

March 2005 GIMS Newsletter

Contents:

- March APS Meeting GIMS Special Events
- Keithley Award Winner
- GIMS APS Fellows
- Secretary-Treasurer's Report
- 2004 Officers List

GIMS Special Events

Important Reminders!

Keithley Award Session 3/22 5:30 PM LACC - 515A	GIMS Business Meeting
Session # M4	<i>...Following the Keithley Award Session</i>
Studying Quantum Liquids and Solids by a Classical Technique	LACC - 518
Dwight Adams, University of Florida	Session # M44
	All GIMS members welcome!
	Dinner to follow at the <i>Palm Restaurant</i> across from the Convention Centre.

GIMS Business Meeting Agenda Items

Item one for discussion:

A proposal for a deeper level of organization of GIMS to be discussed at the GIMS business meeting in L.A. Other units within the APS have a level of organization below the executive committee that GIMS has been missing. The subgroups and related subcommittees put forward nominations for fellowship, and they propose March meeting focus sessions and March meeting invited speaker symposia. The responsibility within GIMS for soliciting fellowship nominations has fallen completely on the Vice-Chair, and the responsibility for the

March meeting program has fallen on the Chair-Elect. I propose that subgroups be formed along instrument interests. I suggest the formation of the following subgroups/committees:

1. High magnetic field instrumentation
2. Synchrotron radiation instrumentation
3. Acoustic and photoacoustic instrumentation

4. Thermometry and thermal control instrumentation
5. Scanning probe instrumentation

These mostly capture the GIMS interests in recent years. A chair would be need to step forward for each of these. The list is not meant to be cast in stone. I believe this deeper level of organization will strengthen GIMS and boost our membership.

Item two for discussion:

A proposal for monthly GIMS conference calls to update executive committee and interested members on activities and planning. The goal is to increase communication and active membership.

GIMS March APS Meeting Session Schedule

March 21 2005 8:00AM, Monday

Session A4 [Chemical and Biological Sensing with Microcantilevers](#)

Sponsor: GIMS Chair: *A.T. Macrander, Argonne National Lab.*

Room: *LACC 515A*

Invited Speakers: *Datskos , Craighead , Adams , Carlisle , Bashir*

Session A18 [Focus Session: Semiconductor Characterization](#)

Sponsor: FIAP GIMS Chair: *David Seiler, NIST* Room: *LACC 406A*

Invited Speakers: *Diebold*

March 21 2005 11:15AM, Monday

Session B44 [X-ray and Neutron Scattering](#)

Sponsor: GIMS Chair: *Bennett Larson, Oak Ridge National Lab* Room: *LACC 518*

March 21 2005 2:30PM, Monday

Session D4 [The New DOE Centers for Nanoscale Science](#)

Sponsor: GIMS DMP Chair: *A.T. Macrander, Argonne National Lab* Room: *LACC 515A*

Invited Speakers: *Isaacs , Lowndes , Hwang , Michalske , Neaton*

March 22 2005 5:30PM, Tuesday

Session M4 [Keithley Award](#)

Sponsor: GIMS Chair: *David Seiler, NIST* Room: *LACC 515A*

Invited Speakers: *Adams*

Session M44 [GIMS Business Meeting](#)

Sponsor: GIMS Room: *LACC 518*

Immediately following Keithley Award Session...

March 23 2005 8:00AM, Wednesday

Session N22 [High Magnetic Fields/Electronic and Photonic Devices](#)

Sponsor: GIMS Chair: *Eric Palm, National High Magnetic Field Lab* Room: *LACC 409B*

March 23 2005 2:30PM, Wednesday

Session S44 [Magnetic and Force Microscopy](#)

Sponsor: GIMS Chair: *Mark Hersam, Northwestern University* Room: *LACC 518*

March 24 2005 8:00AM, Thursday

Session U44 [Focus Session: Interfaces, Characterization, and Fabrication](#)

Sponsor: GIMS Chair: *Karen Waldrip, Sandia National Labs* Room: *LACC 518*

Invited Speakers: *Zavadil, Thornberg*

March 24 2005 11:15AM, Thursday

Session V44 [MEMS/NEMS: Applications and Resonators](#)

Sponsor: GIMS Chair: *Danhong Huang, Air Force Research Lab* Room: *LACC 518*

March 24 2005 2:30PM, Thursday

Session W44 [Microscopy: Near-field, X-ray, Optical, and Probe](#)

