

Florida Physics News

University of Florida - Department of Physics
Annual Alumni Newsletter
2005

UNIVERSITY OF FLORIDA

Contents

Florida Physics News 2005

The Physics Department Annual Alumni Newsletter

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The UP News Staff (listed on page 11)
Dr. Sam Trickey (p 13)

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Chair's Corner

November 2005 marks the third anniversary of my term as department chair, and I can say that the past year has been the most exciting one ("exciting" in the sense of the ancient Chinese curse, "May you live in exciting times"). Two significant events come to mind: the record 2004 hurricane season, and the July 2004 implementation of the new Enterprise Resource Planning software from PeopleSoft, designed to manage UF's financial, payroll, and human resources activities. As you know, Florida was hammered by four hurricanes during last year's season, and Hurricanes Frances and Jeanne directly hit Gainesville in September 2004. Although ultimately the damage to UF was minimal, with downed trees, power outages, and minor flooding, it was nonetheless a stressful time for the many faculty, staff, and students who were affected by the storms. While last year's storm season is little more than a bad memory, we wish the same could be said for the PeopleSoft system, which can charitably be described as "challenging"; our staff continue the long ascent up the PeopleSoft learning curve, and we hope we reach the summit soon.

Weather and administrivia aside, the past year has been a good one for the department, with successes in faculty recruiting, and recognition of many of our faculty, staff, and students. On the recruiting front, we continue to build in our new area of experimental particle astrophysics with the hiring of Dr. Tarek Saab, who joins the department as an Assistant Professor in August 2005. Dr. Saab is a research scientist at the NASA Goddard Space Flight Center where he is part of a team developing x-ray detectors for NASA's

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Lincoln Middle School, Gainesville, Florida, held a Science Fair on January 11, 2005. Among the projects were experiments in physics, mathematics, and chemistry. Accounting for at least one-third of all judges were 10 physics faculty members.

Top row, left to right: Pierre Sikivie, Guenakh Mitselmakher, Alan Dorsey, Jack Sabin, Katia Matcheva, and Pradeep Kumar. Bottom row, left to right: Paul Avery, David Reitze, Samuel Trickey, and Konstantin Matchev

Credit: David Reitze

UF Teacher/Scholar Award

Physics Professor Paul Avery has been named the 2005 Teacher/Scholar of the Year, the highest faculty honor bestowed by the University of Florida. The award is given annually to a professor who demonstrates excellence in both teaching and scholarly activity and exhibits visibility within and beyond the university.

Avery has served the university for 20 years and is a world-recognized scholar for his fundamental contributions to high energy physics. He has published more than 390 refereed publications and supervised 23 PhD students, postdoctoral associates and scientists while maintaining consistent extramural funding. He is the director of two National Science Foundation projects, the Grid Physics Network, known as GriPhyN, and the International Virtual Data Grid Laboratory.

Credit: CLAS News

Avery also collaborates on two major experiments, CLEO, based at Cornell University, and CMS, in Geneva's CERN laboratory. His research is in elementary particle physics, also called high energy physics, which studies the basic particles and the forces between them that together determine the underlying structure of the universe. Avery teaches "Physics 2 with Calculus" and was recently named a fellow of the American Physical Society.

"I am pleased and honored at being selected for this award," Avery says. "I have benefited throughout my career from the strong support of my colleagues and the administration at the University of Florida. I appreciate the collegial environment within the Department of Physics and the ease in forming collaborative projects with members of other departments and colleges. These interpersonal relations, more than anything else, have made my working life so enjoyable here."

source: CLAS News and Publications

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continue - Chair's Corner

Constellation-X space mission. At UF he plans to develop a program in dark matter searches that will nicely complement the ongoing work of Prof. Laura Baudis. We have also made a significant step in the development of our biological physics program with the hiring of Dr. Aneta Petkova, who also starts in August 2005 as an Assistant Professor. Dr. Petkova is a postdoctoral associate at the National Institutes of Health's Laboratory of Chemical Physics, where she uses solid-state nuclear magnetic resonance techniques to study the structure of the proteins that play an important role in Alzheimer's disease. She plans to continue this research at UF, where she has potential collaborators both within the department and at UF's McKnight Brain Institute. Professors Jim Dufty and Sam Trickey retired in June 2005, after 35 and 37 years of service to the university, respectively. We fully expect to see Jim and Sam around the department for many years to come, and we plan to continue to seek their advice (and good company) in the coming years. Our faculty continue to garner awards: Profs. Avery and Hirschfeld have been elected Fellows of the American Physical Society and Prof. Avery was selected the campus-wide UF Teacher/Scholar of the Year. Our undergraduate physics majors program is doing well with 150 physics majors, and our Society of Physics Students has been recognized as one of the most active chapters in the country. Finally, I'm pleased to report that our graduate program continues to thrive, with approximately 130 students enrolled in the PhD program and 23 PhD degrees awarded over the 2004/2005 academic year. You can find out more about faculty, student, and staff news by reading further in this issue.

UF President J. Bernard ("Bernie") Machen is settling into his second year as President, with his official inauguration on September 10, 2004 (just days after Hurricane Frances hit Gainesville). President Machen has recently selected a new Provost and Senior Vice President, Dr. Janie Foukes, a biomedical engineer by training and the current Dean of the College of Engineering at Michigan State University. Dr. Foukes arrives in August 2005 and as Provost she will serve as the university's chief academic officer. We look forward to working with Dr. Foukes as we continue to advance the academic reputation of our department and university.

On the finance front, the university's budgets look healthy for the coming year and include respectable raises for the faculty and staff; this is due to a strong state economy as well as the lobbying efforts of the university administration. Healthy budgets should allow us to continue to aggressively recruit and hire new faculty for our new research initiatives of experimental particle astrophysics and biological physics, while at the same time strengthening our core areas—condensed matter physics, high energy physics, theoretical astrophysics, and chemical physics.

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continue - Chair's Corner

Unfortunately, the outlook for federal funding of basic science is bleak, with cuts or flat funding likely for many agencies. For instance, President Bush's proposed fiscal year 2006 budget requests a 3.8% reduction in the budget of the Department of Energy's Office of Science (the agency that provides most of the funding for high energy physics research in the US). While this particular issue is far from settled, it illustrates the problems that we face as our legislators grapple with the mounting federal budget deficit. If you are as concerned about this as I am, contact your representatives in Congress and let them know.

I will once again renew my call for our alumni to become involved with our department. We look forward to your news about your careers and achievements, and we hope that you can assist the department in areas such as career advisement and job placement for our graduates; we would value feedback on the undergraduate and graduate curricula. If you ever find yourself in Gainesville, let us know and stop by to have a look at our facilities and a chat with our faculty and students.

In my 2006 letter I hope to be able to report that the 2005 hurricane season passed with only gentle breezes and that PeopleSoft has streamlined the way we do business at the university. Stay tuned!

