Natalia V. Zakharova, Ph.D.

Associate Professor of Geophysics
Central Michigan University
n.zakh@cmich.edu, 989-774-4496, Brooks Hall 304

RESEARCH INTERESTS

Unconventional reservoirs, geologic carbon storage, induced seismicity, petrophysical controls on mechanical properties of rocks and sediments, rift basin development and evolution.

EDUCATION

Ph.D., Columbia University in the City of New York 2008-2014
Borehole Geophysics & Carbon Sequestration, Department of Earth & Environ. Sciences

Lomonosov Moscow State University, Russia
M.S. with Honors, Exploration Seismology, Department of Geology 2004-2006
B.S. with Honors, Geology and Geophysics, Department of Geology 2000-2004

PROFESSIONAL & FIELD EXPERIENCE

Dept. of Earth and Atmospheric Sciences, Central Michigan University
Associate Professor 09/2023-ongoing
Assistant Professor 08/2017-08/2023

Lamont-Doherty Earth Observatory, Columbia University 10/2017-05/2023
Adjunct Associate Research Scientist

IODP Expedition 381 'Corinth Active Rift Development' 02/2018
MARUM, University of Bremen, Germany: Core-log-seismic integration specialist

Lamont-Doherty Earth Observatory, Columbia University 10/2014-06/2017
Postdoctoral Research Scientist

Lamont Test Wells: Assistant during drilling, coring, well logging and hydraulic testing 2010-2017
Lamont-Doherty Earth Observatory, Palisades, NY

Colorado Plateau Coring Project: *Well logging supervisor* 11/2014
Petrified Forest National Park, AZ

IODP Expedition 335 'Superfast Spreading Rate Crust 4': Logging staff scientist 04-06/2011
Drilling Vessel JOIDES Resolution, Equatorial Pacific

Mineralogy Laboratory, Schlumberger-Doll Research 03/2010
Cambridge, MA: Trainee in Fourier-Transform Infrared Spectroscopy

CO_2 Mitigation and Sequestration Division, Schlumberger-Doll Research 06-08/2009
Cambridge, MA: Intern in seismic modeling for CO_2 sequestration monitoring

Geovers Ltd.: Vertical Seismic Profiling (VSP) Division: Part-time VSP specialist 2004-2006
Central Geophysical Expedition, Moscow, Russia

Center for Analysis and Development, YUKOS 07-08/2004
Moscow, Russia: Intern in 3D seismic interpretation for Western Siberian oilfields

Well Testing and Completion Services, Schlumberger 06/2004
Chayvo oilfield and Yuzhno-Sakhalinsk, Sakhalin, Russia: Field internship

UNESCO IOC Expedition 'Training Through Research-13', Staff scientist 06-08/2003
Research Vessel Professor Logachev, Northern Atlantic

Laboratory of Near-Surface Electrical Prospecting 01-03/2003
Lomonosov Moscow State University, Russia, Volunteer for field work and data analysis

PUBLICATIONS

Google Scholar citations: 326, h-index: 10; Scopus citations: 255, h-index: 9.

