

OSA-RS Annual Business Meeting and Dinner

Tuesday, May 7th, 2013

Burgundy Basin Inn
1361 Marsh Road
Pittsford, NY 14534

5:30p - Networking

6:30p - Buffet Dinner

7:00p - Business Meeting

8:00p - Featured Speaker

Invited Talk:

"Optical Telescopes for Exoplanet Science - Are We Alone?"

James Breckenridge
NASA / Jet Propulsion Lab
more information on p. 7

Admission (including soft
drinks) is as follows:

\$25 for an OSA-RS regular member

\$10 for an OSA-RS student member

\$30 for non-member guests

No charge for OSA-RS honorary
members

Cash bar is available.

Register [on-line](#) at the
OSA-RS web site.

Directions to the [Burgundy
Basin Inn](#) may be found [here](#).

Paul D. Conrow Elected as Honorary Member

The Council of the Optical Society of America, Rochester Section, is pleased to announce that it has elected Paul D. Conrow as its newest Honorary Member.

Conrow, who holds a bachelor's degree in chemistry from the State University of New York at Geneseo and a master's degree in chemistry from the Rochester Institute of Technology, is a physics teacher at East High School in Rochester.

A few years ago, Conrow established a program to teach optics to his physics students.

Any person who has done eminent service in the advancement of optics or closely allied sciences may be admitted by the Executive Council as an Honorary Member.

- OSA-RS By-laws

[In 2002, optics was removed as a topic from the New York State Regents examination in Physics.]

Paul has worked with Monroe Community College as well as with local companies for equipment, not just optical components but polishing and testing equipment as well. His program has attracted and motivated a broad range of students, from the classical 'academic' student to those who are not as successful

continued on p. 5

Inside



Upcoming Events	... p. 2
Election Results	... p. 2
Vignettes	... p. 2
Public-Private Partnerships	... p. 3
New Corporate Member	... p. 4
UR Optics Summer School	... p. 4
Optics Scholarships	... p. 5
OSA CEO Testifies in DC	... p. 6
Annual Meeting Speaker: Dr James Breckenridge	... p. 7
Science Exploration Days	... p. 7
H&WS Spectrograph Team	... p. 8
Exelis Announces Expansion	... p. 9
Write your Congressman!	... p. 9
National Optics News	... p. 10
Corning Sets Fiber Record	... p. 11

Optical Society of America Rochester Section 2012-13 Council

President	Chris Palmer
Past President	Julie Bentley
President-Elect	Damon Diehl
Secretary	Dan Christensen
Treasurer	Blair Unger
Education Chair	Steve Jacobs
Program Co-Chairs	Dan Staloff Mari de Wit
House Co-Chairs	Yuhong Yao Aly Artusio-Glimpse
IT Chair	Pete McCarthy
Councilors	Mishkat Bhattacharya Stephanie Bloch Cisca Sugiro Joe Vornehm
Resident Historian	Mari de Wit

The purpose of the Rochester Section of the Optical Society of America is to promote and disseminate knowledge of optics and closely related sciences in both its local community and throughout the world by (i) bringing together scientists, engineers, business leaders, educators and students, (ii) providing professionals and students with educational resources for the purpose of improving and developing their abilities, (iii) encouraging the sharing of knowledge and innovation, and (iv) encouraging students to study optics and other sciences.

◇ Upcoming Events ◇

**Mark Your Calendars!
Upcoming Optics Events**

[OSA, Rochester Section
Annual Dinner Meeting](#)

May 7, 2013
Rochester, New York

[3rd EOS Conference on
Manufacturing of Optical
Components \(EOSMOC\)](#)

May 13-15, 2013
Munich, Germany

[Photonics North](#)

June 3-5, 2013
Ottawa, Ontario, Canada

[DAMOP '13:
44th Annual Meeting of the
American Physical Society
Division of Atomic, Molecular
and Optical Physics](#)

June 3-7, 2013
Quebec City, Quebec, Canada

[CLEO](#)

June 9-14, 2013
San Jose, California

[Imaging & Applied Optics](#)

June 23-27, 2013
Arlington, Virginia

[SPIE Annual Meeting](#)

August 25-29, 2013
San Diego, California

[Frontiers in Optics:
OSA Annual Meeting](#)

October 5-9, 2013
Orlando, Florida

[Optifab](#)

October 15-17, 2013
Rochester, New York

**Election Results for
2013-14 OSA-RS
Executive Council**

The Optical Society of America, Rochester Section (OSA-RS) is pleased to announce that the slate of nominees for the 2013-14 council year was declared elected on April 1st.

