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 intimidating 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 APS Meeting Hotline 301-209-3675. (This number is only open during registration hours.)
GENERAL INFORMATION

Welcome to the 47th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, held in Providence, Rhode Island at the Rhode Island Convention Center.

The conference website is: aps.org/units/damop/meetings/annual/index.cfm

All events and scientific sessions will be held at the Convention Center. The scientific sessions will open with the prize session at 8:00 am on Tuesday, May 24 and continue with other exciting scientific sessions until 12:30 pm on Friday, May 27. In addition, a number of special events will take place during the conference including a welcome reception on Monday, May 23 at 6:00 pm.

REGISTRATION

5th Floor Foyer

Monday, May 23 ....................... 2:00 pm – 7:00 pm
Tuesday, May 24 ..................... 7:00 am – 4:00 pm
Wednesday, May 25 ................ 7:30 am – 4:00 pm
Thursday, May 26 ................... 7:30 am – 3:00 pm
Friday, May 27 .......................... 7:30 am – 12:00 pm

The conference registration fee includes all oral, poster, and plenary sessions, coffee breaks, the welcome reception on Monday, and the conference banquet on Thursday evening.

DAMOP MEETING MOBILE APP

DAMOP is pleased to offer the DAMOP Meeting Mobile App for your phone or tablet. Abstracts and other program information will be available directly on your device. Enter this link into your mobile device browser to download the app: go.aps.org/meetingapp.

AMERICANS WITH DISABILITIES ACT STATEMENT

The APS and DAMOP wish 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. If any such services are necessary in order for you to participate in the DAMOP Meeting, please communicate your needs in advance to the APS Meetings Department at meetings@aps.org.

WIRELESS ACCESS

Free wireless internet access, sponsored by DAMOP, is available in the Rhode Island Convention Center in the meeting rooms and public areas.

Network name: APSMTG
Password: damopmtg

SPEAKER READY ROOM

5th Floor, Room 558

We encourage you to visit the Speaker Ready Room to test your presentation and get any A-V assistance you may need before your session.

Monday, May 23 ................. 2:00 pm – 5:00 pm
Tuesday, May 24 .............. 7:00 am – 4:00 pm
Wednesday, May 25 .......... 7:00 am – 4:00 pm
Thursday, May 26 ............ 7:00 am – 3:00 pm
Friday, May 27 ............... 7:00 am – 12:00 pm
AUDIO-VISUAL EQUIPMENT

All rooms will be equipped with an LCD projector, screen, lapel microphone, and laser pointer. There will not be any laptops provided in the meeting rooms. If you plan on doing a PowerPoint presentation, please bring your presentation on your own laptop computer. When you arrive at the session in which you are speaking, please have your laptop turned on and ready to go. Note: you are not allowed to use your own projectors at the meeting.

EXHIBITS

5th Floor Foyer

Tuesday, May 24 .................9:00 am – 5:00 pm
Wednesday, May 25 ..........9:00 am – 5:00 pm
Thursday, May 26 ..........9:00 am – 5:00 pm

Exhibitor display tables will be open during the scientific sessions. These are the Exhibitors registered by print time:

Bristol Instruments, Inc.
CAS Dataloggers
ColdQuanta
IOP Publishing
Lighthouse Photonics Inc.
Lockheed Martin Laser and Sensor Systems
M Squared Lasers
Menlo Systems, Inc.
MOG Labs
MUQUANS
New Focus/A Newport Company
Nufern
Precision Glassblowing of Colorado
Quantel Laser
RIO-OptaSense
SAES Group
Spectra-Physics/A Newport Company
Stable Laser Systems
TeachSpin, Inc.
TOPTICA Photonics
Vescent Photonics, Inc.

APS MEMBERSHIP BOOTH

5th Floor Foyer

Tuesday, May 24 .................9:00 am – 4:00 pm
Wednesday, May 25 ..........9:00 am – 4:00 pm
Thursday, May 26 ..........9:00 am – 4:00 pm

Stop by the APS Membership Booth if you have questions about APS membership or journal subscriptions.

APS SOUVENIR STORE

5th Floor Foyer

Same hours as APS Membership Desk. Come browse our t-shirts, bumper stickers, and more.