Peer-Reviewed Articles since CMU appointment

[#]PhD student co-author, [&]postdoctoral advisee

1. Adeyilola[#], A., **Zakharova**, N., Liu[&], K., Gentzis, T., Carvajal-Ortiz, H., Fowler, H. and Harrison III, W.B., **2023**, Porosity distribution in the Devonian Antrim Shale: Controlling factors and implications for gas sorption. *International Journal of Coal Geology*, *272*, 104251.
2. Liu[&], K., Jin, Zh., **Zakharova**, N. , Zeng, L. , Haghshenas, M., Adeyilola[#], A., Saurabh[&], S., **2023**, Comparison of shale fracture toughness obtained from scratch test and nanoindentation test, *Int. J. Rock Mechanics & Mining Sci.,162,* 10582.
3. Mansour, A., Adeyilola[#], A., Gentzis, T., Carvajal-Ortiz, H. and **Zakharova**, N., **2022**, Depositional setting and organic matter characterization of the Upper Devonian Antrim Shale, Michigan Basin: Implications for hydrocarbon potential. *Marine and Petroleum Geology*, *140*, 105683.
4. Saurabh[&], S., Harpalani, S., and **Zakharova**, N., **2022**, Flow regime evolution and stress-dependent permeability in nanoporous rocks. *Fuel*, *310*, 122413.
5. Adeyilola[#], A., **Zakharova**, N., Liu[&], K., Gentzis, T., Carvajal-Ortiz, H., Ocubalidet, S., and Harrison III, W. B., **2022**, Hydrocarbon potential and Organofacies of the Devonian Antrim Shale, Michigan Basin. *International Journal of Coal Geology*, *249*, 103905.
6. **Zakharova**, N.V., and D.S. Goldberg, **2021**, Mechanical properties of Mesozoic rift basin formations*, Geophysics and Geomechanics for Geo-Energy and Geo-Resources, 7:70*
7. Liu[&], K., Jin, Z., **Zakharova**, N., Zeng, L., Adeyilola[#], A., and Ostadhassan, M., **2021**, Proper Experimental Parameters in N2 Adsorption: The Effects of Data Points and Equilibrium Interval Time. *Energy & Fuels*, *35*(24), 20060-20070.
8. Liu[&], K., **Zakharova**, N.V., Adeyilola[#], A., Gentzis, T., Carvajal-Ortiz, H., Fowler, H., **2021**, Understanding the CO2 adsorption hysteresis under low pressure: an example from the Antrim Shale in the Michigan Basin: Preliminary observations, *Journal of Petroleum Science and Engineering, 203:* 108693.
9. Liu[&], K., **Zakharova**, N.V., Adeyilola[#], A., and L. Zeng, **2021**, Experimental study on the pore shape damage of shale samples during crushing process, *Energy Fuels,* 35, 3, 2183-2191.

10. Liu[&], K., Ostadhassan, M., Jang, H. W., **Zakharova**, N. V., and Shokouhimehr, M., **2021**, Comparison of fractal dimensions from nitrogen adsorption data in shale via different models, *RSC Advances*, *11*(4), 2298-2306.
11. Liu[&], K., **Zakharova**, N.V., Gentzis, T., Adeyilola[#], Carvajal-Ortiz, H., Fowler, H., **2020**, The microstructure characterization of a biogenic shale gas formation – insights from the Antrim Shale, Michigan basin, *Journal of Earth Sciences,* 1-12.
12. **Zakharova**, N.V., D.S. Goldberg, P.E. Olsen, D. Collins, and D. Kent, **2020**, Reservoir and Sealing Properties of the Newark Rift Basin Formations: Implications for Carbon Sequestration*, The Leading Edge, 39 (1),* 38-46*.*
13. McNeill, Shillington, Carter, Everest, Gawthorpe, Miller, Phillips, Collier, Cvetkoska, De Gelder, Ferreiro, Doan, Ford, Geraga, Gillespie, Hemelsdael, Herrero-Bervera, Ismaiel, Janikian, Kouli, Le Ber, Li, Maffione, Mahoney, Machlus, Michas, Nixon, Oflaz, Omale, Panagiotopoulos, Pechlivanidou, Sauer, Seguin, Sergiou, **Zakharova**, Green, **2019**, High-resolution record reveals climate-driven environmental and sedimentary changes in an active rift, *Nature Scientific Reports, 9(1)*, 3116.
14. Olsen, Geissman, Kent, Gehrels, Mundil, Irmis, Lepre, Rasmussen, Giesler, Parker, **Zakharova**, Kürschner, Miller, Baranyi, Schaller, Whiteside, Schnurrenberger, Noren, Shannon, O'Grady, Colbert, Edey, and Kinney, **2018**, Colorado Plateau Coring Project, Phase I (CPCP-I): A continuously cored, globally exportable chronology of Triassic continental environmental change from Western North America, *Scientific Drilling, 24,* 15-40.
15. **Zakharova**, N.V., and D.S. Goldberg, **2018**, Formation strength and elastic wave velocities in rift basin mudstones: effects of stress, frequency, and lithology, ARMA 18-1422, *Proceedings of the 52nd US Rock Mechanics/Geomechanics Symposium, 17-20 June 2018, American Rock Mechanics Association.*

