

R·I·T Science+Math

MONTH IN REVIEW

Message from the Dean

I hope you had a nice and relaxing holiday break and enjoyed quality time with your family and friends.

With the conclusion of the fall term, we have a lot to be thankful for and celebrate. I would like to thank you for another successful semester and to wish you an enjoyable and productive winter intersession.

I am looking forward to seeing you in the 2017 Spring Semester.

SOPHIA MAGGELAKIS
Dean, College of Science



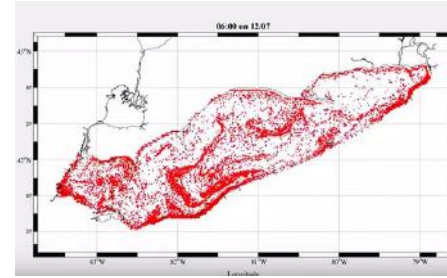
Sophia Maggelakis, Dean

RIT College of Science

December 2016

Researchers study plastic pollution in Great Lakes

A study by Matthew Hoffman of RIT's College of Science and Eric Hittinger of the College of Liberal Arts inventories and tracks high concentrations of plastic in the Great Lakes and could help inform cleanup efforts and target pollution prevention.



[University News >](#)

[Huffington Post >](#)

[Business Standard >](#)

[Duluth News Tribune >](#)

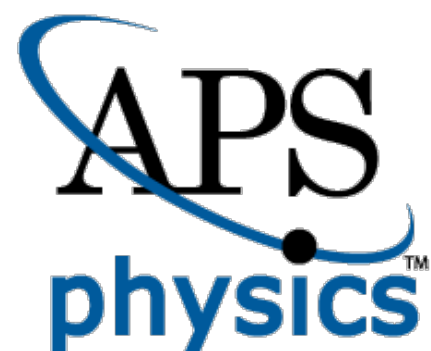
[Rochester Business Journal >](#)

[EcoWatch >](#)

[The Post-Standard >](#)

RIT to host 2018 Conference for Undergraduate Women in Physics

RIT will be the host institution for the 2018 Conference for Undergraduate Women in Physics. Jeyhan Kartaltepe and colleagues have been invited to attend a CUWiP conference in 2017 and will attend a planning session in College Park, Maryland, in June.



Learning by doing: Undergraduates are involved in a wide variety of research projects

Dr. Scott Williams, SCMS, and biochemistry major Taylor Wolf were featured in an *Athenaeum* cover story this month about undergraduate research. [University News >](#)



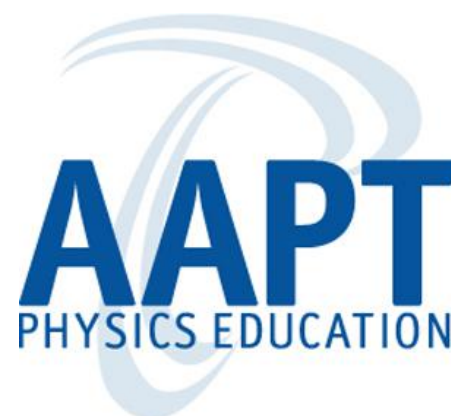
Undergraduate researchers recognized for infectious disease projects

Ali Cala and Kubra Naqvi, GSOLS, were recognized as "Shepherds of the Month" by the Seattle Structural Genomics Center for Infectious Diseases. for getting papers published related to projects they collaborated on with the center. Ali Cala is a current undergraduate researcher working with André Hudson, GSOLS. Kubra Naqvi, who also worked with Hudson, is a graduate student at the University of Texas.



American Association of Physics Teachers recognizes student-designed experiment

Ryan Scott, a 2016 physics graduate, was recognized with an American Association of Physics Teachers' Advanced Laboratory Physics Association Award for development of a new experiment for advanced undergraduate physics labs. Scott will receive a plaque, funding to attend the AAPT meeting in 2017 to receive the award, an invited talk at the meeting, and a cash honorarium. Faculty advisors Edwin E. Hach III and Stefan Preble will also receive a citation and funding to attend the same meeting.



Imaging scientist, Emmett Lentilucci, earns grant automated imaging processing grant

CIS, was awarded \$637,400 to assist Oak Ridge National Laboratory in Oak Ridge, Tenn., with fundamental image science research as it relates to fully automated image processing and photogrammetric registration solutions for manned and unmanned aerial systems.



Northeast Gas Association awards grant for aerial systems inspection research

Carl Salvaggio, CIS, was awarded an anticipated \$100,000 for a series of investigations that are foundational to the development of automated processes for inspecting gas transmission infrastructure using small Unmanned Aerial Systems (sUAS)-based imaging and image processing techniques.



NSF renews imaging science REU

The Physics Directorate of the National Science Foundation has recommended that the CIS REU program, "Imaging in the Physical Sciences", be renewed for another 3 years. The program provides unique research experiences in imaging sciences for top undergraduates from around the country. Applications are currently [being accepted](#).



