



*Southern California Society
for
Microscopy & Microanalysis*

Fall Meeting

**Thursday
November 2, 2017
Starts at 5:30 pm**



Invited Talk:

2017 Nobel Prize in Physics winner

Barry C. Barish

*Ronald and Maxine Linde Professor of Physics Emeritus, Caltech
Former Director of Laser Interferometer Gravitational-Wave Observatory (LIGO)*

“Einstein, Black Holes and Cosmic Chirps”

Address: City of Hope
Arnold and Mabel Beckman Center
Argyros Auditorium
1500 East Duarte Road
Duarte, CA 91010-3000
Tel: 626-301-8265



Dear SCSMM members:

Welcome to our 2017- 2018 program!

I am excited to announce our 2017 fall meeting to be held at City of Hope, Beckman Center, Argyros Auditorium on November 2nd. We are thrilled and honored to have Caltech Linde Professor of Physics emeritus and former LIGO director *and 2017 Nobel Prize in Physics winner* Barry C. Barish as our invited speaker. Prof. Barish led the effort through the approval of funding by NSF in 1994, the construction and commissioning of the LIGO interferometers in Livingston, LA, and Hanford, WA in 1997, and has continued to play a leading role in LIGO and Advanced LIGO. The first detection of the merger of two 30 solar mass black holes was made on Sept. 14, 2015. This represents the first direct detection of gravitational waves since they were predicted by Einstein in 1916 and the first ever observation of the merger of a pair of black holes.

Our 2018 Spring Symposium will be a full-day meeting featuring exciting scientific talks, student platform presentations, and vendor talks. We will have vendor demonstrations of the newest products and latest technology. The details of our Spring Symposium will appear on the SCSMM website and Facebook pages early 2018.

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 2!

Zhuo Li

President, SCSMM

SCSMM 2017 Fall Meeting Schedule

5:30 pm	Happy Hour
6:30 pm	Dinner
7:20 pm	Business Meeting
7:30 pm	Mitigating hydrocarbon contamination formation effects from organic specimens Vincent Carlino, <i>ibss Group, Inc</i>
7:45 pm	Exploration in 3D with X-ray Microscopy William Harris, <i>Carl Zeiss</i>
8:00 pm	“Einstein, Black Holes and Cosmic Chirps” Barry C. Barish, Caltech/LIGO 2017 Nobel laureate in physics

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. Friday, October 27, 2017

Please sign up online (<http://www.imri.uci.edu/content/2017-2018-scsmm-membership-and-fall-meeting-registration>)

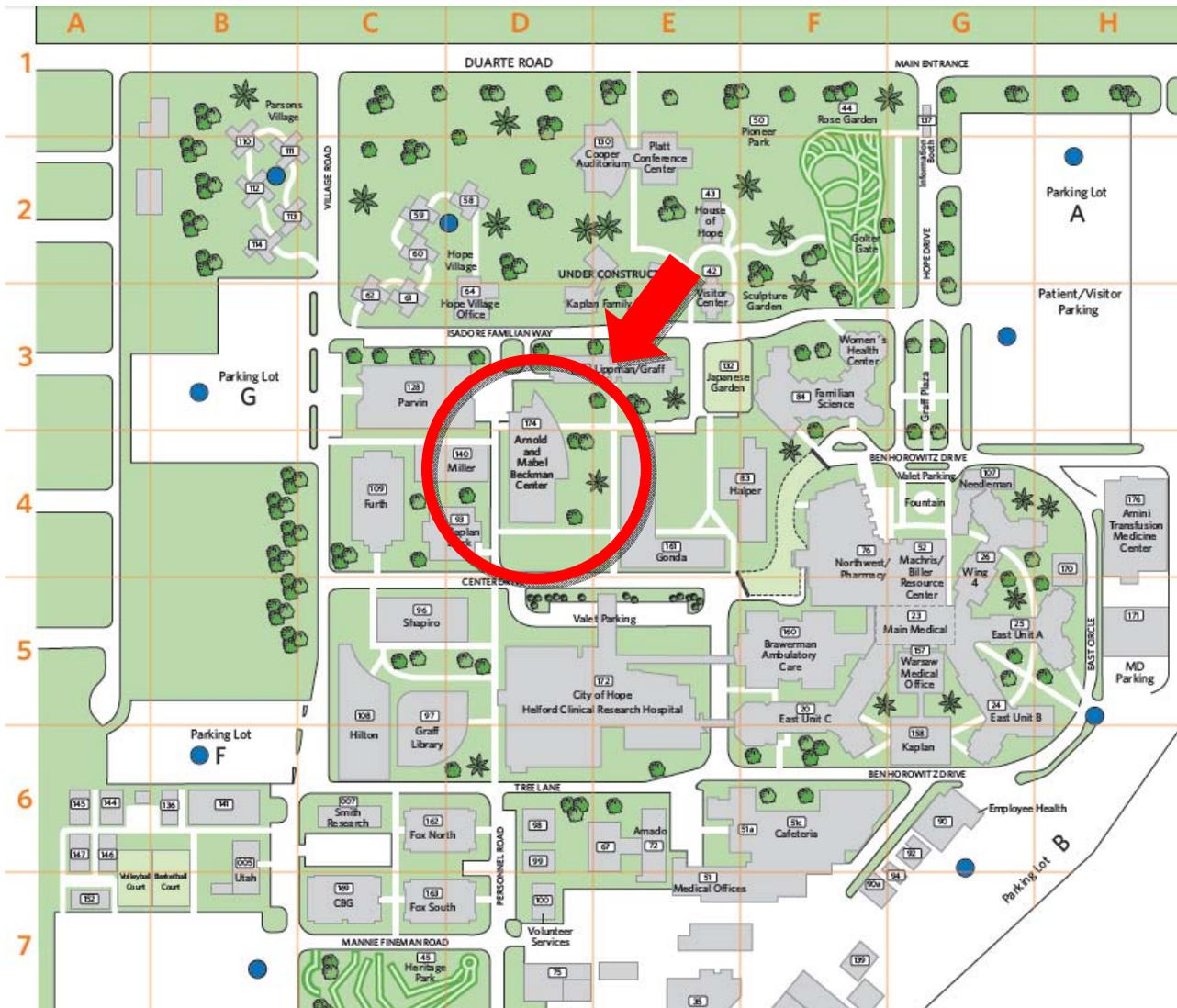
Regular annual membership for 2017-2018 is \$25 (\$10 for students). For further details visit SCSMM web site