Elected by the OSA-RS membership were **Wade Cook** (ASE Optics) as president-elect and **Brandon Zimmerman** (University of Rochester) as secretary. The four elected councilors-at-large are **Daniel Balonek** (LaserMax), **Mishkat Bhattacharya** (Rochester Institute of Technology), **Michele Gleber** (PLS Launch Solutions) and **Dan Staloff** (Corning).

Appointed by incoming president **Damon Diehl** (Monroe Community College) are **Mari de Wit** (QED Technologies) and **Jie Qiao** (University of Rochester) as program co-chairs, **Aly Artusio-Glimpse** (Rochester Institute of Technology) and **Anthony Visconti** (University of Rochester) as house co-chairs, **Steve Jacobs** (University of Rochester) as education chair, and **Yuhong Yao** as information technology chair.

Next year, **Blair Unger** (Blu Optics) will serve the second half of his two-year term as treasurer and **Chris Palmer** (Richardson Gratings) becomes past president.

The incoming council members will be introduced at the Annual Dinner Meeting on May 7th. ■

Did You Know ...

that a Brookings Institute report earlier this year reported that nearly [1,200 patents](#) were generated in the Rochester region between 2007 and 2011, which ranks our region 21st out of 358 metropolitan areas?

◇ Vignettes ◇

Mustafa Abushagur, professor of microsystems engineering and electrical and microelectronic engineering in RIT's Gleason College of Engineering, has been named the OSA's 2013 [Robert E. Hopkins Leadership Award](#) winner. Abushagur is the founding president of RIT Dubai, and served recently as the prime minister of Libya.

Among this year's nominees for Woman of the Year announced by Digital Rochester is **Amy Rigatti**, optical manufacturing group leader at the University of Rochester's Laboratory for Laser Energetics.

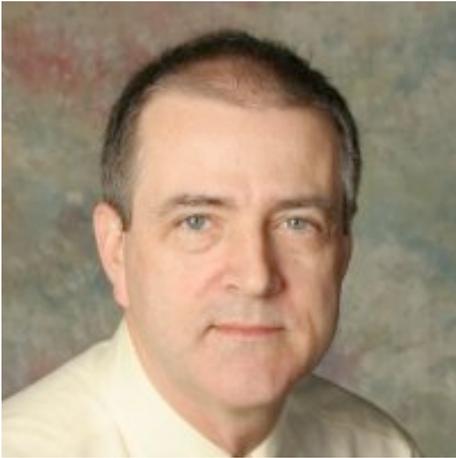
Gaurav Sharma (Electrical and Computer Engineering Department, University of Rochester), **Vladimir Mitin** (Electrical Engineering, University at Buffalo) and **Robert Fiete** (ITT Exelis Geospatial Systems) have been elected fellows of SPIE.

Did You Know ...

that **Paul Bajorski**, professor of statistics at RIT, wrote the book [Statistics for Imaging, Optics, and Photonics](#) published by John Wiley & Sons in 2011?

Did You Know ...

that on April 23rd, 1827, twenty-one-year-old Trinity College undergraduate **William Rowan Hamilton** presented his [Theory of Systems of Rays](#) at the Royal Irish Academy in Dublin, in which he presented his characteristic function?



Public-Private Partnerships

for optics, photonics & imaging

We spoke with **John Steele**, senior business consultant at High Tech Rochester, about public-private efforts in our area to grow our optics, photonics and imaging (OPI) industry.

OSA-RS: What is the Manufacturing Extension Partnership (MEP)?

John: MEP is an initiative of the National Institute for Standards and Technology (NIST) in which NIST works with small and mid-sized US manufacturers to help them create and retain jobs, increase profits, and save time and money.

MEP is comprised of a nationwide network of experts and resources which provides a variety of services, from innovation strategies to process improvement to green manufacturing.

MEP also works with local partners on programs that help manufacturers develop new customers, expand into new markets and create new products.

OSA-RS: Tell us about the American Manufacturing Jobs and Innovation Accelerator Challenge.

John: It's a collaboration between five federal agencies focused on innovation and growth within specific industry clusters in different parts of the country. In our area, and in our shared area of interest, Congresswoman Louise Slaughter was instrumental in bringing this challenge to OPI firms in the Finger Lakes, many of which are members or have staff who are members of the OSA.

The challenge was developed to build strong regional clusters of expertise in specific technologies or disciplines, creating a culture of innovation and growth to create manufacturing jobs.

The local project, named the Rochester Regional Photonics Accelerator (RRPA), is a three-year project intended to coordinate and encourage collaboration amongst the OPI firms in the region.

