



CONNECTICUT COLLEGE

*Class of 2016*  
*Internship Reflection Papers*

**Goodwin-Niering  
Center for the Environment**





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## **Introduction**

The Goodwin-Niering Center for the Environment at Connecticut College offers a certificate program that was developed to enrich the undergraduate experience with a concentration on environmental issues. Open to any major, it is particularly appealing to students who wish to blend their interest in the environment with a non-science major. With the help of a faculty advisor, students customize a curriculum including course work, seminars, and a conference.

During the summer following their junior year, students participate in highly structured internships, increasing the depth of their knowledge and commitment to the environment. These are professional level opportunities for students with career goals that include environmental policy, planning, law, economics, and education. The program enhances the effectiveness of internships by integrating them into the students' educational programs. The purpose of the internship is to offer students experiences that have a positive impact on their intellectual, professional and personal development through exposure to work environments that they might not otherwise encounter as an undergraduate. Students are offered access to stimulating ideas and people in their field of study and given substantive, meaningful work to do that will assist them in achieving their goals. On their return to college in the fall, they refine the relationship between their summer experiences and their senior integrative project.

In the summer of 2015, the fifteenth class of certificate students participated in a wide variety of internships. After returning to college in the fall the students wrote internship reflection papers detailing their experiences. The papers were edited for purposes of clarity and consistency and compiled into this volume for the class of 2016.

More information on the certificate program can be found on the Center's web site at: <http://goodwin-nieringcenter.conncoll.edu>.

**Natalie Calhoun**  
Environmental Studies major, Public Policy minor  
**Recology Golden Gate, San Francisco, CA**

While working for Recology in San Francisco, CA, I had the unique opportunity to lead my own pilot project on event diversion auditing and combined traditional office work with field audits, education and outreach, and job shadowing. My overall intern experience helped prepare me for my Senior Integrative Project as well as prepare me for the working world once I graduate Connecticut College.

Tracing its roots back to the 1930's, Recology sees itself as a resource recovery company instead of a garbage company. Paired with their mission of achieving Waste Zero (no material sent to the landfill), Recology stands out in the waste management industry as a uniquely environmental force for good. With its headquarters in San Francisco, Recology has expanded from the Bay Area up into dozens of cities in Northern California, Oregon, and Washington. Because of their environmental focus, Recology sometimes has more expensive bids for municipal waste hauling contracts and must win over the hearts and minds of their potential new customers with their impeccable track record of safety, landfill diversion, and popular programming like the Artist in Residency Program and volunteer days.

In San Francisco, Recology is the only waste hauler permitted to operate in the city, so the connections between the San Francisco Department of Environment and Recology are strong, and the two often collaborate. This also means that every citizen, household, apartment building, business, restaurant, hotel, and event operating in San Francisco is Recology's customer. In order to meet city mandated landfill diversion goals, Recology audits all of their customers as needed to assess the material quality in the waste stream, to see if people are correctly sorting their compost and recycling, and to conduct educational outreach visits.

Prior to my internship, Recology had never audited event material before, so I was the first and only Special Event Diversion Auditor. My mentor who designed this project for me, Eric Ahnmark, has a background in event greening services and had always wanted to audit special events in San Francisco to assess sorting behavior and material quality. The crux of my work focused on this question: what is the recoverability of the waste stream coming from events in San Francisco? I would call Event Producers on the phone to do pre-event consultations, manage staff and volunteer training when possible, go to the event site to conduct my audit, and finally communicate audit results back to the event producer.

The work itself was challenging at first as I learned how to talk to customers, familiarized myself with San Francisco's municipal policy, went on a facility tours, and attended a three-day seminar called Recycling 101. I shadowed my mentor for a full week on commercial audits to businesses and apartments in San Francisco.

For my personal project, I conducted all of my week's audits each Sunday for the bulk of the summer. I was given permission to drive a company truck to each event location, and had access to safety gear. Event Producers and staff were aware of my presence and would often come up and ask questions while I worked. While in the containers and debris boxes, I took copious notes

and photos to back up my observations. I worked at small events like catered weddings, community block parties and park movie nights, and I worked some of the largest events in San Francisco including SF Pride, SF AIDS Walk, and the SF Marathon.

After the audits were completed, I would share the results the Event Producers. Unfortunately, nearly half of all audits resulted in a 'Fail' grade, meaning no sorting took place or the material failed processing standards in our facilities due to its poor quality and recoverability. Delivering bad news was never fun, and sometimes customers would be very upset with their result. In most cases I was able to offer suggestions for how they could improve for future events.

This internship was an invaluable learning experience for me because it gave me a huge amount of independence as well as responsibility. Running a whole program by myself was a daunting challenge, and without proper mentorship I might have struggled, but instead I was pushed to work hard and exceed my own goals for the summer. By the end of my internship, there was serious talk about continuing my internship project as a full-time position for a salaried employee.

In regards to my Senior Integrative Project, there was nothing else I could have done this summer that would better prepare me for analyzing the waste stream at Connecticut College. The hands-on auditing gave me the tools and insight into how to best assess material, and the customer relations' component prepared me for speaking with students and facilities about garbage. My site visits to transfer stations, recycling facilities, and composting programs will give me something to compare to when I visit these facilities in Connecticut, and my general industry knowledge has increased immensely.

For my Senior Integrative Project, I will be looking at garbage from an ethnoarchaeological perspective as I go on site visits and interviews, review previous scholarship and literature on the subject, survey students, and conduct a hands-on waste characterization on campus. I want to look at what students are throwing away, what their knowledge is of where their waste goes, and follow the path of the Connecticut College material stream.

**Aly Cheney**  
Environmental Studies and Economics majors  
**Tuolumne River Trust, San Francisco, CA**

This summer I worked for the Tuolumne River Trust out of San Francisco, CA. It is a preservation trust that works on preserving the Tuolumne River with the aims to promote sustainable stewardship of the river. The Tuolumne River runs from Yosemite all the way to the Golden Gate Bridge making it a connector between the high Sierra's, the Central Valley, and the Bay Area. These three areas are very different ecologically, economically, and culturally. Therefore, their water use varies between regions. The trust targets its work in each area slightly differently for this reason. In the Sierras much of the Trust's work is in restoration projects specifically with a focus on areas recently affected from wild fire. In the Central Valley there is a large effort to work with farmers on education programs for sustainable water use in the realm of Californian agriculture. In the Bay Area there are many educational activities for urban populations to learn about their water supply and the threats it faces. However, there is one event that very clearly connects the people all of whom rely of the Tuolumne. This event is the Paddle to the Sea event that much of my internship focused on.

