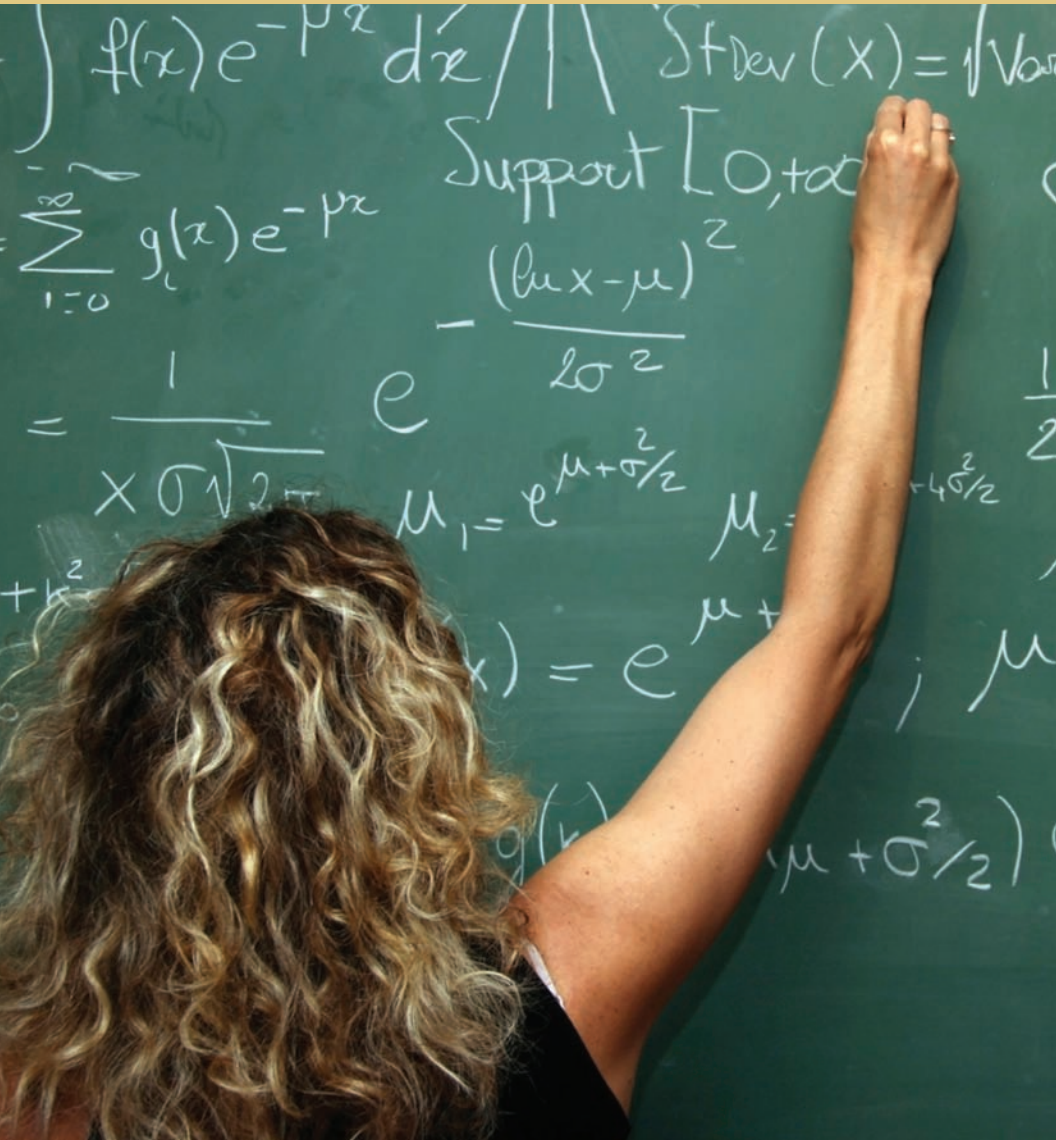


workshop for
**new physics and
astronomy faculty**



June 27-30, 2011

**American Center for Physics
College Park, MD**

New Faculty Advisory Committee

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**American Association
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American Astronomical Society