With warm regards,
Alan Dorsey
Professor and Chairman

News in Research

From Black Holes to Atoms: Lasers Study and Control Physical Systems

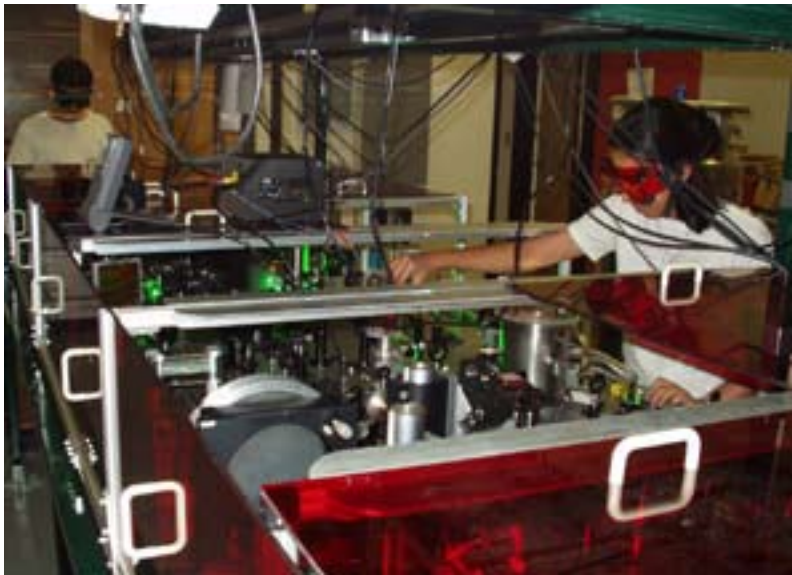
source: Dr. David Reitze

Lasers offer unique capabilities for both probing and manipulating physical systems. On one hand, continuously emitting lasers offer unprecedented wavelength stability for use in interferometric and metrology applications. On the other hand, pulsed laser sources allow for the measurement of dynamical events on time scales of a femtosecond (=10^{-15} s) or less.

These characteristics form the basis for the two major research themes in our group. The major focus of the ultrafast optics group is to probe and control dynamical laser-matter interactions on femtosecond time scales. Femtosecond laser pulses offer unprecedented temporal resolution for observing the dynamics of atoms, molecules, and solid-state systems. By 'kicking' (exciting) a system with a short laser pulse and monitoring the relaxation of the system back to its original state, we can follow the dynamical evolution of the system, be it the motion of electrons in semiconductors or the motion of atoms as they dissociate in chemical reactions.

Through technological advances in lasers and 'pulse-sculpting' technologies, it is now possible to go further and guide the motion of an atom, molecule, or solid. Light naturally interacts with atoms, and by controlling the timing of the interaction through the structure and wavelength of the pulse, we can 'steer' the interaction and thus the evolution of the system. Adaptive (or learning) control takes this even one step further and directly interfaces atomic, molecular, and solid state systems with computer-based learning algorithms through the use of temporally sculpted laser pulses as short as a few femtoseconds to teach the system to evolve to a desired final state, much in the same way as a computer guides the motion of an airplane. This work has wide applications in physics and chemistry as well as optical engineering. We have performed control experiments to turn on and off the coherent motion of atoms (phonons) in solid on picosecond time scales [1], to dramatically enhance the rate at which laser-induced ionization takes place in molecular nitrogen [2], and to control the shape of femtosecond optical pulses in novel 'photonic crystal' fibers [3].

The major focus of the UF gravitational wave physics group is to develop instrumentation to probe the dynamic structure of space-time (gravitational waves). We are a collaboration partner of the Laser Interferometer Gravi-



Graduate students Vidya Ramanathan (right) and Jinho Lee align and tune up the cryogenic femtosecond chirped pulse amplifier. This laser system produces pulses which are 70 femtoseconds in duration and have peak intensities of as much as 10^{17} W/cm^2.

UF research scientist Malik Rakhmanov assembles a Brewster polarizer on a laminar flow bench for installation into the LIGO Hanford 2 km long interferometer. Many of the optical components of the interferometer are located in a high vacuum system placing stringent requirements on cleanliness.

tational Wave Observatory (LIGO). LIGO, one of the largest projects ever undertaken by the National Science Foundation, has as its goal the detection and study of gravitational waves from large-scale astrophysical sources. Gravitational waves were predicted by Einstein almost 90 years ago but never been observed directly despite a number of experiments over the last 40 years. The astrophysical motivation for detecting gravitational waves is compelling. Unlike the visible sky, the gravitational wave 'sky' is completely unexplored. For example, mergers of neutron stars and black holes give insight into strong-field gravity and provide a unique experimental test of general relativity. Observations of pulsar gravitational waves have already allowed us to probe their hydrodynamics and ellipticities [4].

Gravitational waves are miniscule strains applied to space-time by motion of massive astrophysical objects possessing time-dependent quadropole mass moments. A passing gravitational wave will differentially expand and contract the distance between two mirrors ('test masses') in the arms of an interferometer. Direct observation of gravitational waves presents a formidable challenge, because the magnitude of the dynamic strain is expected to be less than 10^{-22}. LIGO consists of three separate interferometers, two located in Hanford, WA (one 4 kilometers long and one 2 kilometers long) and one in Livingston, LA (4 kilometers long) [5]. The UF LIGO group was one of three institutions along with the California Institute of Technology and the Massachusetts Institute of Technology to design and build the LIGO detectors.

A variety of experimental programs are currently underway at UF, including the design of next generation large scale gravitational wave interferometers for the Laser Interferometer Gravitational Wave Observatory, investigations of high power laser interactions with optical components, and the development of advanced interferometer topologies for improved sensitivity. This work is carried out in collaboration with the Tanner group and the Mueller group.

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[3] Shengbo Xu, D. H. Reitze, and R. L. Windeler, "Controlling nonlinear processes in microstructured fibers using shaped pulses", Opt. Express 12, 4731-4741 (2004).

[4] B. Abbott, et al. (LIGO Science Collaboration), "Limits on Gravitational-Wave Emission from Selected Pulsars Using LIGO Data, Phys. Rev. Lett. 94, 181103 (2005).

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American Physical Society

Three New Fellows

Three University of Florida Professors have been named Fellows by the American Physical Society. Physicists Paul Avery and Peter Hirschfeld, and chemist Frank Harris were each elected for their original research and innovative contributions in the application of physics to science and technology.

"Three professors being named fellows in one year is quite impressive," said Dr. Alan Dorsey, chair of the physics department, who was also named a fellow in 2002. "It is certainly an indication of the quality of the faculty, and the esteem in which they are held by their colleagues."

Seventeen of the 49 full-time faculty members in UF's physics department are fellows, including three professors in the Quantum Theory Project. Four chemistry faculty who are part of the project are also fellows. No more than half of one percent of the society's total membership is elected for fellowship status each year.

The American Physical Society was founded in 1899 when 36 physicists gathered at Columbia University and proclaimed the mission of the new society to advance and diffuse the knowledge of physics. The fellowship program was created to recognize members who may have made advances in knowledge through original research and publication.

source: CLAS News

APS Keithley Award

Dr. E. Dwight Adams has been awarded the 2005 Joseph F. Keithley Award by the Executive Board of the American Physical Society. Professor Adams' Citation Reads: "For the pioneering development of the capacitive pressure transducer, its application to the He melting pressure thermometry, and other scientific uses."

