



OSA Rochester Section Newsletter

Glass Art Contest and Auction Fundraiser Held at FiO/LS in October, Winners Announced

The Glass Art Contest & Auction, hosted by OSA Rochester Section, was held at FiO/LS at the Rochester Riverside Convention Center, Empire Hall. The entire OSA-RS was privileged to have been granted an opportunity by the National OSA Chapter to help plan and administer this exciting event.

Numerous optical fabricators and glass artists provided their unique artwork for display. All pieces were displayed in the Frontiers in Optics Exhibition Hall, in a silent auction open to all attendees.

In addition, there was a vote that took place, in two separate categories: "Best in Design," and "People's Choice." The Best in De-

sign award was chosen by three judges. The People's Choice award was given to the most voted on piece, among conference attendees. Several hundred

votes were received among all entries.

continued on Page 7



Glass Art Contest Awards for Best in Design and People's Choice [Photo credit: Eugene Kowaluk]

The Optical Society
Rochester section
Founded in 1916

Highlights:

- > Glass Art Contest and Auction Held at OSA FiO/LS
- > OSA Rochester Section 2016-2017 Speaker Series Update
- > FiO/LS Educators Day Update



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Inside this issue:

Educational Outreach	2
The President's Lens	3
FiO Highlight	4
Speaker Series	5
About us	9
Sponsors	9

Educator’s Day Update *EDAY Held During FiO/LS Conference in Rochester*

“Participants walked away with a variety of resources for their students, and multiple lesson plans appropriate for K-12.”

The Optical Society Foundation (OSAF) in partnership with the American Association of Physics Teachers (AAPT) and The Optical Society (OSA) Rochester Local Section hosted a special community outreach program and training for K-12 educators. This outreach program was held in conjunction with FiO/LS, on the conference’s first day.

The session focused on light and color through fun, hands-on, and even *edible* science experiments. Educators were able to familiarize themselves with many educational activities, supported by the Laser Classroom and Optics Suitcase educational kits, including:

- Methods for learning about the components of white light with a “Rainbow Peephole,”

- how some animals see patterns invisible to the human eye with “Magic Stripes,” and how materials can change color with the “Magic Patch.”
- Methods for learning about color absorption and reflection as we predict the colors of M&M’s under different colors of light and as we

observe how light travels through colored gummy bears.

- Learning about color transmission as we observe the world through filters made of Jell-O.

Participants walked away with a variety of resources for their students, and multiple lesson plans appropriate for K-12.



“The President’s Lens”

Greetings
Everyone,



It's quite a busy and exciting time! Our Rochester Chapter had a substantial role in the FiO/LS conference.

During the month of October, we worked very closely with OSA National to help with administration and support of the Glass Art Contest and Auction at Frontiers in Optics (FiO/LS 2016). We are so very proud to have had an opportunity to be hosts of this event, which coincides with OSA's 100th anniversary. I, along with other Council members, were thankful to be involved. Participation was robust, with many hundreds of FiO conference attendees stopping by to say hello to us. It was a pleasure to see so many familiar faces, and to meet new folks, as well. We man-

aged to raise several thousand dollars for educational outreach efforts during this event!

In addition, our presence there afforded our organization an opportunity to listen and learn from the academic and industry communities; this will help us to further shape our mission.

Many exciting events remain in our year, including several sponsored talks, which have heretofore been extremely rewarding and well-attended. The quality of the speakers has been impressive. We will work to continue to fill the schedule for the remainder of the year, and I am confident that you will find them to be similarly passionate and knowledgeable in their fields.

Thank you, as always, for your interest and support. Please contact me at president@osarochester.org if you have any questions or

comments.

