

**From the President**



Greetings OSSC Members!

We have had another exciting month for many of us with an OSSC meeting in Pasadena with Andrey Matsko from OEWaves who dug deeply into WGM and their applications. We even were able to use the main room at St. Gregory’s Church for the first time. We also had a few new guests along with a few associates we had not seen in quite a while due to the growing interest in photonics.

Additionally, many of us recently spent some time at Photonics West at the Moscone Center in San Francisco, which seemed larger than previous years. There were more talks and symposiums for people attending only the exhibits along with an extra area with booths in addition to the two main halls. Normally, I get through my meetings and

the exhibits in two days; however, this year, I did not get to enjoy all the talks I planned or finish my tours of the halls. However, I did get a new headshot thanks to SPIE.

Since many of us did not have time to see everything, I am proposing a little contest for our members. Put together a paragraph and photo on something photonics related and submit for use in the newsletter, and we will provide recognition to the top few submissions in May. In addition to the admiration and appreciation from your peers, maybe we can throw in a more concrete reward. Additionally, this is not limited to Photonics West as you can share something from any optics or photonics related show or encounter that you care to share. We are obviously always interested in full articles, but most of us do not have time for that.

Finally, we have our program year almost finalized. We will need to postpone our James Webb talk until next year October or November because we not be able to see much even in June. Instead we will have a talk on coating and coating measurements in May along with our March meeting at Cal Poly Pomona on Gigabit imaging, April on laser communications at Facebook, and June in Orange county on Quantum Computing. We look forward to seeing everyone soon.

Sincerely,

Nicholas J. Croglia Jr.  
OSSC President 2018/19

<b><u>In This Issue:</u></b>	<b><u>Page</u></b>
From the President	1
From the Editor	2-3
Meetings	4
Around the OSSC, Outreach Corner	5-6
Events Calendar, OSSC Corporate Members & Sponsors	7

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(See [www.osscc.org](http://www.osscc.org)  
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## From the Editor

Welcome to the February 2019 Images Newsletter!

Several volunteer positions remain open for those who wish to contribute to OSSC while developing their leadership skills and getting to know the local optics community better. Please reach out to any of the BOD members to find out more about the open positions and responsibilities entailed. And if one of the filled positions interests you, the current person holding the role will likely be glad to have the help.

As a reminder, photographs and albums of OSSC events can be viewed at [OSSC Photo Album List](#). Photographs from the recent monthly meetings and Mirror Tech Days can be found at this weblink. If you have recent event photos or photos from years past, please send to any BOD member or OSSC leader for posting on the website.

In the news, our own Donn Silberman, OSSC Fellow (2010), Past President (2007-2008) and Outreach Chair (2009-2012), was one of 88 SPIE Members promoted to the prestigious SPIE 2019 Fellow status. Congratulations Donn!



[Donn Silberman, SPIE Fellow](#)

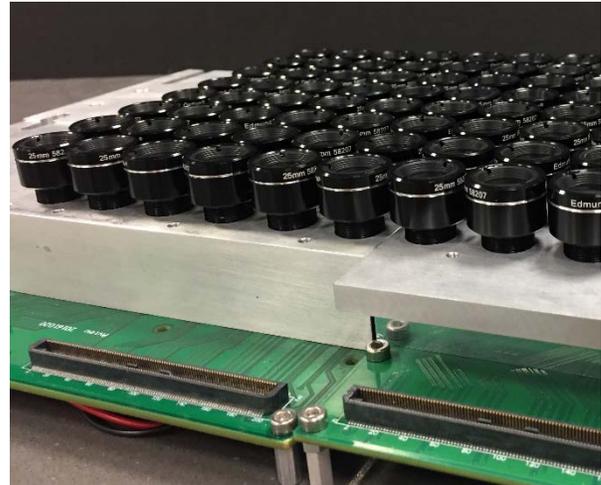
Starrett Kinematic Engineering, Inc., United States  
for achievements in ophthalmic & laser optics, & optics outreach.



President Nicholas Croglio presenting OSSC February 2019 guest speaker Dr. Andrey Matsko his one year OSSC Membership Certificate.

The Micro Camera Array Microscope —  
Enabling gigapixel imaging for behavioral biology  
Dr. Mark Harfouche, CEO & Co-Founder, Ramona Optics  
OSSC Monthly Meeting, March 13<sup>th</sup> 2019

**Abstract:** Abstract: High-throughput optical microscopy is currently transforming the research fields of genetics, drug discovery and neuroscience. Due to challenges with large lens design, no standard microscope can capture more than 50 megapixels per image snapshot, which makes it impossible to simultaneously image at cellular-resolution over a multi-centimeter viewing area (field of view, FOV). To enable cellular resolution imaging over fields of view 10s of cm in diameter, we utilize an array of miniaturized cameras, tiled in a 12x8 configuration collectively called the MCAM. Each camera is individually addressable and controllable to enable rapid acquisition over the fields of view as large as 20 cm in diameter providing gigapixel scale images. Preliminary applications for the MCAM are being developed for behavior imaging of zebrafish larvae in collaboration with collaborators at Duke University and Harvard University.



**About our speaker:** Mark Harfouche is the CEO and co-founder of Ramona Optics, a startup with headquarters in Durham and offices in the Duke BRIDGE program at the Chesterfield. He received his PhD in Electrical Engineering from Caltech studying semiconductor lasers and 3D imaging modalities based on swept source lasers. His work for Ramona Optics now focuses on using computational optional optics to design new microscopes for research and industrial applications. The development of their first product, the MCAM, is now funded in part by the NIH for the purpose enabling new behavioral studies of zebrafish.



