

University of Rochester
Summer 2005 Undergraduate Research in Optics and Engineering

Christopher Barsi, class of '06 at Manhattan College, studied backwards pulse propagation in erbium-doped fiber with Professor Robert W. Boyd and intends to earn a doctoral degree in optics or electrical engineering.

Steven Bloch, class of '07 at the University of Rochester, studied theoretical estimates of polaron energies and wavefunctions on DNA strands with Esther Conwell. He plans to continue his research with Dr. Conwell and eventually attend graduate school.

Jonathan Chen, class of '06 at University of Rochester, worked with Prof. Stephen Jacobs, Dr. Tanya Kosc, and Dr. Kenneth Marshall on investigating the origin of a secondary reflection of light from PCLC (polymer cholesteric liquid crystals) flakes. He plans on applying to graduate school in optics.

Christopher Coon, class of '06 at University of Rochester, worked with Dr. Tanya Kosc, Dr. Ken Marshall, and Dr. Stephen Jacobs on determining parameters for polymer cholesteric liquid crystal flake devices. He plans on applying to graduate school for either physics or optics.

Ryan de Rosa, class of '06 at the University of Rochester, worked with research scientist Sam Thurman and professor James Fienup on developing an analyzing a sparse aperture electronic imaging system. He intends on applying to graduate school in physics.

Azure Hansen, class of '07 at Stony Brook University, worked with Prof. Nick Bigelow's cooling and trapping group to create Laguerre-Gaussian beams for use in manipulating Bose-Einstein condensates. She plans to apply to graduate school in physics.

- Marshal Hunter II, class of '06 at University of Rochester, worked with Prof. James Zavislan on the detection, discrimination, and counting of individual photons. He plans on applying to graduate school for education.

- Natalie Kostinski, class of '06 at the University of Michigan, studied optical precursors with Prof. R.W. Boyd. She plans to go to graduate school in either Applied Physics or Electrical Engineering.

Jason Maher, class of '07 at the University of Rochester, worked with Professor Andrew Berger on a combined *in vivo* confocal scanning laser microscopy and Raman spectroscopy system. Jason plans on applying to graduate school in optics.

Gallia Painter, class of '08 at Case Western Reserve University, worked with Dr. Ken Marshall on chiral nickel dithiolene complexes as near IR dyes for liquid crystal device applications. She plans on applying to graduate school in chemical engineering.

Derek Pulhamus, class of '05 at the University of Rochester, worked with Greg Brady, a graduate student and Professor Jim Fienup, on how to distortion calibrate a lens in order to subtract out the

aberration from images taken using the lens. He plans on applying to graduate school in optics

Brock Schmutzler, class of '06 at Truman State University, worked with John Howell on a two-photon absorption switch. He plans on applying to graduate school in physics.

Auresa Thomas, class of '06 at Columbia University, worked with Prof. Walter O'Dell on spline based deformable registration of brain MR images. She plans to do graduate work in biomedical engineering.

Lisa Tsang, class of '06 at University of Rochester, studied adaptive programmable pulse compression and pulse shaping with professor Chunlei Guo. She plans to apply to graduate school for optics.

Ana Vallejo, class of '06 at St. John's University, worked in Lukas Novotny's group in the chemical synthesis of gold nanorods. She plans to apply to graduate school for Biomedical Engineering.

John Wilson, class of '07 at the University of Rochester, worked at the Laboratory for Laser Energetics by studying the effects of chemistry in Magnetorheological Finishing. He plans to apply for graduate school in optics.

Patrick Zabawa, class of '06 at the University of Oklahoma, worked with graduate student Michael Holmes and Prof. Nick Bigelow on design and testing of a PID control circuit and possible cooling methods for high current transistors used in an atom chip experiment. He plans to attend graduate school in physics.