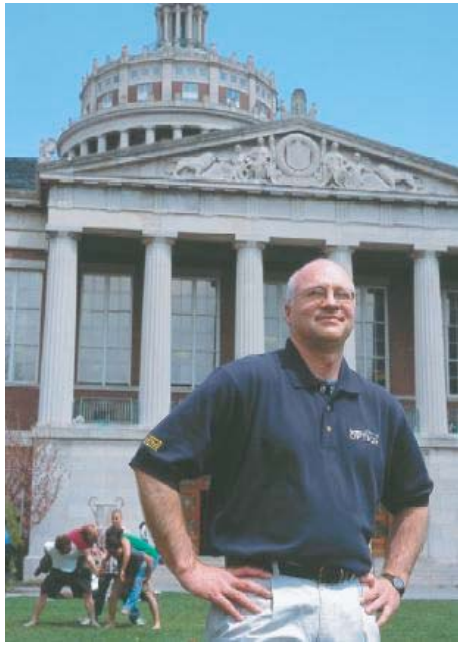
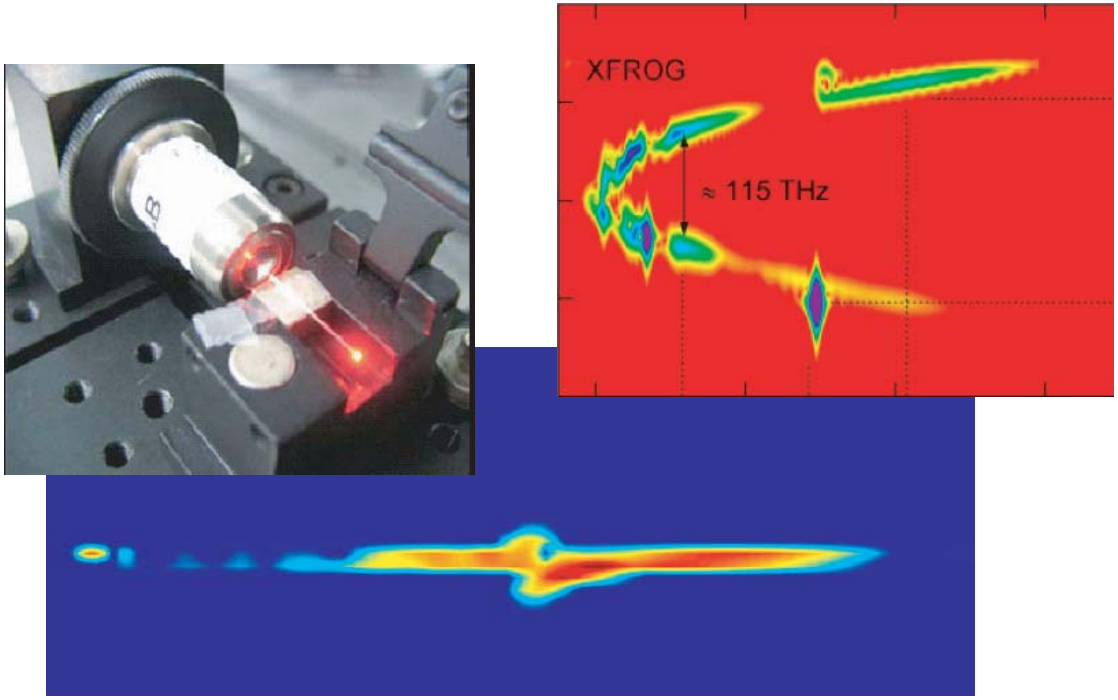
The Institute of OPTICS

Colloquium

UNIVERSITY OF ROCHESTER

Future Fun with Fantastic Fibers





Wayne H. Knox
Director
Institute of Optics
University of Rochester

PhD in Optics, Rochester 1983
Bell Labs 1984 - 2001
U. of Rochester 2001 -

This talk will will discuss the science and applications of optical fibers and the promise of more great things to come.

3:45 pm, Wednesday, November 28, 2007
Bausch & Lomb 106
Tea 3:30, B&L Lobby

Joint Collquium with
Department of Physics and Astronomy

Future Fun with Fantastic Fibers

Wayne H. Knox
Director and Professor of Optics
Professor of Physics, and
Senior Scientist at the Laboratory for Laser Energetics

Advances in optical fibers have truly transformed our lives in many ways, enabling a revolution in communications that has driven the cost of communications to nearly $0.00 per bit per km. Yet, there have been continued revolutionary developments in the area of optical fibers recently, outside the field of telecommunications. Driven by new approaches, new thinking and new materials, we now have fibers with unique and customizable dispersion and nonlinearity properties, ultra-high power amplifier fibers, and even biodegradable fibers. Photonic bandgap, nano-wires and hollow core microfluidic fibers have been demonstrated with properties that go well beyond what might have been imagined by the early pioneers in the field of fiber optics. We discuss these developments, as well as some current research directions in my labs.

Wayne H. Knox obtained BS (1979) and PhD degrees (1983) at The Institute of Optics, University of Rochester in Rochester, NY. He went to Bell Labs in Holmdel NJ in 1984 and worked as a Postdoctoral Fellow, was promoted to Member of Technical Staff in 1985 and to Distinguished Member of Technical Staff in 1990. In 1997, he was promoted to Director of the Advanced Photonics Research Department where he was responsible for forward-looking research in a number of areas related to advanced technologies in telecommunications in long-haul, access and Metro networks. He is a Fellow of the Optical Society of America and a Fellow and Life member of the American Physical Society, in 1990 won the National Academy of Sciences W.O. Baker Award for Initiatives in Research. In 1999 he won the Richtmyer Award for Physics teaching from the American Association of Physics Teachers. He has authored or co-authored over 150 publications and 39 patents, and has chaired many international professional society meetings such as Ultrafast Phenomena, CLEO, Quantum Optoelectronics, Ultrafast Electronics and Optoelectronics, the OSA Annual Meeting, and Nonlinear Optics. He has served on OSA and APS Fellows committees, and was Chair of the 2002 Tyndall Award Committee. In April 2001 he returned to The Institute of Optics as Director and Professor of Optics where he currently carries out a research program in ultrafast science and technology, nonlinear fiber optics and biomedical optics. He was elected to a 2002-2005 term as Director-at-large on the OSA Board of Directors, and served on the Finance Committee. He serves on several Scientific Advisory Boards. He was appointed to the Board of Directors of the Rochester Regional Photonics Cluster in 2002. In 2004, he won the University of Rochester's Robert B. Goergen award for undergraduate teaching excellence.