www.scsmm.org

Map and Directions

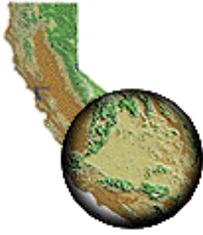
For the Map and Directions to **City of Hope - Duarte** please refer to:

<http://www.cityofhope.org/maps-and-directions>



Parking is free: Lots **A** and **G** are the closest to the **Arnold and Mabel Beckman Center**.

The location of **Arnold and Mabel Beckman Center** is circled in red in the campus map. The **Argyros Auditorium** is on the first floor.



Southern California Society for Microscopy & Microanalysis

Membership Application 2017 - 2018

About SCSMM

The **SOUTHERN CALIFORNIA SOCIETY FOR MICROSCOPY & MICROANALYSIS** is dedicated to increasing interest and information in all areas of microscopy and microanalysis, including, but not limited to: transmission electron, scanning electron and electron microprobe, ion probe, microbeam analysis, optical and confocal microscopies, and microspectroscopies. You are invited to join, or renew your membership in the society.

The Society generally meets two times per year at various locations throughout the greater Los Angeles area. The program usually begins with a Social Hour followed by Dinner, then a brief Business Meeting and finally the Scientific Program which consists of one or two presentations in the biological and physical sciences selected to be of sufficient breadth and interest to appeal to the entire membership.

Among our current members are students (graduate and undergraduate), post-docs, college and university professors and research assistants, laboratory directors, vendors of electron microscopes, microanalysis and/or related equipment, laboratory technicians, technologists, assistants, and many others. Their professional work spans the full range of the biological, medical and physical sciences.

In order that we may have precise records, please complete the on-line membership form (<http://www.imri.uci.edu/content/2017-2018-scsmm-membership-and-fall-meeting-registration>). Alternatively you may fill out the paper form showed below. **The published list of members will include only your work address, phone number, and/or e-mail address and will only be made available to members and meeting sponsors of SCSMM. You may request that your name not be included in the published list.** If your company or laboratory has a web site, we would like to publish this in a directory of services available to Southern California microscopists.

CORPORATE MEMBERSHIP: Corporate members are entitled to place two individual's names on the rolls per membership. Your membership will be acknowledged throughout the year via SCSMM Meeting Announcements and Newsletters. Corporate members are invited to place advertising in our Meeting Announcements and Newsletters. The cost for this is \$175 per 8½ x 11" page. You are also invited to sponsor one of our meetings at which you may give a short presentation or product demonstration. For more information on Corporate Memberships, please contact Brian Miller at Brian.Miller@bruker.com, Phone: +1 503-984-0191.

SCSMM Vendor Sponsorship Benefits and Recognition

\$500 (Gold) level + \$100 Regular Corporate membership

Instrumentation display during spring meeting (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

\$250 (Silver) level + \$100 Regular Corporate membership

Instrumentation display during spring meeting (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

\$150 (Bronze) level + \$100 Regular Corporate membership

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

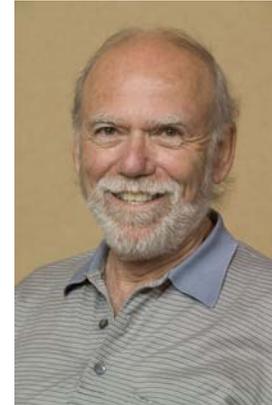
Invitation for one to attend the spring and fall meetings

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!

*Sponsorship is effective and recognized by SCSMM only the year it was made and only after vendor's contribution got SCSMM account.