Paddle to the Sea is a both a fundraising paddle-a-thon for the Trust as well as an immense opportunity to educate local communities about their wonderful natural resources. The paddle starts at the headwaters of the river in the Sierras and continues all the way through the Golden Gate Bridge with stops along the way to teach paddlers and residents about the ecology, policy, and recreation opportunities that surround the river. My main internship responsibility was to make sure that the event ran smoothly. This ranged from physically paddling 250 miles to catering to our guest speakers and communicating with large donors. It also included a fair amount of fundraising for the Trust, which uses the funds from this event to fund restoration projects. Additionally, I was in charge of using the Trust's social media accounts to get the word out about the event. After the Paddle to the Sea event concluded, my responsibilities were focused on contacting the donors as well as taking a training course with my boss on conservation, water safety, and hydrology so I could be better assist with next year's work if I choose to return to the Trust.

My objectives for the internship were met because not only did I complete the paddle but also felt that I helped teach a lot of people about the need for protected rivers in this country. This was done through tabling at public events and holding forums. Additionally, our guest speakers at paddle events expressed the message of river conservation. However, the most valuable part of the learning experience is the passion it gave me for river conservation and the need to protect water overall. This is probably the biggest way in which this internship has prepared me for my SIP, it has given me the passion to continue to explain to people why we need to protect waters in a way that I now know how to verbalize and discuss at a more informed level.

For my SIP I plan to take my passion for water systems and increased knowledge of river ecology cultivated from my internship along with my experience in natural resource economics from my time abroad to create an economic valuation for the water resources of the Rocky Mountains. While abroad I worked with Professor Natalie Stockl of James Cook University. I assisted her on a project that provided an economic valuation of ecosystem services of the Great

Barrier Reef and Wet Tropics Rainforest region. The methodology of gauging tourists and residents expected change in quality of life as a result of both industrial growth and environmental degradation scenarios was used in the project to put a monetary number on the worth of ecosystem services in the area.

I hope to work under the same methodology for my SIP with the help of my advisors, Doug Thompson and Wei Zhang. Throughout first semester I will create questionnaires to determine how an individuals' perceived overall quality of life would change as a result of an environmental or industrial change in the area. The surveys would ask what an individual's perceived change of quality of life would be under a variety of hypothetical environmental degradations as well as settings of economic growth. This will be to determine how much tourists and residents value both their water based natural resources and the productivity of their economy as well as to look at the tradeoff between these two variables. Over winter break, I will administer these questionnaires to residents and tourists at three major ski resorts in the area. During the second semester, the results will be used to determine relative importance scores representing how much visitors value water resources in comparison to industrial growth. Using known monetary industrial values and statistical regressions, I will derive a monetary value for the benefit provided from water based ecosystem services in the region.

## **Cian Fields**

Economics major, Environmental Studies minor

**The Cadmus Group, Arlington, VA**

The Cadmus Group is a “social good” consulting firm operating in a wide spectrum of practices. They aim to “create social and economic value” in the execution of their contracts. To “improve people’s lives”, they produce management and operations documents to guide practices, evaluate data to support these recommendations and execute research projects for a broad range of government departments and private firms. The firm has grown significantly since the 1980’s, from a two person consulting agency with a focus only on EPA contracts on water quality, to a 400-person firm with its own research division and many interdisciplinary projects. Based out of Massachusetts, the firm operates throughout the U.S. and even executes some USAID contracts in foreign countries. The Sustainable Transportation Practice (STP) is a small division (only two employees directly dedicated to it) that was started (acquired) in 2012. The STP works to address a wide spectrum of issues for a range of transportation forms, focusing on practical and implementable approaches to behavior change and the integration of proven technologies.

At The Cadmus Group I served as an intern within their STP. I worked primarily on projects for the STP, but occasionally provided assistance to projects in other divisions. In the STP, I worked directly under two people; Damon Fordham and Nils Klinkenberg. Damon is the Principal of the STP and is responsible for the management of STP projects, while Nils is a Senior Associate and provides his sustainability innovation expertise to projects. Both assigned me tasks and relied on me to communicate when I needed additional work. The majority of my tasks were to complete research (primarily by reading papers and doing web searches, or by talking with subject matter experts) and compile written reports for Damon or Nils, or to complete research as the foundation for writing a section of a client-deliverable document. Often times I was also charged with writing the first draft of that section. Another large responsibility that I was given was to lead the development of (surface transportation) sustainability goals, metrics, targets and practical initiatives that we recommended in the Sustainability Management Plan (SMP) for the Virginia Department of Aviation (DOAV). In this role I led and managed the compilation of information from various subject matter experts, both within Cadmus and from external sub-contractors. As a supplemental framework to the SMP, I completed, compiled and synthesized research on current sustainability efforts in the state of Virginia to provide a context for our recommendations.

I also assisted coworkers with interviewing several international experts from foreign (Norway, England, Australia) road and transportation research firms/agencies. These focused on how the interviewee’s organization tracked and evaluated the effectiveness or usefulness of the implementation of their research findings. I developed a first draft of the Project Work Plan of an Oregon DOT project for developing workshops and toolkits on the implementation of alternative fuel vehicles. Cadmus will also be executing a project similar to this for a consortium of Northeast states this fall, and I am intending to be involved with the workshops. I also attended several client meetings and conferences. These proved to be incredible learning experiences where I not only was able to network with established professionals, but also received the opportunity to be a part of multiple entities collaborating and sharing information.

From all of these tasks I had many takeaways, but perhaps the greatest was that I learned how to find, digest, synthesize and then present information (specifically about sustainable transportation) in a professional and usable manner. This particular takeaway also provided one of my greatest challenges of the summer; learning to “write for business”, as Damon referred to it. In one of my first performance reviews with Damon, this was his major critique of my work. He explained that I wrote in a very academic manner that was too heavily detailed and at times superfluous. Over the course of the summer I focused on writing in a more punchy and direct way that conveyed the information as concisely as possible, while still sufficiently covering all the necessary points.

I found that my original expectations and objectives were more than met. I developed significant relationships with established people working in a broad range of sustainability- and transportation-related roles. I learned a significant amount about alternative fuel use in many types of vehicles (including airport vehicles, trains, and cars) and ways that government agencies are actively trying to reduce the externalities of driving and the transportation sector as a whole. I gained worthwhile experience functioning in a fast-paced business and consulting environment, including practice networking. I also grew and matured as a result of living in a huge city in my own apartment.