At the end of the three years, we will have helped these OPI firms to innovate, grow and expand while promoting the region as one of OPI's bright spots.

OSA-RS: How will the MEP be involved in this effort?

John: The NIST MEP will be working through the regional MEP Center at High Tech Rochester (HTR) with companies in the Rochester Regional Photonics Cluster. Our efforts will consist of projects that focus on creating faster growth, innovation and development. The Small Business Administration (SBA) portion of the project will also be handled by High Tech Rochester and will consist of outreach to firms in disadvantaged and underserved areas of the region that are part of the cluster, or that want to be part of the cluster.

At HTR, the growth services unit works to generate growth and innovation in the manufacturing base of the Finger Lakes, and will be approaching the OPI com-

munity, conducting business assessments to identify obstacles to growth and applying proven MEP processes such as Innovation Engineering™, operational improvements such as Lean Manufacturing and commercialization assistance through our network of New York-based Centers of Excellence and Advanced Technology.

The RRPA project will be handled through CEIS, the UR's Center for Advanced Technology in Emerging and Innovative Sciences. This part of the program is focused on developing the cluster itself, developing business for the cluster and the cluster members and also the development of new OPI technologies.

The work that will be performed with the US Employee and Training Administration will develop comprehensive operational training for employees of cluster organizations and firms this will be undertaken by the University of Rochester, the Rochester Institute of Technology and Monroe Community College.

The Department of Energy, working through the UR Institute of Optics, will develop capabilities in freeform optics. Also included in the Department of Energy's program is work to recover slurry material used in optical lens production that has recently become expensive and hard to locate, and therefore a barrier to growth to firms whose processes require these materials.

The program will be focused on companies that are located in the nine counties in the Finger Lakes in upstate New York.

OSA-RS: What should those interested in participating do next?

John: They should contact me at 585-327-5906 to learn more about how this part of the challenge can be applied to their firm. ■

Newest Corporate Member ...

LaserMax

The Optical Society of America, Rochester Section, is pleased to welcome LaserMax as its newest corporate member!

For more than twenty years, LaserMax has specialized in the design and manufacturing of high-tech laser diode modules. Serving several markets, LaserMax's OEM industrial and scientific lasers are highly sought after and are known worldwide for their precision and reliability. Its laser modules have flown on multiple US Space Shuttle missions, and its laser accessories for firearms are used by law enforcement officers, military personnel, and civilian gun enthusiasts. ■

<http://www.lasermx.com>

Kodak Facts

Kodak has [won nine Oscars](#), the most recent in 2008 for the development of photographic emulsion technologies.

Kodak engineer Steve Sasson is credited with the invention of the [first digital camera](#).

The [Pocket Kodak](#) camera, which could fit in a coat pocket, debuted for \$5 ... in 1895.

Kodak had [ninety percent of the market](#) for photographic film in 1976, as well as eighty-five percent of camera sales in the United States.

Kodak's research laboratories were [established](#) in 1912.

52nd Annual University of Rochester Optics Summer School



In June, The Institute of Optics will offer its 52nd annual [Summer School](#) short-course series. This year's offering will be a mix of a one-week course and two-and-a-half-day courses.

1. [Optical Thin Film Coating Technology](#) (June 3-7) covers all aspects of optical interference devices including thin-film design, digital design methods, and coating and characterization.

2. [Fundamentals of Optics](#) (with labs) (June 3-5) covering lenses, aberrations, principles of diffraction, optical systems, polarization, birefringence and crystal optics, and radiometry and detection.

3. [Modern Optical Engineering](#) (with labs) (June 5-7) covering optical testing and instrumentation, optical manufacturing, optical thin film coatings, diffractive optics, and glass in modern optics.

4. [Opto-Mechanical Analysis](#) (with labs) (June 5-7) covering opto-mechanical analysis methods used to design high performance optical systems. Finite element modeling techniques for analyzing light-weight mirrors, mounts, and lens systems will be discussed. Other topics include fitting surface distortions with Zernike polynomials and the analysis of line-of-sight jitter in vibration environments. The integration of thermal and structural responses into optical design software is presented.

5. [Lasers and Optoelectronics](#) (with labs) (June 10-12) covering basics of lasers, laser systems and modern laser

engineering, nonlinear optics, and semiconductor lasers LEDs, and detectors.

6. [Biomedical Optics](#) (June 12-14) covers diffusion models of photon propagation in multiply-scattering tissues applications of photon migration: tumor detection and brain monitoring spectroscopic methods for glucose sensing and other analyte detection tissue alteration: photodynamic therapy and LASIK high-resolution imaging: confocal microscopy, multiphoton microscopy, and optical coherence tomography.

