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*HEP papers covered by SCOAP³ are all those posted on arXiv.org prior to publication in any of the primary ‘hep’ categories: hep-ex, hep-lat, hep-ph, hep-th, and irrespective of the authors’ institution or country affiliation.*
It is a pleasure to welcome you to Los Angeles and to the APS March Meeting 2018. As has become a tradition, the March Meeting is a spectacular gathering of an enthusiastic group of scientists from diverse organizations and backgrounds who have broad interests in physics. This meeting provides us an opportunity to present exciting new work as well as to learn from others, and to meet up with colleagues and make new friends. While you are here, I encourage you to take every opportunity to experience the amazing science that envelops us at the meeting, and to enjoy the many additional professional and social gatherings offered.

Additionally, this is a year for Strategic Planning for APS, when the membership will consider the evolving mission of APS and where we want to go as a society. We are planning a Town Hall Meeting this Thursday at 1:00 p.m., where you are invited to both hear about the processes for gathering input for, and to give your input to, a new Strategic Plan. Please attend and contribute.

On behalf of APS, I hope you have an exciting, productive, and fulfilling week!

Roger Falcone
2018 APS President
University of California, Berkeley

The 2018 APS April Meeting promises to be one of the largest and most exciting of recent years.

We have a lineup of excellent and timely plenary sessions, including the Kavli Memorial session devoted to the legacy of Richard Feynman on the centenary of his birth, and a “prize plenary” that includes our APS Medal winner, Eugene Parker, and two of our gravity-wave Nobel Laureates. A third plenary will be neutron-rich, with a talk on science policy and nuclear security, one on a neutron star in a triple system, and a talk on the recently observed binary neutron star merger.

There will be sessions on the latest LHC results, the “crisis” in cosmology, and women pioneers in astronomy, among many, many others. Rainer Weiss will give a public lecture on Saturday evening on “Exploring the Universe with Gravitational Waves.” You will definitely need the APS meeting app to navigate your way around the many interesting sessions.

I wish you a very warm welcome to Columbus!

Clifford Will
APS April Meeting 2018 Program Chair
University of Florida
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Michael Thoennessen, Editor in Chief

* Voting Members of the APS Board of Directors
It is the policy of the American Physical Society (APS) that all participants, including attendees, vendors, APS staff, volunteers, and all other stakeholders at APS meetings will conduct themselves in a professional manner that is welcoming to all participants and free from any form of discrimination, harassment, or retaliation. Participants will treat each other with respect and consideration to create a collegial, inclusive, and professional environment at APS Meetings. Creating a supportive environment to enable scientific discourse at APS meetings is the responsibility of all participants.

Participants will avoid any inappropriate actions or statements based on individual characteristics such as age, race, ethnicity, sexual orientation, gender identity, gender expression, marital status, nationality, political affiliation, ability status, educational background, or any other characteristic protected by law. Disruptive or harassing behavior of any kind will not be tolerated. Harassment includes but is not limited to inappropriate or threatening behavior and language, unwelcome jokes or comments, unwanted touching or attention, offensive images, photography without permission, and stalking.

Violations of this code of conduct policy should be reported to meeting organizers, APS staff, or the APS Director of Meetings. Sanctions may range from verbal warning, to ejection from the meeting without refund, to notifying appropriate authorities. Retaliation for complaints of inappropriate conduct will not be tolerated. If a participant observes inappropriate comments or actions and personal intervention seems appropriate and safe, they should be considerate of all parties before intervening.

**Code of Conduct Hotline** (open during registration hours): (301) 209-3675
The APS Leadership and Meetings Department staff extend our sincere thanks to the unit program chairs, abstract sorters, and focus session organizers who, during the past year, gave so generously of their time and expertise in sorting abstracts and organizing the program for the April Meeting 2018.

April Meeting 2018 Program Committee

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GPMFC: Kurt Gibble, Penn State

The APS PIPELINE program seeks to give students what they need to succeed as scientists and innovators in the 21st century. Learn more and get involved. Click over to our website for more information.

aps.org/programs/education/innovation
Kavli Foundation Special Symposium

Frontiers of Physics

Saturday, April 14
8:30 AM–10:30 AM
Convention Center, Union Station Ballroom BC

Being Feynman's Curious Sister
Joan Feynman
Jet Propulsion Lab

Feynman's Footprints: Quantum Field Theory in Nuclear and Particle Physics
Roxanne Springer
Duke University

Quantum Computing and Feynman's Opportunity
Christopher Monroe
University of Maryland
POSTER SESSIONS
Advance Research Systems

Lake Shore Cryotronics

eLife

YOUNG RESEARCHER TRAVEL SUPPORT
PLOS

WELCOME RECEPTION
Quantum Design

MARCH MEETING APP
Northrop Grumman

WIRELESS INTERNET
CRYomech

World leaders in cryorefrigeration for more than 50 years
INTERNATIONAL TRAVEL GRANTS AVAILABLE THROUGH APS

**International Research Travel Award Program (IRTAP)**
IRTAP promotes international scientific collaborations between physicists in developing and developed countries. Grant recipients receive up to $2,000 towards international travel while visiting a collaborator for a minimum of one month.

[aps.org/programs/international/programs/travel-grants.cfm](aps.org/programs/international/programs/travel-grants.cfm)

**Brazil-U.S. Exchange Program - for Physicists at All Levels**
Individuals at U.S. institutions can apply for funds from APS to support travel to Brazil. Ph.D. students and postdocs can pursue opportunities such as attending a summer school or working temporarily in a laboratory. Working physicists can teach a short course or give a lecture series.

[aps.org/programs/international/programs/brazil.cfm](aps.org/programs/international/programs/brazil.cfm)

**India-U.S. Travel Grant Program - for Physicists at All Levels**
APS and the Indo-U.S. Science and Technology Forum provide travel support to working physicists from India and the U.S. to deliver short courses or a lecture series in physics. Postdocs and Ph.D. students can pursue opportunities in physics such as conducting research in a laboratory or attending a summer institute.

[aps.org/programs/international/honors/us-india-travel.cfm](aps.org/programs/international/honors/us-india-travel.cfm)

Visit the APS Office of International Affairs for information about other international opportunities and programs.
First Timers Event
If this is your first March Meeting, join APS staff and leadership on Sunday night at 5:00 PM in Plaza 1-2 at the JW Marriott to learn how to successfully navigate the March Meeting.

Code of Conduct
Creating a supportive environment to enable scientific discourse at APS Meetings is the responsibility of all participants. Read the entire Code of Conduct and learn how to report an incident on page 3.

Free Wi-Fi in the Convention Center
APS sponsors free wi-fi service in designated “hot spots” and the exhibit hall. Wi-fi service is not available in meeting rooms.

SSID: APS March Meeting
Password: apsmarch

Coffee Breaks
APS is pleased to offer complimentary coffee breaks to attendees. Coffee, decaffeinated coffee, and hot tea will be available in several locations near the meeting rooms on the first and second floors, and near the APS Village, Monday through Friday from 9:30 AM to 10:00 AM.

Official Hashtag
The official hashtag for the meeting is #apsmarch. Join the conversation on Twitter!
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Terri Olsen, Director of Meetings
Vinaya Sathyasheelappa, Meetings Manager
Ebony Adams, Meetings Planner

Eric Barth, Scientific Programs Coordinator
Donna Greene, Meetings Publications Specialist
Don Wise, Senior Meetings Registrar
MEETING SERVICES

Wi-Fi
APS sponsors free wi-fi service in designated “hot spots” and the exhibit hall. Wi-fi service is not available in meeting rooms.
SSID: APS April Meeting
Password: apsapril

Registration
LOCATION**
Friday • 2:00–7:00 PM
Saturday • 7:00 AM–5:00 PM
Sunday • 7:00 AM–4:00 PM
Monday • 7:00 AM–3:00 PM
Tuesday • 7:00 AM–12:00 PM

Information Desk
LACC, WEST LOBBY
The APS March Meeting Information Booth will be located in the APS Village. Feel free to stop by to ask general questions about the meeting facilities or activities. You can also inquire about last minute program changes.
Monday–Thursday • 9:00 AM–5:00 PM
Friday • 9:00 AM–12:00 PM

Speaker Ready Room
CONVENTION CENTER, A212
If you do not submit your presentation before the meeting, you should bring it to the Speaker Ready Room to ensure your presentation is uploaded properly. The Speaker Ready Room is equipped with the same hardware and software as those in the presentation rooms. You should submit final presentations no later than four hours before your presentation time.
Friday • 3:00–7:00 PM
Saturday–Monday • 7:00 AM–5:00 PM
Tuesday • 7:00 AM–1:00 PM

Program Changes Board
LACC, WEST LOBBY
Last minute program changes are displayed on the Program Changes Board, located near the APS Village. If you’re chairing a session, please stop by to check if there are any late changes to your session. You can also email changes to abs-help@aps.org.

Food Service
VARIOUS LOCATIONS
Concession stands are available throughout the convention center, including West Lobby and South Lobby and in West Hall A when exhibits are open.

Press Room
LACC, 509B
Monday–Thursday • 7:30 AM–5:00 PM
Friday • 7:30 AM–12:00 PM

Press Conference Room
LACC, 509C
Check the press room for a schedule of press conferences.

Parents’ Quiet Room
LACC, 401
APS has designated a room for quiet time and relaxation available to parents who bring young children to the meeting. It is not a playroom. The room is fitted with comfortable furniture, water, and a private area for nursing.
Monday–Thursday • 7:00 AM–5:00 PM
Friday • 7:00 AM–12:00 PM
**APS Booths**

Meet APS staff, learn about the latest APS activities and services, shop the store, and get fun giveaways.

**LOCATION**
Saturday–Monday • 8:00 AM–5:00 PM
Tuesday • 8:00 AM–12:00 PM

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**APS Membership Booth**

Ask APS staff questions about membership, journal subscriptions, and other services.

