

SCOTT DEWOLF, PH.D.
RESEARCH ASSOCIATE PROFESSOR

Clemson University
Environmental Engineering and Earth Sciences
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PROFESSIONAL EXPERIENCE

- May 2021 – Present **Research Associate Professor**
Department of Environmental Engineering and Earth Sciences
Clemson University, Clemson SC, 29634
- April 2016 – April 2021 **Research Assistant Professor**
Department of Environmental Engineering and Earth Sciences
Clemson University, Clemson SC, 29634
- August 2014 – April 2016 **Post Doctoral Fellow**
Department of Environmental Engineering and Earth Sciences
Clemson University, Clemson SC, 29634
- June 2014 – July 2014 **Staff Research Associate II**
Scripps Institution of Oceanography
University of California San Diego, La Jolla, CA 92093
- November 2011 – June 2014 **Ph.D. Candidate**
Scripps Institution of Oceanography
University of California San Diego, La Jolla, CA 92093
- June 2007 – November 2011 **Graduate Student Researcher**
Scripps Institution of Oceanography
University of California San Diego, La Jolla, CA 92093
- June 2006 – August 2006 **Visiting Undergraduate Researcher**
National Center for Physical Acoustics
University of Mississippi, University, MS 38677
- April 2004 – April 2006 **Undergraduate Research Assistant**
Physics Department
University of Wisconsin River Falls, River Falls, WI 54022

EDUCATION

- University of California San Diego**, Scripps Institution of Oceanography
- Ph.D., Oceanography (Applied Ocean Science), Spring 2014
 - Thesis: “Optical Fiber Sensors for Infrasonic Wind Noise Reduction and Earth Strain Measurement”
 - Advisor: Dr. Mark A. Zumberge
- University of California San Diego**, Scripps Institution of Oceanography
- M.S., Earth Sciences (Geophysics), Fall 2009
 - Thesis: “Optical and Mechanical Behavior of the Optical Fiber Infrasound Sensor”
 - Advisor: Dr. Mark A. Zumberge
- University of Wisconsin River Falls**
- B.S., Physics, Spring 2007
 - Thesis: “Measurement of Reverberant Sound Fields With an Eight Element Microphone Array”
 - Advisor: Dr. Lowell I. McCann
- University of Wisconsin River Falls**
- B.S., Mathematics, Spring 2007
 - Thesis: “Extensions to the Conjugate Gradient Method for Higher Order Equations”
 - Advisor: Dr. Don Leake

RESEARCH

Research Interests:

- Optical sensor development for the measurement of geophysical and geomechanical deformations from tectonics, seismics, and subsurface fluid injection and withdrawal.
- Additional expertise in atmospheric acoustic, pressure, and temperature sensing using optical fibers.
- Data analyses employing modern adaptive signal processing techniques and non-stationary time series methods.

Research Experience:

- Research Associate Professor: Clemson University, 2021–present
 - Continued development of interferometric optical fiber tensor strain and tilt systems for energy and Earth science applications.
 - Design and implementation of a robust, field-deployable optoelectronic interrogation system for Michelson, Mach-Zehnder, and Sagnac interferometers.
- Research Assistant Professor: Clemson University, 2016–2021
 - Design and deployment of tensor optical fiber interferometer strainmeter systems for energy research.
 - Development of interferometric “smart casing” systems for intelligent well completions.
 - Creation of a novel monolithic optical fiber Michelson interferometer vector tiltmeter.
- Post Doctoral Fellow: Clemson University, 2014–2016
advisor: Lawrence C. Murdoch
 - Development of two fully integrated, 4-component strain and 2-component tilt borehole measurement systems.
 - Integration of eddy current displacement transducers and signal conditioning electronics.
- Graduate Student Researcher: Scripps Institution of Oceanography, 2007–2014
advisor: Mark A. Zumberge
 - Development of vertical and horizontal, interferometric, long-baseline optical fiber strainmeters for measuring earth strain associated with tectonic, tidal, and seismic signals.
 - Integration of optical technologies for eliminating polarization fading, passive quadrature fringe generation, and coarse wavelength-division multiplexing.
 - Finite-element and approximate analytic modeling of composite structures containing optical fibers.
- Visiting Undergraduate Researcher: National Center for Physical Acoustics, 2006
advisor: Carrick Talmadge
 - Characterized the mechanical vibration response of several piezo-based infrasound sensors.
 - Deployed a transportable infrasound array in New Mexico as a part of the WSMR III experiment.
- Undergraduate Research Assistant: University of Wisconsin River Falls, 2004–2006
advisor: Lowell I. McCann
 - Adapted a single-beam gradient force optical trap (“tweezers”) for examining the evaporation behavior of liquid droplets while captured by the trap.
 - Employed Gaussian beam propagation to design lens systems for use with both Argon-Ion and Helium-Neon lasers.

