FEMALE PHYSICS FORUM

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WOMEN IN SCIENCE

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GENERAL INFORMATION

- **We are starting a high school outreach program in the spring and need volunteers to help out. If you are interested in being a volunteer or help with organizing the program, email us at fpforum@phys.ufl.edu**
- **Interested in becoming an officer or a part of the newsletter staff for FPForum? Email Layla Booshehri at lgbooboo@ufl.edu for more information.**

FEMALE OF THE MONTH: LISE MEITNER

BY: LAYLA BOOSHEHRI

When names such as Heisenberg, Rutherford, Bohr, Schrödinger, and Einstein are mentioned, it is generally with regards to the history of modern physics. Their names perpetually resonate with the discoveries of quantum mechanics, atomic structure, and invariant mass. However, there is one name that is frequently overlooked, and that name is Lise Meitner. Fondly referred to as “our Marie Curie” by Einstein, Meitner had the reputation of one of Germany’s best experimental physicists of her time. Best known for her sharp realization of the ability to split atomic nuclei, her work sparked a set of discoveries undeniably leading to the atomic bomb. Unfortunately, she had to flee from Nazi Germany, distancing her from her laboratory and colleagues, and ultimately costing her the fame of the Noble Prize. Nonetheless, attention is gradually being refocused on this extraordinary woman.

Born in Vienna, Austria in 1878, Meitner was the third of eight children in a Jewish family. Surrounded by an intellectual atmosphere that inspired her scientific ambitions, Meitner was the second woman to receive her doctorate in physics at the University of Vienna in 1901, studying under Ludwig Boltzmann.

In 1907, she went to Berlin to study with Max Planck and collaborate with Otto Hahn, and in 1918, Meitner and Hahn discovered the element protactinium. In 1923, Meitner then discovered radiationless transitions, known as the Auger effect. This effect was named after Pierre Victor Auger, who discovered the effect two years later.

Germany annexed Austria in 1938, causing Meitner to flee to Sweden. She continued her work at Manne Siegbahn’s laboratory in Stockholm. However, she received little support due to Siegbahn’s prejudice against women in science, and clandestinely met with Hahn in Copenhagen to plan experiments and exchange letters. The experiments that provided evidence of nuclear fission were performed in Hahn’s laboratory in Berlin, although it was obvious through their correspondence that Hahn believed nuclear fission was impossible until Meitner demonstrated to him otherwise. In 1939, each published their findings separately, leading to the creation of the atomic bomb. In 1944, Hahn received the solo Noble prize for Chemistry for the discovery of nuclear fission. It was the opinion of many scientists that Meitner should have shared the prize and, in 1966, it was partially corrected when both Hahn and Meitner together were awarded the Enrico Fermi Award.

Meitner refused an offer to work on the project at Los Alamos, declaring that "I will have nothing to do with a bomb!"

She was named “Woman of the year” in 1946 and received the Max Planck Medal in 1949. She died in 1968 in England and element 109 is named meitnerium in her honor.

SPEAKER HIGHLIGHT: DR. GITI KHODAPARAST

FEMALE PHYSICS FORUM SPEAKER MEETING

On October 10th, Dr. Giti Khodaparast from Virginia Tech spoke to FPForum. Dr. Khodaparast is an assistant professor in the physics department at Virginia Tech and works in the field of condensed matter experiment. She completed her postdoctoral research at Rice University and is a current researcher at the National High Magnetic Field Laboratory, the Stanford Picosecond Free Electron Laser Center, and the Megagauss Laboratory at the University of Tokyo.

Her current research interests are in the area of semiconductor optics, in particular, ultrafast and nonlinear optics, terahertz dynamics, spin-dependent phenomena, and the application of nanoparticles in biology.

Dr. Khodaparast spoke about her experiences as a female in science in Iran and she also mentioned the new Advanced program at Virginia Tech that supports female physicists with children and solves the "two-body problem" that faces women in science.

For those interested in a postdoctoral position in condensed matter experiment, there is an opportunity to work with Dr. Khodaparast in the field of ultrafast spectroscopy, specifically, magnetic and narrow gap heterostructures with emphasis on spin and charge dynamics. Her email is khoda@vt.edu and you must apply for the position online at www.jobs.vt.edu.

SPEAKER HIGHLIGHT: DR. KATE SCHOLBERG

FEMALE PHYSICS FORUM SPEAKER MEETING

On October 27th, Dr. Kate Scholberg from Duke University spoke to FPForum. Dr. Scholberg is an assistant professor of physics at Duke and specializes in experimental high energy physics. She received her undergraduate degree at McGill University and her doctorate at California Institute of Technology. Her current research includes collaborators from the physics department at MIT, the Kamioka Observatory in Japan, and the KEK Accelerator Laboratory in Japan.

Dr. Scholberg's research interests include experimental elementary particle physics, astrophysics and cosmology. Her specific interest is neutrino physics, in particular, neutrino oscillations with the Super-Kamiokande experiment, a giant underground water Cherenkov detector located in a mine in the Japanese Alps. Her primary involvement is with the atmospheric neutrino data analysis.

She also coordinates with SNEWS, the Supernova Early Warning System, an inter-experiment collaboration of detectors with Galactic supernova sensitivity. The goal of SNEWS is to provide the astronomical community prompt alert of a Galactic core collapse.

Dr. Scholberg discussed the similarities of the Canadian education system and the treatment of women in science to the US system. She also discussed her experiences as a female scientist in Japan.

Her email address is schol@phy.duke.edu. You may email her if you have any questions about her research. You may also refer to her home page at http://phys.duke.edu/~schol for more information.

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The goals of our Women in Science newsletter are to provide information about our organization and to inform the public about the achievements of women in science. We hope to enlighten our readers with more information about women in science and hopefully increase the number of female scientists today, in particular, the number of women physicists.