Welcome to the new Department of Physics e-newsletter. The Department of Physics at the University of Colorado at Boulder is internationally renowned for outstanding teaching, research, and service. Strategic investment by the university and decades of visionary recruitment have placed the Department of Physics at the forefront, with accomplished faculty devoted to undergraduate and graduate research and education.

Your support can enhance this program further and ensure the superior quality, value and impact of CU-Boulder Physics. Our faculty and students have provided fundamental scientific research on which our society depends. An investment in physics is an investment in the future.

If you have questions about donating or would like to discover more ways in which you can give, please do not hesitate to contact Pat Sullivan at the CU Foundation via email pat.sullivan@cufund.org or by phone at (303) 541-1475, and additionally Paul Beale: paul.beale@colorado.edu or (303) 492-0297.

It’s easy and secure to give online to the Department of Physics. Just click the giving button below.

Thank you!
Dear Friends of the Department,

I am very pleased to report that this has been another banner year for CU Physics. Leading awards include the Davisson-Germer Prize (Chris Greene), Arthur Schawlow and R.W. Wood Prizes (Henry Kapteyn and Margaret Murnane), College Professor of Distinction (John Wahr), National Academy of Engineering (Dan Baker), Robert L. Stearns Award and Fellow of the American Association for the Advancement of Science (John Cumalat), Friedrich Bessel Award (Victor Gurarie) and the William Proctor Prize (Debbie Jin). We are especially proud of our assistant professors who have won one or more of the leading awards for junior faculty: Meredith Betterton, Victor Gurarie, Michael Hermele, Heather Lewandowski, Kyle McElroy, Alysia Marino, Tobin Munsat, Cindy Regal and Ivan Smalyukh.

Our students are also racking up the awards. They include two Goldwater prizes to Kevin Fiedler and Leland Ellison and the APS Division of Atomic, Molecular and Optical Physics Thesis prizes to Andrew Ludlow and Javier von Stecher.

According to U.S. News' reputational ranking of graduate physics programs, we are the tenth best department at a public university and nineteenth overall. Most notably, we are ranked as the best graduate program in the nation in the field of atomic, molecular and optical physics. Our Ph.D. program has grown to over 200 students, and we now have over 350 undergraduate physics, engineering physics, and astrophysics majors. In 2009, the College of Arts and Sciences ranked physics as the best department in both research and teaching.

With this semiannual e-newsletter and our annual CU Physics calendar, we hope to keep you up-to-date on recent goings-on in the department. We are especially interested in news stories about our alumni. If you have news about yourself or a friend, please email me personally at paul.beale@colorado.edu. We will do our very best to include your update in a dedicated Alumni News section in our next edition.

Sincerely,

Professor Paul Beale
Chair, Department of Physics
Honors and Awards

Ultra-Fast Research Wins Top Prize
Professors Henry Kapteyn and Margaret Murnane have been awarded the 2010 Arthur L. Shawlow Prize. This complements their already-impressive collection of awards, including the very recent 2010 R.W. Wood Prize. More...

Ultracold Molecule Prediction Garners Hot Prize
Professor Chris Greene was awarded the American Physical Society’s 2010 Davisson-Germer Prize for the prediction of the structure of a long-range Rydberg molecule. More...

CU Physicist Wins Top Honor
Professor Deborah Jin was the recent recipient of the illustrious William Procter Prize for Scientific Achievement from the international honor society Sigma Xi. More...

CU-Boulder Alumni Association Honors John Cumalat
Professor John Cumalat was recently selected as a 2010 Robert L. Stearns Award winner. The Alumni Association held a public ceremony on campus Wednesday, May 5. John was also recently elected a fellow of the American Association for the Advancement of Science (AAAS). More...

Physics Professor Receives Lifetime Achievement Award
Associate Professor Victor Gurarie is the recipient of a Humboldt Foundation Friedrich Wilhelm Bessel Research Award. More...
CU Physics Professor Receives Highest Faculty Honor
Dr. Daniel Baker has been awarded the 2010 Distinguished Research Lectureship, honoring a distinguished body of academic achievement and prominence as well as contributions to the educational and service missions of CU-Boulder. Dr. Baker was also recently elected to the National Academy of Engineering. More...