American Physical Society

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Breakout Session II

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Christopher Newport University
Breakout Session III

Benjamin Beppler

Gonzaga University
Breakout Session I

Jesse Berezovsky

Case Western Reserve University
Breakout Session II

Matt Berg

Mississippi State University
Breakout Session III

Jose Blanco-Pillado

Tufts University
Breakout Session I

Geoffrey Bonvallet

South Dakota State University
Breakout Session II

Chris Butenhoff

Portland State University
Breakout Session III

Maria Mercedes Calbi

University of Denver
Breakout Session I

Shane Aaron Catledge

University of Alabama
at Birmingham
Breakout Session II

Martin Centurion

University of Nebraska-Lincoln
Breakout Session III

Peter Chapman

US Military Academy
Breakout Session I

Dorina Chipara

The University of Texas
Pan American
Breakout Session II

Brad Conrad

Appalachian State University
Breakout Session III

Anca Constantin

James Madison University
Breakout Session I

Jodi Cooley

Southern Methodist University
Breakout Session I

Garnett Brendan Cross

Andrews University
Breakout Session II

Wouter Deconinck

College of William & Mary
Breakout Session III

Huaiyu Duan

University of New Mexico
Breakout Session I

Vladimir Florinski

University of Alabama
in Huntsville
Breakout Session III

Ayres Freitas

University of Pittsburgh
Breakout Session I

Carla Frohlich

North Carolina State University
Breakout Session II

Etienne Gagnon

Franklin & Marshall College
Breakout Session III

Rajib Ganguly

University of Michigan-Flint
Breakout Session I

Nicolas Giovambattista

Brooklyn College, CUNY
Breakout Session II

Jeff Gore

Massachusetts Institute of
Technology
Breakout Session III

Moira Gresham

Whitman College
Breakout Session I

Robert Group

University of Virginia
Breakout Session II

Quyen Hart

Regis University
Breakout Session III

Kenichi Hatakeyama

Baylor University
Breakout Session I

Niklas Hellgren

Messiah College
Breakout Session II

Conor Henderson

University of Alabama
Breakout Session III

Brooke Hester

Appalachian State University
Breakout Session I

Shawn Hilbert

Texas Lutheran University
Breakout Session II

Mikel Holcomb

West Virginia University
Breakout Session III

Jaewook Joo

University of Tennessee
Breakout Session I

Israel Klich

University of Virginia
Breakout Session III

James Kneller

North Carolina State University
Breakout Session I

Jens Koch

Northwestern University
Breakout Session II

Veronique Lankar

Manhattan College
Breakout Session III

David Lary

The University of Texas at Dallas
Breakout Session I

Oleksandr Levchenko

Michigan State University
Breakout Session III

Karen Lewis

The College of Wooster
Breakout Session I

Workshop Participants

Gang Li

University of Alabama
in Huntsville
Breakout Session II

Sophie Lin

Eastern Kentucky University
Breakout Session III

Amy Lytle

Franklin & Marshall College
Breakout Session II

Saisudha B. Mallur

Western Illinois University
Breakout Session III

Reina Maruyama

University of Wisconsin-Madison
Breakout Session I

Ivan Medvedev

Wright State University
Breakout Session II

Claudia Mewes

University of Alabama
Breakout Session I

Pavel Nadolsky

Southern Methodist University
Breakout Session II

Sean O'Malley

Rutgers University - Camden
Breakout Session II

Gabriela Petculescu

University of Louisiana
at Lafayette
Breakout Session I

Lara Phillips

University of Notre Dame
Breakout Session II

Geoffrey Poore

Union University
Breakout Session III

Alexey Pronin

Central College
Breakout Session II

Sylvia Ptasinska

University of Notre Dame
Breakout Session III

Xiangyun Qiu

George Washington University
Breakout Session I

James Rantschler

Xavier University of Louisiana
Breakout Session II

Eddie Red

Morehouse College
Breakout Session III

David Robertson

Principia College
Breakout Session I

David Rupke

Rhodes College
Breakout Session II

Anna Sajina

Tufts University
Breakout Session III

Giovanna Scarel

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Breakout Session III

David Schmitter

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Santa Cruz
Breakout Session II

