

## JASON A. DELBORNE

North Carolina State University  
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### EDUCATION

- Ph.D. **University of California, Berkeley** 2005  
Environmental Science, Policy and Management (ESPM)  
Dissertation: *Pathways of Scientific Dissent in Agricultural Biotechnology*  
Jeffrey Romm (chair), Jean Lave, Charis Thompson, and David Winickoff
- A.B. **Stanford University** 1993  
Program in Human Biology, degree conferred with distinction

### ACADEMIC POSITIONS

- Professor** of Science, Policy, and Society 2020-  
**Associate Professor** of Science, Policy, and Society 2013-20  
Department of Forestry and Environmental Resources  
Chancellor's Faculty Excellence Program – Genetic Engineering and Society  
North Carolina State University
- Faculty Affiliate**, Consortium for Science, Policy, and Outcomes 2011-  
Arizona State University
- Faculty Affiliate**, Center for Science and Technology Policy Research 2012-20  
University of Colorado at Boulder
- Assistant Professor**, Division of Liberal Arts and International Studies 2008-13  
Colorado School of Mines
- **Honors Faculty**, McBride Honors Program in Public Affairs 2012-13
  - **Assistant Director**, Master's Program in International Political Economy of Resources 2011-13
- Postdoctoral Research Associate**, Holtz Center for Science and Technology Studies 2008  
University of Wisconsin-Madison
- Postdoctoral Fellow in Science & Society**, National Science Foundation 2006-07  
University of Wisconsin-Madison, Department of Rural Sociology (Daniel Kleinman, mentor)

### HONORS AND AWARDS

- University Faculty Scholar – North Carolina State University 2019
- Outstanding Global Engagement Award (Finalist) – North Carolina State University 2019
- Faculty Research and Professional Development Award – North Carolina State University 2015
- David Edge Prize – Society for Social Studies of Science (4S). “Awarded annually for the best article in the area of science and technology studies.” 2010
- Environmental Public Policy and Conflict Resolution Dissertation Fellowship – Udall Foundation 2004

## GRANTS

- Co-PI** National Science Foundation (NSF) – “National Research Traineeship (NRT): Agricultural Biotechnology in our Evolving Food, Energy, and Water Systems (AgBioFEWS),” Sep 2018-Aug 2023 (\$2,997,865).  
*Serve on executive committee, recruit and advise students, develop curriculum, and teach semester and summer field courses for three cohorts of PhD fellows.*
- Co-PI** Game-Changing Research Incentive Program for the Plant Sciences Initiative (GRIP4PSI), North Carolina State University – “Foliar Fungal Endophytes for Enhanced Crop Sustainability (FUN-CROPS),” Feb 2020-Jun 2023 (\$556,250).  
*Coordinate policy analysis and stakeholder interviews; manage postdoctoral researcher; mentor affiliated graduate students.*
- PI** National Science Foundation (NSF) – “Collaborative Research: Responsible Innovation with Genetically Modified American Chestnut Trees,” Aug 2016-Jul 2021 (SES-1632670: \$320,000 including external collaborators; \$291,974 awarded to NCSU).
- PI** National Park Service – “Free-Ranging and Feral Cats in National Parks: Development of Park Management Strategies for Stakeholder Engagement,” Jul 2019-Jul 2021 (\$48,488).
- Co-PI** United States Department of Agriculture, National Institute of Food and Agriculture (USDA-NIFA) – “Municipal Wastewater Application To Forests: Participatory Science To Understand Human Exposure And Risks To Chemical Contaminants Of Concern,” May 2016-Dec 2020 (\$484,990).  
*Lead research of all social science and participatory science components, including development of Participatory Leadership Team (community officials and expert stakeholders) and Community Involvement Group (community residents).*
- Co-PI** Wellcome Trust – “Talking about Gene Drive: An Exploration of Language to Enable Understanding and Deliberation in Africa, Europe, North America and Australasia,” May 2019-Oct 2020 (\$125,000).  
*Coordinate data collection in North America, participate in project team meetings, analysis, and publications.*
- Co-PI** Defense Advanced Projects Agency (DARPA) – “Restoring Ecosystems and Biodiversity through Development of Safe and Effective Gene Drive Technologies,” May 2017-Jun 2019 (\$3,199,440 including external collaborators; \$936,603 awarded directly to NCSU).  
*Lead research of all stakeholder engagement activities, including coordination of consultants from Arizona State University and Keystone Policy Center.*
- Co-PI** United States Department of Agriculture, National Institute of Food and Agriculture (USDA-NIFA) – “Assessing Public Perceptions of Gene Drives for Invasive Species and Pest Control,” Jul 2017-Jun 2019 (\$100,000).  
*Collaborate on focus group and survey design and analysis, human subjects approvals, and manuscript development.*
- Co-PI** Switzer Foundation – “Developing a Community Engagement Strategy for Solutions to Avian Malaria,” Feb 2018-Jan 2019 (\$5,000 awarded to American Bird Conservancy).  
*Project consultant and expert advisor.*
- PI** United States Army Corps of Engineers – “Synthesizing Engagement for Synthetic

Biology: Ethical and Social Considerations Surrounding the Environmental Impact of Synthetic Biology,” Jul 2017-Sep 2018 (\$74,988).

- Co-I** National Science Foundation (NSF) – “CCE STEM: Comparing Cultures of Responsible Innovation across Bioengineering,” Jan 2016-Dec 2018 (\$350,000).  
*Serve on coordinating committee, design and deliver graduate training workshops, supervise focus groups.*
- Co-PI** National Science Foundation (NSF) – “Making Wearable Health Platforms and Technologies a Reality: Four Workshop Proposals that Enhance and Broaden ASSIST’s Vision and Mission Communities,” Jan 2016-May 2017 (\$143,142).  
*Collaborate on workshop design, facilitate workshop, co-author report.*
- PI** Environmental Protection Agency (EPA) – “Stakeholder Workshop: Issue Framing and Public Engagement for GM Algae Guidance,” Sep 2016-Mar 2017 (\$8,675).
- PI** North Carolina State University, College of Natural Resources – “A Forest in These Trees? An Exploratory, Comparative Analysis of Public Engagement and Diversity in the Case of Genetically Modified Trees,” Faculty Research and Professional Development Award, Jul 2015-Jun 2016 (\$7,500).
- Co-PI** United States Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS) – “USDA Stakeholder Workshop on Coexistence of Genetically Engineered and Conventional Crops,” Mar 2015-Jun 2015 (\$30,676).  
*Collaborate on workshop design, facilitate break-out group.*
- PI** Genetic Engineering and Society Center – “Anticipatory Translation: Scientists, Genetically-Modified Trees, and Conceptualizations of Technological, Regulatory, and Cultural Futures,” Jun 2014-Aug 2014 (\$20,000).
- Co-PI** National Science Foundation, Integrative Graduate Education and Research Traineeship [NSF-IGERT] – “Intelligent Geosystems (SmartGeo),” Jul 2008-Jul 2013 (NSF-0801692: \$3,000,000).  
*Lead all social science and policy research and educational activities, serve on executive committee, mentor all doctoral students in policy/social science research, design and deliver new graduate minor and courses in science, technology, engineering, and policy.*
- Co-PI** National Science Foundation, Partnerships for International Research and Education [NSF-PIRE] – “Advancing Earth Dam and Levee Sustainability through Monitoring Science and Condition Assessment,” Oct 2012-Jun 2013 (OISE-1243539: \$2,750,908).  
*Co-author proposal with intention to lead all social science and policy research and educational activities, but departure from Colorado School of Mines required delegation of all activities soon after award was received.*
- Co-PI** National Science Foundation, Nanotechnology Undergraduate Education [NSF-NUE] – “Nano-Science, Technology, Ethics, and Policy (NanoSTEP),” Oct 2011-Jun 2013 (EEC-1138257: \$200,000).  
*Serve on executive committee, design and deliver faculty training workshop, mentor junior faculty, advise in curriculum revision.*
- Project Participant** National Academy of Engineering – “Partnership for Education on Climate Change, Engineered Systems, and Society,” Oct 2010-Oct 2012 (NAE-P210964: \$1,000,000).  
*Committee member at Colorado School of Mines, participate in project workshop, contribute to literature review and conference proceedings.*

- Co-PI** National Science Foundation (NSF) – “World Wide Views on Global Warming: Process and Impact,” Sep 2009-Jun 2012 (SES-0925043: \$234,955).  
*Lead research team at Colorado School of Mines, coordinate participant surveys and interviews of project participants, attend COP15 Climate Meetings in Copenhagen, Denmark to present results, collaborate on and lead manuscripts and conference presentations.*
- Co-PI** Trefny Institute for Educational Innovation, Curriculum and Development Program – “Climate Change and Water Systems: Integrating Technical, Social, Political, Economic, and Ethical Issues,” Summer 2011 (\$4,786).  
*Collaborate on curriculum revision and impact assessment.*
- PI** Trefny Institute for Educational Innovation, Curriculum and Development Program – “Taking the Next STEP for Policy Initiatives at CSM: Developing the LAIS Minor and ASI in Science, Technology, Engineering, and Policy (STEP),” Summer 2010 (\$4,984).
- PI** Trefny Institute for Educational Innovation, Curriculum and Development Program – “Introduction to Science, Technology, and Engineering Policy,” Summer 2009 (\$4,559).
- Co-PI** National Science Foundation (NSF), Postdoctoral Fellowship in Science and Society – “In the Wake of Scientific Controversy: The ‘Chilling’ of Scientific Dissent in Agricultural Biotechnology?” Jan 2006-Dec 2007 (SES-525104: \$84,000).  
*Supervised by Daniel Lee Kleinman at the University of Wisconsin, Madison.*

## PUBLICATIONS\*

### *Edited Volumes, Special Issues, and Peer-Reviewed Reports*

- 4) 2019 National Academies of Sciences, Engineering, and Medicine. *Forest Health and Biotechnology: Possibilities and Considerations*. Washington, D.C.: National Academies Press. <http://nas-sites.org/dels/studies/forest-biotech/>.  
[appointed committee member and co-author of peer-reviewed report]
- 3) 2018 **Delborne, J.A.**, Kuzma, J., Gould, F., Frow, E., \*Leitschuh, C., and \*Sudweeks, J. (Eds.), Roadmap to Gene Drives: Research and Governance Needs in Social, Political, and Ecological Contexts [special issue], *The Journal of Responsible Innovation*, 5 (sup1). Routledge/Taylor and Francis. <https://tandfonline.com/toc/tjri20/5/sup1?nav=tocList&>
- 2) 2016 National Academies of Sciences, Engineering, and Medicine. *Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values*. Washington, D.C.: National Academies Press. <http://nas-sites.org/gene-drives/>.  
[appointed committee member and co-author of peer-reviewed report]
- 1) 2010 Kleinman, D.L., **Delborne, J.A.**, Cloud-Hansen, K., and Handelsman, J. (Eds.). *Controversies in Science and Technology, Volume 3: From Evolution to Energy*. New Rochelle, NY: Mary Ann Liebert, Inc.

### *Journal Articles and Book Contributions (Peer-Reviewed)*

- 41) 2020 **Delborne, J.A.**, \*Kokotovich, A., and Lunshof, J. “Social license and synthetic biology: The trouble with mining terms,” *Journal of Responsible Innovation*.  
<https://doi.org/10.1080/23299460.2020.1738023>

\* An asterisk denotes a student or postdoctoral co-author who was advised by Delborne during all or part of the research and writing process.

