Gaylord Donnelley Prize 2013

- ***Anna Rose Gable, Environmental Studies (Advisor: Carol Carpenter)***

  ## Practical Pedology: Soil, Sustainability and Agricultural Knowledge in the Georgia Piedmont

  Nationwide, the sustainable agriculture movement is galvanizing people from non-farming backgrounds to take up farming as a pragmatic response to the environmental, social, and economic ravages of mechanized, chemical-intensive "conventional" agriculture. Their alternative, "sustainable" agriculture is based on marketing locally and building biologically-active soils. The ideas that inform sustainable agriculture practice in the Georgia Piedmont come from a nationalized sustainable agriculture literature which obscures regional environmental differences. Farmers in the Piedmont adapt practices to local conditions through trial and error, but the "local" of today's Piedmont is not a purely ecological space. Soil-building systems have not, historically, been sustainable in the Georgia Piedmont due to the region's climate and geology. Their contemporary success depends upon nutrient and energy subsidies from conventional sources. This contradiction locks sustainable farmers into a physically and mentally exhausting battle that pits nature itself against an ideology of restoring and preserving a nature that never existed. An anthropological view of the Piedmont's human ecology suggests that swidden agriculture ("slash-and-burn") could provide a truly liberating, truly ecological alternative with positive social implications on a global scale.

- ***Victoria Montanez, Environmental Studies (Advisor: John Wargo)***

  ## Food Waste: The Value of Knowledge-Based Campaigns in Environmental Protection

  In the United States, over 40% of the total available food is lost or wasted. Postconsumer food waste, which results from individual waste behaviors, accounts for a large proportion of this loss. Despite significant social, environmental, and economic consequences, the government and food industry have taken little action to prevent or recover food waste. Using the case of Yale University, this study seeks to address behavioral issues in an institutional cafeteria setting and determine whether a simple knowledge-based campaign, focused on the negative impacts of food waste, can effectively reduce wasteful behaviors in students. A secondary objective of this study is to determine why students waste food and provide constructive commentary for Yale Dining to promote less wasteful behaviors.

- ***Coleman Wheeler, Environmental Studies (Advisor: Karen Hebert)***

  ## Big Coal in Small-Town Virginia: A Case Study of Environmental Justice and Racial Polarization in the Rural South

  In 2008, the Old Dominion Electric Cooperative announced plans to build a 1500-megawatt coal-fired power plant in the small rural town of Dendron, Virginia. The proposal polarized the population of Dendron and the surrounding area, and led to a controversy that pitted economic

benefits against health, black residents against white residents, and the rhetoric of political and environmental justice against the rhetoric of racial and economic justice. Despite challenges posed by racial divisions and significant resource disadvantages compared to the electric utility, the local opposition to the plant mounted an effective political and legal resistance that delayed the plant significantly. Ultimately the project folded as a result of changes on the national energy scene in 2012. By conducting interviews with locals and key players in the controversy and analyzing local newspaper archives and other primary documents, I sought to explore the factors that contributed to the deep polarization of the community and to the final outcome. In conversation with the literature of environmental justice and social movement theory, I argue that Dendron's pre-existing racial tensions made it particularly vulnerable to corporate power, and that locals mobilized the rhetorical frame of injustice to great effect both in support of and against the proposed facility.

- ***Seung Hyun (Lucia) Woo, Environmental Studies (Advisor: John Wargo)***

  The Air Our Children Breathe: PM 2.5 Pollution Survey of New Haven

  Particulate matter sized 2.5 micrometers or smaller is one of the criteria pollutants that the U.S. Environmental Protection Agency regulates in the interests of both public health and climate change. This paper seeks to characterize the spatial and temporal patterns of PM 2.5 concentrations in New Haven, Connecticut. I analyzed the hourly PM 2.5 concentration and meteorological data from a stationary ambient monitor and conducted a personal sampling of both outdoor and indoor air, using three elementary schools as key sampling sites. I found that wind speed is the major determinant of PM 2.5 concentration rather than the weekday rush-hour traffic patterns. Also, the local sources of pollution dictated the PM 2.5 concentration rather than proximity to highways. Compared to a personal monitor, the state's ambient monitor recorded lower concentration values. Additionally, the PM 2.5 concentration indoors was significantly less than outdoors. I concluded that the state's tools for air quality regulations – ambient monitors and the Air Quality Index – are limited in protecting the susceptible group of asthmatic children.