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Breakout Session III

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Illinois Institute of Technology
Breakout Session I

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The Citadel
Breakout Session II

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Breakout Session I

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Breakout Session I

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Breakout Session II

Cynthia Trevisan

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Breakout Session I

Lubna Tumeh

Manhattan College
Breakout Session I

Anton Vorontsov

Montana State University
Breakout Session I

Kurtis Williams

Texas A&M University
Commerce
Breakout Session III

Dong Yu

University of California, Davis
Breakout Session I

Workshop Schedule

Monday, June 27

- 10:00 a.m.–4:00 p.m. **Workshop Registration – Hilton Garden Inn, Greenbelt**
Azalea Ballroom Foyer
- 11:45a.m.–12:45 p.m. **Lunch - Great American Grill, Hilton Garden Inn**
- 1:30–3:00 p.m. **Optional Workshop: Grant Opportunities**
NSF Program Officers
Dan Finotello, Materials Research
Duncan McBride, Undergraduate Education
Kathleen McCloud, Physics
Dogwood Ballroom
- 3:00–4:30 p.m. **Optional Workshop: Grant Opportunities at**
Research Corporation
Richard Wiener, Research Corporation
Dogwood Ballroom
- 4:30–5:00 p.m. **Break – Azalea Ballroom Foyer**
- 5:00–5:15 p.m. **Welcome and Opening Remarks**
Robert Hilborn, University of Texas at Dallas
Chair, New Physics and Astronomy Faculty Workshop
Beth Cunningham, Executive Officer, AAPT
Ted Hodapp, Director of Education, APS
Kevin Marvel, Executive Officer, AAS
Fred Dylla, Executive Director, AIP
Duncan McBride, National Science Foundation
- 5:15–6:15 p.m. **Large Group Session I**
“Introduction to Peer Instruction”
Julie Schell, Harvard University
James M. Fraser, Harvard University
- 6:15–7:30 p.m. **Dinner – Azalea Ballroom**
Sponsored by Research Corporation
- 7:30–8:30 p.m. *“Peer Instruction Practical Details”*
Julie Schell, Harvard University
James M. Fraser, Harvard University

Tuesday, June 28

- 6:30–7:30 a.m. **Breakfast – Hilton Garden Inn, Azalea Ballroom**
- 8:00 a.m. **Shuttle bus leaves for American Center for Physics**

Tuesday, June 28 (cont.)

- 8:30–9:30 a.m. **Large Group Session II** – Conference Room A
“Learner-Centered Teaching in Physics and Astronomy”
Edward Prather, University of Arizona
- 9:30–10:30 a.m. **Large Group Session III** – Conference Room A
“How to Get Your Students to Prepare for Every Class”
Andrew Gavrin, IUPUI
- 10:30–10:45 a.m. **Refreshment Break** – ACP Rotunda
- 10:45–11:30 a.m. **Small Group Sessions**
- *PhET (I)* – Conference Room A
Katherine Perkins, University of Colorado-Boulder
 - *Digital Libraries (II)* – Conference Room B
Bruce Mason, University of Oklahoma
 - *Lecture Tutorials (III)* – Conference Room C
Edward Prather, Gina Brissenden, University of Arizona
- 11:30–12:15 p.m. **Small Group Sessions**
- *PhET (II)* – Conference Room A
 - *Digital Libraries (III)* – Conference Room B
 - *Lecture Tutorials (I)* – Conference Room C
- 12:15–1:30 p.m. **Group Photo and Lunch** – ACP Cafeteria
- 1:30–2:15 p.m. **Small Group Sessions**
- *PhET (III)* – Conference Room A
 - *Digital Libraries (I)* – Conference Room B
 - *Lecture Tutorials (II)* – Conference Room C
- 2:30–3:30 p.m. **Large Group Session IV** – Conference Room A
“Assessment and Evaluation”
Noah Finkelstein, University of Colorado-Boulder
- 3:30–4:00 p.m. **Refreshment Break** – ACP Rotunda
- 4:00–4:15 p.m. **Large Group Session V** – Conference Room A
The “Inverted Classroom” Method
Andrew Rundquist, Hamline University
- 4:15–5:00 p.m. **Small Group Sessions**
Topics to be Announced
- 5:00–6:00 p.m. **Small Group Sessions**
Primarily Undergraduate Institutions – Conference Room C
M.S. and Ph.D. Granting Institutions – Conference Room A
- 6:00–7:00 p.m. **Dinner** – ACP Cafeteria
- 7:00–8:30 p.m. **Large Group Session VII** – Conference Room A
“The Physics IQ Test”
Richard Berg, University of Maryland

