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Dear Physics Alumni,

The Physics Department faculty and staff invite you to our **Homecoming reception on Saturday, October 19**. We have extended last year's joint reception with Chemistry to include Biology this year. As happened last year we are having both a reception and a lecture demonstrations show. The show is designed to be of interest to everyone including children. The lecture demonstrations will begin at 10 am on Saturday morning in room 126 of Winston Hall. The demonstrations will be followed at 10:30 by a reception in the lobby of Winston Hall. There will also be tours of Olin and Salem Halls for anyone who is interested.

This past year has been an excellent one for the Physics Department. Our students and faculty have received a number of awards including another National Science Foundation Career Award – this time for Professor Oana Jurchescu (recall that Prof. Timo Thonhauser won an NSF Career Award the previous year), the WFU Reid-Doyle prize for excellence in teaching for Professor Oana Jurchescu, a WFU Teaching Innovation Award from the Teaching and Learning Center for Professor Jack Dostal, National Science Foundation Graduate Research Fellowships for graduate students Amanda Smelser and Katelyn Goetz, and the G. W. Greene Scholarship by the Wake Forest Chapter of Phi Beta Kappa for undergraduate physics major Kristine Cantin. Some details on these and other activities and awards are given below.

The number of students in our Department continues to grow. This fall we have 35 juniors, 16 seniors, and 43 graduate students. Our tradition of undergraduate research also continues. Last year over 30 undergraduate students engaged in research with our faculty. If you look around Olin, you will see posters and publications in our halls bearing the names of both our undergraduate and graduate students. You can also read about some of the students and their research projects at <http://www.wfu.edu/physics/profiles/profiles.html>

The National Science Foundation Career Award received by Professor Oana Jurchescu, is a national award to recognize the excellence of the scholarship and teaching of America's outstanding young professor/scientists. It is the National Science Foundation's most prestigious award in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations. The award is given to outstanding scientists to build a firm foundation for a lifetime of leadership in integrating education and research.

The Reid-Doyle Prize for Excellence in Teaching which Professor Oana Jurchescu received recognizes faculty who are in the early part of their careers. Professor Jurchescu's teaching style has been described by her students as "challenging and rewarding". When Provost Rogan Kersh announced the award at the Spring Convocation, he finished with a quote from one of Professor Jurchescu's past students who wrote: "She encourages her students to give their best and to extend their reach, never accepting 'good enough.'" The Physics Department has now had four winners of the Reid-Doyle Prize for Excellence in Teaching: William C. Kerr (1976), Rick Matthews (1982), Martin Guthold (2005), and Oana Jurchescu (2013).

The Teaching Innovation Award from the Wake Forest University Teaching and Learning Center which Professor Jack Dostal won was for developing (with his award co-recipient Dr. Stewart Carter of Music) the class entitled "The Physics of Music". The Teaching Innovation Award is to recognize the effort that goes into reworking traditional courses or introducing new courses, using new methods or finding ways to apply theories of learning to the practice of teaching.

As mentioned above, Amanda Smelser and Katelyn Goetz were both awarded National Science Foundation Graduate Research Fellowships. These Fellowships are for 3 years and provide each student with a \$30,000 annual stipend and also covers the student's tuition costs. According to the NSF webpage this year 2000 winners were selected from over 13,000 submitted applications. Amanda works under Physics Professors Jed Macosko and George Holzwarth, and also works with Professor Allyn Howlett in the Department of Physiology & Pharmacology at Wake Forest School of Medicine. Katelyn works under Professor Oana Jurchescu.

The G. W. Greene Scholarship by the Wake Forest Chapter of Phi Beta Kappa received by undergraduate physics major Kristine Cantin is given to junior(s) with the highest GPA and who have accepted membership in Phi Beta Kappa. The Scholarship was named in honor of the Reverend Dr. George W. Greene, an 1870 graduate of Wake Forest College. The George W. Greene Scholarship was established in 1997 by Dr. and Mrs. Donald Moore. Dr. Moore is Dr. Greene's grandson and is a 1941 graduate of Wake Forest.

At the Physics Department's annual awards ceremony last April it was announced that Professor Jed Macosko would receive the Physics Department Excellence in Teaching Award. Also graduate student Jenny Dorand, who is working on a PhD in medical physics, won the Outstanding Teaching Assistant award and Loah Stevens received the Speas award. Loah entered Rice University this fall to begin her graduate studies in physics.

Physics graduate student Matthew Walb won first place in the Southeast Chapter of the American Association of Physicists in Medicine's trainee poster session during the 2013 SEAAPM Annual Meeting. This session allows grad students and post docs to present their work and is held during the annual Scientific Meeting of the SEAAPM. Matt's poster entitled "The Effects of Low Dose Radiation $\pm$ Hyperoxia on Lung Tumorigenesis" was the winning poster out of the largest number of participants to date.

The Wake Forest University Graduate School awarded Jeremy Ward's poster as a runner-up at the 13th Annual Graduate Student Research Day. This year's event featured 156 posters. Jeremy's poster presented a method for patterning organic thin-film transistors by tuning interactions at interfaces between organic semiconductors and device electrodes. This research is performed in Professor Jurchescu's group and is funded National Science Foundation Graduate Research Fellowship Program.