Four CU Professors Win Early Career Awards
Four University of Colorado at Boulder faculty members, including three from the Department of Physics: Michael Hermele, Alysia Marino and Tobin Munsat, received grants under the Department of Energy’s Early Career Research Program. More...

CU Physics Professor Designated Professor of Distinction
The College of Arts and Sciences has designated Professor John Wahr a College Professor of Distinction, an honorific title reserved for scholars recognized by their peers for exceptional talent. More...

JILA Graduates Win DAMOP Thesis Prize
Drs. Javier von Stecher and Andrew Ludlow are co-winners of the 2009 DAMOP Thesis Prize, in recognition of outstanding doctoral thesis research in atomic, molecular, or optical physics. For more details, please see the JILA 2009 Summer Newsletter.

CU Physics Student Named 2010 Goldwater Scholar
Engineering physics major Kevin Fiedler has been named a 2010 Goldwater Scholar, the premier national undergraduate award recognizing outstanding students in math, science and engineering. More...
Alysia Marino
I was born in New York City and raised in New Jersey. While pursuing my BA at Princeton, I became interested in elementary particle physics, especially the elusive particles called neutrinos. I continued to pursue neutrino research in graduate school at the University of California at Berkeley, receiving my Ph.D. in physics in 2004. My thesis, which received a dissertation prize from the APS, was a measurement of the flux of solar neutrinos at the Sudbury Neutrino Observatory.

Since graduate school, I have been making measurements of neutrino properties using man-made neutrino sources. From 2004-2006, I was a postdoctoral research associate at Fermilab where I worked on the MINOS experiment. MINOS is sending a beam of neutrinos 735 km through the Earth from Illinois to northern Minnesota. In 2006, I became a research associate at the University of Toronto and began working on T2K, a neutrino experiment that is under construction in Japan. Since my arrival at the University of Colorado in January 2009, I have continued to collaborate on T2K. With an intense beam of neutrinos that will travel 295 km across Japan, T2K detected its first beamed neutrinos earlier this year. More...

Thomas Schibli
After obtaining a degree in physics from the Swiss Federal Institute of Technology (ETH) in my hometown of Zurich, Switzerland, I joined the Massachusetts Institute of Technology (MIT) in Cambridge where I wrote my thesis. In 1999, I joined the Institute of Quantum Electronics at the University of Karlsruhe, Germany, where I obtained my Ph.D. in 2001. I then spent another two years at MIT as a postdoctoral associate working on ultrashort pulse generation and precise synchronization techniques for optical metrology.

From 2003-2006, I worked as a researcher at the Institute of Advanced Industrial Science and Technology and the National Metrology Laboratory of Japan in Tsukuba, Japan, where I developed fiber-laser-based frequency combs as well as novel techniques for dimensional metrology. I joined JILA in Boulder in 2006, where I worked as a senior research associate for two years on XUV-frequency comb generation. I joined the Department of Physics in the fall of 2008 as an assistant professor under the Optics Initiative. My research topics involve ultrafast physics, novel tools and applications in precision optical metrology, ultrahigh-Q optical microcavities, and optomechanical systems on chips. I am delighted to be at CU. It offers great minds and a perfect environment in which to work.
Andreas Becker
I received my Ph.D. from the University of Bielefeld in Germany. As a postdoctoral researcher I worked at the University of Bielefeld, Laval University in Quebec and the University of Serbrooke in Canada. For my work I received postdoctoral fellowships from the Alexander von Humboldt Foundation and the German Science Foundation. Before I joined the CU-Boulder Department of Physics and JILA, I was a research group leader at the Max Planck Institute for the Physics of Complex Systems in Dresden.

Currently I work on theoretical atomic, molecular and optical physics. My research interests are related to ultrafast intense laser science, in particular attosecond physics, correlated electron dynamics, coherent control and molecular imaging.

The Department of Physics would also like to extend our warmest welcome to our newest faculty members: Dmitri Uzdensky, Dmitry Reznik, Minhyea Lee, Cindy Regal and Markus Raschke all of whom will be prominently highlighted in upcoming issues.