**Wednesday, March 13th, 2019**

**Reception: 6:00; Dinner: 7:00; Talk: 8:00**

**Dinner:** \$35 for members registered by March 7 (\$40 non-members), \$40 after for members (\$45 non-members)

**(OSSC Student Members \$10 by March 7, \$20 after)**

**[Kellogg West Conference Center](#)**

Cal Poly Pomona Campus  
**Horse Hill Drive, Pomona, CA 91768**  
**909-869-2222**

On-line Registration: [www.osscc.org](http://www.osscc.org) or  
Contact: Alex Small  
[Events@osscc.org](mailto:Events@osscc.org), 240-672-7639

**Directions:** Enter campus from Temple Avenue, turning right on University. Once on campus, turn right at sign for Kellogg West, and go up the hill. Parking is free in the Kellogg West lot.

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## Local Optical News

Cisco has announced that it completed the acquisition of privately-held Luxtera, Inc., a semiconductor company headquartered in Carlsbad, California that uses silicon photonics to build integrated optics capabilities for web scale and enterprise data centers, service-provider market segments, and other customers. Cisco plans to incorporate Luxtera's technology across its intent-based networking portfolio, spanning enterprise, data-center and service-provider markets. Cisco paid \$660 million in cash and assumed equity awards for the acquisition of Luxtera.

[https://www.photonics.com/Articles/Cisco\\_Completes\\_Acquisition\\_of\\_Luxtera](https://www.photonics.com/Articles/Cisco_Completes_Acquisition_of_Luxtera)

Researchers at the University of California, Santa Barbara and their collaborators at Honeywell, Yale, and Northern Arizona University have developed a chip-scale laser capable of emitting light with a fundamental linewidth of less than 1 Hertz (Hz) — a frequency that is quiet enough to allow scientific applications requiring highly coherent lasers to be moved to the chip scale.

[https://www.photonics.com/Articles/Low-Linewidth\\_Laser\\_at\\_Photonic\\_Chip\\_Scale\\_Is](https://www.photonics.com/Articles/Low-Linewidth_Laser_at_Photonic_Chip_Scale_Is)

Experimental cosmologist Philip Lubin recently presented interstellar space travel scenarios at the Optical Society's Laser Congress in Boston, informed by his direction of the NASA Starlight and Breakthrough Starshot programs. Lubin, a professor of physics at the University of California, Santa Barbara, believes that by tapping into photonics-driven propulsion, researchers are well on their way to making laser-light-powered spacecraft that can deliver humans to Mars within one month.

[https://www.photonics.com/Articles/UC\\_Santa\\_Barbaras\\_Lubin\\_Describes\\_Interstellar](https://www.photonics.com/Articles/UC_Santa_Barbaras_Lubin_Describes_Interstellar)

## OUTREACH CORNER...

Our outreach activities are at risk because Justin Francis, our Outreach Chair has moved and is unable to organize the two events we had planned. If we do not find a new Outreach Chair or at least a volunteer willing to organize at least one of the events, this will be the first year in many where we have no outreach events. The two planned outreach events, were: at Petco Park in San Diego and the other at the OC Fair & Event Center in Costa Mesa. The first event is the San Diego Festival for Science and Engineering on March 2<sup>nd</sup>, <https://www.lovestemsd.org/>. Last year we had about 10 volunteers to help out. We demonstrated polarizers, Fresnel lenses, prisms, color mixing, and fibers. The second event is the Vital Link STEM and Arts Career Showcase which is hosted for three days in April, <http://www.vitallinkoc.org/stem-and-arts-career-showcase>. Last year we had about 15 volunteers over the 3 days. These two events are a great way of giving back to the community and getting from young children to college students interested in optics. At each event there are hundreds of children who stop by our booth to learn about optics. These events give high visibility to the OSSC, and they give many young people information about optics, technology, and engineering. We need volunteers!

We have an opportunity for a new Outreach Chair and are looking for someone to take over this role. We thank Justin for his contributions and wish him luck going forward.

### **Outreach & Education**

The OSSC is assisting local university students with OSA Student Chapters. Contact OSSC Student Chapter Liaison [Alex Small](#) if you would like to support these efforts. Currently, the following universities have on-going chapters: [UC Irvine](#), [UCLA](#), [UC Riverside](#), [Cal Poly Pomona](#), [UC San Diego](#), [Caltech](#).

### **Aim and Purpose**

It is the aim and purpose of this society to increase and disseminate the knowledge of Optics and closely allied sciences, to promote the mutual interests of investigators, teachers and students in these fields, and of designers, manufacturers and users of optical instruments and allied scientific apparatus as well as those who have optics as a hobby and to encourage cooperation and establish acquaintanceship among these persons.

### **Speakers Bureau**

The OSSC has formed a Speakers Bureau, to create a roster of individuals interested in giving talks for student chapters, OSSC meetings, and similar events. If you have something interesting to share with our local optics community, especially career-related topics of interest to students, please contact a member of the OSSC Board of Directors.

Optical Society of Southern California  
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## Upcoming Meetings & Events (2019)

Date	Location	Speaker	Topic
<a href="#">March 13</a> (OSSC Monthly Meeting)	<a href="#">Kellogg West Hotel and Conference Center</a> , Cal Poly Pomona Campus	Dr. Mark Harfouche <a href="#">Ramona Optics</a>	Enabling Gigapixel Imaging for Behavioral Biology
April 10 (OSSC Monthly Meeting)	Northridge venue	Hamid Nemati	Laser Communication
May 8 (OSSC Monthly Meeting)	TBD	TBD	TBD
June 12 (OSSC Monthly Meeting)	Orange County location	Panel	Quantum Computing

*All events subject to change without notice.*

## OSSC Corporate Members & Sponsors

These companies and organizations provide the Optical Society of Southern California with financial resources, time and talent. We are grateful for their generous support.

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