This internship was incredibly valuable as a learning experience, both from an academic and personal perspective. Through the research I completed I was exposed to many aspects of transportation and sustainability that I otherwise wouldn't have been. This work was all associated with a specific project, lending all the work a very practical and real-world aspect. Almost all of my prior experience with anything transportation related has been theoretical or academic, and so adding tangible, client-specific implications made for interesting challenges and learning experiences. This experience will help significantly with making my SIP as real-world applicable as possible. While this provided certain benefits, as it was a perspective I had never taken to transportation and sustainability research, it will ultimately limit the usefulness of what I learned for application to my SIP because the client-specific implications no longer apply.

For my SIP I will be completing an Independent Study with Professor Wei Zhang of the economics department. We will be focusing on the externalities of driving and how those external costs are assessed and accounted for by society, specifically with relation to the gasoline tax and consumers responses to changes in the price of a significant input (i.e. gasoline). This topic is of great interest to both Professor Zhang and me and is part of a rapidly expanding area of research within environmental economics to determine consumer demand behavior related to durable goods.

**Matthew Luciani**  
History major  
**Institute for Native American Indian Studies, Washington, CT**

Last summer, I spent ten weeks as an intern at the Institute for American Indian Studies (IAIS) as part of the requirements for my Goodwin-Niering Center for the Environment certificate. Located in Washington CT, IAIS is a museum, research and cultural center, and a hub of activity on Native American studies and archaeology. The museum recently celebrated its 40<sup>th</sup> anniversary as a prominent institution in American Indian studies and a proud part of the Washington community.

When I was looking for internship opportunities last summer, I knew I wanted to work at a small nonprofit that would allow me to explore different interests of mine, develop professional experience, and collect preliminary data for my thesis. I made specific goals and objectives such as being able to expand my knowledge on indigenous wisdom, practices, and history as well as learning how to adequately navigate a workplace. This reflection paper will highlight those goals that I did meet and accomplish, those I did not, and experiences I had that I did not anticipate yet feel fortunate to have undergone anyway.

Every day was different at the museum. During the beginning of the summer, I spent a lot of time in the archeology lab, working on a few different projects. When I started in June, the lab was in the process of reorganizing and re-cataloguing a massive collection from a local site called Deer Run. For my first few weeks, I spent long days in the lab, erasing wrong labels on little orange envelopes, lining them in a plethora of cardboard boxes, and becoming perhaps a bit more acquainted with the different rocks and minerals paleo Indians used to make projectile points than I had originally anticipated. Although this part of the job was at times tedious, I greatly valued my time working in a professional archaeology lab. I became proficient in Past Perfect programming, museum software that is widely used by curators across the field. I also fleshed out my history background by becoming well versed in the vocabularies of archaeology and cultural studies.

While I was working on this project, I began to familiarize myself with the museum and developed relationships with my peers and coworkers. When I started to worry that I would be cataloging rocks all summer, I approached my boss with an idea for a research project. She was very receptive to the idea, and I began to split my time among working in the lab, working in the museum, and researching, designing, and curating a temporary exhibit with the lab assistant and another intern. This was when I really started to fall in love with my internship. My days were always exciting and new, and I met many new people.

The exhibit I worked on over the summer became the highlight of my time at IAIS and helped me develop ideas for my thesis, if not collect actual research itself. Working with Paul, the lab assistant, and Emily, another intern, we researched the land history of archaeological site 6LF1 in Warren, CT. This site is located close to Lake Waramaug, a large lake that brings in summer tourists, and the Hopkins Vineyard. Our exhibit examines the cultural and land narratives of this site through an environmental lens, tracing the site's history from early paleo Indian activity to the modern day. It is currently on display at Town Hall in Warren, CT. During the middle of the

summer, I spent a lot of time at the Gunn Memorial Library in Washington, completing research for the exhibit. While most of this research was for the museum, I came across a few great primary sources that I'm planning on incorporating into my thesis.

While I gained practical skills and knowledge working in the museum world, I also learned a lot about professionalism. At the beginning of the summer, the museum hosted a fundraiser called "Strawberries under the Stars." Twelve local bakeries came to the Washington green for an event and had a competition of different strawberry themed baked goods. I worked 12 hours that day, first at the museum, and then pouring champagne and cleaning plates at the fundraiser. Although not all the interns came to the event, some of us did, and it was a ton of fun bonding while cleaning up after the event. We also had a Green Corn festival at the end of the summer to welcome in the corn harvest. Native dancers came, vendors sold crafts, people made corn husk dolls and baked cornbread, and storytellers sang songs in the replica village behind the museum. It was a wonderful day of community and made me proud to be an intern at IAIS.

I had an incredible diverse summer. One day would have me weeding plants in the medicinal herbs garden, and then the next I would be trying to track down an old map in an archival room. While some days were slow and frustrating, I learned how to maintain professional stamina. I was tired a lot, working so many long days, but I also loved it. I loved contributing to such an amazing organization and learning every day. I also met a great number of prominent people in Native American studies this summer, which was rewarding and humbling. I would recommend this internship to anyone interested in history, art, cultural studies, sustainability, or writing and communication.

**Emily MacGibeny**  
Environmental Studies (Social Track) major  
**Living Roots Ecovillage, French Lick, IN**

This summer I interned as a “Farming and Healing Arts Apprentice” at an intentional community in French Lick, Indiana, called Living Roots Ecovillage. Living Roots is a 75-acre property, consisting of three barns, three greenhouses, a community center, five off-grid cabins, a campsite, five acres of crop fields, ten acres of cattle pasture, natural springs and streams, and a community garden. Living Roots Ecovillage is technically a corporation, and was co-founded about ten years ago, on a much smaller property a few towns over, in Jasper, Indiana. The three founding members of the Ecovillage founded the project with the hopes of creating an intentional, sustainable, and integrated community that supports its members physically, emotionally, mentally, and spiritually, mainly through entrepreneurial and art-centered permaculture design, including building, food, energy, education, and wellness systems. Currently, only one of the three founding members remains with the project, but successfully moved the project over to the new property in French Lick about two years ago. Here the project has grown in size and stature, especially in terms of the number of apprentices that come through its seasonal Apprenticeship Program, of which I was a part.

