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EDUCATION:

<i>Doctor of Philosophy in Mechanical Engineering</i>	University of Maine, Orono, ME 2012
<i>Master of Science in Mechanical Engineering</i>	University of Maine, Orono, ME 1999
<i>Bachelor of Science in Mechanical Engineering</i>	University of Maine, Orono, ME 1997

PROFESSIONAL EXPERIENCE:

Assistant Professor of Mechanical Engineering Technology, UNIVERSITY OF MAINE, Orono, Maine (09/14 to present)

Research Engineer, ADVANCED STRUCTURES AND COMPOSITES CENTER, Orono, Maine (01/13 to 08/14)

- Wrote proposals and work instructions, developed test plans, designed and fabricated test fixtures, calibrated and installed instrumentation, conducted structural testing, and wrote and reviewed project reports for industrial testing and federal research projects.
- Implemented 3-D digital image correlation techniques into structural testing for industrial clients.
- Supervised and trained student employees to perform laboratory tasks required to complete testing and research projects.

Doctoral Research Assistant, ADVANCED STRUCTURES AND COMPOSITES CENTER, Orono, Maine (07/04 to 12/12)

- Dissertation: "Integration of Process Parameter Control and Digital Image Correlation Methods in an Investigation of the Variability of Marine Polymer Matrix Composite Material Properties."
- Fabricated composite test panels and performed material coupon tests using a full-field strain measurement system. Developed test methods, wrote work instructions, and trained undergraduate personnel to perform all facets of the fabrication and testing including safety protocols.
- Designed and installed a structural monitoring system to monitor the response of carbon fiber cables implemented in the stays of the Penobscot Narrows Bridge. Designed and fabricated a cable-strain monitoring device using embedded fiber-optic strain sensors. Calibrated all instrumentation and conducted onsite monitoring of the sensor system.

Research Engineer, DEPT. OF MECHANICAL ENGINEERING, UNIVERSITY OF MAINE, Orono, Maine (01/00 to 07/04)

- Performed structural analysis, fabrication, and testing of composite material systems for hybrid connection concepts.
- Developed test plans, designed and fabricated test fixtures, calibrated and installed instrumentation, and conducted structural testing for industrial and federal research projects.

Engineering Consultant, DEPT. OF INDUSTRIAL COOPERATION, UNIVERSITY OF MAINE, Orono, ME (06/99 to 12/99)

- Performed structural analysis of modular composite material hull-form concepts.
- Conducted flexural fatigue testing and analysis of titanium, copper-nickel, phenolic composite, and stainless steel pipe, flange, and coupling designs for US naval ships.

Graduate Research Assistant, UNIVERSITY OF MAINE, Orono, Maine (02/98 to 05/99)

- Thesis: "Development of a Portable Data Acquisition System for the Correlation of Power Input to Frame Response in a Carbon Fiber Bicycle."
- Designed, fabricated, and tested an eight channel strain amplifier to provide compact, portable data acquisition capabilities for a dynamic monitoring project for Aegis Bicycles, of Van Buren, Maine.

Graduate Research Assistant, INFORMATION TECHNOLOGIES, UNIVERSITY OF MAINE, Orono, Maine (07/97 to 01/98)

- Trained student employees to work as computer consultants in University IT computer clusters.

RESEARCH INTERESTS:

- Implementation of digital image correlation methods into material property and structural testing.
- Structural monitoring of composite material structures using embedded sensors.
- Stress relaxation and creep in composite connections.
- Fiber optic sensors for structural monitoring.

