Hopkins Center Seminars
12:45 - 3:00 pm
Wednesday, March 17, 2010

12:45 pm, Goergen 108
Grid Computing and Optical Design using Optica and Mathematica 7
Donald Barnhart
Lead Developer, Optica Software

Dr. Barnhart has been developing optical design and analysis software in *Mathematica* since 1991. Since its introduction in 1994, his Optica software package has been used by thousands of scientists across the world. In addition to his software development, Donald developed the world's first successful high-resolution holographic instrument to measure three-dimensional velocity fields in fluids, the results of which appeared on the front cover of Applied Optics in 1994 and cited by over 200 publications. Donald also received the Rank Prize in 2001 for the best electro-optics Ph.D. dissertation in the United Kingdom, and the optics group in which he belonged at Loughborough University received the Queen's Anniversary Prize for which he traveled to Buckingham Palace and personally met the Queen of England. Today, in addition to his ongoing Optica business, Donald works as the chief optical scientist for iCyt Mission Technology, a Sony USA subsidiary that produces flow cytometers for stem cell and cancer research.

2:00 pm, Goergen 108
Designing freeform lenses with help from geometry and calculus of variations
Vladimir Oliker
Professor of Mathematics, Emory University

It will be shown how some classes of illumination design problems requiring freeform lenses/mirrors can be formulated rigorously and solved numerically as problems in calculus of variations.

Vladimir Oliker Received his MS and PhD degrees from Leningrad University (USSR).