

**SUMMARY OF PROFESSIONAL ACCOMPLISHMENTS**

RESEARCH GRANTS	<p>Total Funded: <b>17</b>; External: <b>12</b>; Internal: <b>5</b>                  PI-led / Institutional PI: <b>7</b>; Co-PI supported: <b>10</b>; Co-I/Senior Personnel: <b>1</b>                  Total Procured: <b>\$15,290,852</b> (<b>\$13,207,852</b> at OSU)                  My Expenditures: <b>\$1,375,848</b> (<b>\$1,259,887</b> at OSU)</p>
KNOWLEDGE PRODUCTION AND DISSEMINATION	<p>Book Chapters: <b>3</b>; Refereed Journal Articles: <b>30</b> (two editor-reviewed)                  Reports and Other Publications <b>11</b>; Manuscripts in Review/ Revision/ Preparation: <b>1/2/7</b>                  Conference Papers and Proceedings: <b>40</b>                  Conference/Workshop Presentations: <b>115</b>; with abstracts: <b>23</b>                  Invited Presentations: Seminars – <b>35</b>; Conferences/Workshops – <b>18</b></p>
ACADEMIC MENTORING	<p>Graduate: <b>9</b> (Ph.D.: <b>2</b>, M.S. Thesis: <b>6</b>, M.S. Non-Thesis: <b>1</b>); Undergraduate: <b>16</b>                  Other Committees and Advised Students: <b>25</b> (Ph.D.: <b>7</b>; Master’s: <b>15</b>; Undergraduate: <b>3</b>)                  Research Supervisor: <b>5</b></p>
TEACHING AND OUTREACH ACTIVITIES	<p>Since joining OSU in summer 2013, I have revised an existing course (<i>Engineering Economic Evaluation and Optimization in Civil and Environmental Engineering</i>), developed and evolved a new course on <i>Science, Engineering, and Public Policy (SEPP)</i> and an online version for professional master’s students, and helped to usher in an <i>Undergraduate Minor in SEPP</i>. I have also guest lectured in a number of courses and provided continuing education lectures for lawyers and engineers. Prior to joining OSU, at the University of Minnesota I developed and three courses (<i>Systems Thinking and Modeling, Game Theory and Interdependent Decision-Making, Environmental and Natural Resource Economics</i>), taught another (<i>Empirical Analysis I</i>), organized a research seminar (<i>STEP-FAR – Science, Technology, and Environmental Policy Feedback and Research</i>) and was an instructor in the Boreas Leadership Program (<i>Systems Thinking and Tools</i>).</p> <p>I have also interacted with various stakeholders on, and participated in events for, issues where energy, environment, and policy intersect. These efforts include speaking at events for the local public, working with a computer animator to produce a popular publicly accessible computer animated video on energy, climate, and geothermal energy, providing expert participation to <i>Mission Innovation</i>, and participated in forums for industrial and policy decision-makers, such as for the <i>Midwest Governor’s Association</i> and <i>Assemblée Nationale</i> (the lower house of the French Parliament).</p> <p>I have also been profiled in <i>Earth Magazine</i>, spoken to and been quoted in the media and public press on research developments and potential policy changes (e.g., <i>Columbus Dispatch, Scientific American, Climate Central</i>), given a press conference (<i>European Geosciences Union</i>), and our research has appeared in the popular press, including in <i>Discover</i> magazine.</p>
SELECTED SERVICE	<p>Energy Academic Collaboration Council (Reports to OSU Provost), 2017 - present                  Associate Director, OSU Subsurface Energy Resources Center, 2015 – 2017                  Graduate Studies Committee, OSU Environmental Science Graduate Program, 2014 – 2017                  SEPP Program Development Committee, College of Engineering, 2017 – present                  Doctoral Committee, John Glenn College of Public Affairs, 2013 – present                  Conference Session Co-Convener: AGU (2016), AASHE (2015)                  Workshop Organizer: Energy Storage in Sedimentary Basins (2016)</p>

<b>CONTACT INFORMATION</b>	Department of Civil, Environmental, and Geodetic Engineering 483b Hitchcock Hall, 2070 Neil Avenue V: (614) 688-2131  email: bielicki.2@osu.edu   web: <a href="https://u.osu.edu/bielicki.2">https://u.osu.edu/bielicki.2</a>  Google Scholar: <a href="https://scholar.google.com/citations?hl=en&amp;user=CXfsog0AAAAJ">https://scholar.google.com/citations?hl=en&amp;user=CXfsog0AAAAJ</a> ResearcherID: <a href="http://www.researcherid.com/rid/D-4239-2016">http://www.researcherid.com/rid/D-4239-2016</a> ORCID ID: <a href="https://orcid.org/0000-0001-8449-9328">https://orcid.org/0000-0001-8449-9328</a>	The John Glenn College of Public Affairs 310c Page Hall, 1810 College Road V: (614) 688-2113
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**EDUCATION**

2009	Harvard University, Cambridge MA	Public Policy	Ph.D.
2003	Harvard University, Cambridge MA	Public Administration	M.P.A.
2000	University of Chicago, Chicago IL	Business Administration	M.B.A.
1996	Valparaiso University, Valparaiso IN	Mechanical Engineering	B.S.

**PROFESSIONAL APPOINTMENTS**

	<b>The Ohio State University</b> , Columbus OH		
2015 – PRESENT	Courtesy Faculty Appointment, City and Regional Planning, Knowlton School of Architecture		
2013 – PRESENT	Assistant Professor, Department of Civil, Environmental, and Geodetic Engineering		
2013 – PRESENT	Assistant Professor, John Glenn College of Public Affairs		
2013 – PRESENT	Affiliated Faculty, Environmental Science Graduate Program		
	<b>ETH-Zürich</b> , Zurich Switzerland		
2017	Guest Professor, Department of Earth Sciences, Geothermal Energy and Geofluids Group		
	<b>University of Minnesota</b> , Minneapolis MN		
2011 – 2015	Instructor, Boreas Leadership Program, Institute on the Environment		
2011 – 2013	Research Associate, Center for Science, Technology, and Public Policy, Humphrey School of Public Affairs		
2011 – 2013	Graduate Faculty, Humphrey School of Public Affairs		
2010 – 2011	Post-Doctoral Student (Visiting Research Scientist), Center for Science, Technology, and Public Policy, Humphrey School of Public Affairs		
	<b>Oak Ridge National Laboratory</b> , Oak Ridge TN		
2009 – 2010	Weinberg Fellow, Energy and Transportation Science Division		
	<b>University of Tennessee</b> , Knoxville TN		
2009 – 2010	Fellow for Energy and Environment, Howard Baker Center for Public Policy		
	<b>Harvard University</b> , Cambridge MA		
2006 – 2009	Research Fellow, Energy Technology Innovation Policy Group, Belfer Center for Science and International Affairs, Harvard Kennedy School		

2003 – 2005	Teaching Fellow, Harvard Kennedy School: Analytic Frameworks for Policy Analysis (3x); Environmental Science for Policy Analysis; Game Theory, Strategic Decisions, and Negotiations; Individual and Collective Decision-Making
2007	<b>Los Alamos National Laboratory</b> , Los Alamos NM Graduate Research Assistant, Environmental and Spatial Analysis Group; Hydrology, Geochemistry, and Geology Group, Earth and Environmental Systems Division
1996 – 2000	<b>Fermi National Acceleratory Laboratory, U.S. Department of Energy</b> , Batavia IL Mechanical Engineer, Beams Division, Mechanical Support Department
1993 – 1995	Engineering Co-Op, Accelerator Division, Mechanical Support Department
1996	<b>Laboratory for Laser Energetics, University of Rochester</b> , Rochester NY Laboratory Engineer, Optical Manufacturing Department

**PROGRAMS**

2006	Young Scientists Summer Program, International Institute of Applied Systems Analysis. Laxenburg, Austria
2004	Complex Systems Summer School, Santa Fe Institute. Santa Fe NM.

**RESEARCH INTERESTS**

Interactions between Energy and Environmental Systems and Policy; Carbon Management; Energy-Water Nexus; Renewable Energy; Integrated Assessment; Climate Change Adaptation, Mitigation, and Governance; Risks of Emerging Subsurface Technologies

**HONORS, AWARDS, FELLOWSHIPS, CERTIFICATIONS**

2017	2016 Lumley Research Award, College of Engineering, Ohio State University
2016	Semi-Finalist (Team TeraCOH), Carbon XPrize, Xprize Foundation
2015	Best Paper Presentations Award (co-author), Geothermal Resources Council Annual Meeting
2014	Best Paper Presentations Award (co-author), Geothermal Resources Council Annual Meeting
2013	Best Paper Presentations Award (co-author), Geothermal Resources Council Annual Meeting
2011	Outstanding Post-Doctoral Scholar Award, University of Minnesota
2009	Alvin Weinberg Fellowship, Oak Ridge National Laboratory
2004	Joseph G. Crump Fellowship, Environment and Natural Resources Program, Harvard University
1997	American Mensa
1996	Sigma Xi, the Scientific Research Society
1996	Mortar Board, Senior Honor Society
1996	Engineer in Training (EIT)
1994	Tau Beta Pi Engineering Honor Society
1992	Herman C. Hesse Outstanding Freshman Engineering Student Award, Valparaiso University
1992	Alpha Lambda Delta Freshman Honor Society
1992	Herman C. Hesse Outstanding Freshman Engineering Student Award
1991 – 1995	Lutheran Brotherhood Scholarship
1991 – 1995	Aid Association of Lutherans Scholarship

## PROFESSIONAL MEMBERSHIPS

2016 – PRESENT	American Society of Engineering Education
2015 – PRESENT	Association of Environmental Engineering and Science Professors
2013 – PRESENT	European Geosciences Union
2009 – PRESENT	American Association for the Advancement of Science
2007 – PRESENT	American Geophysical Union
2005 – PRESENT	American Economic Society
1992 – PRESENT	American Society of Mechanical Engineers
2013 – 2017	Geothermal Resources Council
2004 – 2008	Society for Industrial and Applied Mathematics

## PUBLICATIONS (STUDENTS: ADVISEE, \*PRESENT INSTITUTION, \*\*PRIOR INSTITUTION, \*\*\*OTHER INSTITUTION)

### BOOK CHAPTERS

2018	1. Carlarne, C., <b>Bielicki, J.</b> (2018). “Nature and Human Well-Being: The Role of Environmental Law.” Van den Bosch, M., and Bird, W. (eds.). <u>Oxford Textbook of Nature and Public Health</u> . ISBN: 9780198725916.
2016	2. Khanal, S., Hochman, G., Shah, A., <b>Bielicki, J.</b> (2016). “Government Policy and Standards for Bioenergy.” in Li, Y. and Khanal, S. (eds.) <u>Bioenergy: Principles and Applications</u> . John Wiley and Sons. ISBN: 9781118568316.
2007	3. <b>Bielicki, J.</b> , Kalinowksi, A., Zhao, L. (2007). “Getting it Done: Barriers and Incentives to Deploying Carbon Capture and Storage.” In <u>Fundamentals of Carbon Capture and Storage Technology</u> . Petroleum Economist: UK.

### REFEREED PAPERS

2018	1. <b>Bielicki, J.</b> , <u>Langenfeld, J.*</u> , Tao, Z.***, Middleton, R., Menefee, A.***, Clarens, A. (2018). "The Geospatial and Economic Viability of CO <sub>2</sub> Storage in Hydrocarbon Depleted Fractured Shale Formations." <i>International Journal of Greenhouse Gas Control</i> , 75, 8-23. <a href="https://doi.org/10.1016/j.ijggc.2018.05.015">https://doi.org/10.1016/j.ijggc.2018.05.015</a>
	2. Dai, Z., Zhang, Y., <b>Bielicki, J.</b> , Amooie, M.*, Zhang, M., Yang, C., Zhou, Y., Ampomah, W., Xiao, T., Jia, W., Middleton, R., Zhang, W., Sun, Y., Moortgat, J., Soltanian, M., Stauffer, P. (2018). "Heterogeneity-Assisted Carbon Dioxide Storage in Marine Sediments." <i>Applied Energy</i> , 225, 876-893. <a href="https://doi.org/10.1016/j.apenergy.2018.05.038">https://doi.org/10.1016/j.apenergy.2018.05.038</a>
	3. <u>Wang, Y.*</u> , Sivandran, G., <b>Bielicki, J.</b> (2018). “The Stationarity of Two Statistical Downscaling Methods for Precipitation under Different Choices of Cross-Validation Periods.” <i>International Journal of Climatology</i> . 38(suppl. 1), e330-e348. <a href="https://dx.doi.org/10.1002/joc.5375">https://dx.doi.org/10.1002/joc.5375</a>
	4. <u>Wang, Y.*</u> , <b>Bielicki, J.</b> (2018). “Acclimation and the Response of Hourly Electricity Loads to Meteorological Variables.” <i>Energy</i> , 142, 473-485. <a href="https://doi.org/10.1016/j.energy.2017.10.037">https://doi.org/10.1016/j.energy.2017.10.037</a>
2017	5. Deng, H., <b>Bielicki, J.</b> , Oppenheimer, M., Fitts, J., Peters, C. (2017). “Leakage Risks of Geologic CO <sub>2</sub> Sequestration and the Impacts on the Global Energy System and Climate Mitigation.” <i>Climatic Change</i> , 144(2), 151-163. <a href="http://dx.doi.org/10.1007/s10584-017-2035-8">http://dx.doi.org/10.1007/s10584-017-2035-8</a>
	6. Harp, D., Pawar, R., Stauffer, P., O’Malley, D., Jiao, Z., Egenolf, E., Miller, T., Martinez, D.***, <u>Hunter, K.*</u> , Middleton, R., <b>Bielicki, J.</b> (2017). “Development of Robust Pressure Management Strategies for Geologic CO <sub>2</sub> Sequestration.” <i>International</i>

*Journal of Greenhouse Gas Control*, 64, 43-59.  
<https://doi.org/10.1016/j.ijggc.2017.06.012>

2016

7. Buscheck, T., **Bielicki, J.**, White, J., Sun, Y., Hao, Y., Bourcier, W., Carroll, S., Aines, R. (2016) "Pre-Injection Brine Production in CO<sub>2</sub> Storage Reservoirs: An Approach to Augment the Development, Operation, and Performance of CCS while Generating Water." *International Journal of Greenhouse Gas Control*. 54(2), 499-512.  
<http://dx.doi.org/10.1016/j.ijggc.2016.04.018>
8. Buscheck, T., **Bielicki, J.**, Edmunds, T., Hao, T., Sun, Y., Randolph, J., Saar, M. (2016). "Multi-Fluid Geo-Energy Systems: Using Geologic CO<sub>2</sub> Storage for Geothermal Energy Production and Grid-Scale Energy Storage in Sedimentary Basins." *Geosphere*, 12(3), 1-19.  
<http://geosphere.gsapubs.org/content/early/2016/05/05/GES01207.1.full.pdf>
9. **Bielicki, J.**, Pollak, M., Deng, H.\*\*\*, Wilson, E., Fitts, J., Peters, C. (2016) "The Leakage Risk Monetization Model for Geologic CO<sub>2</sub> Storage." *Environmental Science & Technology*, 50(10), 4923-4931. <http://dx.doi.org/10.1021/acs.est.5b05329>
10. Buscheck, T., White, J., Carroll, S., **Bielicki, J.**, Aines, R. (2016) "Managing Geologic Storage with Pre-Injection at Brine Production: A Strategy Evaluated with a Model of CO<sub>2</sub> Injection at Snøhvit." *Energy & Environmental Science*, 9(1), 1504-1512.  
<http://dx.doi.org/10.1039/C5EE03648H>

2015

11. Buscheck, T., **Bielicki, J.** (2015). "Reducing Energy's Footprint by Producing Water and Storing CO<sub>2</sub>." *Cornerstone*, 3(3), Autumn 2015. (editor-reviewed).  
<http://cornerstonemag.net/reducing-energys-footprint-by-producing-water-and-storing-co2/>
12. Wattenberg, E., **Bielicki, J.**, Suchomel, A.\*\*, Sweet, J.\*\*, Vold, E.\*\*, Ramachandran, G. (2015). "Assessment of Acute and Chronic Health Hazards of Hydraulic Fracturing Fluids." *Journal of Occupational and Environmental Hygiene*.  
<http://dx.doi.org/10.1080/15459624.2015.1029612>
13. Middleton, R., Levine, J., **Bielicki, J.**, Visanawathan, H., Carey, J.W., Stauffer, P. (2015). "Jumpstarting Commercial-Scale CO<sub>2</sub> Capture and Storage with Ethylene Production and Enhanced Oil Recovery in the U.S. Gulf." *Greenhouse Gases: Science and Technology*. <http://dx.doi.org/10.1002/ghg.1490>
14. **Bielicki, J.**, Peters, C., Fitts, J., Wilson, E. (2015). "An Examination of Geologic Carbon Sequestration Policies in the Context of Leakage Potential." *International Journal of Greenhouse Gas Control*, 37, 61-75.  
<http://dx.doi.org/10.1016/j.ijggc.2015.02.023>
15. Adams, B.\*\*, Kuehn, T., **Bielicki, J.**, Randolph, J., Saar, M. (2015). "A Comparison of the Electric Power Output of CO<sub>2</sub> Plume Geothermal (CPG) and Brine Geothermal Systems for Varying Reservoir Conditions." *Applied Energy*, 140, 365-377.  
<http://dx.doi.org/10.1016/j.apenergy.2014.11.043>

2014

16. Middleton, R., Clarens, A., Liu, X.\*\*\*, **Bielicki, J.**, Levine, J. (2014). "CO<sub>2</sub> Deserts: Implications of Existing CO<sub>2</sub> Supply Limitations for Carbon Management." *Environmental Science & Technology*, 40, 11713-11720.  
<http://dx.doi.org/10.1021/es5022685>
17. Paine, N.\*\*, Homans, F., Pollak, M., **Bielicki, J.**, and Wilson, E., (2014). "Why Rules Matter: Optimizing Pumped Hydroelectric Storage Under Different ISO Markets." *Energy Economics*, 46, 10-19. <http://dx.doi.org/10.1016/j.eneco.2014.08.017>
18. **Bielicki, J.**, Calas, G.\*\*\*, Ha-Duong, M., Middleton, R. (2014). "National Corridors for Climate Change Mitigation: Managing Industrial CO<sub>2</sub> Emissions in France." *Greenhouse Gases: Science and Technology*, 4(3), 262-277.  
<http://dx.doi.org/10.1002/ghg.1395>

