Brian Joyce

Curriculum Vitae

Education

2013–Present **Graduate Student**, *The University of Notre Dame*, Department of Civil and Environmental Engineering and Earth Sciences, PhD Student.
GPA – 3.762/4.0

2009–2013 **Bachelor of Science in Civil Engineering**, *The University of Notre Dame*, Department of Civil and Environmental Engineering and Earth Sciences, *GPA – 3.151/4.0*.
Specialized in Environmental Engineering, Minor in Energy Studies

Experience

Research

2013–Present **Graduate Student**, Computational Hydraulics Labratory, Notre Dame.
Developed a high resolution tide, wind-wave and storm surge model for coastal Alaska using the finite element ocean circulation model ADCIRC. This finite element model takes advantage of a high resolution grid to tie together the Bering Sea, Chuckchi Sea, Beaufort Sea, and Gulf of Alaska in one domain while providing a very high level of detail along the Alaskan coastline.

Currently implementing ice coverage into the model in order to analyze the impact a climate change induced change in seasonal ice coverage could have on powerful coastal storms.

2012–2013 **Undergraduate Reseracher**, Bolster Research Group, Notre Dame.
Developed a tool to compute "Resiliency, Reliability, and Vulnerability" metrics for ground water resources, specifically for use in South America

Teaching

2013–2015 **Teaching Assistant**, *Computational Methods*, Notre Dame.
Worked with Junior level engineering students to teach them the basics of numerical analysis and finite difference methods. Taught some classes, ran all help sessions and created assignments and tests.

Spring 2015 **Teaching Assistant**, *Finite Elements*, Notre Dame.
Worked with Graduate level engineering students to teach them finite element methods. Involved in teaching some classes, ran help sessions and created assignments and tests.

Spring 2014 **Teaching Assistant**, *Civil Engineering Materials*, Notre Dame.
Ran labs for Junior level civil engineering students. Labs consisted of concrete mix design, testing of concrete performance, and study of various other civil engineering materials

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Employment

Summer 2012 **Co-op**, *Boston Water and Sewer Commission*, Boston, MA.
Assisted on a suit against the Comission and researching low impact development and stormwater Best Management Practices. Also observed and assisted with engineering field work such as surveying of sewer lines and repair sites.

Summer 2011 **Intern**, *Boston Water and Sewer Commission*, Boston, MA.
Intern in the legal department. Assisted on a suit against the Comission and researching low impact development and stormwater Best Management Practices.

Publications

In Progress **Joyce, B.**, Westerink, J.J., Grumbine, R., Feyen, J.,van Westeheysen, A. **A High-Resolution Coupled Tide and Storm Surge Model for the Gulf of Alaska, Bering Sea, Chuckchi Sea, and Beaufort Sea**

Presentations

2016 Oral Presentation at the Alaska Marine Society Symposium - **Joyce, B.**, Westerink, J.J., Grumbine, R., Feyen, J.,van Westeheysen, A. **A High-Resolution Coupled Tide and Storm Surge Model for the Gulf of Alaska, Bering Sea, Chuckchi Sea, and Beaufort Sea**

2015 Oral Presentation at the 2015 ADCIRC Workshop - **Joyce, B.**, Westerink, J.J., Grumbine, R., Feyen, J.,van Westeheysen, A. **Modeling Tides in the North Pacific: An ADCIRC model for Alaska**

2014 Oral Presentation at the 2014 ADCIRC Workshop - **Joyce, B.**, Westerink, J.J., Grumbine, R., Feyen, J.,van Westeheysen, A. **Motivation for and Introduction to a High Resolution Ice, Tide, Wind-Wave and Storm Surge Model for Alaska**

Awards

2014 Recipient of the **Dondanville Family Award in Civil Engineering for Excellence in Teaching by a Graduate Student** - "In recognition of the graduate student who has been most effective working with undergraduate students in a teaching situation"

Computer skills

Basic PYTHON, HTML, Bash/Shell scripting

Intermediate LaTeX, OpenOffice, FORTRAN, Linux

Advanced MATLAB, SMS, Microsoft Windows, OS X