

Last Name	First Name	Department	Other Department Affiliations	Description of Scholarly Work	Sustainability Challenges Addressed	Engagement with Others	Scholarly Outputs
Ambwani	Suman	Psychology		My research broadly focuses on health and well-being with specific focus on the prevention and treatment of eating disorders. I am also interested in issues relating to social justice (e.g., weight-based discrimination) and social systems (e.g., diet culture) and ways to dismantle these systems to promote population health.	Eating disorders are an important public health concern. They are linked with significant distress, impairment in functioning, and a wide variety of health problems (including high mortality risk). However, eating disorders are difficult to treat and are linked with high rates of relapse. Thus, identifying appropriate strategies for prevention and treatment is an important and ongoing challenge that warrants further attention.	Dickinson Students Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	<p>Levinson, J., Sarda, V., Sonnevile, K., Calzo, J.P., Ambwani, S., and Austin, S.B. (in press). Prospective association of diet pill and laxative use for weight control with subsequent first diagnosis with an eating disorder in a cohort of U.S. young women. <i>American Journal of Public Health</i>.</p> <p>Cardi, V., Albano, G., Ambwani, S., Cao, L., Crosby, R.D., Macdonald, P., Schmidt, U., and Treasure, J. (in press). A randomized clinical trial to evaluate the acceptability and efficacy of an early phase, online, guided augmentation of outpatient care for adults with anorexia nervosa. <i>Psychological Medicine</i>.</p> <p>McBride, C, Costello, N, Ambwani, S, Wilhite, B, and Austin, S.B. (2019). Digital manipulation of images of models' appearance in mass media: Strategies for action through law and corporate social responsibility incentives to protect public health. <i>American Journal of Law and Medicine</i>, 45, 7-31. doi:10.1177/0098858819849990</p> <p>Ambwani, S., *Shippe, M., *Gao, Z., and Austin, S.B. (2019). Is #cleaneating a healthy or harmful dietary strategy? Perceptions of clean eating and associations with disordered eating among young adults. <i>Journal of Eating Disorders</i>, 7, 1-14. https://doi.org/10.1186/s40337-019-0246-2</p> <p>Cardi, V., Ambwani, S., Robinson, E., Albano, G., Macdonald, P., Shepherd, V., Todd, G., Schmidt, U., Landau, S., Arcelus, J., Beecham, J., and Treasure, J. (2017). Transition care in AN through guidance online from peer and carer expertise (TRIANGLE): Study protocol for a randomized controlled trial. <i>European Eating Disorders Review</i>, 25, 512-523. doi:10.1002/erv.2542.2017</p> <p>Ambwani, S., *Baumgardner, M., *Guo, C., *Simms, L., and *Abromowitz, E. (2017). Challenging fat talk: An experimental investigation of reactions to body-disparaging conversations. <i>Body Image</i>, 23, 85-92. doi: 10.1016/j.bodyim.2017.08.007</p>
Arnedo	Asuncion	Spanish and Portuguese	Latin American, Latinx and Caribbean Studies	I am working with the concerns of the wellbeing of people in the environment, where social justice can work in an environmentally healthy system: migrant communities, labor conditions, and health issues.	Social justice, human security, and its environmental interdependency	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S.	<p>Tilman, D., and Clark, M. (2014). Global diets link environmental sustainability and human health. <i>Nature</i>, 515(7528), 518–+. https://doi.org/10.1038/nature13959</p> <p>Svanstrom, Magdalena, Francisco Lozano-Garcia, and Debra Rowe. "Learning Outcomes for Sustainable Development in Higher Education." <i>International Journal of Sustainability in Higher Education</i> 9.3 (2008): 339-51. Print.</p> <p>Barkemeyer, Ralf, et al. "What Happened to the 'Development' in Sustainable Development? Business Guidelines Two Decades After Brundtland." <i>Sustainable Development</i> 22.1 (2014): 15-32. Print.</p> <p>Miranda Gómez, O., Mora González, S., and Menéndez López, J. (2011). Vulnerabilidades de salud y la sostenibilidad de la defensa. <i>Revista Cubana de Medicina Militar</i>, 40(1), 85–93. Retrieved from http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0138-65572011000100012&lng=en&lng=en</p> <p>Martínez Beleño, C. (2014). Comunicación y Educación para El Desarrollo: Salud, Medio Ambiente y Sostenibilidad Social. <i>Escenarios</i>, 11(2). https://doi.org/10.15665/esc.v11i2.117</p>

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Arnold	Tom	Biology	Biochemistry and Molecular Biology, Environmental Science, Food Studies, Health Studies	I am a broadly-trained interdisciplinary biologist interested in how environmental change impacts plant and the organisms that interact with them. I have studied climate change (especially CO2 rise, warming, eutrophication, and ocean acidification) as stressors for plants, including seagrasses, kelps, forest trees, and crop plants, among others. This has involved studies of carbon flux in ecosystems, plant-herbivore interactions, and the production of plant natural products (some of which have interesting medicinal properties).	Climate change, ocean warming, ocean acidification, tropicalization, diversity loss, habitat conservation, disease outbreaks, invasive species, eutrophication, food quality issues, sea level rise, trophic cascade collapse.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	
Ball	Jeremy	History	Africana Studies	I am currently researching medicinal plants in nineteenth-century Angola. Medicinal plants has resonance for cultural and economic sustainability.		Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	
Barber	Teresa	Psychology	Neuroscience	My research studies alternative treatments of impaired memory, comparing said treatments to traditional medications.	Many of the alternative treatments we study have included herbal remedies and behavioral treatments.	Dickinson Students Colleagues at other institutions outside the U.S.	<p>Barber, T.A., and Frenkel, G.B. Enhanced socialization ameliorates scopolamine-induced amnesia in the day-old chick. In Preparation.</p> <p>Barber, T.A., Edris, E.M., Levinsky, P.J., Williams, J.M, Brouwer, A.R., and Gessay, S.A. (2016). Amelioration of scopolamine-induced amnesia by phosphatidylserine and curcumin in the day-old chick. <i>Behavioural Pharmacology</i>, 27, 536-541.</p> <p>Dembling, S.J., Gilhooly, D.J. (co-first authors), Psychology 325 Fall 2017 Class, and Teresa A. Barber. (2019). Acute aerobic activity improves memory acquisition in the day-old chick. Annual Meeting of the Eastern Psychological Association.</p> <p>Harten, E.G., Lowden, O.C. (co-first authors), Psychology 325 Fall 2017 Class, and Teresa A. Barber. (2019). The decrease in anxiety in valerian-injected c57bl6j mice and the non-significant effect in 129s1/sv1mj mice. Annual Meeting of the Eastern Psychological Association.</p> <p>Lau, H., The Fall 2016 Psychology 325 Research Class, and Barber, T.A. (2018). Intraperitoneal injection of the dietary supplement Prevagen® does not improve short-term memory. Annual Meeting of the Eastern Psychological Association.</p> <p>Frenkel, G.B., Beard, I.R., and Barber, T.A. (2016). Olfactory cues ameliorate scopolamine-induced amnesia in the day-old chick. Annual Meeting of the Eastern Psychological Association.</p>

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Barker	Kathryn	Chemistry		After attending Dickinson's Valley and Ridge Workshop I developed a new unit for the General Chemistry course that connects chemistry to the sustainability of historic iron production in Central Pennsylvania. Students studied the chemistry, visited a locally preserved iron furnace and quarry and ultimately wrote a paper that required them to think critically about the overall effects of iron production on the environment and human well-being past and future.	It was easy to connect sustainability to iron production in the General Chemistry course. The Valley and Ridge summer workshop helped by giving support, context, and feedback during this process. A challenge was to choose the best course content from among so much possible material.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues in other disciplines	
Bates	Alex	East Asian Studies	Film and Media Studies	I am interested in Eco-criticism and specifically the ways nature is perceived in moments of natural disaster.	I examine precarious communities at risk of impact from major "natural" catastrophes which could be linked to climate change through representation in fiction and film.	Dickinson Students Dickinson Faculty and Staff	Alex Bates "Nature and disaster in Murakami Haruki's after the quake." <i>Ecocriticism and Japan</i> , Hisaaki Wake et. al., eds. Lexington Books (2018): 139-155.
Beevers	Michael	Environmental Studies	International Studies	I currently have two research agenda. The first seeks to understand how the environment and natural resources can be both a catalyst for violent conflict, but also peace. There are many, many dimensions that overlap with sustainable development. However, the most obvious is that sustainable development will be difficult, if not impossible, without peace and security. The second seeks to examine how climate change adaptation funding, which is needed predominantly in poor, fragile and poorly governed countries, is used in ways that promote instability and insecurity or stability and security. Again, it overlaps with many SD goals.	poverty alleviation, economic growth, environmental protection, extraction of natural resources, climate change adaptation, governance and institutions.	Dickinson Students Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	
Blyth	Jen	Music		I frequently perform recitals with a climate change or sustainability bent.	I need to travel frequently.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues in other disciplines	

