BRAD PERFECT

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EDUCATION

PhD, Mechanical Engineering, University of Washington — Expected June 2019
    GPA: 3.8/4.0 Advised by Dr's James Riley and Nirni Kumar

MS, Mechanical Engineering, University of Washington — June 2016
    GPA: 3.6/4.0

BS, Physics, Harvey Mudd College — May 2013
    GPA: 3.6/4.0, Graduated with Distinction

RESEARCH EXPERIENCE

University of Washington   **Research Assistant**   **Jun 2015-Current**
Supervised by Dr. James Riley

- Studied the wakes of undersea mountains, with focus on vortex generation and structure (dissertation project)
- Numerical investigation performed for flow interaction with topography in a stratified, rotating system

University of Washington   **Research Assistant**   **Jan 2014-Jun 2015**
Supervised by Dr. James Riley and Dr. Jim Thomson

- Computational and experimental study of Washington State Ferry wake generation and propagation

Lawrence Livermore National Lab   **Summer Student**   **Summer 2011-2014**
Supervised by Dr. Perry Bell and Dr. Charles Brown

- Wrote code and ran simulations and find optimal focus parameters and diagnose timing problems for an x-ray streak camera at the National Ignition Facility.
- Validated models with high-yield NIF shot data and performed data processing

Harvey Mudd College   **Clinic Program**   **Sept 2012-May 2013**
Supervised by Dr. Tom Donnelly and Dr. Nancy Lape

- Led a 5-person team during a yearlong project for an industry client
- Demonstrated computational and experimental proof of concept for a novel detection technique for nanoscale aerosols

TEACHING EXPERIENCE

Course Instructor	**Intro. to Heat Transfer**	**Summer 2017, 2018**
	Statistics	**Spring 2018**
	Autonomous Vehicles	**Fall 2011**
Teaching Assistant	**ME 538, Adv Fluid Mech.**	**Fall 2016, 2017, 2018**
	CEE 599, Sediment Transport	**Spring 2016**
	CEE 347, Intro to Fluid Mech.	**Winter 2016**
	ME 354, Mech. of Materials	**Fall 2013**

RELEVANT COURSEWORK

Scientific Computing: Parallel Applications, Numerical Methods, Spectral Analysis, Algorithm Design
Software: Matlab, Python, Fortran, C, C++, ROMS, OpenFOAM, STAR-CCM+, CUDA
Fluid Turbulence: Theory and Modeling
Fluid Dynamics: General, Computational, Geophysical, Multiphase
General: Partial Differential Equations, Linear Algebra, Heat Transfer, Thermodynamics, Lagrangian Mechanics, Continuum Mechanics

PUBLICATIONS

Perfect, B, Kumar, N, Riley, J. "Vortex Structures in the Wake of an Idealized Seamount in Rotating, Stratified Flow" (accepted), Geophysical Research Letters, 2018.

Homoelle, D., et. al., "A compact UV timing fiducial system for use with x-ray streak cameras at NIF," San Diego, CA, Proceedings of SPIE Volume 8505, 2012.

Opachich, K., et. al., "High Performance Imaging Streak Camera for the National Ignition Facility," Rev. Sci. Instrum., 2012.

CONFERENCE CONTRIBUTIONS

Gordon Research Conference on Ocean Mixing 2018, Andover, NH
American Geophysical Union Ocean Sciences Meeting 2018, Portland, OR
Fluid Dynamics of Sustainability and the Environment 2016, Cambridge, UK
American Physical Society, Division of Fluid Dynamics 2015, Boston, MA
Young Coastal Scientists and Engineers Conference 2015, University of Delaware

HONORS AND AWARDS

Eagle Scout, Boy Scouts of America, 2005
National Merit Finalist and Scholarship Recipient, 2009
Harvey S. Mudd Merit Scholarship, 2009-13
Harvey Mudd College Dean's List, 8 semesters 2009-13
DHS Undergrad Scholarship Program Finalist (Program cancelled during selection)
Robert C Byrd Scholarship, 2009-13
Claremont-Mudd-Scripps Swim Team 2009-13: All American (2010, 2012, 2013)
McCormick Fellowship, UW College of Engineering, 2016
President, Mechanical Engineering Graduate Student Association, 2016-17
UW Graduate and Professional Student Senate Travel Grant Recipient, 2018