**APS Souvenir Store**

Don’t go home empty handed! Browse t-shirts, bumper stickers, and more for great gifts to take back to your students and colleagues who were unable to attend the meeting. Pick out something fun for yourself, too!

**Physical Review Journals Booth**

Editors of the *Physical Review* journals and other APS staff members will be on hand at the *Physical Review* Journals Booth in the Exhibit Hall and in the APS Village to answer questions on all matters pertaining to the *Physical Review* journals.

**APS Programs**

APS develops and implements a range of programs that improve physics education, impact policy makers, increase diversity, inform the public, and reach out to physicists around the world. Visit with APS staff to learn more about these programs:

- Education
- Diversity
- Public Outreach
- Development
- Government Affairs

**Contact Congress**

DON’T TAKE YOUR GRANT FOR GRANTED

Make your voice heard in Washington and help influence the funding levels for basic research by sending a letter to your Congressional delegation. APS staff will follow up each letter with a call or visit to congressional staff. If you live in the United States, you are qualified to write to your members of Congress.

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**Souvenir Store**

Want something to take home? Come browse our t-shirts, bumper stickers, mugs, and more! We are open Monday through Friday in the APS Village!
Internet Access
APS sponsors free wireless in the designated “hot spots” and the exhibit hall. Wireless service is not available in meeting rooms.

SSID: APS April Meeting
Password: apsapril

Social Media
Keep up with the action, connect with meeting attendees, and join the conversation on Twitter.

Follow @APSMeetings and #apsapril

Business Center
A business center is located on the Concourse level of the Convention Center. Hours vary.

American Physical Society
Conferences for Undergraduate Women in Physics
APS CUWiP is a three-day regional conference where undergraduate women can experience a professional conference, learn more about graduate school and professions in physics, and meet other women in physics to share experiences, advice, and ideas. Financial assistance is available.

Applications open September 3 to October 12, 2018
aps.org/cuwip
MOBILE APP

The mobile app is the best way to stay connected during the meeting. Use the mobile app to:

• Browse, search, and schedule sessions from the program
• Search the complete author listing
• View sessions by unit
• Explore highlighted events
• Discover events in “Happening Now”
• Follow the meeting conversation on Twitter
• Learn about exhibitors
• Receive notifications on meeting news and events

Meetings@APS

The Meetings@APS mobile app allows attendees to view meeting information on any iOS or Android mobile device. If you have previously downloaded an APS Meetings app, please check to make sure the app is “Meetings@APS” by Bravura Technologies.

Once you have downloaded the app, start the app and select the appropriate meeting from the events list. Once selected, the Meetings@APS app will download the meeting data onto your mobile device.

Schedule

The APS Meeting app can also import your saved schedule from the online meeting bulletin. If you created a schedule on the online meeting bulletin, login to the mobile app using your APS account username and password. The synchronization is two-way. So, no matter where you edit your schedule, online or in the app, it should always be up to date.

For technical support, contact support@bravuratechnologies.com.

Download: aps.org/meetingapp
**SAFETY & SECURITY**

**Code of Conduct**

Creating a supportive environment to enable scientific discourse at APS meetings is the responsibility of all participants.

Read the full code of conduct on page 3.

**Badge Monitoring**

All attendees must register for the meeting and wear their registration badge at all times. Security personnel or staff may check badges before permitting admission to sessions. If your badge has been lost, you may receive one replacement badge free of charge at the registration desk. Additional replacements will cost $10.00 each.

**First Aid**

LACC, OUTSIDE PETREE HALL C

A first aid station is available on the first floor of the convention center. In case of emergency, please contact an APS employee immediately.

**Lost & Found**

APS REGISTRATION DESK, LACC WEST LOBBY

Lost items may be turned into the APS Registration Desk in the West Lobby, during registration hours. If you have lost an item, please go the Registration Desk to claim it.

**Americans with Disabilities Act**

APS wishes to take any steps required to ensure that no individual with a disability is excluded, denied services, segregated, or otherwise treated differently due to the absence of auxiliary aids and services identified in the Americans with Disabilities Act.

**Gender-Neutral Bathrooms**

LACC, LEVEL ONE NEAR SOUTH HALL G

LACC, LEVEL TWO NEAR ROOM 510
Conference Venue & Hotels

1. GREATER COLUMBUS CONVENTION CENTER
   400 North High Street
   Columbus, Ohio 43215

2. HILTON COLUMBUS DOWNTOWN
   401 North High Street
   Columbus, Ohio 43215

3. HAMPTON INN & SUITES COLUMBUS DOWNTOWN
   501 North High Street
   Columbus, Ohio 43215

Airport Shuttle Buses
Los Angeles Convention Center to Los Angeles International Airport (LAX)

Attendees can purchase timed airport shuttle tickets for $10 at the registration desk. Schedule and departure locations are available at the Meeting Information Desk, Registration Desk, and in the mobile app.
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<th>Time</th>
<th>Event</th>
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<td>FRIDAY, APRIL 13</td>
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<tr>
<td>8:00 AM–4:00 PM</td>
<td>Professional Skills Development Workshop for Women</td>
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<td>4:00 PM–5:00 PM</td>
<td>APS Annual Business Meeting</td>
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<td>SATURDAY, APRIL 14</td>
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<tr>
<td>8:30 AM–10:30 AM</td>
<td>Kavli Foundation Keynote Plenary Session: A Feynman Century</td>
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<td>10:45 AM–5:18 PM</td>
<td>Scientific Sessions</td>
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<tr>
<td>12:00 PM–1:30 PM</td>
<td>Lunch with the Grads</td>
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<tr>
<td>5:30 PM–7:30 PM</td>
<td>Welcome Reception &amp; Poster Session I</td>
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<td>6:30 PM–7:30 PM</td>
<td>DCOMP Business Meeting</td>
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<td>7:00 PM–8:00 PM</td>
<td>Exploring the Universe with Gravitational Waves (Public Lecture)</td>
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<td>SUNDAY, APRIL 15</td>
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<tr>
<td>8:30 AM–5:18 PM</td>
<td>Scientific Sessions</td>
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<tr>
<td>10:00 AM–12:00 PM</td>
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<td>12:00 PM–2:00 PM</td>
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<td>SPS: Affecting Change in your Undergraduate Program</td>
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<td>3:30 PM–5:00 PM</td>
<td>Meet the Physical Review Editors</td>
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<td>4:00 PM–6:00 PM</td>
<td>Professional Skills Seminar for Undergraduate &amp; Graduate Women</td>
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<tr>
<td>5:30 PM–6:30 PM</td>
<td>APS Prizes &amp; Awards Ceremony</td>
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<td>6:30 PM–7:00 PM</td>
<td>NSBP/NSHP Reception</td>
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<td>Roundtable: Improving the Climate in Physics for LGBT+ Physicists</td>
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<td>6:45 PM–7:45 PM</td>
<td>GHP Business Meeting</td>
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<tr>
<td>7:00 PM–8:30 PM</td>
<td>Education &amp; Diversity Reception</td>
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<td>8:00 PM–9:30 PM</td>
<td>Reading of the Play: FLIGHT</td>
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<td>9:30 PM–10:30 PM</td>
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MONDAY, APRIL 16

8:30 AM–10:18 AM  Plenary Session II: From Nuclear Security to Neutron-star Mergers
10:45 AM–5:18 PM  Scientific Sessions
2:00 PM–5:00 PM    Poster Session III
3:30 PM–5:00 PM    Strategic Planning Town Hall Meeting
5:30 PM–6:30 PM    DNP Business Meeting
5:30 PM–6:30 PM    DGRAV Business Meeting
5:30 PM–6:30 PM    DAP Business Meeting

TUESDAY, APRIL 17

8:30 AM–10:18 AM  Plenary Session III: APS Medal & Nobel Prize Winners
10:45 AM–3:18 PM  Scientific Sessions
**FRIDAY, APRIL 13**

**APS Annual Business Meeting**

4:00–5:00 PM  
CONVENTION CENTER, A216

The meeting will feature presentations from APS leadership and provided members with an opportunity to ask questions in-person and online. Overview APS leaders, including the APS president, CEO, EIC, treasurer, publisher, and speaker of the council will provide an overview of the Society and priorities for 2018. Attendees (including virtual attendees) will have an opportunity to ask questions and share comments. The meeting will be live streamed online and recorded.

**Speakers**
Kate Kirby, CEO  
Roger Falcone, 2018 APS President  
James Hollenhorst, Treasurer  
Timothy Gay, Speaker of the Council  
Michael Thoennessen, Editor in Chief  
Matthew Salter, Publisher

---

**SATURDAY, APRIL 14**

**Kavli Foundation Keynote Plenary Session: A Feynman Century**

8:30–10:30 AM  
CONVENTION CENTER, UNION STATION BALLROOM BC

- Being Feynman's Curious Sister: Joan Feynman, Jet Propulsion Lab
- Quantum Computing and Feynman's Opportunity: Christopher Monroe, University of Maryland
- Feynman's Footprints: Quantum Field Theory in Nuclear and Particle Physics: Roxanne Springer, Duke University

---

**Exploring the Universe with Gravitational Waves (Public Lecture)**

7:00–8:00 PM  
CONVENTION CENTER, UNION STATION BALLROOM BC

Join 2017 Nobel Prize Winner, Rainer Weiss, for an illuminating lecture that will explore the basic concepts of gravitational waves, the instruments and methods used for data analysis, and recent results in the field. Although it's impossible to predict the full, long-term impact of the new observatories, you will leave with a vision for the future of gravitational wave astrophysics and astronomy.

---

**SUNDAY, APRIL 15**

**APS Prizes & Awards Ceremony**

5:30–6:30 PM  
CONVENTION CENTER, A112-113

APS Prizes and Awards are presented for outstanding contributions to physics. All are welcome to join us in honoring these remarkable physicists.