- 40) 2020 \*Kokotovich, A., **Delborne, J.**, \*Elsensohn, J., and Burrack, H. “Emerging technologies for invasive insects: The role of engagement,” *Annals of the Entomological Society of America*, saz064. <https://doi.org/10.1093/aesa/saz064>
- 39) 2020 **Delborne, J.A.**, \*Hasala, D., Kinchy, A., \*Wigner, A. “Dueling metaphors, fueling futures: ‘Bridging’ visions of coal, natural gas, and renewable energy,” *Energy Research and Social Science* 61: 101350. <https://doi.org/10.1016/j.erss.2019.101350>
- 38) 2020 \*Barnhill-Dilling, S.K., Rivers, L. and **Delborne, J.A.** “Rooted in Recognition: Indigenous Environmental Justice and the Genetically Engineered American Chestnut Tree,” *Society and Natural Resources* 33(1): 83-100. <https://doi.org/10.1080/08941920.2019.1685145>
- 37) 2019 \*Barnes, J.C., \*Pitts, E.A., \*Barnhill-Dilling, S.K., and **Delborne, J.A.** “Genetic Engineering and Society,” in *Science, Technology and Society: New Perspectives and Directions*, T.L. Pittinsky (ed.). Cambridge, United Kingdom: Cambridge University Press, pp. 203-33. <https://doi.org/10.1017/9781316691489.009>
- 36) 2019 \*George, D.R., Kuiken, T., and **Delborne, J.A.** “Articulating Free, Prior, and Informed Consent (FPIC) for Engineered Gene Drives,” *Proceedings of the Royal Society B* 286(1917). <http://doi.org/10.1098/rspb.2019.1484>
- 35) 2019 Godwin, J., Serr, M., \*Barnhill-Dilling, S., Blondel, D., Brown, P., Campbell, K., **Delborne, J.**, Prowse, T., Oh, K., Saah, J., Thomas, P. “Rodent Gene Drives for Conservation: Opportunities and Data Needs,” *Proceedings of the Royal Society B* 286(1914), 20191606. <https://doi.org/10.1098/rspb.2019.1606>
- 34) 2019 \*Backus, G.A. and **Delborne, J.A.** “Threshold-Dependent Gene Drives in the Wild: Spread, Controllability, and Ecological Uncertainty,” *BioScience* 69 (11): 900–907. <https://doi.org/10.1093/biosci/biz098>  
[Designated “Editor’s Choice” for November 2019 issue of *BioScience*]
- 33) 2019 \*Jones, M.S., **Delborne, J.A.**, \*Elsensohn, J., Mitchell, P.D., and Brown, Z.S., “Does the US public support using gene drives in agriculture? And what do they want to know?” *Science Advances* 5(9): eaau8462. <https://doi.org/10.1126/sciadv.aau8462>
- 32) 2019 \*Barnes, J.C. and **Delborne, J.A.** “Rethinking restoration targets for American chestnut using species distribution modeling,” *Biodiversity and Conservation* 28(12): 3199-3220. <https://doi.org/10.1007/s10531-019-01814-8>
- 31) 2019 **Delborne, J.**, \*Kokotovich, A., and Kolodziejczyk, B. “Evidence in the Context of Synthetic Biology and Biodiversity Conservation,” Chapter 3 in *Genetic Frontiers for Conservation: An Assessment of Synthetic Biology and Biodiversity Conservation*, K.H. Redford, T.M. Brooks, N. Macfarlane, and J.S. Adams (eds.) Technical Assessment to be published by the International Union for the Conservation of Nature, pp. 94-111.
- 30) 2019 Redford, K.H., Brooks, T.M., Macfarlane, N., **Delborne, J.**, and Adams, J.S. “Summing Up and Looking Forward,” Chapter 7 in *Genetic Frontiers for Conservation: An Assessment of Synthetic Biology and Biodiversity Conservation*, K.H. Redford, T.M. Brooks, N. Macfarlane, and J.S. Adams (eds.) Technical Assessment to be published by the International Union for the Conservation of Nature, pp. 207-220.
- 29) 2019 Slobodian, L., Thizy, D., Oliva, M.J., Kingiri, A., **Delborne, J.**, and \*Kokotovich, A. “Governance of synthetic biology and biodiversity conservation,” Chapter 2 in *Genetic*

*Frontiers for Conservation: An Assessment of Synthetic Biology and Biodiversity Conservation*, K.H. Redford, T.M. Brooks, N. Macfarlane, and J.S. Adams (eds.)

Technical Assessment to be published by the International Union for the Conservation of Nature, pp. 48-93.

- 28) 2019 Campbell, K. J., Saah, J. R., Brown, P. R., Godwin, J., Gould, F., Howald, G. R., Piaggio, A., Thomas, P., Tompkins, D. M., Threadgill, D., **Delborne**, J., Kanavy, D. M., Kuiken, T., Packard, H., Serr, M., Shiels, A. A potential new tool for the toolbox: assessing gene drives for eradicating invasive rodent populations. In C. R. Veitch, M. N. Clout, A. R. Martin, J. C. Russell, & C. J. West (Eds.), *Island Invasives: Scaling up to meet the challenge (Occasional Paper SSC no. 62)* (pp. 6–14). Gland, Switzerland: IUCN.
- 27) 2019 \*Barnhill-Dilling, S.K. and **Delborne**, J.A. The genetically engineered American chestnut tree as opportunity for reciprocal restoration in Haudenosaunee communities. *Biological Conservation* 232: 1-7. <https://doi.org/10.1016/j.biocon.2019.01.018>
- 26) 2019 \*Valdez, R.X., Peterson, M.N., \*Pitts, E.A., and **Delborne**, J.A. International news media framing of invasive rodent eradications. *Biological Invasions*, 21(4): 1439-49. <https://doi.org/10.1007/s10530-018-01911-9>.
- 25) 2018 Ryan, S., Adamson, N., Aktipis, A., Andersen, L., Austin, R., Barnes, L., Beasley, M., Bedell, K., Briggs, S., Chapman, B., Cooper, C., Corn, J., Creamer, N., **Delborne**, J., Domenico, P., Driscoll, E., Goodwin, J., Hjarding, A., Hulbert, J., Isard, S., Just, M., Kar Gupta, K., Lopez-Uribe, M.M., O'Sullivan, J., Landin, J., Landis, E., McKenney, E., Madden, A., Nichols, L., Reading, B., Russel, S., Sengupta, N., Shell, L., Sheard, J., Shoemaker, D., Sorger, D., Starling, C., Thakur, S., Vatsavai, R., Weinstein, M., Winfrey, P., and Dunn, R. The Role of Citizen Science in Addressing Grand Challenges in Food and Agriculture Research, *Proceedings of the Royal Society B*, 285(1891), 20181977. <https://doi.org/10.1098/rspb.2018.1977>
- 24) 2018 **Delborne**, J.A., \*Kokotovich, A.E., and \*Barnhill-Dilling, S.K. Letters: Engaging Community with Humility. *Science*, 362(6414), 532-33. <https://doi.org/10.1126/science.aav4987>
- 23) 2018 Stirling, A., Hayes, K. R., & **Delborne**, J. Towards Inclusive Social Appraisal: Risk, Participation and Democracy in Governance of Synthetic Biology. *BMC Proceedings*, 12(Suppl 8):15. <https://doi.org/10.1186/s12919-018-0111-3>
- 22) 2018 Kuzma, J., Gould, F., Brown, Z., Collins, J., **Delborne**, J., Frow, E., Esvelt, K., Guston, D., Letischuh, C., Oye, K., and Stauffer, S. A roadmap for gene drives: Using institutional analysis and development to frame research needs and governance in a systems context. *Journal of Responsible Innovation*, 5(sup1), 13–39. <https://doi.org/10.1080/23299460.2017.1410344>
- 21) 2017 Adelman, Z., Akbari, O., Bauer, J., Bier, E., Bloss, C., Carter, S. R., Callender, C., Denis, A.C., Cowhey, P., Dass, B., **Delborne**, J., Devereaux, M., Ellsworth, P., Friedman, R.M., Gantz, V., Gibson, C., Hay, B.A., Hoddle, M., James, A.A., James, S., Jorgenson, L., Kalichman, M., Marshall, J., McGinnis, W., Newman, J., Pearson, A., Quemada, H., Rudenko, L., Shelton, A., Vinetz, J.M., Weisman, J., Wong, B., Wozniak, C. Rules of the road for insect gene drive research and testing. *Nature Biotechnology*, 35(8), 716–718. <https://doi.org/10.1038/nbt.3926>
- 20) 2016 **Delborne**, J.A. Suppression and Dissent in Science. In T. Bretag (Ed.), *Handbook of Academic Integrity* (Section IX, pp. 943-956). Singapore: Springer Reference. [https://doi.org/10.1007/978-981-287-098-8\\_30](https://doi.org/10.1007/978-981-287-098-8_30).

- 19) 2016 Kaebnick, G. E., Heitman, E., Collins, J. P., **Delborne**, J. A., Landis, W. G., Sawyer, K., Tanneyhill, L., and Winickoff, D. E. Precaution and governance of emerging technologies. *Science*, 354(6313), 710-711. <https://doi.org/10.1126/science.aah5125>
- 18) 2016 \*Kimmel, S., \*Toohey, N., and **Delborne**, J. Roadblocks to Responsible Innovation: Exploring technology assessment and adoption in U.S. Public Highway Construction. *Technology in Society*, 44, 66-77. <https://doi.org/10.1016/j.techsoc.2015.12.002>
- 17) 2015 \*Kimmel, S., \*Toohey, N., and **Delborne**, J. Innovation at the Crossroads: Exploring the Intersection of Innovation Adoption and Specification Reform in Public Highway Construction. *Transportation Research Circular* (Vol. E-C199, pp. 9-18). Washington, D.C.: Transportation Research Board.
- 16) 2014 **Delborne**, J.A. Navigating Controversies in Search of Neutrality: Analyzing Efforts by Public Think Tanks to Inform Climate Change Policy. In D.A. Crow and M. Boykoff (Eds.), *Culture, Politics, and Climate Change: How Information Shapes our Common Future* (pp. 163-179). New York, NY: Routledge/Earthscan.
- 15) 2014 \*Bouchev, M. and **Delborne**, J. Redefining safety in commercial space: Understanding debates over the safety of private human spaceflight initiatives in the United States. *Space Policy*, 30(2), 53–61. doi:10.1016/j.spacepol.2014.03.002
- 14) 2014 Evans, S. W., Jasanoff, S., Calvert, J., **Delborne**, J., Doubleday, R., Frow, E., Funtowicz, S., Green, B., Guston, D.H., Hurlburt, B., Irwin, A., Joly, P., Kuzma, J., Palmer, M., Race, M., Stilgoe, J., Stirling, A., Wilsdon, J., Winickoff, D., Wynne, B., and Zoloth, L. CORRESPONDENCE: Synthetic biology: Missing the point. *Nature*, 510(7504), 218. (June 12, 2014). <https://doi.org/10.1038/510218b>
- 13) 2013 **Delborne**, J., Schneider, J., Bal, R., Cozzens, S., and Worthington, R. Policy Pathways, Policy Networks, and Citizen Deliberation: Disseminating the Results of World Wide Views on Global Warming in the United States. *Science and Public Policy* 40(3): 378-92. <https://doi.org/10.1093/scipol/scs124>
- 12) 2013 Anderson, A.A., **Delborne**, J., and Kleinman, D.L. Information beyond the forum: Motivations, strategies, and impacts of citizen participants seeking information during a consensus conference. *Public Understanding of Science*, 22(8), 955–970. <https://doi.org/10.1177/0963662512447173>
- 11) 2012 **Delborne**, J. and Schneider, J. “Moving Forward with Citizen Deliberation: Lessons and Inspiration from the National Citizens’ Technology Forum,” in *Nanotechnology and the Public: Risk Perception and Risk Communication*. S. H. Priest (ed.), London: CRC Press, Taylor and Francis Group, pp. 103-11.
- 10) 2012 Schneider, J. and **Delborne**, J. “Seeking the Spotlight: World Wide Views and the U.S. Media Context,” in *Citizen Participation in Global Environmental Governance*. M. Rask, R. Worthington, and M. Lammi (eds.). London: Earthscan Publications, pp. 241–60.
- 9) 2011 **Delborne**, J.A. “Constructing Audiences in Scientific Controversy,” *Social Epistemology* 25 (1): 67-95.
- 8) 2011 **Delborne**, J.A., Anderson, A., Kleinman, D.L., Colin, M., and Powell, M. “Virtual Deliberation? Prospects and Challenges for Integrating the Internet in Consensus Conferences.” *Public Understanding of Science* 20(3): 367-84.



