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EDUCATION

UNIVERSITY OF MAINE, Orono, ME — M.S. received December, 2014
Major: Mechanical Engineering

MAINE MARITIME ACADEMY, Castine, ME — B.A. received May, 2011
Major: Marine Systems Engineering Design — *Summa Cum Laude*
Minor: Naval Architecture

RELEVANT WORK / RESEARCH EXPERIENCE

University of Maine: Advanced Structures and Composites Center Orono, Maine — September, 2014 - present
Instrumentation Manager, Research Engineer
Position Goal: To be the in-house expert and ensure quality in test design, instrumentation selection and setup, text execution, and data processing at the University of Maine's Advanced Structures and Composites Center.

- Manage a team of engineers, technicians, and students responsible for the specification, calibration, and installation of all instrumentation used to support the high volume of ongoing multidisciplinary research projects in a 100,000 ft^2 ISO 17025 testing lab
- Manage the instrumentation team budget, making purchasing decisions that support and sustain the lab
- Lead team in the design, construction, and commissioning of the instrumentation and controls system for the W2 Wind/Wave Facility at the University of Maine. The system includes integrated PLCs (Allen Bradley CompactLogix, Studio 5000), scientific data acquisition systems (LabVIEW, NI PXIe chassis, Qualisys multi-camera motion tracking system), and custom equipment integration (Edinburgh Designs 16 paddle wave generator)
- Lead electrical and safety system designer for custom W2 wind wall and tow carriage (480 VAC, 3 phase, including panel protection and distribution)
- Lead team of engineers during the 2016 DOE Wave Energy Prize competition in the newly commissioned W2 testing basin by executing three unique testing programs for different scaled wave energy convertors
- Presented as subject matter expert at the 2017 Marine Hydrokinetic Instrumentation Workshop (NREL)
- Lead team in the digitization of calibration records and development of internal database to track equipment performance and justify longer calibration cycles, reducing overall lab budget
- Lead team in the completion of the Aqua Ventus offshore turbine ins. package ($2.8 million) for future deployment
- Lead six month testing program to characterize the performance of a full scale prototype salt water bearings for use in rotating tidal turbine drivetrain systems
- Key contributor to two successful audits by IAS of internal quality system (ISO 17025)
- Train students and staff in the use of servo-hydraulic test frames for testing composites up to loads of 300 kips
- Lead site engineer for retrieval and decommissioning of the VolturnUS 1:8 scale floating offshore wind platform

University of Maine: Advanced Structures and Composites Center Orono, Maine — August, 2012 – September, 2014
Graduate Research Assistant

- Lead on-site engineering support for the 1:8 VolturnUS offshore floating wind turbine over an 18 month deployment
- Designed comprehensive data acquisition and control system for VolturnUS performance validation (LabVIEW)
- Lead hardware assembly and installation of instrumentation components during VolturnUS deployment
- Collaborated with consultants in developing a control and data acquisition software for VolturnUS
- Managed and supervised undergraduate students and technical interns in support of VolturnUS testing

R.M. Beaumont Corp. Brunswick, Maine — May, 2011 – March, 2014
Research Engineer & IT Specialist

- Designed and built data acquisition systems for validation testing of tidal turbines, oscillating water column generators, wave tank simulators, and tidal generator simulators
- Created CAD models and shop drawings (SolidWorks) of mouse carts for use in a biomedical testing lab
- Compiled performance reports utilizing data from acquisition system testing (Matlab)
- Developed program for analyzing subsea tubular joint welds for conformance with API structural standards
- Designed and manufactured a data acquisition system to be used in testing a 1/50th scale floating wind turbine

Ocean Renewable Power Company, Eastport, Maine — Summers 2009 & 2010
Engineering Intern

- Participated in performance validation testing of a fully operational Darrieus tidal turbine (20 kW)
- Installed and maintained instrumentation components in conjunction with testing
- Developed Matlab script to retrieve, format, analyze, and plot acoustic Doppler data from a serial instrument to aid in test site selection by quantifying tidal velocities at various water depths

INSTRUMENTATION HARDWARE EXPERTISE

I have experience selecting, installing, verifying, and troubleshooting the following instrumentation. List is not exhaustive.

