Biology 1158/Chemistry 1105/ENV 2201: Perspectives in Environmental Science (Phil Camill, Dhami Vasudevan, Shana Stewart Deeds)

To enhance their learning about agriculture, natural resources and soil science in Maine, students used GIS to prioritize parcels in midcoast Maine for farmland conservation. After completing this assessment, students focused more specifically on Bowdoinham, identifying 2,000 acres that they would recommend to be set aside for agricultural use. Next, students went to three local farms and interviewed farmers about their management practices. They then collected soil samples and returned to Bowdoin to analyze these samples. Students completed a standard soil test, as would be completed by the Maine Soil Testing Service. Data on pH and soil nutrients were analyzed and delivered for the farmer, which included: a map of the farm, raw data, and graphs on pH, phosphorus and other soil nutrients. Students will compile their results in a final report, and propose next steps to advance this project so their efforts more fully meet farmers' needs.

Community partners: Harvest Tide Organics in Bowdoinham, Old Crow Ranch in Damariscotta, and Two Cove's Farm in Varna.

Biology 3394/Environmental Studies 3394: Ecological Recovery in Coastal Maine (John Lichter)

This class examines the biophysical and social constraints limiting ecological recovery, with a specific focus on the Kennebec estuary. To deepen their understanding of the challenges and successes in ecological recovery locally, students conducted place-based research and complemented this work with meetings with a diverse group of environmental professionals and area stakeholders.


Earth & Oceanographic Science 1305/ENV 1104: Introduction to Environmental Geology & Hydrology (Peter Lea, Joanne Urohata)

Coastal salt marshes, for their size, are prolific reservoirs of so-called "blue carbon," in the form of little decomposed organic material in marsh sediments. Students counted and analyzed salt marshes in Scarborough and Freeport to determine how carbon storage varies by location and how it has changed over time. A parular focus is whether historical cutting of marshes for salt-grass hay and/or mosquito control has impacted carbon accumulation rates.

Community Partner: Maine Audubon

Earth & Oceanographic Science 2525/Environmental Studies 2251: Marine Biogeochemistry (Michele LaVigne)

Students complemented their exploration of marine chemistry by characterizing the geochemical environment of local clam flats in Phippsburg, ME. In collaboration with the Kennebec Estuary Land Trust, student teams designed and carried out field-based sample collection and laboratory-based research. They are presenting their results to the land trust at the Common Good Celebration.

Community partner: Kennebec Estuary Land Trust

Earth & Oceanographic Science 4009: Advanced Independent Study in Oceanography (Collin Roessler)

“Characterizing the Influence of Atlantic Water Intrusion on Water Mass Formation and Primary Production in Kongsfjorden, Svalbard” - Courtney Payne ’15

As part of an REU program, Courtney conducted field research in Ny Resund, Svalbord, Norway on the impacts of warm water intrusion and glacial melting on water mass formation and primary production. As part of this research, she spoke with many research scientists from Germany, France, Norway, and Denmark in order to incorporate qualitative observations of changes to sea ice coverage, glacial melting, and other regional environmental changes into her research. On campus, she used satellite data, GIS spatial analysis, and a thorough literature review to develop a general model for the impacts of warm water influx on fjord ecosystems. This research has significant ramifications for global sea level, as well as for regional albedo, water mass characteristics, and primary production.

Community partner: Norwegian Polar Institute and Ringo Bay AS, Norway

Education 2222: Educational Psychology (Kate O'Doherty)

The course emphasizes the application of theory and research from the field of psychology, which scientifically studies human behavior and mental processes, to the realm of teaching and learning in contemporary classrooms. Course concepts are grounded in empirical research and authentic activities geared toward understanding the nuances and complexities of perspectives on behavior, cognition, development, motivation, socio-cultural identities and pedagogical instruction in PK-12 educational contexts. Insights for ways educators can structure learning experiences to better serve the needs of students from a variety of backgrounds were cultivated through an action research project in an educational context.