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Boback	Scott	Biology		<p>I have a few projects directly related to impacts of climate change and one project focusing on integration of ecological roles of native organisms on agricultural systems.</p> <p>I study the basic biology of rattlesnakes at a high elevation site in northwestern Colorado. This population exhibits a remarkably short active season spending a long time inactive period in their dens (perhaps as long as 8 months). The combination of these environmental constraints whereby increases in global temperature increases could significantly impact the energy budget of individuals. Additionally I study how turtles, with temperature dependent sex determination, may or may not mitigate the effects of global warming by selecting different locations for their nests. I also investigate the role of a native insectivore (American Toad) as a conservation biological control of insect pests in an organic agroecosystem.</p>	<p>Global warming</p> <p>Sustainable food production through organic agriculture</p> <p>Invasive species</p>	<p>Dickinson Students</p> <p>Dickinson Faculty and Staff</p> <p>Colleagues at other institutions</p> <p>Colleagues in other disciplines</p>	<p>2019 Boback, S.M., Nafus, M.G., Yackel Adams, A.A., and R.N. Reed. Use of visual surveys and radiotelemetry reveals sources of detection bias for a cryptic snake at low densities. In Press at Ecosphere.</p> <p>2019 Nafus, M.G., Yackel Adams, A.A., Boback, S.M., Siers, S.R., and R.N. Reed. Behavioral and morphological traits that predict susceptibility to management also reflect post-treatment frequency shifts in an invasive snake. In Press at Global Ecology and Conservation.</p> <p>2018 Goetz, S. M., Guyer, C., Boback, S.M. and Romagosa, C.M. Toxic, invasive treefrog creates evolutionary trap for native gartersnakes. <i>Biological Invasions</i> 20(2): 519-531. Doi: https://link.springer.com/article/10.1007/s10530-017-1554-6</p> <p>2016 Boback, S.M., Snow, R.W., Hsu, T., Peurach, S.C., Dove, C.J., and R.N. Reed. Supersize me: Remains of three white-tailed deer (<i>Odocoileus virginianus</i>) in an invasive Burmese python (<i>Python molurus bivittatus</i>) in Florida. <i>BioInvasions Records</i>. 5:197-203.</p> <p>2014 Russell, J.L., Wingert, E., Boback, S.M. and Meshaka, W.E. Jr. The Red-eared slider, <i>Trachemys scripta elegans</i> (Wied, 1838), established in Pennsylvania. <i>Bulletin of the Maryland Herpetological Society</i>. 50(1-2):34-41.</p>
Bruno	Maria	Anthropology and Archaeology	Latin American, Latinx and Caribbean Studies	<p>I examine how humans interact with their environments as they develop more intensive agricultural systems in the Lake Titicaca Basin of the Andes. I study how modern-day indigenous farmers sustain their subsistence food systems, particularly how they interact with plant species, and use this to better understand processes in the past. While I study plant remains from archaeological sites, I work on an interdisciplinary team that has also included paleoclimatic research in the lake basin. We attempt to examine the relationships between climate change and human activities in the region.</p>	<p>How can lessons from small-scale farmers in the present and past contribute to larger-scale sustainable farming systems. How have human societies in the past responded to and developed systems of production that help face consequences of climate change.</p>	<p>Dickinson Students</p> <p>Dickinson Faculty and Staff</p> <p>Colleagues at other institutions</p> <p>Colleagues at other institutions outside the U.S.</p> <p>Colleagues in other disciplines</p>	<p>2013 National Geographic Society Scientific Research Grant #9299-13 for archaeological and paleoclimatological fieldwork in Bolivia and laboratory analyses, Co-PIs: Christine A. Hastorf (University of California, Berkeley), Sherilyn Fritz (University of Nebraska), and Paul Baker (Duke University) \$19,630</p> <p>2013 Dickinson College Center for Sustainability Education Student Faculty Research Grant #SFR132-NASA for summer fieldwork in Bolivia and archaeobotany laboratory analysis \$10,375 Weide, D. Marie, Sherilyn C. Fritz, Christine A. Hastorf, Maria C. Bruno, Paul A. Baker, Stephane Guedron, and Wout Salenbien</p> <p>2017 A ~6000-year diatom record of mid-to-late Holocene fluctuations in the level of Lago Wiñaymarca, Lake Titicaca, (Peru/Bolivia). <i>Quaternary Research</i> 88(2):179-192. Bruno, Maria C.</p> <p>2014 Beyond Raised Fields: Exploring Farming Practices and Processes of Agricultural Change in the Ancient Lake Titicaca Basin of Bolivia. <i>American Anthropologist</i> 116(1):1-16. Bruno, Maria C.</p> <p>2011 Farmers' Experience and Knowledge: Utilizing Soil Diversity to Overcome Rainfall Variability on the Taraco Peninsula, Bolivia. In <i>Sustainable Lifeways: Cultural Persistence in an Ever-changing Environment</i>. Edited by Naomi Miller, Katherine Moore, and Kathleen Ryan. pp. 210-243. Penn Museum International Conference Series, University of Pennsylvania Press, Philadelphia.</p>
Castellanos Gonella	Carolina	Portuguese and Spanish	Latin American, Latinx and Caribbean Studies, Africana Studies	<p>My work focuses on gender inequalities, sexism, transphobia, homophobia, racism, and representation of women and minorities</p>	<p>Gender equality</p> <p>Inequality</p>	<p>Dickinson Students</p> <p>Dickinson Faculty and Staff</p>	<p>1. "Cassandra Rios e a lésbica genuína em Eu sou uma lésbica." <i>Journal of Lusophone Studies</i>, vol. 4, no. 1, 2019, pp. 230-251.</p> <p>2. "The Most Desired Positions: Brazilian Female Traffickers in Inferno and Falcão: mulheres e o tráfico." <i>Latin American Research Review</i>, vol. 52, no. 3, 2017, pp. 405-17.</p>

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Cozort	Daniel	Religion		I am at the beginning of a process to identify readings for a new sourcebook on Buddhist perspective on environment and sustainability.		Colleagues at other institutions Colleagues in other disciplines	
Davenny	ward	Art and Art History		It's difficult for me to define my artwork as 'explicitly' addressing sustainability, though mine has an express relationship to, and is sourced in, the natural world. In terms of imagery, subject matter, and conceptual basis, it addresses events in the landscape that portray collisions of pollutants, weather, and air. Rather than verbal conclusions, the art seeks to project an experience, and though describing only a moment, implies a narrative in progress. It is an attempt to offer personal and negotiable questions to an individual. I would say that though sustainability is not a focus or reason that I do my research, I view it as part of my practice, in that I consider the issue in every material choice. Issues of sustainability become important to the outcome of any project, and play a part in my evaluation of success.	In terms of pure material usage, I experiment frequently with things normally deemed 'waste'-discarded house paint, lampblack from soot, reclaimed wood, broken furniture, publications and outdated technology and/or machinery. I have also worked with other artists, technicians and others to create materials from locally sourced and native plants.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	I have made it a point to learn about and experiment with plant dyes and natural pigments. In that vein, I have grown, harvested, and processed inks, paints, dyes, tools and image surfaces. I have shared products of this research with students and colleagues. I hope in the near future to help create a reusable-material recycling facility within Dickinson.
Deng	Fang	East Asia Studies		My college and I wrote a Chinese textbook named "home with kids", it is very famous like "Friends" in America. As a virtual-audio-oral textbook, it creates a real Chinese learning environment to motivate the students to learn Chinese.	The challenge is how to select the best part from the TV play and how to take full advantage of it.	Colleagues at other institutions outside the U.S.	Liu, L and Deng, F. Chinese Audio-visual-oral Course -"Home with kids" (vol. 1-3), Beijing World Publishing Corporation, Dec. 2008- Jan. 2010 Liu, L. and Deng, F. Audiovisual and Audiovisual Textbooks Based on Real-Life Materials, TSCOL Studies, Volume 3, 2018 Liu, L. and Deng, F. Audio-visual Teaching in the Era of Picture Reading, International Chinese Teaching and Research, Volume 2. 2017
Douglas	Maggie	Environmental Studies	Food Studies	Most of my scholarly work relates in one way or another to the sustainability of food production. For example, I study how current patterns of pesticide use affect pollinators and other beneficial insects that are essential to long-term agricultural productivity. I also study how soil conservation practices influence pest management, which has implications for the ability of farmers to implement those practices.	Producing food while protecting the environment, managing pests while limiting the use of toxic substances.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	