COS faculty receive Provost's Faculty Mentoring Grants

The following COS faculty members received funding under the Provost's Faculty Mentoring Grant program, also supported by the Wallace Center's Faculty Career Development Program.

- **Elizabeth Cherry** (COS faculty: Cherry (lead), Kara Maki, David Ross), *Effective Strategies for Teaching Graduate-level Mathematical Modeling*
- **Christopher Collison** (COS faculty: Collison (lead), Jeremy Cody, Michael Coleman, Nathan Eddingsaas, Michael Gleghorn, John-David Rocha, Lea Vacca)



Michel), *Junior Faculty Success Club: Realizing Our Full Potential*

- **Sandra Connelly** (Connelly (COS, lead), Sarah Brownell (KGCOE), Joe Lanzafame (COS), Jeff Mills (COS), James Murphy and Suzanne Long, Monroe Community College), *STEM Research as a Tool to Enhance 2+2 Curricula*
- **Parsian Katal Mohseni** (KGCOE Faculty: Mohseni (lead), Panos Markopoulos, Luis Herrera, Ivan Puchades, Jing Zhang, Edward Hensel, Brian Landi; and Seth Hubbard (COS), *Electrical, Microelectronic and Microsystems Engineering Seminar Series*
- **Paul Wenger** (COS Faculty: Wenger (lead), Nathaniel Barlow, Bernard Brooks, Michael Cromer, Matthew Hoffman, Sogol Jahanbekam, Carl Lutzer, Kara Maki, Laura Munoz, Niels Otani, Wei Qian), *Doceamus: The Pedagogical Mentorship Group in Mathematics*

COS announces Outstanding Undergraduate Scholars

The following students in the RIT College of Science have been named 2016-17 Outstanding Undergraduate Scholars.

- Christian Cammarota
- Shayna Gray
- Art Kalb
- Brody Kutt
- Alex McManus
- Stefano Marin

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**COLLEGE OF
Science**

- Cassandra Martin
- Renee Meinhold
- Shivani Phadke

These students will be honored at a reception, ceremony and dinner on April 6, 2017. The ceremony also honors a high school or community college teacher the recipient regards as influential in their undergraduate career.

Interdisciplinary Biology and Chemistry students present research

Students in the Interdisciplinary Biology and Chemistry class presented their semester of Research and exploration of "big world problems" on December 7, 2016. The course was taught by Sandra Connelly, GSOLS, and Jeff Mills, SCMS. It was funded, in part, by an RIT Provost's Learning Innovations Grant. Students in the course also gave a presentation titled "Can We Feed 8 Billion People (And Many More)???" at Brick City Homecoming on October 15, 2016.



COSSAC hosts COS Holiday Breakfast

The College of Science Staff Advisory Council hosted its annual holiday breakfast buffet on Tuesday, December 20. COSSAC also collected dry and canned goods for RIT's FoodShare on campus donation center.



Renovations continue on the third floor of Gosnell Hall

Phase 2 of renovations to Gosnell Hall Room 3125 will continue through Wednesday, January 18, 2017 with work crews performing abatement projects.



Social Media



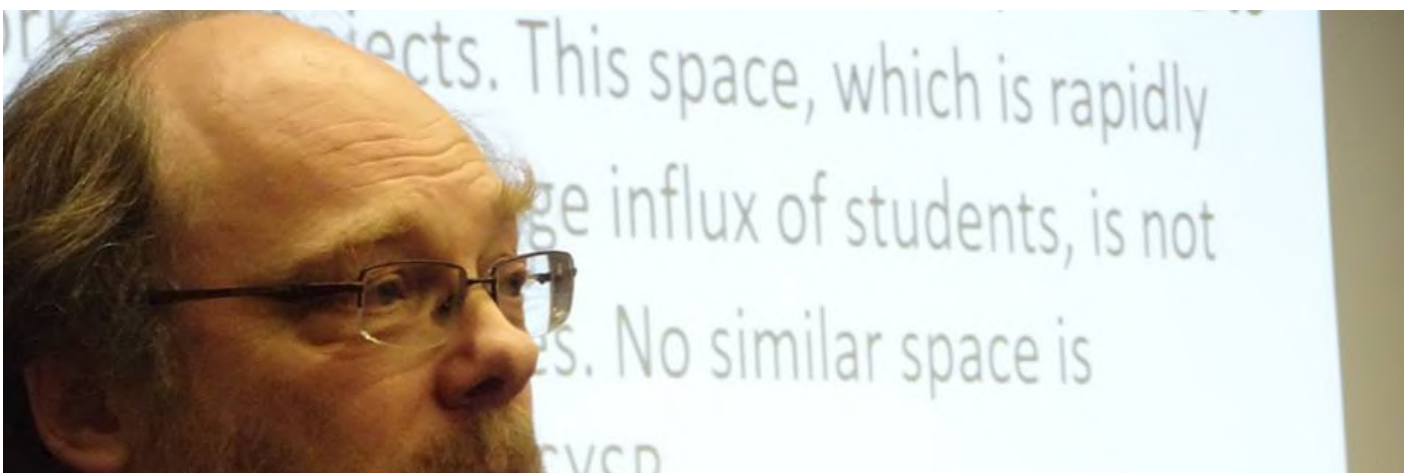
Working toward treatment of tuberculosis