AWARDS AND FELLOWSHIPS

Grants & External Funding:

- Co-PI, *Robust In Situ Strain Measurements to Monitor CO₂ Storage*, United States Department of Energy, \$2,219,302, October 2016 – September 2021.
- Co-PI, *A Strain Sensing Array to Characterize Deformation at the FORGE Site*, United States Department of Energy, \$3,972,453, October 2021 – September 2024.

University of California San Diego

- Best Poster: Application, Fifth European Workshop on Optical Fibre Sensors, 2013

University of Wisconsin River Falls

- Ronald E. McNair Scholar, 2005–2007
- Sigma Pi Sigma Physics Honor Society, 2005

PUBLICATIONS

Peer-Reviewed Publications

11. Soheil Roudini, Lawrence C. Murdoch, Mohammad Shojaei, and **Scott DeWolf**, “Proxy-based Bayesian inversion of strain tensor data measured during well tests,” *Geomechanics for Energy and the Environment*, 100506, September 22, 2023. DOI: /10.1016/j.gete.2023.100506.
10. Lawrence C. Murdoch, Leonid N. Germanovich, William Slack, Michael Carbajales-Dale, Douglas Knight, Robert Moak, Clemence Laffaille, **Scott DeWolf**, Soheil Roudini, and Robert Moak, “Shallow geologic storage of carbon to remove atmospheric CO₂ and reduce flood risk,” *Environmental Science & Technology*, 57(23), 8536–8547, June 1, 2023. DOI: 10.1021/acs.est.3c00600.
9. Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Stephen M.J. Moysey, Alexander C. Hanna, Soheil Roudini, and Robert Moak, “Using the shallow strain tensor to characterize deep geologic reservoirs,” *Water Resources Research* 59(2), e2022WR032920, February 2023. DOI: 10.1029/2022WR032920.
8. Michael S. Steckler, Bar Oryan, Carol A. Wilson, Céline Grall, Scott L. Nooner, Dhiman R. Mondal, Syed Humayun Akhter, **Scott DeWolf**, Steven L. Goodbred, “Synthesis of the distribution of subsidence of the lower Ganges-Brahmaputra Delta, Bangladesh,” *Earth-Science Reviews*, 224, 103887, January 2022. DOI: 10.1016/j.earscirev.2021.103887.
7. Erin R. Dauson, Carly M. Donahue, **Scott DeWolf**, Liwei Hua, Lawrence C. Murdoch, Hai Xiao, and Paul A. Johnson, “Damage detection in a laboratory-scale wellbore applying Time Reversal and Nonlinear Elastic Wave Spectroscopy (TR NEWS),” *NDT & E International*, 126, 102573, March, 2022. DOI: 10.1016/j.ndteint.2021.102573.
6. Lawrence C. Murdoch, Leonid N. Germanovich, Soheil Roudini, **Scott DeWolf**, Liwei Hua, and Robert Moak, “A type-curve approach for evaluating aquifer properties by interpreting shallow strain measured during well tests,” *Water Resources Research*, 57(9), e2021WR029613, September 27, 2021. DOI: 10.1029/2021WR029613.
5. Liwei Hua, Xuran Zhu, **Scott DeWolf**, Jincheng Lei, Qi Zhang, Lawrence C. Murdoch, and Hai Xiao, “Phase demodulation by frequency chirping in coherence microwave photonic interferometry,” *IEEE Journal of Selected Topics in Quantum Electronics* 27(2), pp. 1–9, March/April, 2021. DOI: 10.1109/JSTQE.2020.2975575.
4. Lawrence C. Murdoch, Leonid N. Germanovich, **Scott DeWolf**, Stephen M.J. Moysey, Alexander C. Hanna, Sihyun Kim, and Roger G. Duncan, “Feasibility of using in situ deformation to monitor CO₂ storage,” *International Journal of Greenhouse Gas Control* 93, pp. 102853, February 1, 2020. DOI: 10.1016/j.ijggc.2019.102853.
3. **Scott DeWolf**, Frank K. Wyatt, Mark A. Zumberge, and William Hatfield, “Improved vertical optical fiber borehole strainmeter design for measuring Earth strain,” *Review of Scientific Instruments* 86(11), pp. 114502, November 19, 2015. DOI: 10.1063/1.4935923.
2. Lawrence C. Murdoch, Clay E. Freeman, Leonid N. Germanovich, Colby Thrash, and **Scott DeWolf**, “Using in situ vertical displacements to characterize changes in moisture load,” *Water Resources Research* 51(8), 5598–6016, June 17, 2015. DOI: 10.1002/2015WR017335.
1. **Scott DeWolf**, Kristoffer T. Walker, Mark A. Zumberge, and Stephane Denis, “Efficacy of Spatial Averaging of Infrasonic Pressure in Varying Wind Speeds,” *The Journal of The Acoustical Society of America* 133(6), 3739–3750, June 5, 2013. DOI: 10.1121/1.4803891.