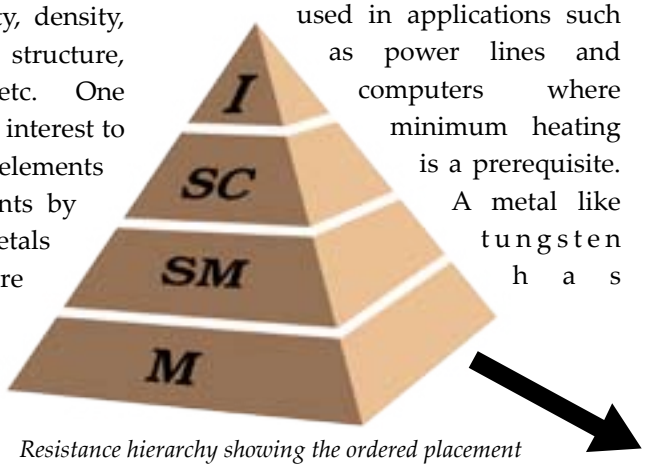
Sponsored by Keithley Instruments, Inc. and the Instrument and Measurement Science Topical Group, this award serves to recognize physicists who have been instrumental in the development of measurement techniques or equipment that have impact on the physics community by providing better measurements.

As part of this award, Dr. Adams received a monetary award and a certificate citing his contributions; both were presented to him at the 2005 March Meeting of the APS in Los Angeles, California.

Bismuth and Graphite: A Case Study of Semimetals Overcoming an Identity Crisis

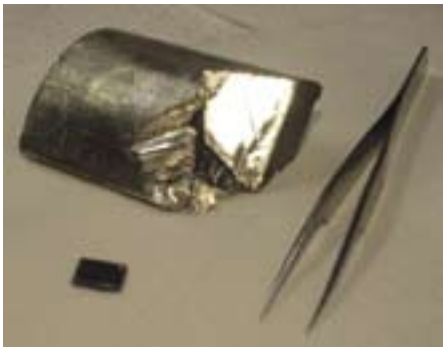
source: Dr. Arthur F. Hebard

Like zoologists in the life sciences, physical scientists have a tendency to classify and order things in hierarchies. The Periodic Table of Elements is a perfect playground for this type of activity. The elements can be ordered using a large number of schemes. These include ranking by atomic number, chemical reactivity, density, melting point, crystal structure, thermal conductivity, etc. One particular scheme that is of interest to physicists is the ordering of elements or combinations of elements by electrical resistance. Metals (M) with low resistance are at the bottom, semimetals (SM) and semiconductors (SC) with intermediate resistance are in the middle, and insulators (I) with high resistance are at the top (see Figure).



Resistance hierarchy showing the ordered placement of metals (M), the semimetals bismuth and graphite(SM), semiconductors(SC) and insulators(I). The samples used in the cited study were cut from high purity crystalline specimens of bismuth (large piece) and graphite (small piece) shown in the picture.

Electrical resistance is a measure of a material's ability to conduct a charge current in the presence of interactions (scattering) of the charge carriers with themselves or with the ions of the host material. Interestingly, the charge can be of either sign: negative when the carriers are electrons and positive when the carriers are "holes". A hole is equivalent to an electron vacancy in the electron fluid. Metals have low resistance because the concentration of mobile charge carriers (electrons or holes) is high and the amount of scattering is small. A metal like copper has a low resistance and is widely used in applications such as power lines and computers where minimum heating is a prerequisite. A metal like tungsten has both a higher resistance and a higher melting point and is used as a filament in light bulbs because it can be heated with a current to a high temperature where it glows but does not melt. Semiconductors such as silicon and germanium occupy the middle stage of the resistance hierarchy. By carefully introducing small amounts of impurities, semiconductors can be coaxed into being either an electron or a hole conductor. Semiconductors are the fundamental building blocks of the electronic gadgetry that surrounds us in our daily lives. Insulators have very high resistance and are at the top of the resistance hierarchy. Diamond, an allotrope of carbon, is a good example. In an insulator the charge carriers are fixed in place and thus cannot move as they do in a metal or a semiconductor. If the temperature is lowered to zero



degrees on the absolute scale, a place where all thermal motion ceases, then all semiconductors become insulators with infinite resistance. For metals, lowering the temperature causes the resistance to decrease toward a value that depends on the number of impurities and defects in the metal.

Most hierarchies have special niches for renegade members, and the resistance hierarchy is no exception. In this regard, the elemental materials bismuth and graphite distinguish themselves as "semimetals" (SM) and occupy a small niche between metals (M) and semiconductors (SC). Semimetals have unusual properties:

Professors Earn Positions in National Societies

Professor David Reitze has been selected to serve a two-year term on the **Optical Society of American Science and Engineering Council** as Vice-Chair of the Ultrafast Optical Phenomena Technical Group of the Quantum Electronics Division for 2005 and 2006. He will become the Chair of the group for the 2007-2008 term.

Professor Stephen Hagen has been elected to the **Executive Committee of the Division of Biological Physics of the American Physical Society**. The Division of Biological Physics is composed of individuals who are interested in the study of Biological Phenomena using Physical techniques.

Columbia Shuttle Accident Investigation: An Insider's Look

A public colloquium given by Dr. Douglas D. Osheroff on February 22, 2005 focused on his time as one of the board members on the Columbia Accident Investigation Board (CAIB). He engaged the packed audience, full of undergraduate and graduate students, faculty from across campus, and even the local media, in the 1001 New Physics Building Auditorium, who were treated to an in-depth look at the investigation.

The Space Shuttle Columbia accident occurred on February 1, 2003 over East Texas at 0900 EST. All seven crew members were killed. Debris from the accident was scattered over 9,000 kilometers and only 40,000 pieces of the craft were recovered during the investigation. He explained how each piece of debris was taken to a hanger and laid out on a grid to visualize where each piece belonged in reference to the actual shuttle. They found that the left wing had virtually no recoverable parts, indicating that it was the part of the craft that sustained the most damage and the probable cause of the accident. As time went on, the team began to focus on a piece of insulating foam that struck the left wing on take-off and damaged one of the thermal panels, specifically RCC panel 8, located close to the base of the wing, and was the only panel that was partially recovered on the ground. After convincing NASA to allow a ballistics test on an existing panel, they were able to prove that this was the problem. The outcome of the findings concluded that NASA needed to take a more in-depth look at how they handle the safety issues of the shuttles which were being overlooked due to NASA's focus on cost and schedule issues. The board recommended that NASA needed to restructure how it deals with the safety and maintenance of the fleet, and that they needed to take back control of the process instead of leaving it up to outside contractors.

Dr. Osheroff was chosen to participate on the CAIB due to his background. In 1996, he received the Nobel Prize in Physics which he shared with two colleagues from Cornell University for their discovery of superfluidity in helium-3. Dr. Osheroff received his BS from CalTech and PhD from Cornell University, he is the G. Jackson and C.J. Wood Professor of Physics and Applied Physics at Stanford University and was a member of the technical staff at the Department of Solid State and Low Temperature Research at Bell Laboratories in the 1970s.

The Nobel Prize caps a long list of awards Osheroff has received. He is a member of the National Academy of Sciences, and won the Simon Memorial Prize, the Oliver Buckley Prize, and was named a MacArthur Fellow. Osheroff also won a Walter J. Gores Award for Excellence in Teaching.

