Reunion Meeting
November 2-4, 2012
American Center for Physics
College Park, MD
New Faculty Advisory Committee

Beth Cunningham, American Association of Physics Teachers
Paul Gueye, Hampton University
Jack Hehn, American Institute of Physics (retired)
Warren Hein, American Association of Physics Teachers (retired)
Charles Henderson, Western Michigan University
Robert Hilborn, American Association of Physics Teachers
Theodore Hodapp, American Physical Society
Kenneth Krane, Oregon State University
Jorgé A. López, University of Texas, El Paso
Tim McKay, University of Michigan
Laurie McNeil, University of North Carolina, Chapel Hill
Timothy Slater, American Astronomical Society
Steven Turley, Brigham Young University

Sponsored by

American Association of Physics Teachers
American Astronomical Society
American Physical Society
National Science Foundation
Workshop Leaders

Robert Hilborn
*Workshop Chair*
American Association of Physics Teachers
College Park, MD
rhilborn@aapt.org

Catherine Crouch
Swarthmore College
Swarthmore, PA
ccrouch1@swarthmore.edu

Karen Cummings
Southern Connecticut State University
New Haven, CT
cummingsk2@southernct.edu

Roman Czujko
American Institute of Physics
College Park, MD
rczujko@aip.org

Melissa Dancy
University of Colorado-Boulder
Boulder, CO
melissa.dancy@gmail.com

Charles Henderson
Western Michigan University
Kalamazoo, MI
charles.henderson@wmich.edu

Theodore Hodapp
American Physical Society
College Park, MD
hodapp@aps.org

Corrine Manogue
Oregon State University
Corvallis, OR
corinne@physics.oregonstate.edu

Laurie McNeil
University of North Carolina-Chapel Hill
Chapel Hill, NC
mcneil@physics.unc.edu

Tom Moore
Pomona College
Claremont, CA
tmoore@pomona.edu

Edward Redish
University of Maryland
College Park, MD
redish@physics.umd.edu

Toni Sauncy
American Institute of Physics
College Park, MD
tsauncy@aip.org

Bruce Sherwood
North Carolina State University
Raleigh, NC
bruce_sherwood@ncsu.edu

Carl Wieman
University of Colorado-Boulder
Boulder, CO
gilbertwieman@gmail.com
<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Breakout</th>
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<tr>
<td>Paulo Acioli</td>
<td>Northeastern Illinois University</td>
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<td>Kara Beauchamp</td>
<td>Cornell College</td>
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<td>Harold Butner</td>
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<td>Alex Chediak</td>
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<td>Debi Choudhary</td>
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<td>Julie Dahlstrom</td>
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<td>Trinanjan Datta</td>
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<td>Erin De Pree</td>
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<td>Theja DeSilva</td>
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<td>Jianjun Dong</td>
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<td>Santaneel Ghosh</td>
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<td>Tariq Gilani</td>
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<td>Mehmet Goksu</td>
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<td>Shane Hutson</td>
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<td>Andrew Piacsek</td>
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<td>Louis Rubbo</td>
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<td>Ellen Siem</td>
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<td>Susan Terebey</td>
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<td>Scott Yost</td>
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<td>Samya Zain</td>
<td>Susquehanna University</td>
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Workshop Schedule

Friday, November 2

4:00 p.m.  Registration – Holiday Inn-College Park

5:00–5:15 p.m.  Welcoming Remarks and Overview – Maryland Room
Bob Hilborn, Chair, Workshop for New Physics and Astronomy Faculty
Beth Cunningham, Executive Officer, American Association of Physics Teachers
Monica Plisch, Associate Director of Education and Diversity, American Physical Society
Kevin Marvel, Executive Officer, American Astronomical Society
Cathy O’Riordan, Vice-President, Physics Programs, American Institute of Physics
Duncan McBride, Division of Undergraduate Education, National Science Foundation

5:15–6:15 p.m.  How Theories of Learning Affect What you will do in Class on Monday
E. F. (Joe) Redish, University of Maryland – College Park

6:15–7:00 p.m.  Implementing and Sustaining Curricular Change, What Works and What Doesn’t
Charles Henderson, Western Michigan
Melissa Dancy, University of Colorado-Boulder

