

Curriculum Vitae

Daniel S. Brogan, MSEE

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1. Academic Degrees

PHD	Virginia Tech	In Progress	Engineering Education
MS	University of New Hampshire	2004	Electrical Engineering
BS	University of New Hampshire	2001	Electrical Engineering
AET	New Hampshire Technical Inst.	1999	Electronic Eng. Technology

2. Relevant Work Experience

2011 – 2012, 2016 –	Graduate Teaching Assistant, Dept. of Engineering Education Virginia Tech, Blacksburg, VA, USA
Taught two sections of ENGE1216 during the spring 2016 semester. Taught workshop/lab portion of ENGE 1024 in the fall 2011 and spring and fall 2012 terms. Was the lead GTA for the spring 2012 term.	
2012 – 2015	Graduate Research Assistant, Dept. of Engineering Education Virginia Tech, Blacksburg, VA, USA
Leading the Learning Enhanced Watershed Assessment System (LEWAS) Lab student team under Dr. Vinod K. Lohani, including the supervision of more than ten other students. Developing the Online Watershed Learning System (OWLS), a guided, open-ended learning environment (http://www.lewas.centers.vt.edu/dataviewer/), and implementing the OWLS into classroom settings to assess its impact on student learning and motivation. Co-taught a five day workshop for engineering faculty at KLE Tech in Hubli, Karnataka, India. Overall course GPA: 3.73 out of 4.	
2013 – 2015	Assistant Media Team Coordinator, Bhutanese-Nepalese Churches of America (based from) Roanoke, VA, USA
Recorded live events and posted edited videos to YouTube (https://www.youtube.com/user/DanielSBrogan ; nearly 600,000 views over the past three years). Developed and maintained multiple websites including http://www.nepalichristiansongs.com/ (an online songbook with lyrics for over 1,800 Nepali-language songs). Taught church media workshops.	
2011 – 2011	Adjunct Faculty, Dept. of Electrical Technology University of New Hampshire, Manchester, NH, USA
Taught ET 674: <i>Control Systems and Components</i> (junior level, 4 credits) and ET 788: <i>Introduction to Digital Signal Processing</i> (senior level, 4 credits) in the spring 2011 term.	
2007 – 2010	Graduate Associate/Instructor, Dept. of Electrical and Computer Engineering University of New Hampshire, Durham, NH, USA
Taught ECE 544: <i>Engineering Analysis</i> (vector calculus) twice (junior level, 4 credits); ECE 634: <i>Signals and Systems II</i> twice (junior level, 3 credits); ECE 603: <i>Electromagnetic Fields & Waves I</i> three times (junior level, 4 credits); ECE 618: <i>Junior Laboratory II</i> once (junior level, 4 credits); and two independent study courses. Students in these courses evaluated my teaching above 4.5 out of 5.	

2002 – 2007	Research Assistant, Center for Coastal and Ocean Mapping University of New Hampshire, Durham, NH, USA
Designed algorithms for extracting bathymetry and backscatter from ocean mapping data collected with multibeam sonar systems having both planar and curved transducer arrays. Gained significant experience with MATLAB. Developed a target bearing reassignment process to improve the accuracy of target bearing estimates that is a spatial relative of the reassigned spectrogram in time-frequency analysis. Overall course GPA: 3.98 out of 4.	
2002 (spring) 2009 (fall)	Teaching Assistant, Dept. of Electrical and Computer Engineering University of New Hampshire, Durham, NH, USA
2002: ECE 634: <i>Signals and Systems II</i> and ECE 618: <i>Junior Laboratory II</i> . 2009: Taught 6 sections of lab for ECE 401: <i>Perspectives in ECE</i> .	
1999 – 2002 (4 mo. / year)	Technician / Engineer Melexis Microelectronic Integrated Systems, Concord, NH, USA
Designed a prototype back-EMF based two-phase brushless DC fan controller that consumed 5% less power while providing a 5% increase in speed compared to conventional controllers. Gained experience in repair, design, and assembly related to sensor applications.	