**Reading of the Play: FLIGHT**

8:00–9:30 PM  
HILTON COLUMBUS, GEORGE BALLONS

*Silent Sky* is based on the true story of 19th century astronomer Henrietta Swan Leavitt as she experiences a woman’s place in society during a time of immense scientific discoveries, when women’s ideas were dismissed until men claimed credit for them.
MONDAY, APRIL 16

Plenary Session II: From Nuclear Security to Neutron-star Mergers
8:30–10:30 AM  CONVENTION CENTER, UNION STATION BALLROOM BC


• Testing General Relativity Using a Pulsar in a Triple System: Anne Archibald, Netherlands Institute for Radio Astronomy

• Discovery, Characterization and Physics Implications of the electromagnetic signatures of GW170817: Marcelle Soares-Santos, Brandeis University

Strategic Planning Town Hall Meeting
3:30–5:00 PM  CONVENTION CENTER, B130

The APS leadership is undertaking a new Strategic Planning initiative this year. Meet with APS President Roger Falcone and CEO Kate Kirby to learn about the initiative and more importantly, have the opportunity to provide your input and thoughts about the future direction of APS.

Plenary Session III: APS Medal & Nobel Prize Winners
8:30–10:00 AM  CONVENTION CENTER, UNION STATION BALLROOM BC

• APS Medal for Excellence in Physics Talk: Magnetic dissipation and field-line topology: Eugene Parker, University of Chicago

• LIGO and Gravitational Waves I: Rainer Weiss, Massachusetts Institute of Technology

• LIGO and Gravitational Waves II: Barry Barish, California Institute of Technology
**Prizes & Awards Ceremony**

5:30–6:30 PM  CONVENTION CENTER

APS Prizes and Awards are presented for outstanding contributions to physics. All are welcome to join us in honoring these remarkable physicists.

---

**W.K.H. Panofsky Prize in Experimental Particle Physics**

SESSION G02

**Lawrence R. Sulak**  
*Boston University*

For novel contributions to detection techniques, including pioneering developments for massive water Cherenkov detectors that led to major advances in nucleon decay and neutrino oscillation physics.

---

**J.J. Sakurai Prize**

SESSION G02

**Michael Dine**  
*University of California, Santa Cruz*

**Ann Nelson**  
*University of Washington*

For groundbreaking explorations of physics beyond the standard model of particle physics, including their seminal joint work on dynamical super-symmetry breaking, and for their innovative contributions to a broad range of topics, including new models of electroweak symmetry breaking, baryogenesis, and solutions to the strong charge parity problem.

---

**Andrei Sakharov Prize**

SESSION R07

**Ravi Kuchimanchi**  
*Association for India’s Development (AID)*

For his continued research in physics while simultaneously advocating for global policies that reflect science; for leading sustainable development, human rights, and social justice efforts; and for creating a vibrant international volunteer movement that learns from, works with, and empowers communities in India.

---

**Narges Mohammadi**  
*Physicist, Engineer, Human Rights Defender, Prisoner of Conscience (Evin Prison, Tehran)*

For her leadership in campaigning for peace, justice, and the abolition of the death penalty and for her unwavering efforts to promote the human rights and freedoms of the Iranian people, despite persecution that has forced her to suspend her scientific pursuits and endure lengthy incarceration.

---

**Leo Szilard Lectureship Award**

SESSION J16

**Edwin Stuart Lyman**  
*Union of Concerned Scientists*

For using his technical expertise and tireless advocacy to maintain and strengthen U.S. policy on nuclear nonproliferation and reactor safety and security.

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**J. J. and Noriko Sakurai Dissertation Award**

SESSION G02

**Grant Newton Remmen**  
*California Institute of Technology*

For his contributions to understanding the structure and self-consistency of gravity and effective field theories using ideas from quantum field theory and holography.
Mitsuyoshi Tanaka Dissertation Award

SESSION S02

**Nathan Jurik**  
*Syracuse University*

For his thesis “Observation of J/psi p resonances consistent with pentaquark states in Lambda_b to J/psi K p decays.”

LeRoy Apker Award

SESSION K07

**Calvin Leung**  
*Harvey Mudd College*

For development and experimental implementation of astronomical random number generators  
For loophole-free tests of Bell’s inequality and other applications in quantum fundamentals, astrophysics, and tests of general relativity.

Henry Primakoff Award for Early-Career Particle Physics

SESSION B02

**Eric Dahl**  
*Northwestern University / Fermilab*

For fundamental contributions to the development of new techniques  
For the direct detection of dark matter, including the bubble chamber and xenon time projection chamber.

APS Medal for Excellence in Physics

SESSION W01

**Eugene N. Parker**  
*University of Chicago*

In recognition of many fundamental contributions to space physics, plasma physics, solar physics and astrophysics For over 60 years.

Excellence in Physics Education Award

SESSION G03

The PhET Interactive Simulations Team:  
**Carl Wieman**  
*Stanford University*

**Wendy K. Adams**  
*Colorado School of Mines*

**Michael Dubson**  
*University of Colorado*

**Emily B. Moore**  
*University of Colorado*

**Ariel Paul**  
*University of Colorado*

**Kathy Perkins**  
*University of Colorado*

**Sam Reid Michael Dubson**  
*University of Colorado*

For the systematic development, dissemination, and evaluation of the physics education tool, PhET Interactive Simulations project, used world-wide by millions of students and their teachers.
Hans A. Bethe Prize
SESSION K07
Keith Alison Olive
University of Minnesota
For outstanding contributions across a broad spectrum of fields including nuclear physics, particle physics, theoretical and observational astrophysics, and cosmology, especially Big Bang nucleosynthesis and the properties of dark matter.

Tom W. Bonner Prize in Nuclear Physics
SESSION U05
Bradley M. Sherrill
National Superconducting Cyclotron Laboratory
For his scientific leadership in the development and utilization of instruments and techniques for discovery and exploration of exotic nuclei, and for his community leadership in elucidating the physics of rare isotope beams and advancing the realization of the Facility For Rare Isotope Beams facility.

Prize For a Faculty Member for Research in an Undergraduate Institution
SESSION U05
Warren F. Rogers
Indiana Wesleyan University
For his essential contribution to the exploration of atomic nuclei beyond the neutron drip line and his conception and continued leadership of the Conference Experience For Undergraduates program.

Herman Feshbach Prize in Theoretical Nuclear Physics
SESSION U05
Edward Shuryak
Stony Brook University
For his pioneering contributions to the understanding of strongly interacting matter under extreme conditions, and for establishing the foundations of the theory of quark-gluon plasma and its hydrodynamical behavior.

APS Physics Job Center
Visit the APS Job Board today to discover or post opportunities in industry, academia, National Labs, non-profits, and more! We offer reasonable rates for job postings; job seekers may use the database for FREE!

VISIT APS PHYSICS JOB CENTER TODAY!
careers.aps.org

Strategic Planning Town Hall Meeting
Thursday, March 7
1:00 p.m.–2:30 p.m. • LACC, 305
The APS leadership is undertaking a new Strategic Planning initiative this year. Meet with APS President Roger Falcone and CEO Kate Kirby to learn about the initiative and more importantly, have the opportunity to provide your input and thoughts about the future direction of APS.
### Meet the Physical Review Editors Reception

**3:30–5:00 PM  **CONVENTION CENTER, FOYER

The Physical Review editors invite you to their 125th anniversary celebration. The editors will be available to answer questions, hear your ideas, and discuss your comments about the journals. Light refreshments will be served.

### Tutorial for Authors & Referees

**2:30–3:30 PM  **CONVENTION CENTER, A226

Editors from Physical Review Letters and Physical Review will provide information and tips for our less experienced referees and authors. This session is aimed at anyone looking to submit to or review for any of the APS journals, as well as anyone who would like to learn more about the authoring and refereeing processes. Topics for discussion will include advice on how to write good manuscripts, similarities and differences in writing referee reports for PRL and PR, and other ways in which authors, referees, and editors can work together productively. Following a short presentation from the editors, there will be a moderated discussion.
MONDAY, MARCH 5

**Meet Your Future: Careers in the Private Sector**

*12:00–2:15 PM  JW MARRIOTT, PLATINUM EF*

FIAP and APS Careers will host a special lunchtime session in which representatives from industry will briefly describe their career path and answer questions about physics careers in the private sector. Topics will include research opportunities for physicists in industry, strategies for successfully pursuing industrial jobs, and advice on how to thrive in this exciting and challenging work environment.

TUESDAY, MARCH 6

**Student Lunch with the Experts**

*12:30–2:00 PM  LACC, WEST HALL B*

Students may sign up to enjoy a complimentary box lunch while participating in an informal and stimulating discussion with an expert on a topic of interest to them. Registration is on a first come, first served basis and attendance is limited. Sign-up begins at 3:00 p.m. on Sunday, March 4 near registration. There will be tables sponsored by the following APS units:

- Division of Biological Physics
- Division of Condensed Matter Physics
- Division of Materials Physics
- Forum on Industrial and Applied Physics
- Forum on Outreach and Engaging the Public
- Topical Group on Energy Research and Applications
- Topical Group on Magnetism
- Topical Group on Medical Physics
- Topical Group on Physics of Climate
- Topical Group on Soft Matter

**Careers in Physics Workshop**

*2:30–5:30 PM  LACC, PETREE HALL D*

In this informative workshop, celebrated career coach and author Peter Fiske provides advice and strategies for taking your physics job search to the next level, including tips for self-assessment, network building, resume writing, interviewing, and salary negotiation. Don't miss this great opportunity to get some great help on taking your next steps.
FUTURE OF PHYSICS DAYS

Future of Physics Days (FPD) are events just for undergraduate students. Sponsored by APS and the Society for Physics Students (SPS), FPD offers undergrads the opportunity to present their research, learn about grad school and career options, and connect with the scientific community.