19. Adams, B.\*\* , Kuehn, T., **Bielicki, J.**, Randolph, J., Saar, M., (2014). “On the Importance of the Thermosiphon Effect in CO<sub>2</sub> Plume Geothermal (CPG) Power Systems”. *Energy*, 69, 409-418. <http://dx.doi.org/10.1016/j.energy.2014.03.032>
20. **Bielicki, J.**, Pollak, M., Fitts, J., Peters, C., Wilson, E. (2014). “Causes and Financial Consequences of Geologic CO<sub>2</sub> Storage Reservoir Leakage and Interference with Other Subsurface Resources.” *International Journal of Greenhouse Gas Control*, 20, 272-284. <http://dx.doi.org/10.1016/j.ijggc.2013.10.024>
- 2013
21. Haase, R.\*\* , **Bielicki, J.**, Kuzma, J., (2013). “Innovation in Emerging Energy Technologies: A Case Study Analysis to Inform the Path Forward for Algal Biofuels.” *Energy Policy*, 61, 1595-1607. <http://dx.doi.org/10.1016/j.enpol.2013.06.029>
22. Parish, E., Efrogmson, R., Dale, V., Dodder, R., Kline, K., McBride, A., Johnson, T., Hilliard, M., **Bielicki, J.** (2013). “Comparing Scales of Environmental Effects from Gasoline and Ethanol Production.” *Environmental Management*. 51, 307-338. <http://dx.doi.org/10.1007/s00267-012-9983-6>
23. Efrogmson, R., Dale, V., Kline, K., McBride, A., **Bielicki, J.**, Smith, R., Parish, E., Schweizer, P. Kline, K., Shaw, D. (2013). “Environmental Indicators of Biofuel Sustainability: What About Context?” *Environmental Management*. 51, 291-306. <http://dx.doi.org/10.1007/s00267-012-9907-5>
24. Johnson, T., **Bielicki, J.**, Dodder, R., Hilliard, M., Kaplan, O., Miller, C.A. (2013). “Advancing Sustainable Bioenergy: Evolving Stakeholder Interests and the Relevance of Research.” *Environmental Management*. 51, 331-353. <http://dx.doi.org/10.1007/s00267-012-9884-8>
- 2012
25. Lilliestam, J.\*\*\*, **Bielicki, J.**, and Patt, A. (2012). “Comparing Carbon Capture and Storage (CCS) with Concentrated Solar Power (CSP): Potentials, Costs, Risks, and Barriers.” *Energy Policy*. 47, 447-455. <http://dx.doi.org/10.1016/j.enpol.2012.05.020>
26. Middleton, R., Kuby, M. **Bielicki, J.** (2012). “Generating Candidate Networks for Optimization: The CO<sub>2</sub> Capture and Storage Optimization Problem.” *Computers, Environment, and Urban Systems*. 36, 18-29. <http://dx.doi.org/10.1016/j.compenvurbsys.2011.08.002>
- 2011
27. Dammel, J.\*\* , **Bielicki, J.**, Pollak, M., Wilson, E. (2011). “A Tale of Two Technologies: Hydraulic Fracturing and Geologic Carbon Sequestration.” *Environmental Science & Technology*, 45, 5075-5076. (editor-reviewed) <http://pubs.acs.org/doi/pdf/10.1021/es201403c>
28. Kuby, M., **Bielicki, J.**, Middleton, R. (2011). “The Optimal Spatial Deployment of CO<sub>2</sub> Capture and Storage with a Price on Carbon.” *International Regional Science Review*, 3, 285-305. <http://dx.doi.org/10.1177/0160017610397191>
- 2009
29. Middleton, R., **Bielicki, J.** (2009). “A Scaleable Infrastructure Model for Carbon Capture and Storage: *SimCCS*.” *Energy Policy*, 37, 1052-1060. <http://dx.doi.org/10.1016/j.enpol.2008.09.049>
- 1998
30. Palumbo, R., Lede, J., Boutin, O., Ricart, E., Steinfeld, A., Moller, S., Weidenkaff, A., Fletcher, E., **Bielicki, J.** (1998). “The Production of Zn from ZnO in a High Temperature Solar Decomposition Process – The Scientific Framework for the Process.” *Chemical Engineering Science*. 53(14), 2503-2517. [http://dx.doi.org/10.1016/S0009-2509\(98\)00063-33](http://dx.doi.org/10.1016/S0009-2509(98)00063-33)
- IN REVISION
1. **Bielicki, J.**, Adams, B., Choi, H.\*\*, Jamiyson, B.\*\* , Saar, M., Taff, S., Buscheck, T., Ogland-Hand, J.\* (In Revision, October 2017). “Engineering Cost-Competitive Geothermal Electricity from Geologic CO<sub>2</sub> Storage.” *Energy Conversion and Management*.

UNDER REVIEW

2. Ogland-Hand, J.\*, **Bielicki, J.**, Wang, Y.\*, Adams, B., Buscheck, T., Saar, M. (In Revision, April 2018). "The Value of Bulk Energy Storage for Reducing CO<sub>2</sub> Emissions and Water Requirements from Regional Electricity Systems." *Energy Conversion and Management*.
1. Tallis, H., Hawthorne, P., Polasky, S., Reid, J., Beck, M., Brauman, K., **Bielicki, J.**, Binder, S., Burgess, M., Cassidy, E., Clark, A., Costello, C., Fargione, J., Game, E., Gerber, J., Isbell, F., Kisecker, K., McDonald, R., Metian, M., Molnar, J., Mueller, ., O'Connell, C., Ovando, D., Troell, M., Boucher, T., McPeck, B. (Revised and Re-submitted, April 2018) "Is a Hopeful Vision of Conservation and Human Well-Being Feasible?" *Frontiers of Ecology and Environment*.

IN PREPARATION

1. DeLuca, M.\*, **Bielicki, J.**, Langenfeld, J.\*, (in prep). "Infrastructure Deployment for CO<sub>2</sub> Capture and Storage that is Robust to Reservoir Leakage Risk." *Energy Policy*
2. Fleming, M.\*\* , Adams, B., Kuehn, T., **Bielicki, J.**, Saar, M. (in prep). "The Effect of Water-Saturated CO<sub>2</sub> on Wellhead Conditions and Power Production for CO<sub>2</sub> Plume Geothermal Power Plants." *Geothermics*
3. Fleming, M.\*\* , Adams, B., Kuehn, T., **Bielicki, J.**, Saar, M. (in prep). "Design and Performance of a Large-Scale Energy Storage System using Carbon Dioxide Plume Geothermal Energy." *Geothermics*
4. Hunter, K.\*, **Bielicki, J.**, Harp, D., Middleton, R., Stauffer, P. (in prep). "Integrated CO<sub>2</sub> Storage and Enhance Water Recovery in the Rock Springs Uplift." *Greenhouse Gases: Science and Technology*.
5. Ogland-Hand, J.\*, **Bielicki, J.**, Patel, I.\*, (in prep). "Optimal Heat Mining of Geothermal Reservoirs". *Renewable Energy*
6. Ogland-Hand, J.\*, **Bielicki, J.**, Adams, B., Buscheck, T., Sioshansi, R. (in prep). "The Value of CO<sub>2</sub>-Bulk Energy Storage with Wind in Transmission-Constrained Electricity Systems." *Energy*
7. Wang, Y.\*, Byers, E., Parkinson, S., Wanders, N., **Bielicki, J.** (in prep). "Water Limitations on Coal-Fired Power Plants in Asia under Different Warming Scenarios." *Energy and Environmental Science*.

#### CONFERENCE PAPERS AND PROCEEDINGS

2018

1. Ogland-Hand, J.\*, **Bielicki, J.**, Nelson, E., Adams, B., Buscheck, T., Saar, M., Sioshansi, R. (2018). "Effects of Bulk Energy Storage in Sedimentary Basin Geothermal Resources on Transmission Constrained Electricity Systems." *Proceedings of the 43rd Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford CA, February 12-14, 2018. SGP-TR-213.  
<https://pangea.stanford.edu/ERE/db/GeoConf/papers/SGW/2018/Oglandhand.pdf>
2. Fleming, M.\*\* , Saar, M., Adams, B., Ogland-Hand, J.\*, Kuehn, T., Buscheck, T., **Bielicki, J.**, Randolph, J. (2018). "High Efficiency and Large-Scale Subsurface Energy Storage with CO<sub>2</sub>." *Proceedings of the 43rd Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford CA, February 12-14, 2018. SGP-TR-213.  
<https://pangea.stanford.edu/ERE/db/GeoConf/papers/SGW/2018/Fleming.pdf>

2017

3. Hunter, K.\*, **Bielicki, J.**, Middleton, R., Stauffer, P., Harp, D., Pawar, R., Martinez, D.\*\*\* (2017). "Integrated CO<sub>2</sub> Storage and Brine Production." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 6331-6336.  
<http://dx.doi.org/10.1016/j.egypro.2017.03.1769>
4. Ogland-Hand, J.\*, **Bielicki, J.**, Buscheck, T. (2017). "The Value of CO<sub>2</sub>-Bulk Energy Storage to Reducing CO<sub>2</sub> Emissions." *13<sup>th</sup> International Conference on Greenhouse*

- Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 6886-6892. <http://dx.doi.org/10.1016/j.egypro.2017.03.1830>
5. Langenfeld, J.\*, **Bielicki, J.**, Tao, Z.\*\*\*, Middleton, R., Menefee, A.\*\*\*, Clarens, A. (2017). "Response of Integrated Carbon Dioxide Capture and Storage Systems in Saline Aquifers and Fractured Shale Formations to Changes in Capture Costs." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 4099-4105. <http://dx.doi.org/10.1016/j.egypro.2017.03.1550>
  6. Langenfeld, J.\*, **Bielicki, J.** (2017). "Assessment of Sites for CO<sub>2</sub> Storage and CO<sub>2</sub> Capture, Utilization and Storage Systems in Geothermal Reservoirs." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 7009-7017. <http://dx.doi.org/10.1016/j.egypro.2017.03.1842>
  7. **Bielicki, J.**, Deng, H., Fitts, J., Peters, C., Wilson, E. (2017). "Monetizing Leakage Risk with Secondary Trapping in Intervening Stratigraphic Layers." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 4256-4261. <http://dx.doi.org/10.1016/j.egypro.2017.03.1565>
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  9. Middleton, R., Levine, J., **Bielicki, J.**, Stauffer, P. (2017). "Industrial CO<sub>2</sub> and Carbon Capture: Near-Term Benefit, Long-Term Necessity." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 7601-7605. <https://doi.org/10.1016/j.egypro.2017.03.1892>
  10. Buscheck, T., **Bielicki, J.**, Randolph, J. (2017). "CO<sub>2</sub> Earth Storage: Enhanced Geothermal Energy and Water Recovery and Energy Storage." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 6870-6879. <https://doi.org/10.1016/j.egypro.2017.03.1615>
  11. Buscheck, T., **Bielicki, J.**, White, J., Sun, Y., Hao, Y., Bourcier, W., Carroll, S., Aines, R. (2017). "Managing Geologic CO<sub>2</sub> Storage with Pre-Injection Brine Production in Tandem Reservoirs." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. *Energy Procedia*, 114, 4757-4764. <https://doi.org/10.1016/j.egypro.2017.03.1826>
  12. Dai, Z., Zhang, Y., Stauffer, P., Xiao, T., Zhang, M., Ampomah, W., Yang, C., Zhou, Y., Ding, M., Middleton, R., Soltanian, M. R., **Bielicki, J.**, (2017). "Injectivity Evaluation for Offshore CO<sub>2</sub> Sequestration in Marine Sediments." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. *Energy Procedia*, 114, 2921-2932. <https://doi.org/10.1016/j.egypro.2017.03.1420>
  13. **Bielicki, J.**, Adams, B.\*\* , Choi, H.\*\*, Jamiyurasuren, B., Saar, M., Taff, S., Buscheck, T., Ogland-Hand, J.\*, (2016). "Sedimentary Basin Geothermal Resource for Cost-Effective Generation of Renewable Electricity from Sequestered Carbon Dioxide." *Proceedings of the 41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford CA, February 22-24, 2016. SGP-TR-209. <https://pangea.stanford.edu/ERE/db/GeoConf/papers/SGW/2016/Bielicki2.pdf>
  14. **Bielicki, J.**, Blackwell, D., Harp, D., Karra, S., Kelley, S., Kelley, R., Middleton, R., Person, M., Sutula, G.\* (2016). "Hydrogeologic Windows and Estimating the Prospectivity of Geothermal Resources." *Proceedings of the 41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford CA, February 22-24, 2016. SGP-TR-209. <https://pangea.stanford.edu/ERE/db/GeoConf/papers/SGW/2016/Bielicki1.pdf>

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15. Ogland-Hand, J.\*, **Bielicki, J.**, Buscheck, T. (2016). "The Value of Bulk Energy Storage in Sedimentary Basin Geothermal Resources for Reducing CO<sub>2</sub> Emissions." *Proceedings of the 41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford CA, February 22-24, 2016. SGP-TR-209. <https://pangea.stanford.edu/ERE/db/GeoConf/papers/SGW/2016/Oglandhand.pdf>
16. Patel, I.\*, **Bielicki, J.**, Buscheck, T. (2016). "A Reduced Form Representation of Temperature Drawdown in Sedimentary Basin Geothermal Reservoirs for the Development of Optimal Management Strategies." *Proceedings of the 41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*. Stanford University, Stanford CA, February 22-24, 2016. SGP-TR-209. <https://pangea.stanford.edu/ERE/db/GeoConf/papers/SGW/2016/Patel.pdf>
17. Person, M., Kelley, S., Kelley, R., Karra, S., Harp, D., Witcher, J., **Bielicki, J.**, Sutula, G.\*, Middleton, R., Pepin, J. (2015). "Hydrogeologic Windows: Detection of Blind and Traditional Geothermal Play Fairways in Southwestern New Mexico Using Conservative Element Concentrations and "Up-Winding." *39<sup>th</sup> Geothermal Resources Council. Annual Meeting*, September 20-23, 2015. Reno, NV. *GRC Transactions*, 39, 751-759.
18. Buscheck, T., **Bielicki, J.**, Chen, M., Sun, Y., Hao, Y., Edmunds, T., Saar, M., Randolph, J. (2015). "Multi-Fluid Sedimentary Geothermal Energy Systems for Dispatchable Renewable Electricity." *Proceedings World Geothermal Congress 2015*. Melbourne Australia, 19-25 April 2015. <https://pangea.stanford.edu/ERE/db/WGC/papers/WGC/2015/32008.pdf>
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20. **Bielicki, J.**, Middleton, R., Levine, J., Stauffer, P. (2014). "An Alternative Pathway for Stimulating Regional Deployment of Carbon Dioxide Capture and Storage." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. *Energy Procedia*, 63, 7215-7224. <http://dx.doi.org/10.1016/j.egypro.2014.11.757>
21. Deng, H.\*\*\*, **Bielicki, J.**, Oppenheimer, M., Fitts, J., Peters, C. (2014). "Policy Implications of Monetized Leakage Risk from Geologic CO<sub>2</sub> Storage Reservoirs." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. *Energy Procedia*, 63, 6852-6863. <http://dx.doi.org/10.1016/j.egypro.2014.11.719>
22. Tao, Z.\*\*\*, **Bielicki, J.**, Clarens, A. (2014). "Physiochemical Factors Impacting CO<sub>2</sub> Sequestration in Depleted Shale Formations: The Case of the Utica Shale." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. *Energy Procedia*, 63, 5153-5163. <http://dx.doi.org/10.1016/j.egypro.2014.11.545>
23. Buscheck, T., White, J., Chen, M., Sun, Y., Hao, Y., Aines, R., Bourcier, W., **Bielicki, J.** (2014). "Pre-Injection Brine Production for Managing Reservoir Pressure in Compartmentalized CO<sub>2</sub> Storage Reservoirs." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. *Energy Procedia*, 63, 5333-5340. <http://dx.doi.org/10.1016/j.egypro.2014.11.565>
24. **Bielicki, J.**, Clarens, A., Middleton, R., Liu, X.\*\*\*, Barbosa de Carvalho, M.\*\*\*, Giovanini Junior, N.\*\*\* (2014). "Shifting Sands in a CO<sub>2</sub> Desert: Replacing Extracted CO<sub>2</sub> with Byproduct CO<sub>2</sub> for Use in Enhanced Oil Recovery." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. *Energy Procedia*, 63, 6567-6564. <http://dx.doi.org/10.1016/j.egypro.2014.11.692>
25. Buscheck, T., **Bielicki, J.**, Chen, M., Sun, Y., Hao, Y., Edmunds, T., Saar, M., Randolph, J. (2014). "Integrating CO<sub>2</sub> Storage with Geothermal Resources for Dispatchable Renewable Electricity." *12<sup>th</sup> International Conference on Greenhouse Gas*