In Production

1. Liwei Hua, Lawrence C. Murdoch, Xuran Zhu, Leonid N. Germanovich, Yongji Wu, Jing Guo, Riley Blais, Grant Plunkett, Olivia Costantino, **Scott DeWolf**, and Hai Xiao, “A microwave photonics optical fiber method for measuring distributed strain for hydrologic applications in the Vadose and

saturated zones,” in Yingping Li, Robert Mellors, and Ge Zhan (Editors) *Distributed Fiber-Optic Seismic Sensing in Borehole Geophysics*, (1st edition, Part 1, Chapter 3). John Wiley & Sons. December, 2024. ISBN: 978-1-394-17924-4.

In Review

3. Soheil Roudini, Lawrence C. Murdoch, **Scott DeWolf**, and Mohammad Shojaei, “Strain type-curve analysis during recovery in a confined reservoir of infinite extent,” submitted to *Geomechanics for Energy and the Environment*, manuscript number GETE-D-24-00435, August 21, 2024.
2. Soheil Roudini, Lawrence C. Murdoch, **Scott DeWolf**, and Mohammad Shojaei, “Characterizing reservoir boundaries using hydromechanical well tests,” submitted to *Journal of Hydrology*, manuscript number HYDROL60115, May 22, 2024.
1. Gavin Gleasman, Kelly Best Lazar, and **Scott DeWolf**, “Low-Cost Methodology for Long-Term Monitoring of Carbon Dioxide Soil Gas Flux in Estuarine Tidal Wetland Environments”, submitted to *Estuaries and Coasts*.

In Preparation

2. **Scott DeWolf** and Lawrence C. Murdoch, “New robust borehole optical fiber areal strainmeters for monitoring geophysical and geomechanical deformations,” to be submitted to *Geophysical Research Letters*.
1. **Scott DeWolf**, Scott L. Nooner, Michael S. Steckler, Mark A. Zumberge, and Syed Humayun Akhter, “Optical Fiber Borehole Strainmeter Arrays for Measuring Sediment Compaction in Bangladesh,” to be submitted to *Journal of Geophysical Research – Solid Earth*.

Conference Proceedings

2. Mark A. Zumberge, **Scott DeWolf**, Frank K. Wyatt, Duncan C. Agnew, Don Elliott, and William Hatfield, “Results from a borehole optical fiber interferometer for recording Earth strain,” *Proceedings of SPIE 8794, Fifth European Workshop on Optical Fibre Sensors*, pp. 87940Q, May 20, 2013.
1. Kristoffer T. Walker, Matthew A. Dzieciuch, Mark A. Zumberge, and **Scott DeWolf**, “A Portable Infrasonic Sensor Calibrator Down to at Least 8 Hz,” *Proceedings of the 2008 Monitoring Research Review: Ground-Based Nuclear Explosion Monitoring Technologies*, pp. 902–911, 2008.

Theses

2. **Scott DeWolf**, *Optical Fiber Sensors for Infrasonic Wind Noise Reduction and Earth Strain Measurement*, University of California San Diego, Ph.D. Thesis, 215 p. June 4, 2014.
1. **Scott DeWolf**, *Optical and Mechanical Behavior of the Optical Fiber Infrasonic Sensor*, University of California San Diego, M.S. Thesis, 48 p. October 22, 2009.

PRESENTATIONS

Invited

3. **Scott DeWolf**, Larry Murdoch, Leonid Germanovich, Stephen Moysey, Alexander Hanna, and Robert Moak, “Using the shallow strain tensor to characterize deep geologic reservoirs,” G&P CCS Learning Series & Geomechanics COP Tech Talk: Near-Surface Strain for CCS Monitoring, Chevron. Houston, TX. March 7, 2023.
2. **Scott DeWolf**, Larry Murdoch, Liwei Hua, Hai Xiao, Leonid N. Germanovich, Michael Furgeson, Stephen Moysey, and Alexander Hanna, “Designs and Performance of New Optical Fiber Tilt and Strain Instruments,” Planetary Science Seminar, NASA Jet Propulsion Laboratory. Pasadena, CA. September 23, 2019.
1. **Scott DeWolf**, Larry Murdoch, Liwei Hua, Hai Xiao, Leonid N. Germanovich, Stephen Moysey, and Alexander Hanna, “New Electromagnetic and Optical Fiber Strainmeters and Tiltmeters for Measuring Deformation,” 2018 Incorporated Research Institutions for Seismology (IRIS) Seismic Instrumentation Symposium, Session 2: Advancements in Instrumentation. Tuscon, AZ. October 30, 2018.