APS JOURNALS TABLE

5th Floor Foyer

Same hours as the membership desk and souvenir store. Stop by for information about the Physical Review journals and Reviews of Modern Physics, and meet some of our editors.

CONTACT CONGRESS

5th Floor Foyer

Tuesday, May 24 .................9:00 am – 5:00 pm
Wednesday, May 25 ..........9:00 am – 5:00 pm
Thursday, May 26 ..........9:00 am – 5:00 pm
Friday, May 27 .................9:00 am – 12:00 pm

Stop by the Contact Congress booth to sign letters to your Congressional delegation on the importance of federal funding for research and other policy priorities for the physics community. It takes only a minute. By doing so, you are making your voice heard in Washington and helping to influence the funding levels and policies for physics research and education.

Don’t Take Your Grant for Granted. The strongest and most persuasive advocates on Capitol Hill are a senator or representative’s constituents. That means you! If you live in the U.S., you are qualified to write to your members of Congress. If you have questions about what is happening in DC, stop by and talk to the experts from the APS Washington, DC Office.
SPECIAL EVENTS

MONDAY, MAY 23

Graduate Student Symposium on Ultra Cold Gases

Monday, 8:30 am – 4:00 pm
5th Floor, Room 551 AB

DAMOP is hosting a graduate student symposium in conjunction with the DAMOP Meeting. While aimed primarily at graduate students, the symposium is open to all registered meeting participants.

Symposium participants are encouraged to pre-register by May 13, 2016. Symposium participants must also register for the conference. The Symposium fee of $50 will cover the costs of the presentations, lunch and refreshments.

8:30 am...Sign In
8:55 am... Welcome and Introductions
9:00 am... Gretchen Campbell, JQI/University of Maryland, “Superfluidity in Ultracold Gases”
10:15 am... Coffee Break
10:45 am... Andrew Daley, University of Strathclyde, “Non-equilibrium Dynamics in AMO Quantum Simulators”
Noon....... Lunch
1:15 pm... Doerte Blume, Washington State University, “Fun with Ultracold Few-body Systems”
2:30 pm... Coffee Break
2:45 pm... Bruno Laburthe-Tolra, Université Paris 13 & CNRS, “Large Spin Magnetism with Cold Atoms”

Organizers:
Nathan Lundblad, Bates College
Ana Maria Rey, University of Colorado, Boulder
Marianna Safranova, University of Delaware

Welcome Reception

Monday, 6:00 – 9:00 pm
5th Floor, Rotunda / Foyer

All registered attendees are welcome to attend. The reception is included in the registration fee.

DAMOP Business Meeting

Monday, 8:00 – 10:00 pm
5th Floor, 553 AB

All meeting attendees are invited attend to hear about issues pertaining to DAMOP, including future meetings and unit finances. There will be brief presentations from several AMO-related program managers, and from Mike Lubell, the APS Director of Public Affairs.

TUESDAY, MAY 24

Session A1: Prize Session

Tuesday, 8:00 am – 10:00 am
5th Floor, Ballroom A

The opening prize session of the conference will honor the following APS prize and award winners:

Randall Hulet, Rice University
Davisson-Germer Prize Talk: “Many-Body Physics with Atomic Fermions”

Klaus Bartschat, Drake University
Will Allis Prize Talk: “Electron Collisions—Experiment, Theory and Applications”

Gretchen Campbell, Joint Quantum Institute, NIST and UMD
Maria Goeppert Mayer Prize Talk: “Superfluid Atom Circuits”

Physical Review A Staff Lunch Meeting

(Invitation Only: For the staff of Physical Review A)
Tuesday, 12:00 – 2:00 pm
5th Floor, Rotunda

DAMOP Fellowship Committee Luncheon

Tuesday, 12:30 – 2:00 pm
5th Floor, Room 550 A
For the first time, DAMOP and APS will sponsor a career fair in Exhibit Hall C, in parallel with the poster sessions. Employers will distribute literature, answer questions, accept resumes, and possibly arrange for interviews. A list of participating companies and organizations, and the day(s) in which they will participate in the Career Fair, will be available on the conference website.

The business meeting of the Group on Precision Measurements and Fundamental Constants is open to all interested conference participants.

Women, underrepresented minorities and LGBT physicists are especially encouraged to attend. Refreshments will be served.