My internship was based around approximately nine hours of farm work per day for the Living Roots Farm, which is the personal business of the one remaining founding member, the only permanent member on the Ecovillage. Living Roots’ particular structure – which is very much still in the process of being realized – is such that permanent members would develop personal businesses, such as the Farm, on the property, while the Living Roots Corporation would have its own source of income, through things like renting cabins, raising and selling grass-fed beef, and a “u-pick” strawberry patch. While there are currently some renters and longer-term “visiting members” (they have not committed to being permanent members) at the Ecovillage, the interns who come through the Apprenticeship Program make up the bulk of the population at the Ecovillage. For these reasons, there was a significant amount of overlap between life as a Farm and Wellness Arts Apprentice and life as a member of the Living Roots Ecovillage, albeit a very transitory member. In addition to the farm work and community responsibilities, my apprenticeship also included approximately three hours a week which I spent learning and practicing yoga and how to give/receive a holistic style of healing massage.

I lived and worked on-site, along with the nine other Farm and Healing Arts Apprentices. We were supervised by a leadership team of three, of which two were former apprentices, and one, the owner of the business. My co-workers played a large role in shaping the experience of my internship, in terms of the relationships we formed while working and living in such close quarters. The farm grew primarily vegetables, and while it is no longer certified organic, is chemical- and spray-free, and relies primarily on human work, rather than on motorized farm equipment. Typical farm tasks included weeding beds, spreading manure/hay over beds, transplanting seedlings into beds, harvesting crops, processing crops for various markets/CSAs/wholesale orders, setting up trellises for crops, and helping to run the Farm’s stand at the Bloomington Farmer’s Market, while tasks for yoga and massage simply consisted of attending and participating in yoga and massage class. The Ecovillage duties included cooking duty (taking the day off from farm work to cook for the whole community), animal duty (collecting eggs, and feeding the pigs, chickens, cats, and dog), outhouse duty (emptying the

composting toilet chamber), and attending and participating in Community meetings and events, and adhering to Ecovillage community policy.

My personal learning goals before the internship included: learning about running a farm, farmers market, and CSA; learning about subsistence farming; building a team/community with the apprentices and full-time members; learning how to give a massage; improving my yoga skills; and living in a way that is more connected with the earth. I also expected that my experience would provide me with a significant amount of information for my SIP research. I planned on keeping track of this progress and learning through the group reflection/meeting that the program offers, and also through personal and academic journal/notes. Looking back at these personal learning goals, I can confidently say that I achieved all of them. I feel particularly confident in my new massage and farmers market skills, in addition to my ability to live in a way that is connected to the earth and work effectively on a team/community. I had hoped for the yoga to be more challenging or advanced, although it was nice to have a yoga practice built into the schedule of the week, and I did learn more restorative poses that helped to counterbalance the hard work that our bodies were doing out in the field. On the whole, my internship taught me all that I had hoped it would. Also, being able to live in a way that had minimal impact on the environment and rather attempted to coexist with and benefit it was extremely important for both the actual well-being of our earth (albeit just a small part of it), and for my ability to advocate for this style of living in the academic work which I carry forward.

However, it is not the fulfillment of any of these goals that ended up being the most valuable thing that my internship did for me. Rather, I walked away from my internship having undergone a large and unexpected paradigm shift, in addition to understanding some realities about intentional communities. The paradigm shift centers around a new skepticism about whether small, organic market farms can actually be the solution for our unsustainable food system, and whether community and subsistence gardening might be the only true solution. In terms of realities about communities, I understood that perhaps one of the biggest issues surrounding the creation of intentional communities is how to guarantee their continuity once the original founders are no longer there, and also that intentional communities are very susceptible to internal social conflict. More personally, I learned about what it felt like to be empowered in terms of my beliefs, values, and social acceptance, and my ability to be self-sufficient.

This internship prepared me for my SIP mainly by solidifying my interest in intentional communities as potential models and mediums for sustainable communities, and also by providing me with opinions and experience to begin researching it. My internship did not provide me with objective data about intentional and sustainable communities, but rather with insight into the realities of life on one. This insight is important for formulating opinions on what works and does not work in intentional communities in terms of sustainability, so that I can go forward in my SIP to formulate a checklist of sustainability indices, and discuss how to apply it towards intentional communities that are not completely sustainable.

## **Anna Marshall**

Environmental Science and Anthropology majors, Geology minor  
**Stroud Water Research Center: National Science Foundation Critical Zone Observatory  
Avondale, Pennsylvania**

This past summer I had the privilege of conducting research on a National Science Foundation Critical Zone Observatory Site through the Stroud Water Research Center in Southeastern Pennsylvania. The Stroud Center has been at the forefront of groundbreaking stream research over the past four decades, including the critical concepts of thermal equilibrium and river continuum that have revolutionized the way stream research is approached throughout the world. Five years ago, Stroud received a \$4.3 million grant from the National Science Foundation to establish the Christina River Basin as a “Critical Zone Observatory” for researching questions related to climate change and freshwater resources. The site designation included a 565-square-mile experimental watershed at the headwaters of the Delaware River.

During my time at the Stroud Water Research Center, I worked in the Critical Zone Observatory under the mentorship of fluvial geomorphologist Dr. Melinda Daniels. I was given free reign of project design beneath the umbrella topic of how land use legacies shape modern stream geomorphology. My research characterized the spatial variability of pre-settlement floodplain surfaces and post-settlement "legacy" sediments upstream and downstream of colonial milldams. Legacy sediments are defined as geologically recent anthropogenic deposits of alluvium or colluvium. Throughout the mid-Atlantic Piedmont region of the United States, floodplains are characterized by these large legacy deposits, which originated from colonial-era deforestation and ongoing hillslope land disturbance. Land use impacts were further exacerbated from the late 17<sup>th</sup> to early 20<sup>th</sup> century, with historically intensive water-powered milling, aiding in the floodplain storage of legacy deposits behind milldams over a century later.

My project was sparked in response to debate over the ubiquity of a 2008 study published in *Science* by Dorothy Merritt and Bob Walters. Walters and Merritt characterized large stacked legacy deposits behind milldams with a grass-dominated organic wetland layer below. Rather than what was described by Walters and Merritt, I hypothesized that 1) the thickness of legacy sediment deposits would vary depending on proximity to historic milldam locations, and that 2) buried organic soil layers would also vary in composition, reflecting a heterogeneous pre-settlement floodplain landscape.

While no day was the same, I would typically spend the morning conducting fieldwork in the surrounding rivers and the afternoon processing samples in the lab. Fieldwork began in early June with preliminary scouting to determine which reaches of the study streams would be suitable for the research objective. In the field, I sampled and measured sediment layers at exposed banks along two streams in neighboring watersheds. Banks were observed for any visible color or composition distinctions that identified layers of sediment. In particular, distinctions were made between legacy deposits, organic buried soil deposits, and sub-surface clay deposits. Samples were scraped from each identified layer using a trough and placed into Ziploc bags. Once samples were collected, they were brought back to the lab where I processed them to look at changes in the composition of sediments between sites. The processing of samples included testing the size of the grain particles, the amount of organic content, and the

chemical composition. Sediment analysis was critical in observing similarities or differences between the legacy sediment deposits and what were assumed more organic buried soil deposits below. I also worked in GIS to model floodplain depths and reconstruct milldam locations. I overlaid 1886 land use and property maps in GIS with GPS coordinates that corresponded with fieldwork sampling sites to assess the relationship between dam locations and sediment characteristics.

