

Physics



Old Dominion UNIVERSITY

Volume 2, Issue 2

June 2007

Welcome from the Chair



As the academic year comes to a close we are proud to announce that our faculty and students have again been recognized for their hard work with several awards and honors. Unfortunately we are also losing two faculty members, one to retirement (Prof. Gil Hoy) and one to a career change (Prof. Paul Ulmer). However, the department continues to grow as we add new students, courses and even undergraduate tracks. We have just launched a search for a new tenure-track assistant profes-

sor in experimental nuclear physics. Finally, in this issue you will find news of our new Instructional Support Manager, Mr. C.J. Oakley who is already becoming indispensable. Best wishes for a happy and productive summer.

Gail Dodge

Welcome C. J. Oakley New Instructional Support Manager

C. J. Oakley was born and raised in the foothills of Tennessee. After high school he joined the Navy, in which he served for 26 years, retiring in 2003 at the enlisted rank of Command Master Chief. After advanced training as a weapons system computer technician, he served on numerous ships and became an expert in mainframe/desktop computer maintenance and management. In 1998 he was selected to serve as Senior Instructor, Tactical Data Systems, Dam Neck, Virginia where he managed 110 instructors and over 600 students in 26 pipeline courses of instruction. Prior to joining the staff at Old Dominion, he held the position of Traffic Court Manager /LAN Administrator, Virginia Beach General District Court.



News/What's Happening

Donika Plyku was selected as the outstanding graduate teaching assistant by both the College of Sciences and the University. She is shown here with a Van der Graff generator during our Earth Day Open House in 2006.



Professor Charles Sukenik was selected this spring as the recipient of the College of Sciences Distinguished Teaching Award. He is an exceptionally effective teacher, enormously popular with the physics students, who also serves as the Undergraduate Program Director and Chief Departmental Advisor. He was also one of the founders of the Physics Learning Center, which provides free tutoring for introductory physics students.

Professor Larry Weinstein was awarded the 2007 Teaching with Technology Award for his introduction of the Personal Response ("clicker") system into introductory courses and for his leadership in rebuilding and documenting the department's lecture demonstration capability.

Professor Charles Hyde was named to a "Chaire d'Excellence" at the Université Blaise Pascal in Clermont-Ferrand, France. Only five such awards were made in the past year, covering all disciplines of science at all French research institutes. The award includes a research grant worth more than \$1 million over the next four years. He will split his time between France and ODU.

New Undergraduate Degree Tracks

Two new undergraduate curriculum tracks have been approved by the faculty, track "D" for a dual degree in physics and electrical engineering and track "E", a combined five year physics and MBA degree program.

Alumni Feature

Mike McDermott, Ph.D. 1996

Chair, Department of Physics, Hampden-Sydney College



After defending his Ph.D. dissertation, Mike was hired by the Smithsonian Astrophysical Observatory at the Harvard Center for Astrophysics to work on the Chandra X-ray observatory, one of NASA's four "Great Observatories", which include the Compton Gamma-Ray Observatory, the Hubble Space Telescope, and the Spitzer Space Telescope. His position was with the

Mission Support Team as a detector scientist where he worked on the calibration of the mirror assembly in the energy range from 2 keV to 10 keV. This was accomplished by using a set of solid state detectors and a single electron in the storage ring of the synchrotron BESSY in Berlin, Germany. The project culminated in the launch of the telescope in the summer of 1999. Information about the telescope can be found at: <http://chandra.harvard.edu>

After completion of his work on Chandra in 1998, Mike was appointed as Visiting Assistant Professor at Hampden-Sydney College; the next year he became an assistant professor and was awarded tenure in 2004. He became chair of the Department of Physics and Astronomy in 2006. He continues to teach and conduct research, often in collaboration with his former advisor and mentor at ODU, Professor Gil Hoy (see article on right). His research has included a sabbatical to study Mössbauer measurements of FeCO_3 at Katholieke Universiteit Leuven, Belgium, with Jos Odeurs (KU-Leuven) and Stijn Gheysen (KU-Leuven). Other research interests include Sickel-Cell Hemoglobin, on which Gil Hoy has also worked. He very much enjoys the small college environment of Hampden-Sydney, which allows him to interact closely with his students and involve them in his research.

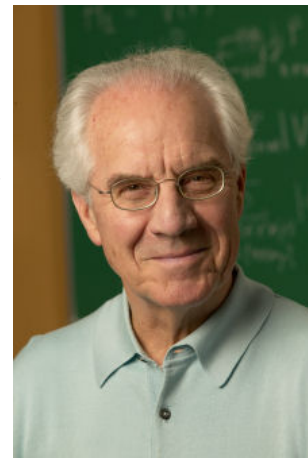
In the upcoming year Mike will be a Visiting Associate Professor in The Physics Department at the University of North Carolina at Greensboro (leave of absence from HSC), while his wife completes her doctorate in music there.