7. [Optical System Design](#) (June 10-14) introduces participants to both fundamental and advanced concepts in optical system design by integrating classroom lectures with software training labs in the Hopkins Optical Design Center. The course can be taken as a full week course or as one of two three day course options depending on interest/skill level. Introduction to Optical System Design covers first order layout, image quality evaluation, aberration theory, optimization, and refractive/reflective design forms. Advanced topics in optical system design begins with refractive/reflective design forms and then covers advanced optimization techniques, zoom lenses, aspheres, stray light analysis, tolerancing and illumination design.

Please see the [flyer](#) about this year's Optics Summer School for more information.

Please contact Gayle Thompson at gayle@optics.rochester.edu to apply. ■

Scholarships for Optics, Photonics, and Imaging Continuing Education Classes



Conrow

continued from p. 1

in high school. Chris Palmer, OSA-RS president, said "In our community's optics educational ladder from elementary school through college, Paul's efforts fill the gap between the *Optics Suitcase* (for younger students) and our region's excellent college-level optics programs."

Paul's optics course is now dual-credit – his students earn college credit for the first course in MCC's optical technician certification program. He also teaches a separate optical fabrication course using equipment in his East High School lab.

Palmer went on to say "Paul Conrow's election as honorary member recognizes his extraordinary efforts to teach optics to high school students, thereby helping them toward careers as optical technicians and engineers and as well as helping provide for the future workforce needs of our region's precision optical manufacturers. By awarding an honorary membership to Paul, we not only recognize his important work to promote and disseminate knowledge of optics but we demonstrate that we value his important contributions to the local optics community."

Honorary Members of the OSA-RS are elected by unanimous vote of the Council, and are recognized for their eminent service in the advancement of optics.

Paul Conrow will be recognized at our Annual Dinner Meeting on Tuesday, May 7th at the Burgundy Basin Inn. ■

Do you have news of interest to the OSA-RS membership?

Send a note to newsletter@osarochester.org

Courses at UR

The Scholarships at the University of Rochester are to attend classes at the Institute of Optics Summer School (see article on p. 4), which is in its 52nd year and runs from June 4th through June 18th, 2013. There are seven courses to choose from; click on the title of each course to learn more:

1. [Optical Thin Film Coating Technology](#)
2. [Fundamentals of Optics](#) (with labs)
3. [Modern Optical Engineering](#) (with labs)
4. [Opto-Mechanical Analysis](#) (with labs)
5. [Lasers and Optoelectronics](#) (with labs)
6. [Biomedical Optics](#)
7. [Optical System Design](#)

Courses at RIT

The scholarships at RIT are for three new classes that have been created for the RRPA program. The three classes are held at different times during the summer. Click on the title of each course to learn more:

1. [Foundations of Imaging Science](#) (with labs)
2. [Optoelectronics Devices, Packaging and Assembly](#) (with labs)
3. [Optical Thin Film Processing](#) (with labs)

How to Apply

Fill out the short [application form](#) and e-mail it to Abigail Brengle at

abigail.brengle@rochester.edu

Please call Abigail Brengle with questions (585) 275-2104. ■

The Center for Emerging and Innovative Sciences at the University of Rochester is pleased to be able to offer scholarships for a series of summer short courses in optics, photonics, and imaging (OPI).

The courses are being held during the summer of 2013 at the University of Rochester and Rochester Institute of Technology. The scholarships are being made available through a grant from the Employee and Training Administration (ETA) in the US Department of Labor. The ETA grant is part of a multi-agency grant program that promotes advanced manufacturing jobs creation in regions having strong industrial clusters. The Rochester program is called the *Rochester Regional Optics, Photonics, and Imaging Accelerator*, or RRPA for short.

The courses are for:

- Displaced workers who would like to work in one of the OPI industries
- People who have jobs outside of the OPI industries but would like to transition into one of them
- People who currently work in an OPI industry and are interested in furthering their career

What you'll get from these courses:

- Specialized skills in growing industries
- An opportunity to professionally develop with some of the leading minds in the field
- Certificate of completion

OSA CEO Testifies on Capitol Hill about Importance of Sustained R&D Funding

Elizabeth Rogan, CEO of the Optical Society (OSA), testified before the US House Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies in late March, calling for sustained federal investments in research and development (R&D) funding for the National Institute of Standards and Technology (NIST) and the National Science Foundation (NSF).

