

KU DEPARTMENT OF PHYSICS & ASTRONOMY

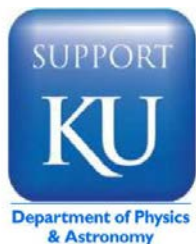
College of Liberal Arts
& Sciences

FALL 2012

A NEWSLETTER FOR FRIENDS & ALUMNI OF PHYSICS & ASTRONOMY



*Understanding
Nature
Starts Here*



ALUMNI
ASSOCIATION
The University of Kansas



Come for the Past, Stay for the Future!

Solid State Physics/Condensed Matter Physics/NanoPhysics
ALUMNI REUNION - MARCH 6 - 8, 2013

In 2011 Physics and Astronomy initiated a series of events to bring alumni of the Department back to campus to view the significant changes in the program over the last 15 years, to encourage alumni and friends of Physics and Astronomy to renew and/or expand their association with the Department, and to contribute to future improvements in the Department. The first regional reunion took place in November 2011 and proved highly successful, in the opinion of the attendees. For the second reunion, scheduled for **March 6-8, 2013**, we have decided to piggyback onto the **57th Regional Condensed Matter Physics Conference**, taking place in Lawrence from **March 8 - 10, 2013**. We are inviting all alumni associated in any way with the solid state physics, condensed matter physics, or nanophysics research groups at KU over the last 50 years (or greater!) to come back to campus to return, reconnect, and remember their experiences at KU while taking an in-depth look at the current program, including five full-time faculty as of January 2013, and their research. It is hoped that returning alumni will remain for the weekend and take part in the **CMP Conference** to gain insight into and to contribute to what the field has to offer now and in the near future.

As a first step, we would like to hear from anyone who would consider attending and, if you believe you are likely to attend, would consider taking part in the organization and planning of the reunion. For our immediate purposes, if you are considering attending, please fill out the on-line form for the Reunion which can be accessed via the link

http://www.physics.ku.edu/alumni/submit_reunion.shtml

If you are considering attending and are in communication with other Physics and Astronomy classmates, let them know and invite them to join you. We will be sending invitations by letter, but the more avenues of communication we have, the higher the likelihood that no alumnus will be overlooked.

If you prefer, you are also welcome to contact the Department regarding the Reunion by sending email to Bruce Twarog at btwarog@ku.edu. Please check back with the REUNION web page

http://www.physics.ku.edu/alumni/alumni_reunion.shtml

periodically for updates regarding the Reunion as we move closer to the date of the event. Thanks, as always, for your interest and consideration.

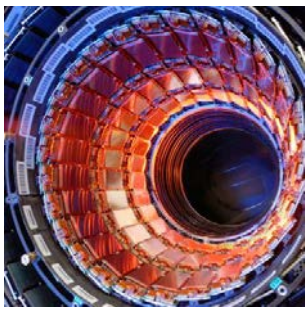
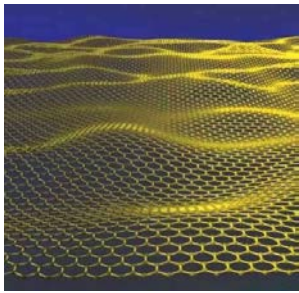
Speaking of Condensed Matter/Solid State/Nano Physics:

Researcher's Innovation Boosts Performance of Graphene for Solar Panels

Judy Wu, Distinguished Professor of Physics and Astronomy, and her research group, in collaboration with Professor Rongqing Hui's group in KU electrical engineering and computer science, have developed a technique for attaching a layer of metal nanoparticles to graphene, vastly improving graphene's capacity to soak up sunlight and re-emit it in a much-condensed form due to "plasmonic resonance," a critical step toward high-efficiency



RESEARCH NEWS



STUDENT NEWS



solar cells that drastically improves their light absorption. The full story of this breakthrough can be accessed at [this link](#).

[New program teaches youngsters nitty-gritty of nanoscale, energy](#)

A suite of new educational material at KU, as part of the **Nanotechnology for Renewable Energy** project, is introducing the world of nanoscale and energy to students in elementary and middle schools. Much of the effort focuses on a new hands-on program for schools at the KU Natural History Museum, where students explore energy through the world of cartoon physics, including falling anvils, giant rubber bands and TNT. The full article can be accessed at [this link](#).



Department Contributions to CMS Lead to Multiple News Items

KU Postdoc at CMS, **Gemma Tinti**, appears in a CMS news note from the Physics Today web page for Friday April 13. The short article discusses attempts to discover exceptionally rare particles hidden in time loops. For the complete story, click on [this link](#).

KU Chair **Stephen Sanders** and grad student **Victoria Zhukova**, both collaborating in research at CMS, appear news note from the Physics Today web page for Friday May 11. The short article discusses CMS experiments and their on our understanding of the quark-gluon soup. For the story, click on [this link](#).



in a CMS
May 11.
impact
complete



[KU Physicists Key Players in Higgs Hunt](#)

Researchers announced a breakthrough discovery of a subatomic particle strongly resembling the long-sought Higgs boson on July 4 in Geneva. KU researchers have played a key part in designing and monitoring the colossal detector at the European Organization for Nuclear Research, where the discovery was made. For more insight into the research, click on [this link](#).