7:15–8:15 p.m.  Dinner – Holiday Inn – Room AB

8:15–9:00 p.m.  Posters and Reception with cash bar – Room CD

Saturday, November 3

6:00–7:30 a.m.  Breakfast – Holiday Inn – Moose Creek Steak House

7:45 a.m.  Shuttle bus leaves for American Center for Physics

8:15–8:30 a.m.  Overview of the Day – Conference Room A
Bob Hilborn, Chair, Workshop for New Physics and Astronomy Faculty

Rethinking the Content of Introductory Physics – Conference Room A

8:30–9:15 a.m.  Matter and Interactions
Bruce Sherwood, North Carolina State University
Saturday, November 3

9:15–10:00 a.m.  Six Ideas That Shaped Physics  
Tom Moore, Pomona College

10:00–10:15 a.m.  Break

Effective Leadership – Conference Room A

10:15–11:00 a.m.  So You are Asked to be Department Chair  
– What I Wish I had Known.  
Laurie McNeil, former chair, Department of Physics,  
University of North Carolina – Chapel Hill

Interactive Engagement Teaching Techniques - Breakouts

11:00–11:45 a.m.  Peer Instruction and Clickers – Conference Room A  
Just-In-Time Teaching – Conference Room B  
Collaborative Group Problem Solving and related  
– Conference Room C

11:45–12:15 p.m.  Enhancing Your Undergraduate Physics Program  
SPS – Toni Sauncy, Director of the Society of Physics Students,  
American Institute of Physics  
Career-Mentoring Site Visit Project – Roman Czujko,  
Director of the Statistical Research Center,  
American Institute of Physics

12:15–1:30 p.m.  Group Photo and Lunch

1:30–2:15 p.m.  Introductory Physics for the Life Sciences  
Catherine Crouch, Swarthmore College

2:15–3:00 p.m.  Introductory Physics for the Life Sciences (I)  
Catherine Crouch  
Matter and Interactions (II) – Conference Room B  
Bruce Sherwood  
Six Ideas That Shaped Physics (III) – Conference Room C  
Tom Moore

3:00–3:15 p.m.  Break

3:15–4:00 p.m.  Introductory Physics for the Life Sciences (II)  
Matter and Interactions (III) – Conference Room B  
Six Ideas That Shaped Physics (I) – Conference Room C

4:00–4:45 p.m.  Introductory Physics for the Life Sciences (III)  
Matter and Interactions (I) – Conference Room B  
Six Ideas That Shaped Physics (II) – Conference Room C
Saturday, November 3 continued

4:45–5:30 p.m. **Assessment and Evaluation**
Karen Cummings, Southern Connecticut State University

5:30 p.m. **Shuttle bus leaves ACP for Holiday Inn**

6:00–6:30 p.m. **Reception and Cash Bar** – Holiday Inn, Adirondack Room

6:30–7:30 p.m. **Dinner** – Adirondack Room

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**Sunday, November 4**

7:00–8:00 a.m. **Breakfast** – Holiday Inn – Moose Creek Steak House

8:15–8:30 a.m. **Enhancing Your Undergraduate Physics Program** – Room AB
PhysTEC – Ted Hodapp, Director of Education and Diversity, American Physical Society

Re-envisioning Upper-Level Physics

8:30–9:15 a.m. **Active-engagement in Upper-Division Physics**
Corinne Manogue, Oregon State University

9:15–10:15 a.m. **Keynote Speaker**
*Taking a Scientific Approach to Physics Teaching*
Carl Wieman, University of British Columbia
University of Colorado – Boulder

10:15–10:30 a.m. **Break**

10:30–11:15 a.m. **Table Breakout groups on leadership and change issues**
Bob Hilborn and Carl Wieman
Characteristics of effective departmental leaders
Characteristics of ineffective departmental leaders

11:15–11:45 a.m. **Improving the Workshop for New Physics and Astronomy Faculty**
Bob Hilborn

11:45 a.m. **Concluding Remarks and Farewell**
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
One Physics Ellipse, College Park, MD 20740-0845; 301-209-3340; www.aapt.org

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*

American Astronomical Society  
2000 Florida Ave. NW, Suite 400, Washington, DC 20009-1231; 202-328-2010; www.aas.org

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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*  
American Physical Society  
One Physics Ellipse, College Park, MD 20740-3844; 301-209-3200; www.aps.org