SATURDAY, APRIL 14

Undergraduate Research I
10:45–11:45 AM CONVENTION CENTER, A216

Lunch with the Grads: A Panel Discussion about Grad School
12:00–1:30 PM HILTON COLUMBUS
Join us for lunch and ask our panel of grad students all the questions you have about what grad school is really like. Learn about choosing a graduate school, balancing the coursework and teaching, qualifying exams, and more.

Undergraduate Research II
1:30–3:06 PM CONVENTION CENTER, A216

Undergraduate Research III
3:30–5:06 PM CONVENTION CENTER, A216

SUNDAY, APRIL 15

Undergraduate Breakfast, Career Workshop and Awards
10:00 AM–12:00 PM CONVENTION CENTER, A216
Undergraduate students can enjoy a hearty breakfast and learn about how to prepare for a wide variety of careers in physics outside of academia. Topics of this interactive workshop will include planning and self-assessment, inventorying transferable skills, finding out more about career opportunities, and successfully applying for jobs. Immediately following the workshop, top presenters from the Undergraduate Research sessions will be recognized. All presenters in the undergraduate sessions will receive certificates acknowledging their scientific accomplishments.

Preparing Students for Careers Outside the Classroom
Sponsor: APS Forum on Education
12:00–2:00 PM HILTON COLUMBUS
According to recent AIP statistics, roughly half of physics Ph.D. graduates go into the private sector or government labs, and 70% of Ph.D. graduates who are in a potentially permanent position work for the private sector. However, the majority of the training and advice graduate students receive during their Ph.D. is aimed at helping them obtain academic positions, which is to be expected given that this is the typical career trajectory of the faculty members supervising graduate students. Furthermore, a promising candidate from the perspective of the private sector looks quite different from a promising candidate for academia, and thus the manner in which graduate students should emphasize their skills and experience if they desire employment in the private sector is quite different from academia. This session will bring together physicists and/or employers from outside academia who will share their insight on how graduate students can prepare themselves for a non-academic careers, as well as how departments can support graduate students for such employment.

SPS: Affecting Change in your Undergraduate Program
3:30–4:30 PM HILTON COLUMBUS, EMERSON BURKHART A
Your undergraduate degree is more than just problem sets, exams, and lab reports. It's about networking, developing skills that can assist you throughout your career, and forming a strong community. This interactive workshop style session will discuss ways to strengthen SPS chapters, clubs within your department, and the department health in general. This session is devoted to ways students and faculty can affect change within their departments to make the undergraduate experience everything it needs to be. Plan for entertaining discussion, prioritizing, tool building, and networking. Both undergraduates and faculty are encouraged to attend.
SUNDAY, APRIL 15

Professional Skills Seminar for Undergraduate and Graduate Women
4:00–6:00 PM  HILTON COLUMBUS DOWNTOWN
This 2-hour seminar will focus on professional skills that students can use to negotiate a position in academia, industry or at a national lab, interact positively on teams and with a mentor or advisor, think tactically, articulate goals, enhance their personal presence, and develop alliances. This highly interactive workshop will be led by Dr. Evie Downie, Associate Professor of Physics and an Associate Dean at the George Washington University.

NSBP/NSHP Reception
6:30–7:00 PM  HILTON COLUMBUS DOWNTOWN
The National Society of Black Physicists (NSBP) and National Society of Hispanic Physicists (NSHP) meetup will provide opportunities for NSBP and NSHP members and those interested in the work of the societies to gather, network, and learn about NSBP and NSHP initiatives. All are welcome. Students and postdoctoral researchers are especially encouraged to attend.

Roundtable: Improving the Climate in Physics for LGBT Physicists
6:30–7:00 PM  HILTON COLUMBUS DOWNTOWN
The LGBT+Physicists group welcomes all interested attendees to participate in a round-table discussion on improving the professional and educational climate within physics with particular attention to those who identify as gender and sexual minorities (LGBTQQIAAP+). The session will focus on the ongoing implementation of the recommendations from the report entitled “LGBT Climate in Physics: Building an Inclusive Community,” which was released at the APS March Meeting in 2015. We will discuss strategies for both APS-led and grass roots organizing aimed at improving support for physicists at different career stages and in diverse environments, including academia, industry and the public sector. Allies are especially welcome at this event to learn how they may help to support and mentor LGBT+ physicists and how the proposed actions can help improve the climate for a broad cross-section of physicists with intersecting minoritized identities within our field. Attendees are encouraged to attend the diversity reception to follow the discussion panel.

SUNDAY, APRIL 15

Education & Diversity Reception
7:00–8:30 PM  HILTON COLUMBUS DOWNTOWN
Join us to relax, unwind, and recognize new Fellows and award winners at the Education & Diversity Reception sponsored by the Forum on Education (Fed), the Committee on Minorities (COM), and the Committee on the Status of Women in Physics (CSWP). We will recognize new Forum on Education Fellows, recipients of the Committee on Education’s (COE) Award for Improving Undergraduate Physics Education, and women and minority physicists who have received APS prizes, awards, and fellowships. This is also a wonderful opportunity to learn about current education and diversity efforts spearheaded by COM, CSWP, COE and LGBT physicists. Light refreshments will be served. All are welcome; no registration required.
Alumni Reunions

TUESDAY, MARCH 6 • 6:00–8:00 PM
Yale University
JW MARRIOTT, PLATINUM I
University of Pennsylvania
JW MARRIOTT, PLATINUM J
Michigan State University
JW MARRIOTT, PLATINUM F
Cornell University
JW MARRIOTT, DIAMOND 3
University of Illinois
JW MARRIOTT, PLATINUM G-H
University of Chicago
JW MARRIOTT, ATRIUM I
Pennsylvania State University
JW MARRIOTT, DIAMOND 2

TUESDAY, MARCH 6 • 6:00–9:00 PM
Institute of Physics, Chinese Academy of Science
JW MARRIOTT, DIAMOND 4-5

WEDNESDAY, MARCH 7 • 6:00–9:00 PM
China Night: Five Chinese Universities
(Fudan University; Nanjing University; Peking University; Tsinghua University; University of Science and Technology of China)
JW MARRIOTT, DIAMOND 4-5

THURSDAY, MARCH 8 • 6:00–9:00 PM
Nankai University
JW MARRIOTT, GOLD III

Satellite Meetings

SUNDAY, MARCH 4
9:00AM–5:00PM
Annual Reviews of Condensed Matter Physics Editorial Committee
MARRIOTT—PLATINUM A

12:00–6:00PM
Korean Physics Symposium
LACC—510

MONDAY, MARCH 5
7:00–10:00PM
Planning Meeting for the 28th Annual Electronic Structure Workshop
MARRIOTT—ATRIUM III

TUESDAY, MARCH 6
5:30–7:30PM
Research Corporation for Science Advancement Reception
MARRIOTT—ATRIUM III

6:00–8:00PM
Buckley Prize Reception
MARRIOTT—PLATINUM C

THURSDAY, MARCH 8
University of Pennsylvania
MARRIOTT—PLATINUM J
6:00-8:00PM
Michigan State University
MARRIOTT—PLATINUM F

Cornell University
MARRIOTT—DIAMOND 3

University of Illinois
MARRIOTT—PLATINUM G-H

University of Chicago
MARRIOTT—ATRIUM I

Pennsylvania State University
MARRIOTT—DIAMOND 2

6:00-9:00PM
Institute of Physics, Chinese Academy of Science
DIAMOND 4-5

Oxford Instruments Reception
MARRIOTT—OLYMPIC I

6:45-8:00PM
Soft Matter Reception
MARRIOTT—PLATINUM E

WEDNESDAY, MARCH 7

12:00-2:00PM
Research in Germany
LACC—EXHIBITS THEATER (WEST HALL A)

5:30-6:30PM
International Conference on Magnetism Program
Committee
MARRIOTT—PLATINUM B

5:30-7:30PM
Materials Research Society (MRS) Reception
MARRIOTT—PLATINUM E

5:30-8:00PM
attocube systems User Meeting
MARRIOTT—ATRIUM III

6:00-9:00PM
China Night: Five Chinese Universities
(Fudan University; Nanjing University; Peking University;
Tsinghua University; University of Science and Technology of China)
MARRIOTT—DIAMOND 4-5

THURSDAY, MARCH 8

6:00-9:00PM
Nankai University
MARRIOTT—GOLD III
APS Invited
A01 Kavli Foundation Keynote Plenary Session: A Feynman Century
W01 Tuesday Plenary: Nobel Prize and APS Medal Winners

COM Invited
D06 Best Practices for Establishing a Diverse and Inclusive Workplace, a Panel Discussion
G04 Beams for Physics Research*
H06 Many Body Quantum Computations in Nuclear Physics*
J03 History of Numerical Relativity*
K04 Binary Merger Simulations*
R05 The Bold New Era of Big Data & Machine Learning*

CSWP Invited
K06 Creating an Inclusive Physics Community for the Next Century

DAP Invited
B07 Time Domain Astrophysics
C07 Tracing Chemical Evolution*
D07 High Energy Particle Astrophysics*
G07 Fireball Emission from Binary Neutron Star Mergers*
H07 Crisis in Cosmology
J07 R-Process Nucleosynthesis*
K07 PRIZE TALKS Big Bang Nucleosynthesis, Dark Matter, and Astronomical Random Number Generators*
R04 Gravitational Wave Sources: Compact Binary Formation Scenarios*
R05 The Bold New Era of Big Data & Machine Learning*
S07 Theory of Electromagnetic Counterparts to Gravitational Wave Events*
U07 History of Women Pioneers in Astronomy*
X07 Mapping the Local Universe
Y04 Low-Frequency Gravitational Wave Astronomy*
Y07 Lensing Probes of Dark Matter

DCOMP Invited
G04 Beams for Physics Research*
H06 Many Body Quantum Computations in Nuclear Physics*
J03 History of Numerical Relativity*
K04 Binary Merger Simulations*
R05 The Bold New Era of Big Data & Machine Learning*

DGRAV Invited
C04 Recent LIGO/Virgo Results
D04 Third Generation Gravitational Wave Detectors
G07 Fireball Emission from Binary Neutron Star Mergers*
H04 Tests of General Relativity*
J04 Quantum Aspects of Gravitation
K04 Binary Merger Simulations*
R04 Gravitational Wave Sources: Compact Binary Formation Scenarios*
S04 Developments in Gravitational Theory

* Jointly Sponsored Session
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Take a Break & Color!