In addition to fieldwork and sediment analysis tools, I came away from my internship with a significantly stronger skillset. I took on the responsibilities of a project manager, which included delegating tasks to an assistant and keeping others up to speed on the project. I also (reluctantly) learned how to both ask for assistance and to trust others with my research. Because I was given a large degree of independence, I was pushed to experiment with innovative research methods and data analysis, including statistical tests and result interpretation.

My time spent at Stroud exceeded my expectations in the role I imagined playing as a member of their scientific community. All of the scientists I encountered were incredibly collaborative, providing ideas for my project and in return asking questions that constantly pushed me to think in new ways. The graduate-level treatment and responsibilities I had held me accountable for my research. At the same time, I was exposed to an array of freshwater topics via weekly brown-bag lunch seminars. The opportunity to work with a woman scientist was extremely beneficial and encouraged my interest in pursuing a career both activism and academia. During my final week, I presented my research on the spatial heterogeneity of buried soils and legacy sediments in the Christina River Basin at the Ecological Society of America centennial meeting. Speaking to an audience about my preliminary research helped to clarify the work I had done into one cohesive story and the ability to network with professionals from around the world served as an excellent way to push my project ideas further.

My internship experience directly aligns with my senior integrative project. I intend to conduct a yearlong honors thesis researching the longitudinal variation in thickness and composition of legacy sediments and buried organic soils in relation to colonial milldams. I am going to use the field data I collected this summer in addition to a few new sites along the Salmon River in Connecticut. I will take sediment samples from the Salmon River using the same methodology that I used at Stroud, as well as ground-penetrating radar and a longitudinal survey. In comparing the data I collect between Connecticut and Pennsylvania, I will be able to look at the role that geography plays in the deposition of legacy sediments behind milldams.

Growing concern over legacy pollution and sediment loading from rivers to sea has made the research I did this summer particularly pertinent. Debate has been raised as to the role legacy sediments have in the storing of pollutants such as nitrogen and phosphorus. The elemental analysis test I am currently running will show the percentage of these pollutants in each sediment layer. Additionally, the test will show the percentage of carbon to look at the potential for carbon sequestration along the floodplains. Due to my positive experience at Stroud and connection to my SIP, Melinda Daniels has agreed to serve as a thesis reader alongside Doug Thompson and will assist me in any way needed. I will be taking my research from this summer to the Geological Society of America annual meeting in November and the collaboration between Melinda, Doug Thompson, and myself will hopefully result in an eventual publication.

**Caitlin Persa**  
Environmental Studies and Botany majors  
**Star Wind Turbines LLC**

Star Wind Turbines LLC is a startup company based in East Dorset, Vermont that manufactures small wind turbines ranging from six to fifty kilowatts. These machines will be available for private and community scale ownership by fall of 2016. After several years of prototyping in New Jersey, the founders of the company started testing in Colorado. They moved to Vermont because of favorable renewable energy policies and incentives. Since then, they have been working on building a manufacturing plant, creating molds for composite work and keeping up with fickle renewable energy subsidies and programs. A large part of establishing a fledgling renewable energy company is having the legal stamina to withstand opposition of development and simultaneously compete with other companies (including solar PV) in the Public's eyes. Upfront risk and investment, means each development project requires ample amount of time for permitting, planning, obtaining and development. There is a lot of work to be done, even before they have anything to sell.

During my summer internship as Public Relations Researcher, I was given the task of building relationships with surrounding colleges, towns, and organizations on behalf of the company via scheduling informational presentations; researching marketing strategies for future reference; and compiling siting permits called Certificate of Public Good (CPG) applications. My biggest project during the internship was giving informational presentations to local town Planning Commissions. I was responsible for editing, printing and handing out copies of a presentation, which discussed what our company does, the available options to participate in purchasing a small wind turbine, and an overview of how the permitting process works. In addition, I kept track of contact information of the attendees (selectmen and residents) and answered questions after the meeting. Of course, seeing the reactions of people to the prospect of wind turbine development in their town was very interesting to me. I noted their opposition or enthusiasm and what types of questions they asked, both for the benefit of the company when giving future presentations and for my SIP research purposes. This was helpful for my honor's thesis of which I will be working on this year concerning perceptions of wind energy, NIMBYism and ethics of siting/ zoning.

Another project that I was involved with was the Certificate of Public Good (CPG) 248-J permitting application process for several wind sites. This packet of information includes projected impact from the turbines. Four main concerns with any wind project are: shadow flicker (shadows passing through windows and disrupting neighbors), noise impact (if the turbines will pass the acceptable level of noise threshold at the property line), visual impact (if the turbines will be seen from the neighbors' homes and if so to what extent) and environmental impact analyses (if the implantation of wind turbines and/or adjacent access roads, transmission lines, power sheds, will cause severe erosion, wildlife habitat fragmentation or otherwise negatively impact the existing ecosystem). These analyses, as well as logistical connectivity information is then sent to the Vermont Public Service Board and Department, Town and abutting neighbors. There is a 30-day period after the proposal is sent in which all copied members have the opportunity to request a hearing and present a valid reason why the project

would cause adverse impact; after this period has elapsed, no one can legally object to the project, and the proposal is scrutinized by the Public Service Board alone.

I was most involved with a site called Hedgehog Hill in Mount Holly, Vermont which was a SPEED Standard Offer bid winner (meaning the power generated from the site would receive a premium feed-in tariff for twenty years) of up to 100 kW nameplate. Star Wind Turbines planned to put up to four wind turbines on the fifteen acre site if possible. Through working on this project I learned how incredibly frustrating it is to work with all parties on approval of such a project. I was involved with multiple site visits to establish the extent the neighbors would be impacted. As this was the first site proposal the company did that was located in residential territory, it was a learning experience all around. After several failed attempts with balloons and cameras, we decided to invest in a quadcopter drone to hover exactly 148 feet above the ground and take a picture from neighbor A,B and C's perspectives of the drone, so I could later photoshop the pictures to include the relative size and location of the turbines to the best of my ability. A five men operation including walkie talkies, cameras, binoculars and a remote control expert is what it took to procure this very important information. This was merely the visual impact portion of the proposal! Although this sounds tedious and unnecessary, the accuracy of this information could potentially mean the reputation of the company and the life of the project. The remainder of the proposal was constructed together through VCGI (Vermont's GIS Interactive website in which property lines, endangered species, wildlife areas, etc.) as well as prototype testing data.