Contributed

57. Gavin Gleasman, Kelly Lazar, and **Scott DeWolf**, “Impact of Hurricane Ian on Carbon Dioxide (CO₂) Flux in Tidal Wetlands of North Inlet-Winyah Bay, South Carolina,” Geological Society of

- America Connects 2024 Meeting, Session T108., Coastal and Shallow Marine Sediments as Archives of Extreme Events, Presentation 13-3. Anaheim, CA. September 22, 2024.
56. Lawrence C. Murdoch, Josh Parris, Maxwell Gordon, Clemence Lafaille, **Scott DeWolf**, and Robert Moak, “Feasibility of Using Removable Strainmeters to Characterize Aquifers,” 2024 Clemson Hydrogeology Symposium. Clemson, SC. March 28, 2024.
 55. Josh Parris, Clemence Lafaille, **Scott DeWolf**, Leonid N. Germanovich, and Lawrence C. Murdoch, “Evaluation of High-Temperature Tensor Strainmeter for Enhanced Geothermal Systems: Simulation, Design, and Testing,” 2024 Clemson Hydrogeology Symposium. Clemson, SC. March 28, 2024.
 54. **Scott DeWolf**, Robert Moak, Lawrence C. Murdoch, and Leonid N. Germanovich, “Harnessing the Shallow Strain Tensor for Reservoir Characterization and Pressure Monitoring: Novel Instrumentation and Results from Field Experiments,” Carbon Capture, Utilization, and Storage (CCUS) 2024. Houston, TX. March 12, 2024.
 53. Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Soheil Roudini, and Robert Moak, “Interpreting Strain Tensor Data to Characterize and Monitor Reservoirs for CO₂ Storage and other Applications,” Carbon Capture, Utilization, and Storage (CCUS) 2024. Houston, TX. March 12, 2024.
 52. Michael S. Steckler, Carol A. Wilson, Md. Hasnat Jaman, Steven L. Goodbred, Bar Oryan, Céline Grall, **Scott DeWolf**, Scott L. Nooner, and Syed Humayun Akhter, “Synthesis of coastal subsidence measurements in the Ganges-Brahmaputra Delta, Bangladesh,” TISOLS – Tenth Annual Symposium on Land Subsidence, paper ID 5133233. Delft–Gouda, the Netherlands. April 17–21, 2023.
 51. Lawrence C. Murdoch, **Scott DeWolf**, Robert Moak, Leonid N. Germanovich, Austin Smith-Jones, and Soheil Roudini, “Recent Developments in Hydrogeologic Applications for Strain Tensor Analyses,” 2023 Clemson Hydrogeology Symposium. Clemson, SC. April 6, 2023.
 50. Gavin Gleasman, Kelly Lazar, and **Scott DeWolf**, “Measuring Soil Gas Flux in Dynamic Coastal Environments with Low-Cost Instrumentation,” Geological Society of America Connects 2022 Meeting, Session T145, Advances and New Voices in Marine and Coastal Geoscience, Presentation 122-1. Denver, CO. October 10, 2022.
 49. Wade Johnson, **Scott DeWolf**, David Mencin, and Elizabeth Van Boskirk, “Future Strainmeter Technology,” Turkish-German Symposium on Seismotectonic Research in the Marmara Region, Session 6: Fault-zone characterization based on novel seismic processing techniques. Istanbul, Turkey. August 17, 2022.
 48. Austin Smith-Jones, Lawrence C. Murdoch, and **Scott DeWolf**, “Evaluation of Zero-Net-Rate Periodic Pumping Tests,” 2022 Clemson Hydrogeology Symposium. Clemson, SC. March 31, 2022.
 47. Gavin Gleasman, Kelly Lazar, and **Scott DeWolf**, “Novel Design and Methodology for Investigating Soil Gas Flux in Tidal Wetland Environments,” 2022 Clemson Hydrogeology Symposium. Clemson, SC. March 31, 2022.
 46. Robert Moak, Lawrence C. Murdoch, Leonid N. Germanovich, and **Scott DeWolf**, “The Feasibility of Using Deformation Monitoring to Identify Leaks from Geologic Repositories,” 2021 Clemson Hydrogeology Symposium. Clemson, SC. October 21, 2021.
 45. **Scott DeWolf**, Lawrence C. Murdoch, Leonid N. Germanovich, Robert Moak, Soheil Roudini, and Austin Smith-Jones, “An Overview of Optical Fiber Strain and Tilt Systems Developed at Clemson University,” 2021 Clemson Hydrogeology Symposium. Clemson, SC. October 21, 2021.
 44. Riley Blais, Lawrence C. Murdoch, and **Scott DeWolf**, Liwei Hua, and Robert Moak, “Using Strain in the Vadose Zone During Sinusoidal-Rate Well Tests to Characterize an Aquifer,” 2021 Clemson Hydrogeology Symposium. Clemson, SC. October 21, 2021.
 43. Michael S. Steckler, Bar Oryan, Md. Hasnat Jaman, Dhiman R. Mondal, Céline Grall, Carol A. Wilson, Scott L. Nooner, Syed Humayun Akhter, **Scott DeWolf**, and Steven L. Goodbred, “Recent measurements of subsidence in the Ganges-Brahmaputra Delta, Bangladesh,” GAGE/SAGE 2021 Community Science Workshop. August 17–19, 2021.
 42. Michael S. Steckler, Bar Oryan, Md. Hasnat Jaman, Dhiman R. Mondal, Céline Grall, Carol A. Wilson, Syed Humayun Akhter, **Scott DeWolf**, and Steven L. Goodbred, “Recent measurements of subsidence in the Ganges-Brahmaputra Delta, Bangladesh,” European Geophysical Union General Assembly 2021, Session GM6.9, Presentation EGU21-6562. April 28, 2021.