Peer-Reviewed Articles before CMU appointment

16. **Zakharova**, N.V., Goldberg, D.S., Olsen, P.E., Kent, D.V., Morgan, S., Yang, Q., Stute, M., Matter, J., **2016**, New insights into lithology and hydrogeology of the northern Newark Rift Basin, *Geochem., Geophys., Geosyst.,* 17(6), 2070-2094, doi:10.1002/2015GC006240
17. **Zakharova**, N.V., and D.S. Goldberg, **2015**, Data report: Analysis of shear wave anisotropy in upper oceanic crust, ODP/IODP Hole 1256D, *Proceedings of the Integrated Ocean Drilling Program, 335*, doi:10.2204/iodp.proc.335.202.2015
18. O'Mullan, G.D., Dueker, M.E., Clauson, K., Yang, Q., Umemoto, K., **Zakharova**, N., Matter, J., Stute, M., Takahashi, T., Goldberg, D., **2015**, Microbial stimulation and succession following a test well injection simulating CO_2 leakage into a shallow Newark Basin aquifer, *PLoS ONE 10(1),* doi:10.1371/journal.pone.0117812
19. **Zakharova**, N., and D. Goldberg, **2014**, In Situ Stress Analysis in the Northern Newark Basin: Implications for Induced Seismicity from CO_2 Injection, *J. Geophys. Res. Solid Earth, 119,* doi:10.1002/2013JB010492
20. Yang, Q., J. Matter, M. Stute, T. Takahashi, G. D. O'Mullan, K. Umemoto, K. Clauson, M. E. Dueker, N. V. **Zakharova**, and D. Goldberg, **2014**, Groundwater hydrogeochemistry in injection experiments simulating CO2 leakage from geological storage reservoir, *Int. J. Greenhouse Gas Control* 26, 193-203, doi:10.1016/j.ijggc.2014.04.025

21. **Zakharova**, N., D. Goldberg, and D. Collins, **2013**, In Situ Stress Constrains from Borehole Data in the Context of CO_2-Storage Site Characterization, Paper #739 *Proceedings of the 47th US Rock Mechanics/Geomechanics Symposium,* 23-26 June 2013, San Francisco, California, USA; ISBN: 978-0-9894844-0-4
22. **Zakharova**, N., D. Goldberg, C. Sullivan, M. Herron, and J. Grau, **2012**, Petrophysical and Geochemical Properties of Columbia River Flood Basalt: Implications for Carbon Sequestration*, Geochem., Geophys., Geosyst.,* 13(11), doi:10.1029/2012GC004305
23. Cranganu, C., M. Villa, M. Saramet, N. **Zakharova, 2009**, Petrophysical characteristics of source and reservoir rocks, Histria Basin, Western Black Sea, *J. Petrol. Geol.*, 32(4), 357-371
24. Gainanov, V.G. and N. **Rykovskaya***, **2005**, The use of reflected waves in crosswell seismic imaging. *Vestnik MGU*, 60(5), 83-85 (*Russian). English translation available in Moscow University Geology Bulletin, Allerton Press, NY.* ***maiden name***