Overall, this internship offered me opportunities to use my versatile liberal arts education including writing, research, GIS work, field work, public speaking, photo editing/ visual arts, and communication skills. Most importantly, I was able to gain information and inspiration for my Honor's Thesis through working with the public to see what level of understanding was common. I learned through these interactions that very often, people don't understand what the regulations are in place to protect them from bad siting; in fact, most don't know the difference between a 1 MW project and a 100 kW project. It is understandable that the unknown generates fear and opposition. From the developer's perspective, regulations, kW size and proper siting is what they do every day; breaking their job down to the basics every time they meet a community seems tedious and unnecessary, but I learned it is so crucial for public acceptance and trust! There needs to be more patience and understanding on both sides of the relationship if we hope to see more distributive renewable energy generation and work towards a fossil fuel independent future.

The most important lesson I learned through this experience is that the wind energy industry is one of the hardest to have a long lasting presence in due to legal issues, public pushback, and high upfront costs. Despite this, the need for renewable, local, clean energy in the face of climate change will continue to draw entrepreneurs, idealists and governments to the table. This experience has introduced me to the possibility of environmental law, more specifically energy law and how critical it is for the future of renewable energy development.

**Olivia Rabbitt**  
Environmental Studies major, Economics minor  
**Asia Pacific Center for Regenerative Design, Honolulu, HI**

This summer I worked with the Asia Pacific Center for Regenerative Design, a small education based nonprofit in Honolulu, Hawai'i that runs Permaculture Design Courses and is involved with other permaculture, sustainable agriculture, food security and sustainable development projects. APCRD is closely linked with Permablitz Hawaii, a grassroots movement based on reciprocal action and community action to create backyard permaculture gardens, but also acts as a more formal entity and is beginning to move more into the policy sphere. Hunter and Matt, the core of APCRD and Permablitz Hawaii, have been Oahu's resident PDC instructors for the past five years. Additionally, both Hunter and Matt are involved in outside projects - Matt as the new Systems Sustainability Coordinator for University of Hawaii and Hunter as consultant for the Hawaii Alliance for Community Based Economic Development. Together, the duo utilizes APCRD, lovingly christened "ap-surdity," as a way to connect like-minded individuals, organizations, initiatives, and resources in the sustainable and alternative agriculture movement.

Rather than focusing only on courses or blitzes, APCRD acts as an umbrella organization to funnel capital, both human and financial, to the various associated projects. This is extraordinarily important since initiatives like Permablitz are completely independent from the financial market, and actually work to subvert the capitalist system through building community resilience. In a way APCRD acts as a buffer between capitalist structures and grassroots activism. This incredible mix of passions and projects greatly extends beyond the perceived scope of "sustainable agriculture" and truly shaped my internship to focus on the environmental, social, and economic aspects of local sustainable food and community action.

Due to the eclectic nature of APCRD's projects my range of responsibilities changed almost daily. Some days I would simply support my bosses during meetings and site visits to learn more about the projects we were involved in and the initiatives that we supported. Other days I would be responsible for media outreach, website management, event planning, grant writing, and data analysis. I was given a lot of autonomy in my projects and often just given a task with a few ideas on potential ways to tackle it, but ultimately able to decide what methods I thought were best. As a final gift to APCRD I redesigned the Permablitz HI website to include an interactive calendar, GIS map of past blitzes, and a structure that didn't look like something out of the late 90s.

Before flying out to O'ahu I really wasn't sure what to expect from my internship. I had quite a romantic vision of nonprofit work and thought we would spend most of our time on permaculture farms and doing field work. However, I quickly realized that my work would be focused on research and planning for initiatives that I might not necessarily be around to see come to fruition. However, I was able to meet my quota for quality dirt hours by volunteering on a politically active permaculture farm each week while still spending most of my internship hours glued to my laptop or cold calling media outlets. I definitely did not have adequate Excel, GIS, or general media strategy skills needed to tackle some of my projects independently, but APCRD was great about giving me time to play around with the projects and software or matching me with a friend who had the expertise to advise me on how to tackle a particular task.

I met with a friend who worked in marketing to help me develop the first ever APCRD media kit and marketing plan, worked on a few iterations of an anaerobic biodigester grant proposal, cold called advertisers, worked on getting university credit for the PDC course in the coming semesters, created countless fliers and event pages, as well as worked with GIS to map past Permacultures, and analyzed data. There were some weeks when both Hunter and Matt were overloaded with projects for one of their six other initiatives/jobs. As their first intern ever, I think they sometimes struggled with giving me an adequate workload to keep me busy during these times. However, there were other weeks where it seemed like we were all working nine hour days and then going home to continue working -- I remember one particularly demanding ten day stretch where all of our projects converged and no one slept. Surprisingly, I found that I don't mind this aspect of nonprofit work; the crunch times were challenging and many of my assignments had very fast turn arounds, but everyone was so passionate about the projects that it was more fulfilling than overwhelming. After these stretches, there were always days off on the beach or volunteering at a local farm to reflect, digest, and rest before the next wave of assignments. Many of my days didn't follow a normal nine to five schedule as neither of my bosses followed a normal nine to five schedule. Work was done when it was needed, convenient to complete, or in between meetings for other initiatives.

As a learning experience my internship was invaluable. I was able to see what working for a small nonprofit actually looks like -- from the daily grind of scheduling and software confusion to the more systemic view of utilizing all possible resources and organizations to strengthen initiatives in creative, community-oriented ways. Aside from the practical tools I learned this summer and the confidence I gained in my abilities, voice, and perspective, I was lucky enough to work with incredible people who were thinking globally, systemically, and sustainably while always connecting projects to their scaled up significance.

My senior project is currently being restructured. Rather naively I entertained some grandiose plans for the type of data I would be able to collect over a three month period regarding the economic and social structure of different permaculture initiatives from garden farms to intentional communities. Aside from this being completely culturally unrealistic and borderline rude, I quickly realized that permaculturists may not even completely identify as only using permaculture principles. Rather they may identify as organic or biodynamic farmers who use permaculture principles as social framework. Additionally, some of the farms I worked with placed their social initiatives as more important than their actual production yield. My internship taught me that doing a formal exploration of an intentionally informal social movement may be more difficult than originally anticipated, but also provided me with an array of organizations and initiatives that could provide examples in a social comparison or permaculture and agroecology models. As of right now, my project will focus on the interaction of economic and social goals within the permaculture and the agroecology movement.

