

# PROTON



PHYSICS REPORT ON THINGS OF NOTE

VOLUME 7 NUMBER 2

## FACULTY NEWS



*Pierre Ramond (left) with Professor Bengt Nilsson who is on the Meitner Prize Committee and a physics professor at Chalmers University*

### 2007 Lise Meitner prize is awarded to Professor Pierre Ramond

This year the Lise Meitner prize is awarded to **Professor Pierre Ramond** for his groundbreaking discoveries in theoretical physics that led to the superstring theory. During the years 1969-71, Ramond, who had then just completed his Ph.D. studies, was working at the National Accelerator Laboratory outside Chicago (later renamed Fermilab). Ramond and a handful of young theoretical physicists had been brought to this newly established laboratory to support experimental physicists in their work. While there, Ramond conducted independent research that laid the foundations for superstring theory. Through studying Paul Dirac's work from 1928 where he formulated the equation describing the wave function of the electron, Ramond succeeded in generalizing the idea to the quantum mechanical description of a string carrying spin.

His work made it possible to construct string theories with both bosonic and fermionic degrees of freedom, necessary for describing elementary particles associated with forces and matter, respectively. A consequence of this formulation was the discovery of a new type of symmetry between these degrees of freedom, later named "Supersymmetry", which was also found to be applicable to ordinary quantum field theories describing ordinary (point-like) particles. This symmetry is now attracting enormous interest and evidence for its existence will be searched for in the new particle accelerator named the "Large Hadron Collider" (LHC) that will start operating this year at CERN.

The award was presented January 25 with a public lecture given by Ramond. The Lise Meitner prize is awarded by the "Fysikcentrum" of Gothenburg, comprised of the physics institutes at Gothenburg University and Chalmers. The prize is given to researchers who under difficult conditions succeed in making groundbreaking discoveries in physics.



**Lise Meitner**, 1878-1968, was an Austrian-Swedish nuclear physicist. In Berlin, in 1934, she started studying the effects of bombarding Uranium with neutrons. The experiment was conducted by the chemist Otto Hahn, and Meitner formulated the theoretical explanations of the problem. Meitner worked in Berlin until 1938 when, being born of a Jewish family, she was forced to escape and consequently came to Sweden.

In Kungälv she made history. Hahn reported the results of the experiment in Berlin. Lise Meitner and her nephew Otto Frisch explained the results. They realized that the atomic nucleus, previously thought to be indivisible, could be split and that a large quantity of energy was emitted in the process, which we now know as "Fission". This conclusion led to a race by many laboratories when the potential for developing nuclear weapons, among other things, was realized. Lise Meitner's contributions were ignored when Otto Hahn received the 1945 Nobel Prize in Chemistry for his research into fission. Meitner became a Swedish citizen in 1949 and moved to Cambridge in 1960. She died there in 1968.

### Spring 2008 SEMILAR Schedule

**Astrophysics**  
Fridays @ 4:00pm in  
Room 2165 NPB

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

**Physics Colloquium**  
Thursdays @ 4:05 in  
Room 1002 NPB

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

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

### EDITORS

Alan Dorsey, Chair  
Pam Marlin



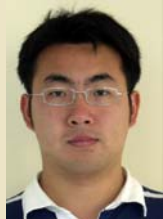
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**liberal arts & sciences**

**UF** UNIVERSITY of  
**FLORIDA**  
The Foundation for The Gator Nation





## STUDENT NEWS



### Physics Student attends Biomolecular Solid State NMR School in Vermont

**Hyoung Jeon Jeon**, a 3<sup>rd</sup> year graduate student working with **Professor Aneta Petkova**, attended the 1<sup>st</sup> U.S.-Canada winter school on Biomolecular Solid State NMR at Stowe, Vermont, January 20-25, 2008, with financial aids (winter school organization committee and Prof. Petkova).

The organizers of this winter school were Dr. Rob Tycko (NIH) and Prof. Bob Griffin (MIT). "The primary goals are to foster the scientific development of the next generation of biomolecular solid state NMR spectroscopists," says Dr. Griffin, "to introduce biomolecular solid state NMR methods to senior scientists who are currently working in related fields, to encourage the sharing of information and the development of productive relationships among biomolecular solid state NMR groups, and consequently to accelerate progress in this field".

The winter school consisted of lectures, problem-solving sessions, and workshops. The topics covered were from fundamental principle of biomolecular solid state NMR to practical aspects of solid state NMR for biological application. Approximately 50 students and postdocs attended this winter school. Well known physicist, Prof. Charles Slichter (UIUC), also attended. Hyoung Jeon was glad for the opportunity to attend, "I was very excited to attend this very terrific and interactive meeting. I could easily discuss very basic questions with well-known scientists and lectures on broad topics helped my understanding and gave me some ideas on my research."



