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EDUCATION

B.S. **Cornell University**
Engineering Physics, Summa Cum Laude with honors

HONORS AND AWARDS

- 2003 **Paul Hartman Prize in Experimental Physics.**
Awarded to the Physics or Engineering Physics student who demonstrates the most outstanding experimental skills in the advanced laboratory or otherwise.
- 2003 **Merrill Presidential Scholar**
Selected as one of 35 Cornell students for outstanding academic achievement.
- 2004 **Outstanding GSI Award**
Awarded for outstanding teaching at UC Berkeley.

PUBLICATIONS

- 2003 **"A New Pressure Gauge for UHV and XHV"**
Senior honors thesis. I designed and built a new ionization pressure gauge incorporating a focused electron beam to push pressure measurement into the extreme high vacuum regime ($P < 1 \times 10^{-12}$ Torr).
- 2005 **"Atomic scale visualization of inertial dynamics"** with A.M. Lindenberg et al.
Science **308**, pg. 392 (2005)
- 2005 **"Time Resolved Measurements of the Structure of Water at Constant Density"** with A.M. Lindenberg et. al. To be published in *J. Chem. Phys.* summer 2005.

TEACHING EXPERIENCE

- 2003 **Graduate Student Instructor, UC Berkeley**
Taught Introductory Electricity and Magnetism discussion sections and laboratories.
- 2000-2003 **Physics Tutor, Cornell University**
Tutored introductory physics courses at the Physics Learning Skills Center.

1998-2003 **Sailing Instructor/Coach**

For six summers I have taught competitive sailing to children at three different places. In 2003 I worked as the head instructor of a Junior Sailing Program in New Jersey and oversaw the entire program of instruction for sixty students. I was also MVP of the Cornell sailing team three times.

RESEARCH INTERESTS

I am broadly interested in developing new techniques to study dynamics in condensed matter, plasmas, and biological systems. In particular, the advent of x-ray free electron lasers will usher in a new regime of physics where non-linear effects in the x-ray regime will be important, and x-ray nonlinear optics may allow for new techniques to probe the ultrafast dynamics of matter. Exciting progress with table top x-ray sources has also been made. If new techniques can be developed to manipulate and control phenomena such as x-ray damage, many applications may become possible with intense x-ray sources such as imaging single biological molecules.