Selected Presentations

***undergraduate student co-author, #PhD student co-author, &postdoctoral advisee*

1. Borst**, **Zakharova**, Goldberg*,* **2022**, Stress Heterogeneity in the Newark Basin: Modeling Stress Perturbation on Faults, *GSA 2022 North-Central/ Southeastern Joint Section Meeting,* Cincinnati, OH, April 7-8, 2022 *(poster presentation)*
2. Adeyilola[#], **Zakharova**, Liu, Gentzis, Carvajal-Ortiz, **2022**, Source rock potential, organofacies and paleoenvironment studies of the Devonian Antrim Shale, Michigan Basin, *GSA 2022 North-Central/ Southeastern Joint Section Meeting,* Cincinnati, OH, April 7-8, 2022 *(oral presentation)*
3. **Zakharova**, Adeyilola[#], Liu[&], Saurabh[&], **2021**, Petrophysical and Geomechanical Properties of the Antrim shale: Implications for biogenic gas generation, storage and transport, *Michigan Core Workshop, Western Michigan University (invited talk)*
4. **Zakharova**, Liu[&], Adeyilola[#], Saurabh[&], **2021**, Porosity structure and distribution in the Antrim shale: implications for biogenic gas generation, storage and transport, *AGU Fall Meeting 2021 (poster presentation)*
5. Adeyilola[#], **Zakharova**, Liu, Gentzis, Carvajal-Ortiz, **2020,** Source rock and organic petrology studies of the Devonian Antrim shale, Michigan Basin, *GSA Annual Meeting (poster presentation)*
6. **Zakharova**, N.V., M. Prasad, D. J. Shillington, L. C. McNeill, M. Ford, C.W. Nixon, **2019**, Elastic properties of the Corinth Rift Sediments: improving shallow velocity model with new experimental and modeling data, *AGU Fall Meeting, MR11B-0031 (poster presentation)*
7. Nixon C., L. McNeill, R. Gawthorpe, M. Ford, R. Bell, A. Moyles, D. Shillington, N. **Zakharova**, J. Bull, G. de Gelder, G. Michas, and IODP Expedition 381 Scientists, **2019**, Increasing slip-rates within a rapidly localising fault network from the Corinth Rift, EGU General Assembly 2019, Vienna, Austria *(oral presentation)*
8. **Zakharova**, N. V., Pezard, P. A., Deans, J. R., Matter, J. M., Crispini, L., Cheadle, M. J., and J.A. Coggon, **2018**, Physical properties of the lower oceanic crust and mantle: quantifying the relationships in wireline logging data from the Oman Drilling Project Phase I. *AGU Fall Meeting, V13E-0158 (poster presentation)*
9. Thibodeau**, C. L., N. V. **Zakharova**, and D. Goldberg, **2018**, CO2 Sealing Capacity of the Newark Basin Rift Mudstones, *AGU Fall Meeting, V13E-0158 (poster presentation)*