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Edwards	Ben	Earth Sciences	Latin American, Latinx and Caribbean Studies	Much of it investigates and documents both long term and short term climate change but documenting the past extent of glaciers and ice sheets, as well as some work on present day glaciers and how they are responding to climate change. At present I am working with a student to also develop methods to for using UAVs to monitor farmland restoration programs (CREP and wetlands restoration), for modeling terrain to investigate rattlesnake den locations, and for better understanding hazards from the production of lahars during eruptions of ice- and snow-covered volcanoes in Chile.	climate change, terrestrial ecosystem conservation, health and well-being, resilient infrastructure	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	<p>* denotes co-authors who were DC undergraduate students during part/all of the work</p> <p>*Kochtitzky, W.H., Edwards, B.R., Enderlin, E.M., Moreno, J., Marinque, N. 2018. Improved estimates of glacier change rates at Nevado Corupuna Ice Cap, Peru. <i>Journal of Glaciology</i>, v. 64, 175-84. https://doi.org/10.1017/jog.2018.2</p> <p>Belousov, A., Belousova, M., Edwards, B.R., Volynets, A., Melnikov, D. 2015. Overview of the precursors and dynamics of the 2012-13 basaltic fissure eruption of Tolbachik volcano, Kamchatka, Russia. <i>JVGR</i>. doi:10.1016/j.jvolgeores.2015.04.009</p> <p>Smellie, J.L., Edwards, B.R. 2016. <i>Glaciovolcanism on Earth and Mars: products, processes and paleoclimate implications</i>. Cambridge University Press: Cambridge, ISBN 9781107037397, 490 p.</p> <p>Waitt, R, Edwards, BR, Fountain, A. 2015. Chapter 15. Ice-clad Volcanoes, In Huggel, C., Carey, M., Clague, J.J., Kääh, A. (Eds) <i>The High-Mountain Cryosphere</i>, Cambridge Press, 272-294.</p> <p>Kargel, J., Leonard, G., Wheate, R., Edwards, B. 2014. Chapter 15: ASTER and SEM change assessment of changing glaciers near Hoodoo Mountain, British Columbia, Canada; in Kargel et al. (eds.) <i>Global Land Ice Measurements from Space</i>, Springer Praxis, p. 353-373.</p> <p>Hickson, CJ, Edwards, BR (2001) <i>Volcanoes and volcanic hazards in Canada</i>, Geological Survey of Canada Bulletin 548.</p> <p>Boback, S.M., Edwards, B.R., Hayes, J.L. 2019. Biogeology of a population of Prairie rattlesnakes (<i>Crotalus viridis</i>) at a high elevation site in northwestern Colorado. <i>Biology of Pitvipers Conference</i>, Rodeo, NM.</p> <p>*Fisher, J.A., Kochtitzky, W.H., Edwards, B.R., *Irving, W., Russell, J.K. 2018. Heat Wave Causes Major Melting</p>
Eng	Rachel	Art and Art History		Many of the artworks I create consider the impact of the materials that I am using and where they come from. By using both found and human made materials, I question the loss of biodiversity due to our consumption and production. It is important for my artwork to be open for the audience to generate their own questions and reflect on their relationship with the materials they see. In the project "re-orienting" I sourced all the plastic bags from recycle bins a big box stores. The piece questions our use of single use items and the lifespan that they have. In the exhibition "Ball snake ball" the projects use clay in its unfired stage, which speaks to the cyclical nature of the material. That it can be recycled infinitely as long as it remains unfired, as it is dug from the ground.	-responsible consumption and production -land/species conservation -climate change	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues in other disciplines	<p>2019 re-orienting (Solo Exhibition), Schmucker Gallery, Gettysburg College, Gettysburg, PA https://www.racheljeng.com/re-orienting.html</p> <p>2018 even out (Solo Exhibition), Woskob Family Gallery, State College, PA https://www.racheljeng.com/even-out.html https://www.racheljeng.com/seek--search.html</p> <p>2018 Ball Snake Ball (Group Exhibition), Curated by Roberto Lugo and Sarah Fritchey, Artspace, New Haven, CT https://www.racheljeng.com/growth-iv--rehydration-ii.html</p>

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Fatehin	Sohani	Economics		Two of my research papers "The Crowding out Effect of Out-of-pocket Medication Expenses of Two Major Non-Communicable Diseases on Household Consumption in Pakistan", and "Consumption Displacement in households with Non-Communicable Diseases in Bangladesh" are related to human health.		Colleagues at other institutions	
Harper-McCombs	Sherry	Theatre and Dance		Theatre artists have always been interested in reuse as a way to save money but in my art, I attempt to reuse not only as an economic choice but also in order to function in a more environmentally sustainable way.	Clothing reuse as a way to stop fueling the fast fashion industry. Using more natural products rather than thermoplastics in order to limit plastic use. Making more environmentally friendly choices of chemicals for painting, dyeing, and cleaning to limit environmental footprint. Using recycled plastics, metals, and other items as construction materials for the stage. Creating projects to use left over fabrics in creative and useful ways.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions	<ul style="list-style-type: none"> •United States Institute of Theatre Technology Conference, March 2018 Costume Commission Juried Poster Session. "Piecing Together a Sustainable Sewing Project for Beginning Stitchers". •United States Institute of Theatre Technology Conference, March 2017 Costume Commission Juried Poster Session. "Pulled Leather Masks over Plaster Forms". •Southeastern Theatre Conference 2017 Workshop. "Trashy Transformation: Upcycling Unwanted Costumes and Fabrics", March 2017. •Southeastern Theatre Conference 2016 Workshop. "Leather Up! Costume and craft work with leather", March 2016 •Southeastern Theatre Conference 2015 Workshop. "Show your Metal: Tips for working with metal in costuming, March 2015.
Hayes	Jorden	Earth Sciences		While my scientific work does not explicitly focus on sustainability, there are implications for thinking about a sustainable future. My work focuses on interactions between rock, water, atmosphere, and biota at Earth's surface that help make our planet habitable. One of the major questions is how the near-surface of Earth will respond to a changing climate and how important resources in this zone (e.g., water) will change as well.	Climatic impacts on the structure of Earth's shallow subsurface.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	<ol style="list-style-type: none"> 1.Hayes, J.L., Riebe, C.S., Holbrook, W.S., Flinchum, B.A., and Hartsough, P.C., 2019. Porosity production in weathered rock: Where volumetric strain dominates over chemical mass loss. Science Advances, 5, doi: 10.1126/sciadv.aao0834 2.Flinchum, B.A., Holbrook, W.S., Grana, D., Parsekian, A.D., Carr, B.J., Hayes, J.L., Jiao, J., 2018. Estimating the water holding capacity of the critical zone using geophysics, Hydrological Processes, 32, doi:10.1002/hyp.13260. 3.Flinchum, B.A., Holbrook, W.S., Rempe, D., Moon, S., Riebe, C.S., Carr, B.J., Hayes, J.L., St. Clair, J., Peters, M.C., 2018. Critical zone structure under a granite ridge inferred from drilling and three-dimensional seismic refraction data, Journal of Geophysical Research: Earth Surface, 123(6), 1317-1343, doi:10.1029/2017JF004280 4.Holbrook, W. S., Riebe, C. S., Elwaseif, M., Hayes, J. L., Harry, D. L., Basler-Reeder, K., Malazian, A., Dosseto, A., Hartsough, P. C. and Hopmans, J. W., 2014. Geophysical constraints on deep weathering and water storage potential in the Southern Sierra Critical Zone Observatory. Earth Surface Processes and Landforms, doi: 10.1002/esp.3502