TEACHING EXPERIENCE:

- CIE 498 - Selected Studies in Civil Engineering: Co-teaching an independent study course "Numerical Model for Predicting Carbon Fiber Composite Cable Forces in a Cable-stayed Bridge", Spring 2014.
- University of Maine's Upward Bound Program: Mentored a student for two months on a project involving testing of composite material coupons, Summer 2006.
- University of Maine's Upward Bound Program: Mentored a student for two months on a project involving hardening of steels, Summer 2005.
- University of Maine Pulp & Paper Foundation's Summer Program: Introduction to Engineering, "Laboratory Experiment to Calculate the Elastic Modulus of a Cantilevered Beam" Summer 1999-2005.
- Training seminar for University of Maine IT consultants: "Microsoft Excel for Intermediate and Advanced Users", October 1997 & March 1998.

GRADUATE COURSES STUDIED IN ENGINEERING:

Theory of Plates and Shells	Advanced Vibrations (Discrete and Continuous Systems)
Continuum Mechanics	Advanced Finite Elements in Solid Mechanics
Elasticity	Advanced Heat Transfer (Convection)
Fracture Mechanics	Advanced Composite Materials
Mechanical Engineering Analysis	Mechanics of Laminated Composite Structures
Adhesion and Adhesives Technology	Sensor Technology and Instrumentation

JOURNAL PUBLICATIONS:

1. Berube K A, Lopez-Anido R A, Goupee A (2014) Full-field Strain Measurement for Determining the Effect of Shear Deformations on the Flexural Response of E-Glass/Vinyl Ester Composites, Experimental Techniques, Submitted for Publication, July 2014.
2. Berube K A, Lopez-Anido R A (2013) Effect of Resin Cure Package and Ambient Processing Temperature on the Material Properties of Marine Grade Polymer Matrix Composite Materials Fabricated with a VARTM Process, Materials Performance and Characterization, v 2, n 1, 41 p.
3. Blake S P, Berube K A, Lopez-Anido R A (2012) Interlaminar Fracture Toughness of Woven E-glass Fabric Composites, Journal of Composite Materials, v 46, n 13, p 1583-1592.
4. Berube K A and Lopez-Anido R A (2011) Effect of Preform Consolidation on the Fracture Toughness of Marine Grade Polymer Matrix Composite Materials Fabricated with a VARTM Process, Journal of Advanced Materials, v 43, n 1, p 30-46.
5. Berube K A and Lopez-Anido R A (2010) Variability in the Material Properties of Polymer Matrix Composites for Marine Structures, Journal of ASTM International, v 7, n 4, 18 p.
6. Caccese V, Berube K A, Fernandez M, Melo J D, Kabche J P (2009) Influence of Stress Relaxation on Clamp-Up Force in Hybrid Composite-to-Metal Bolted Joints, Composite Structures, v 89, n 2, p 285-293.
7. Berube K A, Lopez-Anido R A, Caccese V (2008) Integrated Monitoring System for Carbon Composite Strands in the Penobscot-Narrows Cable-Stayed Bridge, Transportation Research Record, Journal of the Transportation Research Board, No.2050, p 177-186.
8. Caccese V, Kabche J P and Berube K A (2007) Analysis Of A Hybrid Composite/Metal Bolted Connection Subjected to Flexural Loading, Composite Structures, v 81, n 3, p 450-462.
9. Kabche J P, Caccese V, Berube K A, Thompson L (2007) Analysis of a Hybrid Composite/Metal Ship Hull Structural System with Removable Panels, Ships and Offshore Structures, v 2, n 3, p 227-240.

10. Caccese V, Kabche J P, Berube K A, Boone M J (2007) Structural Response of a Hybrid Composite/Aluminum Strut Assembly, *Composite Structures*, v 80, n 2, p 159-171.
11. Kabche J P, Caccese V, Berube K A, Thompson L, Walls J (2007) Structural Response of a Hybrid Composite-to-Metal Bolted Connection Under Uniform Pressure Loading, *Composite Structures*, v 78, n 2, p 207-221.
12. Kabche J P, Caccese V, Berube K A, Bragg R (2007) Experimental Characterization of Hybrid Composite-to-Metal Bolted Joints Under Flexural Loading, *Composites Part B: Engineering*, v 38, n 1, p 66-78.
13. Caccese V, Light K H, Berube K A (2006) Cavitation Erosion Resistance of Various Materials, *Ships and Offshore Structures*, v 1, n 4, p 309-322.
14. Caccese V, Blomquist P A, Berube K A, Webber S R, Orozco N J (2006) Effect of Weld Geometric Profile on Fatigue Life of Cruciform Welds Made by Laser/GMAW Processes, *Marine Structures*, v 19, n 1, p 1-22.