- 7) 2011 **Delborne, J.A.** and Galusky, W. “Toxic Transformations: Constructing Audiences for Environmental Justice,” in *Technoscience and Environmental Justice: Expert Cultures in a Grassroots Movement*. G. Ottinger and B. Cohen (eds). Cambridge, MA: MIT Press, pp. 63-92.
- 6) 2011 Kleinman, D.L., **Delborne, J.A.**, and Anderson, A. “Engaging Citizens: The High Cost of Citizen Participation in High Technology.” *Public Understanding of Science* 20(2): 221-240.
- 5) 2011 Powell, M., **Delborne, J.**, and Colin, M. “Beyond Engagement Exercises: Exploring the U.S. National Citizens’ Technology Forum from the Bottom-Up.” *Journal of Public Deliberation* 7(1): Article 4, 47 pages.
- 4) 2011 Powell, M., Colin, M., Kleinman, D.L., **Delborne, J.**, and Anderson, A. “Imagining Ordinary Citizens? Conceptualized and Actual Participants for Deliberations on Emerging Technologies.” *Science as Culture* 20(1): 37-70.
- 3) 2010 **Delborne, J.A.** “Biofuels: Streams and Themes,” in *Controversies in Science and Technology, Volume 3: From Evolution to Energy*, D. Kleinman, J. Delborne, K. Cloud-Hansen, and J. Handelsman (eds.). New Rochelle, NY: Mary Ann Liebert, Inc, pp. 175-90.
- 2) 2008 **Delborne, J.A.** “Transgenes and Transgressions: Scientific Dissent as Heterogeneous Practice.” *Social Studies of Science* 38(4): 509–41.  
[Winner of 2010 David Edge Prize, Society for Social Studies of Science (4S)]
- 1) 2008 Kleinman, D.L., **Delborne, J.A.**, and Autry, R. “Beyond the Precautionary Principle in Progressive Politics: Toward the Social Regulation of Genetically Modified Organisms.” *Tailoring Biotechnologies* 4(1/2): 41-54.

### **Conference Proceedings (Peer-Reviewed)**

- 3) 2012 \*Ikard, S., **Delborne, J.**, and Brunsdale, K. “Dammed If You Do, Dammed If You Don’t: Tensions between Ensuring Dam Safety and Maximizing Colorado’s Water Supply.” *Dam Safety 2012 Conference Proceedings*. Annual Conference of the Association of State Dam Safety Officials, September 15-19, 2012. Denver, CO.
- 2) 2011 Lucena, J., **Delborne, J.**, Johnson, K., Leydens, J., Munakata-Marr, J., and Schneider, J. “Integration of Climate Change in the Analysis and Design of Engineered Systems: Barriers and Opportunities for Engineering Education.” *Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition*, American Society of Mechanical Engineers, International Mechanical Engineering Congress and Exposition, November 11-17, 2011. Denver, CO.
- 1) 2010 \*Parekh, M., \*Stone, K., and **Delborne, J.** “Coordinating Intelligent and Continuous Performance Monitoring with Dam and Levee Safety Management Policy.” *Dam Safety 2010 Conference Proceedings*. Annual Conference of the Association of State Dam Safety Officials, September 19-23, 2010. Seattle, WA.

### **Other Publications**

- 19) 2019 **Delborne, J.** “Forest Biotech” [audio], *The Academic Minute*, WAMC Northeast Public Radio, July 8, 2019. <https://academicminute.org/2019/07/jason-delborne-north-carolina-state-university-forest-biotech/>



- 18) 2019 Farooque, M., \*Barnhill-Dilling, S.K., Shapiro, J., and **Delborne, J.** *Exploring Stakeholder Perspectives on the Development of a Gene Drive Mouse for Biodiversity Protection on Islands* (Workshop Report). <http://go.ncsu.edu/ges-gene-drive-workshop>
- 17) 2019 \*Barnhill-Dilling, S.K. and **Delborne, J.A.** An Important Community in Restoration Efforts to Protect the American Chestnut Tree. *Science Trends*, May 13, 2019. <https://sciencetrends.com/an-important-community-in-restoration-efforts-to-protect-the-american-chestnut-tree/>
- 16) 2019 **Delborne, J.**, Shapiro, J., Farooque, M., Ford, T., \*George, D., Dermer, S. *Exploring Stakeholder Perspectives on the Development of a Gene Drive Mouse for Biodiversity Protection on Islands: Summary Report of Stakeholder Interviews*. <http://go.ncsu.edu/ges-gene-drive-landscape>
- 15) 2019 **Delborne, J.A.** Can genetic engineering save disappearing forests? *The Conversation*, January 18, 2019. <https://theconversation.com/can-genetic-engineering-save-disappearing-forests-109793>
- 14) 2018 **Delborne, J.A.**, Binder, A.R., Rivers, L., \*Barnhill-Dilling, S.K., \*Barnes, J.C., \*George, D., \*Kokotovich, A., and \*Sudweeks, J. *Biotechnology, the American Chestnut Tree, and Public Engagement* (Workshop Report). Genetic Engineering and Society Center, North Carolina State University. <http://go.ncsu.edu/ges-chestnut-report>
- 13) 2018 **Delborne, J.**, Kuzma, J., Gould, F., Frow, E., \*Leitschuh, C., and \*Sudweeks, J. Mapping research and governance needs for gene drives. *Journal of Responsible Innovation*, 5(sup1), 4–12. <https://doi.org/10.1080/23299460.2017.1419413>
- 12) 2017 **Delborne, J.**, Farooque, M., and Shapiro, J. *Genetically Engineered Algae Public Engagement Strategies: A Stakeholder Workshop Report* (Workshop Report). Tempe, AZ. Expert and Citizen Assessment of Science and Technology [ECAST Network]. <https://ecastnetwork.org/research/genetically-engineered-algae-public-engagement-strategies/>
- 11) 2017 Foley, R. W., Asare, P., **Delborne, J.**, Lach, J., and Misra, V. (2017). *Prototype to Patient Treatment: Dialogue on Safety, Regulation, Privacy, Security, and Acceptability for Wearable Medical Devices - A Workshop Report*. <https://doi.org/10.18130/V3804XJ4K>
- 10) 2017 **Delborne, J.A.** The Ring of Engagement. Invited contribution to *Prometheus: The Science Policy Blog*. Center for Science and Technology Policy Research, University of Colorado at Boulder. <http://ciresblogs.colorado.edu/prometheus/2017/03/03/the-ring-of-engagement/>
- 9) 2015 Siplon, G., Herring, B., Kuzma, J., and **Delborne, J.** *SynBio 101* [screenplay]. Written as part of the “Multi-Site Public Engagement with Science (MSPES) - Synthetic Biology” (NSF Award #1421179).
- 8) 2015 \*Hoopes, J. and **Delborne, J.** “HeLa Cells,” in J. B. Holbrook (Ed.), *Ethics, Science, Technology, and Engineering: A Global Resource* (2nd ed., Vol. 2, pp. 446–448). Farmington Hills, MI: Macmillan Reference USA.
- 7) 2015 Harremoës, P. and revised by **Delborne, J.** “Precautionary Principle,” in J. B. Holbrook (Ed.), *Ethics, Science, Technology, and Engineering: A Global Resource* (2nd ed., Vol. 3, pp. 449–455). Farmington Hills, MI: Macmillan Reference USA.

- 6) 2014 **Delborne, J.** “Grasping Synthetic Biology.” Invited paper for circulation prior to the *Workshop on Research Agendas in the Societal Aspects of Synthetic Biology*. Arizona State University, Tempe, AZ. November 4-6, 2014. <https://cns.asu.edu/synbio/papers>
- 5) 2014 **Delborne, J.** “What’s that hiding behind the poll? Perceiving public perceptions of biotechnology” [invited blog post]. *The Cultural Cognition Project at Yale Law School*, D. Kahan (Ed.). June 24, 2014. <http://www.culturalcognition.net/blog/2014/6/24/whats-that-hiding-behind-the-poll-perceiving-public-percepti.html>
- 4) 2012 **Delborne, J.** “Strategies of Neutrality between Political and Scientific Controversy: Comparing Efforts by U.S. Public Think Tanks to Inform Debates on Climate Change,” in *Proceedings of the International Conference on Culture, Politics, and Climate Change*. September 13-15, 2012. Boulder, CO.
- 3) 2012 **Delborne, J.** and \*Wigner, A. “T. Boone Pickens,” in *Encyclopedia of Energy, Volume 3*. M.A. Pierce (Ed.). Ipswich, MA: Salem Press, pp. 1015-17.
- 2) 2010 **Delborne, J.A., Kleinman, D.L., Cloud-Hansen, K.A., and Handelsman, J.** “Introduction: From Evolution to Energy,” in *Controversies in Science and Technology, Volume 3: From Evolution to Energy*, D. Kleinman, J. Delborne, K. Cloud-Hansen, and J. Handelsman (Eds.). New Rochelle, NY: Mary Ann Liebert, Inc, pp. xi-xxvi.
- 1) 2008 **Delborne, J.A.** and Kinchy, A.J. “Genetically Modified Organisms,” in *Battleground: Science and Technology, Volume 1*. S. Restivo and P.H. Denton (Eds). Westport, CT: Greenwood Press, pp. 182-95.

