

Curricula Vitae Blair A. Winograd

PERSONAL DETAILS

Address 3150 Woodward Ave
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EDUCATION

Ph.D. Chemistry 2014-Present

University of Michigan

Supervisor: Dominika Zgid

Thesis Title: Electronic Structure from a Green's Function within a Stochastic Implementation

Research Interest: Physical Chemistry - Electronic Structure Theory

GPA: 3.790

Certificate in Computational Discovery and Engineering 2014-Present

University of Michigan

Bachelor of Arts 2009-2013

Washington University in St. Louis

Major: Chemistry

Minor: Drama

AWARDS AND GRANTS

Rackham Conference Travel Grant

Awarded, 2017

Rackham Graduate Student Research Grant

Awarded, 2017

Midwest Theoretical Conference Poster Award

Awarded, 2017

**Department of Education Graduate Assistance in Areas of National Need (GAANN)
Fellow**

Awarded, 2016

Transforming Learning for Third Century Discovery/Quick Wins Grant

Awarded, 2015-2016

"Compute-to-Learn: Designing Interactive, Computer-Based Demonstrations of Physical Chemistry Concepts"

E. Geva, H. P. Hendrickson, M. Jafari, A. R. Welden, K. Williams, & **B. Winograd**

AAAS/Science Program for Excellence in Science

Awarded, 2015

PREVIOUS RESEARCH EXPERIENCE AND ACADEMIC ADVANCEMENT

Stochastic Approaches to Electronic Structure Calculations <i>Telluride Science Research Center</i> Summer School	2017
Ph.D Chemistry Rotation <i>University of Michigan</i> Supervisor: Eitan Geva Research Topic: Nakajima-Zwanzig Generalized Quantum Master Equation	2014-2015
Undergraduate Researcher <i>Washington University in St. Louis</i> Supervisor: Jacob Schaefer Research Topic: Solid-State NMR Applications to Biological Molecules	2013-2014
Undergraduate Researcher <i>Washington University in St. Louis</i> Supervisor: Sophia E. Hayes Research Topic: Solid-State NMR Applications to Characterization of Inorganic Nanostructures, Including Al and Ga Nanoclusters	2011-2013

CONFERENCES

Oral Presentations

American Chemical Society <i>DC</i> “Electronic Structure from a Monte Carlo Green’s Function”	2017
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Poster Sessions

American Chemical Society <i>DC</i> “A Stochastic Implementation of The Second-order Green’s Function”	2017
Midwest Theoretical Conference <i>Michigan State University</i> “A Stochastic Implementation of The Second-order Green’s Function”	2017
Symposium on Chemical Physics <i>University of Waterloo</i> “A Stochastic Implementation of The Second-order Green’s Function”	2016
Chemical Sciences at the Interface of Education — U. of Michigan Symposium <i>University of Michigan</i> “Compute-To-Learn: Designing Interactive, Computer-Based Demonstrations of Physical Chemistry Concepts”	2016
International Society of Theoretical Chemical Physics <i>Grand Forks, North Dakota</i> “A Stochastic Implementation of The Second-order Green’s Function”	2016
Midwest Physical Chemistry Conference <i>University of Pittsburgh</i> “A Stochastic Implementation of The Second-order Green’s Function”	2016
Chemical Sciences at the Interface of Education — U. of Michigan Symposium <i>University of Michigan</i>	2015

“Compute-To-Learn: Designing Interactive, Computer-Based Demonstrations of Physical Chemistry Concepts”

Midwest Physical Chemistry Conference

2015

University of Michigan

“Towards accurate descriptions of periodic solids”

Karle Symposium

2015

University of Michigan

“Towards improved descriptions of periodic solids”

Workshop Facilitator

Compute-To-Learn: Designing Interactive, Computer-Based Demonstrations of Quantitative Concepts

2017

Spelman College

“Improving faculty’s and student’s technical and computing skills”

Chemical Sciences at the Interface of Education — U. of Michigan Symposium

2016

University of Michigan

“Compute-to-Learn: Designing Interactive, Computer-Based Demonstrations”

TEACHING

Graduate Student Mentor, University of Michigan

Physical Chemistry (CHEM230)

2017 Winter Semester

Physical Chemistry (CHEM230)

2016 Fall Semester

Physical Chemistry (CHEM230)

2016 Winter Semester

Physical Chemistry (CHEM260)

2015 Fall Semester

Future-Faculty Graduate Student Instructor, University of Michigan

Compute-To-Learn, Physical Chemistry (CHEM230/260H)

2017 Winter Semester

Compute-To-Learn, Physical Chemistry (CHEM230/260H)

2016 Fall Semester

Compute-To-Learn

2015 Winter Semester

Physical Chemistry (CHEM260H)

2015 Fall Semester

Graduate Student Instructor, University of Michigan

Macromolecular Structure and Dynamics (BIOPHYS454)

2017 Winter Semester

Biophysical Chemistry (CHEM453)

2016 Fall Semester

Physical Chemistry (CHEM260)

2016 Winter Semester

Physical Chemistry (CHEM260)

2015 Fall Semester

Physical Chemistry for Pre-Health (CHEM230)

2015 Winter Semester

Organic Chemistry Laboratory I (Chem211)

2014 Fall Semester

Teaching Assistant, Washington University in St. Louis

General Chemistry Laboratory I and II

2013-2014

CHEMISTRY EDUCATION PUBLICATIONS

1. M. Jafari, A. R. Welden, K. Williams, **B. Winograd**, H. Hendrickson, M. Lenard, A. Gottfried, E. Geva. Journal of Chemical Education. “Compute-to-Learn: Authentic Learning via Development of Interactive Computer Demonstrations within a Peer-Led Studio Environment.” DOI: 10.1021/acs.jchemed.7b00032

TEACHING DEMONSTRATIONS

*Developed using Mathematica Software

<http://demonstrations.wolfram.com/ReversibleAndIrreversibleIsothermalExpansionOfAnIdealGas/>
<http://demonstrations.wolfram.com/AdiabaticExpansionAndCompressionOfAnIdealGas/>
<http://demonstrations.wolfram.com/WorkDoneInReversibleAndIrreversibleCompressionOfAnIdealGas/>
<http://demonstrations.wolfram.com/IsobaricCompressionAndExpansionOfAnIdealGas/>

CODING AND HIGH PERFORMANCE COMPUTING

Python
Fortran
C++
openMP
Mathematica
Bash

CLUBS AND OUTREACH

CALC—UM Organizing Committee <i>University of Michigan</i>	2017-2018
CSIE—UM Science for the Public <i>Ann Arbor Hands-On Museum</i>	2017
Science Olympiad Coach - iCompute <i>Angell Elementary, Washtenaw County</i>	2017
Science for the Public <i>Ann Arbor Hands-On Museum</i>	2017
Scientific Computing Club <i>University of Michigan</i>	2014-2017
mirCORE - Computational Biology Camp Volunteer <i>University of Michigan</i>	Summer 2016
Science Olympiad Coach - iCompute <i>Angell Elementary, Washtenaw County</i>	2016

MENTORSHIP

Graduate Student Recruitment Host <i>Kyle Foster Sunden</i>	Winter 2016
Michigan Chemistry Opportunities for Research and Education <i>Shannon Vandenvander</i>	Winter 2015
Graduate Student Recruitment Host <i>Brittany Hagler</i>	Winter 2015

REFERENCES

Dr. Dominika Zgid

University of Michigan

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Prof. Eitan Geva

University of Michigan

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