



PROTON



PHYSICS REPORT ON THINGS OF NOTE

VOLUME 6 NUMBER 9

FACULTY NEWS



Professor Art Hebard to be Honored by the American Physical Society

Source: CLAS News

Distinguished Professor of Physics, **Art Hebard**, together with professors Jun

Akimitsu of Aoyama-Gakuin University and Robert Haddon of the University of California-Riverside, has been named the 2008 recipient of the American Physical Society's James C. McGroddy Prize for New Materials for the discovery of high temperature superconductivity in non-oxide systems. "I am delighted to have received news of this award and am honored that I have been selected to be included in such a distinguished group of co-recipients," Hebard said.

The award was established in 1999 to recognize and encourage outstanding achievement in the science and application of new materials. Hebard was one of the co-discoverers of superconductivity in potassium-doped C60. His breakthrough paper on the topic was "Superconductivity at 18K in Potassium-doped C60," which, according to Web of Science, has been cited more than 1,900 times since it was first published in 1991. Hebard received his B.A. in physics from Yale University, magna cum laude, in 1962. He earned an M.S. and Ph.D. in physics from Stanford University in 1964 and 1971, respectively. Before coming to UF in 1996, he worked as a member of the technical staff at AT&T Bell Telephone Laboratories for nearly 25 years.

Hebard will be honored during the March 2008 meeting of the American Physical Society, where he will receive a certificate and a share of the \$5,000 prize. "Art is an internationally renowned expert on the electronic properties of materials," said Physics Chair **Alan Dorsey**. "He's made a number of important contributions: discovering new materials, inventing new measurement techniques, and creating new applications for novel materials. The McGroddy Prize is an important and well-deserved recognition of but one of his many scientific achievements."



Prof Eugene Dunnam Retires

After nearly 50 years of distinguished service (49 to be precise), **Professor Gene Dunnam** will retire at the end of this semester. The

Department of Physics will hold a party in his honor on Friday, November 30, starting at 5:00pm in 2205 NPB (with adult refreshments), so please mark your calendars.

Darlene Latimer (darlene@phys.ufl.edu) has graciously agreed to collect donations for the party and a gift for Gene.



Prof Gregory Boebinger is Elected to the rank of Fellow of the AAAS

Gregory Boebinger, Director of the National High Magnetic Field

Laboratory and Professor of Physics at Florida State University and UF, has been elected to the prestigious rank of Fellow of the American Association for the Advancement of Science (AAAS). This honor was formally announced in the October 26 issue of the journal, Science. Boebinger was recognized "for research in high-temperature superconductivity and two-dimensional electron and hole systems, including the development of pulsed magnetic fields as a prominent research tool."

A leading researcher in high-temperature superconductivity, Boebinger came to FSU in 2004 to become Director of the National High Magnetic Field Laboratory, where he continues to use intense magnetic fields to suppress superconductivity and investigate its nature. He regularly collaborates with colleagues at Los Alamos National Laboratory. See *Boebinger*, page 4

Fall 2007 SEMINAR Schedule

Astrophysics
Fridays @ 4:00pm in Room 2165 NPB

Condensed Matter Physics
Mondays @ 4:05pm in Room 2165 NPB

High Energy Physics
Tuesdays @ 2:00pm and Fridays @ 2:00pm in Room 2165 NPB

Physics Colloquium
Thursdays @ 4:05 in Room 1002 NPB

Quantum Theory
Wednesdays @ 4:05pm in Room 2205 NPB

Graduate Students
Wednesdays @ 5:15pm in Room 2165 NPB

EDITORS

Alan Dorsey, Chair
Pam Marlin



college of liberal arts & sciences

UF UNIVERSITY of FLORIDA
The Foundation for The Gator Nation



The Institute for Fundamental Theory Special Seminar

On November 19, at 4:00PM, in 2205 NPB, the University of Florida will be honored to host a lecture by **Sir Michael Berry**, F.R.S., which is entitled "Hamilton's Diabolical Singularity". Sir Michael is a renown physicist and an extraordinary expositor of complex physical phenomena to both lay and professional audiences. He is famous among other things for the Berry phase, a phenomenon observed, e.g., in quantum mechanics and optics. He specializes in semi classical physics (asymptotic physics, quantum chaos), applied to wave phenomena in quantum mechanics and other areas such as optics. He is the (co-) author of over 400 articles and books, and the winner of numerous awards as listed below:

Prizes and Honors

1978 Maxwell Medal and Prize of the Institute of Physics; 1990 Julius Edgar Lilienfeld prize of the American Physical Society; 1990 Paul Dirac Medal and prize of the Institute of Physics; 1990 Royal Medal of the Royal Society; 1993 Naylor Prize, London Mathematical Society; 1994 Louis-Vuitton Moët-Hennessey 'Science for Art' prize (Paris); 1995 Hewlett-Packard Europhysics Prize; 1996 Dirac Medal and Prize of the International Centre for Theoretical Physics Trieste; 1996 Knight Bachelor Queen's Birthday Honours; 1997 Kapitza Medal of the Russian Academy of Sciences, 1998 Wolf Prize in Physics; 2000 Ig Nobel prize in physics; 2001 Onsager Medal (Norwegian Technical University, Trondheim); 2002 Novartis/Daily Telegraph 'Visions of Science' competition, 1st prize (Science as Art), 3rd prize (Science Concepts); 2005 Polya Prize, London Mathematical Society; 2005 Chancellor's Medal, University of Bristol

