

Survey of Faculty Research 2/23

Please provide your full name	Please provide your department and/or program affiliations	Research Description/Publications
Alexandra Frazer	Psychology	<p>Motherscholar Collective, Bielski, L.M., Campbell-Obaid, M., Frazier, K. E., Frazer, A.K., Greene, C., Greene-Rooks, J.H., Key-DeLyria, S., McKagen, E.L., Myles-Baltzy, C.C., Richardson, I. (2022, accepted) Caught between a rock and a hot place: How mothers* of young children navigate climate precarity and barriers to collective action. "Mothering in a Time of Climate Change Precarity" (Edited Collection) Editor: Allison Davis. (Original Anticipated Publication date, November 2022).</p> <p>This book is under contract with the Texas Woman's Book Series with Texas A&M Press, but is still being edited and is not yet "in press"</p>
Christopher Borick	Political science	<p>Public opinion research related to climate change and fracking. Relevant publications: Climate change risk perceptions and the problem of scale: evidence from cross-national survey experiments. <i>Environmental Politics</i>, 29(7), pp.1178-1198. Sie, A., Brechin, S.R. and Borick, C.P., 2023. Mischen, P. A. and Palka Jr, J.T., 2022. FRAMING FRACKING THROUGH LOCAL LENSES. <i>When Fracking Comes to Town: Governance, Planning, and Economic Impacts of the US Shale Boom</i>, p.73. <i>Contingencies of Climate Geoengineering and Moral Hazard</i>.</p> <p>He is co director of the National Surveys on Energy and the Environment (NSEE) and currently conducts surveys for the Morning Call newspaper in Allentown, Pennsylvania. He has served as President of both the Wisconsin Political Science Association and the Pennsylvania Political Science Association.</p>
Daniel Klem, Jr.	Biology, Muhlenberg College	<p>Study, writing, and teaching dedicated to making the human-built environment safe for birds the world over. Published over 100 scientific peer-reviewed reports and journal articles, and a recent book (<i>Solid Air, Invisible Killer: Saving Billions of Birds from Windows</i>) documenting sheet glass and plastic as a source of avian mortality and how to prevent significant avian population decline from this and other sources of human-caused attrition worldwide.</p>
Erika Iyengar	Biology	<p>surveying invertebrate community (including pollution-sensitive taxa and invasive species) in local streams and the ponds at Graver Arboretum, monitoring change over time. . . . and student research on differences in animal responses to salinity stresses</p>
Francesca Coppa	English and Film Studies	<p>Barri Gold and I have co-written a paper, currently under review, about the connections between narrative structure and climate change; it's called "In Defense of the Freaky Stuff: Marvel, Ecology & the Tyranny of the Bildungsroman." I presented some of the arguments of that paper on a panel for the University of Pennsylvania's Climate Week, October 13, 2022; see https://www.english.upenn.edu/events/2022/10/13/climate-movies.</p>
Jason Kelsey	Chemistry/Environmental Science	<p>Research on soil toxicology. I study what happens to pollutants like pesticides and industrial chemicals that find their way into natural systems. I have published over 20 articles in scholarly journals on factors and processes affecting biodegradation (essentially: bacteria eat and break down pollutants), bioaccumulation (essentially: movement of pollutants into organisms) and the clean up of toxic substances. I am proud to say that some of my best work was done in collaboration with talented and hard-working Muhlenberg undergraduates.</p>