## CONFERENCE ACTIVITY AND PRESENTATIONS

### *Invited Talks – Off Campus*

- 59) “The Potential for Biotechnology to Address Forest Health,” Pennsylvania/New Jersey State Chapters of The American Chestnut Foundation, Spring Growers Meeting. Scheduled for Harrisburg, PA, but moved to Zoom Webinar because of COVID-19. March 21, 2020.
- 58) “Engaging Stakeholders with Complex and Sometimes Controversial Technologies,” Alliance for Contraception in Cats and Dogs, Council of Stakeholders, Crystal Beach, FL. March 9, 2020.
- 57) “Navigating GMO Misinformation: Frustrations, Controversy, and a Glance in the Mirror,” Symposium: Addressing Misinformation on the Web in Science, Engineering, and Health. National Academies of Sciences. Washington, D.C. February 20, 2020.
- 56) “Stakeholder Engagement and Governance of Emerging Biotechnologies,” Center for Science and Technology Policy Research (CSTPR), University of Colorado, Boulder. January 29, 2020.
- 55) “Public Engagement When Biotechnology Goes ‘Wild,’” Midwest Fish and Wildlife Conference. Springfield, IL. January 27, 2020.
- 54) “Public and Stakeholder Engagement in the Governance of Emerging Biotechnologies,” International Plant and Animal Genome XXVIII Conference. San Diego, CA. January 13, 2020.
- 53) “Mapping the Landscape of Interests and Engaging Stakeholders to Inform Research and Development of Gene Drives for Conservation,” Genetic Biocontrol of Invasive Rodents (GBIRd) International Partnership Meeting. Raleigh, NC. November 13, 2019.
- 52) “Design Choices for Public Engagement,” Alliance for Science Global Leadership Fellows Program, Cornell University, Ithaca, NY. October 11, 2019.

- 53) “Approaching the Genetically Engineered Chestnut,” Alliance for Science Global Leadership Fellows Program, Cornell University, Ithaca, NY. October 10, 2019.
- 52) “Communicating Biotechnology with the Public,” Alliance for Science Global Leadership Fellows Program, Cornell University, Ithaca, NY. October 9, 2019.
- 51) “Public Engagement and Genetic Biocontrol Technologies for Invasive Species,” Genetic Biocontrol of Invasive Species Working Group, Minnesota Department of Natural Resources, St. Paul, MN. June 26, 2019.
- 50) “Decision Points in the Design of Deliberative Forums,” Public Deliberation on Gene Editing in the Wild Working Group, The Hastings Center, Garrison, NY. June 20, 2019.
- 49) “Bioethics and Public Outreach – Starting the Conversation” [presentation and facilitated discussion with Dr. Clare Palmer, Philosopher, Texas A&M], National Science Foundation 1<sup>st</sup> Annual EDGE Investigator Meeting (Enabling Discovery through Genomic Tools), Alexandria, VA. April 29, 2019.
- 48) “Wicked, Post-Normal, Complex: Using Social Science to Enhance Academies Work in the Life Sciences” [panelist], Board on Life Sciences Spring 2019 Meeting, National Academies of Sciences, Engineering, and Medicine, Washington, DC. April 26, 2019.
- 47) “Engagement – Motivations and Methods,” Workshop on the impacts and management of Free-Ranging Cats in U.S. National Parks. River Farm, Alexandria, VA. March 20, 2019.
- 46) “Promises and Fears of New Biotechnologies: Making Decisions with Stakeholder and Community Participation,” Joseph Priestly Society, Science History Institute, Philadelphia, PA. March 14, 2019.
- 45) “Rooting Innovation in Forest Biotechnology in Public Engagement,” AAAS Annual Meeting. Washington, DC. February 16, 2019.
- 44) “Forest Health and Biotechnology: Possibilities and Considerations” [public release of report by webinar], with Susan Offut (chair), Stephen DiFazio, and Inez Ibanez (committee members). National Academies of Sciences, Engineering and Medicine, Washington, DC. January 8, 2019. [separate briefings at the U.S. House of Representatives and Senate Committees on Agriculture]
- 43) “Stakeholder and Community Engagement – U.S. Context,” Genetic Biocontrol of Invasive Rodents (GBIRD) International Partnership Meeting. Exmouth, Western Australia. November 6, 2018.
- 42) “U.S. Public Engagement,” Genetic Biocontrol of Invasive Rodents (GBIRD) End-User Stakeholder Meeting, Western Australian Biodiversity Science Institute. Perth, Western Australia. November 2, 2018.
- 41) “Biotechnology and Biodiversity,” La Biotecnología Moderna y sus Impactos en la Agricultura [Modern Biotechnology and Its Impacts on Agriculture]. Organized by Instituto Nacional de Innovación Agraria (INIA) and Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica (CONCYTEC). Arequipa, Peru. August 23, 2018.
- 40) “Biotechnology and Biodiversity,” La Biotecnología Moderna y sus Impactos en la Agricultura [Modern Biotechnology and Its Impacts on Agriculture]. Organized by Instituto Nacional de Innovación Agraria (INIA) and Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica (CONCYTEC). Miraflores Lima, Peru. August 21, 2018.
- 39) “Frankenstein,” ReadSmart Program, Cameron Village Public Library. Raleigh, NC. March 14, 2018.
- 38) “A Decade of Synthetic Biology” [invited panelist], The End of Synthetic Biology? What Futures? University of Edinburgh, United Kingdom. December 14, 2017.
- 37) “Public engagement: Rationales, methods, and intended outcomes,” International Workshop Assessing the Security Implications of Genome Editing Technology. Hanover, Germany. October 13, 2017.

- 36) "CRISPR and the Ethics of Editing Genes," North Carolina Museum of Natural Sciences, with John Godwin. Raleigh, NC. September 28, 2017.
- 35) "Strategies of engagement in synthetic biology," Engineering Resilience. Heron Island, Australia. September 12, 2017.
- 34) "Emerging biotechnologies and public engagement: Reflections on the NASEM report on gene drives," Center for Science and Technology Policy Research, University of Colorado-Boulder. March 8, 2017.
- 33) "Genetic Engineering and Society Center: 'Engineering' responsible innovation," Arizona State University. Tempe, AZ. February 27, 2017.
- 32) "Incorporating public engagement in research and governance," American Association for the Advancement of Science. Boston, MA. February 17, 2017.
- 31) "Reflections from the National Academies of Sciences committee on non-human gene drives and responsible conduct," Society for Risk Analysis. San Diego, CA. December 13, 2016.
- 30) "Public engagement and emerging biotechnologies: Opportunities and challenges for responsible science." Centro de Estudos Sociais, University of Coimbra. Coimbra, Portugal. December 2, 2016.
- 29) "Incorporating public engagement throughout phased testing [of gene drives]," American Society for Tropical Medicine and Hygiene. Atlanta, GA. November 17, 2016.
- 28) "Engagement as governance." Making the World Engineerable: Science, Practice, and Policy. National Academies of Sciences, Engineering, and Medicine. Washington, DC. November 16, 2016.
- 27) "Governing emerging biotechnologies: Expertise, democracy, and public engagement." Between Certainty and Experimentation, Department of Geography seminar series. University of North Carolina – Chapel Hill. November 11, 2016.
- 26) "Research, Advocacy, and Engagement: Exploring the Roles of Experts in Democracy," keynote address to the 2016 Research-to-Policy Conference: Pathways to Successful Engagement in Agricultural, Natural Resources and Food Issues, hosted by University of California Cooperative Extension (UCCE) at the University of California, Davis. October 12, 2016.
- 25) "Gene drives on the horizon," Science and Society, University of Ottawa. Ontario, Canada. September 28, 2016.
- 24) "Diverse approaches for public engagement," Symposium: What Constitutes Responsible Field Release of Transgenic Insects? International Congress of Entomology. Orlando, FL. September 26, 2016.
- 23) "Mapping gene drive governance," Conference on Advancing Science for Policy through Interdisciplinary Research on Regulation, organized by University of California, Berkeley's Center for Science, Technology, Medicine and Society. Berkeley, CA. September 15, 2016.
- 22) "Perspectives from recent proceedings of the National Academy of Sciences and its June 2016 report, *Gene Drives on the Horizon*," Leadership Summit on Synthetic Biology Stakeholder and Community Engagement for Public Health, Conservation, and Food and Agriculture. Co-sponsored by the Wilson Center and the Keystone Policy Center. Washington, D.C. July 12, 2016.
- 21) "Biotechnology and Engaging the Public as Experts," Biosafety Support Unit, Indian Ministry of Science and Technology, New Delhi, India. March 9, 2016.
- 20) "Engaging Publics as Experts," Effective Management of Plant-Parasitic Nematodes, Indo-U.S. Science and Technology Forum, New Delhi, India. March 8, 2016.
- 19) "Community Engagement and Informed Consent," Policy and Regulatory Issues for Gene Drives in Insects. J. Craig Venter Institute, La Jolla, CA. January 21, 2016.

- 18) “Engaging Publics in Science and Technology,” *When Science and Citizens Connect: Public Engagement on Genetically Modified Organisms*. Workshop of the Roundtable on Public Interfaces of the Life Sciences (PILS), National Academy of Sciences, Washington, D.C. January 15, 2015.
- 17) “Public Engagement in Science and Technology,” *Winter School on the Anticipatory Governance of Emerging Technologies*, organized by The Center for Nanotechnology in Society, Arizona State University. Saguaro Lake Ranch, Mesa, AZ. January 7, 2015.
- 16) “Biofuels, Biodiversity, and Responsible Innovation: The Case of Genetically Engineered Trees.” Energy and Society Lecture Series, Consortium for Science, Policy, and Outcomes. Arizona State University. November 4, 2014.
- 15) “Transgenics & Society: Towards a Productive Dialogue.” *Transgenics and Society Symposium*. International Center for the Improvement of Maize and Wheat (CIMMYT). Texcoco, Mexico. July 23, 2014.
- 14) “Perspectives on Public Perceptions of Biotechnology.” *Sixth Annual Biotechnology Symposium*. SUNY-ESF, Syracuse, NY. May 15, 2014.
- 13) “Science, Democracy, and Public Engagement.” Transgenics and Society Roundtable. International Center for the Improvement of Maize and Wheat (CIMMYT). Texcoco, Mexico. March 14, 2014.
- 12) “Public Think Tanks and Scientific Controversy: Analyzing Efforts by Public Think Tanks to Inform Climate Change Policy.” Science and Technology in Society Departmental Seminar. Virginia Polytechnic Institute and State University. December 6, 2013.
- 11) “Public Engagement in Science and Technology: When the Stakes are High and Debates are Lively.” Cooperative Institute for Research in Environmental Sciences, Center for Science and Technology Policy Research 10<sup>th</sup> Anniversary. University of Colorado-Boulder. September 27, 2012.
- 10) “State-Sponsored Expertise and the Navigation of Political and Scientific Controversy: Reports on Climate Change Policy by U.S. Public Think Tanks.” Political Sociology of Science Workshop. University of Wisconsin-Madison. June 1, 2012.
- 9) “Energy Education at CSM: A Humanities and Social Sciences Approach,” with J. Lucena and J. Schneider. National Renewable Energy Laboratory, Golden, CO. May 2, 2012.
- 8) “Navigating Controversy, Seeking Objectivity: Goals and Practices of Public Think Tanks to Provide Expertise to Policymakers.” 2012 Hixon Forum: Engineers, Exact Scientists (Technocrats) and Political Processes: Global Perspectives. Harvey Mudd College, Claremont, CA. March 2, 2012.
- 7) “Reaching Across or Reaching Within? STS and STP Networks, Communities, and Questions.” Gordon Research Conference on Science and Technology Policy. Waterville Valley, NH. August 9, 2010.
- 6) “Translating World Wide Views Results into Policy – Media and Dissemination to Policymakers.” World Wide Views on Global Warming Research Workshop. Snekkersten, Denmark. June 8, 2010.
- 5) “Citizen Voices in the Global Climate and Energy Challenge: Worldwide Views and Citizen Deliberation,” with J. Schneider. Center for Science and Technology Policy Research, the Renewable and Sustainable Energy Institute, and the Environment and Society Program of the Institute of Behavioral Science. University of Colorado-Boulder. February 1, 2010.
- 4) “Reflections on the United Nations Climate Conference in Copenhagen (COP15).” Center for Science and Technology Policy Research. University of Colorado-Boulder. January 11, 2010.
- 3) “Nanotechnology and the Public: Data for Decision Makers.” Participant in panel discussion with the U.S. Congressional Nanotechnology Caucus, organized by Arizona State University’s Center for Nanotechnology in Society. Dirksen Senate Office Building, Washington, D.C. March 9, 2009.