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<http://dx.doi.org/10.1016/j.egypro.2014.11.796>
26. Edmunds, T., Sotorrio, P., **Bielicki, J.**, Buscheck, T. (2014). "Geothermal Power for Integration of Intermittent Generation." *38<sup>th</sup> Geothermal Resources Council. Annual Meeting*. September 28-October 1, 2014. Portland, OR. <https://e-reportsext.llnl.gov/pdf/776358.pdf>
27. Buscheck, T., **Bielicki, J.**, Randolph, J., Chen, M., Hao, Y., Edmunds, T., Sun, Y. (2014). "Multi-Fluid Geothermal Energy Systems in Stratigraphic Reservoirs: Using Brine, N<sub>2</sub>, and CO<sub>2</sub> for Dispatchable Renewable Power Generation and Bulk Energy Storage" *Proceedings of the 39<sup>th</sup> Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford CA, February 24-26, 2014. SGP-TR-202.  
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28. Buscheck, T., Chen, M., Hao, Y., **Bielicki, J.**, Randolph, J., Sun, Y., Choi, H.\*\* (2013). "Multi-Fluid Geothermal Energy Production and Storage in Stratigraphic Reservoirs." *37<sup>th</sup> Geothermal Resources Council. Annual Meeting*. September 29 – October 2, 2013. Las Vegas, NV. <https://e-reports-ext.llnl.gov/pdf/755658.pdf>
29. Pollak, M., **Bielicki, J.**, Dammel, J.\*\*, Wilson, E., Fitts, J., Peters, C. (2013). "The Leakage Impact Valuation (LIV) Method for Leakage from Geologic CO<sub>2</sub> Storage Reservoirs." *11<sup>th</sup> International Conference on Greenhouse Gas Technologies*. Kyoto, Japan. November 18-22, 2012. *Energy Procedia*, (37) 2819-2827.  
<http://dx.doi.org/10.1016/j.egypro.2013.06.167>
30. **Bielicki, J.**, Pollak, M., Wilson, E., Fitts, J., Peters, C. (2013). "A Methodology for Monetizing Basin-Scale Leakage Risk and Stakeholder Impacts." *11<sup>th</sup> International Conference on Greenhouse Gas Technologies*. Kyoto, Japan. November 18-22, 2012. *Energy Procedia*. (37), 4665-4672. <http://dx.doi.org/10.1016/j.egypro.2013.06.375>
31. Randolph, J., Saar, M., **Bielicki, J.** (2013). "Geothermal Energy Production at Geologic CO<sub>2</sub> Sequestration sites: Impact of Thermal Drawdown on Reservoir Pressure." *11<sup>th</sup> International Conference on Greenhouse Gas Technologies*. Kyoto, Japan. November 18-22, 2012. *Energy Procedia* (37), 6625-6635.  
<http://dx.doi.org/10.1016/j.egypro.2013.06.595>,
32. Buscheck, T., Chen, M., Lu, C., Sun, Y., Hao, Y., Celia, M. Elliot, T., **Bielicki, J.**, Choi, H.\*\* (2013). "Analysis of Operational Strategies for Utilizing CO<sub>2</sub> for Geothermal Energy Production." *Proceedings of the 38<sup>th</sup> Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford CA, February 11-13, 2013. SGP-TR-198. <https://pangea.stanford.edu/ERE/pdf/IGAstandard/SGW/2013/Buscheck.pdf>
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35. Middleton, R., **Bielicki, J.** (2009). "A Comprehensive Carbon Capture and Storage Infrastructure Model." *9<sup>th</sup> International Greenhouse Gas Technologies Conference*, Washington DC. November 17-20, 2008. *Energy Procedia*, 1(1), 1691-1698.  
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38. **Bielicki, J.** (2008). "Returns to Scale for Carbon Capture and Storage Infrastructure and Deployment," *7<sup>th</sup> Annual Conference on Carbon Capture and Sequestration*, Pittsburgh, PA May 5-8. [http://belfercenter.ksg.harvard.edu/files/Bielicki\\_CCSReturnsToScale.pdf](http://belfercenter.ksg.harvard.edu/files/Bielicki_CCSReturnsToScale.pdf)
- 2006 39. **Bielicki, J.** Schrag, D. (2006). "On the Influence of Carbon Capture and Storage on the Location of Electric Power Generation." *Proceedings of the 8<sup>th</sup> International Conference on Greenhouse Gas Technologies*. Trondheim, Norway. June 19-22, 2006.
- 1999 40. Bieniosek, F., Kurmaev, O., Cherepakhin, A. **Bielicki, J.**, Dinkel, J. "Beam Sweeping System." (1999) *Proceedings of the 18<sup>th</sup> Particle Accelerator Conference*, 2, 1249-1251. New York; May 1999.  
<https://accelconf.web.cern.ch/accelconf/p99/PAPERS/TUA74.PDF>

#### TECHNICAL REPORTS AND OTHER PUBLICATIONS

- 2018 1. Numerous Authors, "Crosscut Priority Research Direction: Developing Tools to Integrate Life-Cycle Techno-Economic, Environmental and Social Considerations to Guide Technology Portfolio Optimization." Edited by: Powell, J., Buchanan, M. (Co-Chairs) *Mission Innovation – Accelerating the Clean Energy Revolution*. Carbon Capture, Utilization, and Storage Experts' Workshop. Houston, TX. September 25-29, 2017. (Forthcoming)
- 2017 2. Saar, M., **Bielicki, J.**, Kuehn, T., Randolph, J., Taff, S. Final Report for NSF Award #1230691: "SEP: A Novel Method Using CO<sub>2</sub> and Geothermal Resources for Sustainable Energy Production and Storage." September, 2017.
3. **Bielicki, J.**, Buscheck, T. Final Report for NSF SedHeat RCN Award: "Incubator Workshop: Energy Storage in Sedimentary Basin Geothermal Resources." August, 2017.
4. **Bielicki, J.**, Final Report for USGS/OHRC Award: 2016OH508B "Co-Optimizing Enhanced Water Recovery and CO<sub>2</sub> Sequestration in Ohio." April, 2017.
- 2016 5. **Bielicki, J.**, Final Report for USGS/OHRC Award: G11AP20099 "Developing Integrated Assessments of Water and Energy in Ohio." April, 2017.
- 2015 6. **Bielicki, J.**, Blackwell, D., Harp, D., Karra, S., Kelley, S., Kelley, R., Middleton, R. (PI), Pepin, J., Person, M., Sutula, G., Witcher, J. Final Report for U.S. DOE Award DE-FOA-0000841 / 310130: "DOE Hydrogeologic Windows Final Report." October, 2015
- 2010 7. Numerous Authors, "Technology and Applied R&D Needs for Carbon Capture: Beyond 2020." Resource document for the workshop on basic research needs for carbon capture. "Basic Research Needs for Carbon Capture: Beyond 2020". Edited by: Alivisatos, P., Buchanan, M. (Co-Chairs). *U.S. Department of Energy, Offices of Basic Energy Sciences and of Fossil Energy*. Report of Carbon Capture: Beyond 2020. March 4-5, 2010. Gaithersburg, MD.  
[http://science.energy.gov/~media/bes/pdf/reports/files/Basic\\_Research\\_Needs\\_for\\_Carbon\\_Capture\\_rpt.pdf](http://science.energy.gov/~media/bes/pdf/reports/files/Basic_Research_Needs_for_Carbon_Capture_rpt.pdf)

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| 2009 | <p>8. Numerous Authors, "Grand Challenges for Biological and Environmental Research: A Long-Term Vision". Edited by: Stacey, G. (Chair). <i>U.S. Department of Energy</i>. (DOE-SC0135). A Report from the Biological and Environmental Research Advisory Committee March 2010 Workshop. March 2-5, 2010. Gaithersburg, MD.<br/><a href="http://science.energy.gov/~media/ber/pdf/Ber_ltv_report.pdf">http://science.energy.gov/~media/ber/pdf/Ber_ltv_report.pdf</a></p> <p>9. Numerous Authors, "CCS Guidelines for Community Engagement: Guidelines for Community Engagement in Carbon Dioxide Capture, Transport, and Storage Projects.". Edited by: Forbes, S., Almendra, F., Ziegler, M. Washington: <i>World Resources Institute</i>. ISBN 978-1-56973-756-9<br/><a href="http://www.wri.org/sites/default/files/pdf/ccs_and_community_engagement.pdf">http://www.wri.org/sites/default/files/pdf/ccs_and_community_engagement.pdf</a></p> <p>10. <b>Bielicki, J.</b> (2009). <u>Integrated Systems Analysis and Technological Findings for Carbon Capture and Storage Deployment</u>. Ph.D. Thesis. Harvard University. Cambridge, MA.</p> |
| 2008 | <p>11. Numerous Authors, "CCS Guidelines: Guidelines for Carbon Dioxide Capture, Transport, and Storage". Edited by: Forbes, S., Verma, P., Currey, T., Bradley, M., Friedmann, J., Wade, S. Washington: <i>World Resources Institute</i>. ISBN 978-1-56973-701-9 <a href="http://pdf.wri.org/ccs_guidelines.pdf">http://pdf.wri.org/ccs_guidelines.pdf</a></p> <p>12. Stephens, J., <b>Bielicki, J.</b> "Public Perception of Carbon Capture and Storage Technology". Cambridge: <i>Belfer Center for Science and International Affairs</i>. Harvard Workshop on Public Perception of Carbon Capture and Storage Technology, June 2-3, 2008. Cambridge, MA.<br/><a href="http://belfercenter.ksg.harvard.edu/files/CCS_Public_Perception_Workshop_Report.pdf">http://belfercenter.ksg.harvard.edu/files/CCS_Public_Perception_Workshop_Report.pdf</a></p>   |

## RESEARCH FUNDING

I have been active in organizing research from various perspectives, with awards from competitive entities such as the U.S. National Science Foundation, the U.S. Department of Energy, and the Ohio Water Resources Center / U.S. Geologic Survey, as well as other awards from the Ohio Coal Development Office, and elsewhere. Altogether, I have been PI, Co-PI, or Senior Personnel on awards totaling \$15.4M (\$13.2M while at Ohio State University, OSU, with \$12.7M for OSU). My research does not require equipment or other costly resources, and expenditures to date for my Energy Sustainability Research Laboratory at OSU amount to \$826,000 with another \$434,000 in funded projects for my lab over the next few years.

### **ACTIVE GRANTS** (ACTUAL/ANTICIPATED EXPENDITURES FOR MY EFFORTS ARE SHOWN IN PARENTHESES.)

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| 03/2018 -<br>PRESENT | 1. OSU Subsurface Energy Resources Center. "Engineering the Subsurface to Seasonally Store Energy While Sequestering CO <sub>2</sub> " PI: <b>Bielicki, J.</b> Total Award: \$16,000. (\$16,000)   |
| 12/2017 –<br>PRESENT | 2. U.S. Department of Energy, National Energy Technology Laboratory (DE-FE0031566). "Concentrating Rare Earth Elements in Acid Mine Drainage Using Coal Combustion By-Products Through Abandoned Mine Land Reclamation." PI: Cheng, C.-M. (OSU). Co-PIs: <b>Bielicki, J.</b> , Buttaglia, T., Lenhart, J. Total Award: \$487,386. (\$66,449).  |
| 09/2017 –<br>PRESENT | 3. U.S. National Science Foundation, Innovations at the Nexus of Food, Energy, and Water Systems (1739909). "INFEWS/TI: Impacts of Deglobalization on the Sustainability of Regional Food, Energy, Water Systems" U.S. National Science Foundation. PI: Irwin, E. (OSU). Co-PIs: Bakshi, B., <b>Bielicki, J.</b> , Cai, Y., Fiksel, J., Jackson-Smith, D., Martin, J., Randall, A., Sheldon, I., Wilson, R. Total Award: \$2,431,141. (\$264,000). |
| 08/2017 –<br>PRESENT | 4. Ohio Coal Development Office (OER-CDO-D-17-14). "Mineralizing Carbon Dioxide using Stabilized Flue Gas Desulfurization Material in the Presence of Acid Mine  |

- Drainage.” PI: Cheng, C.-M. (OSU). Co-PIs: **Bielicki, J.**, Buttaglia, T. Total Award: \$308,863. (\$73,890).
- 10/2016 – PRESENT 5. OSU Sustainable and Resilient Economy Discovery Theme Program. “Energy Transitions and Bridges: Does What We Emphasize Take Us Where We Want to Be?” PI: **Bielicki, J.**, Co-PIs: Bakshi, B., Sohngen, B., Wilson, R. Total Award: \$31,099. (\$31,099).
- 03/2016 - PRESENT 6. OSU Sustainable and Resilient Economy Discovery Theme Program. “Earth Services: Full Accounting of Human Well-Being Derived from the Planet.” PI: **Bielicki, J.** Co-PIs: Carlarne, C., Gopolakrishnan, S. Total Award: \$29,319. (\$29,319).
- 08/2015 - PRESENT 7. U.S. National Science Foundation (CBET 1508994). “UNS: Collaborative Research: Measurement and Modeling of the Pathways of Potential Fugitive Methane Emissions During Hydrofracking.” PI: Bohrer, G. Co-PIs: **Bielicki, J.**, Bohrerova, Z. Total Award: \$175,812. (\$0).

**COMPLETED PROJECTS** (ACTUAL/ANTICIPATED EXPENDITURES FOR MY EFFORTS ARE SHOWN IN PARENTHESES.)

- 10/2014 – 09/2017 8. U.S. Department of Energy, National Energy Technology Laboratory. (DE-FE0024357). “Utica Shale Energy and Environment Laboratory (USEEL).” PI: Daniels, J. / Cole, D. (OSU). Co-PIs: OSU - Basta, N., **Bielicki, J.**, Bisesi, M., Lanno, R., Blue, T., Cook, A., Darrah, T., Dutta, P., Martin, K. Mouser, P., Schwartz, F., Prakash, S., Sawyer, D., Wilkins, M., Toman, E. Wolfe, B.; Miami – Brudzinski, M.; WVU – Bilgesu, I., Carr, T., McCawley, M., Wilson, T., Ziemkiewicz, P. Total Award: \$9,137,479. (\$62,242 expended of \$274,560 originally budgeted).
- 09/2012 – 08/2017 9. U.S. National Science Foundation, Sustainable Energy Pathways Program (1230691). “A Novel Method for Using CO<sub>2</sub> and Geothermal Resources for Sustainable Energy Production and Storage.” PI: Saar, M. (U-MN). Co-PI: **Bielicki, J.**, Keuhn, T. (U-MN), Randolph, J. (U-MN), Taff, S. (U-MN). Total Award: \$1,900,000 (\$625,513).
- 09/2016 – 08/2017 10. OSU Subsurface Energy Resources Center. “Community Perceptions of and Resilience to Shale Energy Development in Eastern Ohio.” PI: **Bielicki, J.** Total Award: \$5,619. (\$5,619).
- 03/2016 – 03/2017 11. Ohio Water Resources Center / U.S. Geological Survey. (2016OH508B). “Co-Optimizing Enhanced Water Recovery and CO<sub>2</sub> Sequestration in Ohio.” PI: **Bielicki, J.** Total Award: \$27,306. (\$27,306).
- 02/2016 – 02/2017 12. SedHeat NSF Research Coordination Network / Texas Christian University. “Incubator Workshop: Energy Storage in Sedimentary Basin Geothermal Resources.” PI: **Bielicki, J.** Co-PI: Buscheck, T. (LLNL). Total Award: \$22,960. (\$22,960).
- 03/2015 - 02/2016 13. Ohio Water Resources Center / U.S. Geologic Survey / OSU Office of Energy and Environment (G11AP20099). “Developing Integrated Assessments of Water and Energy in Ohio.” PI: **Bielicki, J.** Total Award: \$37,373. (\$37,273)
- 06/2015 – 12/2015 14. U.S. National Science Foundation (SES 1541844). “FEW Workshop on Migration, Climate Change, and the Resilience of Regional Food, Water, and Energy Systems.” PI: Irwin, E. (OSU). Co-PIs: Faggian, A., Fiksel, J., Hoy, C., Martin, J. Senior Personnel:

Bayraksan, G., **Bielicki, J.**; Breyfogle, N., Brooks, J., Casterline, J., Dormady, N., Greenbaum, R., Klaiber, A., Lal, R., Shafieezadeh, A., Shum, C.K., Shearer, S., Thompson, E. Total Award: \$97,496. (\$0)

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| 08/2014 -<br>10/2015 | 15. U.S. Department of Energy (DE-FOA-0000841 / 310130). "Hydrogeologic Windows: Regional Signature Detection for Blind and Traditional Geothermal Play Fairways. PI: Middleton (LANL); OSU PI: <b>Bielicki, J.</b> Co-PIs: Jacobs, E. (LANL), Karra, S. (LANL), Kelley, S. (NM Tech), Kelley R. (LANL), Person, M. (NM Tech), Witcher, J. (Witcher and Associates), Total Award: \$400,000. (\$39,511). |
| 07/2012 –<br>06/2014 | 16. Office of Vice President of Research, University of Minnesota. "Defining and Mitigating Against Environmental Impacts of Oil and Gas Fracking." Total Award: \$250,000. (\$41,667)   |
| 07/2012 -<br>06/2013 | 17. Ormat Technologies (as cost-share for DOE grant DE-FOA-0000336). "Assessment of Integrated CO <sub>2</sub> -Geothermal Reservoirs." Total Award: \$33,000. (\$33,000)  |

**INVITED PRESENTATIONS**

**INVITED SEMINARS**

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| 2018 | 1. <u>Wang, Y.*</u> (Presenter), <b>Bielicki, J.</b> "Modeling Food-Energy-Water Nexus Based on Integrated Hybrid Input-Output Analysis." <i>School of Geographic Sciences, East China Normal University</i> . January 5, 2018. Oral.   |
| 2017 | 2. <b>Bielicki, J.</b> "Using CO <sub>2</sub> to Produce and Store Energy." <i>Chalmers University, Institute for Energy and Environment, Gothenburg, Sweden</i> . June 19, 2017. Oral.<br>3. <b>Bielicki, J.</b> (Presenter), <u>Langenfeld, J.*</u> , Tao, Z.***, Middleton, R., Menefee, A.***, Clarens, A. "Viability of Using in Hydrocarbon Depleted Fractured Shale Formations for Geologic CO <sub>2</sub> Storage." <i>Center for Climate and Decision-Making, Carnegie Mellon University</i> . Pittsburgh, PA. March 3, 2017. Oral.   |
| 2016 | 4. <b>Bielicki, J.</b> "Energy Storage in Sedimentary Basins." Presented at <i>National Energy Technology Laboratory (NETL) Seminar</i> . U.S. Department of Energy. Morgantown, West Virginia, United States. October, 28 2016. Oral.<br>5. <b>Bielicki, J.</b> "Using Carbon Dioxide for Renewable Energy Generation, Integration, and Climate Change Mitigation." <i>Bureau de Recherches Géologiques et Minières (BRGM, the French Equivalent of the U.S. Geologic Survey)</i> . Orleans, France. May 27, 2016. Oral.<br>6. Buscheck, T. (Presenter), <b>Bielicki, J.</b> "Storing CO <sub>2</sub> in the Earth for Enhanced Geothermal Energy and Water Recovery and Utility-Scale Energy Storage." <i>University of Wyoming School of Energy Resources Speaker Series</i> . Laramie, WY. March 4, 2016. Oral. |
| 2015 | 7. <b>Bielicki, J.</b> "CO <sub>2</sub> Plume Geothermal: What About Context?" <i>Geoenergy and Geofluids Group, Department of Earth Sciences, ETH-Zurich</i> . November 9, 2015. Zürich, Switzerland. Oral.  |
| 2014 | 8. <b>Bielicki, J.</b> "Producing Renewable Energy While Sequestering Carbon Dioxide." <i>Earth and Environmental Systems Division Seminar, Los Alamos National Laboratory</i> . September 2, 2014. Oral.   |

2013

9. **Bielicki, J.** (Presenter), Buscheck, T., Saar, M. "Emerging Options for Engineering Geothermal Resources for Energy Sustainability" *Department of Earth and Atmospheric Sciences Seminar*. Cornell University. Ithaca, NY. March 5, 2014. Oral.
10. **Bielicki, J.** "Interactions Between Energy and Environmental Systems and Policy in Emerging Subsurface Energy Technologies." *John Glenn School of Public Affairs Colloquium*, The Ohio State University. March 3, 2014. Oral.
11. **Bielicki, J.** "Risks and Opportunities of Emerging Subsurface Technologies." *Atmospheric, Earth, and Energy Division*, Lawrence Livermore National Laboratory, December 16, 2013. Oral.
12. **Bielicki, J.** "Energy Sustainability and Emerging Uses of the Subsurface." *Environmental Science Graduate Program Seminar*, The Ohio State University. November 1, 2013. Oral.
13. **Bielicki, J.** "Unconventional Hydrocarbon Resources and the Health Hazards of Hydraulic Fracturing Fluids." *Centre International de Recherche sur l'Environnement et le Développement (CIRED)*. Paris, France. July 11, 2013. Oral.
14. **Bielicki, J.** "Energy Sustainability and Emerging Use of the Subsurface" *Department of Civil, Environmental, and Geodetic Engineering; City and Regional Planning Section, Knowlton School of Architecture. College of Engineering*. The Ohio State University, Columbus, Ohio. February 7, 2013. Oral.
15. **Bielicki, J.** "Energy Sustainability and Emerging Use of the Subsurface" *Center for Advanced Energy Studies*, Idaho Falls, Idaho. January 17, 2013. Oral.