Stop by the Outreach booth in the APS Village to pick up *Color Charge*, the new coloring book based on images from the *Physical Review* journals.

Spontaneous oscillations, signal amplification, and synchronization in a model of active hair bundle mechanics

Poster Session I: Saturday, April 14 • 5:30–7:30 PM  
CONVENTION CENTER, UNION STATION BALLROOM A  
Undergraduate Research  
Physics Education  
Physics Outreach and Engaging the Public  
Physics of Climate  
General  
Public Policy  
International Issues: Programs, Collaborations and Exchanges  
Magnetism  
Atomic, Molecular and Optical (AMO) Physics  
Quantum Information, Concepts and Computation  
Energy Research and Applications  
General Theory, Computational Physics  
Metals and Metallic Alloys

Poster Session II: Sunday, April 15 • 2:00–5:00 PM  
CONVENTION CENTER, UNION STATION BALLROOM A  
Polymer Physics  
Soft Condensed Matter  
Statistical and Nonlinear Physics  
Biological Physics  
Chemical Physics  
Fluids  
Medical Physics

Poster Session III: Monday, April 16 • 2:00–5:00 PM  
CONVENTION CENTER, UNION STATION BALLROOM A  
Insulators and Dielectrics  
Semiconductors  
Superconductivity  
Matter at Extreme Conditions  
Strongly Correlated Systems, Including Quantum Fluids and Solids  
Structured Materials, Including Graphene  
Superlattices, Nanostructures, and Other Artificially Structured Materials  
Surfaces, Interfaces and Thin Films  
Instrumentation and Measurements  
Applications (It, Medical/Bio, Photonics, Etc.)
Program Format

DIVISIONS

Astrophysics, Computational Physics, Nuclear Physics, Gravitational Physics, Particles and Fields, Physics of Beams

TOPICAL GROUPS


FORUMS

Early Career Scientists, Education, Graduate Student Affairs, History of Physics, International Physics, Physics and Society, Outreach and Engaging the Public

Audio Visual (AV)

In keeping with our legally binding contract with our AV vendor, speakers are not permitted to bring their own projection equipment for use at the meeting. All presentations will be handled by our on-site presentation management system. Personal laptops may not be used for presentations. The following guide will give you an overview of how to upload your files to our system, and what to expect when you get to the meeting.

EQUIPMENT: The standard AV package consists of a laptop, LCD projector, screen, laser pointer and 2 lapel microphones—one for the chair and one for the speakers. Any additional AV equipment must be rented by the speaker directly through APS's designated AV provider located in A210-211. The speaker is responsible for the cost of renting any additional equipment.

Presentation Management and Upload Instructions

The APS April Meeting 2018 presentation management website is now open! You may submit your PowerPoint presentation now and/or during the meeting. You should submit your presentation AT LEAST four hours before your scheduled session.

HOW TO REGISTER: Enter your username (which is your presenter email address) on the presentation management system website. You will be prompted to create a password. Once complete, you will be able to upload your presentation. Save your username and password in case you need to make changes to your presentation.

Upload Information

GUIDELINES: Please read the guidelines on the presentation management website before uploading your presentation. If you need assistance or have any questions about uploading your presentation, please email support@sessionupload.com.

CONFIRMATION: After submitting your presentation, you will receive a confirmation email within an hour. If you do not receive a confirmation, please email support@sessionupload.com to ensure your file was received. Please include APS April Meeting 2018 and your name in the email.

Program Time Blocks

Contributed and invited sessions at APS general meetings are three hours in length—four sessions per day at 8:30 a.m., 10:45 a.m., 1:30 p.m. and 2:30 p.m.. The time-blocks are designated in alpha order beginning with time-block “A” on Saturday at 8:30 a.m., and ending with “Y” designating the 1:30 p.m. time-block on Tuesday.

Session Codes

The number following the alpha that designates the time-block represents the sequential numbering of the sessions within the time-block. Session A1 is one of several sessions taking place in parallel in the first time-block on Monday. The number following the decimal in the session code represents the sequence of the papers to be presented in that session. For example: B3 4 = Time-block B (Saturday at 10:45 a.m.); Session 3 (of several) within that time-block; and the 4th paper to be presented in that session.
EDITING YOUR PRESENTATION: If you need to make changes to a presentation that you submitted, you may submit the presentation using a new filename. Be sure to delete the earlier submission.

To access the Presentation Management system, visit https://[showname+year].sessionupload.com

It is strongly recommended that you review your presentation before your session. Visit the Speaker Ready Room (A212) on site at the meeting.

EDITING YOUR PRESENTATION: If you need to make changes to a presentation that you submitted, you may submit the presentation using a new filename. Be sure to delete the earlier submission.

How to Backup Files

Although we take every precaution to ensure files are not corrupted during the file upload, it is always recommended that you bring a backup of your presentation on a USB to the meeting.

Presentation Information

PRESENTER MODE: All PowerPoint presentations may be run in presenter mode, which allows you to view your speaker notes privately while presenting only your slides to the audience. For more information on Microsoft PowerPoint presenter mode, please visit the PowerPoint website.

Guidelines for Speakers

ORAL PRESENTATIONS: Please arrive at least 15 minutes prior to the scheduled time of your talk. Contributed papers are allocated 12 minutes each—10 minutes for presentation and 2 minutes for questions from the audience, unless otherwise specified. Invited papers are allocated 36 minutes—30 minutes for presentation and 6 minutes for questions from the audience.

Note: Occasionally (and unfortunately) the chair for a session may not appear, in which case we ask that the first presenter serve as chair of the session.

POSTER PRESENTATIONS: If you are presenting a poster, please be sure to have your poster up beginning at 10:00 a.m. on the day of your poster presentation to which you have been assigned, and taken down immediately at the end of the day. You must be on hand at the beginning of the poster session (see page Epitome for times). APS will not be responsible for posters left up after the end of each poster session. No AV is allowed in the poster sessions. Posters will be on display between the hours of 10:00 a.m. to 5:00 p.m. Saturday, Sunday, and Monday.

Speaker Ready Room

CONVENTION CENTER, A212

If you do not submit your presentation before the meeting, you should bring it to the Speaker Ready Room to ensure your presentation is uploaded properly. The Speaker Ready Room is equipped with the same hardware and software as those in the presentation rooms. You should submit final presentations no later than four hours before your presentation time.

Friday • 3:00–7:00 PM
Saturday–Monday • 7:00 AM–5:00 PM
Tuesday • 7:00 AM–1:00 PM

Guidelines for Session Chairs

Before Your Session

1. CHECK THE PROGRAM: Determine the number and order of the abstracts to be presented, the time allocated to each abstract, and if there are any supplementary abstracts assigned to the session.

2. CHECK THE PROGRAM CHANGES BOARD NEAR THE INFORMATION DESK: See if any changes have been made to your session.

3. ARRIVE EARLY: 15 minutes prior to the start of the session, familiarize yourself with the controls for lights, microphones, AV equipment, and the timer. If you encounter problems, immediately alert the meeting staff at the registration desk or meeting information desk, and/or an AV technician.
During Your Session

1. **INTRODUCTIONS:** At the start of the session, briefly introduce yourself and explain the timing system.

2. **CHECK THE MICROPHONE:** Make sure the lavaliere is no lower than 6" below the chin.

3. **START ON TIME:** Announce the first abstract and author, and start the provided timer.

4. **STICK TO THE SCHEDULE:** Many attendees move between sessions to hear specific abstracts. Adhere to the time schedule so that simultaneous sessions are synchronized as best as possible.

5. **ALLOTTED TIMES:** If your session includes both contributed and invited abstracts, be aware of the different times allocated for each and set the timer as follows:

   - **Contributed Abstracts:** set timer for eight minutes to give initial warning, then set the final bell to go off two minutes later to signal the end of the talk. Allow two additional minutes for questions.
   - **Invited Abstracts:** set timer for 25 minutes to give initial warning, then set the final bell to go off five minutes later to signal the end of the talk. Allow six additional minutes for questions.

6. **TIMING SPEAKERS:** When a speaker’s time is up, ask them to stop in a courteous but firm manner. Any time used by speakers and/or technicians to set up laptops or any other equipment is deducted from the speaker’s total time allotment. Start timing the speaker from the moment they come to the front, not when they begin speaking.

7. **ABSENT SPEAKERS:** Should a speaker fail to appear, call the author of the first supplementary abstract assigned to the session, if any. If that author is not in attendance, call the author of the following supplementary abstract, and so on. If there are no supplementary abstracts assigned to your session, allow the preceding discussion to continue, or recess the session until it is time for the next scheduled abstract. At the end of the session, if time allows, call again for the regularly scheduled abstract.