- 2) “The Practice of Scientific Dissent in Agricultural Biotechnology.” Center for Science and Technology Policy Research. University of Colorado-Boulder. March 4, 2009.
- 1) “STS at the Intersection of Science and Activism.” STS Engaged: Expertise, Audience, and the Participatory Turn. University of Virginia. March 9, 2007.

### ***Invited Talks – On Campus***

- 25) “Sustainability and wood pellets, and science controversies,” Forest Biomaterials Seminar [on Zoom during COVID-19]. North Carolina State University. April 20, 2020.
- 24) “Communicating Biotechnology with the Public,” 2019 Cochran Training Program for Columbian visitors, College of Agriculture and Life Sciences International Programs. North Carolina State University. December 3, 2019.
- 23) “Public Engagement when Biotechnology Goes ‘Wild,’” Genetics and Genomics Initiative Annual Retreat, Park Alumni Center, North Carolina State University. August 19, 2019.
- 22) “Biotechnology in Social and Political Contexts,” College of Veterinary Medicine, North Carolina State University. April 24, 2019.
- 21) Interdisciplinary Research [panelist], University Research Symposium, hosted by the Research Leadership Academy. North Carolina State University. March 21, 2019.
- 20) “Listening and Talking about GMOs,” Center for Environmental Farming Systems. North Carolina State University. February 27, 2019.
- 19) “The Potential for Biotechnology to Address Forest Health (NASEM Report),” Genetic Engineering and Society Colloquium. North Carolina State University. February 19, 2019.
- 18) “Forest Biotechnology and Public Values,” guest lecture in Emerging Threats to Global Food Security, North Carolina State University. January 17, 2019.
- 17) “Communicating Biotechnology with the Public,” 2018 Cochran Training Program for Indian visitors, College of Agriculture and Life Sciences International Programs. North Carolina State University. December 5, 2018.
- 16) “Emerging Biotechnologies and Public Engagement,” Genetics and Genomics Initiative (GGI) Seminar. North Carolina State University. October 22, 2018.
- 15) “Communicating Biotechnology with the Public,” 2018 Cochran Training Program for Ghanaian visitors, College of Agriculture and Life Sciences International Programs. North Carolina State University. October 10, 2018.
- 14) “Communicating Biotechnology with the Public,” 2018 Cochran Training Program for Turkish visitors, College of Agriculture and Life Sciences International Programs. North Carolina State University. September 7, 2018.
- 13) “Engaging Stakeholders, Policymakers, and Publics,” Center for Integrated Fungal Research, North Carolina State University. May 22, 2018.
- 12) “Stakeholders, Policymakers, and the Public: Opportunities for Faculty Engagement,” Research Leadership Academy. North Carolina State University. February 28, 2018.
- 11) “Genetic Engineering in Agriculture,” Farm to Table Working Group. North Carolina State University. February 23, 2018.
- 10) “Emerging Technologies and Public Engagement,” US-China Agricultural Biotechnology Safety Administration Collaboration Workshop: Communication, Engagement, and Biotechnology. North Carolina State University. October 2, 2017.

- 9) “GMOs, public perception, and opportunities for public engagement,” Agricultural Biotechnology Training Program for Turkish delegation, coordinated by the College of Agriculture and Life Sciences (CALS) Global Academy and the Genetic Engineering and Society Center. North Carolina State University. September 21, 2016.
- 8) “Public attitudes, perceptions, and engagement in the field of genetic modification,” guest lecture in Regulatory Affairs for Crop Protection. North Carolina State University. August 22, 2016.
- 7) “Genetic Engineering and Society,” presentation to guests from Bayer CropScience and the Biotechnology Research Institute of the Chinese Academy of Sciences, hosted by the NC Agricultural Research Service. North Carolina State University. April 27, 2016.
- 6) “Public Attitudes, Perceptions, and Engagement in the Field of Genetic Modification,” Genetic Engineering Research at NC State, organized by the Genetic Engineering and Society Center. North Carolina State University. April 28, 2015.
- 5) “Anticipatory Translation: Genetically Modified Trees and Conceptualizations of Technological, Regulatory, and Cultural Futures,” Science, Technology, and Society Seminar. North Carolina State University. December 4, 2014.
- 4) “Anticipating Futures in Forest Biotechnology,” Genetic Engineering and Society Colloquium. North Carolina State University. October 14, 2014.
- 3) “Constructing Audiences in Scientific Controversy.” Environmental Science and Engineering Seminar Series. Colorado School of Mines. September 30, 2010.
- 2) “Casting an Audience in Scientific Controversy.” Sociology of Environment, Technology, and Agrofood Systems (SociETAS). University of Wisconsin-Madison. September 14, 2007.
- 1) “Dissident Science in Agricultural Biotechnology.” Science, Democracy, and Public Policy Colloquium. University of Wisconsin-Madison, March 9, 2006.

### ***Conference Sessions and Workshops Organized***

- 14) “Having Conversations about the USDA’s New GMO Labelling Standard,” with D. Bloom, H. Dankbar, R. Stout, A. Cruz, J. Goodwin, N. Mugwanya, and S.K. Barnhill-Dilling, session of three presentations and facilitated discussion activities. *NC Cooperative Extension State Conference*, Raleigh, NC. October 30, 2019.
- 13) “Reflecting on Reflexivity in Practice: Responsible Innovation, Engagement, and Governance,” with D. George and A. Kokotovich, panel of three sessions and thirteen papers. Annual Meeting of the Society for Social Studies of Science. New Orleans, LA. September 5, 2019.
- 12) “Workshop on the Impacts and Management of Free-Ranging Cats in U.S. National Parks,” stakeholder workshop organized with A. Kokotovich (NC State) and K. Redford (Archipelago Consulting), funded by the National Park Service. Alexandria, VA. March 19-20, 2019.
- 11) “Exploring Stakeholder Perspectives on the Development of a Gene Drive Mouse for Biodiversity Protection,” stakeholder workshop organized with M. Farooque (Arizona State University) and J. Shapiro (Keystone Policy Center), funded by the DARPA Safe Genes Program. North Carolina State University, Raleigh, NC. March 7-8, 2019.
- 10) “Biotechnology, the American Chestnut Tree, and Public Engagement,” stakeholder workshop funded by the National Science Foundation (Award #1632670). North Carolina State University, Raleigh, NC. April 25-16, 2018.
- 9) “Genetically Engineered Algae Public Engagement Strategies,” stakeholder workshop organized with M. Farooque (Arizona State University) and J. Shapiro (Keystone Policy Center), funded by the Environmental Protection Agency. Tempe, AZ. October 27, 2016.



- 8) “Roasting (GM) Chestnuts: Disruptions in GMO Innovation, Governance, and Engagement,” session of four papers. Annual Meeting of the Society for Social Studies of Science. Denver, CO. November 12, 2015.
- 7) “Moral Fiber: Genetically Modified Trees, Responsible Innovation, and Environmental Justice,” session of four papers. Atlanta Conference on Science, Technology, and Innovation Policy. Atlanta, GA. September 17, 2015.
- 6) “Intersections of Genetics and Society,” professional development workshop for graduate students and public symposium, organized with F. Gould (NC State). North Carolina State University. September 19, 2014.
- 5) “‘Next Generation’ Technologies: Expectations, Continuities, and Governance,” panel of two sessions and ten papers. Annual Meeting of the Society for Social Studies of Science. Buenos Aires, Argentina. August 23, 2014.
- 4) “The Practice of Scientific Dissent,” with K.D. Warner, session of three papers. Annual Meetings of the Society for Social Studies of Science. Washington, D.C, October 29, 2009. Also served as session discussant.
- 3) “Agricultural (Bio)Technologies and International Development: Engaging STS to Make a Difference,” with D. Glover and M. Harsh, session of five papers. Annual Meetings of the Society for Social Studies of Science. Montreal, Canada. October 11, 2007.
- 2) “Transgene Transgressions: Controversies Over Transgenic Maize in Mexico,” with A. Kinchy, session of four papers. Annual Meetings of the Society for Social Studies of Science. Vancouver, Canada. November 4, 2006.
- 1) “Practicing Scientific Dissent,” with J. Howard and D. Durant, session of four papers. Annual Meetings of the Society for Social Studies of Science. Pasadena, CA. October 21, 2005.

### ***Conference Papers***

- 40) **Delborne, J.A.** “Communicating about Biotechnology with Public Audiences,” *NC Cooperative Extension State Conference*, Raleigh, NC. October 30, 2019.
- 39) **Delborne, J.A.** “Kingdoms of Engagement: Reflecting on Stakeholder Engagement Exercises Focused on GE Algae, Trees, and Mice.” *Annual Meeting of the Society for Social Studies of Science*. New Orleans, LA. September 5, 2019.
- 38) \*George, D. and **Delborne, J.A.**, “Mapping Engagement for Emerging Technologies: Decision Phases, Stakeholders, and the Genetically Engineered American Chestnut Tree.” *Annual Meeting of the Society for Social Studies of Science*. New Orleans, LA. September 5, 2019.
- 37) \*Costantini, D., \*George, D. and **Delborne, J.A.**, “Creating Space for Reflexivity: Facilitating Dialogue Between Scientists and Stakeholders.” *Annual Meeting of the Society for Social Studies of Science*. New Orleans, LA. September 5, 2019.
- 36) \*Barnhill-Dilling, S.K. and **Delborne, J.A.**, “Innovations, Interruptions, and Regenerations of Chestnut Restoration: Reciprocal Restoration as a Framework for Reflexivity in Chestnut Restoration Narratives.” *Annual Meeting of the Society for Social Studies of Science*. New Orleans, LA. September 5, 2019.
- 35) \*Hedgespeth, M.L., Rashash, D., Shea, D., Strynar, M.J., **Delborne, J.A.**, and Nichols, E.G. [lightning talk]. “Suspect screening and prioritization of chemicals of concern (COCs) in a comprehensive, field-scale study of a forested water reuse system.” *2019 WRRRI Annual Conference*, Raleigh, NC. March 21-22, 2019.
- 34) \*Hedgespeth, M.L., Gibson, N., McEachran, A.D., Rashash, D., Shea, D., Strynar, M., **Delborne, J.A.**, and Nichols, E.G. “Municipal Wastewater Application to Forests: Using Participatory Science to