Reconstruction Team members discuss debris with CAIB board member Dr. Douglas D. Osheroff (2nd from right)
CAIB Photo by Rick Stiles 2003

namely (1) perfect compensation, which imposes an exact equality in the number of free electrons and holes, and (2) low scattering, which implies that the distance an electron or hole can travel without scattering is long. In ultra pure bismuth at low temperatures this distance can be as long as 1 mm, an enormous distance compared to the ~10^{-7} mm between two adjacent bismuth atoms. The renegade behavior of bismuth and graphite manifests itself in the temperature and magnetic field dependence of the resistance. In zero magnetic fields the temperature dependence of the resistance is similar to that of a metal; the resistance decreases with decreasing temperature. However if a magnetic field is present, then in sufficiently high fields the resistance can increase by as much as a factor of 100,000. Magnetic effects in metals and semiconductors are miniscule in comparison.

This unconventional looking behavior of bismuth and graphite has attracted considerable attention and controversial speculation. "Metal-insulator transitions", "excitonic insulators" and "field-induced superconductivity" typify the descriptive terminology that has appeared in the lexicon of explanations. Experimentalists Arthur Hebard and student, Xu Du, have joined in a collaborative venture with theorists Dmitrii Maslov and postdoc, Shan-Wen Tsai, to research the putative claims for bismuth and graphite. They excised small samples of bismuth and graphite from ultra pure stock [see Figure] and performed detailed measurements and analysis of the dependence of resistance on temperature and magnetic field. Some of these studies were performed at the National High Magnetic Field Lab (NHMFL) in Tallahassee. Their recently published results [1] took into account the simultaneous presence of an equal number of electrons and holes in very pure systems and came to the unexpected conclusion that 'traditional models' explain well the 'unconventional looking behavior'. The implicit story line is that unconventional behavior attracts a following, generates disparate and often incorrect interpretations, and finally elicits a resolution that is accessible and visible to the whole scientific community. Graphite and bismuth might look and behave differently but in reality have established an identity that is no more special than the identities of other diverse occupants of the Periodic Table.

[1] "Metal-Insulator-Like Behavior in Semimetallic Bismuth and Graphite", Xu Du, Shan-Wen Tsai, Dmitrii L. Maslov, and Arthur F. Hebard, Physical Review Letters 94, 166601 (2005).

Student Gov't Award

Dr. Pierre Ramond was honored with the 2004-2005 "C. Arthur Sandeen Improving The Quality of Life Award". This award is for a faculty member whose efforts and service have made the University of Florida a better place for all students.

Academy Induction

Dr. Jacobo Konigsberg, Associate Scientist with the High Energy Experiment Group (HEE), has been inducted into the National Academy of Sciences of Mexico (Academia Mexicana de Ciencias). Recognized for his accomplishment as one of three Mexican scientists that participated in the experiments that led to the discovery of the top quark. Dr. Konigsberg was also honored for his many collaborations with, and contributions to, the Division of Particles and Fields of the Mexican Society of Physics. In 2004, he also received the medal of the Division of Particle and Fields of the Mexican Society of Physics.

Faculty Promotions

Hai-Ping Cheng
Promoted to Professor
(08/16/05)

Sergei Klimenko
Promoted to Associate Scientist
(07/01/05)

Post-Doc Awarded Fellowship from L'Oreal Corporation

Picture : Dr. Everett is presented with the award from Jean-Paul Agon, CEO of L'Oreal USA

Dr. Lisa Everett, a postdoctoral research associate, has been awarded a 2005 Women in Science Fellowship from L'Oreal USA. She was one of five young women from across the nation selected from all areas of physical and biological sciences, each receives a $20,000 fellowship. The U.S. program, in its second year, is part of a broader global initiative on the part of the L'Oreal Corporation to support women in science at both the faculty and postdoctoral level.

Dr. Everett was honored at a special ceremony on April 12, at the American Museum of Natural History in New York City. This fellowship is designed to support her work with her scientific mentor, Dr. Pierre Ramond, with whom she is conducting research in the theories of fermion masses.

Research Scholar Award

Chun Zhang, a graduate student working with Dr. Hai-Ping Cheng of QTP, received the CNMS (Center for Nanophase Materials Science) Research Scholar Award from Oak Ridge National Laboratory. Chun received this award based on his work on quantum transport through molecular junction and spin-dependent tunnelling through magnetic junction.

The CNMS Research Scholar program provides a limited number of competitive awards to outstanding graduate students and postdoctoral researchers, for research carried out at ORNL that serves to advance user research facilities/capabilities. These merit-based awards are intended to encourage contributions by outstanding young researchers in areas of special importance to the CNMS and the national nanoscience community.

CLAS Dissertation Award

Sudarshan Ananth has been awarded the McLaughlin Dissertation Fellowship for the Spring 2005 semester. This award will allow Sudarshan to focus on the writing of his PhD thesis in the general area of theoretical high energy physics. Dr. Pierre Ramond is the chair of his Supervisory Committee. This generous award is made possible by the Charles Vincent and Heidi Cole McLaughlin Endowment in the College of Liberal Arts and Sciences.

UP undergraduate physics newsletter

Alumni Edition

Life is good as an undergraduate physics major at the University of Florida. The Society of Physics Students continues to encourage undergraduate research through its ROFU (Research Opportunities For Undergraduates) meetings, initiated in 2003-2004 by SPS advisor Prof. Yoonseok Lee. UF physics students also have sought out summer research opportunities abroad in such exotic places as the Canary Islands, Scotland, and China. UP News, the student-run undergraduate physics newsletter that was established in Spring 2004 continues to circulate monthly. Each month, students are able to read news that reflects the eclectic talents and interests of the physics department. Topics range from undergraduate research interviews to opinions on Star Trek to reports on SPS outreach. We, the UP News staff, hope this sampler of articles from past UP News issues provides an entertaining perspective on what life is like now for the undergraduate physics major. You can sigh and weep for the good old days...or scoff and grumble about how you had to wade through twenty feet of snow while beating off alligators with a stick to get to class back when you were a young whippersnapper of a physics student.

The Great Physics Student Survey

One hundred and forty-one undergraduate physics students were kind enough to fill out our first ever UP News survey. Here are the results!

Better ingredients really do mean better pizza. **Papa John's** would be thrilled to learn that it garnered the most votes for physics students' **favorite pizza joint**.

Over **60%** of physics students are planning on getting their **masters degree and/or doctorate**. **Thirty percent** of you will be going to **graduate school for physics**. We certainly are an ambitious group, and good luck to you all.

While **13** people did say that they had **contemplated moving into the SPS Lounge**, even more didn't know what the Lounge was. So here you are: the SPS Lounge is a room where physics students can hang out and study. It's located in room 2229 on the second floor of the New Physics Building. Stop in and say hi sometime!

For those **34%** of you who lose sleep at night **wondering what Hilbert Space is**, you will have to keep wondering. We had intended to include an article on this elusive topic in this issue, but cheer up, there's always next month.

It is generally accepted that about 20% of the population is left-handed but only **12.5%** of those surveyed **favor their left hand**. Apparently there is a shortage of lefty physics students. There is also **one ambidextrous** student among us. Perhaps there is a scholarship available for that?

If a physics student were **part of a smore**, he/she would be the **chocolate**. I'm sure this symbolizes something, but exactly what it symbolizes has yet to be determined.