Community partners: Bowdoin Central School, Bowdoinham Community School, Brunswick High School, Collin Elementary School, Harriet Beecher Stowe Elementary School, Mt. Ararat Middle School, Morse High School, Lincoln Middle School, The Real School

Education 3301/3302: Teaching and Learning/Curriculum (Nancy Jennings, Chuck Dorn)

As part of their study of place-based education, students in these two courses expanded their understanding of rural education through firsthand experiences with the Maine coastal communities of Deer Isle/Stanleytown. The two classes visited the Deer Isle/Stamington High School in September, and hosted students from the high school at Bowdoin in October. Questions the classes explored included: 1) What are the unique challenges and opportunities that the many facets of rural coastal life present to local educators? 2) How do we teach rural topics in a way that is relevant? 3) How can educators create curriculum that is relevant and engaging to students preparing to enter the teaching industry? 4) How do rural schools involve the local community?

Community partner: Deer Isle/Stamington High School

Education 4000: Advanced Independent Study (Nancy Jennings)

“Culturally Relevant Curriculum for the Blueberry Harvest School in Milbridge, ME” - Christine Rhode ’15

Christine has completed a semester-long study designing culturally relevant primary and secondary school curriculum for the Blueberry Harvest School, an interdisciplinary and project-based learning summer school that serves children of migrant workers and Native Americans who work the seasonal blueberry harvest in
Environmental Studies 2004: Understanding Place: GIS and Remote Sensing (Eileen O'Connell)

This class examines the role of spatial information, particularly Geographic Information Systems (GIS), in informing public policy decisions. Students in the class had the option of working with community partners to map community assets, and conducted a spatial analysis to address the following issues of concern locally:

Julia Berken-Hall '17: Identifying Areas of High Risk for Arsenic Toxicity in Domestic Wells in Southern Maine
Kristen Nock '15: A Spatial Analysis of Food Safety in Portland, Maine
Schuyler Nardell '15: Water Quality in Harrpsford Sound: 1993-2012
Kiran Pandi '15: Brunswick Topham Water District: Jordan Avenue Aquifer Parcel Prioritization
Ziva Huber-Reese '15: Using LandSat Imagery and Raster Analysis to Find Farm Parcels with Similar Crop Inventories in Aroostook County, Maine
Simon Pritchard '16: Maine Coast Heritage Trust Priority Islands: Essential Habitat Conservation Prioritization
Lu Miao '17: Assessment of Bowdoin College's Storm Water Runoff
Elisa Berglund '15: Evaluating Access to Outdoor Recreation Using a Network Analyst Approach

Community partners: Maine Coast Heritage Trust, Public Health Division, Northern Maine Economic Development Commission, Brunswick-Topham Water District, Environmental Health Strategies Center

Environmental Studies 4001: Advanced Independent Study (John Lichter)

"The Effects of Land Use Change on Riparian Environment, Water Quality, and Society along the Kimana-Kikargant River, Kenya"—Elizabeth Brown '15

On study abroad in southern Kenya, Elizabeth conducted field research on a local river and its surrounding land use; she quantified the environmental condition of the riparian zone, documented farming activities along the river, measured water quality, and interviewed local people about their perceptions of environmental quality and confidence in the management of the river. On campus, she expanded upon these analyses using GIS spatial analysis, remote sensing data, and a thorough literature review to document the effects of rapid land use change on the environmental condition of the wetlands and water quality, which both have significant ramifications for the human communities in the area.

Community Partner: Residents along the Kimana-Kikargant River, Kenya

Film 2110/Environmental Studies 2461/Visual Arts 2110: Seashore Digital Diaries (David Conover)

For this course, which relied on video production as a tool of inquiry at the seashore, students had the option of doing community-engaged work. Three students, Ezra Duplisse-Cyr '15, Tim Hanley '15, and Dana White '15, interviewed and created a documentary about Harpswell lobster harvesters Rob and Karin Watson, from the fifth generation of lobster harvesters in their family. The film reflects the core values of the Watsons—family, hard work, and staying local.