"NIST and NSF are two agencies critical to strengthening the optics and photonics industry. Both make significant investments in the field and we're already seeing the benefits of these programs," said Rogan in her testimony.

Rogan's testimony focused on the importance of sustained federal investments in science – and optics and photonics in particular – supporting research that drives manufacturing innovation, improved communication technologies, increased solar energy efficiency, and much more.

She also referred to the National Academy of Sciences' landmark report discussing the current state of optical sciences and goals for the future – [Optics & Photonics: Essential Technologies for Our Nation](#). One of the key recommendations of the report is to engage US industry, government and academia in the design and oversight of R&D and related programs that include federal as well as industry funding. OSA and other professional scientific societies are working to move the recommendations of the report forward, including the ultimate goal of establishing a National Photonics Initiative or NPI.

Corporate Sponsors



BOND SCHOENECK & KING ATTORNEYS
Commitment · Service · Value · Our Bond



Heraeus



LaserMax



OHARA



OPTIMAX



OPTIPRO



QED Technologies



Richardson Gratings
A Newport Corporation Brand



SCHOTT
glass made of ideas



Semrock
A Unit of IBM Corporation



SYDOR
OPTICS

your company name here!

"Science and engineering research, whether conducted in the private sector, at a university or within a federal agency or laboratory, requires long-term predictability and a sustained, coordinated effort to produce

positive results," said Rogan in her testimony. "The research being done in the field of optics and photonics makes possible everything from life-saving medical imaging devices and solar energy to high-speed Internet connections, computer chips and LEDs, to laser cutting for manufacturing. In short, optics and photonics are essential to solving problems, enabling innovation, facilitating economic growth and improving lives."

The subcommittee hearing was focused on the fiscal year 2014 budget, and is designed to allow representatives from relevant organizations to share their insights. Rogan's full testimony is available on the [OSA website](#). More information about the hearing and the appropriations process is available on the [Appropriations Committee's website](#). ■



Elizabeth Rogan, CEO, OSA

Annual Dinner Meeting Invited Speaker



Dr James Breckenridge

James Breckenridge earned his BS degree in Physics from Case Institute of Technology in Cleveland in 1961 and his MS and PhD degrees in Optical Sciences from the College of Optical Sciences at the University of Arizona, graduating in 1976. His dissertation topic was the development of the rotational shear spatial interferometer and applications to problems in the astronomical sciences.

After his BS degree, Dr Breckenridge became an astronomical research assistant at Lick Observatory for three years working on six color photometric standards. He was an astronomical research assistant at Kitt Peak National Observatory outside Tucson for twelve years before moving to the NASA Jet Propulsion Laboratory (JPL) in Pasadena in

1976. At JPL he was the founding manager of the optical sciences and application section, which is responsible for the design, construction, and testing of most of the space-flight optical systems built by JPL. In 1994 he became the JPL program manager for innovative optical systems, and in 1999 he accepted an assignment to the National Science Foundation (NSF) in Washington DC to manage the Advanced Technologies and Instruments program. He returned to JPL in 2003 to become the chief technologist for the NASA exoplanet program. He retired from JPL in 2012 after thirty-three years of service.

Dr Breckenridge has taught the Optical Engineering class in the Applied Physics and Aeronautics departments at CalTech since 1983. In 2003, he was the recipient of the SPIE's George W. Goddard award. He has written over 85 publications, a book chapter and a book in astronomy, physical optics, spectroscopy, and image science. He was elected President of the SPIE, and is an elected fellow of Optical Society of America, Royal Astronomical Society of London and the SPIE. He is the recipient of eight NASA achievement awards and holds four patents.

Dr Breckenridge currently holds an academic appointment at CalTech as a Visiting Associate in aeronautics and is an Adjunct Professor of Optics at the College of Optical Sciences at the University of Arizona. His current research interests are optical systems for the characterization of exoplanets and topics in advanced optical system engineering. He currently consults in industry and government.

Science Exploration Days To Be Held At St John Fisher College

The Central Western Section of the Science Teachers Association of New York State is hosting *Science Exploration Days* in May at St John Fisher College.

At this event, science students will be exposed to relevant and interesting science and technology topics. Area leaders representing industry, research, education, and professional organizations will share their expertise with students in a seminar format or hands-on exhibits. Seminars are offered to the several hundred students coming from middle and high schools throughout the region.

The 2013 event takes place Friday, May 17th for grades 7 - 12. The exhibits are open to the public from 7:00p to 9:00p on Thursday, May 16th.

St. John Fisher College has been host to *Science Exploration Days* since its inception in 1971.

