Eric S. Harper

Advisor: Sharon Glotzer

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Born: November 26, 1988 - Dayton, Ohio, USA Nationality: American

Current Position

Graduate Student Research Assistant, Materials Science and Engineering Department, University of Michigan

- Research Focus: Entropy-driven self-assembly
- Lead developer of in house analysis software library *Freud*
- Junior system administrator for group computational resources

Graduate Student Instructor, Materials Science and Engineering Department, University of Michigan

- Instruct section of MSE 365 - Second Semester Lab

Areas of Specialization

Computational Nanoscience: Entropy-driven self-assembly

- Programming: Python, C++ (CUDA, MPI, OpenMP, Intel Thread Building Blocks), OpenGL, Bash
- Web Development: HTML, CSS, Javascript
- Remote Unix/Linux system usage including nyx/flux at UM, Blacklight at Pittsburgh, and Stampede at UT-Austin
- Simulation Techniques: Molecular Dynamics, Monte Carlo

Appointments Held

2011 - 2017 Graduate Student, University of Michigan

2010 - 2011 Consultant, Composite Technical Services, Dayton, OH

2008 - 2009 Undergraduate Researcher, Air Force Research Laboratories, Wright-Patterson Air Force Base

Education

2017 (projected) PhD in Materials Science and Engineering, University of Michigan
Michigan Institute for Computational Discovery and Engineering Graduate Certificate in *Computational Discovery and Engineering*

2014 MS in Materials Science and Engineering, University of Michigan
GPA: 3.774/4.000

2011 BCE in Chemical Engineering, University of Dayton
GPA:3.955/4.000

Grants, Honors, & Awards

2012 - 2014 Open Data IGERT Fellow, University of Michigan/NSF

2011 - 2012 William F. Hawkins Fellow, University of Michigan

2010 - 2011 Tau Beta Pi Geico Scholar

Publications and Talks

Journal Articles

[1] Shape Allophiles Improve Entropic Assembly, E. S. Harper, R. L. Marson, J. A. Anderson, G. van Anders, S. C. Glotzer, Soft Matter, 2015, Advance Article, doi:10.1039/C5SM01351H

Poster Sessions

2014   Shape Allophiles Improve Entropic Assembly, Engineering Graduate Symposium, University of Michigan

2013   Self-assembly of complementary shape alloys, CyberInfrastructure Days, University of Michigan

2013   Self-assembly of complementary shape alloys, Engineering Graduate Symposium, University of Michigan

Talks

2010   Bulk-Heterojunction Photovoltaic Cells: The effect of interlayer morphology on device performance, ACS CeRMACS

Scientific Software Development

2012 -   Freud (unreleased), lead developer Hoomd-blue (codeblue.umich.edu/hoomd-blue), developer

Teaching

2015   GSI, Materials Science & Engineering Undergraduate Lab

2012   TA, VSCSE Parallel Programming

2010 - 2011   TA, Chemical Engineering Department, University of Dayton

2011   Head Robotics Coordinator, Summer Honors Institute, University of Dayton

Service to the Profession

2014 -   Advisor, Tau Beta Pi, MI Γ Chapter

2009 - 2011   President, Tau Beta Pi, OH Θ Chapter

Professional Organizations

2014 -   APS

2009 -   Tau Beta Pi

2008 -   ACS

2007 -   AICHE