41. Soheil Roudini, Lawrence C. Murdoch, **Scott DeWolf**, and Leonid N. Germanovich, “Interpretation of Borehole Strain Measurements Using Surrogate Modeling-Based Optimization,” 2020 Fall Meeting of the American Geophysical Union, Session H036, Presentation H036-0008. San Francisco, CA. December 8, 2020.
40. Riley Blais, Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Liwei Hua, and Robert Moak, “Using Strain in the Vadose Zone During Sinusoidal-Rate Well Tests to Characterize an Aquifer,” 2020 Fall Meeting of the American Geophysical Union, Session H062, Presentation H062-0008. San Francisco, CA. December 9, 2020.
39. **Scott DeWolf**, Lawrence C. Murdoch, Leonid N. Germanovich, Robert Moak, and Michael Ferguson, “Designs and Results from Three New Borehole Optical Fiber Tensor Strainmeters,” 2019 Fall Meeting of the American Geophysical Union, Session S21G, Presentation S21G-0597. San Francisco, CA. December 10, 2019.
38. Robert Moak, Lawrence C. Murdoch, **Scott DeWolf**, and Leonid N. Germanovich, “Framework for Characterizing Strain in the Vicinity of Leaky Reservoirs,” 2019 Fall Meeting of the American Geophysical Union, Session H21H, Presentation H21H-1839. San Francisco, CA. December 10, 2019.
37. Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Alexander Hanna, Robert Moak, Stephen Moysey, and Soheil Roudini, “Interpreting the Strain Tensor During Injection into a Reservoir,” 2019 Fall Meeting of the American Geophysical Union, Session H12D, Presentation H12D-04. San Francisco, CA. December 9, 2019.
36. Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Alexander Hanna, and Robert Moak, “Recent Developments in Hydromechanical Well Testing,” 2019 Clemson Hydrogeology Symposium. Clemson, SC. April 4, 2019.
35. Robert Moak, Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, and Riley Blais, “Characterizing the Subsurface Using Deformation from Pumping and Surface Loading Tests,” 2019 Clemson Hydrogeology Symposium. Clemson, SC. April 4, 2019.
34. Robert Moak, Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Riley Blais, and Grant Plunkett, “Characterizing the Subsurface Using Deformation from Pumping and Surface Loading Tests,” 2018 Fall Meeting of the American Geophysical Union, Session H51A, Presentation H51A-07. Washington, DC. December 14, 2018.
33. Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Liwei Hua, Alexander Hanna, Jianan Tang, Stephen Moysey, Hai Xiao, Robert Moak, Grant Plunkett, and Riley Blais, “Characterizing Strain During Injection to Reduce Risks During CO₂ Storage,” 2018 Fall Meeting of the American Geophysical Union, Session H23M, Presentation S51F-0392. Washington, DC. December 14, 2018.
32. Alexander Hanna, Stephen Moysey, Lawrence C. Murdoch, **Scott DeWolf**, and Leonid N. Germanovich, “A cloud computing approach to massively-parallel distributed stochastic optimization with application to geomechanical reservoir characterization,” 2018 Fall Meeting of the American Geophysical Union, Session H23M, Presentation H23M-2144. Washington, DC. December 11, 2018.
31. Alexander Hanna, **Scott DeWolf**, Stephen Moysey, and Lawrence C. Murdoch, “Using strain tensor measurements to locate and characterize subsurface heterogeneities,” European Geophysical Union General Assembly 2018, Session ERE6.1, Presentation EGU2018-19571. Vienna, Austria. April 12, 2018.
30. Reid Williams, Scott Brame, and **Scott DeWolf**, “A Comparative Study of Wire and Plastic Fiber Optic Cable Extensometers,” 2018 Clemson Hydrogeology Symposium. Clemson, SC. April 12, 2018.
29. **Scott DeWolf**, Lawrence C. Murdoch, Leonid N. Germanovich, Stephen Moysey, and Alexander Hanna, “Results from New Tensor and Areal Strainmeters for Monitoring Fluid Injection and Withdrawal,” 2018 Clemson Hydrogeology Symposium. Clemson, SC. April 12, 2018.
28. **Scott DeWolf**, Lawrence C. Murdoch, Leonid N. Germanovich, Stephen Moysey, Alexander Hanna, John Hu, Riley Blais, Grant Plunkett, and Wade Johnson, “New Tensor and Volumetric Strainmeters for Monitoring Fluid Injection and Withdrawal,” 2017 Fall Meeting of the American Geophysical Union, Session G51B, Presentation G51B-0750. New Orleans, LA. December 15, 2017.
27. Lawrence C. Murdoch, **Scott DeWolf**, Leonid N. Germanovich, Stephen Moysey, and Alexander Hanna, John Hu, Riley Blais, Grant Plunkett, and Wade Johnson, “Forward and Inverse Models Incorporating Strain, Tilt and Pressure Data for Monitoring Deformation During CO₂ Injection,”

