



***Southern California Society
for
Microscopy & Microanalysis***

Fall Meeting

**Wednesday
November 6, 2019
Starts at 5:30 pm**



Invited Talk:

**Dr. Will Harris
*KMLabs Inc.***

**“Small and Fast: Probing the Intersection of Nanoscale
Structure and Ultrafast Dynamics with Lab-Based EUV
Laser Light”**

Address:

**Beckman Institute Auditorium, Caltech
1200 E. California Blvd.
Pasadena, California 91125**

<http://www.scsmm.org/default.html>

FROM THE



PRESIDENT

Dear SCSMM members:

Welcome to the SCSMM 2019-2020 program!

As usually we start the new season with traditional Fall meeting. And I am delighted to announce our 2019 Fall meeting to be held on Wednesday November 6th in Caltech Beckman Institute Auditorium. I'm sure that recent renovation of this eminent site will add more enthusiasm to our planned event. For the scientific program, we have invited Dr. Will Harris from KMLabs as the key-note speaker. His subject is real proof that microscopy today (and always) is a very dynamic area of knowledge, which never stops surprising us. New capabilities with "lensless imaging" at the nanoscale, combined with ultrafast optical pulses, open exciting new opportunities for quantum-scale microscopy and spectroscopy. We will see how these latest developments in optical techniques can complement and extend the existing tools found in our characterization labs. I hope you all enjoy an evening of science, food, and networking before the holiday season.

We are excited to welcome Dr. Mark Herzik and Sara Weaver to join SCSMM board. Mark is Assistant Professor of Chemistry and Biochemistry in UC San Diego and Sara is a Graduate Student (5 min away from her PhD) in Chemistry at the California Institute of Technology. Our 2019 Spring Symposium will be a full-day meeting featuring exciting scientific talks, student platform presentations, and vendor talks. We will have vendor demonstrations of newest products and latest technology. The details of our Spring Symposium will appear on the SCSMM website and Facebook pages early 2020.

Our meetings wouldn't be possible without the continuous support we receive from our corporate members and sponsors of all levels. You can find the full list here and on the SCSMM website.

I am looking forward to seeing you all on November 6th!

Sergey V. Prikhodko

President, SCSMM

SCSMM 2018 Fall Meeting Schedule

5:30 pm	Happy Hour
6:30 pm	Dinner
7:15 pm	Business Meeting
7:25 pm	Small and Fast: Probing the Intersection of Nanoscale Structure and Ultrafast Dynamics with Lab-Based EUV Laser Light Will Harris, <i>KMLabs Inc. Boulder, CO</i>
8:10 pm	Insights on crack propagation from in situ nanomechanics Eric Hintsala, <i>Bruker Nano,</i>

Registration & RSVP

RSVP is required

Due to the generous support of our corporate members, registration for this meeting is included in the membership dues.

Respond no later than 5 p.m. Monday, November 4, 2019

Please sign up here: (<https://imri.uci.edu/content/2019-fall-meeting-registration>)

Regular annual membership for 2019-2020 is \$25 for regular members, \$10 for students. For details visit SCSMM web site:

www.scsmm.org

Map and Directions

For the Map and Directions to **Beckman Institute Auditorium**, **Caltech** please refer to:

<https://www.caltech.edu/map/campus/beckman-institute>



Parking is free after 5pm: Two close parking lots are P labeled; You find auditorium inside Beckman Institute, labeled as BI. Please, be aware that the Beckman Institute Auditorium and Beckman Auditorium is not the same site; Beckman Auditorium is the “wedding cake” building nearby (circular construction located to the right from BI).



Southern California Society for Microscopy & Microanalysis

Membership Application 2019 - 2020

The Southern California Society for Microscopy and Microanalysis (SCSMM) is a non-profit organization dedicated to advancing the knowledge in all areas of microscopy and microanalysis, including, but not limited to: transmission electron microscopy, scanning electron microscopy, electron microprobe, ion probe, microbeam analysis, optical and confocal microscopy, and microspectroscopy. You are invited to join and renew your membership.

The Society is one of the local affiliated societies to Microscopy Society of America (MSA, <https://www.microscopy.org>). We meet twice a year at locations in the greater Los Angeles area. In the fall is an evening dinner followed by one or two speakers. In the spring is a full-day symposium featuring scientific talks from biological, medical and physical sciences, vendor talks and exhibitions, and student presentations.

SCSMM Regular and Student memberships are offered to individuals and are renewed every academic year. Corporate membership is offered to organizations, which entitles two individuals to attend SCSMM meetings. Corporate membership is acknowledged in SCSMM meeting announcements and newsletters that are sent to SCSMM members. Corporate members are invited to sponsor SCSMM meetings at Gold, Silver, or Bronze levels. Please see Vendor Sponsorships for details. For more information on corporate membership, please contact Brian Miller (503-984-0191, Brian.Miller@bruker.com).