Mike has very fond memories of his time at ODU and we are fortunate to have alumni that so well represent us and carry the torch forward. It is especially gratifying to feature him in the same newsletter as his dissertation advisor who is retiring this month.

Featured Faculty

Gil Hoy, Professor and Eminent Scholar

This month we mark the retirement of Gil Hoy, Professor of Physics and Eminent Scholar, after 27 years at ODU, including nine years as Chair of the Department. He earned his Ph.D. from the Carnegie Institute of Technology and has worked in industry (Xerox Corporation) and at national laboratories (Oak Ridge, Los Alamos and the Naval Research Laboratory) as well as in academia. Before being recruited to ODU in 1980, Gil had been at Boston University for 17 years, where he was acting Chair in 1979-80.



Prof. Hoy's research has been focused on the areas of Mössbauer spectroscopy and gamma-ray optics. Recently he has turned his attention to the subject of stimulated emission of gamma-radiation and the possibility of constructing a gamma-ray laser – he has published numerous papers on these subjects. Since 1996 Prof. Hoy has had a close collaboration with the Katholieke Universiteit in Leuven, Belgium, and he usually spends several weeks there in the summer. Under his supervision 11 physics graduate students have received a Ph.D. and 2 have earned an M.S. degree. One of his students, Mike McDermott, is our featured alumnus in this issue (left).

As a member of the Virginia Academy of Sciences, Prof. Hoy has served as both the Chair and Secretary. He is also an advisory board member of the International Commission on Induced Gamma Emission.

Prof. Hoy has taught a wide variety of courses over the years. Most recently he was teaching the algebra-based Physics 111/112 (College Physics) sequence as well as Physics 456/556, the second semester of quantum mechanics. He is a dedicated teacher who often meets with students over the weekend to help them with problem-solving. He hopes to teach a course from time-to-time even after retirement.

A long-time fan of field hockey, Prof. Hoy was a fixture at ODU games for many years. He also took up singing a few years ago and met his wife, Karen, who is a voice teacher. Prof. Hoy's excellent rendition of New York, New York by Frank Sinatra was the highlight of last year's department holiday party/kareoke extravaganza. We all wish Prof. Hoy a long and happy retirement, filled with music and physics.

Course Development

Upper-level Undergraduate labs

In the past year a great deal of resources has gone into upgrading upper-level experimental labs to better prepare physics majors to use state-of-the-art equipment and techniques and involve them in research. Shown below is some of the equipment used for senior thesis and advanced undergraduate research. Physics 303-4 *Intermediate Experimental Physics* and Physics 413/513 *Methods of Experimental Physics* are receiving major updates with new equipment and experiments.



New course offerings are also being developed by our new faculty in accelerator physics. A 400/500 level course in accelerator physics and an advanced graduate course in low temperature physics will be offered for the first time in the fall.

Paul Ulmer

Paul Ulmer Leaves for the World of Finance

Professor Paul Ulmer has decided to leave ODU to pursue a new career in the field of mathematical modeling of financial markets at Renaissance Technologies Corporation on Long Island. Prof. Ulmer's research at ODU was in experimental nuclear physics; he is one of the world's experts on the structure of the deuteron, the bound state of a proton and a neutron. He spearheaded an extensive experimental program to probe the force between the two nucleons in the deuteron at the nearby Thomas Jefferson National Accelerator Facility in Newport News, where he is a member of the Hall A collaboration. Prof.

Ulmer is also a very skilled teacher and was highly praised by his students, especially in his course on Modern Physics. With his move to RenTech, Prof. Ulmer has demonstrated, once again, that physics is an excellent preparation for any demanding job. He will be sorely missed.

Student News and Activities

Lillian and Clifford Adams Scholarship

This is a special scholarship endowed by the first chair of the department of physics at ODU who was very influential in the formative years of the department. Two students were selected for the Adams Scholarship this year: Dao Ho and Brandon Rodgers.



Dao is a rising senior; this summer he is doing an internship in the experimental nuclear physics group building a prototype drift chamber for Jefferson Lab. He named Professors Charles Sukenik and Larry Weinstein as the faculty members that inspired him the most.

Brandon is in the Navy in the Seaman to Admiral Program. In addition to his studies in physics he is currently the Alpha Company Physical Training Coordinator, the ODU Operations Division Officer and the Military Student Union Operations Officer. He also tutors math and physics.



Outstanding Senior

The outstanding senior award recipient this year was Robert Horne – he is about as outstanding as they come.



Robert has a GPA of 3.99 and was the recipient for the last two years of the Adams Scholarship. He has worked extensively in the lab of Professor Charles Sukenik on experimental atomic physics, including doing his senior thesis on the development of a permanent magnet

Zeeman slower. Robert has named Professor Charles Sukenik as his most inspiring professor. Last summer he spent the summer doing research at Yale and this fall he will be attending graduate school in physics at the University of Virginia.