Curriculum Vitae

Daniel S. Brogan, MSEE, PhD
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1. Academic Degrees

MTS	Zion Christian University	In progress	Theological Studies
PHD	Virginia Tech	2017	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

2017 –	Assistant Professor of Engineering, Virginia Western Community College, Roanoke, VA, USA

Teaching in courses in the first year of the Associate of Science in Engineering program for students planning to transfer to 4-year institutions and the Engineering Academy for local high school students, including the courses EGR 120: *Introduction to Engineering and Engineering Methods* (freshman level, 3 credits), EGR 124: *Introduction to Engineering* (freshman level, 2 credits) and EGR 199: *Supervised Study in Engineering I* (freshman level, 2 credits)

2017 – 2017	Postdoctoral Associate, Institute for Critical Technology and Applied Science (ICTAS) Virginia Tech, Blacksburg, VA, USA

Pursued continual growth of the Learning Enhanced Watershed Assessment System (LEWAS) Lab and the integration of experiential learning into various ICTAS labs.

2012 – 2015, 2016 – 2017	Graduate Research Assistant, Dept. of Engineering Education Virginia Tech, Blacksburg, VA, USA

Led the Learning Enhanced Watershed Assessment System (LEWAS) Lab student team under Dr. Vinod K. Lohani, including the supervision of more than twenty other students. Developing the Online Watershed Learning System (OWLS), a guided, open-ended cyberlearning 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 (www.youtube.com/user/DanielSBrogan) with more than 1,000,000 views over the past four years. Developed and maintained multiple websites including http://www.nepalichristiansongs.com/, an online songbook with lyrics for over 2,000 Nepali-language songs and http://www.bhutanesechristiansongs.com/, an online songbook with lyrics for over 80 Dzongkha-language songs. Taught church media workshops.

2011 – 2012, 2016 (spring)	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.

2011 – 2011	Adjunct Faculty, Dept. of Electrical Technology University of New Hampshire, Manchester, NH, USA

Taught ET 674: *Control Systems and Components* (junior level, 4 credits) and ET 788: *Introduction to Digital Signal Processing* (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: *Engineering Analysis* (vector calculus) twice (junior level, 4 credits); ECE 634: *Signals and Systems II* twice (junior level, 3 credits); ECE 603: *Electromagnetic Fields & Waves I* three times (junior level, 4 credits); ECE 618: *Junior Laboratory II* 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 MATLAB algorithms for extracting bathymetry and backscatter from ocean mapping data collected with multibeam sonar systems having both planar and curved transducer arrays. Developed a target bearing reassignment process to improve the accuracy of target bearing estimates. 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: *Signals and Systems II* and ECE 618: *Junior Laboratory II*.
2009: Taught 6 sections of lab for ECE 401: *Perspectives in ECE*.

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

2011 –	Bhutanese-Nepali Christian Media Ministries	Roanoke, VA	Founder
2016 – 2016	Pentecostal Church of God of Roanoke (PCoG Roanoke)	Roanoke, VA	Head of the Leadership Team
2015 – 2016	PCoG Roanoke	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

- Certificado de Reconocimiento: La Iglesia de Dios Pentecostal M.I. de Roanoke, INC, 2016
  "Por su excelente labor como líder del ministerio en ingles en este año 2016"
- Certificate of Appreciation: Christian Platform, Inc., 2016
  "In recognition of outstanding contribution, commitment & great leadership to the BNCA organization as Assistant Media Coordinator from September 3rd 2013 till July 15th 2016"
- 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, 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)*, 5(2), Spring 2016, pp. 1-34.

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. Peer-Reviewed Book Chapters

Brogan, D. S., D. Basu and V. K. Lohani. A Virtual Learning System in Environmental Monitoring. Pages 352-367 in the book Engineering Education for a Smart Society: World Engineering Education Forum & Global Engineering Deans Council 2016, M. E. Auer and K.-S. Kim eds., Springer, 2017. Advances in Intelligent Systems and Computing series vol. 627. ISBN: 978-3-319-60937-9. DOI: 10.1007/978-3-319-60937-9.

9. Peer-Reviewed Conference Papers

Basu, D., **D. S. Brogan**, T. G. Westfall, J. Taylor, S. Emanuel, M. T. Verghese, N. Falls and V. K. Lohani. Benefits for Undergraduates from Engagement in an Interdisciplinary Environmental Monitoring Research and Education Lab. 124th ASEE Annual Conference & Exposition, Columbus, OH, USA, June 25-28, 2017.

McDonald, W. M., **D. S. Brogan**, V. K. Lohani and G. H. Joshi. Implementation of a First-Year Engineering Course and Active Learning Strategies at a University in India. 124th ASEE Annual Conference & Exposition, Columbus, OH, USA, June 25-28, 2017.

Brogan, D. S., D. Basu and V. K. Lohani. Insights Gained from Tracking Users' Movements through a Cyberlearning System's Mediation Interface. 14th International Conference on Remote Engineering and Virtual Instrumentation (REV2017), New York, NY, USA, March 15-17, 2017.

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.

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.

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.

10. Conference Abstracts/Presentations without Papers

Basu, D., T. G. Westfall, **D. S. Brogan**, J. Smith, Y. Jalali and V. K. Lohani. The Learning Enhanced Watershed Assessment System (LEWAS) lab and its Applications. New River Symposium, Radford, VA, USA, May 16, 2017.

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.