2012

16. **Bielicki, J.** "Sustainability, Learning, and the Evolution of Energy Technology Deployment." *Arizona State University, School of Sustainability Studies*, March 26, 2012. Oral.
17. **Bielicki, J.** "Your View or Mine: Spatial CO<sub>2</sub> Storage Risk from Various Stakeholder Perspectives." *Los Alamos National Laboratory, Earth and Environmental Science Seminar*. Mart 12, 2012. Oral.
18. **Bielicki, J.** "Interdisciplinary and Multiscale Interactions and the Geography of Energy Technology Deployment." *The Pennsylvania State University, Department of Geography*, February 10, 2012. Oral.

2011

19. **Bielicki, J.** "Efficient Climate Change Mitigation: Returns to Scale Lessons for Carbon Dioxide Capture and Storage Technology Deployment." *Environmental and Natural Resource Economics Seminar*, University of Minnesota. St. Paul, MN. February 14, 2011. Oral
20. **Bielicki, J.** (Presenter), Middleton, R., Kuby, M., Phillip, B. "*SimCCS/SimWIND*: Scaleable infrastructure model for Carbon Capture and Storage/Wind-Generated Electricity" *VTT Technical Research Centre of Finland*. Helsinki, Finland. Oral.

2010

21. **Bielicki, J.** "Energy System Sustainability and Scale: Case Studies for Carbon Dioxide Capture and Storage and Lessons for Technology Deployment." *School of Natural Resources and Environment*, University of Michigan. February 15, 2010. Oral.
22. **Bielicki, J.** "Mitigating Climate Change at Scale: Case Studies for Carbon Dioxide Capture and Storage and Lessons for Technology Deployment." *Energy and Environment Luncheon*. University of Tennessee and Oak Ridge National Laboratory. Oak Ridge, TN. April 30, 2010. Oral.
23. **Bielicki, J.** "Mechanisms for Deploying Carbon Dioxide Capture and Storage: Learning, Risk, and Governance." *Earth and Energy Seminar Series*, National Energy

Technology Laboratory, U.S. Department of Energy. Pittsburgh, PA. October 21, 2010. Oral.

2009

24. **Bielicki, J.** "Returns to Scale for Carbon Capture and Storage." *Department of Engineering and Public Policy*, Carnegie Mellon University. Pittsburgh, PA. January 22, 2009. Oral.
25. **Bielicki, J.** "Scaling and Organizing Carbon Dioxide Capture and Storage Deployment." *Climate Change Research Network*, Vanderbilt University, Nashville, TN. December 4, 2009. Oral.
26. **Bielicki, J.** "Organizing Large Scale Deployment of Carbon Dioxide Capture and Storage," *Earth and Environmental Sciences Division*, Los Alamos National Laboratory, Los Alamos, NM. July 24, 2009. Oral.
27. **Bielicki, J.** "Organizing Carbon Capture and Storage Deployment," *Weinberg Fellowship Committee*, Oak Ridge National Laboratory. Oak Ridge, TN. April 13, 2009. Oral.
28. **Bielicki, J.** "Returns to Scale for Carbon Capture and Storage," *Energy and Transportation Science Division*, Oak Ridge National Laboratory. Oak Ridge, TN. March 16, 2009. Oral.
29. **Bielicki, J.** "Returns to Scale for Carbon Capture and Storage Deployment." *Princeton Environmental Institute*, Princeton University. Princeton, NJ. March 10, 2009. Oral.
30. **Bielicki, J.** "Returns to Scale for Carbon Capture and Storage Deployment." *Energy and Resources Group*, University of California at Berkeley. Berkeley, CA. February 4, 2009. Oral.
31. **Bielicki, J.** "Returns to Scale for Carbon Capture and Storage Deployment." *Resources for the Future*. Washington, DC. February 2, 2009. Oral.
32. **Bielicki, J.** "Infrastructure Deployment for Carbon Capture and Storage," *National Energy Technology Laboratory*, U.S. Department of Energy. Morgantown, WV. January 23, 2009. Oral.

2008

33. **Bielicki, J.** "Geospatial Modeling to Organize Carbon Capture and Storage," *Earth and Environmental Sciences Division*, Los Alamos National Laboratory, Los Alamos, NM. July 23, 2008. Oral.
34. **Bielicki, J.** "Organizing Carbon Capture and Storage," *Center for Global Change, Climate Change Partnership, Nicholas Institute for the Environment*, Duke University. May 21, 2008. Oral.
35. **Bielicki, J.** "The Viability of Permanent Carbon Dioxide Storage in Deep Sea Sediment," *Oak Ridge National Laboratory, Computational Sciences and Engineering Division*, Oak Ridge, TN. January 2008. Oral.

#### INVITED CONFERENCES AND WORKSHOPS [WITH (A)BSTRACT]

2018

1. **Bielicki, J.** "Techno-Economic Modeling of Geothermal Energy: A Case Study of CO<sub>2</sub> Plume Geothermal Energy Production." *Great Lakes SedHEAT Incubator Workshop*. Case Western University. Cleveland, OH. February 19, 2018. Oral.

2017

2. Saar, M., Flemings, M., Adams, B., Ogland-Hand, J.\*, Nelson, E.\*\*\*, Randolph, J., Sioshansi, R., Kuehn, T., Buscheck, T., **Bielicki, J.** (Presenter). "Large Temporal Scale and Capacity Subsurface Bulk Energy Storage with CO<sub>2</sub>." *American Geophysical Union Fall Meeting*. New Orleans, LA. December 14, 2017. Oral. A.

2016

3. **Bielicki, J.** "Using CO<sub>2</sub> to Produce and Store Renewable Energy." *16<sup>th</sup> Polish-American Science & Technology Conference*. Warsaw, Poland. May 16-17, 2016. Oral.



4. Griffin, J. (Presenter), **Bielicki, J.**, Buscheck, T., Randolph, J., Saar, M. "TeraCOH XPrize." Presented at *XPrize Foundation - 2nd Round Workshop*. New Orleans, Louisiana, United States. December 7, 2016.
5. **Bielicki, J.** (Presenter), Deng, H., Pollak, M., Wilson, E., Fitts, J., Peters, C., "Lessons from Monetizing Leakage Risk for Monetizing Monitoring Costs." With Deng, H., Pollak, M., Wilson, E., Fitts, J., and Peters, C. *IEAGHG 2<sup>nd</sup> Combined Meeting of the Modeling and Monitoring Networks*. July 6-8, 2016. Edinburgh, Scotland.
6. **Bielicki, J.** (Presenter), Buscheck, T., Randolph, J. "Carbon Dioxide Plume Geothermal: Using CO<sub>2</sub> for Renewable Energy Generation, Integration, and Climate Change Mitigation." With Buscheck, T. and Randolph, J. *ARMA-AAPG NSF SedHeat Workshop on Successful Engineering of Sedimentary Geothermal Systems*. June 24-26, 2016. Houston, TX.
7. Buscheck, T. (Presenter), **Bielicki, J.**, Randolph, J. "Nitrogen Plume Geothermal and Multi-Fluid Earth Battery Options." *ARMA-AAPG NSF SedHeat Workshop on Successful Engineering of Sedimentary Geothermal Systems*. June 24-26, 2016. Houston, TX.
- 2015
8. **Bielicki, J.** (Presenter), Buscheck, T., Saar, M. "Using CO<sub>2</sub> to Produce and Store Geothermal Energy." *15<sup>th</sup> Polish-American Science & Technology Conference*. Columbus OH. May 28-29, 2015. Oral.
- 2014
9. **Bielicki, J.** (Presenter), Buscheck, T., Saar M., Ogland-Hand, J.\* "Using Carbon Dioxide for Renewable Energy Production from Geothermal, Wind, and Solar Resources." *Ohio Conference on the Sustainable Use of Greenhouse Gases*. August 18, 2014. Columbus, OH. Oral.
- 2010
10. **Bielicki, J.** "Issues and Lessons for Carbon Dioxide Capture and Storage." *Political Economy of Science and Technology*, University of Tennessee. March 23, 2010. Oral.
11. **Bielicki, J.** "Data Generated and Needs for Carbon Dioxide Capture and Storage." (2010). *Earth System Information Partners Summer Meeting, Energy Cluster*. Knoxville, TN. July 22, 2010. Oral.
- 2009
12. **Bielicki, J.** "Issues for Carbon Dioxide Capture and Storage," *Environmental Policy's New Horizon: From the Clean Air Act to Greenhouse Gas Regulations*, Baker Center for Public Policy, University of Tennessee, Knoxville, TN. October 29, 2009. Oral.
13. **Bielicki, J.** "Organizing Large Scale Deployment of Carbon Dioxide Capture and Storage," *Research Experience in Carbon Sequestration 2009*, University of New Mexico, Albuquerque, NM. July 27, 2009. Oral.
- 2008
14. **Bielicki, J.** "Infrastructure Modeling and Organizing Carbon Capture and Storage," *Research Experience in Carbon Sequestration 2008*, University of New Mexico, Albuquerque, NM. July 29, 2008. Oral.
15. **Bielicki, J.** "Geospatial Modeling and Organizing Carbon Capture and Storage Deployment," *North American Carbon Capture and Storage Association Annual Meeting*. Washington DC. December 3, 2008. Oral.
16. **Bielicki, J.** "Infrastructure Modeling for Carbon Capture and Storage: Issues for Scale and Viability" *Workshop on Subseabed Storage of CO<sub>2</sub>*, Lenfest Center for Sustainable Energy, Columbia University. April 29, 2008. Oral.
- 2007
17. **Bielicki, J.** "The Influence of Carbon Capture and Storage on the Location of Industrial Facilities," *Research Experience in Carbon Sequestration 2007*, Montana State University, Bozeman, MT. August 2007. Oral.

18. **Bielicki, J.** “Worldwide Prospectivity for Permanent CO<sub>2</sub> Storage in Deep Sea Sediment,” *Research Experience in Carbon Sequestration 2007*, Montana State University. Bozeman, MT. August 2007. Poster.

### **CONFERENCE AND WORKSHOP PRESENTATIONS** [WITH (A)BSTRACT, (P)APER]

2018

1. **Bielicki, J.** (Presenter), Ogland-Hand, J.\* “Optimally Extracting Geothermal Heat from Sedimentary Basins using Carbon Dioxide.” *Resources for Future Generations 2018*. Vancouver, BC. Canada. June 20, 2018.
2. Wang, Y.\*, Byers, E., Parkinson, S., **Bielicki, J.** (Presenter), Wanders, N., Wada, Y. “Water Limitations on Coal-Fired Power Plants Planning in Asia with Climate Warming.” *Resources for Future Generations 2018*. Vancouver, BC. Canada. June 20, 2018.
3. Fleming, M.\*\* (Presenter), Adams, B., Randolph, J., Ogland-Hand, J.\*, Kuehn, T., Buscheck, T., **Bielicki, J.**, Saar, M. (2018). “High Efficiency and Large-Scale Subsurface Energy Storage with CO<sub>2</sub>.” *43<sup>rd</sup> Workshop on Geothermal Reservoir Engineering*. Stanford, CA. February 14, 2018. Oral. P.
4. Ogland-Hand, J.\* (Presenter), **Bielicki, J.**, Nelson, E.\*\*\*, Adams, B., Buscheck, T., Saar, M., Sioshansi, R. (2018). “Effects of Bulk Energy Storage in Sedimentary Basin Geothermal Resources on Transmission Constrained Electricity Systems.” *43<sup>rd</sup> Workshop on Geothermal Reservoir Engineering*. Stanford, CA. February 14, 2018. Oral. P.

2017

5. **Bielicki, J.** (Presenter), Irwin, E., Bakshi, B., Cai, Y., Jackson-Smith, D., Martin, J., Randall, A., Sheldon, I., Wilson, R., Fiksel, R. (2017). “Deglobalization and Its Discontents in Interconnected Regional Food, Energy, and Water Systems.” *American Geophysical Union Fall Meeting*. GC33A-1063. New Orleans, LA. December 13, 2017. Poster. A.
6. Wang, Y.\* (Presenter), Byers, E., Parkinson, S., **Bielicki, J.**, Wanders, N., Wada, Y. “Low Flows and Water Temperature Risks to Asian Coal Power Plants in a Warming World.” *American Geophysical Union Fall Meeting*. GC31D-1023. New Orleans, LA. December 13, 2017. Poster. A.
7. Hunter, K.\* (Presenter), **Bielicki, J.**, Ogland-Hand, J.\*, Harp, J., Middleton, R., Stauffer, P., Pawar, R. (2017). “Integrating CO<sub>2</sub> Capture and Storage with Enhanced Water Recovery.” *Women in Clean Energy C3E Symposium*. Massachusetts Institute of Technology, Cambridge, MA. November 17, 2017. Poster.
8. Garapati, N. (Presenter), Adams, B., **Bielicki, J.**, Randolph, J., Kuehn, T., Saar, M. “Hybrid Geothermal Energy Conversion – A Potential Solution for Low-Temperature Geothermal Resources.” *2017 AiChE Annual Meeting*. October 31, 2017. Minneapolis, MN. Oral.
9. Randolph, J. Saar, M., **Bielicki, J.**, Griffin, J., Adams, B. (Presenter) “Carbon Dioxide as a Geothermal Heat Mining Fluid in Sedimentary Basins – Technical and Economic Analysis of Its Use in Hydrocarbon Fields.” Presented at *AAPG | SEG International Conference and Exhibition 2017*. London, United Kingdom. October 15-18, 2017. Oral.
10. Hagley, P.\* (Presenter), **Bielicki, J.** “Perceptions of Shale Energy Development in Eastern Ohio.” *Energy Impacts Symposium 2017*. Columbus, OH. July 26, 2017. Poster.
11. **Bielicki, J.**, Langenfeld, J.\* (Presenter), Tao, Z.\*\*\*, Middleton, R., Menefee, A.\*\*\*, Clarens, A. “The Geospatial and Economic Viability of CO<sub>2</sub> Storage in Hydrocarbon Depleted Fractured Shale Formations.” *Gordon Conference on CO<sub>2</sub> Capture, Utilization, and Storage*. June 11-16, 2017. New London, NH. Poster.
12. Buscheck, T. (Presenter), **Bielicki, J.**, Ogland-Hand, J.\*, Saar, M., Randolph, J. “CO<sub>2</sub> Earth Battery: Creating a Business Case for Geologic CO<sub>2</sub> Storage.” *2017 Carbon Capture, Utilization, and Storage Conference*. April 2017, Chicago IL. Oral.

