, have been working together using 3D-printed models of mathematical equations to illustrate wave systems and other fluid dynamics concepts. Together they lead the research group Asymptotics and Wave Instability Group which uses the models of waves to understand how growing waves could impact manufacturing processes and other practical applications. They use these models in teaching because it gives students a three



dimensional visual aid when solving differential equations and understanding a comprehensive view of all solutions over time.

[Read More >](#)

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## Sponsored Research

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**Charles Bachman**, CIS, is the PI on a \$31,964 contract from the Commonwealth of Australia to support the project titled "Prototype Research Goniometer Instrument, Upgrade & Repair."

**Nathan Cahill**, SMS, is the PI with co-PI **Christopher Kanan**, CIS, on a \$80,295 contract from the Office of Naval Research to support the project titled "Brain-Inspired Deep Neural Networks for Incremental Learning."

**Gabriel Diaz**, CIS, is the PI with co-PI Jeff Pelz on a \$31,243 contract from the Federal Reserve System/National Academy of Sciences to support the project titled "Behavioral analysis of cashiers and customers during cash transactions."

**Julie Thomas**, GSoLS, is the PI on a \$426,882 grant from the DHHS National Institutes of Health to support the project titled "Characterization of a giant virion and its unusual cargo of ejection proteins."

## Newsmakers

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### **RIT bowler named to USA Junior team**

WROC-TV, Jan. 22 ([Link](#))

Laura Branch is a second-year biotechnology and molecular bioscience major from Fairport, NY.

### **RIT students learn what makes a cyber heart tick**

WROC-TV — Jan. 9, 2018

### **Weekly Space Hangout: Jeyhan Kartaltepe of the Cosmic Evolution Early Release Science Survey**

Jeyhan Kartaltepe, assistant professor of physics, featured, *Universe Today*, Jan. 3 ([Link](#))

### **The universe could be full of more huge stars than we thought**

Don Figer, professor and director, Center for Detectors, quoted, *New Scientist*, Jan. 4 ([Link](#))

### **Planet Eating Star**

Valerie Rapson '15 (astrophysical sciences and technology) featured, *WNYT.com*, Dec. 31 ([Link](#))

### **Philanthropy Tracker**

Austin McChord '09 (bioinformatics) mentioned, *Bloomberg.com*, Dec. 29 ([Link](#))

### **RZ Piscium: Strange Star Smashes and Eats Its Own Planets**

Kristina Punzi, astrophysics Ph.D. candidate, quoted, *Newsweek*, Dec. 22 ([Link](#))

### **'Eater of worlds': Astronomers solve mystery of star surrounded by wreckage of planets it has consumed**

Kristina Punzi, astrophysics Ph.D. candidate, quoted, *Independent*, Dec. 22 ([Link](#))

### **Blinking Star Appears to Be Devouring Its Own Planetary Offspring**

Joel Kastner, professor in the Chester F. Carlson Center for Imaging Science and the School of Physics and Astronomy, and Kristina Punzi, astrophysics Ph.D. candidate, quoted, *Gizmodo*, Dec. 22 ([Link](#)) See the animation of the

event on the NASA page ([Link](#))

**[RIT Professor to study cosmic evolution with Webb Telescope](#)**

*Space Daily*, Dec. 14 ([Link](#))

**[RIT alum makes historic contribution of \\$50 million](#)**

*Rochester Business Journal*, Dec. 13 ([Link](#))

**[RIT Gets Its Largest Ever Gift From Alumnus: \\$50M](#)**

*The Associated Press*, Dec. 13 ([Link](#))

**[Who is Austin McChord?](#)**

*Democrat and Chronicle*, Dec. 13 ([Link](#))

**[RIT alum Austin McChord, 32, donates \\$50M to college](#)**

*Democrat and Chronicle*, Dec. 13 ([Link](#))

**[Entrepreneur donates \\$50 million to RIT](#)**

*CNN.com*, Dec. 13 ([Link](#))

*Cosmos*

**[Waves of joy: why astronomers are ecstatic about colliding neutron stars](#)**

Richard O'Shaughnessy, assistant professor of mathematical sciences, quoted  
*FOX Rochester*

**[RIT helping women pursue careers in physics](#)**

<http://foxrochester.com/news/good-day-rochester/rit-helping-women-pursue-careers-in-physics>



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