- Understand Human Exposure and Risks to Chemical Contaminants of Concern.” *Nontarget Chemistry Group, U.S. Environmental Protection Agency, Research Triangle Park, NC*. December 13, 2018.
- 33) \*Elsensohn, J.E., Burrack, H.J., Brown, Z.S., and **Delborne**, J.A. “Assessing risks of emerging technologies in pest management through expert elicitation.” *Entomological Societies of America, Canada, and British Columbia Joint Meeting*. Vancouver, BC, Canada. November 11-14, 2018.
  - 32) \*Jones, M. S., \*Elsensohn, J.E., Brown, Z.S., **Delborne**, J.A., and Mitchell, P.J. “Consideration of diverse publics and diverse markets in ethical debates of gene drives in agriculture.” *Entomological Societies of America, Canada, and British Columbia Joint Meeting*. Vancouver, BC, Canada. November 11-14, 2018.
  - 31) Nichols, E. Guthrie, \*Hedgespeth, M.L., Rashash, D., Shea, D., Strynar, M.J., and **Delborne**, J.A. “Wastewater Reuse and Chemical Contaminants of Concern: Understanding Water Quality and Community Perceptions.” *Water Resources Association Annual Conference*, Baltimore, MD. November 5, 2018.
  - 30) Shea, D., \*Hedgespeth, M.L., Strynar, M.J., **Delborne**, J.A., Rashash, D., and Nichols, E.G. “Wastewater Reuse and Chemical Contaminants of Concern: Understanding Water Quality and Community Perceptions.” *SETAC North America 39th Annual Meeting*, Sacramento, CA. November 4-8, 2018.
  - 29) \*Kokotovich, A. and **Delborne**, J. “Synthesizing engagement for synthetic biology governance: A review of existing engagement exercises.” *Governance of Emerging Technologies and Science 2018 Conference*. Phoenix, AZ. May 16-18, 2018.
  - 28) \*Hedgespeth, M.L., Rashash, D., Shea, D., Strynar, M., **Delborne**, J.A., and Nichols, E.G. “Understanding Community Values and Perceptions on Wastewater Reuse and Chemical Contaminants of Concern,” *2018 WRR Conference*, North Carolina State University. March 6, 2018.
  - 27) \*Elsensohn, J.E., \*Jones, M.S., Brown, Z.S., Mitchell, P., and **Delborne**, J.A. “Assessing attitudes on gene drives: What consumers want to know.” *Southeastern Branch of Entomological Society of America*. Orlando, FL. March 4-7, 2018.
  - 26) Nichols, E.G., \*Hedgespeth, M.L., **Delborne**, J.A., Rashash, D., Shea, D., and Strynar, M. “Municipal Wastewater Reuse: Participatory Science to Understand Human Exposure and Risks to Chemical Contaminants of Concern.” *USDA NIFA and NSF Water and Soils Meeting*, Washington, DC. January 29-31, 2018.
  - 25) **Delborne**, J.A. “Envisioning Responsible Innovation in Biotechnology for Conservation: Engagement, GM Chestnut Trees, and Gene Drive Mice.” *Annual Meeting of the Society for Social Studies of Science*. Boston, MA. August 31, 2017.
  - 24) \*Backus, G.A. and **Delborne**, J.A. “Gene Drives over the Horizon: A Model, for Anticipatory Governance.” *Annual Meeting of the Society for Social Studies of Science*. Boston, MA. August 31, 2017.
  - 23) \*Hedgespeth, M.L., McEachran, A.D., Rashash, D., Shea, D., Strynar, M., **Delborne**, J.A., and Nichols, E.G. “Municipal Wastewater Application to Forests: Using Participatory Science to Understand Human Exposure and Risks to Chemical Contaminants of Concern.” *2017 Carolinas SETAC Regional Meeting*, Charleston, SC. May 17-19, 2017.
  - 22) \*Elsensohn, J.E., Brown, Z.S., **Delborne**, J.A., and Burrack, H.J. “Comparative risk analysis for agricultural genetic pest management technologies.” *Society for Risk Analysis*. San Diego, CA. December 11-16, 2016.
  - 21) **Delborne**, J.A. and \*Harrison, R. “Boasting Chestnuts: Genetically-Modified Trees, Responsible Innovation, & Anticipatory Governance.” *Annual Meeting of the Society for Social Studies of Science*.

Denver, CO. November 12, 2015.

- 20) **Delborne, J.A., Rivers, L., and Robinson, M.** “Anticipatory Governance and Responsible Innovation: Technological and Regulatory Futures of Genetically Modified Trees.” *Atlanta Conference on Science, Technology, and Innovation Policy*. Atlanta, GA. September 17, 2015.
- 19) **Delborne, J.** “Anticipating Responsible Innovation: Genetically-Modified Trees and Conceptualizations of Technological and Regulatory Futures,” *Third Annual Conference on Governance of Emerging Technologies: Law, Policy and Ethics*. Scottsdale Resort and Conference Center, Scottsdale, AZ. May 27, 2015.
- 18) **Delborne, J., Rivers, L., and Robinson, M.** “Doubling Back on Risk Perception: Scientists, Genetically Modified Trees, and the Risks of Technological Rejection.” *Annual Meeting of the Society for Social Studies of Science*. Buenos Aires, Argentina. August 23, 2014.
- 17) \*Pitts, E.A. and **Delborne, J.A.** “Regulatory (Mouse) Traps: Social, Cultural and Ethical Issues in Classifying Genetically Engineered Organisms.” *Second Annual Conference on the Governance of Emerging Technologies: Law, Policy, and Ethics*. Scottsdale, AZ. May 28, 2014.
- 16) **Delborne, J.** “Public Think Tanks and Scientific Controversy: Analyzing Efforts by Public Think Tanks to Inform Climate Change Policy.” *Annual Meeting of the Society for Social Studies of Science*. San Diego, CA. October 12, 2013.
- 15) \*Ikard, S., **Delborne, J.**, and Brunsdale, K. “Dammed If You Do, Dammed If You Don’t: Tensions between Ensuring Dam Safety and Maximizing Colorado’s Water Supply.” *Association of State Dam Safety Officials – Dam Safety 2012*. Denver, CO. September 19, 2012.
- 14) **Delborne, J.** “Strategies of Neutrality between Political and Scientific Controversy: Comparing Efforts by U.S. Public Think Tanks to Inform Debates on Climate Change Policy.” *International Conference on Culture, Politics, and Climate Change*. University of Colorado-Boulder. September 15, 2012.
- 13) Hollander, R., Miller, C., **Delborne, J.**, Munakata Marr, J., Rabkin, D., and Sittenfeld, D. “Climate Change, Engineered Systems, and Society.” *Climate Literacy Network Teleconferences*. April 3, 2012.
- 12) \*Kimmel, S., \*Toohey, N., and **Delborne, J.** “Roadblocks in Highway Innovation: Public Highway Construction, Innovation, and Regulation.” *Conference on Earth and Energy Research*, Colorado School of Mines, Golden, CO. March 28-29, 2012.
- 11) **Delborne, J.A.**, \*Wigner, A., and Kinchy, A. “‘Bridge Fuel’: Metaphorical Hope and Hype.” *Annual Meeting of the Society for Social Studies of Science*. Cleveland, OH. November 3, 2011.
- 10) **Delborne, J.**, Schneider, J., Bal, R., Cozzens, S., and Worthington, R. “Policy Pathways, Policy Networks, and Citizen Deliberation: Disseminating the Results of World Wide Views on Global Warming in the United States.” *Atlanta Conference on Science, Technology, and Innovation Policy*. Georgia Institute of Technology. September 17, 2011.
- 9) \*Bouchey, M. and **Delborne, J.** “Redefining Safety in Commercial Space.” *Atlanta Conference on Science, Technology, and Innovation Policy*. Georgia Institute of Technology. September 17, 2011.
- 8) **Delborne, J.**, \*Wigner, A., and Kinchy, A. “Hope for Sustainability, Hype for Natural Gas: The ‘Bridge Fuel’ Metaphor, Refined.” *Conference on the Political Sociology of Science and Technology*. Rensselaer Polytechnic Institute. Troy, NY. April 30, 2011.
- 7) **Delborne, J.** and Galusky, W. “Toxic Transformations: Constructing Audiences for Environmental Justice.” *Annual Meetings of the Society for Social Studies of Science*. Washington, D.C. October 31, 2009.
- 6) Kleinman, D.L., **Delborne, J.**, and Anderson, A. “Engaging Citizens: The High Cost of Citizen

Participation in High Technology.” *Annual Meetings of the Society for Social Studies of Science*. Washington, D.C. October 31, 2009.

- 5) **Delborne, J.** “Constructing Audiences in Scientific Controversy.” *Annual Meetings of the Society for Social Studies of Science*. Montreal, Canada. October 11, 2007.
- 4) **Delborne, J.** “Transgenes and Transgressions: Spectrums of Scientific Dissent.” *Annual Meetings of the Society for Social Studies of Science*. Vancouver, BC. November 4, 2006.
- 3) **Delborne, J.** “Pathways of Scientific Dissent in Agricultural Biotechnology.” *Annual Meetings of the Society for Social Studies of Science*. Pasadena, CA. October 21, 2005.
- 2) **Delborne, J.** “Transforming Scientific Dissent into Dissidence: Analysis of ‘The Pulse of Scientific Freedom in the Age of the Biotech Industry.’” *Annual Meetings of the Society for Social Studies of Science*. Paris, France. August 27, 2004.
- 1) **Delborne, J.** “Dissident Science in Agricultural Biotechnology: The Discovery, Controversy and Significance of Transgenes.” *Annual Meetings of the Society for Social Studies of Science*. Atlanta, GA. October 17, 2003.

### **Conference Posters**

- 9) Binder, A.R., \*Barnes, J.C., \*Barnhill-Dilling, S.K., \*George, D., \*Kokotovich, A., Rivers, L., \*Sudweeks, J., and **Delborne, J.A.** “Restoring Biotechnology’s Moral Fiber? Lessons from a stakeholder workshop on genetically modified American chestnut trees and public engagement.” Society for Risk Analysis. New Orleans, LA. December 2-6, 2018.
- 8) \*Jones, M. S., \*Elsensohn, J.E., Brown, Z.S., Mitchell, P.W., and **Delborne, J.A.** “U.S. public attitudes and uncertainties on using gene drive on invasive insects in agriculture.” *Addressing the North American and Pacific Rim Invasive Insect and Arthropod Species Challenge Summit*. Vancouver, BC, Canada. November 9-10, 2018.
- 7) Nichols, E.G., \*Hedgespeth, M.L., Gibson, N., McEachran, A.D., Rashash, D., Shea, D., Strynar, M.J., and **Delborne, J.A.** “Municipal Wastewater Application to Forests: Using Participatory Science to Understand Human Exposure and Risks to Chemical Contaminants of Concern.” *AWRA 54th Annual Conference*, Baltimore, MD. November 4-8, 2018
- 6) \*Kokotovich, A. and **Delborne, J.** “Contemplative practices for engaging with emerging biotechnologies.” *Association for Contemplative Mind in Higher Education 2018 Conference*. Amherst, MA. October 5-7, 2018.
- 5) \*Costantini, D., \*Sudweeks, J., and **Delborne, J.** “The Diversity of Discourse around the GM American Chestnut Tree.” *Policy and Science and Technology Studies (POSTS) Poster Symposium*. Arizona State University’s Barrett and O’Connor Center, Washington, DC. June 21, 2018.
- 4) \*Hedgespeth, M.L., McEachran, A.D., Rashash, D., Shea, D., Strynar, M., **Delborne, J.A.**, and Nichols, E.G. “Municipal Wastewater Application to Forests: Using Participatory Science to Understand Human Exposure and Risks to Chemical Contaminants of Concern.” *SETAC North America 38th Annual Meeting*, Minneapolis, MN. November 12-16, 2017.
- 3) \*Elsensohn, J.E., Brown, Z.S., **Delborne, J.A.**, and Burrack, H.J. “New kids on the block: Regulatory issues around emerging pests and emerging technologies.” *International Congress of Entomology*. Orlando, FL. September 26-30, 2016.
- 2) Robinson, M., **Delborne, J.**, and Rivers, L. “Does Anticipating Futures Shape Governance? How One NGO Hopes to Predict and Shape Global Regulatory and Commercial Futures in the Creation of Genetically Modified Trees.” *Democratizing Technologies: Assessing the Roles of NGOs in Shaping Technological Futures*. University of California, Santa Barbara. November 13, 2014.
- 1) \*Parekh, M.L., \*Stone, K.A., and **Delborne, J.** “Intelligent Monitoring of Dams and Levees: Can

Technological Advancements in Continuous Monitoring Stimulate Policy Change?" *Association of State Dam Safety Officials – Dam Safety 2010*. Seattle, WA. September 20-21, 2010.