8. **SESSION PROBLEMS:** If any problems arise that you are unable to handle while continuing to chair the session, request an AV technician.
### Saturday, April 14

#### 8:30 AM

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<td>Kavli Foundation Keynote Plenary Session: A Feynman Century</td>
<td>Room: Union Ballroom BC</td>
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<td>B04</td>
<td>Getting the Word Out</td>
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<td>B05</td>
<td>From Neutron Skins to Neutron Stars</td>
<td>Room: A123-125</td>
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<tr>
<td>B07</td>
<td>Time Domain Astrophysics</td>
<td>Room: B131-132</td>
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<tr>
<td>B08</td>
<td>Machine Learning, and Other Advanced Computational Techniques</td>
<td>Room: A110</td>
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<td>B09</td>
<td>Supersymmetry Searches and Models</td>
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<td>B11</td>
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#### 12:00 PM

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<td>Gravitational Waves: Data Analysis Techniques and Parameter Estimation - I</td>
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<td>B17</td>
<td>Galactic Sources and Cosmic-ray Accelerators</td>
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#### 1:30 PM

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<td>C03</td>
<td>Hidden Sector Searches at the Sensitivity Frontier</td>
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<td>C04</td>
<td>Recent LIGO/Virgo Results</td>
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<td>C05</td>
<td>From QCD to the Deuteron</td>
<td>Room: A123-125</td>
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<tr>
<td>C06</td>
<td>Nuclear Weapons and Ballistic Missile Defense</td>
<td>Room: B130</td>
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</tr>
<tr>
<td>C07</td>
<td>Tracing Chemical Evolution</td>
<td>Room: B131-132</td>
<td>INVITED</td>
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<tr>
<td>C08</td>
<td>Neutrino Physics: Results and New Initiatives I</td>
<td>Room: A110</td>
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<td>C09</td>
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SATURDAY
C11 Nuclear Theory I  Room: A220-221  
Sponsor: DNP Chair: Lucas Platter, University of Tennessee

C12 Ultrarelativistic Heavy Ions  Room: A222-223  
Sponsor: DNP Chair: Justin Frantz, Ohio State University, Athens

C13 Analytical Calculations and Approximations in General Relativity  Room: A224-225  
Sponsor: DGRAV Chair: Eanna Flanagan, Cornell University

C14 Gravitational Wave SIG Minisymposium  Room: A226 MINI-SYMPOSIUM  
Invited Speakers: Peter Wass

C15 Missions and Instruments  Room: B230-231  
Sponsor: DAP Chair: Tyce DeYoung, Michigan State University

C16 Compact Object Structure and Magnetic Fields  Room: B232-233  
Sponsor: DAP DGRAV Chair: Zaven Arzoumanian, NASA

C17 Physics Education and Outreach  Room: B234-235  
Sponsor: Fed FOEP Chair: Andrew Heckler, Ohio State University

Saturday, April 14  3:30 PM

D02 New Approaches to Direct Dark Matter Searches  Room: A112-113 INVITED  
Sponsor: DPF Chair: Paolo Crivelli, ETH Zurich Invited Speakers: Gordan Krnjaic, Iftah Galon, Matthew Pyle

D03 Research in Recruiting Physics Teachers  Room: A114-115 INVITED PRIZE/AWARD  
Sponsor: FED Chair: Monica Plisch, American Physical Society Invited Speakers: Michael Marder, Eleanor Close, Wendy K. Adams

D04 Third Generation Gravitational Wave Detectors  Room: A120-122 INVITED  
Sponsor: DGRAV Chair: Lisa Barsotti, MIT Invited Speakers: Matthew Evans, Salvatore Vitale, Ho Jung Paik

D05 Deep Learning and Quantum Computation in Nuclear Physics  Room: A123-125 INVITED  
Sponsor: DNP Chair: David Dean, Oak Ridge National Laboratory Invited Speakers: Thomas Papenbrock, Martin Savage, Mike Williams

D06 Best Practices for Establishing a Diverse and Inclusive Workplace, a Panel Discussion  Room: B130 INVITED  
Sponsor: COM

D07 High Energy Particle Astrophysics  Room: B131-132 INVITED  
Sponsor: DAP DPF Chair: Tracy Slatyer, MIT Invited Speakers: Stephanie Wissel, Colas Rivière, Carla Bonifazi

D08 Neutrino Physics: Results and New Initiatives II  Room: A110  
Sponsor: DPF Chair: Adam Aurisano, University of Cincinnati

D09 Beyond Standard Model Physics II  Room: A111  
Sponsor: DPF

D10 Undergraduate Research III  Room: A216  
Sponsor: SPS APS Chair: Cortney Bougher, American Physical Society

D11 Nuclear Reactions & Nuclear Structure  Room: A220-221  
Chair: Robert Janssens, University of North Carolina at Chapel Hill

D12 Hadronic Physics II  Room: A222-223  
Sponsor: GHP DNP Chair: Holly Szumila-Vance, Jefferson Lab

D13 Quantum Aspects of Gravitation - I  Room: A224-225  
Sponsor: DGRAV Chair: Steven Carlip, University of California, Davis

D14 Numerical Relativity: Black Hole Binaries  Room: A226  
Sponsor: DGRAV Chair: Carlos Lousto, Rochester Institute of Technology

D15 Indirect Dark Matter Searches  Room: B230-231  
Sponsor: DAP DPF Chair: Tim Linden, Ohio State University

D16 Optical Counterparts to Gravitational-Wave Events  Room: B232-233  
Sponsor: DAP DGRAV Chair: Judith Racusin, NASA Goddard Space Flight Center Invited Speakers: Daniel Kasen

D17 Precision Measurements of Magnetic Moments and Electric Dipole Moments  Room: B234-235  
Sponsor: GPMFC Chair: Timothy Chupp, University of Michigan

Saturday, April 14  5:30 PM

F01 Welcome Reception and Poster Session I (17:30-19:30)  Room: Union Ballroom A POSTER

Saturday, April 14  6:30 PM

F14 DCOMP Business Meeting  Room: A226 Bldg: Hilton Columbus

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**IMPACT**

Industry Mentoring for Physicists

IMPact connects graduate students and postdocs with physicists who work in industry.

It's easy for APS members to sign up as mentors or mentees. Join more than 400 mentors and mentees today at impact.aps.org.
Sunday, April 15

8:30 AM

G01 **FPS Business Meeting**  
*Room: Edward Parker Hayde Bldg: Hilton Columbus*  
*Sponsor: FPS*

G02 **Sakurai and Panofsky Prize**  
*Room: A112-113 INVITED PRIZE/AWARD*  
*Sponsor: DPF Chair: Marcela Carena, FNAL Invited Speakers: Ann Nelson, Michael Dine, Laurence Sulak, Grant Remmen*

G03 **Excellence in Physics Education Award**  
*Room: A114-115 INVITED PRIZE/AWARD*  
*Sponsor: FED Chair: Geraldine Cochran, Rutgers University Invited Speakers: Carl Wieman, Katherine Perkins, Suzanne White Brahmia, Vashti Sawtelle*

G04 **Beams for Physics Research**  
*Room: A120-122 INVITED*  
*Sponsor: DPB DCOMP Chair: Stephen Milton, Los Alamos National Laboratory Invited Speakers: Erik Hemsing, Yury Ivanvshenkov, Luca Giannessi*

G05 **High Baryon Density Physics in Nuclei and the Cosmos**  
*Room: A123-125 INVITED*  
*Sponsor: DNP Chair: Ramona Vogt, Lawrence Livermore National Laboratory Invited Speakers: Jocelyn Read, Swagato Mukherjee, Frank Geurts*

G07 **Fireball Emission from Binary Neutron Star Mergers**  
*Room: B131-132 INVITED*  
*Sponsor: DAP DGRAV Chair: Fiona Harrison, Caltech Invited Speakers: Eric Burns, Gregg Hallinan, Anthony Piro*

G08 **Neutrino Experiments: Backgrounds, Calibration, and Instrumentation**  
*Room: A110*  
*Sponsor: DPF Chair: Kate Scholberg, Duke University*

G09 **Dark Matter Theories, Models, and Phenomenology**  
*Room: A111*  
*Sponsor: DPF DAP Chair: Matthew Graham, SLAC National Accelerator Laboratory*

G10 **Historical Trends Across the Disciplines**  
*Room: A216*  
*Sponsor: FHP Invited Speakers: Ryan Chaban*

G11 **Mini-Symposium on FRIB and ReA Instrumentation I**  
*Room: A220-221 MINI-SYMPOSIUM*  
*Sponsor: DNP Chair: Benjamin Kay, Argonne National Laboratory Invited Speakers: Manoel Couder*

G12 **Hadrons and Light Ions; Bayesian Methods**  
*Room: A222-223*  
*Sponsor: DNP Chair: Roxanne Springer, Duke University*

G13 **Gravitational Waves: Source Modeling - I**  
*Room: A224-225*  
*Sponsor: DGRAV Chair: Scott Hughes, MIT*

G14 **Gravitational Waves: Data Analysis Techniques and Parameter Estimation - II**  
*Room: A226*  
*Sponsor: DGRAV Chair: Salvatore Vitale, MIT*

G15 **Medium Energy Cosmic Rays**  
*Room: B230-231*  
*Sponsor: DAP Chair: William Hanlon, The University of Utah*

G16 **Neutrinoless Double Beta Decay and Neutrino Mass**  
*Room: B232-233*  
*Sponsor: DNP Chair: Vincente Guiseppe, University of South Carolina*

G17 **NICER: First Results**  
*Room: B234-235*  
*Sponsor: DAP Invited Speakers: Zaven Arzoumanian*

Sunday, April 15

10:00 AM

G20 **Undergraduate Breakfast, Career Workshop, and Awards**  
*Room: Emerson Burkhart A Bldg: Hilton Columbus*  
*CAREERS UNDERGRADUATE*

Sunday, April 15

10:45 AM

H02 **Celebration of the 40th Anniversary of the Time Projection Chamber**  
*Room: A112-113 INVITED*  
*Sponsor: DPF DNP Chair: Priscilla Cushman, University of Minnesota Invited Speakers: David Nygren, Flavio Cavanna, Helen Caines*