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Helweg-Larsen	Marie	Psychology		My research is on Health and Well-Being and Inequality which are both on the list of sustainability challenges.	I research stigmatization and identity and how reminding people of their devalued status can help or hinder smokers in quitting. The issue of smoking cessation is related both to the sustainability challenge of Health and Well-Being (tobacco smoking is the biggest preventable cause of mortality and morbidity) as well as Inequality (smoking is much more common among the poor).	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	Helweg-Larsen, M., *Pyakuryal, M., and Pisinger, C. (in press). Reminders of a stigmatized status might help smokers quit. <i>Stigma and Health</i> . Helweg-Larsen, M., *Sorgen, L., and Pisinger, C. (2019). Does it help smokers if we stigmatize them?: A test of the stigma-induced identity threat model among U.S. and Danish smokers. <i>Social Cognition</i> , 3, 294-313.
Hendrickson	Burleigh	French and Francophone Studies	Middle East Studies	My work addresses political sustainability in terms of transitional democracies and failed dictatorship/empires.	Retribution and national healing post-dictatorship. New governments face challenges sustaining democratization programs following political and social oppression.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	2016 "Student Activism and the Birth of the Tunisian Human Rights Movement, 1968-1978," in <i>Mouvements étudiants en Afrique francophone, des indépendances à nos jours</i> , ed. by Françoise Blum et al. (Publications de la Sorbonne), 233-247. 2017 "From the Archives to the Streets: Listening to the Global 1960s in the Former French Empire," <i>French Historical Studies</i> 40:2, 319-342.
Jacob	Jacob	International Studies	Political Science	I am presently working on developing a documentary mini-series with a Voice of America journalist - Linord Moudou. The miniseries will access how select countries in sub-Saharan Africa are working towards meeting the SDGs and the challenges they are facing. This work is at a very preliminary stage. I have worked on access to education for displaced persons and girls at the margins in northeast Nigeria. A forthcoming book - 'Transactional Radio Instruction: Improving Educational Outcomes for Children in Conflict Zones' co-authored with Dr. Margee Ensign will be released in March 2020 by Palgrave Macmillan. I oversee the Dickinson College Bridge program which seeks to provide access to higher education for young people from war-torn and disaster affected societies. We currently have four Nigerian women who escaped Boko Haram's captivity on the program. I have previously worked on public access	Access to Quality Education for Girls and Women in marginalised communities (SDG 4 and 5), Peace/Public access to Information (SDG 16.10)	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	Jacob, J.U., Ensign M. (2020). <i>Transactional Radio Instruction: Improving Educational Outcomes for Children in Conflict Zones</i> , Palgrave Macmillan, Forthcoming. Pape, Utz Johann; Sharma, Ambika; Nezam, Taies; Petrini, Benjamin; Ebrahim, Menaal Fatima; Udo-Udo, Jacob; Appler, Felix Konstantin; Woodhouse, Andrea Fitri; Phipps-Ebeler, Verena; Meckelburg, Alexander Benjamin; Iqbal, Syedah Aroob. (2019). <i>Using Micro-Data to Inform Durable Solutions for IDPs (Vol. 2) : Volume B : Country Case Studies (English)</i> . Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/968141557465726421/Volume-B-Country-Case-Studies Jacob J.U. (2019). 'Communitarianism, Ethics and the Burden of Journalistic Objectivity: Reflections of "Peace Journalists" Covering the Boko Haram Insurgency'. In: Shaw I., Selvarajah S. (eds) <i>Reporting Human Rights, Conflicts, and Peacebuilding</i> . Palgrave Macmillan, Cham.
Jin	Dengjian	International Business and Management		I wrote a paper on the relationship between human nature, technology, and sustainability	Human nature is not evolved to solve the long-term challenge of sustainability and the fatal allure of technology	Dickinson Students Colleagues at other institutions Colleagues at other institutions outside the U.S.	

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Katunich	John	Writing Program		My recently completed dissertation in Curriculum and Instruction examined the complicity of English language teaching in current sustainability crises. In addition, I am currently co-editing a book on new perspectives for teaching English in the Anthropocene, in which raise the prospects for reclaiming and revitalizing the "commons" as a guiding principle for teaching and learning. I'm also applying this lens to broader discussion in composition studies around complicity and the commons.	At the present, I am looking closely at the challenge posed by the post-truth moment we find ourselves in, and how in the teaching of writing, we can understand how evidence is increasingly replaced by feelings or ideology when evaluating solutions to social problems, especially highly politicized problems such as climate change.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	<p>Goulah, J, and Katunich, J. (eds.) (2020) Sustainability and TESOL: New Perspectives on Language Teaching into the Anthropocene. London: Bloomsbury Academic.</p> <p>Katunich, J. (2019) Convivial English language teaching amid the crisis of sustainability: Reclaiming a "language-as-commons" orientation in English language teaching, Dissertation, Penn State University.</p> <p>Katunich, J. (2019). Promoting Sustainability Literacy Through Immersion Abroad Experiences for Teachers. In Redefining Teaching Competence through Immersive Programs (pp. 235-257). E. Smolcic and D. Martin (eds.) London: Palgrave.</p> <p>Katunich, J. (2018) "Revitalizing the linguistic commons: The integration of a commons-based pedagogy into English language teacher education," Individual Paper Presentation, American Educational Research Association, Annual Conference, New York, April 2018.</p> <p>Katunich, J. (2018) "Integrating Eco-pedagogy and Sustainability Literacy into ESL Teacher Preparation", TESOL Annual Conference, Chicago, March 2018.</p> <p>Katunich, J. (2017) "Considering the Role of Applied Linguistics in the Sustainability Crises", Colloquium Organizer and Presenter, Colloquium at American Association of Applied Linguistics, Portland, OR, March 20, 2017.</p> <p>Cody, J., Katunich, J, and Kissling, M. (2016) "Problems in our Backyard: What Happens When Students Grapple with Real, Local Issues," Green Teacher, 110, Summer, 2016.</p>
Key	Marcus	Earth Sciences	Environmental Studies	My research involves I quantifying climate change.	Analytical methodology	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	<p>Smith, A. M., M. M. Key, Jr., and A. C. L. Wood. 2019 in press. Culturing large erect shelf bryozoans: skeletal growth measured using calcein staining in culture. Australasian Palaeontological Memoirs, 52: ??-??.</p> <p>Key, M. M., Jr., R. K. Rossi, A. M. Smith, S. K. Hageman, and W. P. Patterson. 2018. Stable isotope profiles of skeletal carbonate validate annually-produced growth checks in the bryozoan <i>Melicerita chathamensis</i> from Snares Platform, New Zealand. Bulletin of Marine Science. 94 (4): 1447-1464. https://doi.org/10.5343/bms.2017.1166.</p>