To join SCSMM online and attend SCSMM meetings, please register online (<https://imri.uci.edu/content/2019-fall-meeting-registration>). Alternatively, you may fill the Membership Application Form and bring it to SCSMM meetings.

Membership Application 2019 - 2020



Southern California Society for Microscopy & Microanalysis

Name: _____

Institution: _____

Address: _____

City, State, Zip _____

Phone: _____

E-mail address: _____

Web Site: _____

Please check the appropriate membership category:

Regular @ \$25.00

Student @ \$10.00

Attach your check for the appropriate amount made payable to SCSMM. You may bring this form along with your dues to any of our meetings or mail to:

**SCSMM c/o Elena Miranda
California State University Northridge
Department of Geological Sciences
18111 Nordhoff St
Dept. 8266
Northridge, CA 91330-8266**

**Tel: 818-677-4671
Elena.miranda@csun.edu**

SCSMM Vendor Sponsorship Benefits and Recognition

- Gold @ \$600.00
- Silver @ \$350.00
- Bronze @ \$250.00
- Corporate @ \$100.00

All Corporate Memberships are entitled to two individual member listings. If you have selected a Corporate Membership, please copy this form and provide details for the second listing. Write "**2nd Listing**" at top of form.

\$600 Gold level

Instrumentation display during fall and spring meetings (table)
Scheduled (15 min) talk during spring or fall meeting
Announcement/acknowledgment from the stage as a Gold sponsor of SCSMM
Listing as a Gold sponsor in all press and media materials of the SCSMM
Invitation for two to attend the spring and fall meeting

\$350 Silver level

Instrumentation display during fall and spring meetings (table)
Announcement/acknowledgment from the stage as a Silver sponsor of SCSMM
Listing as a Silver sponsor in all press and media materials of the SCSMM
Invitation for two to attend the spring and fall meeting

\$250 Bronze level

Announcement/acknowledgment from the stage as a Bronze sponsor of SCSMM
Listing as a Bronze sponsor in all press and media materials of the SCSMM
Invitation for two to attend the spring and fall meeting

\$100 Regular Corporate membership

Listing as a Corporate Member in SCSMM spring and fall pre-meeting newsletters
Invitation for one to attend the spring and fall meetings

Vendors are also most welcome to sponsor with "in-kind" support of our meetings, such as providing wine with dinner (fall meeting) or a prize for a raffle or student talk/poster. Acknowledgements of such sponsorship will be made during the meeting and in the meeting announcement - and are always much appreciated!

Small and Fast: Probing the Intersection of Nanoscale Structure and Ultrafast Dynamics with Lab-Based EUV Laser Light

Will Harris, PhD

Materials Scientist and Business Development Manager

KMLabs, Inc.

Boulder, CO

Among existing techniques, electron microscopy and ultrafast optical spectroscopy have emerged as the prominent tools to probe incredibly small length and time scales, respectively. Interestingly, we note the natural connection between these dimensions as very small spatial structures tend to correlate with rapid transient behavior, especially at the nano to quantum scales. As a means of arriving at this intersection of small length- and time-scales, laser-based high harmonic generation (HHG) has emerged over recent years, providing a lab-based optical probe exhibiting both short wavelength (~10 nm) and short pulse duration (~10 fs). This technique provides a laser-like beam of photons in the extreme ultraviolet (EUV) to soft X-ray range, a region of the electromagnetic spectrum classically difficult to access, particularly in the laboratory (as opposed to synchrotron/FEL facilities).

More recently, maturation of the HHG source has allowed parts of the scientific community to gradually shift focus away from the task of creating photons, and towards their unique interactions with matter. Naturally this transition has extended the technique's reach beyond the specialist laser physics labs and into the domain of materials scientists, engineers, chemists, and more. While applications are manifold, this talk will introduce scientific opportunities in nanoscale coherent diffraction imaging (CDI), photoemission/ionization, and ultrafast spectroscopy to probe compositional, mechanical, thermal, and magnetic dynamics at the nano/quantum scales.

Biography: Will Harris is a materials scientist and business development manager at KMLabs, the leader in short wavelength, ultrafast laser technology. Prior to KMLabs, Dr. Harris spent several years in the materials science team at ZEISS Microscopy, with a focus on applications of X-ray and electron techniques. He has a PhD in Mechanical Engineering from the University of Connecticut, with a thesis on characterizing and modeling energy materials/devices with the aid of synchrotron X-ray imaging and analysis.



The Southern California Society for Microscopy and Microanalysis thanks the following Corporate Members for the 2019-2020 year.

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