

## *The American Physical Society*

### *Topical Group on Precision Measurement and Fundamental Constants*

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Newsletter No. 39

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Fred E. Wietfeldt, Tulane University  
Secretary-Treasurer, GPMFC

#### **2013 April APS and DAMOP Meetings**

The 2013 April APS meeting will be held at the Sheraton Denver Downtown Hotel in Denver, Colorado April 13–16, 2013. All scientific and plenary sessions, as well as all ancillary activities, will take place in the Sheraton, located on Denver's 16th Street Pedestrian Mall. The deadline for contributed abstracts is January 11 and the early registration deadline is February 22. GPMFC will sponsor an invited session: "Weak Interactions - in memory of Stuart Freedman" with speakers Gerry Garvey, Karsten Heeger and Zheng-Tian Lu, chaired by John Schiffer.

GPMFC will also meet with DAMOP this year in Quebec, June 3–7, 2013 and co-sponsor two invited sessions.

#### **Topical Group Annual Meeting**

The 2013 annual meeting, business meeting, and executive committee meeting of the Topical Group will be held during the April APS meeting in Denver, CO, April 13–16, 2013 (see above).

#### **GPMFC Travel Support for Young Scientists**

Each year, the Topical Group provides partial travel support to several graduate students and post-docs to present contributed papers at scientific meetings in the area of precision measurement and fundamental constants. Support is available to attend either the GPMFC annual meeting (April APS in 2013) or any other meeting in which GPMFC is sponsoring a session.

To be eligible for support, the applicant must (1) be a graduate student or postdoc at a college, university, or national laboratory and engaged in research in the area of precision measurements and fundamental constants; (2) be a member in good standing of the APS and GPMFC; and (3) have submitted an abstract to present a contributed talk or poster in a session of the regular meeting, or in a GPMFC-related session of another meeting. To apply, send a request by email to the Secretary-Treasurer of the Topical Group, Fred Wietfeldt ([few@tulane.edu](mailto:few@tulane.edu)), with a copy of your abstract attached, on or before the deadline for submitting abstracts to the meeting. If you are also applying for support from another APS unit, please state that in your application. Support is limited to a maximum of \$600 per traveler.

Please encourage your students and young colleagues to take advantage of this program.

## APS Meetings Childcare Program

The APS Committee on the Status of Women in Physics (CSWP) has small grants up to \$400 available for meeting attendees who are bringing small children to a meeting or who incur extra expenses in leaving their children at home (i.e., extra daycare or babysitting services). GPMFC will participate in this program beginning with the 2013 annual meeting in Denver. For more information contact GPMFC Secretary-Treasurer Fred Wietfeldt ([few@tulane.edu](mailto:few@tulane.edu)).

## Future Programs

One of the main goals of the Topical Group is to present interesting and engaging programs that reflect both the diversity of interests of our membership and the common themes of precision measurement. Our program committee seeks topics for next year's meetings, and your suggestions are welcome, particularly in interdisciplinary, cross-cutting, or new areas. Members with ideas for future program topics should contact the Program Committee Chair Mike Romalis ([romalis@princeton.edu](mailto:romalis@princeton.edu)).

## 2013 Francis M. Pipkin Award:

The Francis M. Pipkin Award honors research accomplishments by a young scientist in the interdisciplinary area of precision measurement and fundamental constants. Congratulations to the 2013 winner, **Randolf Pohl**, Max Planck Institute of Quantum Optics, for the observation of the 2S state of muonic hydrogen and for a precision measurement of the Lamb shift of muonic hydrogen, which has significant implications for the determination of the charge radius of the proton.

## Congratulations to our 2012 APS Fellows:

**Fritz Riehle**, Physik-Tech Bundesanstalt, for his pioneering scientific contributions to the optical frequency standards, high resolution spectroscopy, atom interferometry, and ultracold atomic gases and for his leadership role in the international standards community.