Societies

1982 Elected to the Royal Society of London; 1983 Elected Fellow of the Royal Society of Arts; 1983 Elected Fellow of the Royal Institution; 1986 Elected Member of the Royal Society of Sciences, Uppsala; 1989 Elected member of the European Academy; 1990 Elected to Indian Academy of Sciences; 1995 Elected Foreign Member of the National Academy of Science of the USA; 1995 Elected Member of the London Mathematical Society; 1998 Elected a Governor of the Weizmann Institute; 1999 Honorary Fellow, Institute of Physics; 2000 Elected Foreign Member of Royal Netherlands Academy of Arts and Sciences; 2005 Elected to Royal Society of Edinburgh

Seminar Abstract

Hamilton's first application of the concept of phase-space – later so fruitful in physics, especially in the hands of Dirac – was a prediction in optics: conical refraction in biaxial crystals. This was one of the first successful predictions of a qualitatively new phenomenon using mathematics, and created a sensation. At the heart of conical refraction is a singularity, anticipating the fermionic sign change underlying the Pauli exclusion principle and the conical intersections now studied in quantum chemistry. The light emerging from the crystal contains many subtle diffraction details, whose definitive understanding and observation have been achieved only recently. Generalizations of the phenomenon involve radically different mathematical structures.

A Reception will follow the seminar.

UPCOMING SEMINARS

FOR TIMES PLEASE SEE PAGE 1

CONDENSED MATTER

NOV 19, MICHAEL BERRY (IFT),
UNIVERSITY OF BRISTOL
NOV 26, GLEB FINKELSTEIN,
DUKE UNIVERSITY

COLLOQUIUM

NOV 1, SERGEI SHABANOV
NOV 8, SHALAEV,
UNIVERSITY OF INDIANA, PURDUE
NOV 15, RUSSELL BOWERS, UF CHEM
NOV 29, BRAD MARSTON,
BROWN UNIVERSITY

QTP

NOV 7, NEDIALKA LORDANOVA,
GEORGIA SOUTHWESTERN UNIVERSITY

GRADUATE STUDENTS

NOV 7, YOUSSEF FALTAS
NOV 14, ALIX PRESTON

SEMINAR SCHEDULES ARE LISTED AT
<http://www.phys.ufl.edu/seminars>

News Bits



Professor **Heather Ray** received a \$500 travel award to attend the SNS users meeting (Spallation Neutron Source, at Oak Ridge

Laboratory, TN), from October 8 - 10, 2007. Heather presented a poster on a proposed neutrino experiment.



The Department of Physics welcomes **Martin Meder**, who has joined the High Energy Physics Group as Office Manager. Martin comes from the College of

Pharmacy and has been with UF for 19 years.



STUDENT NEWS

SCIENCE FAIR TIME!!



Graduate Students: From mid-November to mid-December, local middle and high schools will have Science Fairs. Judges are needed to help evaluate the projects and to encourage the young students. A typical event will require one morning of your time, and all of you are qualified to be judges.

The schedule and registration form for judging may be found at: <http://www.phys.ufl.edu/~meisel/2007-Science-Fair-Judge-Info.doc> In the past, I have judged with physics graduate students, and they enjoyed the experience, which they listed on their CVs. If you are interested, I suggest that you consider pairing with another physics graduate student, so you can carpool and exchange ideas about the process and projects. In every instance, there was plenty of food for the judges. If you have any questions, please let me know, and Ms. Pam Fitzgerald (fitzgepp@sbac.edu), who coordinates the volunteers for Alachua County Public Schools, would be happy to hear from you.

These local fairs should not be confused with the Alachua Region Science and Engineering Fair that will be held at Santa Fe Community College. Judging for this large event will be February 29, 2008. <http://tlc.sbac.edu/scifair/html/dates.htm>

-**Mark Meisel**, Graduate Coordinator, meisel@phys.ufl.edu



Congratulations to **Michael Schmitt**, physics graduate student, who was married September 22, 2007 at the Savannah Grande in Gainesville to **Heather Yerby** (now Heather Schmitt), who is a UF graduate (B.S. Animal Sciences, class of '06).

Photo by John Mocko

Tara Dhakal, graduate student in **Prof Amlan Biswas'** group, has been given a travel award of \$500 to attend the 52nd Magnetism and Magnetic Materials Conference to be held in Tampa from November 5 - 9, 2007. Tara will be giving an oral presentation entitled "Growth of mixed phase manganite nanoparticles using substrate induced strain". The talk is scheduled for November 9, 2007 at 3:24 pm.

