

Bruce A. Barnett  
 4402 Norwood Rd.  
 Baltimore, MD 21218

Education			
Institution	Area	Degree	Date
Harvard University	Physics	B.A. cum laude	1965
University of Maryland	Physics	Ph.D.	1970

Appointments			
Institution	Position	Dates	
The Johns Hopkins University	Full Professor	7/83/- Present	
The Johns Hopkins University	Asso. Professor	7/79 - 7/83	
The Johns Hopkins University	Asst. Professor	1/76 - 7/79	
University of Maryland	Asst. Professor	7/73 - 1/76	
University of Maryland	Post Doctoral Fellow	1/70 - 7/73	

Professor Barnett has for the last 13 years concentrated on teaching the introductory general physics courses. He has instituted several new innovations to enhance student learning and improve the interaction between the students and faculty. These include

1. the use of a Classroom Performance System to allow the lecturer to ask questions of the students and get their immediate feedback,
2. introduction of web-based homework to give students faster feedback and to increase the time for TA and faculty office hours,
3. utilization of laptop computers during weekly section meetings which enable the undergraduate students to work individually on physics problems instead of simply watching a graduate student TA do examples on the blackboard and
4. extensive use of web based course information giving the students access to class notes, old exams and interactive sample problems.

Prof. Barnett has received several teaching awards from his universities. These include

1. an award for outstanding teaching as a graduate student by the University of Maryland in 1965,
2. the Award for Outstanding Teaching by the Johns Hopkins University Alumni Association and Deans Office in 1994 and
3. the Johns Hopkins University George E. Owen Teaching Award for "Outstanding Teaching and Devotion to Undergraduates" by the Student Council of Johns Hopkins University in 2006.
4. the 2007 Outstanding Faculty Award from the Maryland Association of Higher Education and the Maryland State Outstanding Educator Awards Committee. This award is presented to only one professor in the state every two years.

Prof. Barnett's interest in teaching has extended outside the university classroom, especially in terms of trying to improve the amount of scientific information available to K through 12 classes. An informal effort towards this is that he frequently visits schools to give lectures and display demonstrations. A more formalized structure occurs through his leadership of a program of the JHU particle physics group called Quarknet. This is a program sponsored by the Department of Energy and the National Science Foundation for involving K through 12 teachers in modern research. Quarknet has groups at many different universities throughout the United States. The JHU Quarknet program has sent Maryland and Pennsylvania high school teachers to the Fermi National Laboratory near Chicago and CERN Laboratory in Switzerland for summer internships and has also held one and two week long summer workshops. About 100 different teachers have participated in this program over the last ten years with the current membership being 25 teachers per year.

During the 2003 Quarknet Workshop there was a discussion about how to get physics education into the community more effectively. A high school Quarknet teacher suggested that the JHU Department of Physics & Astronomy might have some sort of "open house" for the public. Prof. Barnett took this idea to his Chairman, Jon Bagger, who endorsed it. This became the Annual JHU Physics Fair which has now been held nine times in April. It involved games, contests, lectures, and demonstrations appropriate to the public from ages 2 to 102. Hundreds of people attend the Fair. Over a dozen JHU faculty and more than 70 graduate and undergraduate students are active in presentations. Many of the Quarknet teachers actively work on, and at, the Fair, and encourage their students to attend the Fair. Prof. Barnett leads this effort, recruiting participants, organizing the events, publicizing it and presenting programs at the Fair.

Johns Hopkins University has recently joined with more than two dozen other universities to form the Center for the Integration of Research, Teaching, and Learning (CIRTL). A major portion of this JHU team is from the Center for Educational Resources (CER). Prof. Barnett is the lead professor in this JHU team. The CIRTL Collaboration hopes to receive over \$20 million of funding from the NSF over the next several years to be distributed among the many institutions.

Prof. Barnett's responsibilities extend into many other University and non-university activities. He has served as Vice Chairman of his Department and on the JHU Academic Council. Since 2005 he has served as Chairman of the JHU Homewood Campus Graduate Board which oversees all graduate programs within the Schools of Arts and Sciences and Engineering within Johns Hopkins University. Outside the university he has served as an officer of the Division of Particles and Field of the American Physical Society, as Chairman of Outreach & Education for CurePSP (Society for Progressive Supranuclear Palsy) a national medical society and as Chairman of Sherwood Gardens, an eight acre public botanical garden.

Prof. Barnett is a Fellow of the American Physical Society.

### Research

Professor Barnett does research in elementary particle physics. His research has been performed at the Argonne National Laboratory, the Brookhaven National Laboratory, the Stanford Linear Accelerator Center, the Fermi National Laboratory and the C.E.R.N Laboratory. He was, for example, active in research related to the discovery of the  $\tau$  lepton at SLAC in 1975 and was a member of the collaboration that discovered the top quark at Fermilab in 1994 where he was a leader in the creation of vertex detector apparatus to identify particles containing bottom quarks. He continued this leadership role in the creation of the vertex detector for the CMS experiment at CERN. He is currently a member of the CDF Collaboration at Fermilab and the CMS Collaboration at CERN. Each of these has recently published results announcing the discovery of a new particle with properties consistent with those expected for the Higgs Boson. He has collaborated in the publication of over 1000 papers.

His Ph.D. thesis students are David Blockus 1980, David Christian 1982, Jon Bakken 1983, Wayne Koska 1984, David Drewer 1988, Brian Harral 1990, Steve Vejckik 1992, Chris Boswell 1993, Alan Spies 1993, Douglas Glenzinski 1995, Jeffrey Tseng 1996, Jeffrey Cammerata 1996, Chadd Smith 2002 and Yi Le, 2003.

He has directed the research of several Post Doctoral Fellows. These are David Badtle 1978-1982, David Stoker 1985-1989, Paul Dauncey 1985-1989, Jim Hysten 1983-1989, John Skarha 1989-1996, Frederick Snider 1990-1997, Matthew Herndon 1998-2005, Stephan Vandenbrink 1998-2000 and Satyajit Behari 2001- 2012.