The Science Teachers Association of New York State (STANYS), founded in 1896, is dedicated to promoting excellence in science education. The Central Western Section is one of the seventeen STANYS sections and encompasses the counties of Monroe, Livingston, Ontario, Seneca, Wayne, and Yates. Its purpose is to promote science education and provide programs benefiting students and teachers in our region. ■

Did You Know ...

that the [Delano diagram](#) (also known as the y-ybar diagram) for paraxial analysis is named after **Erwin Delano**, a retired professor of physics at St John Fisher College?

Hobart & William Smith Students to Participate in NASA Competition

This May, four students and three faculty members from Hobart and William Smith College (HWS) will participate in the third annual National Student Solar Spectrograph Competition (NSSSC) at Montana State University (MSU).

The team will compete against teams from twenty-one colleges and universities around the country to determine the best construction of a solar spectrograph -- an instrument used to measure the properties of sunlight over the visible and near infrared portion of the electromagnetic spectrum. The competition is part of an education and outreach effort for NASA's Interface Region Imaging Spectrograph (IRIS) heliophysics mission and is hosted by the Montana Space Grant Consortium, located at MSU in Bozeman, Montana.

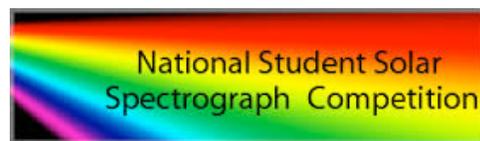
Over the course of nine months, Candace Carducci '15, Jacob Slade-Baxter '15, Mimi Sakarett '15 and Lee Schneider '14, under the advisement of Peter Spacher, physics lab technician, Joshua Nolenberg, visiting assistant professor of physics, and Ileana Dumitriu, assistant professor of physics, have been building their own spectrograph instrument to collect data in support of their goals. The team received a NASA Build Award of \$2,000 for project materials.

During the fall semester, the team met at least once per week in Dumitriu's lab to conduct research on lenses, diffraction, interference, solar spectrum and spectroscopy through lab activities. "The students explored different types of spectrographs in order to decide which design is best suited for our

research project," says Dumitriu. "They also tried different types of digital cameras and data acquisition software in order to record and analyze the spectra."

This spring, the team has focused its efforts on building the spectrograph, collecting data and preparing for the competition. "It is our intent to use the spectrograph device we've built to measure the prominence of water vapor constituents of the atmosphere over a relatively small geographic area of Seneca Lake," says the team.

"Growing up surrounded by machines, I developed an interest in how and why things work," says Slade-Baxter. "I am excited to participate in this competition." To Lee Schneider, "physics is what makes the world we live in today possible. I would love to get into biophysics and medical imaging research." Sakarett, a computer science major with minors in chemistry and environmental studies, says preparing for the competition has enhanced her love for "discovery and hands-on science learning."



The NSSSC invites interdisciplinary teams of undergraduate students to design, build and test optical instruments to answer questions about the sun or other science topics that used sunlight as part of the investigation. The students will give three presentations during the competition, explaining how they designed and built their spectrographs, detailing a science outreach event they held and presenting the scientific results of their investigation.

The HWS team members will demonstrate their instrument and present their research findings in a three-day competitive science fair environment in Bozeman in mid-May. There are four judged categories: best build, best design, best science and best presentation. Each student on the winning teams receives a scholarship award of \$3,000 and a travel award to a NASA launch.



HWS students and faculty construct a solar spectrograph in Eaton Hall. The team will participate in the National Student Solar Spectrograph Competition at Montana State University in Bozeman this month.

Exelis Geospatial Systems Announces Expansion

Exelis Geospatial Systems (GS) announced last month that it will be creating fifty new jobs in Rochester's Eastman Business Park in 2013.

The new job opportunities in Rochester result from consolidation of the company's presence in West Springfield, Massachusetts. GS is working toward transitioning all work to Rochester by early July and staffing will be completed in phases, with the most critical roles being filled first. Approximately a dozen Exelis employees from West Springfield will relocate to Rochester to support local operations. The remaining positions will be sourced from New York.

Empire State Development (ESD) and Monroe County officials worked closely with Exelis to support this project, which will provide opportunities for high-skilled production and engineering jobs in New York State. ESD will assist Geospatial Systems with this facility expansion project by providing tax credits while Monroe County has offered incentives in tax credits and training assistance.

"Exelis is committed to our Rochester base of operations," said Chris Young, president, Exelis Geospatial Systems in a prepared statement. "New York State and Monroe County, offer our employees a high standard of living, and for Exelis, a strong pool of talent as well as world-class of technical resources through its institutions of higher learning."