**David Shiner**, University of North Texas, for his work on precision laser measurements in the helium atom, especially helium fine structure and helium nuclear size using the isotope shift.

The Topical Group is entitled to propose candidates for Fellowship in the APS. The Fellowship Committee is chaired by Dmitry Budker ([budker@berkeley.edu](mailto:budker@berkeley.edu)). Please consider nominating a worthy and accomplished colleague for this honor. Nomination instructions and the online form can be found at <http://www.aps.org/programs/honors/fellowships/nominations.cfm>

## 2013 GPMFC Election

In the upcoming year we will be electing two new Members at Large of the Executive Committee, a new Secretary/Treasurer, and a new Vice Chair who is in the succession for Chair. Please contact the Chair of the Nominating Committee, Eric Hudson ([eric.hudson@ucla.edu](mailto:eric.hudson@ucla.edu)) to suggest nominees.

## Upcoming Conferences and Meetings of Interest

3rd International Symposium on Terahertz Nanoscience (TeraNano III)

<http://tinyurl.com/teranano2012>

December 10–12, 2012

Honolulu, Hawaii

2013 AAPT Winter Meeting

<http://www.aapt.org/Conferences/wm2013/>

January 5–9, 2013

New Orleans, Louisiana

Annual International Conference on Optoelectronics, Photonics & Applied Physics (OPAP 2013)

<http://www.physics-conf.org/>

February 4–5, 2013

Singapore

2013 International Conference on Nuclear Data for Science & Technology (ND2013)

<http://www.bnl.gov/nd2013>

March 4–8, 2013

New York, New York

APS March Meeting 2013

<http://www.aps.org/meetings/march/index.cfm>

March 18–22, 2013

Baltimore, Maryland

2013 April APS Meeting

<http://www.aps.org/meetings/april/index.cfm>

April 13–16, 2013

Denver, Colorado

44th Annual DAMOP Meeting

<http://www.aps.org/units/damop/meetings/annual/index.cfm>

June 3–7, 2013

Quebec City, Quebec

21st International Conference on Laser Spectroscopy (ICOLS 2013)

<http://icols.berkeley.edu>

June 9–14, 2013

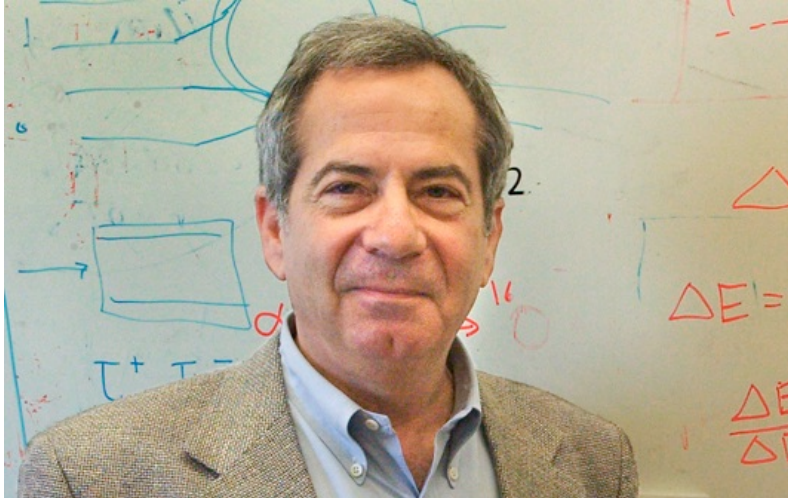
Berkeley, California

The International Conference on Coherent and Nonlinear Optics (ICONO)

<http://iconolat13.phys.msu.ru>

June 18–22, 2013

Moscow, Russia



### **In Memorium: Stuart Freedman**

Stuart Jay Freedman, Chair of the APS Topical Group on Precision Measurement and Fundamental Constants, passed away suddenly on November 9, 2012 while attending a physics conference in Santa Fe, NM. Stuart was an outstanding experimental physicist who made major contributions to the fields of nuclear, particle, and atomic physics. We have lost a great friend and colleague as well as an esteemed scientist and international advocate for physics and precision measurements.