Representatives from industry and national labs will provide information about physics careers in private sector and laboratory environments. Topics will include research opportunities for physicists in industry, strategies for successfully pursuing industrial jobs, exploring the linkages between private sector and national laboratory research, and advice on how to thrive in these exciting and challenging work environments. Light refreshments will be served. This event is sponsored by the APS Forum on Industry and Applied Physics (FIAP).

The Theoretical Atomic, Molecular and Optical Community business meeting will highlight opportunities for collaboration and workshops at theory institutes, ITAMP, and the Perimeter Institute. An NSF program officer will speak about the agency’s perspective and strategy on AMO theory funding. There will be a demonstration of the new NIST Digital Library of Mathematical Functions resource. New TAMOC leadership will be selected. All DAMOP participants are welcome.
Public Lecture

Wednesday, 7:30 – 8:45 pm
5th Floor, Ballroom A

Nergis Mavalvala
Massachusetts Institute of Technology

Talk Title: Detection of Gravitational Waves: A Hundred Year Journey

Abstract: In February 2016, scientists announced the first ever detection of gravitational waves from colliding black holes, launching a new era of gravitational wave astronomy and unprecedented tests of Einstein’s theory of general relativity. I will describe the science and technology, and also the human story, behind the long quest that led to this discovery.

Nergis Mavalvala is Professor of Physics at the Massachusetts Institute of Technology (MIT). Her research links the world of quantum mechanics, usually apparent only at the atomic scale, with gravitational waves, arising from some of the most powerful, yet elusive, forces in the cosmos. In 2016, she was part of the team that announced the first detection of gravitational waves from colliding black holes. She received a BA from Wellesley College in 1990 and a PhD from MIT in 1997. She was a postdoctoral fellow and research scientist at the California Institute of Technology between 1997 and 2002. She was named a MacArthur Fellow in 2010. She is a Fellow of the APS and OSA.

Meet the APS Journal Editors

Thursday, 4:30 – 6:00 pm
5th Floor, Rotunda/Foyer

The editors of PRA, PRL and PRX invite you to join them for conversation. The editors will be available to answer questions, hear your ideas, and discuss any comments about the journals. All are welcome. Light refreshments will be served.

Conference Banquet

Thursday, 7:00 – 9:30 pm
5th Floor, Ballroom A

Following dinner, DAMOP prizes, awards and fellowships will be presented. The after-dinner talk will be given by Rush D. Holt.

Talk Title: In Washington, Facts are Negotiable

Rush D. Holt is the chief executive officer of the American Association for the Advancement of Science (AAAS) and executive publisher of the Science family of journals. Holt is a Phi Beta Kappa graduate of Carleton College in Northfield, Minnesota, and he holds M.A. and Ph.D. degrees in physics from New York University. He was a faculty member at Swarthmore College, assistant director of the Princeton Plasma Physics Laboratory (PPPL), and an AAAS/American Physical Society Science and Technology Policy Fellow on Capitol Hill.

He was elected and served for 16 years as a member of the U.S. House of Representatives, representing New Jersey’s 12th Congressional District in Congress, and was a senior member of the Committee on Natural Resources as well as the Committee on Education and the Workforce. He also served eight years on the Permanent Select Committee on Intelligence and, from 2007 to 2010, chaired the Select Intelligence Oversight Panel, which worked to strengthen legislative oversight of the intelligence community. His legislative work earned him numerous accolades, including being named one of Scientific American magazine’s “50 National Visionaries Contributing to a Brighter Technological Future” and a “Champion of Science” by the Science Coalition.

Holt is a past recipient of two of AAAS’ highest honors: the William D. Carey Lecture-ship Award (2005) and the Philip Hauge Abelson Award (2010). He is an elected fellow of AAAS, the APS, and Sigma Xi.

Tutorial for Authors and Referees

Thursday, 3:30 – 4:30 pm
5th Floor, Rotunda

Editors from Physical Review Letters, Physical Review X and Physical Review A will provide information and tips for our 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 authoring and refereeing. Topics for discussion will include advice on how to write good manuscripts, similarities and differences in writing referee reports for PRL/PRX and PR and other ways in which authors, referees and editors can work together productively. The tutorial session will be followed by a Meet-the-Editors reception with light refreshments.
Session U2: Hot Topics

*Friday, 10:30 am – 12:30pm*
*5th Floor, Ballroom B*

The speakers at the Hot Topics session will present exciting research in a spectrum of topics.

