

## 2012 Iota Sigma Pi Anna Louise Hoffman Award for Outstanding Achievement in Graduate Research

### Emilie Ringe



Photo Credit to Andrew Campbell at Northwestern University

Ms. Emilie Ringe, an outstanding graduate student in the Chemistry Department at Northwestern University, conducts research in the Richard Van Duyne lab in Chemistry in collaboration with the Laurence Marks group in the Materials Science and Engineering Department. Ms. Ringe's research on localized surface plasmon resonance (LSPR) seeks to characterize and understand the correlation between structure and optical properties of metallic nanoparticles for better optimizing their practical applications. Her experiments are designed to understand how particle shape is determined (composition, growth environment, strain, etc) and how shape, size, and composition affect optical properties. Ms. Ringe's research endeavors employ dark field optical microscopy and high-resolution transmission electron microscopy to probe structure and LSPR behavior. She has authored or co-authored over 10 publications, and has received many recognitions including an International Fellowship to the University of Melbourne, a Special Merit Fellowship funded by the NSF, and the Presidential Fellowship at Northwestern, that university's most prestigious. Professor Van Duyne recommends Ms. Ringe as having "all the intellectual, experimental, and communication skills required to succeed" and recognizes her exceptional contributions at every stage from project conception through publication. Professor Marks admires her for "experimental skill as well as demanding rigorous analysis." Outside of the laboratory, Ms. Ringe excels as a leader and contributor. One of Ms. Ringe's faculty members, Dr. Monica Olvera de la Cruz describes her as having "admirable dedication to both science and community," exemplified by her interests and engagement with area schools, scouts, and with an organization that provides adaptive assistance to blind runners.