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Jason Kelsey	Environmental Science/Environmental Science	<p>My formal science interests are in a field known as soil toxicology. Put succinctly, I study what happens to pollutants like pesticides and industrial chemicals that find their way into natural systems. During my 25+ years as a scientist, I have published over 20 articles in scholarly journals on factors and processes affecting biodegradation (essentially: bacteria eat and break down pollutants), bioaccumulation (essentially: movement of pollutants into organisms) and the clean up of toxic substances. I am proud to say that some of my best work was done in collaboration with talented and hard-working Muhlenberg undergraduates.</p> <p>Kelsey, J.W. 2023. Environmental Science: A Science-Based Study of Earth's Natural Systems. Pressbooks. Hatzinger, P.B and Kelsey, J.W. 2022. Biodegradation of organic contaminants. Reference Module in Earth Systems and Environmental Sciences. Elsevier.</p>
Jordanna Sprayberry	Biology and Neuroscience	<p>My scholarship is focused on the neuroethology of pollination, with a substantial focus on how odor-pollution could disrupt foraging behavior in bumblebees. Given the importance of wild bees to sustainable agriculture systems alongside problematic population declines, our work is highly germane to current sustainability efforts.</p> <p>Sommer, J., Rao, V. & Sprayberry, J. Deconstructing and contextualizing foraging behavior in bumble bees and other central place foragers. <i>Apidologie</i> 53, 32 (2022). https://doi.org/10.1007/s13592-022-00944-3. (view only version: https://rdcu.be/cP7DR)</p> <p>David NF, Henry TJ, and Sprayberry JDH (2022). Odor pollution from fungicides disrupts learning and recognition of a common floral odor in Bumblebees (<i>Bombus impatiens</i>). <i>Frontiers in Ecology and Evolution</i>. DOI: 10.3389/fevo.2022.765388.</p> <p>Sprayberry JDH (2020). Compounds without borders: A mechanism for quantifying complex odors and responses to scent-pollution in bumblebees. <i>PLoS Computational Biology</i>. DOI:10.1038/s41598-018-32897-y</p> <p>Sprayberry JDH (2018). The prevalence of olfactory- versus visual- signal encounter by searching bumblebees. <i>Scientific Reports</i>. 8: 14590. DOI:10.1038/s41598-018-32897-y</p> <p>permalink: https://rdcu.be/8dF8</p> <p>Sprayberry JDH, Ritter KA, and Riffell JA (2013). The effect of olfactory exposure to non-insecticidal agrochemicals on bumblebee foraging behavior. <i>PLoS One</i>. 8(10); e76273. DOI: 10.1371/journal.pone.0076273</p>
Joseph Elliott	Art	Photographic documentation & industrial archeology including work on brown fields, urban water distribution, and artisanal gold mining. Co-Author of <i>In Exchange for Gold: The Legacy and Sustainability of Artisanal Gold Mining In Las Juntas de Abangares</i> (Common Ground Publishing)
Karen Tuerk	Chemistry/Environmental Science	Urban water quality assessment

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Keri L Colabroy	Chemistry	My research revolves around understanding enzyme function and mechanism within bacterial metabolism. In particular, dioxygenase enzymes are essential protein catalysts for the breakdown of the molecular components found in the infrastructure of woody tissue in plants, but the complex relationship between enzyme structure and function is not well understood. This lack of understanding limits our ability to exploit this powerful chemistry to make new natural products and degrade plant material into biofuels. We collaborate with Laryn Peterson of Rhodes College to study the enzyme-catalyzed reaction in real time using small molecules carefully designed to expose how the enzyme catalyzes this difficult chemistry.
Lora Taub	Media & Communication	Lora Taub's work explores the affordances of new digital media as resources for critical participation in democratic society, with a particular interest in new digital technologies and youth agency and voice. Much of her thinking on these issues emerges from her long-term ethnographic research on the socio-cultural impacts of digital media in the lives of children.
Marcia Morgan	Philosophy, Jewish Studies, Sustainability Studies, Women's and Gender Studies	<p>Marcia Morgan, "Philosophy of Migration and Gender," September 8, 2022: "Methodological Nationalism in Political Theory," MANCEPT Workshops in Political Theory, Co-organized by Alex Sager and Clara Sandelind, University of Manchester.</p> <p>Marcia Morgan, March 18, 2022: Guest professor on the philosophy of migration, Autonomous University of Barcelona, Erasmus Mundus in German and French Philosophy- PhiAFEC master degree program under the direction of Begonya Saez Tajafuerce.</p> <p>Marcia Morgan, January 8, 2022: Invited commentary on papers by Christine Staehle and Alex Sager on refugees and asylum, Annual Meeting of the American Philosophical Association- Eastern Division, Baltimore MD.</p> <p>I continue to develop this work within the domain of gender equity I'm speaking on a panel in NYC on April 29 at the New School for Social Research as part of the "Gender Matters" annual conference, on a panel on gender and migration with Alexandra Delano (https://usmex.ucsd.edu/fellows/alexandra-delano-alonso.html) and expanding on my previous work on the philosophy of migration.</p>
Marten Edwards	Biology	Insect Biology in relation to invasive insects such as the spotted lantern fly, and tick related disease and public health issues. Recently publication: Edwards, Marten J., James C. Russell, Emily N. Davidson, Thomas J. Yanusheski, Bess L. Fleischman, Rachel O. Heist, Julia G. Leep-Lazar, Samantha L. Stuppi, Rita A. Esposito, and Louise M. Suppan. "A 4-yr survey of the range of ticks and tick-borne pathogens in the Lehigh Valley region of eastern Pennsylvania." Journal of medical entomology 56, no. 4 (2019): 1122-1134.
Matt Moore	Theatre	All of my theatre courses are driven by a need to address social and environmental justice through embodied action, models of artistic production, and questions of visibility and sustainability. Much of my recent research centers on the relationship between human social systems (reified in theatrical encounters) and our systemic relations to the nonhuman world. I also teach a course in wilderness studies that seeks to understand the relationship between representations of nature, our ways of interacting with the nonhuman world., and our ongoing formation of subjecthood.