H03 **Dark Matter & Galaxies: The Legacy of Vera Rubin**  
*Room: A114-115 INVITED*  
*Sponsor: FPS FHP Chair: Beverly Hartline, Montana Tech Invited Speakers: Annika Peter, Alycia J. Weinberger, Deidre Hunter, Participation From Audience*

H04 **Tests of General Relativity**  
*Room: A120-122 INVITED*  
*Sponsor: DGRAV GPMFC Chair: Clifford Will, University of Florida - Gainesville Invited Speakers: Brian D’Urso, Manuel Rodrigues, Jason Hogan*

H05 **Snapshots of the Dynamics of the Nucleon**  
*Room: A123-125 INVITED*  
*Sponsor: GHP Chair: Bob McKeown, Jefferson Lab Invited Speakers: Julie Roche, Yi-Bo Yang, Prithwish Tribedy*

H06 **Many Body Quantum Computations in Nuclear Physics**  
*Room: B130 INVITED*  
*Sponsor: DCOMP DNP Chair: Alexei Bazavov, Michigan State University Invited Speakers: Sofia Quaglioni, Gustav R. Jansen, Dean Lee*

H07 **Crisis in Cosmology**  
*Room: B131-132 INVITED*  
*Sponsor: DAP Chair: Josh Frieman, Fermilab Invited Speakers: Daniel Meiron, Stephen Feeney, Bradford Benson*

H08 **Neutrino Beams I**  
*Room: A110*  
*Sponsor: DPF Chair: Leonidas Aliaga, Fermi National Accelerator Laboratory*
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<td>Future Science and Prospects in MeV Gamma-ray Astrophysics</td>
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<td>B230-231</td>
<td>DAP</td>
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<td>J16</td>
<td>FPS Awards Session</td>
<td>B232-233</td>
<td>DPF</td>
<td>Liu Huixing</td>
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<td>J17</td>
<td>Innovative Ideas for Engaging the Public</td>
<td>B234-235</td>
<td>DPF</td>
<td>Liu Huixing</td>
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<td>Sunday, April 15</td>
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<td>K02</td>
<td>Understanding the Neutrino Sector</td>
<td>A112-113</td>
<td>DPF</td>
<td>Kate Scholberg</td>
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</tbody>
</table>

*Sunday, April 15* 12:00 PM
- **J20 Preparing Students for Careers Outside Academia**
  - Room: Emerson Burkhart B Bldg: Hilton Columbus
  - Sponsor: FED

*Sunday, April 15* 12:33 PM
- **J01 DPF Business Meeting**
  - Room: A110
  - Sponsor: DPF

*Sunday, April 15* 1:30 PM
- **J02 Accelerators for Energy Frontier Research: Status and Plans**
  - Room: A112-113
  - Sponsor: DPF
  - Chair: Vladimir Shiltsev, Fermilab
  - Invited Speakers: Daniel Schulte, Alexander Romanenko, Soren Prestemon

*Sunday, April 15* 2:00 PM
- **L01 Poster Session II (14:00-17:00)**
  - Room: Union Ballroom
  - Poster

*Sunday, April 15* 2:30 PM
- **J14 Tutorial for Authors and Referees**
  - Room: A226

*Sunday, April 15* 3:30 PM
- **K02 Understanding the Neutrino Sector**
  - Room: A112-113
  - Sponsor: DPF
  - Chair: Kate Scholberg, Duke University
  - Invited Speakers: Andre de Gouveia, Diana Parno, Alexandre Sousa
K03 The Cutting Edge of Physics Education Research  
Room: A114-115 INVITED  
Sponsor: FED GPER Chair: Gary White, George Washington University  
Invited Speakers: Jacquelyn Chini, Rachel Scherr, Angela Johnson  

K04 Binary Merger Simulations  
Room: A120-122 INVITED  
Sponsor: DGRAV DCOMP Chair: Frans Pretorius, Princeton University  
Invited Speakers: Bruno Giacomazzo, Luis Lehner, Francois Foucart  

K05 R-Process and Shell Evolution Near Doubly-Magic 78Ni  
Room: A123-125 INVITED  
Sponsor: DNP Chair: Benjamin Kay, Argonne National Laboratory  
Invited Speakers: Ruben de Groote, Miguel Madurga Flores, Heiko Hergert  

K06 Creating an Inclusive Physics Community for the Next Century  
Room: B130 INVITED  
Sponsor: CSWP Chair: Pearl Sandick, University of Utah  
Invited Speakers: Angela Johnson, Patricia Rankin, Laura McCullough  

K07 PRIIZE TALKS Big Bang Nucleosynthesis, Dark Matter, and Astronomical Random Number Generators  
Room: B131-132 INVITED PRIIZE/AWARD  
Sponsor: DAP DNP Chair: Robert Janssens, Argonne National Laboratory  
Invited Speakers: Keith Olive, Gabriele Betancourt-Martinez, Shirley Li, Josiah Schwab, Calvin Leung  

K08 Neutrino Cross Sections  
Room: A110  
Sponsor: DPF Chair: Luke Corwin, South Dakota School of Mines and Technology  

K09 The Future of Direct Dark Matter Detection  
Room: A111  
Sponsor: DPF DNP Chair: Jodi Cooley, Southern Methodist University  

K10 Minisymposium on Probing High Baryon Density Physics I  
Room: A216 MINI-SYMPOSIUM  
Sponsor: DNP Chair: Swagato Mukherjee, BNL  
Invited Speakers: Fridolin Weber  

K11 Hadronic Physics IV  
Room: A220-221  
Sponsor: GHP DNP Chair: Or Hen, MIT  

K12 Instrumentation  
Room: A222-223  
Sponsor: DNP Chair: Elton Smith, Jefferson Lab  

K13 Modified Gravity, Observables and Foundations  
Room: A224-225  
Sponsor: DGRAV Chair: Nicolas Yunes, Montana State University  

K14 Precision Measurements and Tests of Fundamental Physics  
Room: A226  
Sponsor: GPMFC Chair: V. Alan Kostelecky, Indiana University  

K15 Large Scale Structure - Theory  
Room: B230-231  
Sponsor: DAP Chair: Kevin Bundy, Lick Observatory  

K16 Supernovae  
Room: B232-233  
Sponsor: DAP  

K17 Modeling Populations of Compact Gravitational-Wave Sources  
Room: B234-235  
Sponsor: DAP DGRAV Chair: Carl Rodriguez, Massachusetts Institute of Technology  

K20 SPS: Affecting Change in your Undergraduate Program  
Room: Emerson Burkhart A Bldg: Hilton Columbus  

K21 Meet the Physical Review Editors  
Room: Foyer Bldg: Convention Center  

Sunday, April 15  
4:00 PM  

K22 Professional Skills Development Seminar for Women  
Room: Robert King Bldg: Hilton Columbus  

Sunday, April 15  
5:30 PM  

N01 APS Prizes and Awards Ceremonial Session  
Room: TBD PRIIZE/AWARD  
Sponsor: APS  

Sunday, April 15  
6:30 PM  

N20 NSBP/NSHP Reception  
Room: Edward Parker Hayde Bldg: Hilton Columbus  

Sunday, April 15  
6:45 PM  

N08 GHP Business Meeting  
Room: A110  
Sponsor: GHP  

Sunday, April 15  
7:00 PM  

N22 Education and Diversity Reception  
Room: Elijah Pierce B Bldg: Hilton Columbus  

Sunday, April 15  
8:00 PM  

P01 A Staged Reading of the Play: FLIGHT  
Room: George Bellows EF Bldg: Hilton Columbus  

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<tr>
<th>Time</th>
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</table>
| Monday, April 16 8:00 AM | **FHP Business Meeting**  
Sponsor: FHP | Room: A216 Bldg: Convention Center | Monday, April 16 8:30 AM | **From Nuclear Security to Neutron-star Mergers**  
Room: Union Ballroom BC  
Sponsor: APS Chair: Enrico Ramirez-Ruiz, University of California, Santa Cruz  
Invited Speakers: Njema Frazier, Anne Archibald, Marcelle Soares-Santos | Monday, April 16 10:45 AM | **Frontier Physics Enabled by New Facilities**  
Room: A112-113 INVITED  
Sponsor: DPF Chair: Leo Piilonen, Virginia Tech  
Invited Speakers: Bertrand Echenard, Renee Fatemi, Patrizia Rossi | Monday, April 16 1:30 PM | **Exotic Hadrons from the LHC and B-Factories**  
Room: A112-113 INVITED PRIZE/AWARD  
Sponsor: DPF Chair: Michael Sokoloff, University of Cincinnati  
Invited Speakers: Christoph Hanhart, Nathan Jurik, Bilas Pal | Monday, April 16 | **Nuclear Theory II**  
Room: A220-221  
Sponsor: DNP Chair: Sofia Quaglioni, LLNL | Monday, April 16 | **Electroweak Interactions**  
Room: A222-223  
Sponsor: DNP Chair: Hans Mumm, NIST | Monday, April 16 | **Mathematical Aspects of General Relativity**  
Room: A224-225  
Sponsor: DGRAV Chair: Deborah Konkowski, U.S. Naval Academy | Monday, April 16 | **Mergers, Collapse and Black Hole Dynamics**  
Room: A226  
Chair: Manuela Campanelli, Rochester Institute of Technology | Monday, April 16 | **Cosmological Parameters and Halo Structure**  
Room: B230-231  
Sponsor: DAP Chair: Annika Peter, Ohio State University | Monday, April 16 | **FPS Invited Session**  
Room: B232-233 INVITED  
Sponsor: FPS | Monday, April 16 | **Detection and Origin of Astrophysical Neutrinos**  
Room: B234-235  
Sponsor: DAP Chair: John Beacom, The Ohio State University |
MONDAY