Kind regards,
Jason Rama
President
OSA Rochester Section

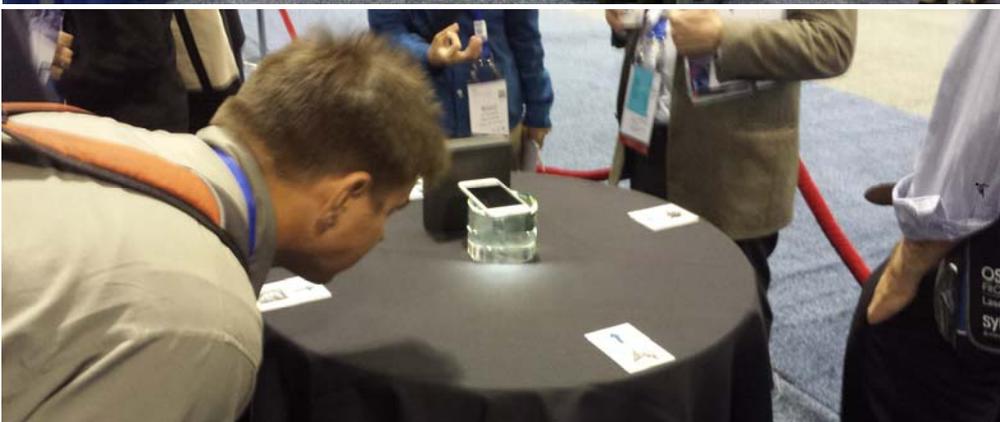


Photo Credits: OSA-RS

Michio Kaku Keynotes The Optical Society's Light the Future Program at Frontiers in Optics Conference *From OSA National Newswire*

FiO Highlight

“For 100 years, the optical science community has been gathering to discuss the latest advances in all areas of the field of optics and photonics at The Optical Society’s Annual Meeting.”

OSA, the leading global professional association in optics and photonics, with theoretical physicist and futurist Dr. Michio Kaku, City College of New York (CUNY), NY, USA, hosted the latest in The Optical Society's (OSA) Light the Future series. The program took place at the Frontiers in

the Tenth Dimension,” and “Parallel Worlds: A Journey Through Creation, Higher Dimensions, and the Future of the Cosmos,” have helped popularize science, making time travel a topic for the dinner table. Dr. Michio Kaku has appeared on programs and networks, including Good Morning America,

2-5 November:
Steven Chu, Nobel Laureate, former U.S. Secretary of Energy and OSA Fellow Asia Communications and Photonics Conference *Wuhan, China*

4-8 December:
Professor Sir David Payne, University of Southampton, Highfield and OSA Fellow Photonics India *Kanpur, India*



Prof. Michio Kaku, futurist and theoretical physicist, CCNY (Photo Credit: OSA)

Optics Conference and Exhibit (FiO), the 100th OSA annual meeting, promoting topics in optical science and engineering for both academics and industry members at the Rochester Riverside Convention Center in Rochester, New York.

As The Optical Society (OSA) celebrates 100 years in optics and photonics, Dr. Michio Kaku looked towards the next 100 years in optics, providing his vision of self-driving cars, 3D printing and a billion pixel camera. Joining Dr. Kaku will be Sir Peter L. Knight, OSA fellow and emeritus professor at Imperial College, London, England, who will serve as the Master of Ceremonies for the program.

As an author, Dr. Michio Kaku's bestsellers "Hyperspace: A Scientific Odyssey Through Parallel Universes, Time Warps and

20/20, Nightline, Naked Science, CNN, CBS News, ABC News, NBC News, Fox News, , BBC World News, and talk shows like the Late Show with David Letterman, The Colbert Report, The Discovery Channel, and Real Time with Bill Maher.

The Light the Future speaker series is touring eight international cities as part of The Optical Society's Centennial program, featuring visionaries, futurists and Nobel Laureates discussing how science affects our lives every day.

The series kicked off in February of this year in Washington, D.C. with Ira Flatow, host of Science Friday, and has featured Mary Lou Jepsen at OFC 2016; Ray Kurzweil and former U.S. Secretary of Energy Steven Chu at CLEO 2016. Other Light the Future events include:

For 100 years, the optical science community has been gathering to discuss the latest advances in all areas of the field of optics and photonics at The Optical Society's Annual Meeting.

The meeting has grown from its start as a local conference focused on topics such as photography and vision to new scientific thrusts of today such as developments in nonlinear spectroscopy and optical coherence tomography. The annual program was held 17-20 October 2016 at the Rochester Riverside Convention Center with an attendance of 2,300.

"This meeting was 100 years in the making," said Elizabeth Rogan, CEO, The Optical Society. "From our centennial celebrations to the technical programming, FiO engaged scientists, engineers, business leaders and students from around the world to share the latest advances in optics. This premier conference program reflects the best in class of volunteers that developed the program."