'The Force' and Parallel Fields

by Erica Bolin

I think the divide between science and art isn't as vast as one might think. Visualize a river with science on one side and art on the other; while they are two distinct banks, the same water flows on their shores. Artist Matthew Schreiber crossed the length of this proverbial river with the opening of his exhibit, titled "The Force", on display November 2004 through January 2005 at the University Gallery. Schreiber graduated from UF with a BFA in 1990. As a student, it was a physics class he took with Dr. Stanley Ballard that furthered his interest in light, physics, and the nature of vision. He began making holograms with Dr. Ballard and has since worked in several different media, often using science as his primary subject.

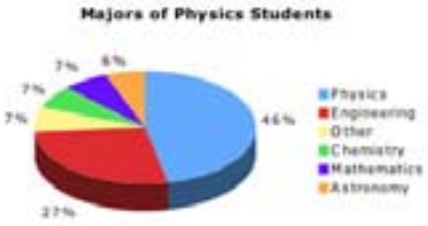
At a November SPS meeting Schreiber gave a presentation describing some of his previous artwork using video holographs and other multimedia. The idea for his next exhibit, "The Force", was dramatically different. During the SPS meeting Schreiber elicited the help of physics students to help install the piece, which consisted of large concrete slabs, four metal rings eight feet in diameter, and lots of lasers. Not your typical sculpture.

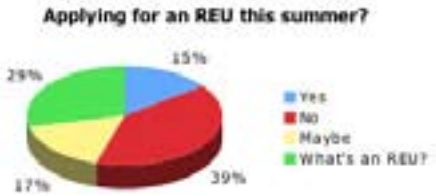
Schreiber mentioned that many in the art world don't know how to react to science when he places it in the context of a gallery space. Judging by the reaction at the SPS meeting, I think the science world has similar hang-ups. The misconception of science as merely a process of uncovering facts leaves out the vast amount of creativity behind it. While I don't think anyone would blatantly deny the imagination physics requires, the subject doesn't seem to be confronted very often. Similarly, much of art requires the same attention to technique and skill that a researcher must have to study scientific phenomena, but because the outcome is not about the process, as in art, this is often overlooked. The opening Friday, November 19th drew large crowds as it coincided with the College of Fine Arts' yearly open house, "Art Bash". Even though I had the opportunity to work on the installation early in the process, seeing the final product was astonishing. With the aid of both physics students and art students, Matthew Schreiber constructed two pieces over the course of eleven days. The main element dominated the room as over a hundred lasers pointed to one spot in the center of the space. The other, smaller piece located on the far side of the room was a nonfunctional Michelson interferometer. A fog generator was used to heighten the visual effect of the lasers.

SPS continued to host ROFU (Research Opportunities For Undergraduates) meetings. Dr. Dunnam and Dr. Van Rinsvelt were among the professors who gave students lab tours.

The exhibits in the lobby of the physics building never cease to amuse students.

In March, SPS and the Chemistry Club battled it out in a game of paintball.





by Katherine Keller

A note for the small number of you who claimed to have never used the **physics bathrooms**: you are definitely missing out. **Forty-four percent** of physics students wouldn't mind **eating lunch in there** or perhaps trying some **frictionless experiments**.

Thirty-seven percent of you are involved in **research at the University of Florida** and fewer than **15%** are **applying to an REU** for this summer. If you're one of the **28%** who **don't know what an REU is**, that's Research Experiences for Undergraduates.

And now for the most important statistic of all: how many of you actually read UP News. **Thirty-two percent** of you **don't know what UP News is** and therefore will probably never know what became of that weird survey you filled out. **Fifty-one percent** of you will **read a newsletter if you come across one**. And our most devoted fans, those who **read every issue and visit our website**, make up **17%** of those surveyed.

UP News Celebrates First Birthday

Reflections

It has been a year since UP News published its first issue. By the way, it's not "U-P News", but "UP" as in "what's UP in this issue" (yes, we delight in corny phrases). In the feature article, we interviewed physics major Becky Gorla about her incorporation of science into her volunteer work with the Girls Club of Alachua County. In addition to articles reviewing *Solaris* and recommending a programming class, we began our four part Undergraduate Advisor Spotlight series, which informed readers of matters of not-so-critical importance but great interest, such as Prof. Darin Acosta's favorite sport (cycling) and physics hero (Richard Feynman).

The staff that started the newsletter is still here…all six of us: Erica Bolin, Amruta Deshpande, Rahawa Haile, Katherine Keller, Linda Watson, and me. Considering the guy-to-girl ratio in the physics department, the staff seems to be suffering from curiously low levels of testosterone. But "suffering" is the wrong word. Working with the UP staff over the past year has been truly enjoyable, and the absence of the hairier sex has been less a source of grief than amusement. We have been thankful for the support of our faculty advisor, Prof. Yoonseok Lee, and the sponsorship of the Society of Physics Students. Of course, we are most thankful to you, our readers. It is you who gives life to our newsletter. We are grateful for the kind comments that have come our way. Maybe you don't know just how much your words mean to us. I'm especially glad to hear from the staffers about readers commenting specifically on their articles e.g. Rahawa and her Star Trek article (vol2 issue1) – I guess community really is something that Trek fans cherish – and Amruta's account of her pleather-panted scooting adventure (vol2 issue3), which has elicited quite a humorous response.

UP News Staff 2004-2005

by Linda Watson

Justin Zumsteg, a physics and astronomy major from UF, spent his summer in the Canary Islands--a cluster of Spanish islands off the Northwest coast of Morocco. He was on the island Tenerife working at the Instituto de Astrofisica de Canarias (IAC), with whom Florida is in league to build what will be the largest single aperture telescope in the world! The Gran Telescopio Canarias will be a 10m telescope on La Palma (one of the other Canary Islands)... ahhhh, an astronomer's dream!

Justin spent ten weeks in the Canary Islands working with Marc Balcells and Mercedes Priedo on Model Independent Morphology of High-Z Galaxies. The current method of classifying galaxy structure is the Hubble System, which is based on visual inspection. To eliminate the subjectivity, Justin used a program written to classify galaxies. This IRAF (Image Reduction and Analysis Facility) script was written by Chris Conselice from Caltech and is called CAS. It is named for the structural variables examined to determine how the galaxy's structure is classified, such as concentration and asymmetry. Justin's main goal was to generalize CAS to be used with different data sets.

In addition to astronomy, Justin was able to experience the relaxed Spanish culture. He became proficient at Spanish, made many a trip to the ocean to go scuba diving, hiked, Salsa danced, and trained and competed with a swim team. He also noted that the climate of the Canary Islands is quite unique: the island Justin was on is "just a big volcano that slopes down to the sea." Because of the change in elevation, the island has microclimates, where essentially "an area the size of a city block has its own weather patterns." I don't know about you, but I'm ready for a field trip!

The Future

by Cathy Yeh

Putting out the newsletter every month is only possible with significant contributions from each staff member. We would like to expand our staff. Especially needed are more writers, a photographer, and an assistant webmaster to maintain the online version of the newsletter. Joining UP News is a good way to get involved with the physics department and keep your English skills from atrophying away entirely. We also would like more outside submissions from undergraduates. The articles from guest writers have been excellent, and we look forward to seeing more.