*Faculty Students & Staff are invited*

**COFFEE TIME**

*freshly baked cookies  
hot cocoa  
& hot tea, too!*

**Every Monday & Tuesday**

**3:00p - 3:45p | NPB 2205**

*- brought to you by the Society of Physics Students -*

Minutes from the Spring 2008 Graduate Student meeting have been posted at <http://www.phys.ufl.edu/academics/downloads/grad-meet-spring08.pdf>



## SUMMER 2008 REU

### University of Florida Physics Research Experience for Undergraduates (REU)

#### 2008 Summer Program will offer...

- valuable research experience
- workshops on cutting-edge science and career choices
- tours of research facilities
- ten-week program from May 27 through July 31
- a \$4,500 stipend, paid housing and travel

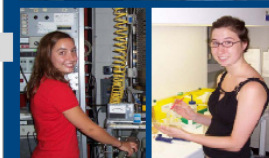
#### Research opportunities in...

Materials Physics  
Experimental Accelerator Physics  
Computer Modeling & Simulation

#### For more information...

Project descriptions and applications are online at [www.phys.ufl.edu/reu](http://www.phys.ufl.edu/reu)

Questions?  
Contact Prof Kevin Ingersent  
[ingersent@phys.ufl.edu](mailto:ingersent@phys.ufl.edu)



UF UNIVERSITY OF FLORIDA





## Employment Opportunity

**Postdoctoral position in Gravitational Wave Astronomy** The LIGO Research Group at the University of Florida invites applications for a postdoctoral position in the area of gravitational wave (GW) astronomy and data analysis. An appointment for two years is anticipated with possible extension. We will be continuously reviewing applications starting April 1st, 2008 until the position is filled. We are looking for a scientist who is willing to take a leading role and actively contribute to an exciting and rapidly growing area of gravitational wave physics. Expertise in astrophysics, statistics, signal processing and computing is desirable. The UF LIGO group consists of six faculty members, four post-docs and three graduate students. The group is a member of the LIGO Scientific collaboration, and it has made a significant contribution to the design, development, and construction of the LIGO detectors. The UF LIGO group maintains a vigorous research program in many aspects of gravitational wave physics. Increasingly important in our research is the analysis of LIGO data, the development of tools for data analysis (particularly wavelet methods for burst searches), real-time monitoring, and characterization of the LIGO detectors. We are expanding our research in the astrophysics of burst and binary inspiral sources of GW radiation and also the development of data analysis tools and strategies for the LISA experiment. The group has access to excellent computational facilities including a network of SGI workstations and LINUX clusters with several hundred CPUs located at UF. Applicants should send their curriculum vitae, a brief description of research interests and three letters of recommendation to:  
**Dr. Sergey Klimenko**, Physics Department, University of Florida corner of Museum road and Gale Lemerand drive Gainesville, FL 32611-8440 klimenko@phys.ufl.edu



### UF Policy for Emergency Notification Information Use and Access

The university has been enhancing its emergency response efforts in connection with providing information, warnings and security for its students, faculty and staff. Part of this effort involves the collection of emergency contact information to be used in case of a campus or other emergency involving the university or its constituents. The university has started collecting emergency notification information for students during the course registration process. Plans to start collecting this information for faculty and staff are underway. Faculty, staff and students can enter their emergency contact information through My.ufl.edu ->My Account-> Update Emergency Contact.

Personal cell phone, personal e-mail, and emergency contact information is being collected for campus emergency notification, preparation and response. This information is protected from disclosure as a public record under an exception to the Florida public records law for security system plans and, unless required by law, the only business process under which UF will use the information is for emergency notification, preparation or response. The emergency contact information is being collected for use in notifying the individual or emergency contact in case of an emergency that could threaten the safety or health of people or to prepare or respond to an emergency.

This new collection and notification process is an important step that will enhance the University's ability to prepare for and respond to emergencies. Thank you for your participation. If you have any questions about this initiative, please contact the Directory Administration at 273-1388 or emailto:DIRECTORY-@LISTS.UFL.EDU.



### Physics Food Drive a Success!



PO Box 5086  
 Gainesville, FL 32627  
 Phone (352) 336-0839  
 Fax (352) 395-6570

January 15, 2008

University of Florida  
 Physics Department  
 ATTN: Lori Bell  
 P.O. Box 118440  
 Gainesville, FL 32611

Dear Ms. Bell;

On behalf of Bread of the Mighty Food Bank and the Gainesville community, I thank you and the Physics Department family for your donation of 94 pounds of food received on December 14, 2007. Your donation was greatly appreciated.

As we entered the holiday season, the shelves of the food bank were quite empty. A public appeal requesting help for the Bread of the Mighty and other food service agencies in our area resulted in a tremendous outpouring from the Gainesville and University of Florida communities. We at the Bread of the Mighty had a vision to distribute 300 food boxes at Thanksgiving and 250 food boxes for the Christmas holiday. But, the benevolence of people like you allowed us to exceed these goals. We were able to distribute 390 food boxes at Thanksgiving and another 299 boxes in the week preceding Christmas.

The goal of the Bread of the Mighty is to continue to make a difference in the ability of our network of non-profit organizations to feed and meet the needs of the poor and the needy. With the help of donations from supporters such as you, we will continue to see improvements in our ability to do this. *Remember - anytime is a good time to conduct a food drive to support the food bank.*

Together we can maintain and strengthen the hope of our servicing agencies, and, more importantly, those who are served. Thank you again for your support of our efforts to feed the hungry and care for the needy. God bless.

Sincerely,

  
 Anne H. Voyles  
 Director