**COMPANION EVENT**

**Companions' Coffee**

*Tuesday, May 24, 8:00 – 10:00 am*
*5th Floor, Rotunda*

Companions of attendees of the DAMOP Meeting are invited to a complimentary coffee gathering where they may meet other companions and learn more about the city of Providence. Presentations will be made by a representative of the Providence Warwick Convention & Visitor’s Bureau. You will receive information about the sites and attractions in the city. This event is restricted to companions and families only.

**MEALS**

There are many restaurants within easy walking distance of the Rhode Island Convention Center. A light continental breakfast will be provided for registered meeting attendees at 10:00 am (Tuesday to Friday) during the coffee breaks.

**PROGRAM FORMAT**

*Program Time-Blocks*
*Tuesday:...... A–F*
*Wednesday:. G–K*
*Thursday: .... M–S*
*Friday:......... T–U*

There are four time blocks for each day of the meeting. (Tuesday through Thursday: Oral sessions at 8:00 am; 10:30 am and 2:00 pm; Poster sessions at 4:00 pm. On Friday, there are two sets of oral sessions at 8:00 am and 10:30 am). The time blocks are designated in alphabetical order beginning with time block “A” on Tuesday at 8:00 am, and ending with time block “U” designating the 10:30 am session on Friday. See the Epitome for details.

*Poster Codes*

Posters are numbered sequentially.

*Poster Presentations*

If you are presenting a poster, please be sure to have your poster up prior to the start of the session to which you have been assigned, and taken down immediately at the end of the session. APS will not be responsible for posters left up after the end of each poster session. No A-V is allowed in the poster sessions. Posters will be accessible from 10:00 am to 6:00 pm on Tuesday, Wednesday and Thursday. Consult the Poster Session Schedule (on page 9) for exact times and a breakdown of poster topics.
POSTER SESSION BREAKDOWN

3rd Floor, Exhibit Hall C

SESSION D1: Tuesday, 4:00–6:00pm

1–16 Spectroscopy, Lifetimes, Oscillator Strengths
17–25 Atom-Atom and Atom-Molecule Collisions
26–35 Atomic, Molecular and Charged Particle Collisions
36–43 Ion-Atom and Ion-Ion Collisions
44–49 Photonization, Photodetachment and Photodissociation
50–54 Time-Resolved Electron Dynamics and Attosecond Spectroscopy
55–59 Time-Resolved Molecular Dynamics and Femtochemistry
60–67 Strong Field Physics
68–70 Science with XUV and X-Ray Free-Electron Lasers
71–74 New Light Sources, Laser Technology and Short Pulse Generation
75–77 Matter Wave Interferometry
78–92 Quantum/Coherent Control
93–100 Quantum Measurement
101–105 Many-Body Physics in Quantum Simulation
106–110 Interfacing Nanophysics and Plasmonics with Cold Atoms
111–122 Cold Rydberg Gases and Plasmas
123–147 Cold and Ultracold Molecules
148–157 Spinor Gases and Magnetic Phenomena
158–168 Quantum Gases in Low Dimensions
169–174 Atomic Clocks
175–206 Fundamental Constants & Tests of Basic Laws

SESSION K1: Wednesday, 4:00–6:00pm

1–3 Atomic and Molecular Structure in Static Fields
4–11 Electron-Molecule Collisions
20–24 Long Range Interactions
25–31 Photonization, Photodetachment and Photodissociation
32–35 Time-Resolved Electron Dynamics and Attosecond Spectroscopy
36–40 Time-Resolved Molecular Dynamics and Femtochemistry
41–49 Strong Field Physics
50–52 Science with XUV and X-Ray Free-Electron Lasers
53–64 Nonlinear Optics
65–71 Atom and Matter Optics
72–75 Stopping and Slowing Light
76–79 Quantum Gates
80–92 Quantum Computation and Simulation
93–99 Quantum Networks and Protocols
100–108 Cold Atoms, Molecules and Plasmas
109–122 Bose-Einstein Condensates
123–133 Degenerate Fermi Gases
134–139 Vortices and Excitations in Degenerate Quantum Gases
140–147 Ultracold Collisions and Photoassociation Processes
148–166 Laser Cooling and Trapping
167–186 Atomic Magnetometers and Sensors
187–197 Electric-Dipole Searches and Tests of Fundamental Symmetries

