



Department of Physics & Astronomy
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Dear Colleague or Interested Student:

In preparing for the 2008/2009 academic year, we would like to draw your attention to the Department of Physics and Astronomy at University of Denver (DU). Our small, dynamic department emphasizes hands-on academic preparation in close contact with the faculty. We provide attentive academic instruction and research mentoring up to the Ph.D. level.

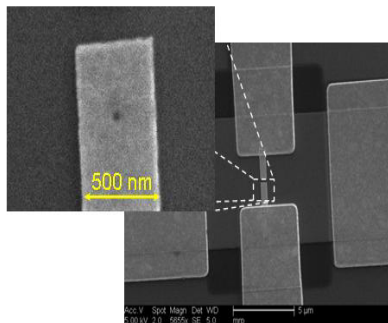
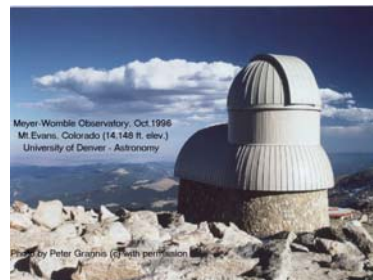
DU is the oldest and largest private university in the Rocky Mountain region. Our quality academic program, excellent faculty and personal attention, as well as our location in one of the most beautiful and vibrant regions of the country, are some the reasons that students choose to study and live here.

Our department recently began a strong expansion with five faculty members hired in the last two years in the areas of astrophysics, condensed matter, and biophysics. Additionally we are hiring a biophysics faculty member to begin in the 2008/09 academic year. These hires are coupled with a large expansion across the campus in the sciences and engineering, including approximately 15 new faculty in the Natural Sciences and Mathematics division. Our research efforts are closely tied with those of other departments, and students readily conduct academic studies and research in collaboration with faculty across the DU campus. These collaborations are facilitated by two new interdisciplinary programs at DU, the Integrated Molecular Life Sciences and Biophysics (IMLSB) program and the Center for Nanoscale Science and Engineering (CNSE).

The department currently has research efforts in the following areas:

- **Experimental atmospheric spectroscopy and radiometry** involving worldwide studies of infrared radiation using high-altitude balloons, research aircraft, and ground-based equipment and theoretical studies of atomic and molecular atmospheric spectra.

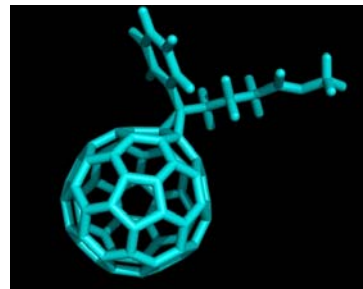
- **Astrophysics and infrared astronomy:** studies of galactic structure, the interstellar medium, stellar evolution, astropaleontology, evolved stars, supernovae, circumstellar material, astro-mineralogy, and solar-terrestrial and magnetospheric physics. Techniques include optical and infrared imaging, spectroscopy, and spectropolarimetry; ground-based and balloon- and satellite-borne studies of Galactic cosmic rays and cosmic gamma-rays; and computer simulations using numerical radiative transfer. Research into infrared astronomy is partly carried using the department's Mt. Evans summit observatory located in the Rocky Mountains at an elevation of 4,313 m.



- **Condensed matter and materials physics:** using nanofabrication techniques to control and measure properties of thin films and nanostructures down to 300 mK; studies of high resolution microcalorimeter x-ray and gamma-ray detectors; x-ray and neutron diffraction studies of ferroelectrics and biomaterials; studies of mechanical properties of environmentally interesting materials; probing spin transport and magnetism at the nanoscale and research into high frequency (100 GHz) device application of spin transfer devices; and research on fundamental characterization of organic semiconductor materials and development of organic photovoltaic materials and novel device architectures.

- **Biophysics:** studies of nanoparticle modulation of protein-protein interactions and aggregation used to explore biochemical pathways involved in diseases such as Autism and Alzheimer's; studies into nonlinear dynamics and emergent phenomena in neuronal and other complex networks.

Our research is often carried out using international research facilities, including the Hubble Space Telescope, Mauna Kea Observatories, European Organisation for Astronomical Research in the Southern Hemisphere (ESO) observatories, the Laboratory for Atmospheric and Space Physics and the High Altitude Observatory, as well as synchrotron and neutron sources. Our faculty has close ties to the National Institute of Standards and Technology (NIST) in Boulder, CO and the National Renewable Energy Laboratory (NREL) in Golden, CO.



Our main source of financial aid to graduate students is in the form of Graduate Teaching Assistantships (GTA) and Graduate Research Assistantships (GRA). Stipends for 2007-2008 are:

- Graduate Teaching Assistantships: \$17,000 (nine months) plus up to 27 quarter hours of tuition waiver for the academic year. The teaching and grading commitment is about 20 hours per week.
- Graduate Research Assistantships: \$17,000 to \$20,000 plus up to 27 quarter hours of tuition waiver for 9 month appointments. Summer employment is also possible.
- Additional Fellowships: The department and the university also offer both merit and need-based fellowships.

The Department of Physics and Astronomy also welcomes applicants interested in pursuing a MS degree with an emphasis in applied physics. Suitably qualified individuals whose undergraduate training is in engineering, chemistry or materials science are also considered for the pursuit of this degree. The curriculum plan for each student is specifically designed with full consideration of the individual's career plan.

If you have any questions about graduate study in our department, please see our website: <http://www.physics.du.edu> (for more information see sections on [Prospective Students](#) and [People](#) and [Research](#)) and feel free to get in touch with us via email at phys-gradinfo@du.edu or by phone at (303) 871-2238.

Many thanks and best regards,



For the Faculty of the Department of Physics and Astronomy
Davor Balzar, Chair

Faculty:

Robert C. Amme, *Research Professor, Condensed Matter and Materials Physics*
Davor Balzar, *Associate Professor and Chair, Condensed Matter and Materials Physics*
Ronald D. Blatherwick, *Associate Research Professor, Atmospheric Physics*
Aaron Goldman, *Professor, Atmospheric Physics*
Jennifer L. Hoffman, *Assistant Professor, Astrophysics*
Frank J. Murcray, *Professor, Atmospheric Physics*
Herschel Neumann, *Professor Emeritus*
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Zeev Shayer, *Research Professor, Condensed Matter and Materials Physics*
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Toshiya Ueta, *Assistant Professor, Astrophysics*
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