Exelis Power Solutions businesses being moved here includes Analytical Instrumentation (AI) and Rugged Power Supplies businesses. AI will design, develop, manufacture and sell custom ion detectors and custom high-voltage power supplies to the analytical and life science instrumentation industries. These devices are critical components in mass spectrometry systems utilized to detect, identify, and verify chemical and biological substances. They are also employed in other areas such as X-Rays, scanning electron microscopes and surface-science instruments. Rugged Power Supplies business provides government and commercial users with high-voltage and low-voltage power supplies for operating in ruggedized or extreme environments. ■

from the OSA
Public Policy Team ...

Budget season is here - Tell Congress to maintain strong science & technology investments!

On April 10th, President Barack Obama submitted his Fiscal Year (FY) 2014 budget request to the U.S. Congress. The request provides for sustained funding levels for most science, technology, and innovation programs, and increases and new funding for others.

The president is proposing \$142.8 billion in total research and development (R&D) investments and \$3.1 billion in science, technology, engineering, and math (STEM) education initiatives. Other science and technology highlights include:

- \$7.6 billion for the National Science Foundation (NSF)
- \$754 million for the National Institute of Standards and Technology (NIST) labs
- \$5 billion for the Department of Energy (DOE) Office of Science
- \$67.5 billion for the Department of Defense's (DOD) R&D and test and evaluation programs
- \$2.9 billion across multiple agencies for advanced manufacturing research
- An expansion and permanent extension of the Research & Experimentation Tax Credit
- \$325 million for expand NSF's graduate fellowship program and create a new National Graduate Research Fellowship
- \$65 million for NSF's Advanced Technological Education program, which focuses on training technicians for high-tech jobs

In the coming months, Congress will begin the process of drafting and passing the FY 2014 appropriations bills – taking the president's request into consideration during that process. Now is the time to make your voice heard, and urge your representatives in Washington to continue robust investments in science and technology. Use our easy online tool to [send a letter to Congress](#) asking them to support the president's FY 2014 science and technology budget request.

OSA has set up a template letter for you to use in its [Legislative Action Center](#). It's very simple, only takes a few minutes, and can make a big impact! Your personal stories about the work you are doing and the value of federal R&D investments can make all the difference in influencing legislators. ■

For more information, contact the OSA Public Policy Team at public-policy@osa.org.

New Photonics Degree Program at University of Central Florida

On March 21st, the Board of Trustees of the University of Central Florida (UCF) approved a [new Bachelor of Science degree program](#) in photonics science and engineering. The new program will be a partnership between [The College of Optics and Photonics \(CREOL\)](#) and the [College of Engineering and Computer Science](#).

According to the university, this degree program "will enable students to analyze and design optical and laser systems for a broad set of applications, including manufacturing, healthcare, telecommunications, defense, security and entertainment."

The first classes of the new undergraduate program will be offered in the Autumn 2013 semester.

CREOL, founded in 1985, has offered only graduate degrees in Optics; the new program will be UCF's first undergraduate optics degrees. UCF has has an [undergraduate specialization option](#) for BSEE students for some time.

The University of Central Florida is one of the world's foremost institutions for teaching and research in optics and photonics. ■



Michigan establishes photonics cluster

Mi-Light, the newly-established alliance for Michigan's photonics industry, officially launched the organization with its first Annual Meeting on April 10th that included the election and installation of its inaugural board of directors.

Mi-Light is a non-profit organization serving Michigan's photonics industry by bringing together professionals from companies, academia and organizations to mutually support and promote photonics-related business.

In 2012, the Michigan Economic Development Corporation (MEDC) awarded Mi-Light \$89,000 to kick off activities supporting and promote the growth of Michigan's photonics industry cluster. Leaders from Michigan photonics companies, many of which are in vicinity of Ann Arbor, began meeting in 2008 to collaborate on developing Michigan's photonics industry.

"We appreciate the foresight of the MEDC and the State [of Michigan] in recognizing the important role that Michigan has to play in the global and rapidly-expanding photonics industry," said Mi-Light Chair Michelle Stock in a prepared statement. "Industry and educational organizations from across the entire state are participating in Mi-light initiatives that will benefit many dimensions of the state economy."

Did You Know ...

that the Optics Center on Goodman Street is Bausch & Lomb's largest facility at 725,000 square feet?