Linda is graduating this semester, and the rest of the staff will follow suit eventually (we hope), but even after the original staffers have all gone, we hope UP News will remain.

//Page Credits//
Editor// Cathy Yeh
Layout// Erica Bolin
Pictures// UP News Archives
UP News Online//
http://www.phys.ufl.edu/~upnews

Albert Einstein Institut Rewards Two Students

Max Planck Fellowship

Sudarshan Ananth, a graduate student in the High Energy Theory group, has been awarded a two-year Postdoctoral Fellowship by the Albert-Einstein-Institut (Max-Planck-Institut fur Gravitationsphysik, Potsdam). He will join their "Quantum Gravity and Unified Theories" division in the Fall of 2005.

Sudarshan was supported by an Alumni Fellowship from 2000 to 2004 and is currently a McLaughlin Fellow within the High Energy Theory group. He works with Professor Pierre Ramond on supersymmetric field theories, supergravity and various aspects of string theory.

Post-Doc Fellowship

Dong-Hoon Kim has been offered and accepted a postdoctoral fellowship at the Albert Einstein Institut. He will be joining Yanbei Chen's gravity wave group in the Fall of 2005. Dong-Hoon will be working on general methods, based on gravitational wave data, to map the spacetime geometry in the neighborhood of massive black hole binaries. His analysis will be useful for both the LIGO and LISA observational efforts.

Physics Teacher of the Year

Yoonseok Lee, PhD

Announced at the 2004 Holiday Party

Credit: CLAS News

25th Brandt-Ritchie Workshop on Penetration Phenomena

Dr. Jack Sabin

Organized by Dr. Jack Sabin, the Department of Physics and the Quantum Theory Project held the 25th Brandt-Ritchie Workshop (formerly known as the Werner Brandt Workshop) at the physics building in April 2005. The topics explored during the workshop were Dynamic Charge State Effects, Target Phase Effects, Channeling, Target Anisotropies, and Plasmon Effects. The workshop was well attended with participants from Germany, Spain, Hungry, Argentina, Mexico, and the USA. The first two days consisted of the presentations of the participants, both theoretical and experimental talks. A round table discussion of two recent articles from Nature and PRL occurred on the third day. This round table discussion was widely herald as a good closure to the workshop. The 2006 meeting will be held in Paris, France.

TannerFest

In honor of Dr. David Tanner's 60th Birthday, a symposium was given in April 2005. Colleagues and friends from all over the nation and internationally came to honor Dr. Tanner's personal and professional achievements.

Organized by Jan Musfeldt (Univ of Tennessee), David Reitze (UF), Chris Stanton (UF), and Nacira Tache (UF), with the administrative support of Janet Germany, the TannerFest was a wonderful time for all those involved. Participants enjoyed a tour of Dr. Tanner's lab and current work, along with a reception at the Hilton.

At the dinner, held at the Harn Museum, participants were entertained by anecdotes about Dr. Tanner and the three day celebration was topped off by a rainy, but fun, picnic at Santa Fe River.

Pictures Courtesy of Dr. Jan Musfeldt

(Top)
Dr. Leslie Rosenberg
(Left)
David Bernholdt,
Jan Musfeldt,
and David Tanner

Faculty Retirement

The Fall of 2005 will mark the formal retirement of two prominent members of the Physics Faculty. Professor James Dufty a member of the Condensed Matter Theory group will retire after 35 years of service and Professor Samuel B. Trickey, a member of the Quantum Theory group will retire after 37 years of service.

The Department had a retirement party celebrating the work of Drs. Jim Dufty (left) and Sam Trickey (right) in April 2005.

Sam Trickey joined the Physics Department as an Assistant Professor in 1968, and quickly rose through the ranks to Professor. Aside from a brief tenure at Texas Tech, he has been at UF for the remainder of his career. Sam has made scientific contributions in a wide variety of areas, from fundamentals of Density Functional Theory, to modeling of ultra-thin films and crystals, to simulations of material fracture and stopping. He has also had a distinguished career as an Administrator, serving as the Director of the Quantum Theory Project, Executive Director in the Office of the Provost, and Director of Information Resources and Technological Programs in CLAS. When he is not doing physics, Sam is an avid sailer, has been a Board Member of the Farm Worker Ministry for over 20 years, is a curator of an historic pipe organ, and is an expert on the U.S. railway system. In his retirement, Sam looks forward to having more time to do research, but admits that he will also spend more time on boats.

Jim Dufty arrived at UF in 1968 as a Postdoctoral Fellow and became an Assistant Professor of Physics and Chemical Engineering in 1970 and then Physics in 1971; he has spent his entire academic career here, becoming a Professor in 1978. Jim is well known for his many contributions to nonequilibrium statistical physics, kinetic theory and the physics of plasmas; most recently he has been developing hydrodynamic models for the flow of granular materials. His excellent teaching was recognized with a Teaching Improvement Award in 1996, and he has long served as a careful and devoted mentor of graduate students. Jim has also served the university in an administrative role, as the Associate Dean for Research of the College of Liberal Arts and Sciences from 1994—1999. The department will continue to depend upon Jim for both his sound advice and good company.

45th Sanibel Symposium (March 5 - 11, 2005)

source: Dr. Samuel Trickey

King and Prince Resort Hotel, St. Simons Island, Georgia (credit: QTP Staff)

"Back to the Beach!" was an obvious slogan for the 45th Sanibel Symposium. While not back on Sanibel Island (the Symposium left in 1977 and not been back), the meeting had a beach-front location for the first time in many years. The King and Prince Resort Hotel on St. Simons Island, GA proved to be a highly popular new venue with participants. Registration was up by roughly 20 percent, beginning to approach pre 9/11 levels. International participation, particularly from developing nations, continued to be limited by economics and visa barriers.

The meeting format remained roughly as adopted in 2004, 6 days with 17 Plenary (Invited Talk) sessions and 6 Poster sessions. The last three Plenary sessions honored the myriad contributions of Enrico Clementi. Other Plenary focus topics included Metals in Biology, Fundamental Challenges in Transport Theory, Density Functional Theory and Magnetic Fields, Dynamical Mean Field Theory, High-level Methods for Electron Correlation, Large-scale Simulations of Condensed Systems, Relativistic Quantum Mechanics, Biomolecular NMR, Semi-empirical Electronic Structure Methods, Multi-reference Coupled-cluster and Many-body Perturbation Methods, Protein Design, Cytochrome P450, and Explicitly- correlated Quantum Chemical Methods.

A feature introduced last year was continued: two tutorial sessions were offered to introduce graduate students to the topics of the Plenary Sessions. For the fourth straight year, the participant survey showed high satisfaction with the scientific program and speaker selection (4.1 - 4.4 on a 1-5 scale with 5 best). The Army Research Office, Office of Naval Research, and IBM Corporation provided external funding. UF's Vice President for Research, College of Liberal Arts and Sciences, and QTP's home departments (Chemistry, Physics) also contributed much-appreciated funding.

The 46th Symposium will take place at the King and Prince Resort Hotel Feb. 26 - Mar. 3, 2006. Reservations and information is at http:www.qtp.ufl.edu. Click on "Sanibel" in the menu on the left side.

