**Laura L. Marcotte, Ph.D.**

Assumption College  Assistant Professor of Chemistry

Department of Natural Sciences

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**Education**

**Harvard University**, Cambridge, MA (2002 – 2007)

Ph.D. in Biochemistry and Molecular Pharmacology

 Thesis: Structural and biochemical characterization of the poliovirus precursor protein 3CD

**Sweet Briar College**, Sweet Briar, VA (1998 – 2002)

B.S. in Biochemistry and Molecular Biology, *summa cum laude*

Honors Thesis: Detection of triclosan in geographically-diverse wastewater samples

**TEACHING EXPERIENCE**

**Assumption College**, Worcester, MA

**Assistant Professor of Chemistry**, August 2014 – present

Courses taught: Introductory Chemistry (first and second semester) and Introductory Chemistry Laboratory (first and second semester)

**Clark University**, Worcester, MA

**Adjunct Faculty**, January 2011 – May 2011; August 2012 – December 2013

Courses taught: Protein Chemistry, Biochemistry Laboratory, Biophysical Chemistry Laboratory, and Physical Chemistry II Laboratory

Designed a protein chemistry course for the university, which included preparing a syllabus and daily lectures, identifying scientific literature for the students to review, and instructing the students on protein visualization software

Currently developing a protein biochemistry course for non-science majors

**Assumption College**, Worcester, MA

**Adjunct Faculty**, August 2011 – May 2012

Courses taught: Introductory Chemistry Laboratory (first semester) and Introductory Chemistry Lecture (second semester)

**Simmons College**, Boston, MA

**Adjunct Faculty**, September 2010 – December 2010

Course taught: Introductory Biology Laboratory

**RESEARCH EXPERIENCE**

**University of Massachusetts Medical School**, Worcester, MA

**Postdoctoral Fellow** with Professor Mary Munson, December 2013 – August 2014

 Biochemical characterization of the exocyst tethering complex.

**Harvard University**, Cambridge, MA

**Graduate Student** with Professor James M. Hogle, 2003 – 2007

Structural and biochemical characterization of the poliovirus precursor protein 3CD.

Determined the structure of a poliovirus protein through x-ray crystallography to understand how its structure related to its function within the virus and infected cells

Examined the binding affinities and specificities of 3CD and its cognate RNA through fluorescence anisotropy and RNA footprinting

Solved the structures of poliovirus polymerase mutants that show altered fidelity

**Sweet Briar College**, Sweet Briar, VA

**Honors Research Student** with Professor David Orvos, 2000 – 2002

Detection of triclosan in geographically-diverse wastewater samples

Analyzed wastewater samples using HPLC and mass spectrometry to determine the concentration of the antimicrobial triclosan present

Identified triclosan-resistant strains of bacteria present in wastewater

**Princeton University**, Princeton, NJ

**Research Student** with Professor Fred Hughson, Summer 2001

Worked to characterize novel SNARE-binding proteins from yeast lysates by affinity purification

**Medical University of South Carolina**, Charleston, SC

**Research Student** with Professor Jürgen Rohr, Summer 2000

Conducted research studying the biosynthetic pathway of mithramycin

**ADDITIONAL WORK EXPERIENCE**

**Clark & Elbing LLP**, Boston, MA

**Patent Agent**, January 2007 – December 2010

Prepared and prosecuted patent applications in the fields of molecular biology, biochemistry, organic chemistry, pharmaceutical sciences, and biophysics

Performed freedom-to-operate and patentability analyses

Registered to practice before the United States Patent and Trademark Office

**Publications, pRESENTATIONS, and ABSTRACTS**

M.R. Heider, M. Gu, C.M. Duffy, A.M. Mirza, **L.L. Marcotte**, A. Walls, Z. Hakhverdyan, M.P. Rout, A. Frost, and M. Munson. Subunit connectivity, assembly determinants, and architecture of the yeast exocyst complex. *Accepted. Nature Structural and Molecular Biology.*