**S08**  Detector R&D and Performance I  Room: A110
Sponsor: DPF Chair: Roger Rusack, University of Minnesota

**S09**  Sub-GeV Dark Matter  Room: A111
Sponsor: DPF Chair: Philip Schuster, SLAC National Accelerator Laboratory

**S10**  Minisymposium: Low Radioactivity Background Techniques in Underground Experiments - II
Room: A216 MINI-SYMPOSIUM
Sponsor: DNP Chair: Jordan Myslik, LBNL

**S11**  Nuclear Astrophysics  Room: A220-221
Sponsor: DNP Chair: Manuel Couder, University of Notre Dame

**S12**  Mini-Symposium on Initial State and Early-time Dynamics of Heavy Ion Collisions I
Room: A222-223 MINI-SYMPOSIUM
Sponsor: DNP Chair: Julia Velkovska, Vanderbilt University Invited Speakers: Ronald Belmont

**S13**  Gravitational Waves: Source Modeling - II
Room: A224-225
Chair: Harald Pfeiffer, Albert Einstein Institut Golm

**S14**  Gravitational Waves: Detectors and Instrumentation
Room: A226
Chair: Jenne Driggers, California Institute of Technology

**S15**  Early Universe
Room: B230-231
Sponsor: DAP Chair: Keith Olive, University of Minnesota

**S16**  Active Galaxies
Room: B232-233
Sponsor: DAP Chair: Jeremy Perkins, NASA

**S17**  Neutrinos, Gamma Rays, and Cosmic Rays, oh my
Room: B234-235
Sponsor: DAP DPF Chair: Amy Connolly, Ohio State University

### Monday, April 16

**2:00 PM**

**T01**  Poster Session III (14:00-17:00)
Room: Union Ballroom A POSTER

### Monday, April 16

**3:30 PM**

**U02**  Gravitational Waves and Dark Matter Searches
Room: A112-113 INVITED
Sponsor: DGRAV DPF Chair: Marc Kamionkowski, Johns Hopkins University
Invited Speakers: Lam Hui, Masha Baryakhtar, Ilias Cholis

**U03**  Physics Experiments in Antarctica, What They Tell Us About the South Pole and the Changing Climate
Room: A114-115 INVITED
Sponsor: FIP Chair: Noemi Mirkin, University of Michigan - Ann Arbor
Invited Speakers: Gillian Young, Dustin Schroeder, Kimberly Casey

**U05**  DNP Prize Session
Room: A123-125 INVITED PRIZE/AWARD
Sponsor: DNP Chair: David Dean, Oak Ridge National Laboratory Invited Speakers: Warren Rogers, Edward Shuryak, Bradley Sherrill

### Monday, April 16

**5:30 PM**

**U17**  Ultra High-energy Neutrinos
Room: B234-235
Sponsor: DAP DPF Chair: Tyce DeYoung, Michigan State University

Sponsor: DAP FHP Chair: Priyamvada Natarajan, Yale University Invited Speakers: Dava Sobel, Alan Paige Lightman, Adam Riess

**U08**  Detector R&D and performance II
Room: A110
Sponsor: DPF Chair: Alan Schwartz, University of Cincinnati

**U09**  QCD and Hadrons
Room: A111
Sponsor: DPF DNP Chair: Stephen Sekula, Southern Methodist University

**U10**  Technology and curriculum developments in Physics Education
Room: A216
Sponsor: GPER FEd Chair: John Thompson, University of Maine

**U11**  Nuclear Theory III
Room: A220-221
Sponsor: DNP Chair: Richard Furnstal, Ohio State University

**U12**  Minisymposium on Initial State and Early Time Dynamics of Heavy Ion Collisions II
Room: A222-223 MINI-SYMPOSIUM
Sponsor: DNP Chair: Frank Guerts, Rice University

**U13**  Gravitational Waves: Source Modeling - III
Room: A224-225
Chair: Jocelyn Read, Cal State Fullerton

**U14**  Tests of General Relativity and Gravitation
Room: A226
Sponsor: DGRAV Chair: Aaron Zimmerman, CITA

**U15**  Cosmic Microwave Background and More
Room: B230-231
Sponsor: DAP Chair: Barbara Ryden, Ohio State University

**U16**  Minisymposium: Low Radioactivity Background Techniques in Underground Experiments - III
Room: B232-233 MINI-SYMPOSIUM
Sponsor: DNP Chair: Wenqin Xu, University of South Dakota

**U17**  History of Women Pioneers in Astronomy
Room: B130

Sponsor: DAP FHP Chair: Priyamvada Natarajan, Yale University Invited Speakers: Dava Sobel, Alan Paige Lightman, Adam Riess

Sponsor: DNP Chair: Jordan Myslik, LBNL

Sponsor: DNP Chair: Manuel Couder, University of Notre Dame

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Room: A123-125 INVITED PRIZE/AWARD
Sponsor: DNP Chair: David Dean, Oak Ridge National Laboratory Invited Speakers: Warren Rogers, Edward Shuryak, Bradley Sherrill

Room: B130

Room: B230-231
Sponsor: DAP Chair: Barbara Ryden, Ohio State University

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Sponsor: DNP Chair: Wenqin Xu, University of South Dakota

Room: B234-235
Sponsor: DAP DPF Chair: Tyce DeYoung, Michigan State University

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Sponsor: DPF Chair: Roger Rusack, University of Minnesota

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Room: B232-233 MINI-SYMPOSIUM
Sponsor: DNP Chair: Wenqin Xu, University of South Dakota

Room: B234-235
Sponsor: DAP DPF Chair: Tyce DeYoung, Michigan State University
**Tuesday, April 17**

### 8:30 AM

**W01 Tuesday Plenary: Nobel Prize and APS Medal Winners**  
Room: Union Ballroom BC  
**INVITED PRIZE/AWARD**  
Sponsor: APS Chair: Clifford Will, University of Florida - Gainesville  
Invited Speakers: Eugene Parker, Rainer Weiss, Barry Barish

### 10:45 AM

**X02 The Energy Frontier: Results from LHC**  
Room: A112-113  
**INVITED**  
Sponsor: DPF Chair: Christopher Hill, Ohio State University - Columbus  
Invited Speakers: Jessie Shelton, Swagato Banerjee, Sunil Somalwar

**X04 Unveiling Massive Black Holes**  
Room: A120-122  
**INVITED**  
Sponsor: DGRAV Chair: Kelly Holley-Bockelmann, Vanderbilt University  
Invited Speakers: Priyamvada Natarajan, Cole Miller, Enrico Barausse

**X06 Progress and Challenges for Women Physicists in Africa, Asia, and the Middle East**  
Room: B130  
**INVITED**  
Sponsor: FIP Chair: Cherrill Spencer, SLAC National Accelerator Laboratory  
Invited Speakers: Ibiyinka Fuwape, Rohini Godbole, Mona Mohsen

**X07 Mapping the Local Universe**  
Room: B131-132  
**INVITED**  
Sponsor: DAP Chair: James Bullock, University of California, Irvine  
Invited Speakers: David Hogg, Coral Wheeler, Kevin Bundy

**X08 Top Physics, and Lepton Interactions**  
Room: A110  
**INVITED**  
Sponsor: DPF Chair: Douglas Schaefer, CERN

### 1:30 PM

**Y02 The High Luminosity LHC Upgrade and New Physics Windows**  
Room: A112-113  
**INVITED**  
Sponsor: DPF Chair: Jeremiah Mans, University of Minnesota  
Invited Speakers: Douglas Schaefer, Jessica Metcalfe, Alberto Belloni, Lindsey Gray

**Y04 Low-Frequency Gravitational Wave Astronomy**  
Room: A120-122  
**INVITED**  
Sponsor: DGRAV DAP Chair: Michele Vallisneri, Caltech  
Invited Speakers: John Baker, Stephen Taylor, Maura McLaughlin

**Y05 Weakly-Bound Systems**  
Room: A123-125  
**INVITED**  
Sponsor: GFB DNP Chair: Kenneth Nollett, San Diego State University  
Invited Speakers: Peter Mueller, Jordy de Vries, Xilin Zhang

**Y06 The Chapel Hill Conference and its Role in the Renaissance of General Relativity**  
Room: B130  
**INVITED**  
Sponsor: DGRAV FHP Chair: Don Salisbury, Austin College, Texas  
Invited Speakers: Peter Saulson, Dieter Brill, Dean Rickles, Joshua Goldberg

**Y07 Lensing Probes of Dark Matter**  
Room: B131-132  
**INVITED**  
Sponsor: DAP Chair: Priyamvada Natarajan, Yale University  
Invited Speakers: Mathilde Jauzac, Yashar Hezaveh, Chihway Chang

**Y08 Electroweak Physics, and Lepton Non-Universality**  
Room: A110  
**INVITED**  
Sponsor: DPF Chair: Stephen Sekula, Southern Methodist University

**Y09 Axions II**  
Room: A111  
Sponsor: DPF

**Y11 Computational Physics and Cosmos**  
Room: A220-221  
**INVITED**  
Sponsor: DCOMPO DGRAV

**Y13 New Perspectives in Gravitational Physics - II**  
Room: A224-225  
**INVITED**  
Sponsor: DGRAV Chair: Yosef Zlochower, Rochester Institute of Technology

**Y14 Particle Accelerators and Applied Plasma Physics**  
Room: A226  
Chair: Dmitri Denisov, Fermilab

**Y15 Gamma Ray SIG Minisymposium**  
Room: B230-231  
**MINI-SYMPOSIUM**  
Invited Speakers: Sylvain Guiriec

**Y16 Inflation Probe SIG Minisymposium**  
Room: B232-233  
**MINI-SYMPOSIUM**  
Invited Speakers: Shaul Hanany
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CONVENTION CENTER, FOYER
Saturday–Monday • 9:00 AM–5:00 PM

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The APS leadership and staff extend their sincere thanks to the abstract sorters, who, during the past year, gave so generously of their time and expertise.

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