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Kingston	Sharon	Psychology	Health Studies	Some of my research is related to health disparities among low-income African American and Latinx populations and some is related to the effects of living in low-income urban areas on human development.	access to health care, effects of living in low-income urban neighborhoods on mental health and behavioral outcomes such as substance use, involvement in criminal activity.	Dickinson Students Colleagues at other institutions Colleagues in other disciplines	<p>#Kingston, S., #Bruzzese, J-M., Bruzelius, E., Falletta, K.A., Poghosyan, L. (2019). Individual and neighborhood factors associated with undiagnosed asthma among urban adolescents. Journal of Urban Health. DOI: 10.1007/s11524-018-00340-2</p> <p>Bruzzese J-M, Kingston S, Zhao Y, DiMeglio J, Cespedes A, George M. (2016). Psychological factors influencing the decision of urban adolescents with undiagnosed asthma to obtain medical care. Journal of Adolescent Health, 59, 543-548. DOI: 10.1016/j.jadohealth.2016.06.010</p> <p>Kingston, S. and Rose, A.(2015). Do the effects of adolescent employment differ by neighborhood context? American Journal of Community Psychology, 55, 37-45. DOI: 10.1007/s10464-014-9690-y</p> <p>Kingston, S. (2013). Economic adversity and depressive symptoms in parents: Do marital status and perceived social support matter? American Journal of Community Psychology, 52, 359-366. DOI: 10.1007/s10464013-9601-7</p> <p>Kingston, S., Huang, K.Y., Calzada, E., Dawson-McClure, S. and Miller Brotman, L. (2013). Parent involvement in education as a moderator of family and neighborhood socioeconomic context on school readiness among young children. Journal of Community Psychology, 41(3), 265-276. DOI: 10.1002/jcop.21528.</p> <p>Bruzzese, J.M., Kingston, S., Sheares, B.J., Cespedes, A., Sadeghi, H. and Evans, D. (2011). Feasibility and preliminary outcomes of a school-based approach to help inner-city, ethnic minority adolescents with undiagnosed asthma. Patient Education and Counseling, 85, 290-294.[PMCID: PMC3029508]</p> <p>Miller Brotman, L., Calzada, E., Y., Huang, K., Kingston, S., Dawson-McClure, S., Kamboukos, D., Rosenfelt, A., Schwab, A., and Petkova, E. (2011). Promoting effective parenting practices and preventing child behavior problems in school among ethnically diverse families from underserved, urban communities. Child Development,82(1): 258–276.</p>
Kongar	Ebru	Economics		I am currently co-editing Handbook of Feminist Economics, which is a 50 chapter volume that uses social provisioning approach of Power (2004) that puts well-being of women, men, girls and boys at the center of feminist economics inquiry. Several chapters are also explicitly about	Work-life balance (lack of), vulnerability to economic shocks (such as the Great Recession), overwork, time poverty. Please also see above.	Colleagues in other disciplines	

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Koss	Lorelei	Mathematics and Computer Science		My research has focused on applications of differential equations to issues in sustainability and their application in the classroom. I have published an article on developing a semester-long case study in a differential equations course to environmental and sustainability issues in the history of Easter Island. Topics investigated include the date of arrival of early settlers, the impact they had on natural resources through population growth as well as through the introduction of non-native species, and the effect of European diseases on the population. A second paper surveyed recent developments in research using differential equation models to understand the interactions between people, rats, and forest stock on Easter Island. Recently, I have also published a survey article examining how a differential equation model called an SIR model has been extended beyond investigations of biologically infectious diseases to other topics that contribute to social inequality and environmental concerns. For example, these models	population growth, spread of disease, sustainable agriculture, social inequality, the effects of non-native species		<p>L. Koss, SIR Models: Differential equations that support the common good, CODEE (2019), 12, Article 6. https://scholarship.claremont.edu/codee/vol12/iss1/6/pdf.</p> <p>L. Koss, Ordinary differential equations and Easter Island: a survey of recent research developments on the relationship between humans, trees, and rats. European Journal of Mathematics, 5, No. 3 (2019), 929–936.</p> <p>L. Koss, Sustainability in a differential equations course: a case study of Easter Island, International Journal of Mathematical Education in Science and Technology, 42, Issue 4 (2011), 545 - 553.</p>
Leary	Neil	Sustainability		My research examines climate change risks, vulnerability and resilience; nitrogen footprints; carbon fees and permit trading	Climate change; hunger; poverty; sustainable communities.	Dickinson Students Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	<ul style="list-style-type: none"> •Intergovernmental Panel on Climate Change (2014). N. Leary and P. Dube, review editors, Chapter 22, Africa, in Climate Change 2014: Impacts, Adaptation and Vulnerability, Working Group II volume of the Fifth Assessment Report of the IPCC. •K. Averyt, B. Hewitson, N. Leary, and J. Marengo, guest editors (2009), CR Special 20: Integrating Analysis of Regional Climate Change and Response Options, Climate Research 40, December 10, 2009. •N. Leary, C. Conde, J. Kulkarni, A. Nyong and J. Pulhin, editors (2008), Climate Change and Vulnerability. Earthscan, London. •N. Leary, J. Adejwon, V. Barros, I. Burton, J. Kulkarni and R. Lasco, editors (2008), Climate Change and Adaptation. Earthscan, London. •Intergovernmental Panel on Climate Change (2007). N. Leary and A. Magalhães, review editors, Chapter 17, Assessment of Adaptation Practices, Options, Constraints and Capacity, in Climate Change 2007: Impacts, Adaptation and Vulnerability, Working Group II volume of the Fourth Assessment Report of the IPCC. •J. McCarthy, O. Canziani, N. Leary, D. Dokken, and K. White, editors (2001), Climate Change 2001: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, UK and New York, USA. •R. Pichs, R. Swart, N. Leary and F. Ormond, editors (2001), Development, Sustainability and Equity, Intergovernmental Panel on Climate Change, Geneva, Switzerland.

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liu	lixin	East Asia Studies		I had a MOOC named "Chinese for HSK2".In that course,I designed 23 situational dialogues training the learners to study Chinese with "authentic materials" ,not only focusing on the grammars and vocabulary as a traditional way.Following the "quality education" concept,the course is not only helping the students passing the test,but also make them enjoying Chinese speaking and reading.	If we have more technical support,the course will be more ideal.We have done our best when we were preparing the course,but when i look back now,I realize that we may do it better.	Colleagues at other institutions outside the U.S.	https://www.coursera.org/learn/hsk-2 Coursera course Chinese for HSK 2Total Learners 6,879 Active Learners (All Time) 4,951
Loeffler	Carol	Biology		I study the population colony of rare plant species, and in some cases am actively involved in restoring declining populations, to help maintain biodiversity. My students and I also study the effects of white-tailed deer on forest plant diversity, and we study the population ecology of hemlocks and an invasive insect from Japan, the hemlock woolly adelgid, which is causing widespread decline of this ecologically important forest tree.	Maintainance of plant diversity and of habitat diversity for the animals that use the plants.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions	
Maher	Chauncey	Philosophy		I'm writing a book on a person Martin Luther King calls "the white moderate." King suggests that this person is a "great stumbling block" to racial equality. I critically evaluate that claim as a proposed explanation for the persistence of racial inequality, including various forms of material inequality. Assuming that material inequality and injustice are each a "major sustainability challenge," I am trying to clarify and evaluate our best explanations for one "major sustainability challenge"	See my previous response	Dickinson Students Dickinson Faculty and Staff Colleagues in other disciplines	

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Martin	James	Music		<p>I have completed two projects this year. One was in tandem with Jennifer Blyth regarding the significance of water to our ecologic and economic cycles. Specifically, the Chansons Madecasses addressed the use of the ocean for colonialism. Rain in the Emily Dickinson song is an element of catharsis. Similarly, Walt Whitman in 1989 shows the river as a loving usher to death. The Boatmen shows the river as a means of sustaining the economy, and At the River is a spiritual conduit toward the Divine. The second project was entitled Songs of Ourselves. It addressed issues of social injustice towards African-Americans, LGBTQ+ and women. The world premiere title piece specifically tackled issues of racial discrimination, race and gender bias, poverty, and violence.</p>	See above.	<p>Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines</p>	<p>The Weary Blues, Langston Hughes Cabaret Songs, William Bolcom Songs of Ourselves, Amit Majmudar I Hear America Singing, Walt Whitman</p>
McGaughey	Sarah	German		<p>I address the issue of environmentalism and identity in an article on the 1936 novel The Spell. The article is the start of work that looks at the issues of human relationships to the environment and nature. I am also working on a project on household gardening in the 1920s.</p>	<p>One of the major issues I address is the politicization of environmental preservation on all parts of the political spectrum and the philosophical questions about whether humans have a different role to play in nature than animals, for instance.</p>	<p>Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S.</p>	<p>To be published: "An Experiment in Zivilisationskritik: Carl Dallago and Broch's Vision of Nature in Die Verzauberung" In: Broch und "Brenner", "Brenner" und Broch. (forthcoming with Brenner Archive of University of Innsbruck)</p>

