

DEAN'S MID-YEAR BULLETIN

January, 2012

Happy New Year! I wish you the best for the year ahead, and many thanks for your contributions to your academic unit, our college and the institute.

The purpose of this bulletin is to inform and to give an update on the status of this year's initiatives, agenda items, and on our progress towards meeting the goals and objectives of our College. Below is an outline of our accomplishments and work in progress.

**UPDATES**

**Calendar Conversion:** The curriculum of all our programs, foundation, and general education courses has been converted. The converted programs have been approved by the Institute Curriculum Committee and Graduate Council. Almost all our programs have been reviewed and approved by the New York State Department of Education. We are currently converting our minors and BS/MS programs. We are all very grateful to the COS Curriculum Committee members for their diligent work and for the time and effort they put into this important and time consuming task.

**Undergraduate Research:** Undergraduate research is central to the mission of our college and our institute as it combines faculty mentoring with student achievement that leads to increased scholarship for both groups. We encourage the participation of your students to our *Weekly Undergraduate Research Seminar* that takes place on Wednesdays at 1:00 over pizza and soda to promote interdisciplinary collaboration. Faculty and students participate to listen to presentations given by students from our science and math programs.

**Student Involvement:** I met monthly with the College of Science Student Advisory Board (COSSAB) and quarterly with all the COS students to give them an update on COS activities, initiatives, challenges and opportunities and to hear their concerns and suggestions

**Policies:** We have almost completed the updating of our COS Policies, Procedures and Guidelines. The updated versions are posted on the COS Webpage for your reference. Please check: <http://www.rit.edu/cos/policiesmanual/policiesmanual.html>.

**Mentoring:** During the summer the Administrative Council developed a mentoring plan for our pre-tenure faculty. This plan has been distributed to all pre-tenure faculty members and has been approved by the Provost. We are currently implementing this plan (see: <http://www.rit.edu/cos/policiesmanual/Section6.html>) I still hold monthly meetings with our pre-

tenure faculty members. The purpose of these meetings is to identify any issues or concerns, to provide support, and to keep the communication open.

**COS Webpage:** We are almost done with the restructuring of the COS webpage. Please check: <http://www.rit.edu/cos/>. The COS academic units are using this as a model to redesign and revamp their pages.

**Advising:** I am pleased to report that our college will be getting a Calendar Conversion Student Advisor to help our students with the transition to semesters. We hope to have this advisor on board soon.

**Faculty Searches:** We are currently conducting faculty searches in the Chemistry Department for two tenure-track positions in the areas of Analytical Chemistry and Physical Chemistry.

**COS Advisory Board:** I am pleased to report that we have formed a College of Science External Advisory Board. Its purpose is to support the mission and guide the vision of the College. The Board will serve in an advisory capacity to review the activities of the College, exchange ideas and to offer recommendations to the Dean of the College in key strategic areas. The membership of the Board is comprised of a panel of prominent scientists and mathematicians, high-profile alumnae, individuals familiar with Federal or State science funding and policies, industry leaders, influential community leaders and educators prominent in science pedagogy at the college level and/or K-12 level. The names of the Board members and their biographies will be forwarded to you soon.

## INITIATIVES

**Dean's Research Initiation Grants (D-RIG):** The research overhead return (F & A return) from external grants, that is distributed to the COS Dean's Office, will be invested in future research activities to support research and scholarship through seed funding that will help to jump start research projects and cross-disciplinary research clusters in order to promote rich learning environments for our students and faculty. A call for proposals has just gone out to all faculty.

**Strategic Plan:** The blueprint of the strategic plan has been completed. We are in the process of drafting the implementation plan that is comprised of specific goals, objectives, action items and metrics for assessing success. Our goal is to have a draft ready to be discussed and approved during the Spring Quarter.

**Howard Hughes Medical Institute (HHMI) Invitation:** We received an invitation to submit a proposal to Howard Hughes Medical Institute. Our college in collaboration with NTID submitted a \$1.6M proposal that is addressing one of HHMI's goals which is to prepare

undergraduates who will become scientifically curious and literate leaders in society, regardless of their eventual career emphases.

