

Department of Physics & Astronomy

Good News around the
Department

Fall 2013

>>JOIN OUR FACEBOOK GROUP!

The new "Friends of WSU Physics and Astronomy" group on Facebook is a great place for alumni to catch up with friends and colleagues by sharing old stories or reporting good news. You are encouraged to upload old photos from around the department, as well as then-and-now photos. We look forward to seeing you on Facebook!

<https://www.facebook.com/groups/1427920190753894/>

>>DISCOVERY

Marianne Tarun (Ph.D. 2012 Mat. Sci.; postdoc, McCluskey) has accidentally discovered that exposing strontium titanate to light makes it over 400 times more conductive.

Read more at WSU News:

<http://news.wsu.edu/2013/11/14/accidental-discovery-dramatically-improves-electrical-conductivity/#.Up-ERsRDs9Q>

>>PAPERS

Katherine Hegewisch (Ph.D. 2010, Tomsovic) had her thesis work published in the *Journal of the Acoustical Society of America (JASA)* as part of a special issue.

<http://scitation.aip.org/content/asa/journal/jasa/134/4/10.121/1.4818783>

Narendra Parmar (Ph.D. 2012; postdoc, Lynn) had a paper accepted in *Journal of Electronic Materials* as an editor's choice: "Vibrational Spectroscopy of Na-H Complexes in ZnO."

<http://link.springer.com/article/10.1007%2Fs11664-013-2723-8>

Doerte Blume's graduate students:

Harmonically trapped Fermi gas: Temperature dependence of the Tan contact. **Yangqian Yan** and D. Blume, *Phys. Rev. A* 88, 023616 (2013)
<http://link.aps.org/doi/10.1103/PhysRevA.88.023616>

Correlations of the Upper Branch of 1D Harmonically Trapped Two-Component Fermi Gases. **Seyed Ebrahim Gharashi (M.S. 2012, Blume)** and D. Blume, *Phys. Rev. Lett.* 111, 045302 (2013)
<http://arxiv.org/abs/1307.6898>

Small two-component Fermi gases in a cubic box with periodic boundary conditions. **Xiangyu Yin** and D. Blume, *Phys. Rev. A* 87, 063609 (2013)
<http://pra.aps.org/pdf/PRA/v87/i6/e063609>

>>STUDENTS

Summer 2013 graduation

Charles David Bergman (M.S., Kuzyk)
Tong Wan (M.S., Allen)
Benjamin Anderson (Ph.D., Kuzyk)
JiaJia Chang (Ph.D., Engels)
Liyanamagar (Ranga) Dias (Ph.D., Yoo)

December 2013 graduation

Cory Carpenter (B.S.)
John Peters (B.S.)
Kyle Schademan (B.S.)
Shen Wei (B.S.)
Josef Felver (M.S., Dexheimer)
Kasey Lund (M.S., Lynn)
Wadu-Thanthree Thilina Dayanga (Ph.D., Bose)
Shaon Ghosh (Ph.D., Bose)
John Lang (Ph.D., Gupta)
Shores Shafei (Ph.D., Kuzyk)
Xianjun Ye (Ph.D., Kuzyk)

>>CONFERENCES

Together with Hans-Werner Hammer and Shina Tan, **Doerte Blume** is organizing the program entitled "Universality in Few-Body Systems: Theoretical Challenges and New Directions," to be held at the Institute for Nuclear Theory (INT), University of Washington, from March 10 to May 16, 2014. This program is accompanied by a five-day workshop entitled "Few-body Universality in Atomic and Nuclear Physics: Recent Experimental and Theoretical Advances," organized by D. Blume, F. Ferlino, C. H. Greene, and D. Phillips.

Steven Tomsovic co-organized a conference in Dresden, Germany, from October 22-26, 2012, called "Wave Chaos from the Micro to the Macroscale."
http://www.mpipks-dresden.mpg.de/~wcm12/announcement_soon.html

>>STUDENTS AND ALUMNI

Student News

Brett Deaton plans to write for Astrobites, a blog (astrobites.com), this coming year - "There are about 30 grad students from various universities writing summaries of astronomy and astrophysics research at an undergraduate level. I'm excited about it!"