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Nichols	Ashton	Environmental Studies	English	<p>My most recent book 2011/2012 pbk.-- "Beyond Romantic Ecocriticism: Toward Urbanatural Roosting"--addresses sustainability directly throughout its argument. See reviews: "At the heart of the book is a vision, at once intellectual, spiritual, and pragmatic, of humans as fundamentally part of the natural world, together with a belief that to establish an "ecoculture" we must embrace that belonging. "Beyond Romantic Ecocriticism's" holistic vision of ecology as a single integrated system, combining the human and non-human alike, shares much in this respect with Timothy Morton's recent writings, "Ecology Without Nature" and "The Ecological Thought." Nichols focuses, however, not so much on the problem of 'nature' as a category as on human kinship within nature: a kinship which must ultimately define our meanings, our values, and our forms of life. To 'roost' in this sense becomes a keyword for living sustainably in and from environment, without damaging that environment. "Beyond Romantic Ecocriticism" is in the end a</p>	See reviews of my most recent book (above)	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S.	<p>A Romantic Natural History: 1750-1859: A hypertext project designed to survey the relationship between literature and natural history in the century before Darwin's On the Origin of Species. The site has been recognized for excellence by the BBC ("Education Web"), Romantic Circles (University of Maryland) and The New York Times ("Circuits"). See: http://www.dickinson.edu/~nicholsa/Romnat/romnat1.htm</p> <p>"After the Hawk," "That Hum and Buzz," "Fantastic Beauty in the Front Yard," "Raptors and Riparians," "Songbirds at Creekside," "Death from Above—Life Everywhere," "Crazy Cardinal," "Snow Baths," "Urbanature—The Roost and Urbanatural Roosting." The Roost: Thoreau Farm Blog. Invited blog-posts at Thoreau Farm Birthplace, Concord, Massachusetts. February, 2014-present: http://thoreaufarm.org/?s=Ashton+Nichols</p> <p>ARTICLES and ESSAYS:</p> <p>"'Over the Sea to Skye': Dr. Johnson and Wordsworth on Dun Cann," Session series, Walking the Walk: Romantic Writing on the Trail, The Wordsworth Circle (TWC), XLIX 2018: forthcoming</p> <p>"Henry David Builds His Hut," in What Would Henry Do? Essays for the 21st Century—Feature Essay by President Jimmy Carter. Ed. Thoreau Farm Trust. Concord: Thoreau Farm Trust, Inc., 2017: 105-09.</p> <p>"Ecocriticism and Environmental Approaches," chapter in Teaching Victorian Literature in the 21st Century: A Guide to Pedagogy. Ed. Jen Cadwallader and Laurence Mazzeno. New York and London: Palgrave Macmillan, 2017: 315-329.</p> <p>"Home to Roost: Generations Enjoy a Mountaintop Cabin," Cabin Living (June 2017): 19</p> <p>"'Humanist Joy': Urbanature in the Poetry of Seamus Heaney," Festschrift for Robert Langbaum, Ed. Michael Pickard. The Wordsworth Circle (TWC) XLVII:2, 2016: 100-04.</p>
Pawley	Emily	History	Food Studies	<p>My past work addresses sustainability in three main ways. First, it examines how agricultural markets and agricultural capitalism lie at the root of some of the key concepts of sustainability (e.g. concepts of nutritional cycles, the early mapping of bioregions, the study of interrelated systems of organisms, the study of soil degradation)</p> <p>Second, it studies the rise of the systems that pose some of our most significant sustainability challenges (e.g. the development of the botanical networks that spread our invasive species, the rise in unsustainable fertilizer markets, the development of long range systems of food trade)</p> <p>Finally it challenges some of the assumptions undergirding common sustainable critiques of agriculture, particularly the idea of a generally beneficent past of small mixed farms.</p> <p>My more recent work is moving in two directions--I have joined a larger group of</p>	Introduced species, fertilizer pollution, destructive agricultural markets, genetic diversity loss, the rise and dominance of meat landscapes, and the emergence of CAFOs. Increasingly, in newer work, policy failures and climate change.	Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	<p>Book: The Nature of the Future: Agriculture, Science, and Capitalism in the Antebellum North, Forthcoming, University of Chicago Press (April, 2020).</p> <p>"Feeding Desire: Generative environments, meat markets, and managing sheep intercourse in Great Britain, 1700-1750" Osiris 33, no. 1 (2018).</p> <p>"Cataloging Nature: Standardizing Fruit Varieties in the United States, 1800–1860" Business History Review 90, no. 3 (2016): 405-429.</p> <p>As a team member in the Environmental Historians Action Collaborative "Remarks by President Trump on America's Environmental Leadership—Annotated" Environmental Data and Governance Initiative, released: November 5th 2019 https://envirodatagov.org/trump-on-environmental-leadership-annotated/</p>

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Pfister	Hans	Physics and Astronomy	Environmental Science	<p>My research pertains directly to renewable energies and energy efficiency.</p> <p>In particular, I design, build, and test Solar Air Heaters (SAHs), solar collectors that take solar energy and turn it into thermal energy that can be used to heat buildings, houses, dry agricultural products, or desalinate water. One of the SAH's that I invented has a solar-to-thermal conversion efficiency of over 80%.</p>	<p>I have invented multiple SAHs</p> <p>I have also invented a sun-tracking, concentrating solar collector to be used in developing countries.</p> <p>One of my inventions that pertains to energy efficiency, is a device, which stores thermal energy in a phase change material (PCM)</p> <p>A problem that we solved over the course of the past 2 academic years is the conductive and convective thermal loss through the glazing of a SAH. We developed a 'scheme' to drastically cuts that loss from about 250W to a little more than 50W.</p>	<p>Dickinson Students</p> <p>Dickinson Faculty and Staff</p> <p>Colleagues at other institutions</p> <p>Colleagues in other disciplines</p>	<p>"A Novel Gridded Solar Air Heater and an Investigation of its Conversion Efficiency," Hans Pfister, Tyler Ralston '15, and Sung Woo Kim '13. Submitted to the peer-reviewed journal Solar Energy on Feb. 2nd, 2015. Accepted for publication July 11, 2016. Published July 28, 2016.</p> <p>Renewable Energy and Energy Efficiency Sustainability Workshop Series, "Increasing Energy Efficiency by Storing Thermal Energy in a Box," Hans Pfister, Dickinson College, Nov18, 2017.</p> <p>Renewable Energy and Energy Efficiency Sustainability Workshop Series, "The Solar Air Heater – Direct Conversion of Solar Energy into Thermal Energy," Hans Pfister, Dickinson College, Oct. 28, 2017.</p> <p>"Design and Build your own Solar Air Heater," a renewable energy and energy efficiency workshop for members of SWEP, the Society of Women Environmental Professionals, and their family members, Hans Pfister, Dickinson College, July 16, 2016.</p> <p>Renewable Energy and Energy Efficiency Sustainability Workshop Series, Session III, "The Physics and Economics of CFL and LED Lighting," Hans Pfister, Dickinson College, Nov. 21, 2015.</p> <p>"Investigation of the Absorber Efficiency of a Gridded Single-Pass Solar Air Heater," Date Grant Awarded: February 23, 2018. Amount awarded: \$5,741.93. Student Intern: Sophie Kirkman '19 2017</p> <p>CSE Grant No. CD183: Student-Faculty Collaborative Research grant in support of the e-bike project. Project Title: "Construction and Performance Evaluation of e-bikes for Dickinson College," Date Grant Awarded: Oct. 26, 2017</p> <p>"Design, Construction and Analysis of a Singly Glazed Solar Air Heater with Matrix Absorber and Unique Air Flow," Date Grant Awarded: March 1, 2016. Amount awarded: \$9,329.37. Student Intern: Elon Gordon '18 2014</p>
Pires	Anthony	Biology		<p>Increasing atmospheric carbon dioxide from fossil fuel combustion causes acidification of the world's oceans. I work on impacts of ocean acidification on the development and behavior of marine organisms. Some species are extremely sensitive to acidification, while others are quite resilient. Acidification thus has the potential to create "winners" and "losers", and thus to change the composition of marine ecosystems, with consequences for the services that those ecosystems provide to human communities.</p>		<p>Dickinson Students</p> <p>Colleagues at other institutions</p> <p>Colleagues in other disciplines</p>	<p>Bogan, S.N., J.B. McMahon, J.A. Pechenik and A. Pires. (2019). The legacy of multiple stressors: Responses of gastropod larvae and juveniles to ocean acidification and nutrition. Biol. Bull. 236: 159-173. (The first two authors were Dickinson undergrads who worked in my lab here and at University of Washington Friday Harbor Labs.)</p> <p>Pechenik, J.A., A. Pires, J. Trudel, M. Levy, T. Dooley, A. Resnikoff and R.E. Taylor (2019). Impact of ocean acidification on growth, onset of competence, and perception of cues for metamorphosis in larvae of the slippershell snail, <i>Crepidula fornicata</i>. Mar. Biol. 166:128. (The last two authors were Dickinson undergrads who worked in my lab at the University of Washington Friday Harbor Labs.)</p> <p>Kriefall, N.G., J.A. Pechenik, A. Pires, and S.W. Davies (2018). Resilience of Atlantic slippershell <i>Crepidula fornicata</i> larvae in the face of severe coastal acidification. Front. Mar. Sci. 5 (312): 1-12.</p>
Roman	Hanna	French and Francophone Studies	Medieval and Early Modern Studies	<p>My new research is in the environmental humanities: I am interested in understanding how people have perceived and written about the environment, nature, and their relationship to this, in particular in the Enlightenment. I want to trace which ideas have lasted and how they have changed over time.</p>	<p>Human relationship and responsibility to nature; history of sustainable practices; history of climate and related theories of race</p>	<p>Dickinson Students</p> <p>Dickinson Faculty and Staff</p> <p>Colleagues at other institutions</p> <p>Colleagues at other institutions outside the U.S.</p>	<p>- I am currently teaching a senior seminar about the history of environment in Enlightenment France. This course was developed with the help of the Valley and Ridge seminar at Dickinson College, and it is cross-listed with Environmental Studies here.</p> <p>- I organized an international conference while on a research fellowship in Germany this past spring 2019, about religion, geology, and environment in the long 18th century.</p> <p>- I have presented my work from this fellowship at conferences as well as to my colleagues at Dickinson.</p> <p>- I have published--or have forthcoming--two articles on the history of environment.</p>