Community partners: Rob and Karin Watson

Interdisciplinary Studies 2430: The Digital Image of the City (Jack Geseking)

Students were tasked with identifying an issue in the City of Portland related to the topic of housing, infrastructure, or public space. They then conducted qualitative field research and learned the geographic information systems (GIS) open-source platform QGIS. Focusing on smart urbanism, which includes interventions in urban issues through better uses of technology and data, from gentrification to pollution, access to public spaces to improved walkability, students created maps and conducted research to help them devise technological solutions to these issues. They shared their solutions with community partners from the City of Portland.

Community partner: City of Portland

Government 2573: Politics of Language (Erica Abuaga)

As a complement to their exploration of the role of language in politics, including the relationship between language standardization and citizen participation and democracy, and the responses of minority language groups to such standardization, students attended a workshop about the path to citizenship and citizenship classes for English language learners at Portland Adult Education. Students also had the opportunity to volunteer in ESL classes at Portland Adult Education to deepen their understanding of course themes.

Community partner: Portland Adult Education

Psychology 2010: Infant and Child Development (Kate O'Doherty)

Students in this course had the option of choosing between different community projects to complement their Warner class learning about psychological functioning from conception through childhood. Some worked 2 hours per week at Bowdoin's Children's Center and others at the Brunswick Early Learning Center, all interacting with children as teachers' aides.

Community partners: Bowdoin College Children's Center, Brunswick Family Focus

Psychology 4001A: Honors in Psychology (Louisa Sadowski)

"Assigning Legal Punishment: Individual Differences in Justice Sensitivity and Selective Attention"—Emily Weinberger '15

Emily's honors project investigated peoples' decision-making processes to better understand the inconsistencies in punishment decisions in the U.S. legal system. She focused specifically on restorative versus retributive justice. The goal was to determine if and how an individual's justice sensitivity (a personality trait) and selective attention predict preferences for restorative or retributive processes when assigning punishment to a criminal case. Research was conducted with original methodology and used Psych 110 students at Bowdoin as the subjects. The results will be shared with the Cumberland Legal Aid Clinic's juvenile justice group.

Community partner: Cumberland Legal Aid Clinic

Sociology 4001A: Advanced Independent Study in Sociology (Nancy Riley)

"A Doula Can Only Do So Much: Birth Doulas and Stratification in United States Maternity Care"—Kaylee Wolfe '15

As part of her honors research into the experiences, roles, and impacts of birth doulas, Kaylee conducted qualitative interviews with doulas currently practicing in hospital settings in Maine. She examined the complex and contradictory ways in which doulas simultaneously resist and support the institution of medicalized birth in the United States, the benefits that doulas offer to hospitals, and the challenges faced by the profession, including the potential to inadvertently contribute to stratification within maternity care and the possible consequences of commodifying the nurturing and emotional labor central to the doulas profession.

Community partner: Birth Doulas of Maine

Sociology 4001A: Independent Study in Sociology (Shaun Goldberg)

"Creating Successful Public Space: Design Recommendations for Portland's India Street Neighborhood Recreation Hub"—Emma Chow '15

In conjunction with her study of what it means to create successful public spaces and cities that improve quality of life and happiness, Emma worked with Portland's Urban Designer, Caitlin Cameron, to make recommendations that help realize the goals and vision statements articulated in the India Street Sustainable Neighborhood Plan. Her work, integrating GIS research, studies of public spaces in Sweden, and field research on the San Francisco waterfront, focuses on neighborhood improvements for creating a dynamic recreation hub at the foot of India St.

Community partners: City of Portland Planning and Urban Development Department, India Street Neighborhood Advisory Committee (ISNAC)

Visual Arts 3804: Public Art (John Bisbee)

Students competed individually with local artists to design public artworks for the Brunswick community. Their proposals emerged from conversations with the Brunswick Public Art Committee and were judged by committee members in a final exhibition. In a later self-designed project, students reached out to other local agencies to develop public art interventions of their own initiative.

Community partner: Brunswick Public Art Committee