10. **Zakharova**, N., and D. Goldberg, **2018**, Stress and strength heterogeneity in the Newark Rift Basin, GSA Annual Meeting, Indianapolis, IN, USA *(poster presentation)*
11. **Zakharova**, N., and D. Goldberg, **2018**, Formation strength and elastic wave velocities in rift basin mudstones: effects of stress, frequency, and lithology, ARMA 18-1422, *52nd US Rock Mechanics/Geomechanics Symposium, 17-20 June 2018, Seattle, WA, (oral presentation)*
12. Goldberg, D., and N. **Zakharova**, **2018**, Lithostratigraphic borehole test sites in the northern Newark Basin: recent studies of Mesozoic rift basin geology*, EGU General Assembly 2018, Apr. 8-13, 2018, Vienna, Austria, EGU2018-494, 049 (poster presentation)*
13. **Zakharova**, N., D. Goldberg, **2017**, Acoustic velocity in rift basin mudstones and its relation to formation strength, *AGU Fall Meeting, MR33D-049 (poster presentation)*
14. **Zakharova**, N., and D. Goldberg, **2016,** In-situ stress and geomechanical properties in the Newark Basin: Implications for induced seismicity and carbon sequestration, *Dept. Earth and Planetary Sci.*, *Rutgers University (colloquium talk)*
15. **Zakharova**, N., D. Goldberg, D. Collins, and N. Malkewicz, **2015**, Geomechanical properties of rift basin mudstones, *AGU Fall Meeting, MR41C-2664 (poster presentation)*
16. **Zakharova**, N., and D. Goldberg, **2015,** Evaluating In Situ Stress and Induced Seismicity Risks for CO_2 Geologic Storage, Gordon Research Conference on Carbon Capture, Utilization and Storage, Stonehill College, MA *(poster presentation)*
17. **Zakharova**, N., A. Slagle, and D. Goldberg, **2014,** Carbon sequestration in unconventional reservoirs: Advantages and limitations, *AGU Fall Meeting, V23A-4771 (poster presentation)*
18. **Zakharova,** N.V., In situ stress in the Northern Newark Basin: Implications for induced seismicity and carbon sequestration, MGG/SGT seminar, Lamont-Doherty Earth Observatory, September 20, **2013** (*oral presentation*)
19. **Zakharova**, N., D. Goldberg, and D. Collins, **2012,** Petrophysical and mechanical properties of fractured aquifers in the Northern Newark Basin: Implications for carbon sequestration, *AGU Fall Meeting, NS51B-1826 (poster presentation)*
20. **Zakharova,** N.V. and Goldberg, D.S., **2012**, Fractures in geologic reservoirs – storage space and leakage pathways?, Gordon Research Seminar and Conference on Flow in Porous Media, Les Diablerets, Switzerland *(poster presentation)*
21. **Zakharova,** N.V., Yang, Q., J. Matter, M. Stute, T. Takahashi, G. D. O'Mullan, K. Umemoto, K. Clauson, M. E. Dueker, N. V., **2011**, Geophysical characterization of fractured-rock aquifers for CO_2 injection in the Newark Basin, *AGU Fall Meeting, GC44A-08 (oral presentation)*
22. **Zakharova**, N., Goldberg, D., Herron, M., Grau, J., **2010**, Sensitivity of geochemical monitoring for CO_2 sequestration in basalts, *AGU Fall meeting, GC24A-04 (oral presentation)*

Theses

1. Carbon Sequestration In Unconventional Reservoirs: Geophysical, Geochemical and Geomechanical Considerations, Ph.D. thesis, **2014**, Columbia University
2. Processing Techniques for 2D and 3D Vertical Seismic Profiling, M.S. Thesis, **2006**, Lomonosov Moscow State University
3. Reflection Imaging for Crosswell Seismic Data, B.S. Thesis, **2004**, Lomonosov Moscow State University

GRANTS, AWARDS, AND SCHOLARSHIPS

Research Grant Applications since CMU Appointment

1. Geomechanical Assessment of Confining Units in the Michigan Basin (PI), sub-award for Advancing Carbon Capture, Utilization and Storage in the Michigan Basin (Western Michigan university/Michigan Geological Survey), *the US Dep. of Energy, total amount $1,081,552, CMU share $84,368* ***Feb.2023, awarded***
2. Elucidating Gas Sorption Controls in Low-Maturity Shales: Implications for Carbon Storage in Unconventional Reservoirs (PI), *American Chemical Society Petroleum Research Fund, $120,000* Mar. 2023, *declined*
3. Wave-based condition assessment of physical systems powered by high-fidelity wave simulations, machine learning, robotics, and experiments (senior personnel), *NSF LEAPHI, $1,928,127* Sept. 2022*, declined*
4. A Novel Approach to Characterizing Flow Regimes and Permeability in Gas Shales (PI), *American Chemical Society Petroleum Research Fund, $110,000* Oct. 2021, *declined*
5. Collaborative drilling proposal 'The Cornell University Borehole Observatory' (co-PI), *ICDP, $2,006,019, CMU share $0* 2021, *declined*
6. Collaborative Research: Colorado Plateau Coring Project 2: A continuous record of Triassic-Jurassic environmental change (co-PI): *NSF Sedimentology and Paleobiology, Total amount: $3,000,000, CMU share $105,351* 2020*, withdrawn by the lead PI*