CAREER RESOURCE CENTER

UF UNIVERSITY of FLORIDA

The Career Resource Center will present 'Career Options' for Astronomy, Chemistry and Physics Majors on Tuesday, November 13th at 4:05pm at the Career Resource Center, Reitz Union.

CCMS *Upcoming 2008 Summer Lecture Series*

The Center for Condensed Matter Sciences organizes, and funds (budget permitting) an annual Summer Lecture Series (CCMS-SLS) in the Department of Physics. The CCMS-SLS will consist of 10 – 12 lectures over a 3 week period to be given during the summer semester. The lectures will be presented by a single lecturer, or multiple lecturers in a highly coordinated fashion, on a subject in the field of condensed matter sciences. Lecturers will be awarded \$3,000 (to be split between multiple lecturers) for the summer 2008 series. In addition to organizing and delivering the series the lecturer will be required to provide a complete set of lecture notes at the end of the series. CCMS plans to web publish the lecture notes. The CCMS Summer Lecture Series aims to facilitate a conceptually deep and extensive understanding on a specific subject in condensed matter sciences for the benefit of graduate students, researchers and interested faculty.

Each Fall semester the CCMS Executive Committee will solicit proposals for CCMS-SLS to be given the following summer. The solicitation will be made to the faculty in Physics and related departments at UF. Upon recommendation from a member of CCMS, proposals from lecturers outside of the University of Florida will also be considered. Proposals are due by the beginning of the 2nd week of Spring semester. The 2008 deadline is Monday, January 14, 2008. The CCMS Executive Committee will review the proposals and announce in the middle of the Spring semester. The lecturer(s) will be awarded \$3,000 in total after the completion of the lecture series and the submission of the complete lecture notes. Should unforeseen circumstances prevent a lecturer from completing the proposed set of lectures the amount of the award may be prorated in proportion to the number of lectures actually delivered. For more information visit: <http://www.phys.ufl.edu/ccms/lecture>.



Hazardous Waste Training

The Division of Environmental Health and Safety will be conducting Hazardous Waste training classes for all laboratory personnel and staff who generate hazardous waste. The Hazardous Waste training classes provide the information required to comply with federal EPA requirements, including hazardous waste identification, container management, and disposal procedures. A Lab manager (PI), or designated hazardous waste manager from each laboratory, must attend annually. The responsible party for each laboratory is then required to train their staff. The training session will last approximately one hour. The class will be held in Room 2205 NPB at 10:00AM on Friday, November 9th. Personnel unable to attend the departmental training session may contact the EH&S office (392-8400) to make alternative arrangements.

UF TOGETHER FOR A SAFE CAMPUS....



In an effort to improve student and community safety awareness, utilize current technology (thereby conserving resources), and in compliance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, the University of Florida Police Department has published its annual 2007 "UF Together for a Safe Campus" safety brochure. The report includes statistics for the previous three years (2004, 2005, 2006) concerning reported crimes that occurred on campus, in certain off-campus buildings or property owned or controlled by the University of Florida, and on public property within or immediately adjacent to and accessible from the UF campus. It also includes institutional policies concerning campus security such as policies regarding alcohol and drug use, crime prevention, sexual assault, the reporting of crimes, and other personal and property safety issues.

The "UF Together for a Safe Campus" brochure is available for review by accessing the University of Florida Police Department web site at <http://www.police.ufl.edu>. Hard copy requests may be made by e-mail to upinfo@admin.ufl.edu, or by mail to Chief Linda J. Stump, Director, University of Florida Police Department, P.O. Box 112150, Gainesville, FL 32611-2150.

Recent Physics Publications

For a list of recent physics publications please visit
http://web.uflib.ufl.edu/msl/subjects/Physics/2007_bymonth.html



Boebinger Con't from Page 1

Boebinger also has a strong commitment to interpreting science for students and the general public. In addition to his many scientific publications, he has written articles designed for mainstream audiences in both *Physics Today* and *Scientific American* and gives frequent public lectures throughout the country. He also has been interviewed and demonstrated magnetic levitation on the History and Discovery channels.

"I am particularly honored to be named a Fellow in the AAAS because it is a wonderfully cross-disciplinary organization focused on advancing science broadly--much like high-magnetic-field research itself," Boebinger said. "This mission is critically important because there is an increasingly urgent need to educate and train greater numbers of the next generation to become scientists and science-aware citizens. I am keenly appreciative that this personal recognition would not have occurred without the many fruitful collaborations with so many colleagues through the years."

"Being elected a Fellow of the AAAS represents a significant level of achievement within one's academic field," noted Kirby Kemper, FSU's vice president for Research. "Professor Boebinger has proved himself to be a national leader in the field of superconductivity research, and we commend him on this latest accomplishment."

The AAAS (www.aaas.org) is the world's largest general scientific society and publisher of *Science*, which, with an estimated total readership of 1 million, has the largest paid circulation of any peer-reviewed general science journal in the world.