Wednesday, June 29

- 6:30–7:30 a.m. **Breakfast – Hilton Garden Inn, Azalea Ballroom**
- 7:45 a.m. **Shuttle bus leaves for American Center for Physics**
- 8:15–9:00 a.m. **Small Group Sessions**
- *Introductory Physics (I)* – Conference Room A
Ted Hodapp, APS
 - *Tenure Matters (II)* – Conference Room B
Robert Hilborn, University of Texas at Dallas
 - *Upper-level Physics (III)* – Conference Room C
Ken Krane, Oregon State University
- 9:00–9:45 a.m. **Small Group Sessions**
- *Introductory Physics (II)* – Conference Room A
 - *Tenure Matters (III)* – Conference Room B
 - *Upper-level Physics (I)* – Conference Room C
- 9:45–10:15 a.m. **Break – ACP Rotunda**
- 10:15–11:00 a.m. **Small Group Sessions**
- *Introductory Physics (III)* – Conference Room A
 - *Tenure Matters (I)* – Conference Room B
 - *Upper-level Physics (II)* – Conference Room C
- 11:00–12:00 p.m. **Large Group Session VIII – Conference Room A**
“Help Your Students Develop Expertise in Problem Solving”
Ken Heller, University of Minnesota
- 12:00–1:00 p.m. **Lunch – ACP Cafeteria**
- 1:00–2:00 p.m. **Large Group Session IX – Conference Room A**
“Active Learning with Interactive Lecture Demonstrations (ILD)”
David Sokoloff, University of Oregon
Ronald Thornton, Tufts University
- 2:00–2:45 p.m. **Small Group Sessions**
- *Physlets, Easy Java Simulations, and Open Source Physics (I)*
Conference Room A
Mario Belloni, Davidson College
 - *ILD/Real Time Physics (II)* – Conference Room B
David Sokoloff and Ron Thornton
 - *Problem Solving (III)* – Conference Room C
Ken Heller, University of Minnesota
- 2:45–3:30 p.m. **Small Group Sessions**
- *Physlets, Easy Java Simulations, and Open Source Physics (II)*
Conference Room A
 - *ILD/Real Time Physics (III)* – Conference Room B
 - *Problem Solving (I)* – Conference Room C

Wednesday, June 29 (cont.)

- 3:30–4:00 p.m. Refreshment Break – ACP Rotunda
- 4:00–4:45 p.m. Small Group Sessions
- *Physlets, Easy Java Simulations, and Open Source Physics (III)*
Conference Room A
 - *ILD/Real Time Physics (I)* – Conference Room B
 - *Problem Solving (II)* – Conference Room C
- 4:45–6:15 p.m. Large Group Session X
“Research in Physics Education: A resource for improving student learning” – Conference Room A
Lillian C. McDermott and Peter Shaffer,
University of Washington
- 6:15 p.m. Bus to Hilton Garden Inn
- 6:30–7:00 p.m. Reception – Azalea Ballroom
- 7:00–8:00 p.m. Dinner – Azalea Ballroom