   revised and resubmitted to *NSF Frontiers Research in Earth Sciences, Total amount: $2,000,000, CMU share $76,324* 2021, *declined*
7. Concept paper 'Multi-Scale Fault Characterization to Assess Seismic Hazard and Risk in the Southern Michigan Basin' (co-PI), US DOE under DE-FOA-0002401, AOI 01 2021, *declined*
8. Prototypical Integrated Renewable Fuels and CarbonSAFE Complex – A Pattern for Negative Carbon Footprint Sustainable Fuels Production (co-PI), *DOE Fossil Energy Research and Development, Total amount $15,000,000, CMU share $500,916* 2020, *declined*
9. Water and Energy Sustainability Research Institute (co-PI), *CMU President and Provost Innovation Fund, $493,382* 2020, *declined*
10. Influence of immature organic matter on porosity and mechanical properties of gas shale (PI) *American Chemical Society Petroleum Research Fund, $110,000* 2019, *declined*
11. IODP Expedition 381: Science Party Participation and Post-Expedition Research Awards (PI), *US Science Support Program/Columbia University/NSF, $39,320* ***2018, awarded***
12. Concept paper 'Quantifying reservoir-scale variations in in-situ stress field from mechanical formation properties' (lead PI), US DOE under DE-FOA-0001826, AOI 01 2018, *declined*
13. Concept paper 'Development of S-wave anisotropy and seismic ambient noise interferometry methods for monitoring of pressure migration at an injection site' (co-PI), US DOE under DE-FOA-0001826, AOI 02 2018, *declined*

Prior Research Awards and Academic Prizes

Research Sub-award: Geomechanical Properties of Mesozoic Rift Basins 2014-2017
Sandia Technologies, LLC/US Department of Energy DE-FE0002352

IODP Expedition 335 Post-Expedition Research Award 2011
Consortium for Ocean Leadership/NSF

Science Fellowship 2008-2010
Department of Earth & Environmental Sciences, Columbia University

Science Fellowship 2006-2008
Graduate Center, City University of New York

Schlumberger Prizes for Academic Achievements 2003, 2004
Lomonosov Moscow State University, Russia

Prize for Young Scientists 'Lomonosov-2004' 2004
Lomonosov Moscow State University, Russia

TEACHING EXPERIENCE

Courses taught at CMU

GEL/ENS 409 Professional Development Spring 2022, 2023
Upper-level required/elective for majors/minors

GEL 100 Introduction to Earth Systems 2020-2023
Introductory active-learning science class

GEL 420 Geostatistics Spring 2020
Upper-level elective for majors

GEL 280 Geomath Fall 2017-2023
Required math-based active-learning class for majors

SCI 285 Earth Science for Elementary School Teachers Spring 2019, 2020
Introductory active-learning science class for over 60 students

GEL 372 Introduction to Geophysics Fall 2018, 2022
Elective for majors; complete course overhaul

GEL 105 Dangerous Planet Spring 2018
Online introductory science class on geologic hazards

Guest lectures:
Basics of Drilling, Well Logging and Coring in GEL 385 2018-2022
CO2 Capture and storage in ENR 597 Spring 2020

Prior Teaching Experience

Global Warming Isn't Cool Fall 2015
Double Discovery Center, Columbia University, science class for high school students

Independently designed and implemented a 16-hour course on weather and climate basics with the focus on active inquiry-based learning, hands-on activities, and real data analysis

Earth: Origin, Evolution, Future, lab section Fall 2009, 2010
Columbia University, undergraduate intro-level course
Independently developed and conducted lab activities on a variety of topics in Earth and Environmental Sci.; required teaching assistantship in 2009, volunteering in 2010

Quantitative Methods of Data Analysis Fall 2008
Columbia University, graduate-level course
Teaching assistantship: grading, help with homework, class material and final project

Introduction to Geophysics Fall 2005
Lomonosov Moscow State University, undergraduate course for majors
Substitute Lecturer

Formal Training

Teaching 2.0 – What You Need to Know to Be a Successful Teacher Spring 2015
Columbia University, postdoctoral course with practicum
Principles of active learning and backward design