Biography:

Barry Clark Barish is an American experimental physicist. He is a Linde Professor of Physics, emeritus at California Institute of Technology. He is a leading expert on gravitational waves. In 2017, Barish was awarded the Nobel Prize in Physics along with Rainer Weiss and Kip Thorne "for decisive contributions to the LIGO detector and the observation of gravitational waves".



Birth and education

Barry C. Barish was born in Omaha, Nebraska, grew up in southern California, and attended high school in Los Angeles. He earned his B.A. in physics (1957) and his Ph.D. in experimental high energy physics (1962) at the University of California, Berkeley. He joined Caltech in 1963 as part of a new experimental effort in particle physics using frontier particle accelerators at the national laboratories.

Research

Barish became the principal investigator of the Laser Interferometer Gravitational-wave Observatory (LIGO) in 1994 and director in 1997. He led the effort through the approval of funding by the NSF National Science Board in 1994, the construction and commissioning of the LIGO interferometers in Livingston, LA and Hanford, WA in 1997. He created the LIGO Scientific Collaboration, which now numbers more than 1000 collaborators worldwide to carry out the science.

The initial LIGO detectors reached design sensitivity and set many limits on astrophysical sources. The Advanced LIGO proposal was developed while Barish was director, and he has continued to play a leading role in LIGO and Advanced LIGO. The first detection of the merger of two 30 solar mass black holes was made on Sept. 14, 2015. This represents the first direct detection of gravitational waves since they were predicted by Einstein in 1916 and the first ever observation of the merger of a pair of black holes. Barish delivered the first presentation on this discovery to a scientific audience at CERN on Feb 11, 2016, simultaneously with the public announcement.

Barish's other noteworthy experiments were those performed at Fermilab using high-energy neutrino collisions to reveal the quark substructure of the nucleon. These experiments were among the first to observe the weak neutral current, a linchpin of the electroweak unification theories of Glashow, Salam, and Weinberg.

In the 1980s, Barish initiated an ambitious international effort to build a sophisticated underground detector to search for the magnetic monopole and solve other problems in the emerging area of particle astrophysics. Experiments conducted underground in the Gran Sasso Tunnel in Italy provided some of the key evidence that neutrinos have mass. In 1991, Barish was named the Maxine and Ronald Linde Professor of Physics at Caltech.

Barry Barish is former Director of the Global Design Effort for the International Linear Collider (ILC) and Linde Professor of Physics, Emeritus at the California Institute of Technology. The ILC is the highest priority future project for particle physics worldwide, as it promises to complement the Large Hadron Collider at CERN in exploring the TeV energy scale. This ambitious effort is being uniquely coordinated

worldwide, representing a major step in international collaborations going from conception to design to implementation for large scale projects in physics.

From 2001 to 2002, Barish served as co-chair of the High Energy Physics Advisory Panel subpanel that developed a long-range plan for U.S. high energy physics. He has chaired the Commission of Particles and Fields and the U.S. Liaison committee to the International Union of Pure and Applied Physics (IUPAP). In 2002 he chaired the NRC Board of Physics and Astronomy Neutrino Facilities Assessment Committee. Report "Neutrinos and Beyond".

Honors and awards

Barish has been elected to:

- the American Academy of Arts and Sciences (AAAS)
- the National Academy of Sciences (NAS)
- the National Science Board (NSB)
- Fellow of American Physical Society Vice President 2008
- Fellow of American Association for the Advancement of Science (AAAS)
- The Nobel Prize in Physics (2017) (jointly with Rainer Weiss and Kip Thorne)

In 2002, he received the Klopsteg Award of the American Association of Physics Teachers. Barish was honored by the University of Bologna (2006) and University of Florida (2007) where he received honorary doctorates. In 2007, delivered the Van Vleck lectures at the University of Minnesota. The University of Glasgow honored Barish with an honorary degree of science in 2013.

Barish was honored as a *Titan of Physics* in the On the Shoulders of Giants series at the 2016 World Science Festival.

In 2016, Barish received the Enrico Fermi Prize "for his fundamental contributions to the formation of the LIGO and LIGO-Virgo scientific collaborations and for his role in addressing challenging technological and scientific aspects whose solution led to the first detection of gravitational waves".

Barish was a recipient of the 2016 *Smithsonian* magazine's American Ingenuity Award in the Physical Science category.

Barish was awarded the 2017 Henry Draper Medal from the National Academy of Sciences "for his visionary and pivotal leadership role, scientific guidance, and novel instrument design during the development of LIGO that were crucial for LIGO's discovery of gravitational waves from colliding black holes, thus directly validating Einstein's 100-year-old prediction of gravitational waves and ushering a new field of gravitational wave astronomy."

Barish was a recipient of the 2017 Giuseppe and Vanna Cocconi Prize of the European Physical Society for his "pioneering and leading role in the LIGO observatory that led to the direct detection of gravitational waves, opening a new window to the Universe."

He was also a recipient of the 2017 Princess of Asturias Award for his work on gravitational waves (jointly with Kip Thorne and Rainer Weiss).

The Southern California Society for Microscopy and Microanalysis thanks the following Corporate Members for the 2016-2017 year.

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