- 2017 Fall Meeting of the American Geophysical Union, Session S51C, Presentation S51C-0613. New Orleans, LA. December 15, 2017.
26. Michael S. Steckler, Dhiman Ranjan Mondal, Céline Grall, Syed Humayun Akhter, Carol Wilson, Steven L. Goodbred, Jr., Scott Nooner, and **Scott DeWolf**, “Measurements of Subsidence and Sedimentation in the Coastal Zone of Bangladesh,” International World Climate Research Program / Intergovernmental Oceanographic Commission of UNESCO 2017 Conference on Regional Sea Level Changes and Coastal Impacts. New York, NY. July 10 – 14, 2017.
 25. **Scott DeWolf**, Lawrence C. Murdoch, Josh Smith, Leonid N. Germanovich, Stephen Moysey, and Alexander Hanna, “Results from New Strainmeters and Forward and Inverse Models for Monitoring Deformation During CO₂ Injection,” 2016 Fall Meeting of the American Geophysical Union, Session G33A, Presentation G33A-1035. San Francisco, CA. December 14, 2016.
 24. Robert Moak, Lawrence C. Murdoch, Colby Thrash, Leonid N. Germanovich, **Scott DeWolf**, and Fan Jun, “Characterizing Subsurface Deformation from Changes in Moisture Content during Infiltration Experiments,” 2016 Fall Meeting of the American Geophysical Union, Session H23D, Presentation H23D-1577. San Francisco, CA. December 13, 2016.
 23. Michael S. Steckler, Dhiman Ranjan Mondal, Syed Humayun Akhter, Steven L. Goodbred, Jr., Carol Wilson, Scott Nooner, and **Scott DeWolf**, “Measurements of the Balance of Subsidence and Sedimentation in the Coastal Zone of Bangladesh,” 2nd International Workshop on Coastal Subsidence. Venice, Italy. May 30 – June 1, 2016.
 22. **Scott DeWolf**, Lawrence C. Murdoch, Stephen Moysey, Leonid N. Germanovich, Alexander Hanna, and Josh Smith, “Two High-Resolution Systems for Measuring Ground Deformation During CO₂ Injection,” 2016 Clemson University Research Symposium. Clemson, SC. May 4, 2016.
 21. Viviana L. Heim, Lawrence C. Murdoch, and **Scott DeWolf**, “Feasibility of Using Fluctuations of Pore Pressure to Monitor Changes in Reservoir Gas Content,” 2016 Clemson Hydrogeology Symposium. Clemson, SC. March 31, 2016.
 20. Josh Smith, Larry Murdoch, Stephen Moysey, Leonid N. Germanovich, Glen Mattioli, **Scott DeWolf**, Alexander Hannah, Marvin Robinowitz, Scott Robinowitz, and David Mencin, “Measure and Interpret Deformation During CO₂ Injection into a Reservoir,” 2016 Clemson Hydrogeology Symposium. Clemson, SC. March 31, 2016.
 19. **Scott DeWolf**, Lawrence C. Murdoch, Stephen Moysey, Leonid N. Germanovich, Alexander Hanna, and Josh Smith, “Removable Tensor Strainmeter and Vector Tiltmeter System Coupled with Forward and Inverse Methods for Characterizing Deformation During CO₂ Injection,” 2015 Fall Meeting of the American Geophysical Union, Session S21A, Presentation S21A-2673. San Francisco, CA. December 15, 2015.
 18. Lawrence C. Murdoch, Colby Thrash, Leonid N. Germanovich, **Scott DeWolf**, and Robert Moak, “Effects of Hydrologic Processes on Vertical Displacements in the Critical Zone,” 2015 Fall Meeting of the American Geophysical Union, Session H53C, Presentation H53C-1669. San Francisco, CA. December 18, 2015.
 17. **Scott DeWolf**, Lawrence C. Murdoch, Stephen Moysey, Leonid N. Germanovich, Alexander Hanna, and Josh Smith, “Tensor Strainmeter and Vector Tiltmeter Design for Measuring Ground Deformations Associated with Fluid Injection and/or Withdrawal,” 2015 Clemson Hydrogeology Symposium. Clemson, SC. March 26, 2015.
 16. Michael S. Steckler, S. L. Goodbred, Syed Humayun Akhter, Leonardo Seeber, M. D. Reitz, C. Paola, Scott L. Nooner, **Scott DeWolf**, E. K. Ferguson, J. Gale, S. Hossain, M. Howe, W. Kim, C. M. McHugh, Dhiman R. Mondal, A. L. Petter, J. Pickering, R. Sincavage, L. A. Williams, C. Wilson, Mark A. Zumberge, “Ganges-Brahmaputra Delta: Balance of Subsidence, Sea level and Sedimentation in a Tectonically-Active Delta,” 2013 Fall Meeting of the American Geophysical Union, Session EP33D, Presentation EP33D-01. San Francisco, CA. December, 2013.
 15. **Scott DeWolf**, Scott L. Nooner, Michael S. Steckler, Mark A. Zumberge, Syed Humayun Akhter, “Optical Fiber Borehole Strainmeter Arrays for Measuring Sediment Compaction in Bangladesh,” 2013 Fall Meeting of the American Geophysical Union, Session EP31A, Presentation EP31A-0831. San Francisco, CA. December 11, 2013.