In addition to the acclaimed research, attendees benefit

continued on Page 8

OSA Rochester Section 2016-2017 Speaker Series Updates

Since our Early Fall issue, we have had several installments of the OSA Rochester Section 2016-2017 Speaker Series:

“The OMEGA EP Laser System: Recent Developments and Prospects” Brian Kruschwitz, Senior Scientist



Brian Kruschwitz, Photo Credit: OSA-RS

ble of producing picosecond, petawatt-class infrared pulses via an Optical Parametric Chirped Pulse Amplification (OPCPA) front end, and multi-kJ, nanosecond, ultraviolet pulses. The beams can be delivered to targets within a dedicated target chamber, and the short IR pulses can also be transported to the

rately shaped UV pulses with arbitrary temporal profiles. This has in turn enabled successful experiments such as ramp compression of materials to study the formation of extreme states of matter. Second, improvements in wavefront control and focusing have produced more repeatable and higher-quality target-plane irradiance profiles with the short-pulse beams. This has been accomplished via application of static phase correction of repeatable beamline aberrations, and improvements to the use of adaptive optics for wavefront correction.

Looking to the future, LLE is also developing technologies for a broadband, all-OPCPA (Optical Parametric Chirped-Pulse Amplification) laser system called the Optical Parametric Amplifier Line (OPAL), which will be capable of producing high-energy, 20-fs pulses. A potential future EP-OPAL using OMEGA EP beams to pump the final OPA stages could potentially produce ultra-intense pulses (>1023 W/cm²) that can be used to study ultra-relativistic phenomena.

Continued on Page 6

Speaker Series

“Looking to the future, LLE is also developing technologies for a broadband, all-OPCPA (Optical Parametric Chirped-Pulse Amplification) laser system called the Optical Parametric Amplifier Line (OPAL), which will be capable of producing high-energy, 20-fs pulses.”

Abstract: OMEGA EP, one of two kilojoule-class laser systems at the University of Rochester’s Laboratory for Laser Energetics, has been operational since 2008 and has proven to be an effective user facility for the study of high-energy-density physics. The laser is comprised of four main beamlines capa-

able of producing picosecond, petawatt-class infrared pulses via an Optical Parametric Chirped Pulse Amplification (OPCPA) front end, and multi-kJ, nanosecond, ultraviolet pulses. The beams can be delivered to targets within a dedicated target chamber, and the short IR pulses can also be transported to the

Two areas of recent progress on OMEGA EP will be discussed. First, advances in pulse shaping of the long-pulse UV beams, enabled by improvements to system simulation capabilities, have enabled the delivery of accu-

Past and upcoming talks



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Date	Speaker	Title or Topic
Dec 6	Thomas Brown (UR)	The Strange World of Polarized Light
Jan 17	Kate Medicus (Optimax)	Everything you wanted to know about freeform optics but were afraid to ask
Feb 7	Geunyoung Yoon (Flaum Eye Institute)	TBD
Feb 21	Jie Qiao (RIT)	TBD

OSA Rochester Section 2016-2017 Speaker Series Updates (cont'd)

Continued from Page 5



Steve Fentress Photo Credit: OSA-RS

"Technology and Rochester's Planetarium: Past, Present, Future" Steve Fentress, Director, Strasenburgh Planetarium, Rochester Museum & Science Center

Abstract: The gift that gave Rochester a Planetarium was announced by Edwin and Clara Strasenburgh in 1964. Now it is time to join the world of full-dome digital projection and big data. This talk puts Rochester's planetarium in perspective on a timeline from the pre-WWI culture of innovation in Germany to the internationally competitive arena of planetarium technology in the 21st century.

Steve's first job at Strasenburgh was composing music for planetarium shows. After becoming Planetarium Director, he emphasized linking the planetarium to current events and accurate science while maintaining the Planetarium's unique qualities including a beautiful indoor sky. Steve studied physics and music at UCLA and Cal State Northridge and did graduate work at the Indiana University School of Music. He lives with his wife Kathryn Vajda, an artist who

teaches in the College of Art and Design at Alfred University.