**Math Science Partnership (MSP) NSF Grant:** We are the recipients a \$282K MSP grant. We partnered with Nazareth College and the Rush Henrietta School District to share understanding and learn how to work collaboratively to make a successful career in STEM teaching a real possibility for more students.

**Women in Science (WiSe) Program:** Our WiSe program is off to a good start. We are making progress toward our goal to engage women in the sciences and mathematics by offering information, equity, and collaboration opportunities that will break down barriers and will enhance their education and career(s) throughout their journey. In October, we hosted Dr. Esther M. Conwell, 2010 National Medal of Science Recipient, who gave a talk to our students and faculty about her journey as a female scientist.

**Core Optic Mirror Donated to CCRG:** One of the core optic mirrors of the LIGO experiments was donated by the LIGO laboratory to CCRG (Center for Computational Relativity and Gravitation) for outreach purposes. It is a fully functional equipment of about \$200K value. Dr. Michael Landry (a LIGO scientist from Caltech) visited in September to help with the mounting of the optic mirror

## EVENTS

**COS Annual Faculty Research Symposium:** In September, we launched our 1st Annual Faculty Research Symposium. The event was well attended and consisted of brief research updates from the directors of the large COS Research Centers and Laboratories, those who received FEAD grants this year, and those returning from sabbatical leave. We closed the Symposium with a reception. The Provost and the Dean of Graduate Studies attended the Symposium and were pleased with the outcome.

**Distinguished Lecture Series:** In October, Dr. Nancy Jackson, president of the American Chemical Society, presented a talk on "Sunshine to Petrol". The talk was well attended.

**Observatory Open House:** In October, the Observatory held an Open House. The observatory's two big telescopes and a range of smaller optical devices gave visitors a close-up view of the night sky.

**Center for Detectors Speakers Series:** In September, the Center for Detectors (CfD) launched its speaker series which will bring leading scientists from around the world to explore the most promising detector technologies for astronomy as part of the "Detector Virtual Workshop." The

workshop will focus on future ultraviolet, optical and infrared detectors by bringing together the community of scientists working to advance these technologies.

**Summer Math Institute:** In July, we held our 4<sup>th</sup> Annual Summer Math Institute. Approximately 50 teachers from all school districts and from other states attended the week-long workshop. The workshop focused on how high school mathematics forms the basis for college courses and how high school mathematics is used by professionals in various fields. Professionals from industry, government and academia were our invited speakers who gave presentations that aimed on how they use high school mathematics in their professions.

**RIT-Nazareth Articulation Agreement:** Our collaboration with Nazareth continues (please check: <http://www.rit.edu/cos/tech2teach>). RIT undergraduates have the opportunity to earn a Master of Science in education and teacher certification. Collaborative agreements put in place allow our students to make the best use of elective credits in preparation for pursuit of a master's degree in education. Third- and fourth-year students have the opportunity to begin selecting upper-level graduate classes earlier than usual, reducing the total time of advanced study.

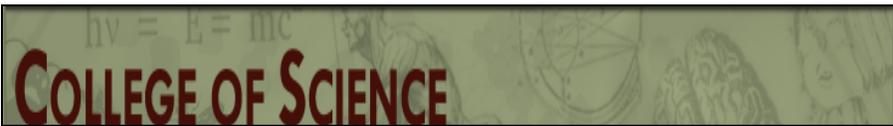
## CELEBRATING OUR SUCCESSES

Congratulations to all our faculty, staff, and students for their accomplishments, successes, and contributions to our college and institute. For details and news releases, please check: <http://www.rit.edu/cos/in-the-news>.

### STUDENT SPOTLIGHT

**1st Prize in the Physics and Astronomy Section of the Summer Undergraduate Research Symposium.** Physics sophomore, Michael Every, has been doing research on spin cast plastic telescope mirrors and was the recipient of 1st Prize in the Physics and Astronomy Section of the Summer Undergraduate Research Symposium. Recently, he wrote a paper on this work. An astronomer at California Polytechnic Institute invited Michael to present his research in Hawaii and to co-author a chapter with him, in his upcoming book, explaining his successes and failures with his research so far.