14. **Scott DeWolf**, Frank K. Wyatt, Mark A. Zumberge, Duncan C. Agnew, “Vertical and Horizontal Optical Fiber Strainmeters for Measuring Earth Strain,” 2012 Fall Meeting of the American Geophysical Union, Session G23B, Presentation G23B-0918. San Francisco, CA. December 5, 2012.
13. **Scott DeWolf**, Frank K. Wyatt, Mark A. Zumberge, Duncan C. Agnew, Don Elliott, and Billy Hatfield, “Two New Optical Fiber Strainmeters for Earth Strain Measurement,” 2012 UNAVCO Strainmeter Science Workshop. La Jolla, CA. October 10–12, 2012.
12. **Scott DeWolf**, Frank K. Wyatt, Mark A. Zumberge, Duncan C. Agnew, Don Elliott, and Billy Hatfield, “Two New Optical Fiber Strainmeters for Earth Strain Measurement,” 2012 Annual Meeting of the Southern California Earthquake Center, Presentation 233. Palm Springs, CA. September 9–11, 2012.
11. Kristoffer T. Walker, **Scott DeWolf**, Mark A. Zumberge, and Stephane Denis, “The self-similarity of ‘wind noise’ quantified with optical fiber infrasound sensors,” 2011 International Infrasound Technology Workshop. Dead Sea, Jordan. November 2, 2011.
10. **Scott DeWolf**, Kristoffer T. Walker, and Mark A. Zumberge, “Miniaturization and Autonomous Deployment of the Optical Fiber Infrasound Sensor,” 2010 Fall Meeting of the American Geophysical Union, Session S11A, Presentation S11A-1929. San Francisco, CA. December 13, 2010.
9. Kristoffer T. Walker, Mark A. Zumberge, **Scott DeWolf**, Jon Berger, and Michael A. H. Hedlin, “Optical Fiber Infrasound Sensor Arrays: An Improved Alternative to Arrays of Rosette Wind Filters,” 2009 Fall Meeting of the American Geophysical Union, Poster Programme SM2.6/AS4.8, Presentation EGU2010-14620. Vienna, Austria. May 7, 2010.
8. Mark A. Zumberge, Kristoffer T. Walker, **Scott DeWolf**, Jon Berger, and Michael A. H. Hedlin, “Optical Fiber Infrasound Sensor Arrays: An Improved Alternative to Arrays of Rosette Wind Filters,” 2009 Fall Meeting of the American Geophysical Union, Session S31B, Presentation S31B-1726. San Francisco, CA. December 2009.
7. Mark A. Zumberge, Kristoffer T. Walker, **Scott DeWolf**, Michael A. H. Hedlin, Peter M. Shearer, and Jon Berger, “Directional microphone arrays: Reducing wind noise without killing your signal or filling up your disk,” 2008 Fall Meeting of the American Geophysical Union, Session S11B, Presentation S11B-1732. San Francisco, CA. December 2008.
6. Kristoffer T. Walker, Mark A. Zumberge, Matthew A. Dzieciuch, **Scott DeWolf**, and Catherine de-Groot Hedlin, “Application of an M-Sequence Infrasonic Calibrator at the Camp Elliott OFIS Array,” 2008 International Infrasound Technology Workshop. Grotto Bay Beach Resort, Bermuda. November 2008.
5. Kristoffer T. Walker, Matthew A. Dzieciuch, **Scott DeWolf**, Mark A. Zumberge, Michael A. H. Hedlin, and Jon Berger, “Optical fiber infrasound sensor arrays: Signal detection and characterization capabilities in the presence of wind noise,” 154th Meeting of the Acoustical Society of America, Presentation 2aEA7. New Orleans, LA. November 28, 2007.
4. **Scott DeWolf** “Characterizing the Mechanical Sensitivity of Three Piezo-Based Infrasound Sensors,” 2006 International Infrasound Technology Workshop. Fairbanks, AK. September 28, 2006.
3. **Scott DeWolf** and Lowell I. McCann, “Examination of the Evaporation Behaviors of Water Droplets in an Optical Trap” 7th Annual University of Wisconsin System Symposium for Undergraduate Research and Creative Activity. Menominee, WI. May 5, 2006.
2. **Scott DeWolf** and Allen Riley, “Modeling the Sound Field Directivity of 1, 2, and 3 Tine Tuning Forks,” UW-River Falls Research, Scholarly, and Creative Activity Poster Day. River Falls, WI. April 27, 2006.
1. **Scott DeWolf** and Lowell I. McCann, “Growth and Evaporation of Optically Trapped Liquid Droplets Viewed with a Two Axis Microscope,” March Meeting of the American Physical Society, Session D42. Baltimore, MD. March 13, 2006.

