

Eric Berquist

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EDUCATION

Northeastern University, Boston, MA **September 2007 – Present**
B.S. in Chemistry (ACS-certified) with a minor in Computer Science

- Expected graduation date: May 2012
- Dean's List; GPA (out of 4.00): Chemistry 3.23, CS 3.56

Lowell High School, Lowell, MA **September 2003 – May 2007**

COURSEWORK

Chemistry: Organic I & II w/labs, Physical I & II w/ labs, Bioanalytical w/ lab, Bioinorganic, Spectroscopy and Identification of Organic Compounds w/ lab, Instrumental Methods of Analysis w/ lab, Chemical Synthesis Characterization w/ lab, Biochemistry w/ lab, Foundations of Spectroscopy

Computer Science: Fundamentals of Computer Science I & II w/ labs, Logic and Computation w/ lab, Object-Oriented Design, Theory of Computation

Other: Physics I & II w/ labs, Calculus I & II, Differential Equations and Linear Algebra

CHEMISTRY SKILLS

Spectroscopy: low- and high-field EPR (9.5 and 230 GHz) [Bruker], FTIR/ATR [Bruker], UV-Vis, NMR [Varian], atomic absorption/emission

Chromatography: HPLC [Waters, Agilent], FPLC [GE/Amersham]

Other: lab automation [Tecan], viscometry, titration (colorimetric/potentiometric/Karl Fischer coulometric), Gaussian/GaussView, GAMESS, ORCA

COMPUTER SKILLS

Software: Mac OS X, Unix/Linux, MS Windows, MS Office/VBA, HTML/CSS, L^AT_EX, Mathematica, MATLAB, SciFinder, ChemOffice, EndNote

Languages: Scala, Java, Scheme/ACL2, C++, Python

RESEARCH EXPERIENCE

Northeastern University Boston, MA **May 2011 – Present**
Research Assistant for Professor David Budil
High Field Electron Magnetic Resonance Laboratory

- Examination of radical-containing ferrocenylmethylidenes and other ferrocene-containing compounds using electron paramagnetic resonance, computational studies, and UV-vis/FTIR spectroscopy
- Accepted for poster presentation, 243rd ACS National Meeting, Division of Physical Chemistry: "Evidence for a carbon-centered radical delocalized over a weakly-conjugated molecular framework in ferrocenylmethylidines"
- Examination of possible CIDEP systems using UV pumping of nitroxide-labeled residues and nitroxide-tagged steroids attached to gold nanoparticles

Northeastern University Boston, MA

January 2009 – March 2009

Professor David Forsyth's Lab

- Performed a computational study to determine the rotational energy barriers and transition states of nitrogen-containing aromatic rings and ring systems

WORK EXPERIENCE

Northeastern University Boston, MA

September 2011 – Present

Tutor, Department of Chemistry and Chemical Biology

- Tutor for CHEM 3403: Physical Chemistry 2 (Fundamentals of Quantum Mechanics and Spectroscopy) and CHEM 3505: Bioinorganic Chemistry

Spectro Inc. Littleton, MA

July 2010 – December 2010

Chemistry Co-op, Applications

- Performed ASTM oil and fluid analyses through FTIR and atomic emission spectroscopy, titration, particle detection, and viscometry
- Developed algorithms for handheld lubricant condition monitor and FTIR spectrometer

Cubist Pharmaceuticals Lexington, MA

July 2009 – December 2009

Downstream Purification Co-op, Manufacturing Process Development

- Used lab automation to apply high-throughput screening methods to process chromatography resin for supporting process scale-up

MEMBERSHIPS AND ACTIVITIES

American Chemical Society, NU Student Affiliates of the American Chemical Society, NU Pep Band (officer), NU Concert Band, NU Wind Ensemble