**Astrophysics and Dance:** Six students from the NTID Dance Company will translate scientific concepts into dance. This work is sponsored by NSF that awarded \$150,000 to NTID, the Center for Computational Relativity and Gravitation (CCRG), and the Golisano College of Computing and Information Sciences. Starting in fall 2012, NTID students will perform new dances illustrating topics such as gravitational waves and black holes. They'll bring their unique recitals



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to deaf, hard-of-hearing and hearing audiences around the nation. Specially designed backdrops will help portray the scientific principles acted out onstage.

**2011-12 NYSG/AST Fellowship** award will be shared equally between Valerie Rapson and Ian Ruchlin; they are both AST (Astrophysical Sciences and Technology) students.

**Prestigious NASA fellowship recipient**, Christine Trombley, a graduate student in Astrophysical Sciences and Technology program, worked in Goddard's Exoplanets and Stellar Astrophysics Laboratory, part of the Astrophysical Sciences Division. The research experience was the first part of Trombley's yearlong NASA Graduate Student Researchers fellowship, which is helping to fund her thesis work.

**Ms. Wheelchair New York 2011.** Luticha Doucette, chemistry major, was named Second Runner-Up at the 40<sup>th</sup> Annual Ms. Wheelchair America Pageant held August 6, 2011, in Grand Rapids, MI. Participants from twenty-six states gathered at the Amway Grand Hotel to compete for the title. Her platform, as Ms. Wheelchair NY, was increasing science education for young people with disabilities.

**2011 RIT Graduate Research Symposium Overall Best Presentation:** Brian Gamm, Color Science M.S. (and soon to be Ph.D.) student, won the Overall Best Presentation for his work on Analysis of the Factors Influencing Paper Selection for Books of Reproduced Fine Art Printed on Digital Presses.

**Astronomical Society of New York Undergraduate Student Prize:** Winner of this year's prize is Sean Quinn.

**Study on the Ecological Health of Lakes:** Caitlin Trueting, environmental science graduate student, in collaboration with other students from SUNY Brockport were featured for conducting a study on the ecological health of four lakes — Grass, Millsite, Mud and Red — in the towns of Alexandria and Theresa and a portion of the Indian River. The study is funded by an \$8,500 Great Lakes Innovative Stewardship through Education Network matching grant, and the conservancy is investing \$2,000 of its own funds in hopes of improving the region's water quality through the research.

**FACULTY SPOTLIGHT**

Dr. Elizabeth Cherry, assistant professor in the School of Mathematical Sciences, is one of the authors of a paper which was published in *Nature* in July. The paper focuses on how low-energy electrical pulses can be used to control electrical turbulence in the heart. It is hoped that the method could yield a less-damaging alternative to standard cardiac defibrillation, which uses a single high-energy electric shock to restore normal cardiac rhythm.

Dr. Paul Craig, professor in the Department of Chemistry, and his team earned a \$417,000 grant from the National Institutes of Health to match proteins to their specific functions for drug research.

DIRS: Our Digital Imaging Remote Sensing (DIRS) group and Kucera International remotely imaged the destruction in eastern New York caused by downpours from Tropical Storm Irene. They collected information for NY State to enable response to the flooding caused by the hurricane.

Dr. Mark Fairchild, Associate Dean of Research and Graduate Education, was elected as a *Fellow of the Optical Society of America*.

Dr. James Ferwerda, associate professor in the Chester F. Carlson Center for Imaging Science, has been named the Xerox Endowed Chair for a three-year term. Dr. Ferwerda will use the three-year appointment to create displays that are characteristic of real materials and to explore the optical properties of “programmable matter,” an emerging technology that will shift display technology from flat screens to three-dimensional objects.

Dr. Don Figer, Professor in the Chester F. Carlson Center for Imaging Science and Director of the Center for Detectors, is one of the authors of a paper that was published in *Nature* in November. The article focuses on findings that support recent ideas about the presence of large, possibly carbon-based organic molecules—“carriers”—hidden in interstellar dust clouds.