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Mohsin Hashim	Political Science	Assessing the Limits of Using the Energy Sector in Reviving Russia's Geopolitical Stature, Managing Dissent, Global Citizenship
Ranajoy Ray-Chaudhuri	Business & Economics	<p>Economic institutions in relation to development. Releavent publication: Ray-Chaudhuri, R. (2013, June). Institutional and infrastructural challenges to India's development. In International Affairs Forum (Vol. 4, No. 1, pp. 74-78). Routledge.</p> <p>I am currently looking at how central banks operate in countries that do not have their own currency. These nations are then unable to conduct conventional monetary policy, but their central banks still have a lot under their charge.</p> <p>As a case study, I am currently focusing on Kosovo, which unilaterally decided to adopt the euro despite not being a part of the official eurozone. I am looking at what this has meant for the operations of the Central Bank of Kosovo, and also how the constraints on monetary policy have affected their fiscal policy.</p> <p>My ancillary research interests are quite broad; these include how social, cultural and political institutions evolve and affect economic development, as well as the developmental experiences and challenges of the BRICS nations.</p>
Richard Niesenbaum	Biology & Sustainability Studies	Research on approaches and barriers to achieving sustainability objectives in artisanal gold mining communities, the integration of conservation, biodiversity, and sustainability, historical effects of climate change on plant flowering times. Author of Sustainable Solutions: Problem solving for current and future generations" (Oxford University Press) and In Exchange for Gold: The Legacy and Sustainability of Artisanal Gold Mining In Las Juntas de Abangares (Common Ground Publishing)
Rita Chesterton	Bus/INE	Alignment of innovation, enterpenership and venture development with sustainability onjectives. Grant from venturewell to support integration of Innovation & Entrepeneruship and sustainability education
Sara Vigneri	Media & Communication	This isn't 'scholarly' per se, but I thought I would submit it and let you decide if it qualifies. Students in my Environmental Journalism class are tasked with researching and reporting on issues relating to land ethics in the Lehigh Valley and publishing their work on a website I maintain: lehighvalleyalmanac.org. The students decide what they want to report on as a group and then examine the topic from different angles. For example, in City of Zinc my students examined the Palmerton Superfund site from various angles including why the people of Palmerton have a complicated relationship with the company that polluted their city but also created jobs and funded public works, or the difficulty in cleaning up toxic sites when the companies responsible are no longer in existence. You can read those stories here: https://lehighvalleyalmanac.org/issue01/

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William "Chip" Gruen	Religion Studies	<p>Each of the three articles listed below consider the relationship between the forms and behaviors of non-human animals and the development/manifestation of Christian traditions in the ancient world. Though these works do not directly address sustainability per se in the contemporary world, they do address attitudes that are part of the history of Christianity that continue to influence the religion's responses to and understanding of ecological questions. Religious systems as cultural productions cannot help but reflect and influence their own context; this is true with regard to the social world, the economic landscape, as well as the natural environment. My work on animals in ritual and symbol works to demonstrate that if we neglect that natural environment in which religious traditions exist, we do so at the risk of understanding a significant factor in their development.</p> <p>"Wild Christology: On Foxes, Birds, and the Son of Man" in Exploring Animal Hermeneutics, Arthur Walker- Jones and Suzanna Millar, eds. SBL Press, forthcoming.</p> <p>"Contested Spaces and Contested Meanings in the Acts of Thomas" in Religion and Theology Vol.20.3-4 (2014).</p> <p>"The Liminal Donkey: A Reappraisal of the Palatine Crucifix" in Early Christianity Vol. 2.4 (2011).</p>
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