3. Community Service / Leadership Experience

2015 –	Pentecostal Church of God of Roanoke [under Iglesia de Dios Pentecostal M.I.]	Roanoke, VA	Leadership Team Member
2013 – 2014	Nepali Church of Roanoke	Roanoke, VA	Administrator, Deacon
2012 – 2013	Nepali Church of Roanoke	Roanoke, VA	Sunday School Teacher
2001 – 2011	Faith Tabernacle	Concord, NH	Audio/Visual Person
2002 – 2008	Faith Tabernacle	Concord, NH	Assistant Youth Leader
2001 – 2002	Univ. of New. Hamp.	Durham, NH	IEEE Vice President
1998 – 1999	New Hamp. Tech. Inst.	Concord, NH	IEEE Chairman
1998 – 1999	New Hamp. Tech. Inst.	Concord, NH	Student Senate

4. Honors & Awards

Certificate of Appreciation: 3rd Bhutanese / Nepali Christian Summit, 2013

“In recognition of valuable contribution to Bhutanese Christian Community, your sacrifice, selflessness, dedication towards the service of the church and to the people of God”

Presidential Scholar, UNH: Spring 2001 (undergraduate GPA of 3.98 out of 4)

Vice President’s Award: highest GPA (4.00) in graduating class at NHTI

Student Senate Award for contribution to student life and academic performance, 1997-1998

5. Licenses & Certifications

Engineer In Training: 2001-Present (First step towards PE licensure)

6. Professional Affiliations

American Society for Engineering Education, Student Member

7. Peer-Reviewed Journal Papers

Brogan, D. S., W. M. McDonald, V. K. Lohani, R. L. Dymond and A. J. Bradner. Development and Classroom Implementation of an Environmental Data Creation and Sharing Tool. *Advances in Engineering Education (AEE)*. Accepted.

McDonald, W. M., **D. S. Brogan**, V. K. Lohani, R. L. Dymond and R. L. Clark. Integrating a real-time environmental monitoring lab into university and community college courses. *International Journal of Engineering Education (IJEE)*, 31(4), 2015, pp. 1139-1157.

McDonald, W. M., V. K. Lohani, R. L. Dymond and **D. S. Brogan**. A Continuous, High-Frequency Environmental Monitoring System for Watershed Education Research. *Journal of Engineering Education Transformations (JEET)*, 28(4), April 2015, pp. 11-22.

8. Conference Papers

McDonald, W. M., **D. S. Brogan** and V. K. Lohani. Developing a First-Year Engineering Course at a University in India: International Engineering Education Collaboration. 123rd ASEE Annual Conference & Exposition, New Orleans, LA, USA, June 26-29, 2016. In review.

Basu, D., **D. S. Brogan**, W. M. McDonald, D. Maczka and V. K. Lohani. Combined Contribution of 11 REU Students to the Development Of the [Lab-1]. 123rd ASEE Annual Conference & Exposition, New Orleans, LA, USA, June 26-29, 2016. In review.

McDonald, W. M., **D. S. Brogan**, V. K. Lohani and R. L. Dymond. Assessing Cognitive Development and Motivation with the Online Watershed Learning System (OWLS). 122nd ASEE Annual Conference & Exposition, Seattle, WA, USA, June 14–17, 2015.

Basu D., J. Purviance, D. Maczka, **D. S. Brogan** V. K. Lohani. Work-in-Progress: High-Frequency Environmental Monitoring Using a Raspberry Pi-Based System. 122nd ASEE Annual Conference & Exposition, Seattle, WA, USA, June 14–17, 2015.

Brogan, D. S., V. K. Lohani and R. L. Dymond. Work-in-Progress: The Platform-Independent Remote Monitoring System (PIRMS) for Situating Users in the Field Virtually. 121st ASEE Annual Conference & Exposition, Indianapolis, IN, USA, June 15-18, 2014.

