

# BRET BOSMA

FACULTY RESEARCH ASSOCIATE

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## EXPERIENCE

- 2016 - Present**      **O.H. HINSDALE WAVE RESEARCH LABORATORY, OREGON STATE UNIVERSITY**  
**Faculty Research Associate**  
Scaled physical and numerical modeling of Ocean Wave Energy Converters; Instrumentation and data acquisition for a variety of wave laboratory projects.
- 2015**                      **NORTHWEST NATIONAL MARINE RENEWABLE ENERGY CENTER, OREGON STATE UNIVERSITY**  
**U.S. DOE EERE Postdoctoral Research Fellow**  
Physical and numerical modeling of a wave energy converter for verification and validation of the WEC-Sim simulator code.
- 2014**                      **HYDRAULICS AND MARITIME RESEARCH CENTRE, UNIVERSITY COLLEGE CORK, IRELAND**  
**U.S. DOE EERE Postdoctoral Research Fellow**  
Research on the Galway Bay, Ireland 1/4 scale wave energy test site.
- 2010 - 2013**              **NORTHWEST NATIONAL MARINE RENEWABLE ENERGY CENTER**  
**Graduate Research Assistant**  
Developed design guide for wave energy converter design and testing. Design, buildt and tested scaled autonomous wave energy converter.

## EDUCATION

- 2013**                      **PHD, ELECTRICAL ENGINEERING**  
**Oregon State University**  
Dissertation: On the Design, Modeling, and Testing of Ocean Wave Energy Converters.
- 2008**                      **MASTERS OF SCIENCE, ELECTRICAL ENGINEERING**  
**California State University, Chico**  
Thesis: A Novel Technique for Maximum Power Operation of Photovoltaic Arrays Using Real-time Identification.

## STATEMENT

Experienced researcher in renewable energy applications most recently focused on ocean wave energy system physical and numerical modeling and testing. Skilled at design and troubleshooting of laboratory instrumentation and data acquisition systems including control.

## TECHNICAL

MATLAB/Simulink  
Speedgoat  
Labview  
Solidworks  
Ansys AQWA  
WAMIT  
NEMOH  
Rhinoceros  
Orcaflex  
HTML/PHP/MySQL  
Excel

## SKILLS

### Instrumentation Specialist

Extensive implementation of laboratory sensors for wave, structure, and PTO analysis of physical models.

### Numerical Modeling

Complete hydrodynamic modeling from solid modeling, through boundary element method, and time domain non-linear WEC modeling.

### Control System Design

WEC control system design, modeling, and implementation.