SESSION Q1: Thursday, 4:00–6:00pm

1–11 Atomic and Molecular Structure and Properties
12–29 Electron-Atom Collisions
30–39 Photonization, Photodetachment and Photodissociation
40–52 Time-Resolved Molecular Dynamics and Femtochemistry
53–56 Science with XUV and X-Ray Free-Electron Lasers
57–58 Molecular Control and Imaging
59–60 Ultrafast X-Ray Processes
61–76 Quantum Optics
77–81 Quantum Information Theory
82–93 Hybrid Quantum Systems
94–103 Nonlinear Dynamics and Out-of-Equilibrium Trapped Gases
104–122 Dynamics of Cold Atoms in Optical Lattices
123–137 Quantum Phases and Atoms in Optical Lattices
138–147 Synthetic Gauge Fields & Spin Orbit Coupling in Cold Gases
148–151 Quantum Gases with Dipolar Interactions
152–160 Cold and Ultracold Molecules
161–168 Atom Interferometers
169–216 Precision Measurements
GUIDELINES FOR SPEAKERS

Visit the Speaker Ready Room (5th Floor, Room 558) to run through your presentation and ensure that it is smooth and technically trouble-free. Testing your presentation in the A-V Room prior to your presentation is strongly recommended to minimize equipment compatibility difficulties. If you encounter difficulties, consult with the A-V technicians.

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 30 minutes—25 minutes for presentation and 5 minutes for audience questions.

GUIDELINES FOR CHAIRS

If you are experiencing technical problems in your session, there will be a number listed in the session room that you may use to call for assistance from an A-V technician who will come to your session room. 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.

1. Prior to the session, check the Program-Changes Board in the registration area to see if any papers have been withdrawn.
2. Arrive at the meeting room about 15 minutes prior to the start of the session and familiarize yourself with the controls for lights, microphones, A-V equipment and the timer. If you encounter problems, you should immediately alert the A-V specialist or APS staff at the Information Booth located near the Meeting Rooms.
3. Start the session on time. Briefly introduce yourself, announce the first paper and author, and start the timer.
4. Please adhere to the time schedule listed in the Bulletin, so that simultaneous sessions are as closely synchronized as possible. Many attendees move from session to session in order to hear specific papers.
5. The allotted time for contributed papers is 12 minutes; for invited papers—30 minutes. If you are chairing a session that includes both contributed and invited papers please be aware of the different times allocated for each and set the timer as follows:
   • Contributed papers—set timer for 8 minutes to give initial warning, then set the final bell to go off 2 minutes later. When this time is up, allow 2 additional minutes for questions relating to the paper, thank the speaker and promptly introduce the next paper and speaker.
   • Invited papers—set timer for 20 minutes for initial warning, and the final bell to ring 5 minutes later. Then set the timer for 5 additional minutes for questions from the audience. Explain the timing system to the audience prior to the start of the session, and as often during the session as you think necessary.
6. The By-Laws of the Society request that speakers be asked to stop when their allotted time is up in a courteous but firm manner. Keep in mind that the session must end on time, and that the last speaker has just as much right to an audience as does the first speaker.
7. Should a speaker fail to appear, allow the preceding discussion to continue, or recess the session until it is time for the next scheduled paper. At the end of the session, call again for the regularly scheduled paper, if time allows.
8. When two or more papers are submitted by an author, only one of these will be assigned a scheduled presentation time within that session. It is assumed that the first author listed in the abstract is the person who will present the paper at the meeting. Other papers with the same first author will be assigned as supplementary papers, to be called for if time permits. If you notice that an author who has already presented a paper rises to present another paper, you should request that this paper be presented at the end of the regular program as a supplementary paper, if time allows.
9. If any problems arise that you are unable to handle, please inform the A-V tech assigned to the room, or go immediately to the APS Information Booth to alert the APS staff. You may contact the Speaker Ready Room directly at 401-458-6291. Any time used by the speaker and/or technicians to set up laptops for LCD (PowerPoint) presentations is deducted from the time allocated for the talk.