13. Buscheck, T. (Presenter), **Bielicki, J.**, Saar, M., and Randolph, J. "Earth Battery: An Approach for Reducing the Carbon and Water Intensity of Energy" *American Geophysical Union Fall Meeting*. H13O-06. December 12-16, 2016. San Francisco, CA. Oral. A.
14. Pawar, R. (Presenter), Harp, D., **Bielicki, J.**, Stauffer, P., Middleton, R., Martinez, D.\*\*\* "Robust Pressure Management Strategies for CO<sub>2</sub> Sequestration." *American Geophysical Union Fall Meeting*. GC41C-1106. December 12-16, 2016. San Francisco, CA. Poster. A.
15. Oglan-Hand, J.\* (Presenter), **Bielicki, J.**, Buscheck, T. "The Value of CO<sub>2</sub>-Geothermal Bulk Energy Storage to Reducing CO<sub>2</sub> Emissions Compared to Conventional Bulk Energy Storage Technologies." *American Geophysical Union Fall Meeting*. H13G-1490. December 12-16, 2016. San Francisco, CA. Poster A.
16. **Bielicki, J.**, Wang, Y.\* (Presenter). "Evolutions in Water Withdrawal and Consumption Factors for Thermoelectric Power Plants in the United States." *American Geophysical Union Fall Meeting*. H32C-05. December 12-16, 2016. San Francisco, CA. Oral. A.
17. Hunter, K.\*, **Bielicki, J.**, Middleton, R., Stauffer, P., Harp, D., Pawar, R., Martinez, D.\*\*\* "Integrated CO<sub>2</sub> Storage and Brine Extraction." *13<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*. November 14-18, 2016, Lausanne, Switzerland. Oral. P.
18. Oglan-Hand, J.\* (Presenter), **Bielicki, J.**, Buscheck, T. "The Value of CO<sub>2</sub>-Bulk Energy Storage for Reducing CO<sub>2</sub> Emissions" *13<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*. November 14-18, 2016, Lausanne, Switzerland. Oral. P.
19. Langenfeld, J.\*, **Bielicki, J.** (Presenter), Tao, Z.\*\*\*, Middleton, R., Menefee, A.\*\*\*, Clarens, A. "Viability of Integrated CO<sub>2</sub> Capture and Storage Systems in Depleted Shale Formations" *13<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*. November 14-18, 2016, Lausanne, Switzerland. Oral. P.
20. Langenfeld, J.\*, **Bielicki, J.** (Presenter). "Assessment of Sites for CO<sub>2</sub> Storage and CO<sub>2</sub> Capture, Utilization, and Storage Systems in Geothermal Reservoirs." *13<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*. November 14-18, 2016, Lausanne, Switzerland. Poster. P.
21. **Bielicki, J.** (Presenter), Deng, H., Fitts, J., Peters, C., Wilson, E. "Monetizing Leakage Risk with Secondary Trapping in Intervening Stratigraphic Layers." *13<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*. November 14-18, 2016, Lausanne, Switzerland. Oral. P.
22. Garapati, N. (Presenter), Adams, B., **Bielicki, J.**, Schaedle, P.\*\*\*, Randolph, J., Kuehn, T., Saar, M. "A Hybrid Geothermal Energy Conversion Technology - A Potential Solution for Shallow Geothermal Resources." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. Oral. P.
23. Middleton, R., Levine, J., **Bielicki, J.**, Stauffer, P. (Presenter). "Industrial CO<sub>2</sub> and Carbon Capture: Near-Term Benefit, Long-Term Necessity." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. Poster. P.
24. Buscheck, T., **Bielicki, J.** (Presenter), Randolph, J. "CO<sub>2</sub> Earth Storage: Enhanced Geothermal Energy and Water Recovery and Energy Storage." *13<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*. November 14-18, 2016, Lausanne, Switzerland. Oral. P.
25. Buscheck, T., **Bielicki, J.**, White, J., Sun, Y., Hao, Y., Bourcier, W., Carroll, S., Aines, R. "Managing Geologic CO<sub>2</sub> Storage with Pre-Injection Brine Production in Tandem Reservoirs." *13<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*. November 14-18, 2016, Lausanne, Switzerland. Poster. P.
26. Dai, Z., Zhang, Y., Stauffer, P. (Presenter), Xiao, T., Zhang, M., Ampomah, W., Yang, C., Zhou, Y., Ding, M., Middleton, R., Soltanian, M. R., **Bielicki, J.**, "Injectivity Evaluation for Offshore CO<sub>2</sub> Sequestration in Marine Sediments." *13<sup>th</sup> International Conference on Greenhouse Gas Technologies*. November 14-18, 2016. Lausanne, Switzerland. Poster. P.

27. Hunter, K.\* (Presenter), **Bielicki, J.**, “Optimizing Water Extraction and Carbon Dioxide Storage in Saline Aquifers.” *WaterSmart Innovations Conference*. October 5-7, 2016. Las Vegas, NV. Poster.
28. **Bielicki, J.** (Presenter), Deng, H., Fitts, J. Peters, C., Wilson, E. “Monetized Leakage Risk of Geologic CO<sub>2</sub> Storage and the Role of Secondary Trapping in Intervening Stratigraphic Layers.” *35<sup>th</sup> International Geological Congress*, August 27 – September 4, 2016. Cape Town, South Africa. Oral.
29. Patel, I.\*, **Bielicki, J.** (Presenter), Buscheck, T., Adams, B., Saar, M. “Optimally Extracting Geothermal Heat from Sedimentary Basins Using Carbon Dioxide.” Presented at *35<sup>th</sup> International Geological Congress*, August 27-September 4, 2016. Cape Town, South Africa. Oral.
30. Langenfeld, J.\*, **Bielicki, J.** (Presenter), Tao, Z.\*\*\*, Clarens, A., Middleton, R., Menefee, A.\*\*\* “The Geospatial and Economic Viability of CO<sub>2</sub> Storage in Fractured Shale.” *2016 Annual Carbon Capture, Utilization, and Storage Conference*. June 14-16, 2016. Washington, DC. Oral.
31. **Bielicki, J.** (Presenter), Pollak, M., Deng, H.\*\*, Wilson, E., Peters, C., Fitts, J., “Monetizing Leakage Risk of Geologic CO<sub>2</sub> Storage.” *2016 Annual Carbon Capture, Utilization, and Storage Conference*. June 14-16, 2016. Washington, DC. Oral.
32. Patel, I.\*, **Bielicki, J.** (Presenter), Buscheck, T. “Optimizing Sustainable Geothermal Heat Extraction.” *European Geosciences Union, General Assembly*, Vol. 18, EGU2016-10780. April 17-22, 2016. Vienna, Austria. Oral. A.
33. **Bielicki, J.**, Blackwell, D., Harp, D., Karra, S. Kelley, R., Kelley, S., Middleton, R., Person, M., Sutula, G.\*, Witcher, J. “Estimating the Prospectivity of Geothermal Resources Using the Concept of Hydrogeologic Windows.” *European Geosciences Union, General Assembly*, Vol. 18, EGU2016-10780. April 17-22, 2016. Vienna, Austria. Poster. A.
34. Buscheck, T. (Presenter), **Bielicki, J.**, Randolph, J. “Using Geologic CO<sub>2</sub> Storage for Enhanced Geothermal Energy and Water Recovery and Energy Storage.” *CO<sub>2</sub> Summit II: Technologies and Opportunities*. Santa Anna Pueblo, NM. April 10-14, 2016. Oral.
35. Buscheck, T. (Presenter), **Bielicki, J.**, White, J., Sun, Y., Hao, Y., Bourcier, W., Carroll, S., Aines, R. “Geologic CO<sub>2</sub> Storage with Pre-Injection Brine Production in Tandem Reservoirs: A Strategy for Improved Storage Performance and Enhanced Water Recovery.” *CO<sub>2</sub> Summit II: Technologies and Opportunities*. Santa Anna Pueblo, NM. April 10-14, 2016. Oral.
36. Hunter, K.\* (Presenter), **Bielicki, J.** “The Production of Water from Saline Aquifers through Carbon Dioxide Capture and Storage Operations.” *CO<sub>2</sub> Summit II: Technologies and Opportunities*. Santa Anna Pueblo, NM. April 10-14, 2016. Poster.
37. Langenfeld, J.\* **Bielicki, J.** “Development and Planning for Carbon Dioxide Capture, Utilization, and Storage Infrastructure in Geothermal Reservoirs.” Presented at *CO<sub>2</sub> Summit II: Technologies and Opportunities*. Santa Anna Pueblo, NM. April 10-14, 2016. Poster.
38. Ogland-Hand, J.\* (Presenter), **Bielicki, J.**, Buscheck T. “The Value of CO<sub>2</sub>-Geothermal Bulk Energy Storage for Reducing CO<sub>2</sub> Emissions.” *CO<sub>2</sub> Summit II: Technologies and Opportunities*. Santa Anna Pueblo, NM. April 10-14, 2016. Oral.
39. Patel, I.\* (Presenter), **Bielicki, J.** “Optimal Geothermal Heat Extraction Using CO<sub>2</sub>.” *CO<sub>2</sub> Summit II: Technologies and Opportunities*. Santa Anna Pueblo, NM. April 10-14, 2016. Poster.
40. **Bielicki, J.** (Presenter), Adams, B.\*\*, Choi, H.\*\*, Jamiyurasuren, B., Saar, M., Taff, S., Buscheck, T., Ogland-Hand, J.\*, “Sedimentary Basin Geothermal Resource for Cost-Effective Generation of Renewable Electricity from Sequestered Carbon Dioxide.” *41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*, February 22-14, 2016. Oral. P.
41. **Bielicki, J.** (Presenter), Blackwell, D., Harp, D., Karra, S., Kelley, S., Kelley, R., Middleton, R., Person, M., Sutula, G.\* “Hydrogeologic Windows and Estimating the Prospectivity of Geothermal Resources.” *41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*, February 22-24, 2016. Oral. P.

2015

42. Ogland-Hand, J.\*, **Bielicki, J.** (Presenter), Buscheck, T. “The Value of Bulk Energy Storage in Sedimentary Basin Geothermal Resources for Reducing CO<sub>2</sub> Emissions.” *41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*, February 22-14, 2016. Oral. P.
43. Patel, I.\*, **Bielicki, J.** (Presenter), Buscheck, T. “A Reduced Form Representation of Temperature Drawdown in Sedimentary Basin Geothermal Reservoirs for the Development of Optimal Management Strategies.” *41<sup>st</sup> Workshop on Geothermal Reservoir Engineering*, February 22-24, 2016. Oral. P.
44. **Bielicki, J.** (Presenter), Adams, B., Choi, H., Jamiyansuren, B., Saar, M., Taff, S., Buscheck, T., Langenfeld, J.\*, Ogland-Hand, J.\* “The Efficacy and Potential of Renewable Energy from Carbon Dioxide that is Sequestered in Sedimentary Basin Geothermal Resources.” GC53C-1222. *American Geophysical Union, Fall Meeting*. December 14-18, 2015. San Francisco, CA. Poster. A.
45. Wang, Y.\* (Presenter), **Bielicki, J.** “Extracting the Weather Response from Long-Term Hourly Electricity Load Data in an Eastern Region of the United States.” *American Geophysical Union, Fall Meeting*. GC51C-1102. December 14-18, 2015. San Francisco, CA. Poster. A.
46. Patel, I.\*, (Presenter), **Bielicki, J.**, Buscheck T. “Optimal Operation of Geothermal Heat Extraction.” GC53C-1225. *American Geophysical Union, Fall Meeting*. December 14-18, 2015. San Francisco, CA. Poster. A.
47. Deng, H\*\*\* (Presenter), **Bielicki, J.**, Oppenheimer, M., Fitts, J., Peters, C., “How Leakage Risk in Geologic CO<sub>2</sub> Storage Might Impact Climate Change Mitigation and Energy Policy Choices.” *AEEESP Research and Education Conference*. Yale University. New Haven, CT. June 13-16, 2015. Poster.
48. Buscheck, T. (Presenter), **Bielicki, J.**, White, J., Sun, Y., Hao, Y., Bourcier, W., Carroll, S., Aines, R. “Improving the Physical and Economic Performance of CO<sub>2</sub> Capture, Utilization and Storage in Saline Reservoirs by Producing Brine.” *Carbon Management Technology Conference*. November 17-19, 2015. Sugar Land, TX. Oral.
49. Buscheck, T., **Bielicki, J.** (Presenter), Ogland-Hand, J.\*, Hao, Y., Sun, Y., Randolph, J., Saar, M “Hybrid Geo-Energy Systems for Energy Storage and Dispatchable Renewable and Low-Carbon Electricity.” Vol. 17, EGU2015-7539. *European Geosciences Union, General Assembly*. Vienna, Austria. April 12-16, 2015. Vienna, Austria. Oral. A.
50. Jiang, Z.\* (Presenter), **Bielicki, J.** “Did Tax Credits Fuel Non-Conventional Oil Production? A Quasi-Experiment of Enhanced Oil Recovery in Texas.” *38<sup>th</sup> Fall Research Conference*. Association for Public Policy Analysis and Management (APPAM), November 3-5, 2016. Washington, DC. Oral.
51. Person, M. (Presenter), Kelley, S., Kelley, R., Karra, S., Harp, D., Witcher, J., **Bielicki, J.**, Sutula, G.\*, Middleton, R., Pepin, J. “Hydrogeologic Windows: Detection of Blind and Traditional Geothermal Play Fairways in Southwestern New Mexico Using Conservative Element Concentrations and “Up-Winding.” *39<sup>th</sup> Geothermal Resources Council* September 20-23, 2015. Reno, NV. Oral.
52. Jiang, Z.\* (Presenter), **Bielicki, J.** “Sources of Production in Carbon Dioxide Enhanced Oil Recovery Fields.” *2015 Public Affairs Conference*. July 9-11, 2015. Milwaukee, WI. Oral.
53. **Bielicki, J.** (Presenter), Pollak, M., Deng, H.\*\*\*, Wilson, E., Peters, C., Fitts, J., “Monetizing Geologic CO<sub>2</sub> Leakage Risk.” With Pollak, M., Deng, H., Wilson, E., Peters, C., and Fitts, J. *Gordon Research Conference: Carbon Capture, Utilization, and Storage*. Easton, MA. May 31 – June 5, 2015. Poster.
54. Deitz, J.\* (Presenter), **Bielicki, J.**, Deng, H.\*\*\*, Buscheck, T., Langenfeld, J.\*, Volzer, C.\* “Integrating CO<sub>2</sub> Capture, Utilization, and Storage into the Global Change Assessment Model: Using CO<sub>2</sub> to Produce Electricity from Geothermal Resources.” *14<sup>th</sup> Annual Carbon Capture, Utilization, and Storage Conference*. Pittsburgh, PA. April 28 – May 1, 2015. Oral.

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55. Langenfeld, J.\*, **Bielicki, J.**, Middleton, R., Tao, Z.\*\*\*, Clarens, A. "Infrastructure and Supply Curves for CO<sub>2</sub> Storage in Shale." *14<sup>th</sup> Annual Carbon Capture, Utilization, and Storage Conference*. Pittsburgh, PA. April 28 – May 1, 2015. Oral.
56. **Bielicki, J.** (Presenter), Jamiyunsuren, B.\*\*, Adams, B.\*\*, Choi, H.\*\*, Saar, M., Taff, S., Buscheck T., Ogland-Hand, J.\* "The Cost of Geothermal Electricity Generated by Sequestered Carbon Dioxide." *14<sup>th</sup> Annual Carbon Capture, Utilization, and Storage Conference*. Pittsburgh, PA. April 28 – May 1, 2015. Oral.
57. Deng, H.\*\*\* (Presenter), **Bielicki, J.**, Oppenheimer, M., Fitts, J., Peters, C. "Accounting for the Leakage of Geologic CO<sub>2</sub> Storage and Its Impacts on Climate Mitigation and the Global Energy System." *14<sup>th</sup> Annual Carbon Capture, Utilization, and Storage Conference*. Pittsburgh, PA. April 28 – May 1, 2015. Oral.
58. Witcher, J., Person, M. (Presenter), Kelley, S., Kelley, R., **Bielicki, J.**, Sutula, G.\*, Middleton, R. "Hydrogeologic Windows: Detection of Blind and Traditional Geothermal Play Fairways in Southwestern New Mexico." *New Mexico Geological Society Spring Meeting*. Las Cruces, NM. April 24, 2015.
59. Buscheck, T., **Bielicki, J.** (Presenter), Chen, M., Sun, Y., Hao, Y., Edmunds, T., Saar, M., Randolph, J. "Multi-Fluid Sedimentary Geothermal Energy Systems for Dispatchable Renewable Electricity." *World Geothermal Congress 2015*. April 19-25, 2015. Melbourne, Australia. Oral. P.
60. Saar, M. (Presenter), Buscheck, T., Jenny, P., Garapti, N., Randolph, J., Karvounis, D.\*\*\*, Chen, M., Sun, Y., **Bielicki, J.** "Numerical Study of Multi-Fluid and Multi-Level Geothermal Fluid Systems." *World Geothermal Congress 2015*. Melbourne Australia, April 19-25, 2015. Oral. P.
61. Buscheck, T. (Presenter), Randolph, J., Saar, M., Hao, Y., Sun, Y., **Bielicki, J.** "Multi-Fluid Geo-Energy Systems for Bulk and Thermal Energy Storage and Dispatchable Renewable and Low-Carbon Electricity." H41I-02. *American Geophysical Union Fall Meeting*, December 15-19, 2014. San Francisco, CA. Oral. A.
62. Deng, H.\*\*\* (Presenter), **Bielicki, J.**, Peters, C., Fitts, J., Oppenheimer, M. "How CO<sub>2</sub> Leakage May Impact the Role of Geologic Carbon Storage in Climate Mitigation." *American Geophysical Union Fall Meeting*, GC41B-0565. December 15-19, 2014. San Francisco, CA. Poster. A.
63. **Bielicki, J.** (Presenter), Peters, C., Fitts, J., Wilson, E. "Geologic Carbon Sequestration: Leakage Potential and Policy Implications." *American Geophysical Union Fall Meeting*, H51J-0740. December 15-19, 2014. San Francisco, CA. Poster. A.
64. **Bielicki, J.** (Presenter), Middleton, R., Levine, J., Stauffer, P "An Alternative Pathway for Stimulating Regional Deployment of Carbon Dioxide Capture and Storage." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. Poster. P.
65. Deng, H.\*\*\* (Presenter), **Bielicki, J.**, Oppenheimer, M., Fitts, J., Peters, C. "Policy Implications of Monetized Leakage Risk from Geologic CO<sub>2</sub> Storage Reservoirs." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. Oral. P.
66. Tao, Z.\*\*\*, **Bielicki, J.**, Clarens, A.(Presenter) "Physiochemical Factors Impacting CO<sub>2</sub> Sequestration in Depleted Shale Formations: The Case of the Utica Shale." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. Poster. P.
67. Buscheck, T. (Presenter), White, J., Chen, M., Sun, Y., Hao, Y., Aines, R. Bourcier, W., **Bielicki, J.** "Pre-Injection Brine Production for Managing Reservoir Pressure in Compartmentalized CO<sub>2</sub> Storage Reservoirs." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. Oral. P.
68. **Bielicki, J.** (Presenter), Clarens, A., Middleton, R., Liu, X.\*\*\*, Barbosa de Carvalho, M.\*\*\*, Giovanini Junior, N.\*\*\* "Shifting Sands in a CO<sub>2</sub> Desert: Replacing Extracted CO<sub>2</sub> with Byproduct CO<sub>2</sub> for Use in Enhanced Oil Recovery." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. Poster. P.