McDonald, W. M., R. L. Dymond, V. K. Lohani, **D. S. Brogan** and R. L. Clark Jr. Integrating a Real-Time Remote Watershed Monitoring Lab into Water Sustainability Education. 121st ASEE Annual Conference & Exposition, Indianapolis, IN, USA, June 15-18, 2014.

McDonald, W. M., R. L. Dymond, V. K. Lohani, **D. S. Brogan** and D. Basu. Insights and Challenges in Developing a Remote Real-Time Watershed Monitoring Lab. 121st ASEE Annual Conference & Exposition, Indianapolis, IN, USA, June 15-18, 2014.

Teo, H. J., A. Johri and **D. S. Brogan**. Towards an understanding of ECE students' Use of online homework help forums. *Frontiers in Education Conference, 2013 IEEE*, October 23-26, 2013, Oklahoma City, OK, USA, pp. 400-404. DOI: 10.1109/FIE.2013.6684854.

Dymond, R. L., V. K. Lohani, **D. S. Brogan** and M. A. Martinez. Integration of a Real-Time Water and Weather Monitoring System into a Hydrology Course. 120th ASEE Annual Conference & Exposition, Atlanta, GA, USA, June 23-26, 2013.

9. Conference Abstracts without Papers

Brogan, D. S. and V. K. Lohani. A Real-Time High Frequency Water Monitoring System: The Learning Enhanced Watershed Assessment System (LEWAS). 2015 Water Resources Conference of the Virginias, Roanoke, WV, USA, October 5-6, 2015.

Brogan, D. S. and K. A. Chamberlin. Phase comparison of single-frequency monopulse techniques that mimic the results of multiple-frequency, single-aperture interferometry. The 159th Meeting of the Acoustical Society of America / NOISE-CON 2010, Baltimore, MD, USA, April 19-23, 2010. *The Journal of the Acoustical Society of America*, Vol.127, No.3 (Part2), March 2010, p.1980.

Brogan, D. S. and K. A. Chamberlin. Phase and amplitude monopulse techniques to increase the accuracy of within-beam bearing estimates of volume scatterers. The 158th Meeting of the Acoustical Society of America, San Antonio, TX, USA, October 26-30, 2009. *The Journal of the Acoustical Society of America*, Vol.126, No.4 (Part2), October 2009, p.2233.

Brogan, D. S. and K. A. Chamberlin. Use of within-beam mapping in conjunction with Kalman filtering to improve angle of arrival estimation accuracy in multibeam echo-sounding. The 158th Meeting of the Acoustical Society of America, San Antonio, TX, USA, October 26-30, 2009. *The Journal of the Acoustical Society of America*, Vol.126, No.4 (Part2), October 2009, p.2249.

Brogan, D. S. and C. P. de Moustier. Comparison of extended Kalman filtering with split-aperture processing for angle of arrival estimation in multibeam echo-sounding. The 151st Meeting of the Acoustical Society of America, Providence, RI, USA, June 5-9, 2006. *The Journal of the Acoustical Society of America*, Vol.119, No.5 (Part2), May 2006, p.3352.

Brogan, D. S. and C. P. de Moustier. 3D spatial sampling with a cylindrical multibeam array. The 149th Meeting of the Acoustical Society of America, Vancouver, BC, Canada, May 16-20, 2005. *The Journal of the Acoustical Society of America*, Vol.117, No.4 (Part2), April 2005, p.2447.

Brogan, D. S. and C. P. de Moustier. Bathymetry and seafloor backscatter imagery with a volume search sonar. The 147th Meeting of the Acoustical Society of America, New York, NY, USA, May 24-28, 2004. *The Journal of the Acoustical Society of America*, Vol.115, No.5 (Part2), May 2004, p.2547.

de Moustier, C., T. C. Gallaudet and **D. S. Brogan**. Three-dimensional acoustic backscatter measurements in the water column with hull-mounted and towed multibeam echo-sounders. The 146th Meeting of the Acoustical Society of America, Austin, TX, USA, November 10-14, 2003. *The Journal of the Acoustical Society of America*, Vol.114, No.4 (Part2), October 2003, p.2300.