CONFERENCE PAPERS:

1. Berube K A, Lopez-Anido R A (2008) Full-field Strain Measurements for Determining Mechanical Properties of Marine Composite Laminates, SEM XI International Congress & Exposition on Experimental and Applied Mechanics - Experimental Mechanics Applied to Damage: Detection, Analysis and Mitigation, Orlando, FL., June 2-5, 8 p.
2. Berube K A, Lopez-Anido R, Caccese V (2008) Initial Data Analysis of a Structural Health Monitoring System for Carbon Fiber Composite Strands in a Cable Stayed Bridge, International Bridge Conference, Pittsburgh, PA, June 1-4, 8 p.
3. Berube K A, Lopez-Anido R (2008) Variability of Marine Composite Properties in a Manufacturing Round Robin Study, SAMPE '08 - Long Beach, Material and Process Innovations: Changing our World, Long Beach, CA, May 18-22, 18 p.
4. Nader J W, Dagher H J, Lopez-Anido R, Berube K A (2008) Size Effects on the Bending Strength of Marine Grade Polymer Matrix Composites, SAMPE '08 - Long Beach, Material and Process Innovations: Changing our World, Long Beach, CA, May 18-22, 17 p.
5. Caccese V, Kabche J P, Berube K A, Thompson L (2006) Structural Response of a Composite/Steel Hybrid Connection for Removable Ship Hull Panels, Proceedings of ICCE 14, Broomfield Colorado, July 1-5.
6. Berube K A, Lopez-Anido R A, Caccese V, Hess P E (2006) Variability in Flexural Response of E-Glass/Vinyl Ester Composites Fabricated using the VARTM Process, Proc. of the 51st Int. SAMPE Symposium and Exhibition, Creating New Opportunities for the World Economy, CD-ROM, ISSE Vol. 51, 11 p., Long Beach, CA, Apr. 30-May 4.
7. Berube K A, Lopez-Anido R A, Hess P E (2005) Variability in Flexural Response of E-Glass/Vinyl Ester Composites, COMPOSITES 2005 Convention and Trade Show of the American Composites Manufacturers Association, Columbus, OH, September 28-30.
8. Kabche J P, Caccese V, Berube K A (2005) Hydrostatic Testing of a Hybrid Connection Assembly, International SAMPE Symposium and Exhibition (Proceedings), v 50, SAMPE 05: New Horizons for Materials and Processing Technologies - Conference Proceedings, p 2239-2252, Long Beach, CA.
9. Caccese V, Blomquist P A, Orozco N J, Berube K A (2004) Fatigue Life Prediction of HSLA-65 Welds Made by Laser/GMAW Processes, Proceedings of the 23rd International Congress on Applications of Lasers & Electro-Optics, San Francisco, CA, October, 10 p.

TECHNICAL REPORTS:

1. Berube K A, Sanchez O (2014) Material Property Testing for Vtrans Floating Bridge (ADDENDUM), Advanced Structures and Composites Center. Test Report No.14-24.1267A, 5 p.
2. Berube K A, Sanchez O (2014) Material Property Testing for Vtrans Floating Bridge, Advanced Structures and Composites Center. Test Report No.14-24.1267, 14 p.
3. Berube K A (2014) M36 Metallic Root Insert Static Pull-Out Test #2, Advanced Structures and Composites Center. Test Report No.14-25.1197, 45 p.
4. Berube K A (2013) M36 Metallic Root Insert Static Pull-Out Test, Advanced Structures and Composites Center. Test Report No.13-25.1161, 41 p.