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Rose	Susan	Sociology	Health Studies, Food Studies, Latin American, Latinx and Caribbean Studies, Women's Gender and Sexuality Studies	Sustainability, broadly conceived, has been a focus of a number of migration Mosaics that I have been involved in. The two Mediterranean Migration Mosaics and the last two Mexican Migration Mosaics and the three Patagonia Mosaics focused on cultural sustainability (the ways in which migrant and immigrant communities maintain their dynamic culture even as they adapt to their new transnational realities); the impact of global climate change on migration patterns; and economic and environmental sustainability (how the state, employers, and workers negotiate economic and environmental costs and benefits related to productivity, labor, and health of humans and the environment). The China Practicum focused on out-migration from a Bai village and how it has affected farming (from subsistence farming to larger-scale farming) and how that has influenced cultural sustainability of the Bai ethnic community.	Impact of global climate change on migration patterns Cultural sustainability	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	Hill, Ann, Jinji Wei, and Susan Rose. "In Search of Community in Rural China." In Char Miller (ed.), submitted for review, AsiaNetwork Journal. "The Gamble: Mexican Circular Migration and the Return on Remittances" with Robert Shaw, Mexican Studies. Vol. 24, No. 1, Winter 2008: 79-111. Terre d'immigrants: Le Musée Virtuel Mosaïque de Patagonie with John Osborne. En Laure Telieres et Sylvie Toux (eds.), Migrations, Mémoires, Musées. Université de Toulouse-Le Mirail Collection: CNRS: Méridiennes, 2008: 73-88. Documentary Film: "Destino Patagonia" (Spanish and English, 71 minutes) "From Migrant Work to Community Transformation: Families Forming Transnational Communities in Peribán and Pennsylvania" with Sarah Hiller. Oral History Review. Vol. 34, No. 1. 2007: 97-144. I could add some re: Indigenous Histories, Memories and Reclamations but I think that is a stretch although it does have a lot to do with cultural sustainability
Sak	Peter	Earth Sciences	Latin American, Latinx and Caribbean Studies, Earth Science	My tectonic research as direct implications for natural hazards and hazard mitigation. My weathering research explores how the chemical weathering of silicate rocks helps to regulate atmospheric CO2 concentrations over geologic timescales.		Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	Guo, J., Ma, L., Gaillardet, J., Sak, P.B, Pereyra, Y., and Engel, J., in press, Reconciling chemical weathering rates across scales: Application of uranium-series isotope systematics in volcanic weathering clasts from Basse-Terre Island (French Guadeloupe): Earth and Planetary Science Letters. Witter, A.E., Nguyen, M.H., Baidar, S., Sak, P.B., 2014, Coal-tar-based sealcoated pavement: A major PAH source to urban stream sediments: Environmental Pollution, v. 185, p. 59-68. Sak, P.B, Miller, S.R., Ma, L., and Gaillardet J., 2018, Fluvial knickpoints and transient erosion on Basse-Terre, Guadeloupe, with implications for estimates of chemical weathering: .Geological Society of America Annual Meeting
St. Angelo	Sarah	Chemistry		I work on green synthesis of nanomaterials, using nanomaterials to combat pollution of waterways, and using nanomaterials to convert carbon dioxide to useful chemicals and fuels. I have also worked with a student on his senior research related to sustainable agriculture.	Climate Change Sustainable Agriculture	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues in other disciplines	

