

Michael J. M. Mazack

63 Kolthoff Hall
207 Pleasant St. SE
Minneapolis, MN 55455

E-Mail: michael@mazack.org

Education

Ph.D. Scientific Computation, University of Minnesota, Jan. 2014
M.S. Mathematics, Western Washington University, Mar. 2009
B.S. Mathematics (minor in physics), Western Washington University, Jun. 2007
A.S. Computer Science, Skagit Valley College, Jun. 2005, *Honors*
A.S. Physics/Engineering, Skagit Valley College, Jun. 2005, *Honors*
A.A. General Studies, Skagit Valley College, Jun. 2004, *Honors*

Employment History

Postdoctoral Associate, Chemistry, University of Minnesota, Feb. 2014 - Present
Research Assistant, Chemistry, University of Minnesota, Aug. 2009 - Jan. 2014
Graduate Teaching Assistant, Mathematics, Western Washington University, Sep. 2007 - Mar. 2009
Laboratory Teaching Assistant, Physics, Western Washington University, Jan. 2006 - Jun. 2007
Tutor, Mathematics, Physics, & Computer Science, Skagit Valley College, Sep. 2004 - Jun. 2005

Peer-Reviewed Publications

4. J. Gao, Y. Wang, M.J.M. Mazack, P. Löffler, M.R. Provorse, P. Rehak, Explicit Polarization: A Quantum Mechanical Framework for Developing Next Generation Force Fields, *Accounts of Chemical Research*, **2014**, 46() (submitted).
3. M.J.M. Mazack, J. Gao, Quantum Mechanical Force Field for Hydrogen Fluoride with Explicit Electronic Polarization, *Journal of Chemical Physics*, **2014**, 140(20), 204501-13.
2. J. Han, M.J.M. Mazack, P. Zhang, D.G. Truhlar, J. Gao, Quantum Mechanical Force Field for Water with Explicit Electronic Polarization, *Journal of Chemical Physics*, **2013**, 139(5), 54503-21.
1. M.J.M. Mazack, A. Cembran, J. Gao, Internal Dynamics of an Analytically Coarse-Grained Protein, *Journal of Chemical Theory and Computation*, **2010**, 6(11), 3601-12.

Book Chapters

1. Y. Wang, M.J.M. Mazack, D.G. Truhlar, J. Gao, "Explicit Polarization Theory", in *Many-Body Effects and Electrostatics in Multi-Scale Computations of Biomolecules*, Ed. Q. Cui, Ed. M. Meuwly, Ed. P. Ren, **2014**, Springer-Verlag (in press).

Other Documents with Citations

3. M.J.M. Mazack, Non-Negative Matrix Factorization with Applications to Handwritten Digit Recognition, *Working Paper*, University of Minnesota, **2009**.
2. M.J.M. Mazack, Algorithms for Handwritten Digit Recognition, *Master's colloquium*, Western Washington University, **2009**.
1. M.J.M. Mazack, A Comparative Analysis of Noun Classification in English and Japanese, *Working Paper*, Western Washington University, **2007**.

Talks, Posters & Conferences

Forming a Quantum Mechanical Force Field with Explicit Polarization Theory, Midwest Theoretical Chemistry Conference (MWTCC), Northwestern University, Evanston, IL, USA; Jun., **2014** (poster).

X-Pol: A Force Field for the Next Generation, 2013 International Summer School on HPC Challenges in Computational Sciences, New York University, New York, NY, USA; Jun., **2013** (poster).

XP3P: A Quantum Mechanical Force Field for Liquid Water, Midwest Theoretical Chemistry Conference (MWTCC), University of Illinois, Urbana, IL, USA; May, **2013** (poster).

MACROSHAKER: Macromolecular Diffusion Software, Midwest Theoretical Chemistry Conference (MWTCC), University of Wisconsin, Madison, WI, USA; Jun., **2012** (poster).

MACROSHAKER: Macromolecular Diffusion Software, World Association of Theoretical and Computational Chemists (WATOC), Universitat de Santiago de Compostela, Santiago de Compostela, Spain; Jul., **2011** (poster).

ACG: Analytical Coarse-Graining for Proteins, TSRC Workshop on Macromolecular Crowding, Telluride, CO, USA; Jun., **2011** (talk).

Protein Fluctuations without Explicit Atoms, CHARMM Developers' Meeting, Harvard University, Cambridge, MA, USA; Jul., **2010** (talk).

SIAM Conference on Parallel Processing for Scientific Computing (PP10), Seattle, WA, USA; Feb., **2010** (attended).

Algorithms for Handwritten Digit Recognition, Master's colloquium, Western Washington University, Bellingham, WA, USA; Feb., **2009** (talk).

Teaching Experience

Precalculus II (Math 115), Western Washington University, Spring 2008, Winter 2009

Precalculus I (Math 114), Western Washington University, Winter 2008

Functions & Algebraic Methods (Math 112), Western Washington University, Fall 2007, Fall 2008

Principles of Physics III Lab (Phys 116), Western Washington University, Spring 2007

Principles of Physics II Lab (Phys 115), Western Washington University, Winter 2006, Spring 2006, Winter 2007

Honors and Awards

Journal Cover, *Journal of Chemical Physics*, 140(20), **2014**.

XSEDE Travel Grant (via NSF:OCI-1053575) for 2013 International Summer School on HPC Challenges in Computational Sciences, **2013**.

WATOC Poster Prize, World Association of Theoretical and Computational Chemists (WATOC), Santiago de Compostela, Spain, **2011**.

Journal Cover, *Journal of Chemical Theory and Computation*, 6(12), **2010**.

Richard Greene Graduate Scholarship, Western Washington University, **2008**.

WWU Japan Week Speech Contest Scholarship, **2006 & 2007**.

Washington State Promise Scholarship, **2004-2005**.

Acquired Skills

Computing: Linux, C++, Perl, MATLAB, Fortran, OpenGL, OpenMP, MPI, CUDA, TCP/IP, Qt
Codebase Knowledge: NAMD, CHARMM, MOPAC, LuxRender
Languages: English (native), Japanese (fluent), Spanish (reading knowledge)
Other: Thorough knowledge of Tokyo's districts and rail system

Activities

WWU Japanese Conversation Club, Founder & President; 2008
School choir, KCP International, Shinjuku, Tokyo, Japan; 2007 & 2008
KCP International Speech Contest, Ikebukuro, Tokyo, Japan; 2007
Homestay in Japan; Umegaoka, Tachikawa, & Tokorozawa, Japan
Study abroad in Tokyo, Japan; Fall 2006, Summer 2007, Summer 2008
Member of the Society for Industrial and Applied Mathematics (SIAM)