Dr. Yuan Li, who earned his doctorate in the summer of 2012 at the Nanotech Center under the guidance of Professor David Carroll, was awarded the "Green Talents" in October 2012, in Berlin, Germany. This award is given by the German Federal Ministry of Education and Research (BMBF), and its purpose is to intensify the global exchange between young researchers in the field of environmental and sustainability research. BMBF annually announces the international "Green Talents"-competition, focusing on young outstanding scientists active in the field of sustainability research. He was among 25 young scientists all over world to receive this year's award. Yuan Li is the first Wake Forest student to win the award. In addition Dr. Yuan Li's Ph.D. dissertation was selected as "Outstanding Ph.D. Research" by Springer and published as a book in 2012. It was also highlighted in Nature Photonics.

Physics graduate student Chen Liu won a Young Investigator award at the Annual Meeting of the Society for Free Radical Biology and Medicine held in San Diego November 15-18, 2012. The title of his presentation was Nitric Oxide scavenging by Red Blood Cell Microparticles, co-authored by Weixin Zhao and George J Christ from Regenerative Medicine, and Daniel Kim-Shapiro.

Some of the research efforts of our faculty and students have received extra recognition in the past year. Professor Timo Thonhauser's research on hydrogen storage has been featured in national and international news. Dr. Thonhauser was even voted "Salzburger of the Year 2012" (yes, this is the Salzburg from the Sound of Music!) by Austrian newspapers. Coverage of his work appeared in the Austrian national newspapers Salzburger Nachrichten and Unterkärntner as well as in the Charlotte Observer, the Winston-Salem Journal, eScience News, NewsWise, and Bridges (a publication of the Office of Science and Technology).

The BBC reported on work done by Professor Dave Carroll and his students at the Nanotech Center on the development of a new type of light bulb. It is based on a technology invented by Dr. Carroll and has advantages over older technology in that it is more efficient, environmentally friendly, and the bulbs are made of plastic so they won't break like glass when they are dropped. For more details see the BBC news article at <http://www.bbc.co.uk/news/science-environment-20553143>. This work has been published in the journals Applied Physics Letters and Organic Letters.

An article co-authored by Professor Fred Salsbury was featured on cover of the Journal of Medicinal Chemistry. An article entitled "Direct Structural Mapping of Organic Field-Effect Transistors Reveals Bottlenecks to Carrier Transport" by graduate student Jeremy Ward and Professor Oana Jurchescu was featured on the cover of Advanced Materials Journal. An article authored by WFU Alumnus and Postdoctoral Researcher, Joel Grim, along with Professors Burak Üçer and Richard Williams was selected by the editors of Physical Review B to be an Editors' Suggestion. The paper is titled "Nonlinear quenching of densely excited states in wide-gap solids". Dr. Piero Canepa who worked as a postdoctoral researcher for Professor Timo Thonhauser had his scientific artwork selected for the month of March for the webpage on Kaleidoscope Images for the journal Physical Review B. The link to the webpage is <http://prb.aps.org/kaleidoscope/March2013>.

The Winston-Salem Journal on Sept.21, 2012 showcased a beet-root juice based drink that was developed due to its health effects based on the research of Physics Professor Dany Kim-Shapiro, the Harbert Family Distinguished Chair for Excellence in Teaching and Scholarship. The story about the beet-root juice drink was the lead technology featured in an article about the Technology Expo held on Thursday, Sept. 20, 2012 in Winston-Salem to highlight local companies and entrepreneurs that are involved in technology development and technical products and services.

Last October Wake Forest University hosted the Stuttgart NanoDays Conference. This conference was the fourth one in a series of workshops examining entrepreneurship in the natural sciences - specifically dealing with nanocarbon materials. The Fraunhofer Institut IPA (Stuttgart) and the Center for Nanotechnology and Advanced Materials at Wake Forest worked together with an international advisory board to sponsor and organize this event.

Finally, it is with great sadness that I mention that Judy Swicegood will be retiring at the end of December 2013 as the Administrative Coordinator in Physics after 29 ½ years of service. Judy came to Wake Forest University and was hired both in the Physics and Chemistry Departments on June 24, 1984 as an Administrative Assistant and worked in Salem Hall. She worked in both departments until Physics moved into their new building, Olin Physical Lab, in December 1989. Judy was the first employee to move into Olin (on Dec. 1, 1989), before the faculty moved in during the Christmas holidays. As I can attest, Judy is the person who has been the glue and the memory of the Physics Department, making sure the Department runs smoothly and efficiently year after year. In 2004, Judy's hard work and dedication was recognized by the university in awarding her the "Employee of the Year Award". During her many years of working here she has come to know many of you – our alumni. When asked what she would most miss in her retirement about Wake Forest, Judy answered that she would miss the many friendships she has made over the 29 ½ years. If you want to send her well-wishes on her retirement her email is: judy@wfu.edu.

I want to give special thanks to all of you who designated the Physics Endowment Fund as part of your alumni giving. As well as helping to send students doing research to national and international conferences, the Physics Endowment Fund is used to support other aspects of student research and scholarship. It also supports the annual faculty and student awards and allows us to provide lunches at the career advising events for our undergraduate and graduate students. The Fund is also used to support the students who are members of our local chapter of the Society of Physics Students in their activities and events throughout the academic year. The members of the Physics Department and the university community greatly appreciate the support of our alumni.

Please come and join the fun if you can. We are looking forward to seeing you. If you can't make it to Homecoming, please drop me a note or give me a call and tell me what you're up to. If this letter was forwarded to you, please let us know your current address.

Best Regards,

A handwritten signature in blue ink that reads "Keith Bonin".

Keith Bonin
Professor of Physics & Chair