Kevin Waters

kwaters@mtu.edu
+1 (270) 312 5419

Education

Michigan Technological University (MTU) 2013-Present
Doctor of Philosophy in Physics
Advisor: Ravindra Pandey
Expected Graduation: May 2018

Indiana State University (ISU) 2009-2013
Bachelor of Science · Cum Laude
Major: Physics
Minors: German, Mathematics

Research Experience

Doctoral Research (MTU) 2013-Present
Advisor: Ravindra Pandey
Performed first principles calculations and investigated the nanomaterial-bio interface using programs such as VASP and Gaussian09 on high performance computers. Wrote analysis tools for electronic software suites and mentored graduate and undergraduate students.

DOE SCGSR Fellowship at Pacific Northwest Laboratory Spring 2018
Advisor: Eric Bylaska
Developed NWChem Software

Air Force Research Laboratory Summer 2017
Advisor: Ruth Pacther
Used first principles calculations to investigate defects and functionalization of boron nitride nanomaterials and functionalized gold clusters

Summer Undergraduate Research (ISU) 2012-2013
Advisor: Joseph West
Analyzed and found solutions for moving large pyramid type blocks using theoretical and experimental methods.

Summer Undergraduate Research (ISU) 2010-2012
Advisor: Gou-Ping Zhang
Analyzed electrocardiograms using Fourier transforms to diagnose heart conditions. Used the local high performance computer to perform the calculations.

Teaching Experience

Teaching at MTU

Introduction to Scientific Programming for Physicists · Instructor	Fall 2016, 2017
Introduction to Scientific Programming for Physicists · Teaching Assistant	Fall 2014, 2015
Computational Methods in Physics · Teaching Assistant	Fall 2015
Honors Physics I · Teaching Assistant	Fall 2013, 2015

Physics Learning Center Coach · Learning Coach — Spring 2015
Introductory Astronomy · Teaching Assistant — Fall 2013-Spring 2014

Teaching at ISU

Physics Help Center · Tutor — Fall 2010-Spring 2013
General Physics I · Teaching Assistant — Fall 2010, 2011, Spring 2011
General Physics II · Teaching Assistant — Spring 2012
University Physics I · Teaching Assistant — Fall 2012
University Physics II · Teaching Assistant — Spring 2013

Publications

The Electronic and Mechanical Properties of Hexagonal BN2 a Proposed Two-dimensional Material

Kevin Waters, Ravindra Pandey

`In Preparation`

Absorption and Fluorescence Properties of Eight C4 Substituted 7-Aminocoumarins

Shraddha Singh, Vaho Begoyan, Marina Tanasova, Kevin Waters, Max Seel, Ravindra Pandey

`In Preparation`

Hierarchical Self-Assembly of Noncanonical Guanine Nucleobases on Graphene

Nabanita Saikia, Kevin Waters, Shashi P. Karna, Ravindra Pandey

ACS Omega vol. 2. pp. 3457

Amino-Acid-Conjugated Gold Clusters: Interaction of Alanine and Tryptophan with Au_8 and Au_{20}

Marwa H. Abdalmoneam, Kevin Waters, Nabanita Saikia, and Ravindra Pandey

J. Phys. Chem. C, 2017, vol. 121 pp. 2558525593

Electronic Properties of Acetaminophen Adsorbed on 2D Clusters: A First Principles Density Functional Study

Ujjal Saikia, Nabanita Saikia, Kevin Waters, Ravindra Pandey, Munima Bora Sahariah

ChemistrySelect 2017 vol. 2 pp. 3613

Amino Acid Analogue-Conjugated BN Nanomaterials in a Solvated Phase : First Principles Study of Topology-Dependent Interactions with a Monolayer and a (5,0) Nanotube

Kevin Waters, Ravindra Pandey, Shashi P. Karna

ACS Omega vol. 2, pp. 7683, 2017

Thermoelectric Properties of SnSe Nanoribbons: A Theoretical Aspect

Kriti Tyagi, Kevin Waters, Gaoxue Wang, D. Haranath, Bhasker Gahtori, Ravindra Pandey

Materials Research Express, vol. 3 pp. 35013, 2016

A Theoretical Study of Structural and Electronic Properties of Alkaline-Earth Fluoride Clusters

Ratnesh Pandey, Kevin Waters, Sandeep Nigam, Haiying He, Subhash Pingle, Avinash Pandey, Ravindra Pandey.

Computation and Theoretical Chemistry, vol. 1043, pp. 2430, 2014

Building the Next Pyramid

Joseph West, Greg Gallagher, Kevin Waters, Stephen Ward, Tia Ward

arXiv:1502.07319

Presentations

Stability and Electronic Properties of Amine Functionalized Boron Nitride Nanostructures

Graduate Research Colloquium (MTU) · February 2017

Stability and Electronic Properties of Amine Functionalized Boron Nitride Nanostructures

Physics Graduate Colloquium (MTU) · January 2017

Amino Acids Interaction with Boron Nitride Nanomaterials

American Physical Society March Meeting · March 2016

Amino Acids Interaction with Boron Nitride Nanomaterials

Graduate Research Colloquium (MTU) · February 2016

First Principles Study of Boron Nitride Nanomaterials & Amino Acid Molecules

Physics Graduate Colloquium (MTU) · Feb 2016

Ab Initio Study of the Structural and Electronic Properties of MgV_2O_4 in its Cubic Phase

Graduate Research Colloquium (MTU) · February 2015

A Theoretical Study of Structural and Electronic Properties of Alkaline-Earth Fluoride Clusters

American Physical Society March Meeting · March 2015

How They (Should Have) Built the Pyramids

American Physical Society March Meeting · March 2014

Computational Analysis of Electrocardiograms

American Physical Society March Meeting · March 2013

Conferences

American Physical Society March Meeting	March 2016
Supercomputing	November 2014
American Physical Society March Meeting	March 2014
American Physical Society March Meeting	March 2013

Leadership

MTU Graduate Student Government: Department Representative	2014-2015
Friends of the Van Pelt Library Board Member	2016-2017
MTU Graduate Student Government: Friends of the Van Pelt Library Liaison	2014-2016
MTU Graduate Student Government: IT Governance Group Representative	2015
MTU Summer Graduate School Softball Team Manager	2014-Present
ISU Society of Physics President	2012-2013
ISU Phi Gamma Delta Academic Chair	2012-2013
ISU Residential Life Academic Peer Advocate	2012-2013

Skills

Programing Languages

Python

C/C++

Fortran

Bash

Atomic Simulation Software

Vienna Ab-initio Simulation Package (VASP)

Gaussian09

Operating Systems

Linux/Unix

Mac OS X

Microsoft Windows

Awards

John Miles Physics End Fellowship	2017
Traditions of Giving Fellowship	2013
Physics Outstanding Graduating Senior	2013
Outstanding Physics Teaching Assistant	2013
John McCarthy Outstanding Junior Award	2012
Boy Scouts of America Eagle Scout	2007