Department of Physics
A Sampling of Recent Faculty Publications

ASTROPHYSICS AND GRAVITATION

B. Abbott, et al. (LIGO Scientific Collaboration). "Limits On Gravitational-Wave Emission From Selected Pulsars Using LIGO Data." Phys. Rev. Lett. 94, 181103 (2005).

S.J. Asztalos, et.al. "Experimental Constraints on the Axion Dark Matter Halo Density." Astrophys. Jour. Lett. 571, L27 (2002).

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CHEMICAL PHYSICS (QTP)

R.J. Bartlett, I. Grabowski, S. Hirata, and S. Ivanov. "The Exchance-Correlation Potential in ab initio density functional theory." J. Chem. Phys. 122, 034104 (2005).

R. Cabrera-Trujillo, Y. Ohrn, E. Deumens, J.R. Sabin, and B.G. Lindsay. "Theoretical and Experimental Studies of the H+-N2 System: Differential Cross Sections for Direct and Charge-Transfer Scattering at keV Energies. Phys. Rev. A66 (2002).

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W. Zhu and S.B. Trickey. "Exact Analytical Solutions for Two Electrons in an Oscillator Potential and a Magnetic Field." Physical Review A [in press, manuscript AD10125].

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PHYSICS EDUCATION

R. DeSerio. "Chaotic Pendulum: The Complete Attractor." Am. J. Phys. 71, 250 (2003).

R. DeSerio. "Synchronous Analog I/O for Acquisition of Chaotic Data in Periodically Driven Systems." Am. J. Phys. 72, 553 (2004).

Davis Productivity Award

John Mocko received the 2005 Davis Productivity Award. Nominated by his supervisor, Prof. Rick Field, John was recognized for his work on the installation of the H-ITT Student Response System in the physics classrooms. John was recognized for his achievement and awarded a monetary sum at a June ceremony for all Davis Productivity recipients.

Staff Retirement

Raymond G. Thomas, Senior Teaching Laboratory Technician, has retired after 35 years of service and dedication to the University of Florida. In 1993, Dr. Gary Ihas nominated Ray for the UF Superior Accomplishment Award, for his work with the students and the labs "before there were computers" and everything was done with paper and pen. Ray won the state-wide competition and was invited to have lunch with then Governor Lawton Chiles.

At the 2004 Physics Holiday Celebration, Ray was honored and presented with a Certificate celebrating his 35 years of service from the College of Liberal Arts & Sciences.

R. Thomas (l), R. DeSerio (r)

Physics 2004 Employee Excellence Award

Janet Germany - Office Staff
Pete Axson - Technical Staff

Undergraduate Honors

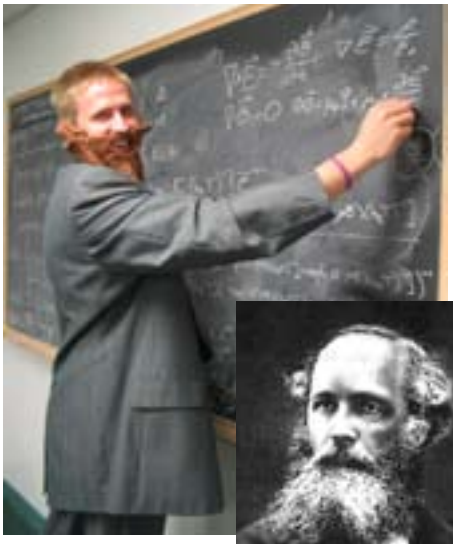
First Place Presentation

Eduardo "Eddie" Calleja, an undergraduate student in Physics, won First Place in the Oral Presentation Competition in Physics at the Florida-Georgia Louis Stokes Alliance for Minority Participation (FLGSAMP) Expo 2005. Eddie gave a presentation entitled, "High Resolution Sound Velocity Measurements Using a Path Length Modulation Technique." The research for this presentation began when Eddie was a student in the 2002 Summer Research Experiences for Undergraduates (REU) program which was supported by the National Science Foundation and the University of Florida. Eddie continued his research upon entering Professor Yoonseok Lee's research group during the 2003 Summer REU program and has stayed with Prof. Lee's group since that time.

FLGSAMP serves over 1000 undergraduate students who major in one of the SEM disciplines, (Science, Engineering, and Mathematics). Its focus is to help increase the number of underrepresented students gain baccalaureate degrees. The alliance includes 11 schools from Florida and 1 from Georgia. (http://www.fglsamp.com)

Women's Club Scholarship Award

Catherine Yeh, an undergraduate physics major, received the $1500 Judith Ann Young Scholarship from the Women's Club (2005). This scholarship is given in recognition of overall excellence in scholarship, leadership, and service to the campus and community. Cathy is a promising undergraduate physics student as well as Vice-President of the UF Chapter of the Society of Physics Students. She also serves as the editor-in-chief of the Undergraduate Physics Newsletter which is staffed primarily by female physics undergraduate majors.



Chris Cook won the SPS "Dress Like a Famous Physicist Contest."

Chris is an undergraduate major, dressed like James Maxwell.

Outreach Program

Physics Lobby Exhibits

The Department of Physics Lobby Exhibits opened in December 2002. The original six science exhibits included a T-Rex Hologram, Parabolic Dishes, a Large Plasma Ball, a Giant Guitar String, the Anti-Gravity Mirror, and a "Real-Image" Object display that changes objects periodically. Two recent additions since the grand opening are the Spectra exhibit and the Chaotic Pendulum.

Under the direction of Dr. Henri Van Rinsvelt, more than 1000 children from area schools have visited the physics lobby during UF Engineering Week, school field trips, and summer stays at the Girls Club of Alachua County. Even a group from Sidney Lanier (a school for the disabled) came to enjoy and marvel at the physics displays.

Visiting students are divided into manageable size groups, usually led by either an SPS student or a volunteering staff/faculty member, along with Dr. Van Rinsvelt and Dr. Robert DeSerio. Each visitor has a chance to use the exhibit while the leaders give a brief description of the science behind the fun of manipulating the display. A non-scientific survey has found that most students prefer to zap their friends with the effects of the plasma ball and erupt into fits of screeches and giggles at the site of a big green T-Rex hologram.

The exhibits are open to the public year round and available to anyone who happens to meander into the New Physics Building. Scheduled tours and school groups are arranged through Dr. Henri Van Rinsvelt and the outreach program webpage (http://www.phys.ufl.edu/outreach/) is readily available to visitors who wish to preview the exhibits before they come for a visit.

An exciting addition to the physics department, the lobby exhibits are a big draw for area students' curiosity into the world of science.