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Strock	Kristin	Environmental Studies		My research focuses on managing freshwater resources, our main source of drinking water worldwide, to support healthy societies and functioning ecosystems in the face of rapid environmental change. I employ scientific tools to better understand how aquatic ecosystems function, how this may change with increased human use and climate change, and how different management techniques may influence how these resources are used by communities.	In the past five years, I've published several peer-reviewed studies that documented: - how lakes in the northeastern United States have recovered following Clean Air Act legislation to reduce acid rain and how this recovery may be complicated by ongoing climate change. - the ecological ramifications of a global-scale phenomenon known as "brownification", an increase in carbon concentrations in our surface waters that can complicate safe drinking water treatment. - the effects of climate change on freshwater resources, notably increased air temperatures in the northeastern United States and changing wind speeds in the Midwestern United States - how human-constructed waterways ("reservoirs") differ in their sensitivity to climate change as compared to naturally-formed systems ("lakes")	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues at other institutions outside the U.S. Colleagues in other disciplines	Somers, D.J., K.E. Strock, J.E. Saros. 2018. Environmental controls on microbial diversity in Arctic Lakes of West Greenland. <i>Microbial Ecology</i> . In Revision for Publication. Strock, K.E., J.E. Saros, S. McGowan, M. Edlund, D.R. Engstrom. 2019. Response of Boreal Lakes to Changing Wind Strength: Coherent Physical Changes Across Two Large Lakes but Varying Effects on Primary Producers Over the 20th Century. <i>Limnology and Oceanography</i> . 00: 1-15 doi:10.1002/Ino.11181. Gavin, A.L., S.J. Nelson, A.J. Klemmer, I.J. Fernandez, K.E. Strock, and W.H. McDowell. 2018. Acidification and Climate Linkages to Increased Dissolved Organic Carbon in High Elevation Lakes. <i>Water Resources Research</i> . 54(8): 5376-5393 doi: 10.1029/2017WR020963. Richardson, D.C., S.J. Melles, R.M. Pilla, A.L. Hetherington, L.B. Knoll, C.E. Williamson, B.M. Kraemer, J.R. Jackson, E.C. Long, K. Moore, L.G. Rudstam, J.A. Rusak, J.E. Saros, S. Sharma, K.E. Strock, K.C. Weathers, C.R. Wigdahl-Perry. 2017. Transparency, geomorphology, and mixing regime explain variability in trends in lake temperature and stratification across northeastern North America (1975 - 2012). <i>Water</i> . 9 (442) doi: 10.3390/w9060442. Strock, K.E., N. Theodore, W. Gawley, A.C. Ellsworth, and J.E. Saros. 2017. Increasing dissolved organic carbon concentrations in northern boreal lakes: implications for lake water transparency and thermal structure. <i>Journal of Geophysical Research: Biogeosciences</i> . 122, doi:10.1002/2017JG003767. Hayes, N., Deemer, B., Corman, J., Razavi, R., Strock, K.E. 2017. Key differences between lakes and reservoirs modify climate signals: a case for a new conceptual model. <i>Limnology and Oceanography Letters</i> . 2: 47-62. doi:10.1002/lol2.10036 Coble, A., Asch, R.G., Rivero-Calle, S., Heerhartz, S., Holding, J., Kremer, C.T., Finiguerra, M., Strock, K.E. 2016. Climate is variable, but is our science? <i>Limnology and Oceanography Bulletin</i> . 25:71-76 doi:
Takacs	Helen	International Business and Management	Social Innovation and Entrepreneurship	My research explores the complex relationship between business and the natural environment and, most recently and more specifically, business and climate change. I am currently investigating the businesses that are aligned with the 2016 Paris Agreement and how some very proactive businesses have committed to operations that reverse climate change.	Sustainable industrialization and innovation Responsible consumption and production Climate change	Dickinson Students Colleagues at other institutions	Takacs, C. H. 2013. Teaching about climate change in the business curriculum: An introductory module and resource list. <i>Journal of Education for Business</i> , 88(3): 176-183. Takacs, C.H. 2012. Sustainable cotton production in India: A case study in strategic corporate social responsibility. <i>International Journal of Business and Social Research</i> . 2(3): 1-10.
Tynan	Nicola	Economics	Policy Studies	I look at water resource management and the impact of clean water provision on public health from an economic and historical perspective.	Impact of water quality decline on public health in an urban setting.	Dickinson Students Colleagues at other institutions Colleagues in other disciplines	
Vazquez	Eric	American Studies	Latin American, Latinx and Caribbean Studies	Increasingly, undocumented immigrants to the US included so-called "climate refugees." As my research increasingly takes up unauthorized entrants into the US, my work increasingly acknowledges this problem as part of the flow of migrants into the US.	Climate refugees.		

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Whitmore	Jim	Computer Science	International Studies	I am an Adjunct Faculty Member in Math and Computer Science. I develop and teach special topics courses on the topic of Cyber and Information Security. As I understand the provided definition of Sustainability, my courses and my research have a direct connection to "secure livelihood" and "resilient infrastructure" and likely other aspects.	My primary work is to prepare individuals to design and develop computing systems that are appropriate for use including uses deemed as critical infrastructure. I am also independently involved in standards efforts associated with secure health devices and systems. I am also involved in independent scholarly writing.		
Wingert	Harold	Biology	State Museum of PA	I investigate amphibian and some reptile phenology. My research establishes baseline data that can be used to assess the effects of climate change into the future. I also track the population sizes of some amphibians and have published the disappearance of several local species.	Exotic species, disappearing species, By examining the entire life cycles of various species including such things as clutch size, number of clutches, growth rates, and other physical and behavioral characteristics of the various species. This baseline data is important if we are to judge the effects of future climate change.	Dickinson Students Dickinson Faculty and Staff Colleagues at other institutions Colleagues in other disciplines	<p>Breeding Episodes of Eastern Spadefoot, <i>Scaphiopus holbrookii</i>(Harlan, 1835) in Central Pennsylvania. Walter E. Meshaka, Jr. Eugene Wingert, Randy Cassell, Pablo Delis and Sarah Mortzfeldt. Journal of Kansas Herpetology Number 40, December 2011.</p> <p>Status and Distribution of Eastern Spadefoot, <i>Scaphiopus holbrookii</i> (Harlan 1835) in Pennsylvania: Statewide Conservation Implications for an Imperiled Species. Walter E. Meshaka Jr. Eugene Wingert, Randy Cassell, Pablo Delis, and Noel Potter. Collinsorum: The Journal of Kansas Herpetology vol 1(2/3) September 2012</p> <p>Adult Body and Clutch Characteristics of the Spring peeper, <i>Pseudacris crucifer</i> (Wied-Neuwied, 1838) from a Single Site in South-Central Pennsylvania. Walter E. Meshaka, Sarah Bartle, Pablo R. Delis and Eugene Wingert. Collinsorum: The Journal of Kansas Herpetology. Vo. 1 number 2/3 September 2012</p> <p>Breeding and Larval Growth of the Marbled Salamander, <i>Ambystoma opacum</i> (Gravenhorst, 1807), From Two Adjacent Sites in South-Central Pennsylvania Walter E. Meshaka Jr1, Stephanie Williams2, Pablo Delis2 and Eugene Wingert3 Bulletin of the Maryland Herpetological Society Vol 49 Numbers 1-4 January-December 2013</p> <p>The Red_eared Slider, <i>Trachemys scripta elegans</i> (Wied, 1838), Established in Pennsylvania. Julia L. Russell, Eugene Wingert, Scott Boback and Walter E. Meshaka. Bulletin of the Maryland Herpetological Society. Volume 50 Numbers 1-2 January-June 2014</p> <p>Confirmation of Species Identity, Body Sizes, and Clutch Characteristics of the Eastern Gray Treefrog (<i>Hyla versicolor</i> Leconte, 1825) from Cumberland County Pennsylvania. Walter E. Meshaka, Jr., Eugene Wingert, Tiffany Frey, Michael Roberts, Charles Zwemer, Sarah R. Bartle, Nicole A. Davidson, Pablo R. Delis and George R. Cline: Collinsorum 4(1) April 2015</p>

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Witter	Amy	Chemistry	Biochemistry and Molecular Biology	I am looking at chemical contamination that is present in stormwater runoff. As stormwater runoff enters urban streams, it impairs stream health. As many of our streams serve multiple purposes as both our wastewater, stormwater, and drinking water supplies, the study of chemical contamination links to the preservation of clean drinking water.	Examining the chemical composition of commercial products that enter the water supply through unintended consequences; ranking chemicals in order to find more sustainable products for consumers to choose.	Dickinson Students Dickinson Faculty and Staff	<p>Witter AE. 2011. Water for a Thirsty World: A Liberal Arts Seminar Course Designed for First-Year Non-Science Students. In: Middlecamp CH, and Jorgensen AD, eds. Sustainability in the Chemistry Curriculum. Washington, DC: American Chemical Society Symposium Series Books, 1087; 141-158.</p> <p>Witter AE, *Nguyen MH*, *Baidar S, and Sak PB. 2014. Coal-tar-based sealcoated pavement: A major PAH source to urban stream sediments. Env Poll, 185, 59-68.</p> <p>Witter AE, and Sak PB. 2014. Response to letter on Coal-Tar-Based Sealcoated Pavement: A Major PAH Source to Urban Stream Sediments. http://dx.doi.org/10.1016/j.envpol.2014.02.015.</p> <p>Witter AE, and Sak PB. 2014. Response to O'Reilly's second letter to the editor on coal-Tar-Based Sealcoated Pavement: A Major PAH Source to Urban Stream Sediments. http://dx.doi.org/10.1016/j.envpol.2014.03.037.</p> <p>Witter, AE and *Nguyen, MH. 2016. Determination of oxygen, nitrogen, and sulfur-containing polycyclic aromatic hydrocarbons (PAHs) in urban stream sediments. Env Poll, 209, 186 – 196.</p> <p>Witter, AE. 2019. Quantification of azaarenes, hydroxylated azaarene derivatives, and other polar compounds released in urban runoff from two commercial sealcoat products. Env Poll 254, 113103.</p>