[KU students visit Large Hadron Collider in Geneva](#)

A European research facility that recently made headlines around the globe for a breakthrough discovery was among the stops on an August trip to Germany and Switzerland for 17 University of Kansas School of Engineering students in the Self Engineering Leadership Fellows Program. The visit to CERN was arranged by KU physics professor **Alice Bean**, who leads a team of more than 20 KU researchers who are part of the collaboration at the Large Hadron Collider. CERN is only one part of the SELF senior class capstone experience, dubbed The Alpine Projekt. For the press release, click [this link](#).

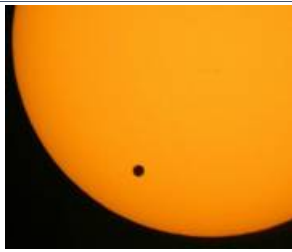
[Two Departmental Majors Selected as University Scholars](#)

Congratulations to **Gregory Burg**, a sophomore in engineering physics, and **Jill Wenderott**, a sophomore in physics and geology, on their selection as **University Scholars** for 2012. Each student receives a \$250 scholarship per semester for five semesters, a faculty mentor and enrolls in an interdisciplinary seminar taught by a faculty member noted for a distinguished teaching record. The full press release can be found at [this link](#).



[New KU YouTube Video Features UG Physics Research](#)

Sophomore Juliet Remmers, a dance major, received an undergraduate research award to conduct Physics research at KU. Her project with Prof. Dave Besson is featured in a new on-line video promoting undergraduate research experiences at KU. The video is accessible on YouTube via [this link](#).



[Hundreds View Venus Transit from Lied Center](#) Hundreds of Lawrencians showed up in the parking area west of the Lied Center to view the transit of Venus with telescopes set up by the Astronomy Associates of Lawrence, the KU Astronomy program, and a variety of enthusiastic amateurs. Helping out in the photo above are Jeannette Shawl, Bryce and Jill Baringer, and Bob Curry. For the story in the Lawrence Journal-World, click on [this link](#).



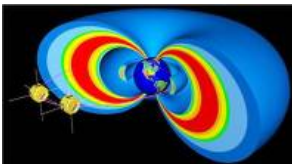
Education in Action (and Reaction!)

Congratulations to **Prof. Chris Fischer** and more than 60 students in his PHSX 211 class on an uplifting demonstration of Newtonian physics. Chris held a projectile competition on a former practice field south of Allen Fieldhouse, assigning credit based upon the distance travelled by a projectile launched using a trebuchet, catapult, or slingshot in one of three size categories. The class and department greatly appreciated the cooperation of the Athletic Department and Paul Buskirk, Associate Athletic Director, in helping set up this edutainment.



[Department Alumni Prime Movers in NASA Mission](#)

It's Launched! While the Radiation Belt Storm Probes (RBSP) Mission at NASA may have cost only \$700 million, 1/3 of the Mars Mission, its direct impact on Earth and our understanding of the Earth-Sun interaction is significantly greater. **Dr. Mona Kessel** (MS, PhD Physics 1986), member of the Department Alumni Advisory Board, is Program Scientist for the mission and Prof. Emeritus, alumnus, and former Board member, **Dr. Tom Armstrong**, will be running the Science Operations Center for **RBSPICE**, one of the four instruments on board, from his local Lawrence firm, Fundamental Technologies. To celebrate and view the launch, a local event was held in downtown Lawrence at Hobbs at 3 AM on Aug. 24. For technical reasons and the weather, the launch was delayed a week to Aug. 30. There will be an approximately two-month shakedown period before the data collection is fully underway but, so far, so good. To follow the progress of the mission, click on [this link](#).



Dr. John Beacom (B.S. Physics and Mathematics 1991) has been elected Vice Chair of the American Physical Society Division of Astrophysics. He will assume the role of Chair next year. John served as a member of the Physics and Astronomy Alumni Advisory Board until he assumed his extensive duties as Director of the Center for Cosmology and AstroParticle Physics at Ohio State University in 2011.



In Memoriam: **Mavis Paterson Wiseman, 1918 - 2012**



Mavis Paterson Wiseman, 94, wife of Professor Emeritus Gordon Wiseman, passed away on April 1, 2012 at Lawrence Presbyterian Manor. A memorial service for Mavis was held 2:30 p.m. Friday, April 6, 2012 at First Presbyterian Church, Lawrence. Mavis married Dr. Wiseman on April 5, 1942. She was active in a number of volunteer organizations in Lawrence. In particular, she was one of the founders of "Small World", a volunteer organization for teaching English and life skills to the spouses of foreign students. More details can be found at [this link](#).



Marian Elaine Sheeran, 1970 – 2012



Marian Sheeran (BS ASTR 1994) 42, passed away Saturday, March 17, 2012. She obtained her ASTR degree doing research with Profs. Anthony-Twarog and Twarog but also met her future husband, Bob Stewart (BS ASTR 1994), while at KU. Marian used her physics and math knowledge to become a dedicated physics teacher at Shawnee Mission South High School. Marian's main teaching passion, however, lay in teaching about Japanese culture and language. She spent 13 years as an inspirational teacher of Japanese at the Center for International Studies in the Shawnee Mission School District.

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