CU Physics In the News

CU Physics Tops in Hot and Cold

Large Hadron Collider breaks Energy Records
The CU-assisted Large Hadron Collider (LHC) project, recently cited by Discover as one of the year’s top 100 science stories, has broken its own record for high-energy proton collisions. More...

Creating the World’s Hottest Temperature Matter
The Relativistic Heavy Ion Collider (RHIC) project, aided by collaborators Jamie Nagle and Edward Kinney, succeeded in creating a quark-gluon plasma (with temperatures hotter than anything known in the universe!). More...

JILA Physicists observe Super-Cool Chemical Reactions
Deborah Jin, June Ye and John Bohn have observed chemical reactions near absolute zero for the first time. More...
CU Physics Leads the Classroom Clicker Revolution
A recent MSNBC report covered the rising popularity of clickers in the classroom, highlighting Senior Instructor Michael Dubson. More...

Physics Today Highlights CU Research
Professor Michael Ritzwoller’s recent Nature paper, with Ph.D. student Morgan Moschetti and postdocs Fan-Chi Lin and Yingjie Yang, is highlighted in Physics Today. More...

CU Professor Testifies Before Congress Regarding STEM Education
Noah Finkelstein, who recently commented on the national crisis affecting science and math education, discussed before Congress in February leading research, reforms and models for improving Science, Technology, Engineering and Mathematics (STEM) education. More...

Distinguished Professor Chosen for White House Science Post
Carl Wieman was nominated by President Obama to become the Associate Director for Science, Office of Science and Technology Policy. The Nobel laureate was also recently elected to the prestigious National Academy of Education. More...

India’s Groundwater Loss Concern
CU Physics Professor and recently named Professor of Distinction John Wahr has noted the largest rate of groundwater loss on the planet, potentially leading to a major water crisis in India. More...

Herschel Space Observatory Gazes Back on Early Galaxies
Launched from Europe in May 2009, the Herschel Space Observatory’s high resolution images have revealed thousands of newly discovered galaxies in their early stages of formation, says astrophysics and physics Associate Professor Jason Glenn. More...
U.S. News Graduate School Rankings Names CU’s AMO Program Tops
CU’s atomic, molecular and optical physics program was tied for first place in the nation. More...

Condensed Matter Summer Schools and TASI Renewed
We are happy to announce that the National Science Foundation has renewed the Boulder School in Condensed Matter and Materials Physics and the Theoretical Advanced Study Institute in Elementary Particle Physics (TASI) for five years.

Physics Main Office Remodel
Duane’s front office got a much-needed facelift in 2009, now featuring an attractive color scheme with newly painted walls, fresh carpeting, and stylized, modular furniture to complete the decor. Be sure to stop by and say hello!

Two New Endowed Fellowships
The Department of Physics has two new endowed fellowships. One is named for Al Bartlett and supports students seeking to become science teachers. The other is a graduate fellowship that honors Jing Yin and Ethan Townsend, two of our grad students who were lost tragically last year.

Staff Transitions and New Hires

Office Manager
Jeanie Balch took over the reins of Office Manager from Debra DeVilbiss.

Research Staff
Annemiek Kamphuis joined the full-time staff as Assistant for the National Renewable Energy Laboratory Research Experience for Undergraduates program.

Program Assistants
Kate Kidder has taken over administrative support for iSTEM and Physics Education Research, while Jason Hopkins has replaced Kate in supporting Condensed Matter.

Building Manager
Eric Erdos has become Building Manager of Duane and the Nuclear Physics Lab.

Front Desk Receptionist
Marilyn Tallon replaced retiree Kathleen Oliver as the Receptionist in the main physics office.

Undergraduate Coordinator
Leigh Dodd has been promoted from Front Desk Receptionist to Undergraduate Coordinator.

Lab Coordinator
Scott Pinegar has joined our experienced team as a Lab Coordinator.

Instrument Maker
Kels Detra has been brought on as an Instrument Maker in the Physics Precision Instrument Shop.