69. Buscheck, T. (Presenter), **Bielicki, J.**, Chen, M., Sun, Y., Hao, Y., Edmunds, T., Saar, M., Randolph, J. "Integrating CO<sub>2</sub> Storage with Geothermal Resources for Dispatchable Renewable Electricity." *12<sup>th</sup> International Conference on Greenhouse Gas Control Technologies*, October 5-9, 2014. Oral. P.
70. Edmunds, T. (Presenter), Sotorrio, P., **Bielicki, J.**, Buscheck, T. (2014). "Geothermal Power for Integration of Intermittent Generation." *38<sup>th</sup> Geothermal Resources Council. Annual Meeting*. September 28-October 1, 2014. Portland, OR. Oral. P.
71. Middleton, R., Karra, S., Kelley, S. (Presenter), Kelley, R., Jacobs, E., Person, M., **Bielicki, J.** Blackwell, D. "Hydrogeologic Windows: Regional Signature Detection for Blind and Traditional Geothermal Play Fairways." With Middleton, R., Karra, S., Kelley, S., Kelley, R., Jacobs, E., Person, M., Blackwell, D., Witcher, J. *38<sup>th</sup> Geothermal Resources Council. Annual Meeting*. September 28-October 1, 2014. Portland, OR. Oral. P.
72. **Bielicki, J.** (Presenter), Buscheck, T., Chen, M., Sun, Y., Hao, Y., Saar, M., Randolph, J. "Engineering Sedimentary Geothermal Resources for Large-Scale Dispatchable Renewable Electricity" with Buscheck, T., Chen, M., Sun, Y., Hao, Y., Saar, M., and Randolph, J. *European Geosciences Union, General Assembly*, Vol. 16, EGU2014-11882. April 28-May 2, 2014. Vienna Austria. Oral. A.
73. Middleton, R., Levine, J. (Presenter), **Bielicki, J.**, Stauffer, P. "The Price Must Be Right: A New Pathway to Jumpstarting CCUS." *13<sup>th</sup> Annual Carbon Capture, Utilization, and Storage Conference*. April 28 - May 2, 2014. Pittsburgh, PA. Oral.
74. Deng, H.\*\*\* (Presenter), **Bielicki, J.**, Oppenheimer, M., Fitts, J., Peters, C., "Modifications to Cost Curves of Geologic CO<sub>2</sub> Storage Caused by Reservoir Leakage and the Policy Implications." *NSF Research Coordination Network on CO<sub>2</sub>, Capture, Utilization, and Storage Annual Meeting*, Lenfest Center for Sustainable Energy, Columbia University. New York, New York. April 24-26, 2014. Poster.
75. Buscheck, T. (Presenter), **Bielicki, J.**, Randolph, J., Chen, M., Hao, Y., Edmunds, T., Sun, Y. "Multi-Fluid Geothermal Energy Systems in Stratigraphic Reservoirs: Using Brine, N<sub>2</sub>, and CO<sub>2</sub> for Dispatchable Renewable Power Generation and Bulk Energy Storage." *39<sup>th</sup> Workshop on Geothermal Reservoir Engineering*, February 24-26, 2014. Stanford, CA. Oral. P.
- 2013
76. Buscheck, T. (Presenter), **Bielicki, J.**, Randolph, J., Chen, M., Hao, Y., Sun, Y. "Multi-Fluid Geothermal Energy Systems: Using CO<sub>2</sub> for Dispatchable Renewable Power Generation and Grid Stabilization." (2013). *American Geophysical Union Fall Meeting*, H54B-02. December 9-13, 2013. San Francisco, CA. Oral. A.
77. Buscheck, T., Chen, M., Hao, Y., **Bielicki, J.** (Presenter), Randolph, J., Sun, Y., Choi, H.\*\* "Multi-Fluid Geothermal Energy Production and Storage in Stratigraphic Reservoirs." *37<sup>th</sup> Geothermal Resources Council. Annual Meeting*. September 29 – October 2, 2013. Las Vegas, NV. Oral. P.
78. Middleton, R. (Presenter), Stauffer, P., **Bielicki, J.**, Gorski, A. "The Real Cost of CO<sub>2</sub> Capture and Storage: Variable Electricity Generation for Coal-Fired Power Plants." *12<sup>th</sup> Annual Carbon Capture, Utilization, and Storage Conference*. April 2013. Pittsburgh, PA.
79. **Bielicki, J.** (Presenter), Fitts, J., Peters, C., Wilson, E. "Monetizing Leakage Risk of Geologic CO<sub>2</sub> Storage using Wellbore Permeability Frequency Distributions". *European Geosciences Union General Assembly*. EGU2013-10924. April 7-12, 2013. Vienna, Austria. Oral. A.
80. Buscheck, T. (Presenter), Chen, M., Lu, C., Sun, Y., Hao, Y., Celia, M. Elliot, T., **Bielicki, J.**, Choi, H. \*\* "Analysis of Operational Strategies for Utilizing CO<sub>2</sub> for Geothermal Energy Production." (2013). *38<sup>th</sup> Workshop on Geothermal Reservoir Engineering*, February, 11-13, 2013. Stanford, CA. Oral. P.

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81. Guo, B.\*\*\*(Presenter), Fitts, J., Dobossy, M., **Bielicki, J.**, Peters, C. “Accounting for Geochemical Alterations of Caprock Fracture Permeability in Basin-Scale Models of Leakage from Geologic CO<sub>2</sub> Reservoirs.” *American Geophysical Union Fall Meeting*. H23A-1344. December, 3-7, 2012. San Francisco, CA. Poster. A.
82. **Bielicki, J.**, Pollak, M., Peters, C., Wilson, E. (Presenter). “CCS in a Hot, Crowded World: Integrating Subsurface Management.” *American Public Policy Analysis and Management (APPAM), Fall Research Conference*. Baltimore, MD. November 8-10, 2012. Panel.
83. Randolph, J., Saar, M., **Bielicki, J.** (Presenter) “Geothermal Energy Production at Geologic CO<sub>2</sub> Sequestration Sites: Impact of Thermal Drawdown on Reservoir Pressure” *International Conference on Greenhouse Gas Technologies*. Kyoto, Japan. November 18-22, 2012. Poster. P.
84. **Bielicki, J.** (Presenter), Pollak, M., Wilson, E., Fitts, J., Peters, C. “Quantifying Basin Scale Leakage Risk and Stakeholder Impacts.” *11<sup>th</sup> International Conference on Greenhouse Gas Technologies*. Kyoto, Japan. November 18-22, 2012. Oral. P.
85. Pollak, M., **Bielicki, J.** (Presenter), Dammel, J.\*\* , Wilson, E., Fitts, J., Peters, C. “Potential Cost of Leakage from Geologic Sequestration in the Michigan Basin” *11<sup>th</sup> International Conference on Greenhouse Gas Technologies*. Kyoto, Japan. November 18-22, 2012. Oral. P.
86. **Bielicki, J.** “Energy Sustainability: Pillars, Values, and Policy” *Worlds within Reach: From Science to Policy, IIASA 40<sup>th</sup> Anniversary Conference*. October 24-26, 2012. Vienna, Austria. Poster.
87. **Bielicki, J.**, Pollak, M. (Presenter), Wilson, E., Peters, C., Fitts, J. “Spatially Integrated Assessment of Leakage Risk from CO<sub>2</sub> Storage Reservoirs from Multiple Stakeholder Perspectives”. *DOE-NETL 10<sup>th</sup> Annual Conference on Carbon Capture, Utilization, and Sequestration*. Pittsburgh, PA. April 30-May 3, 2012. Poster.
88. Pollak, M. (Presenter), Wilson, E., **Bielicki, J.**, Dammel, J.\*\* , Fitts, J., Peters, C. “Estimating Financial Consequences of Leakage from Geologic Sequestration”. *DOE-NETL 10<sup>th</sup> Annual Conference on Carbon Capture, Utilization, and Sequestration*. Pittsburgh, PA. April 30-May 3, 2012. Oral.
89. Saar, M., Adams, B.\*\* , Kuehn, T., Mevissen, A.\*\* , Paine, N.\*\* , Pollak, M. (Presenter), Randolph, J.\*\* , Smale, A.\*\* , Taff, S., **Bielicki, J.**, Wilson, E., “CO<sub>2</sub> Plume Geothermal (CPG) Energy Production at Geologic Sequestration Sites.” *DOE-NETL 10<sup>th</sup> Annual Conference on Carbon Capture, Utilization, and Sequestration*. Pittsburgh, PA. April 30-May 3, 2012. Poster.

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90. **Bielicki, J.** (Presenter), Pollak, M., Wilson, E., Elliot, T., Guo, B.\*\*\*, Noguez, J.\*\*\*, Peters, C., Fitts, J. “Your View or Mine: Spatially Quantifying CO<sub>2</sub> Storage Risk from Multiple Stakeholder Perspectives.” *American Geophysical Union Fall Meeting*. H42C-08. San Francisco, CA. December 5-9, 2011. Oral. A.
91. Guo, B.\*\*\* (Presenter), Matteo, E.\*\*\*, Elliot, T., Noguez, J.\*\*\*, Deng, H.\*\*\*, Fitts, J., Pollak, M., **Bielicki, J.**, Wilson, E., Celia, M., Peters, C. “Semi-analytical estimation of wellbore leakage risk during CO<sub>2</sub> sequestration in Ottawa County, Michigan.” *American Geophysical Union Fall Meeting*. GC51A-0948. San Francisco, CA. December 5-9, 2011. Poster. A.
92. **Bielicki, J.** (Presenter), Bael, D.\*\* , Pollak, M., Rahimi, M.\*\* , Wilson, E. “RISCS: Risk Interference of Subsurface CO<sub>2</sub> Storage.” *Sixth Trondheim CCS Conference on CO<sub>2</sub> Capture, Transport, and Storage*. Trondheim, Norway. June 14-16, 2011. Oral.
93. Calas, G.\*\*\*, Ha-Dong, M., **Bielicki, J.** (Presenter), Middleton, R. “Simulated CO<sub>2</sub> Pipeline Networks for CCS in France.” *Sixth Trondheim CCS Conference on CO<sub>2</sub> Capture, Transport, and Storage*. Trondheim, Norway. June 14-16, 2011. Poster.
94. Kuby, M. (Presenter), Middleton, R., **Bielicki, J.** “Benefits of Network Optimization for Planning Carbon Capture and Storage Infrastructure Systems.” *Association of American Geographers Annual Meeting*. Seattle, WA. April 12-16, 2011. Oral.
95. Pollak, M. (Presenter), **Bielicki, J.**, Dammel, J.\*\* , Rahimi, M.\*\* , Wilson, E. “Integrating Geologic Carbon Dioxide Storage with Other Subsurface Activities.”



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96. Pollak, M. (Presenter), Bael, D.\*\* , **Bielicki, J.**, Rahimi, M.\*\* , Wilson, E. “Interference and CO<sub>2</sub> Storage.” *DOE-NETL 9<sup>th</sup> Annual Conference on Carbon Capture and Sequestration*. Pittsburgh PA. May 2-5, 2011. Oral.
97. Saar, M., Adams, B.\*\* , **Bielicki, J.**, Janke, B.\*\* , Kuehn, T., Mevissen, A.\*\* , Parker, C., Pollak, M. (Presenter), Randolph, J.\*\* , Smale, A.\*\* , Taff, S., Wilson, E. “Carbon Dioxide Plume Geothermal Energy: Making Electricity (and Money) from Geologic Sequestration of Carbon Dioxide.” *DOE-NETL 9<sup>th</sup> Annual Conference on Carbon Capture and Sequestration*. Pittsburgh PA. May 2-5, 2011. Poster
- 2010
98. Kuby, M., Middleton, R., Keating, G., **Bielicki, J.** (Presenter) “Analysis of Cost Savings from Networking Pipelines in CCS Infrastructure Systems.” *10<sup>th</sup> International Greenhouse Gas Technologies Conference*. Amsterdam, The Netherlands. September 19-23, 2010. Poster. P.
99. Middleton, R. (Presenter), Keating, G., Pawar, R., Stauffer, P., **Bielicki, J.** “Jumpstarting CCS using Oil Refinery CO<sub>2</sub> for Enhanced Oil Recovery.” (2010). *10<sup>th</sup> International Greenhouse Gas Technologies Conference*. Amsterdam, The Netherlands. September 19-23, 2010. Oral. P.
100. **Bielicki, J.** “Evolving Carbon Dioxide Capture and Storage Deployment: Lessons from CO<sub>2</sub> Enhanced Oil Recovery.” (2010). *DOE-NETL 8<sup>th</sup> Annual Conference on Carbon Capture and Sequestration*, Pittsburgh, PA May 5-8, 2010. Oral.
- 2009
101. Middleton, R., Phillips, B. (Presenter), **Bielicki, J.** “The Optimal Spatial Deployment of Wind-Energy and Electricity Transmission Infrastructure.” *American Geophysical Union Fall Meeting*. A31F-0192. December 14-18, 2009. Poster. A.
102. **Bielicki, J.** “The State of Carbon Dioxide Capture and Storage,” *Carbon Capture and Storage Workshop, Oak Ridge National Laboratory*, Oak Ridge, TN. September 9, 2009. Oral.
103. Kuby, M., Middleton, R. (Presenter), **Bielicki, J.** “The Spatial Deployment of Carbon Capture and Storage with a Price on Carbon Dioxide.” *Geological Science of America Annual Meeting*, Portland OR, October 18-21, 2009. Oral.
104. **Bielicki, J.** “An Empirical Learning Curve for Geologic CO<sub>2</sub> Injection.” *DOE-NETL 7<sup>th</sup> Annual Conference on Carbon Capture and Sequestration*, Pittsburgh, PA. May 4-7, 2009. Oral.
105. Kuby, M., **Bielicki, J.** (Presenter), Middleton, R. “The Spatial Deployment of Carbon Capture and Storage with a Price on Carbon Dioxide.” *DOE-NETL 7<sup>th</sup> Annual Conference on Carbon Capture and Sequestration*, Pittsburgh, PA. May 4-7, 2009. Oral.
- 2008
106. **Bielicki, J.** “Spatial Clustering and Carbon Capture and Storage Deployment.” (2008) *9<sup>th</sup> International Greenhouse Gas Technologies Conference*, Washington DC. November 17-20, 2008. Oral. P.
107. Middleton, R. (Presenter), **Bielicki, J.** “A Comprehensive Carbon Capture and Storage Model.” (2008) *9<sup>th</sup> International Greenhouse Gas Technologies Conference*, Washington DC. November 17-20, 2008. Poster. P.
108. Stephens, J. (Presenter), **Bielicki, J.**, Rand, G. \*\*\* “Learning about Carbon Capture and Storage: Changing Stakeholder Perception with Expert Information.” *9<sup>th</sup> International Greenhouse Gas Technologies Conference*, Washington DC. November 17-20. Oral. P.
109. Middleton, R., **Bielicki, J.**, Kuby, M. (Presenter) “A Pipeline Network Design Model for Geologic Carbon Sequestration and Carbon Credit Pricing.” (2008) *ISOLDE: International Symposium on Locational Decisions*, Santa Barbara, CA, July, 2008. Oral.

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| 2007 | <p>110. <b>Bielicki, J.</b> “Returns to Scale for Carbon Capture and Storage Infrastructure and Deployment,” <i>DOE- NETL 6<sup>th</sup> Annual Conference on Carbon Capture and Sequestration</i>, Pittsburgh, PA. May 5-8. Oral. P.</p> <p>111. <b>Bielicki, J.</b> “The Viability of Permanent Carbon Capture and Storage in Deep Sea Sediment,” (2007) <i>American Geophysical Union Fall Meeting</i>. U42A-04. San Francisco, CA. Oral. A.</p> <p>112. Middleton, R. (Presenter), <b>Bielicki, J.</b> “The Carbon Capture and Storage Optimization Problem.” <i>North American Regional Science Conference</i>. Savannah, GA. November 2007. Oral.</p> |
| 2006 | <p>113. <b>Bielicki, J.</b> (Presenter), Schrag, D. “The Influence of Carbon Capture and Storage on the Location of Electric Power Generation.” <i>8<sup>th</sup> International Conference on Greenhouse Gas Technologies</i>. Trondheim, Norway. June 19-22, 2006. Poster. P.</p>  |
| 1999 | <p>114. Bieniosek, F. (Presenter), Kurnaev, O. Cherepakhin, A., <b>Bielicki, J.</b>, Dinkel, J. “Beam Sweeping System” (1999) <i>IEEE Particle Accelerator Conference</i>, New York, NY. May 1999, Oral. P.</p>   |
| 1992 | <p>115. Peterson, M., Bora, B. and others. “An Expert System for Design for Manufacturability using the Gold Works III Expert System Shell” <i>Argonne Symposium for Undergraduates in Science, Engineering, and Mathematics</i>, Argonne National Laboratory, Argonne, IL. November 1992. Poster.</p>  |

### OTHER PRESENTATIONS

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| 2017 | <ol style="list-style-type: none"> <li>1. <u>Wang, Y.</u>* (Presenter), Simon, E., Parkinson, S., Wada, Y., Riahi, K., <b>Bielicki, J.</b> “The Vulnerability of Electricity Generation under Changes in Water Temperature and Availability.” <i>Young Scientists Summer Program Symposium, International Institute of Applied Systems Analysis</i>. Laxenburg, Austria. August 22, 2017. Oral.</li> <li>2. <u>Nelson, E.</u>*** (Presenter), <b>Bielicki, J.</b>, Sioshansi, R., <u>Ogland-Hand, J.</u>* “The Value of Using Carbon Dioxide and Geothermal Resources in Transmission Constrained Electricity Systems.” <i>2017 Summer Research Opportunities Program</i>. Columbus, OH. July 27, 2017. Oral.</li> <li>3. <u>Nelson, E.</u>*** (Presenter), <b>Bielicki, J.</b>, Sioshansi, R., <u>Ogland-Hand, J.</u>* “The Value of Using Carbon Dioxide and Geothermal Resources in Transmission Constrained Electricity Systems.” <i>2017 Summer Research Opportunities Program</i>. Columbus, OH. July 27, 2017. Poster.</li> <li>4. <u>Wang, Y.</u>* (Presenter), Simon, E., Parkinson, S., Wada, Y., Riahi, K., <b>Bielicki, J.</b> “The Vulnerability of Coal-Fired Power Plants to Water Shortage in Asia under Climate Change and Capacity Expansion.” <i>Hayes Graduate Forum. The Ohio State University</i>. Columbus, OH. March 2, 2018. Oral.</li> <li>5. <b>Bielicki, J.</b> (Presenter), <u>Rath, A.</u>* , Gopalakrishnan, S., Carlarne, C. “Earth Services: Fuller Accounting of Human Benefit from the Planet.” <i>OSU Discovery Theme Showcase</i>. Columbus, OH., November 15, 2017. Oral.</li> </ol> |
| 2016 | <ol style="list-style-type: none"> <li>6. <b>Bielicki, J.</b> “Energy Storage in Sedimentary Basin Geothermal Resources.” <i>NSF SedHeat Research Coordination Network Incubator Workshop</i>. August 15-16, 2016. Columbus, Ohio. Oral.</li> <li>7. <u>DeLuca, M.</u>* (Presenter), <b>Bielicki, J.</b> "Infrastructure Deployment for CO<sub>2</sub> Capture and Storage that is Robust to Reservoir Leakage Risk." <i>The Richard D. and Martha J. Denman Undergraduate Research Forum</i>. Columbus, OH. March 30, 2016. Oral.</li> </ol>  |