Sponsor: GIMS Chair: *Joseph Stroscio, NIST* Room: *LACC 518*

Joseph F. Keithley Award For Advances in Measurement Science

**2005 Joseph F. Keithley
Award Recipient
E. Dwight Adams
*University of Florida***

Studying Quantum Liquids and Solids by a Classical Technique

^3He and ^4He liquids and solids have many unusual bulk properties as a result of their quantum behavior. For example, they remain liquids to absolute zero and the ^3He melting pressure has a minimum as well that makes it useful for thermometry. The minimum occurs because of exchange effects in the solid that cause it to have more entropy than the liquid below the temperature of the minimum. Solid ^3He exhibits at least five magnetic phases at temperatures

near 1 mK. All of these phenomena and others can be investigated to advantage by a high-resolution measurement of the pressure that the solid exerts on its container using a capacitive pressure transducer. A brief description of the transducer will be given, then a review of some of the measurements that have been made with it. Recent, previously unreported results on magnetic ordering in solid ^3He , will be presented.

Congratulations to the new GIMS Sponsored APS Fellows

Cleland, Marshall Robert

Ion Beam Applications

Citation: For leadership in and contributions to the development and production of many ion and electron accelerators for research, medicine and industry, and for the promotion of practical applications of ionizing radiation.

Zollner, Stefan

Motorola, Inc

Citation: For advancement and application of measurements enabling the development of semiconductor materials and processes for microelectronic devices, especially using spectroscopic ellipsometry and high-resolution x-ray diffraction.

Pinnaduwege, Lal Ariyaratna

Oak Ridge National Laboratory

Citation: For his pioneering work in developing micromechanical cantilever-based sensors for detection of explosive vapors and elucidation of fundamental physical principles underlying the thermally-induced nanodeflagations for chemical selectivity.

Budget & Membership Report

As of 12/31/2004 GIMS total assets are \$59,736.79.

GIMS Membership stands at 548 or 1.26% of APS.

2004 Leadership:

OFFICERS

Chair

Eric Palm

(Term expires 3-05)

NHMFL

FSU

1800 E Paul Dirac Dr

Tallahassee FL 32306

Secretary-Treasurer

Chris Armstrong

(Term expires 3-05)

Keithley Instruments

28775 Aurora Rd

Solon, OH 44139

440-498-3068 (P)

850-644-1325 (P)
850-644-0534 (F)
palm@magnet.fsu.edu

Chair-Elect

Albert T. Macrander
Editor, Review of Scientific
Instruments
APS/401
Argonne National Laboratory
9700 S Cass Avenue
Argonne IL 60439-4814
630-252-5672 (P)
630-252-3222 (F)
macrander@aps.anl.gov

Past & Nominating Comm. Chair

Dwight G. Rickel
(Term expires 3-05)
Los Alamos National Laboratory
MS E536
Los Alamos NM 87545
505-667-1222 (P)
505-665-4311 (F)
drickel@lanl.gov

440-542-8017 (F)
carmstrong@keithley.com

Vice-Chair

Karen E. Waldrip, Ph.D.
Sandia National Laboratories
Semiconductor Material & Device
Sciences, Dept. 1123
P.O. Box 5800, MS 0601
Albuquerque, NM 87185-0601
(ofc) 505.844.1619
(lab) 505.845.0854
(fax) 505.844.3211

Fellowship Committee Chair

Karen Waldrip
see address above

EXECUTIVE COMMITTEE

Joseph Stroschio

(Term expires 3-06)
Bldg 220 Rm B206
NIST
100 Bureau Dr Mail Stop 8412
Gaithersburg, MD 20899-8412
Phone (301) 975-3716
Fax (301) 926-2746
joseph.stroschio@nist.gov

Peter Weichman

(Term expires 3-06)
Alphatech, Inc
6 New England Executive Park
Burlington MA 01803
Phone (781) 273-3388
Fax (781) 273-9345
pbw@alphatech.com

P. Chris Hammel

(Term expires 3-05)
Los Alamos National Laboratory
MS K764
Los Alamos, NM 87545
505-665-0759 (P)
505-665-7652 (F)
pch@lanl.gov

Rachael Heron

(Term expires 3-07)
Janis Corp.
Research
rheron@janis.com
978 657 8750

Michael Gold

Charles Agosta

(Term expires 3-05)
Dept of Physics & Astronomy
Univ of New Mexico
800 Yale Blvd
Albuquerque, NM 87131
505-277-2086 (P)
505-277-1520 (F)
mgold@unm.edu
Albert T. Macrander (Ex Officio)
See address above: Chair-elect

(Term expires 3-05)
Physics Dept
Clark Univ
950 Main St
Worcester MA 01610
508-793-7736 (P)
508-793-8861 (F)
cagosta@clarku.edu