TECHNICAL REPORTS (cont.):

5. Kittridge M, Lopez-Anido R A, Marquis J, Williams D, Snape T, Eary S, Duncan C, Berube K A (2012) Advanced Design and Optimization of High Performance Combat Craft: Material Testing and Computational Tools, Advanced Structures and Composites Center, Project Report No. 12-46.780, 667 p.
6. Marquis J, Lopez-Anido R A, Eary S, Berube K A (2010) Infusing Large (up to 140 ft) Composite Vessels: R&D to Reduce Technical Risk, Advanced Structures and Composites Center, Project Report No. 10-47.705, 312 p.
7. Caccese V, Berube K A (2010) Structural Testing of Carbon Fiber Composite Material Samples, University of Maine Department of Mechanical Engineering, Report No. C-2009-012-RPT-01, 28 p.
8. Lopez-Anido R, Caccese V, Berube K A (2009) Integrated Monitoring System for CFCC Cables in the Penobscot Narrows Bridge, Advanced Structures and Composites Center, Project Report No. 10-03.498, 1,936 p.
9. Caccese V, Berube K A (2007) Structural Testing of Pultruded Composite Sandwich Panels- Supplemental Testing, University of Maine Department of Mechanical Engineering, Report No. C2006-010-RPT-002, 17 p.
10. Caccese V, Berube K A (2007) Structural Testing of Pultruded Composite Sandwich Panels, University of Maine Department of Mechanical Engineering, Report No. C2006-010-RPT-001, 29 p.
11. Kabche J P, Caccese V, Berube K A (2006) Testing and Analysis of Hybrid Composite/Metal Connections and Hull Section for the MACH Project, University of Maine Department of Mechanical Engineering, Report No. UM-MACH-RPT-01-01, 348 p.
12. Pelletier K N, Caccese V, Berube K A (2005) Influence of Stress Relaxation in Hybrid Composite/Metal Bolted Connections, Report No.UM-MACH-RPT-01-02, University of Maine Department of Mechanical Engineering, 87 p.
13. Berube K A, Caccese V, Kihl D P (2004) Fatigue Strength of Laser Welded HSLA-65 Steel Cruciforms, Report No. C2000-001-RPT-003, University of Maine Department of Mechanical Engineering, 40 p.
14. Caccese V, Berube K A, Kihl D P (2004) Local Instability of Laser Fabricated Structural Shapes, Report No. C2000-001-RPT-002, University of Maine Department of Mechanical Engineering, 64 p.
15. Caccese V, Berube K A (2004) Structural Testing of Adjust-It Masonry Wall Bracing System Compression Member, Report No.C2003-010-RPT-002, University of Maine Department of Mechanical Engineering, 25 p.
16. Caccese V, Berube K A (2003) Stub Column and Residual Strain Tests for HSLA-65 Laser Fabricated Structural Shapes, University of Maine Department of Mechanical Engineering, Report No. C2000-001-RPT-001, 28 p.
17. Caccese V, Boone M J, Berube K A (2003) Adhesive Study, Bonding and Assembly of the Full-Scale Hybrid Composite Strut Assembly for the AHFID Project, University of Maine Department of Mechanical Engineering, Report No. UM-AHFID-RPT-01-1, 44 p.
18. Boone M J, Caccese V, Bragg R, Berube K A (2003) Mechanical Testing of Epoxy Adhesives in GRP/Aluminum Hybrid Connections for naval Applications, Report No.UM-MACH-RPT-01-03, University of Maine Department of Mechanical Engineering, 108 p.
19. Caccese V, Berube K A (2003) Evaluation of the Adjust-It Masonry Wall Bracing System, Report No.C2003-010-RPT-001, University of Maine Department of Mechanical Engineering, 10 p.
20. Caccese V, Berube K A (2001) Current State-of-the-Art in Carbon Nanotube Research, Report No.C-2001-03-01, Apex Engineering and Technologies, Inc., 44 p.
21. Caccese V, Berube K A, Boober G (2001) Flexural Fatigue Testing of 6" and 10"-NPS Copper-Nickel Spin Flange Pipe Connections, Report No. C2000-004-001, University of Maine Department of Mechanical Engineering, 50 p.
22. Berube K A, Caccese V, Koskie J (2001) Design Criteria for the AHFID Pod and Strut Structural System, University of Maine Department of Mechanical Engineering. Report No. UM-DIC-TR-001-R01, Interim Report, 12 p.
23. Caccese V, Berube K A, McNichols T, Boober G (2000) Flexural Fatigue Testing of 4", 8" and 12"-NPS Titanium Lap Flange Pipe Connections, Report No.C-9903-03, University of Maine Department of Mechanical Engineering, 91 p.
24. Caccese V, Berube K A, McNichols T, Boober G (2000) Flexural Fatigue Testing of 4", 8" and 12"-NPS Copper-Nickel Lap Flange Pipe Connections, Report No.C-9903-02, University of Maine Department of Mechanical Engineering, 90 p.
25. Caccese V, Berube K A, and McNichols T (2000) Flexural Fatigue Testing of 4", 8" and 10"-NPS CRES Lap Flange Pipe Connections, Report No.C-9903-01, University of Maine Department of Mechanical Engineering, 101 p.
26. Caccese V, Lopez-Anido R L, Berube K A (2000) Design, Fabrication and Testing of a Pod/Strut Structure for the AHFID Program, Report No. C-9909, University of Maine Department of Mechanical Engineering, 40 p.