### **Panel Moderation and Facilitation**

- 9) Invited moderator, with panelists Aaron Ellison, Joel Ong, Jon Davis, Erin Kirchner, and Rachel Rusk, "Genetic Arts Intervening in the Anthropocene: Climate, Geoengineering, and Ecosystems," *Art's Work in the Age of Biotechnology: Shaping Our Genetic Futures*. October 18, 2019. <https://research.ncsu.edu/ges/arts-work-in-biotech/>
- 8) Moderator, with panelists Zachary Brown, Hannah Burrack, Heike Sederoff, and Ross Sozzani, "Gene Editing in the Food System," *Institute on Science for Global Policy (ISGP) Forum* (online). September 25, 2019. <https://www.facebook.com/isgpforum/>
- 7) Invited moderator, with panelists Rodolphe Barrangou, R. Alta Charo, Sarah Goodwin, and Elliot Kirschner, "Discussion of the Documentary *Human Nature*," Board on Life Sciences 2019 Spring Meeting, National Academies of Sciences, Engineering, and Medicine, Washington, DC. April 26, 2019. Film Trailer: <https://wondercollaborative.org/human-naturedocumentary-film/>
- 6) Invited discussant, "Emerging Technologies, New Governance Arrangements, and the Time-Honored Challenges: Searching for Novelty in Anticipatory Governance." *Advancing Science for Policy through Interdisciplinary Research in Regulation*. University of California, Berkeley. November 17, 2017.
- 5) Moderator, "Genome Engineering for Biological Insights and Product Development," *Genetic Engineering Research at NC State*. North Carolina State University. April 28, 2015.
- 4) Invited facilitator, "Towards Improving the Interfaces between Scientists and Citizens: Breakout Session: Transgenic Corn and the Monarch Butterfly," *When Science and Citizens Connect: Public Engagement on Genetically Modified Organisms*. Workshop of the Roundtable on Public Interfaces of the Life Sciences (PILS), National Academy of Sciences, Washington, D.C. January 16, 2015.
- 3) Session discussion leader, "Natural Resources: Socio-Ecological Systems and Policy," *Gordon Research Conference on Science and Technology Policy*. Waterville Valley, NH. August 12, 2014.
- 2) Moderator, "Effective Interventions in Undergraduate Engineering Education." *Networking Educational Priorities for Climate, Engineered Systems, and Society*. Washington, DC. October 18, 2011.
- 1) Respondent, "Interactions – Defining the Problems." *Climate, Society, and Technology*. Beckman Center, Irvine, CA. June 7, 2011.

## **COURSES TAUGHT**

### **North Carolina State University (Aug 2013 – )**

- Current Issues in Natural Resource Policy (NR 571) – required core course for the Masters in Natural Resources program.
- Emerging Technologies and Society (GES 508) / New Technologies in Social and Cultural Context (GES 591) – required graduate course for minor in Genetic Engineering and Society (GES).
- Genetic Engineering and Society Colloquium (GES 591) – required graduate course for minor in Genetic Engineering and Society (GES).
- Genetic Engineering and Society Discussion (GES 591) – pilot discussion section to pair with GES Colloquium.
- Science, Technology, and Society Capstone Seminar (STS 403)

- Pest Issues in Developing Countries: Biology, Culture, and Infrastructure (GES 591) – required 4-week intensive summer course in Mexico for IGERT Ph.D. fellows.
- Genetic Pest Management Cohort Project (GES 591) – required graduate course for IGERT fellows.

#### **Colorado School of Mines (Aug 2008 – May 2013)**

- Nature and Human Values (LAIS 100): 1-2 lectures per semester to 600+ students.
- U.S. Public Policy Analysis (HNRS 300): junior-level course for McBride Honors Program in Public Affairs; co-taught with professor of economics and business.
- History of Technology (LAIS 371): junior-level course for 35 students; foundational course for STEP minor [STEP = Science, Technology, Engineering, and Policy].
- Science and Technology Policy (LAIS 486): writing intensive, senior-level capstone course required for STEP minor.
- Science and Technology Policy (LAIS 586): graduate-level required course for STEP minor; MIPER elective [MIPER = Master's Program in International Political Economy of Resources].
- Science, Technology, and Society (LAIS 565): graduate level course for STEP minor; required course for all SmartGeo IGERT fellows; MIPER elective.
- SmartGeo Seminar (SYGN 555): required weekly seminar for all SmartGeo IGERT fellows.

#### **University of Wisconsin-Madison (Aug 2006 – Jun 2008)**

- Where Science Meets Society (STS 201): required course for the Integrated Studies in Science, Engineering, and Society Undergraduate Certificate Program (ISSuES).
- Science, Technology, Medicine, and Society (STS 901): required seminar for Ph.D. minor in STS.

#### **University of California, Berkeley (Jan 1999 – Dec 2002)**

- Environmental Policy, Administration, and Law (ESPM 50): Teaching assistant and section leader for sophomore-level course.
- Case Studies in Environmental Science, Policy, and Management (ESPM 200A): Teaching assistant for required graduate seminar in ESPM program.
- Research Approaches in Environmental Science, Policy, and Management (ESPM 201A): Co-Instructor for required graduate seminar in ESPM program.
- Environmental Electioneering, Lobbying, and Advocacy (ESPM mini-course): Teaching assistant.

#### **Stanford University (Sep 1993 – Jun 1994)**

- Human Biology Core (HUMBIO 2B, 3B, 4B): Teaching assistant and section leader for the social science components of the core sophomore sequence in the interdisciplinary human biology program.

## **PROFESSIONAL SERVICE**

### ***National and International Service***

Gene Drives in Biomedical Research Working Group, Novel and Exceptional Technology and Research Advisory Committee (NExTRAC), National Institutes of Health (NIH) 2020-

|  |                  |
|--|------------------|
| International Union for Conservation of Nature (IUCN), Commission on Environmental, Economic and Social Policy (CEESP)   | 2019-            |
| Engineering Biology Research Consortium, Council Member (appointed)  | 2019-            |
| International Union for Conservation of Nature (IUCN), Task Force on Synthetic Biology and Biodiversity Conservation   | 2018-            |
| Expert Advisory Committee, “Gene Drive Applications to Agriculture in Texas” (USDA grant)  | 2018-            |
| Working Group, “Public Deliberation on Gene Editing in the Wild” (led by The Hastings Center, funded by the National Science Foundation)   | 2018-            |
| International Expert Advisory Committee, “ReWrite: New knowledge to navigate the rewriting of human/nature relations through genome editing in the search for sustainable food” (led by GenØk – The Center for Biosafety, funded by the Norwegian Research Council)  | 2018-            |
| Editorial Board, <i>Science Communication</i>  | 2015-            |
| Editorial Board (charter member), <i>Engaging Science, Technology, and Society</i> ,   | 2014-            |
| Review Panel, National Science Foundation, Division of Social and Economic Sciences  | 2017, 2018, 2020 |
| Organizing Committee, 3 <sup>rd</sup> International Conference on CRISPR Technologies. Würzburg, Germany. Society of Biological Engineering. September 16-18, 2019.  | 2018-19          |
| Engineering Biology Research Consortium, Academic Research Member  | 2018-19          |
| Committee on the Potential for Biotechnology to Address Forest Health, National Academies of Sciences, Engineering and Medicine (NASEM), Board on Agriculture and Natural Resources  | 2017-19          |
| External reviews of faculty tenure and promotion dossiers  | 2018(2)          |
| Faculty Facilitator and Mentor, “Policy of Science, Technology and Society (POSTS) Scholars Program,” funded by the National Science Foundation to “increase diversity in science and technology studies and science policy fields,” Program coordinated through Arizona State University and included campus mentoring during the academic year and three weeks of summer workshops in Washington, D.C. | 2014-18          |
| Committee on Gene Drive Research in Non-Human Organisms: Recommendations for Responsible Conduct, National Academies of Sciences, Engineering and Medicine (NASEM), Board on Life Sciences   | 2015-16          |
| Vice-Chair, Gordon Research Conference on Science and Technology Policy  | 2014             |
| Ad-hoc student section (6S) charter committee, Society for Social Studies of Science (4S)  | 2014             |
| Co-coordinator, “Science Outside the Lab: A Policy (Dis)orientation.” Two-week summer workshop organized by Arizona State University to introduce science and engineering graduate students to the intersection of science and policy in Washington, D.C.  | 2011, 2012       |
| Scholarship Review Committee, Udall Foundation   | 2011             |



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| Elected student representative, Society for Social Studies of Science (4S) Council   | 2004-06       |
| <b><i>University Service – College and Campus</i></b>  |               |
| Strengthening University-Wide Interdisciplinarity Task Force (component of University's 2021-2030 Strategic Planning Process)  | 2020-         |
| Curriculum Committee, Genetics and Genomics Initiative   | 2019-         |
| Faculty Advisor, Environmental Student Association   | 2018-         |
| Executive Committee, Agricultural Biotechnology in our Evolving Food, Energy, and Water Systems (National Research Traineeship)  | 2018-         |
| Leadership in Public Science Committee, Chancellor's Faculty Excellence Program  | 2015-         |
| Advisory Committee, Science, Technology, and Society Program   | 2014-         |
| Co-Director, Genetic Engineering and Society Minor Program   | 2014-         |
| Executive Committee, Genetic Engineering and Society Center  | 2013-         |
| University Standing Committee on Evaluation of Teaching (NCSU)   | 2015-18       |
| Executive Committee, Genetic Engineering and Society: The Case of Transgenic Pests Integrative Graduate Education, Research, and Traineeship (IGERT) Program   | 2013-18       |
| Transdisciplinary Research Seminar Working Group, College of Natural Resources   | 2013-14       |
| University Research Council (Colorado School of Mines/CSM)   | 2012-13       |
| Executive Committee, Intelligent Geosystems (SmartGeo) Integrative Graduate Education, Research, and Traineeship (IGERT) Program (CSM)   | 2009-13       |
| Steering Committee, University of Wisconsin-Madison's Delta Program / Center for the Integration of Research, Teaching, and Learning   | 2007-08       |
| <b><i>University Service - Department</i></b>  |               |
| Graduate Committee, Department of Forestry and Environmental Resources (FER)   | 2019-         |
| Teaching Peer Review Committee, FER  | 2013-18, 2020 |
| Department Head Review Committee, FER  | 2019          |
| Working Group, Faculty Workload and Rewards Project, FER   | 2018-19       |
| Post-Tenure Review Committee, FER  | 2016-19       |
| Program Advisor, Science, Technology, Engineering, and Policy undergraduate and graduate minor and certificate (Division of Liberal Arts and International Studies [LAIS], Colorado School of Mines) | 2010-13       |
| Graduate Curriculum Committee (LAIS)   | 2011-13       |
| Undergraduate Curriculum Committee (LAIS)  | 2010-12       |