- *Strain Gauges (1/4 Bridge, ½ Bridge, Full Bridge)*
- *Accelerometers (Resistive & Piezoelectric)*
- *Encoders (Quadrature & Analog)*
- *Acoustic Doppler Current Profilers*
- *Load Cells (Button, S-beam, Canister, Pancake, Submersible)*
- *Proximity Sensors (Safety & Object Detection)*
- *Anemometers (Mechanical, Ultrasonic, Hot-Wire)*
- *Torque Transducers (Rotary & Reaction)*
- *Thermocouples & RTDs*
- *Photogrammetry (Reflective Tracking & Contrast Point Tracking)*
- *Draw Wire Sensors / String Potentiometers*
- *Wave Probes (Resistive & Capacitive)*
- *Flow Transducers (Ultrasonic)*
- *Tachometers (Optical)*
- *Pressure Gauges & Transducers (Air & Service Hydraulics)*
- *Linear Displacement Transducers (AC&DC)*
- *IMUs (Inertial Measurement Units)*
- *Electrical Power Monitoring (DC, AC)*
- *Inclinometers (Digital & Analog)*
- *Amplifiers, Filters, Breakers, EMI Protection, Fuses, Wire Selection (Gauge & Jacket Material)*

SOFTWARE EXPERTISE

I have experience in the use and configuration of the following software. List is not exhaustive.

- *NI LabVIEW*
- *Studio 5000*
- *Mathcad*
- *Matlab*
- *Instron Console &DAX*
- *OPC Server*
- *MS Office*
- *SolidWorks*
- *MTS Aeropro*
- *MS Visio*
- *Qualisys Track Manager*
- *FactoryTalk PanelView*

AWARDS & LEADERSHIP ACTIVITIES

ACADEMIC ADVISER: Soc. of Naval Arc & Marine Engineers, University of Maine	January, 2018 to present
DIRECTOR'S AWARD: Outstanding Staff Member, University of Maine	May, 2016
CAPSTONE MENTOR: 5 Undergraduate Teams, University of Maine	May, 2014 to present
DIRECTOR'S AWARD: Outstanding Graduate Student, University of Maine	May, 2014
DIRECTOR'S AWARD: Outstanding Design Team, University of Maine	May, 2014
E.I.T CERTIFICATION, State Board of Licensure for Professional Engineers, Maine	May, 2011
HENRY A. SCHEEL SCHOLAR, Maine Maritime Academy	November, 2010

PEER-REVIEWED PUBLICATIONS

Driscoll, Rick, Erik Mauer, and Jeff Rieks. 2018. 2017 MHK Instrumentation Workshop Report. Golden, CO: National Renewable Energy Laboratory. NREL/TP-5000-70591. https://www.nrel.gov/docs/fy18osti/70591 (*CONTRIBUTOR*)

Viselli, A, H. Dagher, A. Goupee, C. Allen and C.Libby. "VolturnUS 1:8- Successful Completion of $1^1/_2$ Years of Testing the First Offshore Wind Turbine in the Americas." *Proceedings of the 20th Offshore Symposium, February 2015, Houston, Texas*.

Libby, C. *Design and Implementation of Data Acquisition Systems for use in a Scaled Deployment of a Floating Offshore Wind Turbine*. Orono, Maine: University of Maine, 2014.

PROFESSIONAL REFERENCES

Christopher Urquhart, *Laboratory Operations & Safety Manager* — 1-207-581-2160
University of Maine's Advanced Structures and Composites Center — christopher.h.urquhart@maine.edu
Coworker — Known 5 years

Dr. Andrew Goupee, *Assistant Professor of Mechanical Engineering* — 1-207-581-3657
University of Maine — agoupe91@maine.edu
Professor & Graduate Advisor — Known 7 years

Ryan Beaumont PE, *Owner and Principle Engineer* — 1-207-735-6131
R. M. Beaumont Corporation — ryan@rmbeaumontcorp.com
Manager — Known 9 years