Dr. André Hudson, assistant professor in the School of Life Sciences, was awarded a \$198K NSF Research Initiation Grant and was also featured for his work on blocking an enzyme in algae, targeting the organism without harming other plant life.

Dr. Akhtar Kahn, assistant professor in the School of Mathematical Sciences, was invited to join the Editorial Board of journal *OPTIMIZATION* which is one of top journals on this subject.

Dr. Joel Kastner, in collaboration with his post-doctoral Fellow Germano Sacco, was awarded a \$339K NSF grant to study the early origins of our solar system and the many new planetary systems now being discovered orbiting other stars.

Dr. John Kerekes, associate professor in the Chester F. Carlson Center for Imaging Science, won a three-year \$561,130 grant from NASA to help the space agency’s scientists better interpret remotely sensed data collected with laser light.

Dr. Jeff Lodge, Associate Professor in the School of Life Sciences, is working on a project to help Haiti in their need of clean water. Funds have been secured and are used to prep the site located near Carrefour, Haiti.

Dr. Dina Newman, assistant professor in the School of Life Sciences, was selected as a 2012 BEN (BiosciEdNet) Scholar. The program promotes the use of its digital library resources and student-centered teaching and learning methods in higher education, specifically in biological sciences lecture and laboratory courses, and in research training programs. Dr. Newman is part of the third cohort of BEN Scholars.

Dr. Mike Richmond, professor in the Department of Physics, completed a summer fellowship in Japan and helped to write software to process raw images of the sky captured by the new Kiso Wide Field Camera. Dr. Richmond stayed for a month in Agematsu, the small town at the base of the mountain, during the second half of his fellowship with the Japanese Society for the Promotion of Science.

Dr. Lea Vacca-Michel, assistant professor in the Chemistry Department, was invited to serve on biomedical research panels by the National Institutes of Health. She was appointed to NIH's Early Career Reviewer Program which is part of the NIH Center for Scientific Review.

Dr. Anthony Vodacek, associate professor in the Chester F. Carlson Center for Imaging Science, was featured for leading a *MacArthur Foundation-funded study of Lake Kivu in Rwanda*. Dr. Vodacek, who is specializing in remote sensing, is leading a two-year survey of the Lake Kivu system to collect scientific measurements for benchmarking hazards threatening the region's biodiversity.

Eisenhart Teaching Award for Outstanding Teaching: Congratulations to our colleagues **Anurag Agarwal, David Barth-Hart, Bernard Brooks, Pat Clark, Christina Collison, Rebecca Daggar, Dennis Glanton, Dawn Hollenbeck, Andre' Hudson, Carrie Lahnovych, Vern Lindberg, Carol Marchetti, Harvey Pough, Thomas Prevendoski, Harvey Rhody, David Ross, Eric West and Tamas Wiandt**. They have been nominated for the Eisenhart Teaching Award for Outstanding Teaching. They deserve our gratitude for their excellent job as teachers and for their dedication to our students!

## STAFF SPOTLIGHT

**Nominations for Staff Awards**: We are lucky to have dedicated, hardworking and outstanding staff. A number of our staff members were nominated for the various RIT staff awards for outstanding service to our college and the institute. Congratulations to **Bethany Choate, Jason**

*Faulring, Dave Lake, Jennifer Liedkie, Autumn Madden, Donald McKeown, and Nina Raqueno* who were nominated for this year's staff awards.

**Staff Professional Development and Career Advancement:** The COS Administrative Council has written a proposal on Staff Professional Development and Career Advancement that we are implementing this year.

**COS Staff Advisory Council (COSSAC).** A staff retreat was held in September. As a result of this retreat we formed COSSAC. Its members are Tom Allston, Cynthia Drake, Carrie Koneski, Autumn Madden, Brenda Mastrangelo, Jennifer McDyer, Joe Pow, and Karen Reynolds. They meet regularly and I meet with them once a month to get updates and to work with them to advance their agenda, to address any issues when they arise, to celebrate successes, and to plan ahead.

Respectfully,



Sophia A. Maggelakis, Ph.D.  
Dean of the College of Science  
Professor of Mathematics