Mi-Light will use the MEDC funding in four broad areas:

- to promote Michigan's industry and research assets in photonics to a global audience in order to attract companies, talent and new business,
- to increase awareness of Michigan's breadth and depth of photonics capabilities and assets,
- to develop photonics education and training programs in Michigan to increase the availability of skilled technical personnel at all levels, and
- to stimulate collaboration among its members and with outside organizations. Photonics involves innovative applications of lasers, optics, fiber-optics, and electro-optical devices in numerous and diverse fields of technology. Photonics is an enabling technology for nearly every other high-tech industry including telecommunications, controls, energy, defense, manufacturing, research and medicine.

Mi-Light's new board members include Michelle Stock (mlstock consulting), chair; David Shindell (Data Optics), vice-chair and acting treasurer; Anca Sala (Baker College), secretary; Bodo Ehlers (Rigaku); Sheila Jensen (Visotek); Michael Klos (IPG Photonics); and Richard Kurtz (Advanced Photonix, Inc).

For more information, visit www.mi-light.org.

Did You Know ...

that a material with limited [invisibility properties](#) has been demonstrated by a team at the University of Texas at Austin?

OSA Chapters Top 300 Worldwide

The Optical Society (OSA) recently announced that its worldwide network of Student Chapters has grown to more than three hundred. In late March, the OSA Student Chapter at the University of Victoria in British Columbia, Canada was established — bringing the total to three hundred one Student Chapters in fifty-six countries. So far, ten chapters have been chartered so far in 2013. The number of OSA Student Chapters has more than doubled in the last five years.

“The expansion of our Student Chapter program reflects the growing interest students have in creating an effective professional network and the strong desire to belong to the top professional society in the field,” said OSA CEO Elizabeth Rogan in a prepared statement. “Last year, chapters in East Asia and Oceania had the highest growth rate of any region globally. Our Student Chapters are providing meaningful and unique opportunities for the next generation of optical scientists

and engineers to enhance their careers, build public awareness of the importance of optics and photonics, and prepare their members to be future leaders. Strong support of students is a priority for OSA.”

OSA Student Chapters, 72% of which are located outside the United States, are independently managed by students at leading universities worldwide. To be established and approved by OSA, Student Chapters are required to have a starting roster of at least five members, a faculty advisor, a letter of intent describing the chapter's intent, and a set of bylaws. Applications are reviewed and approved by OSA's Member and Education Services Council. OSA Student Chapters engage in a variety of activities, including professional development opportunities, youth education outreach, the International OSA Network of Students™ (IONS) meetings, and other initiatives. OSA supports the chapters through travel grant programs, activity and education grants, IONS funding, traveling lecture programs, website support and more. ■

Corning Announces Optical Fiber Breakthrough

Corning Incorporated and NEC Corporation of America announced that they have achieved record-breaking results in the transmission capacity of optical fibers.

Researchers from NEC Labs in Princeton, New Jersey and Corning's Sullivan Park Research Center in Corning, successfully demonstrated ultra-high-speed transmission with a capacity of 1.05 petabits (10^{15} bits) per second over novel multi-core

fiber (MCF), a type of optical fiber designed by Corning researchers that has cores arranged in a triangular lattice, enabling transmission over a large number of spatial modes. By combining spectral multi-plexing with polarization and spatial mode multiplexing and employing multilevel modulation formats, the joint Corning-NEC team achieved the total spectral efficiency of 109 bits/sec/Hz, while the aggregate transmission capacity was 1.05 petabit/s -- according to the researchers, this is the highest capacity over a single optical fiber that has been demonstrated. ■

Did You Know ...

that in 1942, as part of the war effort, the UR's Institute of Optics used the Memorial Art Gallery's kiln for top-secret work for the military?

Speakers for Photonics North Announced

The Conferium for Photonics North Conference will take place at the Convention Centre in Ottawa, Canada, from June 3rd through June 5th, 2013.

Speaking on the topic “Photonic integration: moving beyond telecom and datacom” will be plenary speaker, Professor Roel Baets of Ghent University, Imec, Belgium. Plenary speaker Dr Tom Hausken of The Optical Society and the Optoelectronics Industry Development Association will provide an update on the North American photonics market and the US National Photonics Initiative.

Conference co-chairs are Jacques Albert, Canada Research Chair in Advanced Photonic Components, Carleton University and Douglas James, Chair, Board of Directors, Canadian Photonics Industry Consortium (CPIC).

Main sessions will cover biomedical optics, green photonics and energy, optical communications, optoelectronics and integrated circuits, photonic materials and nonlinear optics, photonic sensors and more. ■

Did You Know ...

that public companies focused on optics and photonics generate \$3B per year, more than 10% of all US public company revenue?