TECHNICAL REPORTS (cont.):

27. Berube K A, Caccese V (1999) Construction and Connection Concepts for a Modular Advanced Composite Hull-Form, Report No. C-9914, University of Maine Department of Mechanical Engineering, 33 p.
28. Berube K A, Caccese V (1999) Instrumentation Development for the Correlation of Power Input to Frame Response of a Carbon Fiber Bicycle, Report No. C-9911, University of Maine Department of Mechanical Engineering, 83 p.

PROFESSIONAL DEVELOPMENT:

- Member of the American Society for Testing and Materials (ASTM)
- Member of the Composite Materials Handbook (CMH-17) Coordination Group
- Collaborated with American Society for Testing and Materials (ASTM) Committee D30 (Composite Materials) as the primary editor for the new test standard “ASTM D7264/D7264M-07 Standard Test Method for Flexural Properties of Polymer Matrix Composite Materials.”

GRANTS AND CONTRACTS:

- Material Property Testing for Vtrans Floating Bridge, **Kenway Corporation**, Keith Berube (Co-PI with Olivia Sanchez (PI), \$16,300, 04/2014-07/2014.
- Wind energy composite component structural testing, Blade Dynamics, Keith Berube (PI) \$11,960, 01/2014-04/2014.
- Prototype and Bulkhead Assembly Testing, Lockheed Martin, Keith Berube (Co-PI) with Olivia Sanchez (PI), \$44,500, 10/2013-1/2014.
- Wind energy composite component structural and material property testing projects, Siemens Energy, Inc, Keith Berube (PI) \$104,000, 03/2013-01/2014.
- Wind energy composite component structural testing, Blade Dynamics, Keith Berube (PI) \$11,500 03/2013-12/2013.
- Long-Term Monitoring of Carbon Composite Strands in the Penobscot-Narrows Bridge, Maine DOT, Roberto Lopez-Anido (PI) and Keith Berube, \$50,000, 9/2012-1/2014.

SERVICE ACTIVITIES:

- Judge, Maine High School Wind Blade Challenge, 2010
- Public Address Announcer at University of Maine Women’s Volleyball Games, 2000-2006
- Judge, University of Maine ASTM Cardboard Canoe Race, 1999-2002