Stuart received his B.S. in Engineering Physics in 1965 and his Ph.D. in Physics in 1972, both from the University of California, Berkeley. For his doctoral thesis Stuart measured the linear polarization correlation of photons emitted from calcium atoms, a Bell-type inequality, ruling out "local hidden variable" theories of quantum mechanics. Following teaching appointments at Princeton and Stanford, he moved to Argonne National Laboratory in 1982 and later became a professor in the University of Chicago's Fermi Institute. In 1991 he returned to Berkeley, joining Berkeley Lab and U.C. Berkeley while maintaining his affiliations with Argonne and Chicago. In 1999 Stuart was named to the Luis W. Alvarez Memorial Chair in Experimental Physics at U.C. Berkeley.

Stuart was fond of pointing out that he made a nice career of "measuring zero". He is well known for his ground breaking null results searching for free quarks, superluminal particles, very light Higgs bosons, axions, and massive (17 keV) neutrinos. But he made important non-zero measurements as well; for example he was U.S. spokesman of KamLAND which made the first observation of flavor oscillations in antineutrinos from reactor sources, confirming that neutrinos have mass.

His numerous awards and honors include election to the National Academy of Sciences in 2001, election to the American Academy of Arts and Sciences and named a Fellow of the American Association for the Advancement of Science, both in 2006, and the 2007 Tom W. Bonner Prize from the American Physical Society.

Stuart is survived by his wife Joyce, his son Paul and family, and his sister Ina.

The U.C. Berkeley Physics Department is creating a new fellowship: the *Stuart J. Freedman Graduate Fellowship in Physics*. It will be awarded to a top graduate student, with a preference for a female, who chooses to work in the fields of nuclear, AMO or particle physics. To contribute to the endowment for this fellowship contact Maria Hjelm, [mhjelm@berkeley.edu](mailto:mhjelm@berkeley.edu), (510) 642-5979.

**2012-2013 GPMFC Executive Committee (year term ends in parentheses)**

**Chair:**

Michael Romalis (2014)  
Princeton University  
[romalis@princeton.edu](mailto:romalis@princeton.edu)

**Member at Large:**

Mark Raizen (2013)  
University of Texas, Austin  
[raizen@physics.utexas.edu](mailto:raizen@physics.utexas.edu)

**Chair Elect:**

Dmitry Budker (2014)  
University of California, Berkeley  
[budker@berkeley.edu](mailto:budker@berkeley.edu)

**Member at Large:**

Bill Marciano (2014)  
Brookhaven National Laboratory  
[marciano@bnl.gov](mailto:marciano@bnl.gov)

**Vice Chair:**

Dmitry Budker (2013)  
University of California, Berkeley  
[budker@berkeley.edu](mailto:budker@berkeley.edu)

**Member at Large:**

Holger Müller (2014)  
University of California, Berkeley  
[hm@berkeley.edu](mailto:hm@berkeley.edu)

**Past Chair:**

Jun Ye (2013)  
NIST/ University of Colorado-JILA  
[junye@jilau1.colorado.edu](mailto:junye@jilau1.colorado.edu)

**Member at Large:**

Eric Hudson (2015)  
UCLA  
[eric.hudson@ucla.edu](mailto:eric.hudson@ucla.edu)

**Secretary/Treasurer:**

Fred Wietfeldt (2013)  
Tulane University  
[few@tulane.edu](mailto:few@tulane.edu)

**Member at Large:**

Tanya Zelevinsky (2015)  
Columbia University  
[tz@phys.columbia.edu](mailto:tz@phys.columbia.edu)

**Member at Large:**

Chen-Yu Liu (2013)  
Indiana University, Bloomington  
[cl21@indiana.edu](mailto:cl21@indiana.edu)