

Research Inventory. College of the Atlantic.

The inventory covers the three calendar years, 2019, 2020, and 2021. The current number of faculty is 30, but during the time period of the inventory, 37 people held faculty appointments.

Faculty at COA are organized into three broad areas: Arts and Design (AD), Human Studies (HS), and the Environmental Sciences (ES). In the following list, we indicate both the discipline(s) in which the faculty teach and their administrative area (AD, ES, or HS). COA does not organize faculty by department.

Faculty members conducting research in sustainability.

1. Jodi Baker (AD, Drama and Performance)
2. Kourtney Collum (HS, Food Systems)
3. Gray Cox (HS, Philosophy)
4. David Feldman (ES, Physics and Mathematics)
5. Sarah Hall (ES, Geology)
6. Susan Letcher (ES, Botany)
7. Doreen Stabinsky (HS, Global Environmental Politics)
8. Davis Taylor (HS, Economics)
9. Sean Todd (ES, Biology)

Kourtney Collum (HS, Food Systems) is Co-PI on a grant to support the Mount Desert Island (MDI) Food Access Project, an initiative that provides free healthy meals, non-perishable food, and fresh produce to residents of Mount Desert Island, the outer islands, and Trenton. This project aims to reduce food access barriers, decrease duplication of island services, and address unmet food insecurity in MDI's more remote communities.

Collum was also co-Principal Investigator on the grant , "Finding the Sweet Spot: Scale Challenges and Opportunities for Beekeeping and Maple Syrup Production in Maine," funded by the USDA Agriculture and Food Research Initiative (#2016-10889). Maine: April 2017-May 2020. This work has led to two publications:

2021 Velardi, S., Leahy, J., Collum, K., Ladenheim, M., and McGuire, J. "You Treat Them Right, They'll Treat You Right": Understanding Beekeepers' Scale Management Decisions within the Context of Bee Values. *Journal of Rural Studies* 81.

2020 Velardi, S., Leahy, J., Collum, K., Ladenheim, M., and McGuire, J. Adult learning theory principles in knowledge exchange networks among maple syrup producers and beekeepers in Maine. *The Journal of Agricultural Education and Extension* DOI: 10.1080/1389224X.2020.1773283.

Jodi Baker (AD, Dram and Performance), Kourtney Collum (HS, Food Systems), David Feldman (ES, Physics and Mathematics), Doreen Stabinsky (HS, Global Environmental Politics) are co-PIs on a \$40,000 grant from the Henry David Thoreau Foundation to support COA's Thoreau Environmental Leaders Initiative. This project expands student learning and COA's institutional capacity by incorporating two new elements into the Thoreau Environmental Leaders Initiative: 1) strategies to engage with intersectionality and inclusion in environmental and social justice movements, and 2) training in using the performing arts for community organizing and environmental and social justice activism. The Thoreau Initiative also offers day-long workshops on skills and tools for environmental advocacy and activism.

David Feldman (ES, Physics and Mathematics) continues to engage in research in ways to effectively explain quantitative aspects of climate change and renewable energy to diverse audiences. In November of 2020 he gave an invited presentation, titled "Introduction to Energy & Climate: Making Sense of Big Numbers", to Racepoint Energy (now Savant Power Company). He is writing a book on sustainable energy for non-STEM majors.

Gray Cox (HS, Philosophy) has given a series of conference presentations and written two articles on the relationships between artificial intelligence and sustainability. This work is part of a book project which is now under revision for publication later this year. The working title of the book is *From a Smarter Planet to a Wiser Earth: The Roles of Dialogue in Economics, Politics, and AI Informed Technology*. Gray also serves as the chief officer (Clerk) of the Quaker Institute for the Future.