**Emma Rotner**  
International Relations and Environmental Studies majors  
**Backus SABMiller, Lima and Pucallpa, Peru**

This summer, I worked for Backus, one of the largest beer and beverage companies in Peru and a branch of the larger beer company, SABMiller. Backus has 5 production plants that are located in different regions across Peru. At 4 of these 5 plants, there is a market for the organic waste that is created as a byproduct during beer production. Typically, farmers buy this byproduct to use it as fertilizer for their crops or as feed for their animals. However, at their plant in Pucallpa, Peru, located in the jungle region of Peru, this market does not exist. Subsequently, in 2009, Backus began turning this byproduct into compost that they could later use as an organic fertilizer to begin a 640-acre reforestation project, known as Ecoparque, in conjunction with a private reforestation company, Reforesta Peru.

Due to deforestation and land degradation from agriculture and cattle farming, the soil in the deforested parts of the jungle region of Peru has become very acidic and is not conducive to growing plants. Using the byproduct compost, Backus and Reforesta Peru have been able to restore the health of the soil in order to create a good environment for trees to grow. Then, using information from Brazil, who has been very successful with reforestation efforts, Backus developed a tree nursery composed of profitable species and trees that grow successfully in the climate of the jungle of Peru. After about 8 years, the trees will have grown tall enough in order for them to be sustainably harvested, allowing the company to make a profit off of these trees. Additionally, Backus has developed innovative technology that enables workers to plant up to 1,000 trees per day, per person, with very little physical exertion. This reforestation project is now serving as a way to reuse waste from beer production, a carbon sink, a biodiversity restoration project, a marketing tool for the company, an innovative way to make a profit, and as a teaching laboratory. Currently, over 900 people in the local area from universities, engineering schools, and the forestry sector have now been trained in proper forestry and agroforestry techniques by using the reforestation project as a teaching laboratory.

During the summer, I worked as an independent research analyst in order to determine what factors have made Backus's reforestation project, Ecoparque, so successful and how this model could be used to create other reforestation projects and sustainable development projects throughout Peru. I was also responsible for determining who the key stakeholders in reforestation and sustainable development projects were and the limitations that exist in Peru for replicating projects such as Ecoparque. My main responsibility was to interview key stakeholders, such as members of the national forestry service, heads of universities, engineers, members of the wood industry, workers at development banks, and native community members. I was responsible for creating questions for key stakeholders and conducting 2-hour interviews with them in Spanish. I then performed outside research regarding successful reforestation projects in other countries and compiled my research and interview data in preparation for a final presentation and a report for the company.

Throughout the summer, I was working very independently and subsequently my internship objectives were to ensure that I was self-motivating and diligent throughout the entire summer. I definitely was able to meet these objectives, as I was responsible for creating a large part of my

schedule and had to ensure that I would get my research done on time. Additionally, I learned how challenging it could be at times to work independently, especially in a foreign country and without a consistent daily routine. This taught me the importance of being extremely prepared for every situation. I also was able to practice my Spanish a great deal, which was a very important part of this internship for me. At times it was challenging, because accents and slang words are very different than what I was used to in school. However, I definitely feel as though my Spanish improved a considerable amount this summer.

Overall, this internship taught me a great deal about myself. Due to how independently I was working, I had to rely very heavily on my own skills and knowledge and did not have the safety net of someone else to fall back on. Adding this independence to living on my own in a foreign country and having to adapt to a new culture, a new transportation system, and a new language, made this an extremely challenging experience, but was also a very valuable learning experience. These experiences in conjunction with my internship provided me with an invaluable opportunity that I truly believe has helped me to grow and develop as a person. I was able to broaden my horizons and completely immerse myself within a new culture; and through challenging, but exciting experience, I was able to step outside of my comfort zone, learn a great deal about myself, and gather even more confidence in my everyday life.

The research and data that I collected this summer will greatly assist me to write an honor's thesis this year where I will examine the role that large corporations play within the environmental movement. I will be able to use a combination of my environmental studies major, my international relations major, and the experience that I had this summer in order to do an in depth analysis on how corporations are impacting the environmental and sustainable movement and whether corporate social responsibility policies are truly improving a company's environmental practices.

## **Marina Stuart**

Environmental Studies major, Literatures in English minor  
**Environmental Defense Fund, Washington, DC**

Environmental Defense Fund (EDF) was founded in 1967 and is an environmental not for profit that is committed to finding solutions to environmental problems. It often uses market-based approaches manage environmental issues while working with fishermen, indigenous groups, politicians, local governments, and large corporations. EDF is headquartered in New York City with regional offices all over the US and in the UK, China, and Mexico.

This summer I worked at EDF's national DC office in Dupont Circle. I was working on the communications team, which primarily dealt with writing EDF's quarterly newsletter *Solutions* and its annual report. My supervisor, Charlie Miller, is a senior writer and I assisted him throughout the summer. The main responsibilities of my internship were to gather potential story ideas for the senior writers; as well as create a database of future story ideas, quotes, pictures, and stats with two other communications interns, who were based in New York. I also did individual tasks including: attending development meetings in different departments, being present on conference calls, transcribing interviews, searching for specific quotes, copyediting, and taking notes at meetings. A typical day for me would be doing research for my project, coupled with doing individual tasks, and usually a meeting or conference call in the afternoon. One of the most informative parts of my internship was intern brown bag lunches that took place every week. All the interns in each US office would gather in conference rooms and have a giant videoconference while an expert in one office would give a presentation. One of these presentations was about successful communication and it boiled down to one point: tell a story an audience wants to listen to, it has to be intriguing, have a plot, and inspire the audience. I thought this was great advice and his presentation really got me thinking about how I could develop my communications strategies for my SIP, which was one of the goals I had for my internship.

My overall goals for this summer were to learn how environmental groups communicate with the general public and how I could apply those strategies to my own writing and SIP. I did actually learn a lot about communicating and how audiences need to be targeted certain way for certain topics. One of my other goals was to be able to write something for EDF. That goal was not met. During my last week at EDF I was assigned to write a piece about a court case that we had won, but it was pulled a day after I was assigned it. Instead I was reassigned to interview and write a profile about one of our members, however after several unanswered emails and fruitless attempts to contact her through twitter I was unable to reach the member before I finished my internship. This experience showed that while I didn't accomplish something that was really important to me I still needed to make the best of my experience. Looking back now I also believe I needed to speak up earlier about wanted to write more during the internship but was shy at the time. I hope to not make this mistake again and in future experiences will be more vocal with my supervisor about what I want to take away from the job or internship.