"Integrated Silicon Photonics" Stefan Preble, Associate Professor, RIT

Photonics has had a transformational impact on modern life, from fiber optic communications that power the internet to the high resolution displays used in all smart phones. However, current photonic systems use discrete, bulky, components that limit their ultimate potential. In this talk Prof. Stefan Preble gave an overview of Silicon Photonics, a technology that monolithically integrates photonics and microelectronics together, and as a result is able to leverage the inherent economies of scale and the dense integration of integrated electronics. In the future, Silicon Photonics will enable more efficient, smaller and lighter devices with transformative impacts to computing, communication, healthcare and security systems.

Dr. Stefan Preble is an Associate Professor in the Kate Gleason College of Engi-

neering at the Rochester Institute of Technology. He received his B.S. degree from RIT in Electrical Engineering (2002), and Ph. D. in Electrical & Computer Engineering from Cornell University (2007).

His research is focused on novel Silicon Photonic devices with the goal of realizing high performance computing, communication and sensing systems that leverage the high speed, bandwidth and sensitivity of light. Professor Preble has received numerous awards recognizing his work, including a DARPA (Defense Advanced



Stefan Preble
Photo Credit: OSA-RS

Research Projects Agency) Young Faculty Award and an AFOSR (Air Force Office of Scientific Research) Young Investigator Award.

We very much thank all the speakers for their participation in the 2016-2017 Speaker Series!

A note about the OSA Rochester Section 2016-2017 Speaker Series:

Updates on future talk topics and dates will be posted on the OSA Rochester Section Facebook and LinkedIn pages. Please consider liking/joining both groups for the most current information regarding scheduling and topic information!

"In the future, Silicon Photonics will enable more efficient, smaller and lighter devices with transformative impacts to computing, communication, healthcare and security systems."

Glass Art Contest and Auction, hosted by OSA Rochester Section, Held at FiO/LS in October

“The winner for Best in Design was ‘pi³’, by artist Tony Marino, of AGI. The winner of the People’s Choice award was ‘Waveguide,’ designed and fabricated by the R&D department of Optimax.”

continued from Page 1

The winner for Best in Design was ‘pi³’, by artist Tony Marino, of AGI. (artwork pictured at below left).

The winner of the People’s Choice award was ‘Waveguide,’ designed and fabricated by the R&D department of Optimax. The artwork is pictured at below right.

Proceeds for the silent auction

event go to OSA-RS to support The Optics Suitcase and The OSA Foundation to support Explore Optics Kit.

The last contest being held in 2005, it had been several years since OSA-RS had an opportunity to help support an exciting event similar to this, and we’re thankful to have been able to support these fundraising efforts. Thank you all for your participation, your bids, your votes, and for your support!



[Photo credits: Eugene Kowaluk] pi³ (left) and Waveguide (right) Glass Artwork winners

Michio Kaku Keynotes The Optical Society's Light the Future Program at Frontiers in Optics

continued from Page 4

ed from a wealth of special events and programming. To name a few, technical division chairs gave an overview of the hot topics in optics today in virtually every sub-field of optics, seven special symposia were held on topics ranging from integrated photonic manufacturing to quantum photonics, and women leaders in the field came together for a day-long program on current issues and trends facing women and minorities in

science.

OSA created a Century of Optics exhibit that showcases 100 iconic, forward-thinking moments in the science of light and The Optical Society's history. The anchor and traveling exhibits were displayed at more than 25 global optics conferences and OSA meetings throughout 2016. At the conclusion of FiO, the anchor exhibit moved to the Rochester Museum and Science Center where it will be displayed in the lobby of the Strasenburgh Planetarium through

30 April 2017. The exhibit also is on permanent display at 16 university partners in Australia, China, Colombia, Germany, South Africa, the United Kingdom and the United States.



Painting with Light Event at the Memorial Art Gallery and RMSC

July 25 and August 7, 2015 — Members of the student chapter organized, directed, and participated in a crowd-sourced painting with light event at the local art gallery to celebrate the International Year of Light with the public community. The image on the near right is the final captured photo and the crew of students who put it together (far right).

At the closing of the RMSC After Dark: Lights Out event, chapter members directed the public circle the statue outside the Strasenburgh Planetarium with small flashlights in hand creating an iridescent scene that makes the statue look like it is about to take-off for outer space. The final image at below right is created with this crowd of people each holding their small light is below.



Photo Credit: RIT SPIE-OSA Student Chapter

About OSA Rochester Section

Find us at
osarochester.org

The purpose of the Rochester Section of the Optical Society 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.

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Rochester Section
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