Contact:
Prof. Henri Van Rinsvelt
352-392-1447
henri@phys.ufl.edu

Celebrating Our Recent PhD Graduates

FALL 2004

Luis Breva-Newell
"Radiative Decays of the Upsilon (1S) into Two Charged Hadrons"
Chair: Prof. John Yelton

Xu Du
"Magnetotransport and Tunneling Study of the Semimetals: Graphite and Bismuth"
Chair: Prof. Art Hebard

Abu Mohammad Abdus Sayem Khan
"Study of the Continuous Spin Representations of the Poincare and Super-Poincare Groups and their Construction by Inonu-Wigner Group Contraction"
Chair: Prof. Pierre Ramond

Evren Ozarslan
"Developments in Diffusion Weighted MRI with Applications to Neural Tissue"
Chair: Prof. Thomas Mareci

Hidenori Tashiro
"Time-Resolved Infrared Studies of Superconducting Molydenum-Germanium Thin Films"
Chair: Prof. David Tanner

Andrew C. Wint
"A Far-Infrared Electro-optic Effect in Thin Superconducting $YBa_2Cu_3O_{(6+x)}$ Films"
Chair: Prof. David Tanner

Chun Zhang
"Transport Properties at Nano-Scale via First Principles Approach"
Chair: Prof. Hai-Ping Cheng

SPRING 2005

Suhas Gangadharaiah
"Interacting Fermions in Two-Dimensions: Effective Mass, Specific Heat, and Singularities in the Perturbation Theory"
Chair: Prof. Dmitrii Maslov

Filippos Klironomos
"Tunneling Between Two-Dimensional Electron Systems in a High Magnetic Field and Crystalline Phases of a Two-Dimensional Electron System in a Magnetic Field"
Chair: Prof. Alan Dorsey

Aditi Mallik
"Multi-Scale Modeling of Solids as a Composite of Quantum Mechanical (QM) and Classical Mechanical (CM) Domains"
Chair: Prof. Jim Dufty

Daniel J. Mixson
"Differing Roles of Disorder: Non-Fermi-Liquid Behavior in $UCu_{5-x}Ni_x$ and Curie Temperature Enhancement in $UCu_2Si_{2-x}Ge_x$"
Chair: Prof. Gregory Stewart

Alexandre Pronko
"Fragmentation of Quark and Gluon Jets in Proton-Antiproton Collisions at Center-of-Mass Energy of 1.8 TeV"
Chair: Prof. Andrey Korytov

Jennifer Sippel-Oakley
"A Study of Charge Induced Actuation in Carbon Nanotubes and Resistance Changes in Carbon Nanotube Networks"
Chair: Prof. Andrew Rinzler

Marc Soussa
"Modified Gravity Theories - Alternatives to the Missing Mass and Missing Energy Problems"
Chair: Prof. Richard Woodard

Lingyin Zhu
"Quasiparticle Scattering and the Local Electronic Structure of D-Wave Superconductors"
Chair: Prof. Peter Hirschfeld

SUMMER 2005

Sudarshan Ananth
"Maximally Supersymmetric Theories on the Light-Cone"
Chair: Prof. Pierre Ramond

Luis Alberto Cruz
"Using Max/Min Transverse Regions to Study the Underlying Event in Proton-Antiproton Collisions at $\sqrt{s}=1.97$ TeV"
Chair: Prof. Rick Field

Dong-Hoon Kim
"Radiation Reaction in Curved Spacetime"
Chair: Prof. Steven Detweiler

Wuming Zhu
"Numerical and Exact Density Functional Studies of Light Atoms in Strong Magnetic Fields"
Chair: Prof. Samuel Trickey

Awards Made Possible By Alumni Donations

J. Michael Harris Graduate Student Award

The Institute of Fundamental Theory (IFT) has awarded the first J. Michael Harris Graduate Student Awards to Aravind Natarajan and Yongke Sun. These awards allow graduate students to have a reduced teaching load during the Spring 2005 semester, thereby enabling the extra time for their PhD research.

These awards are made possible by a generous donation by J. Michael Harris. Dr. Harris is 1982 Alumnus of the University of Florida. He is currently a Sarasota Internist in private practice and has a deep interest in particle physics and cosmology.

Tom Scott Memorial Award

Susumu Takahashi

This award is made annually to senior graduate students in experimental physics who have shown distinction in research.

Charles F. Hooper Jr. Memorial Award

Daniel Mixson

This award is made annually to a senior graduate student in physics who has shown distinction in research and teaching.

Teaching Assistants of the Year

Jesse Angle - Laboratory Sections
M. Ian Vega - Discussion Sections

These awards are awarded annually to two Teaching Assistants who have displayed excellence in teaching in either the laboratory or the discussion sections.

Marie Curie Fellowship Awarded to Former Graduate Student

Former graduate student Vakif Kemal Onemli was selected by the European Union for a prestigious Marie Curie Fellowship.

Dr. Onemli is an expert on dark matter caustics and on applying the Schwinger-Keldysh formalism to quantum field theory during inflation. He attended UF from Fall 1998 to Fall 2003, and accomplished his Ph.D. in particle theory under the direction of Professor Pierre Sikivie. Vakif has written papers with UF Professors Zongan Qiu, Pierre Sikivie and Richard Woodard. His fine performance here was recognized by the award of a dissertation fellowship.

After graduating, he began his postdoctoral work at the Universite de Paris-Sud in Orsay, France and has used the fellowship to work with Professor Nikolaos Tsamis (a frequent visitor to the University of Florida) at the University of Crete in Heraklion, Greece. Afterwards, he plans to assume an associate professorhip in his home nation of Turkey.

Alumnae Receives Kenan Professorhip

Dr. Cristina Marchetti received a William R. Kenan, Jr. Professorship of Science, a major honor with only 120 Kenan Professors nationwide.

Dr. Marchetti received her Ph.D. in Physics from the University of Florida, under the advisement of Professor Jim Dufty. Then continued on with postdoctoral positions at the University of Maryland, Rockefeller University and the City College of CUNY. She is currently at Syracuse University where her research in theoretical physics, supported by National Science Foundation grants, is focused on the fields of condensed matter physics and statistical mechanics.

William Kenan (d. 1965) was a chemist, engineer, industrialist, farmer and philanthropist. He worked mainly in the fields of chemical and mechanical engineering and had a life-long interest in education. In his Will, he created the Charitable Trust in his name, which among other activities, endows these Kenan Professorships.

Source: Edward Lipson, Professor and Chair, Department of Physics, Syracuse University

Outstanding Physics Alumnus

At the 2004 UF Homecoming CLAS Outstanding Alumni Brunch, Dean Neil Sullivan presented Dr. Jaszczak with an award commemorating this honor.

Dr. Ronald Jaszczak received his Bachelor of Science degree from the University of Florida in 1964 and out of a class of 980 graduates he was ranked 4th. He continued on at UF to receive his Doctor of Philosophy degree (PhD) in Physics, where he studied under Professor Eugene Dunnam. He currently resides in Chapel Hill, North Carolina, and is a Professor of Radiology and Biomedical Engineering at Duke University Medical Center.

Dr. Jaszczak is a Fellow in the Institute of Electrical and Electronics Engineers (IEEE) and has served as President of the IEEE Nuclear Plasma Sciences Society (NPSS) from 1997 to 1998. His research interests are in the field of medical imaging science and he has made many contributions to his field, in particular, to the development, characterization and understanding of the single photon emission computed tomography (SPECT).

Awarded the 2000 Paul C. Abersold Award, by the Society of Nuclear Medicine, Dr. Jaszczak was recognized for his pioneering work and outstanding achievement in the field of nuclear medicine imaging.

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Designate a specific fund:

Fund#	Name of Award	Amount
011175	The Charles F. Hooper, Jr. Memorial Award	_____
008637	The Raymond Andrew Memorial Award	_____
002240	The Tom Scott Scholarship Award	_____
000616	The Sawyer Scholarship Award	_____
003401	The Williamson Memorial Award	_____
001944	The Richard E. Garrett Award	_____

Total Donation _____

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