Teaching & Learning Concepts in Earth Sciences Spring 2012
Columbia University, graduate-level course
Approaches to inquiry-based learning, identifying misconceptions, promoting spatial and temporal thinking, and developing learning goals, learning performances and grading rubrics

Introduction to Pedagogy 2004-2005
Lomonosov Moscow State University, undergraduate level
Introductory courses on teaching methods and learning cognition; part of unfinished second major in teaching

Research Mentoring

Department of Earth and Atmospheric Science, Central Michigan University:
Undergraduate student mentor, petrophysical research (4 students) 2017-ongoing
including two Senior Thesis:
Evaluation of the log-derived porosity of the Antrim Shale, Michigan Basin, Ch. Thibodeau, 2020
Evaluating stress heterogeneity and potential fault influence in the Newark Basin, G. Borst, 2021
EES Ph.D. student primary research advisor 2019-ongoing
EES Ph.D. committee member 2019-2020
Postdoctoral Fellows (2) primary research advisor 2019-2021

Lamont-Doherty Earth Observatory, Columbia University
Lab work with college-level summer interns (2 students) 2015
Research project with volunteer post-undergraduate student 2014-2015
Research mentor for high-school student's science project 2012

SERVICE TO COMMUNITY

Councils and Committees

***Science Evaluation Panel*,** International Ocean Discovery Program (IODP) Fall 2021 - ongoing

Central Michigan University:

Laboratory Safety Committee	Fall 2021 - ongoing
President's and Provost's Awards Committee	Fall 2019 - Spr. 2020, Fall 2022 - Spr. 2023
Sustainability and Environmental Policy (SEP) Advisory Board	Summer 2022 - ongoing
SCE InSciTE Council	Fall 2021 - ongoing
SCE Earth and Ecosystem Science (EES) Council	Fall 2020 - ongoing
SCE Sabbatical Committee	Fall 2020 - Spring 2022
GEL student advising	Fall 2019 - ongoing
GEL Alumni Advisory Board	Spring 2019 - ongoing
EAS Scholarship Committee	Fall 2017 - ongoing
EAS Faculty Search Committee	Fall 2017-Spring 2018

Columbia University:

Columbia University Postdoctoral Society	2014-2018
Postdoctoral Advisory Council	2014-2015
Organizing Committee for Graduate Student Symposium	Spring 2013
Earth Institute Student Advisory Council	2011-2012
Chevron Student Initiative Fund Committee	Spring 2009

Leadership Roles

Annual American Geophysical Union Fall Meeting, *New Orleans, LA* 12/2017
Primary convener and the chair of two sessions on in situ stress

Inter-University Student Initiative in Carbon Sequestration (ISICS) 2010-2013
Co-founder and co-chair of the initiative; lead organizer of two ISCIS events:
a student research conference and a science communication workshop

Chief Editor for Storke Memorial Expedition Field Guides 2010, 2011, 2013
Lamont-Doherty Earth Observatory, Columbia University

Outreach

CMU Faculty Calling Campaign Fall 2019

American Geophysical Union (AGU) Fall Meetings 2015-2019
Outstanding Student Paper Award (OSPA) judge

CMU & U Day, *Central Michigan University* 10/2017
Co-organizer of hands-on activities and geoscience outreach

NYC Science & Engineering Fair Spring 2015
The City College of New York & American Museum of the Natural History
Volunteer judge at the preliminary and final rounds

Girls' Science Day 2013, 2014
Columbia University
Co-leader of hands-on activity 'Earth-Science Application of Sound in Water'

Annual Lamont Open House 2008, 2010-2013
Lamont-Doherty Earth Observatory, Columbia University
Co-leader of hands-on activities and games on porosity, carbon cycle, and carbon sequestration

AGU Fall Meeting Press Communication 12/2011
San Francisco, CA
Press interview resulting in coverage in Popular Mechanics
(www.popularmechanics.com/science/energy/a7483/could-the-northeast-store-its-co2-right-beneath-its-feet/, last access 8/25/15)