

DANIEL PATRICK HOWARD

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EXECUTIVE SUMMARY

Passionate towards applying my mathematical expertise to complex problems, especially those related to the climate and environment, by developing and utilizing toolsets in high performance computing. Looking for internship summer 2017.

EDUCATION

UNIVERSITY OF NOTRE DAME

Ph.D. Applied & Computational Mathematics & Statistics (ACMS)

Advisor: Harindra Joe Fernando, Environmental Fluid Dynamics Laboratory

Supplementary Program: GLOBES Certificate in Environment, Science Policy, & Society

Notre Dame, IN
Aug 2015 - May 2020

UNIVERSITY OF WISCONSIN-MADISON

B.S. Applied Mathematics, Engineering, and Physics (AMEP)

Focus in Electrical and Computer Engineering, 2nd Major in Pure Mathematics

Certificate in Computer Science

Honors in the Liberal Arts

Madison, WI
Aug 2011 - May 2015

RESEARCH EXPERIENCE

MERCY CORPS INDONESIA

Student in course Business on the Frontlines

Jakarta, Indonesia
Spring 2016

- Mendoza College of Business under Prof. Emily Block, international experience in Indonesia
- Collaborate across disciplines with MBA, Law, Human Rights, and Peace Studies students
- Research natural disasters, i.e. floods and volcanic eruptions, and their impact on communities
- Develop best practices and propose business models for NGO Mercy Corps to develop resiliency
- Integrate ash cloud predictive math models into risk analysis; inform insurance pricing schemes

TIFR - CENTRE FOR APPLICABLE MATHEMATICS

S.N. Bose Scholar - Summer Student Research Intern

Bengaluru, India
Summer 2015

- Research with Prof. Praveen Chandrasekar, computational fluid dynamics
- Translate FORTRAN code to C++ code
- Develop and compare methods such as Discontinuous Galerkin and RLLC Riemann Solvers

UNIVERSITY OF WISCONSIN-STOUT

Student Researcher, Mathematics, Statistics & Computer Science Department

Menomonie, WI
Summer 2013

- Research with Prof. Keith Wojciechowski, numerical solutions to PDEs
- Implement the Eigen-decomposition Pseudo Spectral (EPS) Method
- Study wave propagation problems and Burger's equation
- Presented talk at JMM 2014 "Applying the Eigendecomposition Pseudospectral Method to Wave Propagation Problems"

UNIVERSITY OF WISCONSIN-MADISON

Student Researcher, Chemistry Department

Madison, WI
Summer 2013

- Research with Prof. Gil Nathanson, material sizing and liquid air interfaces
- Optimization of paper production process by surface tension data collection

UNIVERSITY OF NOTRE DAME

Laboratory Researcher, QuarkNet Program

Notre Dame, IN
Summer 2008

- Research with Prof. Randal Ruchti, waveshifting and scintillating properties of detector materials
- Analyze collision data and quark jets from the Large Hadron Collider
- Became proficient in lab equipment such as the Vernier spectrometer machine and software

WORK EXPERIENCE

UNIVERSITY OF WISCONSIN-MADISON HOUSING

Madison, WI

House Fellow (Resident Assistant)

Fall 2013 to Spring 2015

- Oversaw a group 65 residents, primarily first-year students, while promoting academics, community, involvement, and diversity.
- Administrative responsibilities such as desk supervision and weekly reports/house newsletters.
- Enforced/Documented UW-Housing policy violations.
- Managed a yearly house budget of approximately \$500.

UNIVERSITY OF WISCONSIN-MADISON OFFICE OF THE REGISTRAR

Madison, WI

IT Intern

Fall 2011 to Spring 2015

- Provided technical support for staff of the Office of the Registrar.
- Respond to and process data requests while following FERPA regulations.
- Designed MS Access queries to retrieve/organize data from Oracle database.

LEADERSHIP & SERVICE

Leadership Activities:

President, ACMS Student Organization (SIAM Chapter), Notre Dame (2015-Present)
Social Chair, Math Club, Madison, WI (2014-15)

Service Activities:

Tutor at Robinson Community Learning Center, South Bend, IN (2016)
Math Tutor at UW-Madison Residence Halls, UW-Madison (2012-13)
WE Conserve Ambassador, UW-Madison (2013-15)

AWARDS

5-year Dean's Fellowship for Graduate Study at Notre Dame
Recipient of 2012-2013 Theodore Herfurth Scholarship at UW-Madison
Dean's List at UW-Madison – Fall 2011 and Spring 2012

PROFESSIONAL MEMBERSHIPS

Society for Industrial and Applied Mathematics (SIAM)

June 2015 - Present

American Physical Society (APS)

September 2015 - Present

Association for Computing Machinery (ACM)

January 2017 - Present

WORKSHOPS AND CONFERENCES

Programming and Tuning Massively Parallel Systems (PUMPS), Barcelona, Spain

Summer 2016

IMA Mathematics and Climate Summer Program, Lawrence, KS, USA

Summer 2016

Workshop on Control and Numerics for Fluid-Structure Interaction Problems, Bengaluru, India

Summer 2015

Joint Mathematics Meetings, Baltimore, MD, USA

Winter 2014

TEACHING EXPERIENCE

Foundations of a Liberal Arts Education, ILS 138 (UW-Madison, Fall 2012)

Applied Mathematical Methods I, ACMS 20550 (Notre Dame, Fall 2016)

SKILLS AND KNOWLEDGE

Spanish language – 5 years of classroom experience

Windows XP-7-8-10, Mac OSX, and Linux (Debian/Ubuntu)

Microsoft Office Suite, including Access and Project

Advanced Experience – Java, MATLAB, Mathematica, Maple, MathCAD, LaTeX

Moderate Experience – C++, FORTRAN, Python, MPI, OpenMP, OpenACC, CUDA, R, HTML/CSS, jQuery