**Peer-review of proposals and manuscripts (through 2019)**

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| <i>Acta Astronautica</i>   | 2016   |
| <i>Bioethics</i>   | 2018   |
| <i>Bulletin of Science, Technology and Society</i>                                 | 2019   |
| Cornell University Press   | 2014   |
| Council for the Humanities of the Netherlands Organization for Scientific Research | 2012   |
| <i>Critical Reviews in Biotechnology</i>   | 2018(2)  |
| Elsevier   | 2016   |
| <i>Engaging Science, Technology, and Society</i>                                   | 2015(2), 2016, 2018  |
| <i>Environmental Humanities</i>  | 2015   |
| <i>Environmental Sociology</i>   | 2015   |
| Fondazione Cariplo (STS Italian Foundation)  | 2019 [9]   |
| Foundation for the National Institutes of Health                                   | 2017   |
| <i>Gates Open Research</i>   | 2017   |
| Genome British Columbia  | 2019   |
| <i>Georgetown Journal of International Affairs</i>                                 | 2017   |
| <i>Governing Biodiversity through Democratic Deliberation</i> (Routledge)          | 2013   |
| <i>Ground Water</i>  | 2009   |
| <i>Hastings Center Report</i>  | 2017   |
| <i>International Journal of Foresight and Innovation Policy</i>                    | 2013(2)  |
| <i>International Journal of Engineering, Social, Justice, and Peace</i>            | 2013, 2014   |
| <i>Journal of Responsible Innovation</i>   | 2019   |
| <i>Minerva</i>   | 2015   |
| National Academies of Engineering  | 2016, 2017   |
| National Science Foundation  | 2008, 2010(2), 2011, 2018  |
| Oxford University Press  | 2016   |
| <i>Pacific Conservation Biology</i>  | 2017   |
| <i>People and Nature</i>   | 2019   |
| <i>Perspectives on Science</i>   | 2015   |
| <i>PLOS Biology</i>  | 2014 (3)   |
| <i>Public Understanding of Science</i>   | 2009, 2011(2), 2012, 2013  |
| Routledge/Earthscan Press  | 2015   |
| <i>Science and Public Policy</i>   | 2014   |
| <i>Science as Culture</i>  | 2009   |
| <i>Science Communication</i>   | 2010, 2011, 2012(2), 2013(3), 2014 (2), 2015, 2016(2), 2017(2), 2018, 2019 |
| <i>Science, Technology and Human Values</i>  | 2008   |
| Social Sciences and Humanities Research Council of Canada                          | 2011   |
| <i>Social Studies of Science</i>   | 2008, 2009, 2012, 2013, 2015, 2016, 2017                                   |
| Swiss National Science Foundation  | 2015   |
| United States-Israel Binational Science Foundation                                 | 2015   |
| <i>Wildlife Research</i>   | 2019   |
| World Class University Program/Korean Ministry of Education, Science & Technology  | 2012, 2013   |

**STUDENTS AND POSTDOCS ADVISED****North Carolina State University (2013- )**

- Pezzini, Daniela. Entomology / AgBioFEWS National Research Traineeship. Ph.D committee member. Spring 2020-
- Hoy, Morgan. Natural Resources. Master's committee member. Spring 2020-
- Barnhill-Dilling, S. Kathleen. Forestry and Environmental Resources / Genetic Engineering and Society Center. Postdoctoral Supervisor. Jul 2019-
- Kokotovich, Adam. Forestry and Environmental Resources / Genetic Engineering and Society Center. Postdoctoral Supervisor. Jan 2018-

- George, Dalton. Forestry and Environmental Resources / AgBioFEWS National Research Traineeship. Ph.D. advisor. Spring 2018-
- Vella, Michael. Biomathematics / Genetic Engineering and Society IGERT. Ph.D. committee member. Fall 2017-
- Elsensohn, Johanna. Entomology / Genetic Engineering and Society IGERT, Ph.D. committee member. Spring 2015-
- Costantini, Danielle. Natural Resources. Master's of Science advisor. Defended Spring 2020.
- Murphy, Ian. Environmental Assessment. Master's Project Supervisor. Defended Fall 2019.
- Shain, Samuel. Park Scholar (undergraduate). Faculty mentor. 2015-2019
- Selviana, Vivi. Natural Resources. Master's committee member. Defended Summer 2019.
- Sudweeks, Jayce. Public Administration / Genetic Engineering and Society IGERT. Ph.D. committee member. Defended May 2019.
- Barnhill-Dilling, S. Kathleen. Forestry and Environmental Resources. Ph.D. advisor. Defended May 2018.
- Barnes, Jessica Cavin. Forestry and Environmental Resources / Genetic Engineering and Society IGERT. Ph.D. advisor. Defended April 2018.
- Valdez, Rene. Forestry and Environmental Resources / Genetic Engineering and Society IGERT. Ph.D. committee member. Defended October 2017.
- Typhina, Eli. Communication, Rhetoric, and Digital Media. Ph.D. committee member. Defended February 2017.
- Backus, Gregory. Biomathematics Program / Zoology / Genetic Engineering and Society IGERT. Ph.D. committee member and minor advisor. Defended January 2017.
- Pitts, Elizabeth. Communication, Rhetoric, and Digital Media / Genetic Engineering and Society IGERT. Ph.D. committee member. Defended December 2016.
- Ndoh, Tina. Public Administration. Ph.D. committee member. Defended May 2015.
- MacGregor, Dresden. Natural Resources. Master's committee member. Defended March 2018.
- Wooten, Elizabeth. Natural Resources. Master's committee member. Defended November 2017.
- Late, Ketki. Natural Resources. Master's committee member. Defended March 2017.

### ***Colorado School of Mines (2008-13, summary)***

- Undergraduate Minor Advisor: Science, Technology, Engineering, and Policy. 13 students.
- Graduate Minor/Certificate Advisor: Science, Technology, Engineering, and Policy. 15 students.
- Thesis committees, Masters in International Political Economy of Resources. 3 students.
- Ph.D. thesis committees in Economics and Business. 2 students.
- Ph.D. thesis committee in Mining. 1 student.
- Ph.D. thesis committees in SmartGeo IGERT Program. 11 students.

### **MEDIA MENTIONS (*since 2016*)**

- Quoted in *Associated Press* (syndicated and re-published in *The New York Times*, *Chicago Tribune*, *Minneapolis Star Tribune*, and many other outlets), "High-tech chestnuts: US to genetically altered tree" (November 6, 2019) <https://apnews.com/e4dd339ee2ee408c8a40c9556aee318f>
- Interviewed for *BioScience Talks*, the podcast of the American Institute of Biological Sciences, "Threshold-Dependent Gene Drives in Wild Populations" (October 8, 2019) <http://bioscience-talks.aibs.org/threshold-dependent-gene-drives-in-wild-populations>
- Quoted in *College of Natural Resources News*, "Public Support for Gene Drives in Agriculture Tied to Limits" (September 11, 2019) <https://news.ncsu.edu/2019/09/public-support-for-gene-drives/> [republished in *Science Daily*, *Futurity*, *Phys.org*, and *WRAL TechWire*]

- Featured in *The Academic Minute* [podcast] (July 8, 2019), played on WAMC radio and published on *Inside Higher Ed*. <http://www.insidehighered.com/audio/2019/07/07/forest-biotech>
- Featured in *College of Natural Resources News*, “Can Genetic Engineering Save Our Planet’s Biodiversity?” (June 24, 2019) <https://cnr.ncsu.edu/news/2019/06/the-future-of-conservation-can-genetic-engineering-save-our-planets-biodiversity/>
- Quoted in *Independent*, “Plan to plant genetically engineered trees throughout the US to save dying forests” (February 16, 2019) <https://www.independent.co.uk/environment/trees-genetic-engineering-gm-pests-diseases-invasive-species-extinction-fungus-a8782061.html>
- Essay requested by *The Conversation*, published as “Can genetic engineering save disappearing forests?” (January 18, 2019) <http://theconversation.com/can-genetic-engineering-save-disappearing-forests-109793> (republished by at least 24 outlets, including *Discover Magazine*, *Newsweek*, and the *San Francisco Chronicle/SF Gate*)
- Quoted in *Scientific American*, “Biotech Could Modify Trees to Protect against Pests” (January 10, 2019) <https://www.scientificamerican.com/article/biotech-could-modify-trees-to-protect-against-pests/>
- Featured in *ECOS eNews* (published by CSIRO), “Transparency in science: Talking about the potential of gene editing for conservation” (December 11, 2018) <https://blogs.csiro.au/ecos/gene-editing/>
- Quoted in *Gizmodo*, “Scathing Report Accuses the Pentagon of Developing an Agricultural Bioweapon” (October 4, 2018) [https://gizmodo.com/scathing-report-accuses-the-pentagon-of-developing-an-a-1829525862?utm\\_medium=sharefromsite&utm\\_source=gizmodo\\_email&utm\\_campaign=version\\_92\\_5\\_version\\_A\\_top](https://gizmodo.com/scathing-report-accuses-the-pentagon-of-developing-an-a-1829525862?utm_medium=sharefromsite&utm_source=gizmodo_email&utm_campaign=version_92_5_version_A_top)
- Quoted in 合成生物学の衝撃 (*The Impact of Synthetic Biology*, April 2018), book written by Momoko Suda, Japanese visiting fellow to the Genetic Engineering and Society Center in 2016-17.
- Quoted in *New York Times*, “Gene Drives are too Risky for Field Trials, Scientists say” (November 16, 2017) <https://www.nytimes.com/2017/11/16/science/gene-drives-crispr.html>
- Quoted in *Quanta*, “New Model Warns about CRISPR Gene Drives in the Wild” (November 16, 2017) <https://www.quantamagazine.org/new-model-warns-about-crispr-gene-drives-in-the-wild-20171116/>
- Quoted in *Gizmodo*, “Genetically Engineering the Natural World, it Turns Out, Could Be a Disaster” (November 16, 2017) <https://gizmodo.com/genetically-engineering-the-natural-world-it-turns-out-1820493131>
- Mentioned in *Scientific American*, “Could Genetic Engineering Save the Galapagos?” (November 1, 2017) <https://www.scientificamerican.com/article/could-genetic-engineering-save-the-gal-aacote-pagos/>

- Quoted in *Scientific American*, “Can Scientists Convince the Public to Accept CRISPR and Gene Drives?” (October 1, 2017) <https://www.scientificamerican.com/article/can-scientists-convince-the-public-to-accept-crispr-and-gene-drives/>
- Quoted in *New York Times*, “Species-wide Gene Editing, Applauded and Feared, Gets a Push” [first published as “Panel Endorses ‘Gene Drive’ Technology That Can Alter Entire Species”] (June 8, 2016) <http://nyti.ms/1WEMu48>
- Quoted in *Science Magazine*, “U.S. Academies gives cautious go-ahead to gene drive” (June 8, 2016) <http://www.sciencemag.org/news/2016/06/us-academies-give-cautious-go-head-gene-drive>
- Quoted in *Associated Press* (syndicated and re-published in many outlets), “Malaria-proof mosquito? Tool promising but needs more study” (June 8, 2016) <https://www.apnews.com/98307ad5a8474df6959c965aefd7ae0c>
- Featured in *NC State News*, “Keeping up with the fast-moving science of gene drives” (June 8, 2016) <https://news.ncsu.edu/2016/06/delborne-genedrive-qa/>