8. Shaheen, N.\* (Presenter), **Bielicki, J.** “Spatial Association Analysis of Geothermal Tracer Pathways.” *Spring Undergraduate Research Expo*. The Ohio State University. Columbus, OH. March 30, 2016. Poster.
- 2015
9. **Bielicki, J.** “Pillars of Energy Sustainability.” *Integrated Assessment Modeling Group, Sustainable and Resilient Economy Discovery Theme Program*. The Ohio State University. Columbus, OH. October 14, 2015. Oral.
10. Langenfeld, J.\* (Presenter), **Bielicki, J.**, “Geospatial and Economic Viability of CO<sub>2</sub> Storage in Fractured Shale and Saline Aquifers.” *Graduate Engineering Research Colloquium*. The Ohio State University. Columbus, OH. October 2, 2015. Poster.
11. Patel, I.\* (Presenter), **Bielicki, J.**, “Optimal Operation of Geothermal Heat Extraction.” *Graduate Engineering Research Colloquium*. The Ohio State University. Columbus, OH. October 2, 2015. Poster.
12. **Bielicki, J.** (Presenter), Deng, H.\*\*\*, Pollak, M., Wilson, E., Fitts, J., Peters, C., “Monetizing Geologic CO<sub>2</sub> Storage Leakage Risk.” Presented at *U.S. Department of Energy Carbon Storage R&D Project Review Meeting*. August 18-20, 2015. Pittsburgh, PA. Poster.
13. **Bielicki, J.** “Personal, Climatic, and Research Juxtapositions: Using CO<sub>2</sub> for Renewable Energy Generation.” *STEAM Exchange*, Ohio State University. Columbus, OH. January 22, 2015. Oral.
- 2014
14. **Bielicki, J.** “Moneyball and the Glenn School.” *M.P.A. Orientation*. John Glenn School of Public Affairs. The Ohio State University. August 20, 2014. Columbus, OH. Oral.
- 2013
15. **Bielicki, J.** (Presenter). “Summary of Multi-Fluid Geothermal”. (2013). *Penrose Conference: Predicting and Detecting Natural and Induced Flow Paths for Geothermal Fluids in Deep Sedimentary Basins*. October 19-23, 2013. Park City, UT. Oral.
16. **Bielicki, J.** (Presenter), Gilley, S., “Geothermal Energy: Enhancing our Future”. (2013). *Penrose Conference: Predicting and Detecting Natural and Induced Flow Paths for Geothermal Fluids in Deep Sedimentary Basins*. October 19-23, 2013. Park City, UT. Oral.
17. Saar, M., **Bielicki, J.** (Presenter), Kuehn, T., Randolph, J., Taff, S. “A Novel Method Using Carbon Dioxide and Geothermal Resources for Sustainable Energy Production and Storage.” *NSF Sustainable Energy Pathways Grantees Meeting*. June, 2013. Washington DC. Oral.
- 2012
18. **Bielicki, J.** (Presenter), Pollak, M., Fitts, J., Wilson, E., Peters, C. “Your View or Mine: Spatial CO<sub>2</sub> Storage Risk from Various Stakeholder Perspectives.” *Carbon Sequestration Workshop*, Carnegie Mellon University. January 17, 2012. Oral.
19. **Bielicki, J.** (Presenter), Pollak, M., Fitts, J., Wilson, E., Peters, C. “Your View or Mine: Spatial CO<sub>2</sub> Storage Risk from Various Stakeholder Perspectives.” *United States Department of Energy, National Energy Technology Laboratory, Project Update Meeting*, January 16, 2012. Oral.
- 2009
20. **Bielicki, J.** “Climate Change Impacts Science at Oak Ridge National Laboratory.” *Halcrow Visit to Oak Ridge National Laboratory*, Oak Ridge, TN. October 27, 2009.
21. **Bielicki, J.** “Infrastructure Deployment for Carbon Capture and Storage,” *CO<sub>2</sub> Pipeline Modeling Meeting*. *CO<sub>2</sub> Pipeline Modeling Meeting*. National Energy Technology Laboratory, U.S. Department of Energy. Pittsburgh PA. January 21, 2009.
- 2008
22. **Bielicki, J.** “Princeton’s Wedge Game,” *Research Experience in Carbon Sequestration 2008*, University of New Mexico, Albuquerque, NM. July 20, 2008.

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| 2007 | 23. <b>Bielicki, J.</b> “Princeton’s Wedge Game,” <i>Research Experience in Carbon Sequestration 2007</i> , Montana State University, Bozeman, MT. July 2007.   |
| 2004 | <p>24. <b>Bielicki, J.</b> (Presenter), Landguth, E.(Presenter) “Embedding Ameriflux Data.” Presented at <i>Santa Fe Institute Complex Systems Summer School</i>, Santa Fe, NM. June, 2004.</p> <p>25. Bendor, T. (Presenter), <b>Bielicki, J.</b> (Presenter), Powell, B. (Presenter), Robinson, D. (Presenter), “Embedding Ameriflux Data.” Presented at <i>Santa Fe Institute Complex Systems Summer School</i>, Santa Fe, NM. June, 2004.</p> |

## **OUTREACH, CONTINUING EDUCATION, AND BROADER IMPACTS OF RESEARCH**

### **DECISION-MAKERS AND FORUMS**

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|------|--|
| 2016 | Invited Panelist. “Energy Storage: Capturing Opportunity.” <i>Grid Modernization: Understanding Technology Advancements, Midwest Governor’s Association Annual Meeting</i> , The Ohio State University. Columbus, OH. October 5, 2016. Panel.  |
| 2016 | Invited Speaker and Discussant. “The Earth Battery: An Emerging Approach for Energy Storage to Integrate Renewable Energy Sources into the Electricity Grid.” <i>Les Enjeux Technologiques De L’Integration Des Energies Reuvelables au Reseau Electrique</i> (Public hearing on integrating renewable energy into the electricity grid) <i>Assemblée Nationale</i> (French National Assembly, the lower house of the French Parliament). May 26, 2016. Paris, France. |
| 2014 | Invited Speaker. “Benefits and Concerns with Unconventional Hydrocarbon Development.” <i>Glenn School Leadership Forum</i> , October 17, 2014. Columbus, OH. Oral.   |
| 2009 | Invited Speaker. “CO <sub>2</sub> Pipeline Modeling for the Midwestern United States,” <i>Midwest Governors Association Renewable Electricity, Advanced Coal and Carbon Capture with Storage Advisory Group Meeting</i> . Traverse City, MI. (Remote from Cambridge, MA). March 20, 2009.  |
| 2008 | Invited Speaker. “Infrastructure Modeling for Carbon Capture and Storage,” (2008). <i>Midwest Governors Association, CO<sub>2</sub> Infrastructure Subcommittee Meeting</i> , Washington DC. June 19-20, 2008.   |

### **PRESS CONFERENCES**

- |            |  |
|------------|--|
| APRIL 2015 | “Using CO <sub>2</sub> to Produce and Store Energy.” <i>Reducing Emissions: Renewable Energies &amp; Carbon Capture and Storage. European Geosciences Union, General Assembly</i> , April 13, 2015. Vienna, Austria. <a href="http://www.egu.eu/news/168/egu-2015-general-assembly-media-advisory-4-pressconferences-live-stream-on-site-registration/">http://www.egu.eu/news/168/egu-2015-general-assembly-media-advisory-4-pressconferences-live-stream-on-site-registration/</a> |
|------------|--|

### **PRESS RELEASES**

- |                |   |
|----------------|---|
| SEPTEMBER 2017 | “Leaks will not sink carbon capture and storage.” <i>Princeton University</i> , Princeton, New Jersey, United States. <a href="https://www.princeton.edu/news/2017/09/01/leaks-will-not-sink-carbon-capture-and-storage">https://www.princeton.edu/news/2017/09/01/leaks-will-not-sink-carbon-capture-and-storage</a> |
| DECEMBER 2013  | “Can we turn unwanted CO <sub>2</sub> into electricity?” <i>American Geophysical Union Fall Meeting</i> , San Francisco, California, United States. <a href="https://news.osu.edu/news/2013/12/12/geothermal/">https://news.osu.edu/news/2013/12/12/geothermal/</a>   |

## QUOTES AND FEATURES

OCTOBER 2017	XPrize Foundation. “How to power the grid with renewables 24/7? Use stored CO <sub>2</sub> , says Team TerraCOH”. <a href="https://twitter.com/xprize/status/921438475315851264">https://twitter.com/xprize/status/921438475315851264</a>
MAY 2017	Climate Central. “Budget Guts U.S. Carbon Capture, Storage Research.” by Bobby Magill of Climate Central.” <a href="http://www.climatecentral.org/news/budget-guts-us-carbon-capture-storage-research-21478">http://www.climatecentral.org/news/budget-guts-us-carbon-capture-storage-research-21478</a>
MARCH 2017	Columbus Dispatch. “Trump doing what he said he’d do on environment.” Marion Renault. <a href="http://www.dispatch.com/news/20170330/trump-doing-what-he-said-hed-do-on-environment">http://www.dispatch.com/news/20170330/trump-doing-what-he-said-hed-do-on-environment</a>
NOVEMBER 2016	Columbus Dispatch. “Trump’s pledges to reverse climate-change policies worry some.” Marion Renault. <a href="http://www.dispatch.com/content/stories/local/2016/11/19/trumps-pledges-to-reverse-climate-change-policies-worry-some.html">http://www.dispatch.com/content/stories/local/2016/11/19/trumps-pledges-to-reverse-climate-change-policies-worry-some.html</a>
JUNE 2016	Scientific American. <i>Scientists turn carbon dioxide emissions into stone.</i> ” Bobby Magill <a href="https://www.scientificamerican.com/article/scientists-turn-carbon-dioxide-emissions-into-stone-video/">https://www.scientificamerican.com/article/scientists-turn-carbon-dioxide-emissions-into-stone-video/</a>
AUGUST 2015	Earth Magazine. “Down to Earth With: Engineer Jeffrey Bielicki” Terry Cook. <a href="http://www.earthmagazine.org/article/down-earth-engineer-jeffrey-bielicki">http://www.earthmagazine.org/article/down-earth-engineer-jeffrey-bielicki</a>
JULY/AUGUST 2015	Discover Magazine. “Geothermal’s Carbon Dioxide Boost.” Xiaoshi Lim. <a href="http://discovermagazine.com/2015/july-aug/20-geothermal-co2-boost">http://discovermagazine.com/2015/july-aug/20-geothermal-co2-boost</a>
APRIL 2015	Deutschlandfunk. “Strom aus Kohlendioxid.” Dagmar Rölich. <a href="http://www.deutschlandfunk.de/geothermisches-kraftwerk-strom-aus-kohlendioxid.676.de.html?dram:article_id=317049">http://www.deutschlandfunk.de/geothermisches-kraftwerk-strom-aus-kohlendioxid.676.de.html?dram:article_id=317049</a>
DECEMBER 2014	Huffington Post. “An Open Letter to Warren Buffett.” Clay Faris Naff. <a href="http://www.huffingtonpost.com/clay-naff/an-open-letter-to-warren_b_6387076.html">http://www.huffingtonpost.com/clay-naff/an-open-letter-to-warren_b_6387076.html</a>

## MEDIA AND PUBLIC

2014	Invited Speaker. “Can We Turn Unwanted Carbon Dioxide into Electricity?” <i>Science Writers 2014: Lunch with a Scientist</i> , October 19, 2014. Columbus, OH.
2014	Invited Speaker. “To Frack or Not to Frack: Energy Sustainability and Emerging Subsurface Development.” <i>Marion Science Café</i> . The Ohio State University, Marion. April 1, 2014.
2013	Gilley, S., and <b>Bielicki, J.</b> “Geothermal Energy: Enhancing Our Future.” Computer Animated Video, available at <a href="http://www.energypathways.org">www.energypathways.org</a> and <a href="https://www.youtube.com/watch?v=GR-AA3dINRs">https://www.youtube.com/watch?v=GR-AA3dINRs</a>
2012	Keynote Speaker. “Energy Sustainability and Solar Energy Technology Innovation.” <i>Solar Energy Workshop</i> , West Central Research and Outreach Center, University of Minnesota at Morris. June 12, 2012.

2007 Invited Panelist. Chewonki Carbon Capture and Storage Public Meeting, Wiscasset ME. October 24, 2007.

#### CONTINUING EDUCATION

2017 Invited Speaker. "Using CO<sub>2</sub> to Produce and Store Energy." *Engineers Foundation of Ohio*, Columbus, OH. November 3, 2017.

2014 Invited Speaker. "Benefits and Concerns of Emerging Subsurface Development Activities." *Ohio Energy: Emerging Issues in Law, Finance, and Regulation*. Moritz College of Law, The Ohio State University. April 9, 2014.

#### SERVICE

##### EXPERT PARTICIPATION AND CONSULTATION

2017 *Mission Innovation – Accelerating the Clean Energy Revolution: Carbon Capture, Utilization, and Storage Experts Workshop*. September 25-29, 2017 Houston, TX. Report forthcoming.

2012 Social Aspects of Bioenergy Sustainability Workshop, *U.S. Department of Energy - Office of Biological and Environmental Research*, Washington, DC.

2011 Quadrennial Technology Review, *Technical Workshop on Clean Electricity*. *U.S. Department of Energy*, June 7, 2011. Boulder, CO. Report.

2010 Grand Challenges Workshop, *U.S. Department of Energy - Office of Biological and Environmental Research*, March 2-5, 2010. Bethesda, MD.

2009 "U.S.-China Cooperation on Low-Emission Coal Technologies: Realities and Opportunities." *Atlantic Council and the U.S./China Energy and Environment Technology Center at Tsinghua and Tulane Universities*, Beijing China. June 24-26, 2009.

2008 CCS Guidelines: Guidelines for Carbon Dioxide Capture, Transport, and Storage Workshop, *World Resources Institute*, June 2008. Washington, DC.

2008 Carbon Capture and Storage Working Group. *National Commission on Energy Policy*, Washington, DC. Fall 2008.

##### UNIVERSITY SERVICE

###### **Ohio State University**

2017 - PRESENT Member. Energy Academic Collaboration Council. University (reports to the Provost)

2017 – PRESENT Member. Science, Engineering, and Public Policy Program Development. College of Engineering

2013 - PRESENT Member. Doctoral Committee. John Glenn College of Public Affairs

2017 – 2018 Member. Faculty Search Committee - Agricultural Sensing and Sustainability Indicators. Food, Agricultural, and Biological Engineering

2016–2017	Member. Faculty Search Committee - Smart Buildings. Department of Civil, Environmental, and Geodetic Engineering.
2015–2017	Associate Director. Subsurface Energy Resources Center
2014–2017	Member. Graduate Studies Committee. Environmental Science Graduate Program
2014–2017	Member. Faculty Advisory Committee. Subsurface Energy Resources Center
2014–2015	Member. Faculty Search Committee - Infrastructure. Department of Civil, Environmental, and Geodetic Engineering.
	<b>University of Minnesota</b>
2010–2013	Organizer. Science, Technology, and Environmental Policy Feedback and Research (STEP-FAR) Seminar. Humphrey School of Public Affairs.
2011–2012	Member. Ph.D. Program Development Committee. Humphrey School of Public Affairs.

#### EXPERT AND PEER REVIEWS

##### JOURNAL REFEREE

2018	<i>Nature Energy, Energy &amp; Environmental Science, International Journal of Greenhouse Gas Control (2)</i>
2017	<i>Energy &amp; Environmental Science (3), Applied Energy, SPE Economics &amp; Management</i>
2016	<i>Advances in Water Resources, Environmental Science &amp; Technology, Energy &amp; Environmental Science (2), Energy Policy, Environmental Engineering Science (2),</i>
2015	<i>Energy Policy (7), Journal of Cleaner Production, Energy Economics, International Journal of Greenhouse Gas Control, Environmental Science &amp; Technology,</i>
2014	<i>Energy Policy (7), International Journal of Greenhouse Gas Control (2), Science and Public Policy, Sedimentary Record, Energies</i>
2013	<i>SPE Economics &amp; Management, Energy Policy (4)</i>
2012	<i>Energy Policy</i>
2011	<i>Energy Economics, SPE Economics &amp; Management, Greenhouse Gases: Science &amp; Technology, Energy Policy (2)</i>
2010	<i>Energy Policy, International Journal of Greenhouse Gas Control</i>

##### GRANT PANELS AND PROPOSALS

2017	Reviewer Panel Member. NSF Chemical, Biotechnology, and Environmental Technology. Unsolicited Panel Proposals
2016	Reviewer Panel Member. NSF Chemical, Biotechnology, and Environmental Technology. Unsolicited Panel Proposals
2016	Proposal Reviewer. Ohio Agricultural Research and Development Center (OARDC). Ohio State University.
<b>REPORTS</b>	
2012	Intergovernmental Panel on Climate Change, Fifth Assessment Report. Working Group III. First Order Draft.
2010	Shaping the Future of CCS: Understanding Carbon Capture and Storage Systems and Knowledge from Social Science Perspectives.
2009	International Energy Agency. Technology Roadmap: Carbon Capture and Storage 2009.
<b>SCHOLARLY COMPETITIONS</b>	
2017	Midwestern Association of Graduate Schools (MAGS). MAGS Distinguished Master's Thesis Competition.