Biochemistry major Taylor Wolf has contributed research that can verify the components of the drug cocktail used in the treatment of tuberculosis, the leading infectious disease worldwide. Taylor says her lab experience helped her discover a passion for research, which she now plans to make her career.



Simulation and modeling expert presents distinguished lecture on cancer and systems biology

Irina Kareva, a scientist in Simulation and Modeling at [EMD Serono](#) Research Center was the latest guest in our Distinguished Lecture Series Monday afternoon. She leads a presentation on the topic of understanding cancer through systems biology. Using mathematical modeling, ecology, and past statistical research, Dr. Kareva showed how scientists are learning why secondary cancer cells metastasize after a primary tumor has been removed—with suggestions of novel treatment that can better manage dangerous cells.





Integrated Sciences pioneer offers insights to COS leadership and faculty

Dr. Michel Pleimling, Director of Virginia Tech's Academy of Integrated Sciences, spoke to COS faculty and staff today about how his university has created a division to support interdisciplinary undergraduate science programs. Students can opt into a two-year Integrated Science Curriculum before choosing a major. Three interdisciplinary degrees are also hosted by the Academy: Computational Modeling and Data Analytics, Nanoscience, and Systems Biology. The Academy also offers a minor in Science, Technology, and Law.



Color Science faculty present research and meet with alumni in San Diego

Faculty and staff from the color science program presented at The Society for Imaging Science and Technology's Color and Imaging Conference, Nov. 7-11, in San Diego, Calif., including **Mark Fairchild**, program director/professor, **Michael Murdoch**, assistant professor, and **David Wyble**, associate research scientist. **Susan Farnand**, associate research scientist, attended as the Journal of Imaging Science & Technology-First/CIC Guest Editor. Attendees also gathered with RIT alumni at an evening event. [Facebook album >](#)



MathCrash! in the Atrium

The annual "MathCrash!" study session drew students to the Atrium for assisted study in calculus and other subjects. Free pizza and other refreshments were on hand for the popular event.

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Newsmakers

Moumita Das, SoPA, presented "Better, stronger, faster: Collective mechanobiology of cells and tissues emerging from differential physical properties of components and their interplay," at a seminar in the Chemical and Biological Seminar Series at Colorado State University on Nov. 17.

Marvin Gruber, SMS Professor Emeritus, reviewed the book *Information Geometry and its Applications* by Shun-ichi Amari for the journal *Technometrics*. [Download review >](#)

Elizabeth Hane, GSoLS was featured in the *FRAM Focus* December 2016 newsletter published by Jennifer L. Schneider, RIT's Eugene H. Fram Chair in Applied Critical Thinking. [Download newsletter >](#)

André Hudson, GSoLS, published a paper in the Dec. 1 issue of the journal *Acta Crystallographica* on the crystal structure of the enzyme dihydrodipicolinate reductase from the human pathogenic bacterium *Bartonella henselae*. The enzyme has potential in the development of antibiotics. Co-authors include RIT undergraduate students Ali Cala, a biotechnology and molecular bioscience major, and Maria Nadeau, a biochemistry major and RIT/NTID student; Renwick Dobson, associate professor at University of Canterbury, New Zealand; and scientists at the Seattle Structural Genomics Center for Infectious Diseases. Hudson also presented "Are the enzymes involved in the synthesis of essential amino acids plausible targets for the development and/or discovery of antibiotics?" at the National Institutes of Health Future Research Leaders Conference in Bethesda, Md., on Sept. 13.

Jeff Lodge, GSoLS, presented "Food Waste to Energy by Anaerobic Digestion in Western N.Y. What to do with their waste?" at the University of Rochester Laboratory for Laser Energetics noontime seminar series on Dec. 2.

Deana Olles, senior lecturer, and **Connie Shannon**, lecturer, School of Mathematical Sciences and members of RIT's CASTLE, presented a poster on "The Implementation of Hands-on Experiences in Mathematics for Engineering Technologists" at the International Learning Assistant Conference held at

University of Colorado, Boulder, on Oct. 23-25.

Jan van Aardt, CIS, was awarded a fellowship by the Carnegie African Diaspora Fellowship Program. He gave a seminar at Stellenbosch University, South Africa, in October and developed research collaborations and coursework focusing on forest assessment and inventory using remote sensing technologies, including light detection and ranging, or LiDAR.

