CATHRINE A. SOUTHERN

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EDUCATION

1996-Present	Research Assistant, University of Chicago Advisor: Professor Donald H. Levy Ph.D. candidate, degree anticipated 2002
1997	M.S. (Chemistry), University of Chicago
1996	B.S. (Chemistry), *magna cum laude*, University of Notre Dame

TEACHING EXPERIENCE

1996-Present Teaching Assistant, University of Chicago

Led recitation sections, review sessions and supervised laboratory experiments

Honors General Chemistry I, taught by Professor Laurie Butler
Honors General Chemistry II, taught by Professor Donald Levy
Physical Chemistry I: Quantum Mechanics, taught by Professor Donald Levy
Physical Chemistry II: Thermodynamics, taught by Professor James Norris
Physical Chemistry III: Chemical Kinetics and Dynamics, taught by Professor Laurie Butler
Physical Chemistry Laboratory, taught by both Professor Laurie Butler and Professor Donald Levy

1994-1996 Volunteer Tutor, General Chemistry, University of Notre Dame

1994-1996 Participated in and helped organize "Ms. Wizard's Day" program, University of Notre Dame

This program brings fourth through sixth grade girls to University of Notre Dame's campus for a day of scientific demonstrations and laboratory experiments.

RESEARCH EXPERIENCE

Graduate

1996-Present — University of Chicago
Research Advisor: Professor Donald H. Levy
Currently studying the spectroscopy and dynamics of anthranilic acid, a fluorescent label, and its derivatives in a supersonic jet expansion. The goal of this project is to gain insight into why the fluorescent properties of anthranilic acid vary in nonpolar versus polar environments, as well as when anthranilic acid is attached to different amino acids.

1996 — University of Chicago
Research Advisor: Professor Laurie J. Butler
Investigated the photodissociation dynamics of phosgene using potential energy surfaces obtained from *ab initio* calculations.

Undergraduate

1994-1996 — University of Notre Dame
Research Advisor: Professor James S. Keller
Studied the excited state potential surfaces of small, gas-phase molecules using two-color, laser-induced grating spectroscopy.

1995 — Columbia University, NSF-REU Fellow
Research Advisor: Professor James J. Valentini
Examined the photodegradation of Nylon 6,6 using resonance Raman spectroscopy.

1994 — University of Notre Dame
Research Advisor: Professor Anthony Serianni
Worked on developing a chemical synthesis for ^{13}C-labeled lactose.

HONORS AND AWARDS

1999 — Nathan Sugarman Memorial Award for Excellence in Teaching Chemistry Laboratory Sections, University of Chicago

1996 — Dr. William R. Wischerath Award for Outstanding Achievement as a Chemistry Major, University of Notre Dame

1996 — Phi Beta Kappa, University of Notre Dame

1992-1996 — Glenna R. Joyce Scholarship, University of Notre Dame

PUBLICATIONS

"Supersonic Jet Investigation of the Fluorescent Label Anthranilic Acid." C. A. Southern, D. H. Levy. Manuscript in preparation.

"Resonance Raman spectroscopic investigation of the mechanism and kinetics of *N,N*-hexamethylene bishexamide, a Nylon 6,6 model compound." H. Matsui, C. A. Schehr, J. J. Valentini, J. N. Weber. *Polymer* **42** (2001) 5625.

PRESENTATIONS

"Supersonic Jet Spectroscopy of Anthranilic Acid," C. A. Schehr, D. H. Levy, 222nd American Chemical Society National Meeting, Abstract No. 252, Chicago, Illinois, 2001 (poster).

REFERENCES

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