Overall I think my internship was a great learning experience, I enjoyed learning about how an environmental non-profit works, what an office environment is like, meeting new people, and

bonding and hanging out with my fellow interns. The other aspect that I really enjoyed was learning how different each environmental group is; EDF, in terms of other environmental groups is politically non-partisan and is more conservative than other groups of its size and with similar goals. I thought this was a great way to challenge myself to think of environmental solutions differently and also challenge the solutions that EDF was trying to implement. This came up in a presentation that was done to the interns about EDF's stance on fracking. EDF believes that fracking should be allowed as long as all environmental regulations are met and methane leaks are prevented. The interns challenged that idea in our question and answer session. I think it is important to use different strategies to preserve the environment and I realized that maybe working with large "evil" corporations might work, but not always!

In terms of my SIP, my ideas have changed since my internship and getting back to school. While at EDF I did a lot of research on renewable energy and the federal subsidies and regulations that go along with them. I decided I really wanted to learn more about these and the specific language they use. I will work with professor Michelle Neely and study communication theory and create communications strategies that will be successful in educating people about renewable energy, specifically solar panels and the tax credit system in place. I will then take these strategies and apply them to some specific government laws and regulations about solar panels credits. I will study whether or not the specific language used is easy to understand and find out if that has any impact on if residents put solar panels on their houses. I have several contacts in Connecticut and California I can talk to about how the regulation language influenced their solar panel implementation. I also hope to do a comparison between federal, state, and local governments' language and maybe even a comparison between two local towns to see if successful communication creates successful solar panel implementation.

**Jessica Wright**  
Biological Sciences major  
**The Massachusetts Sierra Club, Boston, MA**

My summer with the Massachusetts Chapter of the Sierra Club was anything but ordinary. From the countless opportunities I was presented with to the truly inspirational people I met, there was never a dull moment during the summer of 2015. I was one of five interns, all with diverse backgrounds and interests, and we worked great as a team. We were given unique experiences, being assigned to different projects from day one. When I arrived on my first day I was thrown right into the rough and tumble of the natural gas leaks' world, which kept me on my toes until the end of the summer. This project, along with all the other projects interns worked on, enabled me to do research, lobby at the State House, rally with other national and Massachusetts-based environmental organizations, chat with Sierra Club members throughout the state, and explore the city of Boston. I met countless people in my fields of interest and have made connections that will last me throughout my professional career.

A typical day as a MA Sierra Club intern is hard to describe because we honestly were faced with something new every day. Never did I feel like a child, constantly being watched and monitored. Instead, I was left to my own devices to work on projects and manage my own time. Whenever I needed help, everyone in the office was more than willing to lend a hand but I still felt like an adult worker rather than a student intern, which made a world of difference. Because I was treated like an adult, in addition to learning about environmental activism, I learned time management, networking, phone skills, and most importantly how to work as a team member. One day I would be assigned a list of Sierra Club members to call and rally to act and another I would attend a public hearing at the State House regarding important environmental legislation. Because of this diversity of activity, I was able to experience the entire spectrum of environmental activism and further understand the role of grassroots action, public education, and political lobbying in the fight for the environment.

The opportunities from my summer with the MA Sierra Club will help me with my SIP, which will explore environmental activism in relation to animal welfare activism, because I now have a hands-on understanding of environmental activism with one of the most successful environmental activist organizations in the country. The Sierra Club takes action on many environmental issues but they resist using extreme tactics. Instead they focus on peaceful protests, rallying Sierra Club members and volunteers, and lobbying politicians and educating them on important environmental legislation. Even though waiting for state governments to make policy change or relying on volunteers and members you have never met may seem like an unlikely way to make important change, the Sierra Club's record speaks for itself. Their success record is a testament to the power of ordinary well-informed citizens who are given a platform to fight for what they believe in.

My specific project, in working with the natural gas leaks team, consisted of many responsibilities. One of the most time consuming and challenging projects I worked on was in partnership with another local non-profit in Cambridge, MA called HEET. HEET worked to educate businesses on how to be more successful in conserving energy usage. With HEET, I worked to create interactive Google maps that would enable the public to easily access the

locations of natural gas leaks throughout the state. The location of gas leaks were made public by the natural gas companies, however, the locations was buried deep within three hundred page documents that no one could easily find. Team members at HEET and myself worked to transfer this crucial information into easy to access public information in an effort to further educate and rally people to action.

The over-arching goal of the gas leaks team was to pass two pieces of legislation through the Joint Committee on Telecommunications, Utilities, and Energy (T.U.E.). The two pieces of legislation required utility companies to pay for the unaccounted for gas lost to leaks rather than pass the financial burden onto ratepayers. In addition to a shift in financial responsibility, the legislation would require utility companies to be present whenever roads are opened up for construction and check for leaky pipes and repair them on the spot. This would discourage excess road construction and further inconvenience. To encourage the passing of these pieces of legislation, I reached out to Sierra Club MA members and talked with them over the phone about the leaky pipes and encouraged them to meet with their representative who sits on the T.U.E. committee and encourage them to vote yes. This tactic was not quite as successful as we had hoped because few people were willing to drive into the city to meet with their representative. When this plan failed, we then started educating city councils and town governments on the gas leaks issue and encouraged them to pass resolutions in support of the two pieces of legislation. This tactic was more successful and by the end of my internship we had seven municipalities pass supportive resolution. This is an example of how adaptive management was a key part of my internship experience. Not only was it worthwhile to discover which tactics were effective, it was helpful to know what tactics did not work so well.

I cannot speak to my experience with the MA Sierra Club without mentioning the amazing people with whom I worked. The MA Sierra Club is driven by two incredible women, whose determination and passion are nothing short of inspirational. The expansive network of volunteers works tirelessly to fight for change in MA and is a powerful force whose successes speak for themselves. Everyone at the MA Sierra Club was more than willing to share their experiences with all of the interns and to advise us on how to be successful in fighting for the environment. Learning from others experiences is beneficial but learning from your own experiences is what's incredible. The networks of people who create the backbone of the MA Sierra Club were always helping us to create our own experiences and memories. From attending hearings at the State House to office bonding trips to hot spots around the city, I like to think I have made not only professional connections but also personal friendships. I look forward to staying in touch with everyone I have met this summer and continuing to work with the Sierra Club in the future.