**L.L. Marcotte** and M. Munson. Vesicle tethers. Encyclopedia of Cell Biology 2016: Volume 2, 485-490.

I.M. Moustafa, V.K. Korboukh, J.J. Arnold, E.D. Smidansky, **L.L Marcotte**, D.W. Gohara, X. Yang, M.A. Sanchez-Farran, D. Filman, J.K. Maranas, D.D. Boehr, J.M. Hogle, C.M. Molina, and C.E. Cameron. Structural dynamics as a contributor to error-prone replication by an RNA-dependent RNA polymerase. Journal of Biological Chemistry 2014: 289(52), 36229-48.

**L.L. Marcotte**, A. Wass, D. Gohara, H.B. Pathak, J.J. Arnold, D.J. Filman, C.E. Cameron, and J. Hogle. Crystal structure of poliovirus 3CD protein. Journal of Virology 2007; 81(7), 3583-96.

D.B. Lacy, H.C. Lin, R.A. Melnyk, O. Schueler-Furman, **L. Reither**, K. Cunningham, D. Baker, and R.J. Collier. A model of anthrax toxin lethal factor bound to protective antigen. Proceedings of the National Academy of Sciences USA 2005; 102(45), 16409-14.

**L.L. Reither** and D.R. Orvos. Detection of triclosan in geographically-diverse wastewater Samples. Abstracts of the Association of Southeastern Biologists, 2002. Abstract and presentation 191.

**L.L. Reither** and D.R. Orvos. Detection of triclosan and the microbial resistance to triclosan in geographically-diverse wastewater samples. Mid-Atlantic Regional Conference for Undergraduate Studies, 2001. Abstract and presentation.

**L.L. Reither,** M. Munson, and F. Hughson. Identification of new SNARE regulators. Mid-Atlantic Regional Conference for Undergraduate Studies, 2001. Abstract.

L.L. Martin, **L.L. Reither**, and J. Rohr. Cloning, expression, and substrate specificity of the mithramycin MTMO11 oxygenase. Abstracts of the American Chemical Society, 2001. Abstract 221.

**aWARDS**

Alpha Lambda Delta Barbara P. Quilling Graduate Fellowship (2002)

Sweet Briar College Presidential Medalist (2002)

James Lewis Howe Chemistry Award (2002)

Iota Sigma Pi, national honor society for women in chemistry (2002)

Barry Goldwater Scholar (2001)

Sweet Briar College Mary Kendrick Benedict Award, given to an upperclass student of high academic standing and personal integrity (2001)

Eta Sigma Phi, national honor society for classical studies (2001)

Alpha Lambda Delta Jo Anne J. Trow Scholarship (2000)

Sweet Briar College Manson Memorial Alumnae Award, given to an upperclass student of high academic standing who shows qualities of leadership and makes a constructive contribution to student life (2000)

Alpha Lambda Delta, national honor society for first-year students (1999)

Emilie Watts McVea Scholar, highest GPA in college class (1999)

Sweet Briar College Award for Outstanding First-Year Student in Chemistry (1999)

Sweet Briar College Betty Bean Black Scholar (1998)

**COMMUNITY INVOLVEMENT and ACTIVITIES**

**Living Learning Community Mentor**, Assumption College (2015)

**Science Olympiad Volunteer**, Assumption College (2015)

**Girls Inc. Eureka! Program Instructor**, Worcester, MA (2013)

 Developed a biochemistry-themed summer class for middle-school-aged girls. The Eureka! Program encourages girls to explore career paths and post-secondary educational opportunities in STEM fields.

**Junior League of Worcester Food 4 Thought Program**, Worcester, MA (2012-2013)

 Assisted with planning and implementing after-school programs for young women. Food 4 Thought seeks to empower middle-school-aged girls to be more self-sufficient through adult mentorship.

**Iota Sigma Pi Anna Louise Hoffman Award Selection Committee** (2012-2014)