Alumni

Christopher Bates (B.S. 2008) is a 4th-year medical student at Wake Forest Baptist Health in North Carolina; he plans to finish this May and go into orthopedic surgery.

Shaon Ghosh (Ph.D. 2013, Bose) is now a postdoctoral researcher at Radboud University Nijmegen, The Netherlands.

Randal Newhouse (Ph.D. 2012, Collins) is now an assistant professor of physics at Sterling College, Sterling, Kansas.

>>DEPARTMENT UPDATE

ESPN coverage of our annual Pumpkin Drop (from the October 31 game-day coverage) can be found on the Society of Physics Students (SPS) web portal:

<http://www.spsnational.org/wormhole/>



>>SPOTLIGHT

"I am a physics major, entering my fifth and final year of undergraduate study. For the past two summers, I had the opportunity to be an intern at the Lawrence Livermore National Laboratory in Livermore, CA. I got this internship through Air Force ROTC, of which I am a member. I got to participate in nuclear physics research while I was there. My first summer, I assisted a PhD student from UC Berkeley with his research in nuclear excitation by electron transition (NEET) in uranium-235. This summer, I got to carry out research on whether thorium-229 decaying from uranium-233 comes out *neutral* or positively charged - this is important in the search for the half-life of the thorium-229 isomer, which could lead to observing whether the fine structure constant, a universal fundamental constant that dictates the strength of the electromagnetic and strong nuclear forces, is in fact changing with time, by building a nuclear clock. Being an intern at LLNL has been the opportunity of a lifetime, and I'm hoping to go back again next summer!"

Molly Wakeling
Senior

>>Physics Textbook Scholarship Recipients

Cory Carpenter
Daniel Foust
Bernard Hall
Lucas Holbert
Anthony Lathrop
Lukas Memovich
Jesse Miller
Justin Niedermeyer
Molly Wakeling
Milo Wilkes

The Physics Textbook Scholarship (\$100) is "granted to certified physics majors who earned a semester GPA of B+ (3.30) or better and are enrolled for 12 credits or more during a fall or spring semester, and in the subsequent semester, and have not completed their degree work."

>>AWARDS

The WSU Society of Physics Students Chapter (Physics and Astronomy Club) was just named an Outstanding Chapter for 2013 by the National Society of Physics Students!

WSU was one of only 3 chapters from Zone/Region 17 named an Outstanding Chapter for 2013! This is also the first time in recent memory that the WSU Chapter has achieved this award. Region 17 covers Alaska, British Columbia, Oregon, Washington, and Northern Idaho. The award is given to clubs who meet criteria of outreach, K-12 educational programs, promoting college physics education and research, publicizing recent physics news, and increasing awareness of physics. A big thank you for the hard work, leadership, and energy of last year's president, **Shen Wei**, and club members including **Klaas Monster**, **Eric Beier**, and so many more, as well as to advisor **Nicholas Cerruti** (regional director of Region 17) and **Mary Guenther**. Some of the activities that garnered this award for the club included Pumpkin Drop, outreach and educational tables at Lentil Festival, WSU Family Days, Science and Engineering Days, and WSU Spring Connect, where the club presented demos. In addition, there were speakers and demonstrations, hosting the Regional Zone meeting, and coordinating Solid State Days. Thank you to all who helped the club win this award, and CONGRATULATIONS!!!

<http://www.spsnational.org/programs/awards/2013/oca.htm>

Doerte Blume has been reappointed to serve a second term (January 2013 - December 2015) on the Editorial Board of *Physical Review A*.

Steven Tomsovic was awarded the 2012 College of Sciences (COS) Distinguished Faculty Award and was a Senior Research Fulbright Fellow in 2011.