#### **CONFERENCE SESSION AND WORKSHOP CONVENER / ORGANIZER**

DECEMBER 2016	Conference Session Co-convenor. <i>“Conventional, Enhance, and Emerging Geothermal Systems: Characterization, Integration, Stimulation, Simulation, Induced Seismicity, and Reservoir Energy Management”</i> American Geophysical Union Fall Meeting. San Francisco, CA.
AUGUST 2016	Workshop Organizer. <i>“Energy Storage in Sedimentary Basins Workshop.”</i> Columbus, OH.
OCTOBER 2015	Conference Session Co-Organizer. <i>“Educating Energy Professionals of the Future.”</i> 2015 AASHE (Association for the Advancement of Sustainability in Higher Education) Conference and Expo. Minneapolis, MN.
MAY 2015	Conference Session Chair. <i>“Energy and Environment”</i> 15 <sup>th</sup> Polish-American Science & Technology Conference. Columbus, OH.

#### **AFFILIATION TO PROFESSIONAL SOCIETIES**

2016 – PRESENT	Member. American Society of Engineering Education
2015 – PRESENT	Member. Association of Environmental Engineering and Science Professors
2013 – PRESENT	Member. European Geosciences Union
2009 – PRESENT	Member. American Association for the Advancement of Science
2007 – PRESENT	Member. American Geophysical Union
2005 – PRESENT	Member. American Economic Society
1992 – PRESENT	Member. American Society of Mechanical Engineers
2013 – 2017	Member. Geothermal Resources Council
2004 – 2008	Member. Society for Industrial and Applied Mathematics



**ACADEMIC MENTORING** (WITH NOTABLE ACCOMPLISHMENTS)

**PH.D. STUDENTS** (COMPLETED: **1**; PRESENT: **1**; INCOMING: **3**)

- |                |   |
|----------------|---|
| INCOMING AU18  | 1. <b>Sirin, Murat Selahattin:</b> Ph.D. Student, John Glenn College of Public Affairs<br>Received OSU University Fellowship (2016, deferred until 2018).   |
| INCOMING AU18  | 2. <b>Miranda, Marcos:</b> Ph.D. Student, Department of Civil, Environmental, and Geodetic Engineering.<br>Received OSU Diversity Fellowship (2018).<br>Receives College of Engineering Diversity Fellowship (2018).  |
| INCOMING AU18  | 3. <b>Chun, Soomin:</b> Ph.D. Student, Environmental Science Graduate Program   |
| 2014 - PRESENT | 4. <b>Ogland-Hand, Jonathan:</b> Ph.D. Student, Environmental Science Graduate Program (Expected Graduation: 12/18)<br>Lead author of paper in revision; co-author of paper in revision.<br>Lead author of three, and co-author of two, conference papers.<br>One of four OSU students selected to participate in AAAS Catalyzing Advocacy in Science and Engineering (CASE) workshop in (Washington, DC, 2018).<br>Inducted into Sigma Xi, the Scientific Research Society (2016).<br>Received OSU Environmental Policy Initiative Research Grant (\$4,500) (2016).<br>One of 100 graduate students nationwide selected to participate in the ARPae Innovation Summit in Washington, DC (2016).<br>Received two ESGP travel grants (2016, 2x), one OSU Office of Energy and Environment Travel Grant (2015).<br>Received honorable mention for NSF Graduate Research Fellowship (2015, 2016)<br>Received OSU University Fellowship (2014). |
| 2014 - 2018    | 5. <b>Wang, Yaoping:</b> “Climate Change and Its Effects on Energy and Water.” Environmental Science Graduate Program (Graduation: 08/18)<br>Lead author of two published peer-reviewed papers; co-author of paper in revision.<br>Received Peccei Award from the International Institute of Applied Systems Analysis (IIASA), Laxenburg Austria (2018)<br>One invited talk at international university (East China Normal University, School of Geographic Sciences. China, 2018).<br>Selected to participate in OSU Hayes Graduate Research Forum (2018).<br>One of 52 students from 30 countries selected to participate in the Young Scientists Summer Program (YSSP) at IIASA, Laxenburg, Austria. (2017)<br>Received OSU Office of Energy and Environment Sustainability Grant (\$2,500) (2014).  |

**M.S. STUDENTS** (CURRENT: **2**; COMPLETED: **5**; INCOMING: **1**)

- |               |   |
|---------------|---|
| INCOMING AU18 | 6. <b>Maldonado, Stephen:</b> M.S. Student, Department of Civil, Environmental, and Geodetic Engineering<br>Received OSU Diversity Fellowship |
|---------------|---|

2017 - PRESENT	7. <b>Starkey, Dan:</b> M.S. Student, Department of Civil, Environmental, and Geodetic Engineering. Non-thesis.
2016 – PRESENT	8. <b>Rath, Amlan:</b> M.S. Student, Department of Civil, Environmental, and Geodetic Engineering.
2015 – 2017	9. <b>Hunter, Kelsey:</b> “CO <sub>2</sub> -Enhanced Water Recovery through Integrated CO <sub>2</sub> Injection and Brine Extraction in the Rock Springs Uplift Formation in Southwest, WY.” Department of Civil, Environmental, and Geodetic Engineering. Graduated: 2017. Co-author of published peer-reviewed paper. Finalist, 2017 C3E Women in Clean Energy Symposium. Lead author of conference paper. One of 100 graduate students nationwide selected to participate in the ARPAe Innovation Summit in Washington, DC (2016). Scholarship from the Ohio Water Resources Center to attend a Water Smart Innovation Conference (2016). Inducted into Sigma Xi, the Scientific Research Society (2016). Best Poster Award at the "CO <sub>2</sub> Summit II: Technologies and Opportunities" conference (2016). U.S. DOE Mickey Leland Energy Fellowship (2016)
2015 – 2017	10. <b>Hagley, Paige:</b> “Empowerment, Uncertainty, and Perceived Impacts of Shale Energy Development in Eastern Ohio.” Environmental Science Graduate Program. Graduated: 2017.
2014 – 2016	11. <b>Langenfeld, Julie:</b> “Geospatial and Economic Viability of CO <sub>2</sub> Storage in Fractured Shale.” Department of Civil, Environmental, and Geodetic Engineering (M.S.) and John Glenn College of Public Affairs (M.P.A.). Graduated: 2016. Co-author of published peer-reviewed paper. Lead author of two conference papers. Inducted into Sigma Xi, the Scientific Research Society (2016) Received OSU University Fellowship (2014)
2014 – 2016	12. <b>Patel, Iti:</b> “Optimal Heat Extraction for Geothermal Energy Applications.” Department of Civil, Environmental, and Geodetic Engineering. Graduated: 2016. Inducted into Sigma Xi, the Scientific Research Society (2016) Received Sigma Si Grant in Aid of Research (GIAR) (\$1,000) (2016) Lead author of one conference paper.
2014 – 2016	13. <b>Sutula, Glenn:</b> “Developing a Framework for the Purposes of Locating Undiscovered Hydrogeologic Windows.” Environmental Science Graduate Program. Graduated: 2016. Inducted into Sigma Xi, the Scientific Research Society (2016) Co-author of two conference papers

**UNDERGRADUATE STUDENTS (CURRENT: 0; COMPLETED/FORMER: 16)**

2015 – 2017	14. <b>DeLucca, Maria:</b> B.S., Department of Civil, Environmental, and Geodetic Engineering. Graduated: 2017.
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Selected to participate in the Denman Undergraduate Research Forum

- 2016–2017 15. **Pfister, Cody.** B.S., Department of Civil, Environmental, and Geodetic Engineering. Graduated: 2017.
- 2016–2017 16. **Elderbrock, Andrew:** B.S., Department of Civil, Environmental, and Geodetic Engineering. Graduated: 2017.
- 2015–2016 17. **Shaheen, Nora:** B.S., Department of Chemical and Biomolecular Engineering. Graduated: 2017.
- 2016 18. **Peters, Travis:** B.S., Department of Materials Science and Engineering. Graduated: 2018.
- 2015 19. **Rossini Lupinnaci, Julia:** B.S., Universidade Federal de Vicosa. Brazilian Scientific Mobility Program. Graduated: 2016.
- 2015 20. **Oliveira de Azevedo, Bianca:** B.S., Universidade Tecnológica Federal do Paraná. Brazilian Scientific Mobility Program. Graduated: 2016.
- 2015 21. **Cardoso Cascais, Valniele:** B.S., Universidade do Estado do Pará. Brazilian Scientific Mobility Program. Graduated: 2016.
- 2015 22. **Ferreira Alves, Rafael:** B.S., Centro Universitario UNA. Brazilian Scientific Mobility Program. Graduated: 2016.
- 2015 23. **Alves Pereira, Erica:** B.S., Universidade Federal de Vicosa. Brazilian Scientific Mobility Program. Graduated: 2016.
- 2015 24. **Sforsin Pereira da Cunha, Gabriel:** B.S., Universidade Federal do Tocantins. Brazilian Scientific Mobility Program. Graduated: 2016.
- 2014 25. **Barbosa de Carvalho, Mariana:** B.S., UNESP – Universidade Estadual Paulista. Brazilian Scientific Mobility Program. Graduated: 2015.  
Received fellowship from FAPESP (Sao Paulo Research Foundation, Brazil)
- 2014 26. **Giovannini Junior, Nelson:** B.S., UNESP – Universidade Estadual Paulista. Brazilian Scientific Mobility Program. Graduated: 2015.
- 2014 27. **Beasley, Emma:** B.S. student, Department of Chemistry
- 2014 28. **Miner, Jonathan:** B.S., Department of Civil, Environmental, and Geodetic Engineering. Graduated: 2014.
- 2014 29. **Kesavan, Supreya:** B.S., Department of Civil, Environmental, and Geodetic Engineering. Graduated: 2015.

## GRADUATE COMMITTEE MEMBERSHIP

### PH.D. COMMITTEES (Current: 5; Completed: 2)

2018 - PRESENT	30. <b>Junod, Anne:</b> School of Environment and Natural Resources. The Ohio State University.
2017 – PRESENT	31. <b>Ezekiel, Justin:</b> Department of Earth Sciences. ETH-Zürich.
2015 – PRESENT	32. <b>Vines, Chante’:</b> Department of Civil, Environmental, and Geodetic Engineering. The Ohio State University
2014 – PRESENT	33. <b>Rey-Sanchez, Andres-Camillo:</b> Environmental Science Graduate Program. The Ohio State University.
2015 – PRESENT	34. <b>Saltos, Theodore:</b> Agricultural, Environmental, and Developmental Economics. The Ohio State University.
2016 – 2017	35. <b>Morin, Tim:</b> “The Nexus of Observing and Modeling Methane Emissions from Inland Water Bodies.” Environmental Science Graduate Program. The Ohio State University. Graduated: 2017.
2014 – 2016	36. <b>Matheny, Ashley:</b> “Development of a Novel Plant-Hydrodynamic Approach for Modeling of Forest Transpiration during Drought and Disturbance.” Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2016.

### MASTER’S COMMITTEES (CURRENT: 2; COMPLETED: 13)

2017 – PRESENT	37. <b>Vines, Chante’:</b> Civil, Environmental, and Geodetic Engineering. The Ohio State University.
2017 – PRESENT	38. <b>Haines, Sarah:</b> Environmental Science Graduate Program. The Ohio State University.
2018	39. <b>Luma, Johnson:</b> “Sleep Loss and Environmental Exposures in Asthma Patients (SLEEAP): Chemical Analysis and Significance Testing for Interior Aerosols from Buffalo, NY Residences.” Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2018.
2017 – 2018	40. <b>Rey-Sanchez, Andres-Camillo:</b> “Measurements of Evaporation and Carbon Dioxide Fluxes over a Coastal Reef using the Eddy-Covariance Technique.” Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2018.
2017	41. <b>Bittinger, Adam:</b> “Sludge Stabilization and Biosolids Production Processes.” Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2017.
2016	42. <b>Wright, Mathew:</b> Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2016.
2016	43. <b>Compton, Rosemary:</b> “An Analysis of CO <sub>2</sub> -Switchable Poly Allylamine Gels as Alternative Fracking Fluids.” Chemical and Biomolecular Engineering. The Ohio State University. Graduated: 2016.

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| 2014 - 2016 | 44. <b>Herak, Patrick:</b> “A Comparison of Several Models for Determining Critical Sources in the Context of Seasonal Variation.” Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2016.                       |
| 2015        | 45. <b>Thomas, Nathaniel:</b> “ <i>Qanat</i> : Ancient Water Delivery.” Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2015.  |
| 2015        | 46. <b>McClain, Krystaal:</b> “Environmental Drivers of Migration in Two Israeli Raptor Species.” Environmental Science Graduate Program. The Ohio State University. Graduated: 2015.  |
| 2014        | 47. <b>Ohanian, Nicholas:</b> “The Examination of Fiber and Breaker Effects on the Rheological and Settling Rate Characteristics of Hydraulic Fracturing Fluids.” Chemical and Biomolecular Engineering. The Ohio State University. Graduated: 2014. |
| 2012 – 2013 | 48. <b>Gilley, Shannon:</b> “Sci-Candy: Principles of Animation-Based Learning and the Next Wave of Science Education.” Minneapolis College of Art and Design. Graduated: 2013.  |
| 2012 – 2013 | 49. <b>Suchomel, Ashley:</b> “Potential Hazards of Hydraulic Fracturing Fluids for Public Health in the Bakken Shale Play of North Dakota.” Public Health. University of Minnesota, Graduated: 2013.   |
| 2011 – 2012 | 50. <b>Haase, Rachel:</b> “Innovation in Emerging Energy Technologies: A Case Study Analysis to Inform the Path Forward for Algal Biofuels.” Humphrey School of Public Affairs. University of Minnesota, Graduated: 2012.                            |
| 2011 – 2012 | 51. <b>Kemp, Mary:</b> “Palm Oil Sustainability.” Humphrey School of Public Affairs. University of Minnesota, Graduated: 2012.   |

**UNDERGRADUATE HONORS (CURRENT: 0; COMPLETED: 3)**

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|------|--|
| 2017 | 52. <b>Haines, Sarah:</b> “Modeling Microbial Growth in Carpet Dust under Diurnal Variations in Relative Humidity.” Department of Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2017.            |
| 2016 | 53. <b>Berkeley, Randall:</b> “Measuring Soil Moisture with Radio-Waves.” Department of Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2016.  |
| 2015 | 54. <b>Merriam, Charles:</b> “Agriculture and Policy: Policy Shifts and their Impact on the Upper Big Walnut Creek Watershed.” Department of Civil, Environmental, and Geodetic Engineering. The Ohio State University. Graduated: 2015. |

**OTHER RESEARCH ADVISING (CURRENT: 0; COMPLETED/FORMER: 5)**

- |             |  |
|-------------|--|
| 2013 – 2015 | 55. <b>Deng, Hang:</b> “Policy Implications of Monetized Leakage Risk from Geologic CO <sub>2</sub> Storage Reservoirs.” Civil and Environmental Engineering Ph.D. Student -- Woodrow Wilson School of International Affairs. Science, Technology, and Environmental Policy Graduate Certificate. Princeton University. Graduated: 2015. |
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2014–2015	56. <b>Jiang, Zhongnan:</b> “Learning by Doing, Technological Changes, Expansion and Productivity in CO <sub>2</sub> Enhanced Oil Recovery and Policy Implications.” John Glenn College of Public Affairs. The Ohio State University. First-Year Paper Advisee.
2015	57. <b>Benham, Claudia:</b> Fenner School of Environment and Society. Australia National University. Visiting Scholar – Ph.D. student.
2014	58. <b>Ray, Andy:</b> “Improving Public Safety & Reducing Greenhouse Gas Emissions by Replacing Vintage Gas Distribution Pipelines in Michigan, New York, Pennsylvania, and Ohio.” M.S. Energy Policy and Climate. Johns Hopkins University. Graduated: 2014.
2010–2011	59. <b>Calas, Guillaume:</b> “Le transport de dioxyde de carbone par canalization: Modalités de développement et modélisation en France des réseaux de transport dans le cadre du captage et stockage de CO <sub>2</sub> .” M.S. AgroENGREF Paris Tech, Paris. Graduated: 2010.

## **TEACHING**

### GRADUATE

#### **The Ohio State University**

*Science, Engineering, and Public Policy* (PUBAFRS/ENVENG 5600): Sp15, Sp16, Sp17, Sp18  
*Special Topics - Science, Engineering, and Public Policy* (PUBAFRS 5800), co-taught with Caroline Wagner: Sp14

#### **University of Minnesota**

*Empirical Analysis I* (PA 5031-008): Au12  
*Systems Thinking and Modeling* (PA 5022-011): Sp13  
*Environmental and Natural Resource Economics* (APEC 5076): Sp13  
*Game Theory and Interdependent Actions* (PA 5022-007): Sp11, Sp12, Sp13

### UNDERGRAD.

#### **The Ohio State University**

*Engineering Economic Evaluation and Optimization in Civil and Environmental Engineering* (CIVILEN 3080): Sp15, Sp16 (two sections), Sp17 (two sections), Sp18 (two sections)  
*Science, Engineering, and Public Policy* (PUBAFRS/ENVENG 5600): Sp15, Sp16, Sp17, Sp18  
*Special Topics - Science, Engineering, and Public Policy* (PUBAFRS 5800), co-taught with Caroline Wagner: Sp14

### PROFESSIONAL

#### **The Ohio State University**

*Science, Engineering, and Public Policy*, Masters of Global Engineering Leadership (MGEL ENVENG 5600): Sp17, Sp18

### SHORT COURSES

#### **University of Minnesota**

*Systems Thinking and Tools*, Boreas Leadership Program: Au11, Sp12, Sp13, Au14, Au15,

### GUEST LECTURES

#### **The Ohio State University**

*Hydraulic Fracturing: Environmental and Socioeconomic Considerations* (EEOB 8896): Sp16  
*Sustainability Metrics* (ENR 3900): Au15  
*Energy MBA Program* (OSU Fisher College of Business): Sp15  
*Ecological Engineering* (ENVENG 5310): Au14  
*Issues in Environmental Science* (ENVSCI 7899): Au13

*Applied Hydrology* (ENVENG 5130): Au13

**University of Minnesota**

*Science and Policy of Global Environmental Change* (EEB/FR 4126): Sp11

*Environment and Natural Resource Economics Seminar*: Sp11