Seminars

7. “Designs and Performance of New Optical Fiber Tilt and Strain Instruments,” Caltech Seismological Laboratory Geophysics Brown Bag Seminar, California Institute of Technology. Pasadena, CA. September 24, 2019.
6. “Two High-Resolution Systems for Measuring Ground Deformation During CO₂ Injection,” Clemson University Post Doc Summer Seminar Series, Clemson University. Clemson, SC. June 29, 2016.

5. “Measuring the Length of an Optical Fiber to 1 Part in 10^{10} : The Borehole Optical Fiber Strainmeter,” Applied Ocean Sciences Seminar, Scripps Institution of Oceanography. La Jolla, CA. March 1, 2012.
4. “Deployment of 12 Optical Fiber Borehole Strainmeters in Bangladesh,” Applied Ocean Sciences Seminar, Scripps Institution of Oceanography. La Jolla, CA. May 12, 2011.
3. “Measuring Sound with Light: Polarimetry and Thermometry,” Applied Ocean Sciences Seminar, Scripps Institution of Oceanography. La Jolla, CA. April 22, 2010.
2. “The Conjugate Gradient Method: A Better Way to Go Down Hill,” Senior Mathematics Seminar, University of Wisconsin River Falls Mathematics Department. River Falls, WI. April 25, 2007.
1. “Reflecting upon Reflections: Measuring Reverberant Sound Fields with a 3D Microphone Array,” Senior Physics Seminar, University of Wisconsin River Falls Physics Department. River Falls, WI. April 19, 2007.

PROFESSIONAL MEMBERSHIPS AND SERVICES

Society Memberships

- American Geophysical Union
- Acoustical Society of America (former)

Referee/Reviewer

- *The Journal of The Acoustical Society of America*
- *Geophysical Journal International*
- *Geophysical Research Letters*
- *Journal of Geophysical Research – Solid Earth*

DEPARTMENTAL SERVICES

Graduate Student Committee Membership, Clemson University

- Soheil Roudini, Ph.D. Hydrogeology, Spring 2018 – Fall 2024.
- Clemence Laffaille, M.S. Hydrogeology, Fall 2022 – Spring 2024.
- Riley Blais, M.S. Hydrogeology, Spring 2019 – Summer 2023.
- Austin Smith-Jones, M.S. Hydrogeology, Fall 2020 – Spring 2023
- Olivia Costantino, M.S. Hydrogeology, Spring 2019 – Fall 2021.
- Grant Plunkett, M.S. Hydrogeology, Fall 2018 – Spring 2021.
- Alexander Hanna, Ph.D. Hydrogeology, Fall 2017 – Summer 2019.
- Viviana Heim, M.S. Hydrogeology, Fall 2015 – Summer 2016.

Applied Ocean Science Seminar Committee, Scripps Inst. of Oceanography, Fall 2010–Spring 2011

- Duties included scheduling speakers, advertising the upcoming talks, and providing refreshments.

Marine Science Development Center Committee, Scripps Institution of Oceanography, 2010–2013

- Duties included general oversight of the operations of the machine shop and proposed merger with the Hydraulics Laboratory.

PROFESSIONAL COLLABORATIONS

Academic

- Duncan Carr Agnew (University of California San Diego Scripps Institution of Oceanography)
- Syed Humayun Akhter (University of Dhaka)
- Leonid N. Germanovich (Clemson University, formerly Georgia Institute of Technology)
- Stephen Moysey (Eastern Carolina University)
- Lawrence C. Murdoch (Clemson University)
- Scott L. Nooner (University of North Carolina Wilmington, formerly Lamont Doherty Earth Observatory)
- Michael S. Steckler (Lamont Doherty Earth Observatory)
- Kristoffer T. Walker (Chevron, formerly University of California San Diego Scripps Institution of Oceanography)
- Frank K. Wyatt (University of California San Diego Scripps Institution of Oceanography)

- Hai Xiao (Clemson University)
- Mark A. Zumberge (University of California San Diego Scripps Institution of Oceanography)

Industry

- Marvin Robinowitz (Grand Resources)
- Scott Robinowitz (Grand Resources)
- Kristoffer T. Walker (Chevron)

REFERENCES

Lawrence C. Murdoch, Clemson University, lmurdoc@clemson.edu
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