Thursday, June 30

- 6:30–7:30 a.m. Breakfast – Hilton Garden Inn, Azalea Ballroom
Hotel Check-Out
- 8:00–8:45 a.m. Large Group Session XI
“Case Studies, Discussion of Student Behavior”
Dogwood Ballroom, Hilton Garden Inn
Tim Slater, Robert Hilborn
- 8:45–9:30 a.m. Large Group Session XII
“Time Management” – Dogwood Ballroom
Tim Slater, Robert Hilborn
- 9:30–9:45 p.m. Break – Azalea Ballroom Foyer
- 9:45–11:00 a.m. Large Group Session XIII
“Systemic Mentoring for Diversity” – Dogwood Ballroom
Diola Bagayoko, Southern University at Baton Rouge
- 11:00 –11:30 a.m. Final Summary, Evaluations and Adjournment



AAPT American Association of Physics Teachers

Founded in 1930, The American Association of Physics Teachers (AAPT) is dedicated to enhancing the understanding of physics through teaching. For our 10,000+ members who serve physics students across the spectrum of schools, colleges, and universities, AAPT is a professional home that helps bring together knowledgeable and innovative colleagues who care deeply about physics teaching and education, and that offers valuable resources and benefits.

We serve our members through programs, publications, and networking, but also reach out to the larger community of physics and science teachers—current and future—and we look after issues of significance in science education. Our national office works closely with our dedicated volunteers around the nation and beyond to promote a better understanding of physics at all levels. The association supports physics educators at all levels through our two publications, the *American Journal of Physics* and *The Physics Teacher*; NSF-funded programs including the Physics Teaching Resource Agents institutes; the digital physics library, ComPADRE (with APS and AIP); the Physics Teacher Education Coalition, PhysTEC (with APS and AIP); the Workshops for New Physics and Astronomy Faculty (with APS and AAS); our two national annual meetings; and the student programs and scholarships that we administer, including the Lotze Scholarship for Future Teachers, the High School Physics Teacher Grant, the Physics Bowl, and the U.S. Physics Olympiad.

Beth Cunningham
Executive Officer

American Association of Physics Teachers
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American Astronomical Society

The American Astronomical Society promotes the advancement of astronomy and closely related branches of science. It was founded in 1899. AAS members include professional researchers in the astronomical sciences, and also educators, students, and others interested in the advancement of astronomical research. The Society operates in five major areas: Publications, Meetings, Education, Public Policy and Employment in order to ensure that astronomy remains healthy and vital for the benefit of our profession and society at large. AAS publishes *The Astrophysical*

Journal and *The Astronomical Journal*, which are among the most important scholarly journals in the field. The *Bulletin of the American Astronomical Society* reports the latest institutional developments and documents the content of AAS and its divisions' annual meetings. More information about the Society's activities and membership are available on the AAS website, www.aas.org.

Kevin Marvel
Executive Officer

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American Physical Society

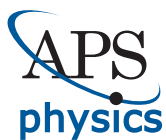
With more than 47,000 members worldwide, the American Physical Society works to advance and disseminate the knowledge of physics. Since its formation in 1899, it has been dedicated to providing its members and the international physics community with the latest research results through meetings and the most highly respected international journals in physics. These journals include *Physical Review Letters*, the *Physical Review* (with a *Special Topics* series including a journal on *Physics Education Research*), and *Reviews of Modern Physics*. The APS conducts more than 20 meetings per year, to connect physicists and disseminate physics knowledge and information relevant to the community. In addition, APS vigorously lobbies for funding for physics research and education, provides the physics community with timely information about government affairs, carries out studies of physics-based topics of importance to the country, and promotes the interests of the physics community through extensive public information efforts such as www.PhysicsCentral.com, a website for the public.

APS is actively involved in educational programs to improve undergraduate education and to improve the education of future physics and physical science teachers through its leadership in the Physics Teacher Education Coalition (www.PhysTEC.org). APS partners with AAPT in PhysTEC and on numerous other education programs including, the New Faculty Workshop, the ComPADRE digital library of educational resources, and conferences and workshops on education at various levels. For many years APS has worked to increase the number of female and minority physicists, and has several significant programs that advance these goals. Information about these and other APS programs can be found at www.aps.org.

Kate Kirby
Executive Officer

Theodore Hodapp
Director of Education and Diversity

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American Astronomical Society

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American Association of Physics Teachers

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