The University of New Mexico Student Chapter of the Optical Society of America presents

Professor Jean-Claude Diels of the University of New Mexico is the recipient of the 2006 Engineering Excellence Award of the Optical Society of America, given in recognition of technical achievements in optical engineering. He received this award for his contributions to high-precision measurements (inertial, nonlinear index, sub-picometer displacements) by new phase interferometry using phase-to-frequency conversion inside a mode-locked laser cavity reaching sensitivities of less than 10^-7 rad. *Congratulations!*
Prof. Diels will however talk about a different area of his work:

Weaving with filaments
a fabric of confusion
but... there is light at the end of the thread

Prof. Jean-Claude Diels

Department of Physics and Astronomy, University of New Mexico

Friday, October 20th, at 12:00 noon

Center for High Technology Materials, Room 101

A light lunch will be served at the talk.

Can the nonlinear optical properties of air be used to propagate light beams over long distance, without spreading due to diffraction? "Self-channeling" of light in the IR was first reported by Braun et al. in 1994, and in the UV by Zhao et al. in 1995. Theorists have since gone on a rampage, solving humongous differential equations requiring days of computer time. After a decade of computing, the results were just pretty computer generated pictures and movies, leading to a lot of head scratching, nodding and yawning. Only recently have some realized that a physical insight can only be gained by stripping to the bare minimum (the equations).

I will give an overview of the present understanding of filamentation. Our efforts at UNM will be put in the "broader context", since this field has expanded rapidly in the rest of the world.

http://www.unm.edu/osa