Jay Friedlander (HS, Sustainable Business) conducts research in sustainable business. Over the last three years, this work has included:

- Serving on the organizing committee for Arctic Opportunities Explorers, a global challenge to solve problems for Arctic communities. Led multiple seminars on building sustainable enterprises. (2020-2021).
- Leading ten workshops and seminars throughout Australia on using the UN Sustainable Development Goals and the Abundance Cycle to spark innovation in the higher education, private enterprise, social enterprise and governmental sectors. November 2019.
- Leading a seminar for Icelandic enterprises, nonprofits and government officials on Leveraging the UN Sustainable Development Goals, October 2019.
- Leading a strategy seminar for faculty, staff and administrators on Embedding Changemaking into the Curriculum, University of Evansville Harlaxton College, U.K., September 2019.
- Leading a faculty and staff seminar at BCIT in Vancouver on Integrating Sustainability into the Curriculum, August 2019.
- Leading a faculty seminar for Babson College MBA and undergraduate professors on Integrating Sustainability into the Curriculum, April 12, 2019.

- Leading a 3-day seminar for faculty, students and government officials, The United Nations Sustainable Development Goals: Accelerating Entrepreneurship and Innovation, at the University of the Faroe Islands, March 2019.

During 2021 and 2022 Friedlander served as a Fulbright Specialist in Colombia, gave a lecture in Ireland and has done several small business boot camps to provide business skills to local enterprises.

Sarah Hall (ES, Geology) is a member of an NIH SEPA project on Data Literacy and Private Well Water Quality. This collaborative project aims to collect water chemistry data from privately owned wells while simultaneously enabling high school educators to supplement existing curricula and enhance data literacy with a focus on a locally relevant topic: arsenic abundance in drinking water. The project was initially funded through an EPA Environmental Education grant and is currently funded through a NIH Science Education Partnership Award (SEPA). Hall has given numerous conference presentations on this work and peer-reviewed publications stemming from this project include:

- Farrell, Anna, Kate Buckman, Sarah R. Hall, Isidora Muñoz, Karen Bieluch, Bill Zoellick, and Jane Disney. "Adaptations to a Secondary School-Based Citizen Science Project to Engage Students in Monitoring Well Water for Arsenic during the COVID-19 Pandemic." *Journal of STEM outreach* 4, no. 2 (2021).

Susan Letcher (ES, Botany) works with an international team of scientists to study the dynamics and resilience of tropical forests. Recent publications include

- Poorter, Lourens, et al. "Multidimensional tropical forest recovery." *Science* 374.6573 (2021): 1370-1376.
- Poorter, Lourens, et al. "Functional recovery of secondary tropical forests." *Proceedings of the National Academy of Sciences* 118.49 (2021).

The research of **Doreen Stabinsky (ES, Global Environmental Politics)** straddles intersections between biodiversity and climate policy and politics. In the past few years Doreen authored or coauthored a number of reports and briefing papers on a variety of topics for international non-governmental organizations, including the Third World Network, the African Center for Biodiversity, Friends of the Earth International, and the Loss and Damage Collaboration. She also published a letter to the editor in Financial Times on carbon-offset markets. She was an invited speaker to webinars on a range of topics, hosted by various organizations around the world, including Caritas France, Acción Ecológica, the UK Climate Funders Group, the Global Youth Biodiversity Network, and Federação de Órgãos para Assistência Social e Educacional, and in August she was a keynote speaker at the annual conference of the Netherlands Academy for Land Governance. She is a contributing author to the Working Group II and Working Group III reports in the forthcoming 6th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

Davis Taylor (HS, Economics) conducts research into consumer and producer cooperatives. For the past 18 months he has been working on a USDA-funded project with the Cooperative Development Institute (the Northeast's technical assistance group for cooperative formation) to provide "train the trainer" services to the Maine Organic Farmers and Gardeners Association (MOFGA). The project seeks to expand sustainable farming practices in Maine via two-way learning regarding producer cooperatives.

Over the past few years **Sean Todd (ES, Biology)** has been PI on a project looking at the impact of increasing temperatures in the Gulf of Maine on whale foraging behavior. The project uses stable isotope analysis to examine skin biopsies taken *in situ* as proxies of medium- to long-term diet, as well as more longitudinal records obtained from baleen of stranded carcasses. Data obtained are being compared to a dataset collected back in the 2000's prior to the warming shift. Preliminary data collected just from sighting frequencies suggest that whales are moving further north and east to find colder and more productive water. These impacts might be especially important for baleen whales located lower in the trophic chain and therefore more closely associated with physical oceanographic impacts, such as the critically endangered right whale.