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Summer 2012

*Energy Conservation and Building Efficiency at the University of the South*

Through funding provided by the DuPont Foundation, I spent eight weeks working for Marvin Pate and the Sewanee Office of Sustainability. In the most general sense, the Office of Sustainability consists of faculty and staff working to decrease Sewanee's environmental impact and create a broader student awareness and interest in environmental stewardship. With close ties to the Environmental Studies Program, the Office of Sustainability works interdepartmentally to write and implement carbon emission reducing policy. Additionally, the Office of Sustainability employs several post-baccalaureate fellows whose sole responsibility is to act as a liaison to student groups, fostering student activism and involvement. While Marvin serves as the Director of Sustainability, the Office consists of Dr. Jon Evans (the Assistant Provost for Sustainability), Daniel Church (the Post Baccalaureate Fellow), and Rachel Petropoulos, who coordinates and assists with logistics and marketing for events hosted by the Office of Sustainability and the Sewanee Environmental Institute.

The central focus of my particular internship was energy conservation. Working with three other interns, we began our internship with a series of readings designed to familiarize us with the most current literature on environmental concerns and climate science. After reading Plan B 4.0 and No Impact Man, we had a solid base in the broader themes of living sustainably as an individual as well as of the broad, global concerns associated with a lack of environmental stewardship. To supplement this knowledge, we read scientific literature focused on familiarizing us with the terminology and processes surrounding the mechanical engineering which underlie building efficiency best practices. With this knowledge in hand, we all set about on individual projects, in addition to our group tasks of analyzing the efficiency of building usage in Sewanee. For the duration of the summer I focused on two particular tasks, the first

monitoring and trouble shooting the implementation of the newly-passed HVAC policy, and the second being the writing of various chapters of the Sustainability Master Plan. Additionally, I spent much time working on programming for freshman orientation that would familiarize them with the various organizations encompassed by the Office of Sustainability as well as to inform them of ways to use energy efficiently in their dorms.

The first task, the implementation of the new HVAC policy, was an incredible lesson in navigating the politics of change of any sort, particularly in an academic environment. The new HVAC policy requires buildings to have air conditioning set no lower than 76 degrees in the summer months, a temperature recommended and used by various leading environmental institutions including AASHE. Though the policy was passed in April 2012, implementation began with the internship, with interns working with physical plant services to develop a schedule for buildings to be moved to the higher temperature. Given the unusual heat of this summer, we experienced many different levels of complaints from various faculty members. When a complaint came in, it was my job to investigate the validity of the complaint and to adjust the temperature accordingly if needed. I used HOBO data loggers to gauge the temperature in the space in question, monitoring the room for a day or two and then reading the logger and creating a graphical representation of the data to be used to explain either why or why not the request for a lower temperature was granted or denied. Additionally, if the logger did in fact read a high temperature than that recorded by the thermostat in the room, adjustments were made, as were adjustments for improper airflow, a problem, which often appears to be an issue of actual temperature. Along these same lines, I also worked with Residential Life on scheduling summer conferences. After looking at the conference schedule, I noticed some severe discrepancies with several dorms being used for sporadic periods of time and disproportional number of students to size. To prevent this from happening in future years, I create a spreadsheet

showed the number of occupants in any given dorm on any given day of the summer highlighting inefficiencies, additionally, I overlaid this graph with a graph of energy usage during unoccupied times further demonstrating places where efficiency could be gained.

My second task of the internship program was my most independent task and that involved researching and writing chapters of the sustainability master plan. The first chapter I endeavored to write was a chapter on purchasing policies for electronics. Using EPEAT standards as my baseline I went through various pieces of technology used by most universities and compiled information about which were the most up to EPEAT standards, and which were within out budget. I created a draft of a plan, which would require that all new electronics purchased by the university would meet or exceed EPEAT gold standards and would also phase out current technology that does not meet the standards. This policy will be reviewed by Dr. Jon Evans, presented to the executive staff as well as to the Sustainability Steering Committee, and will hopefully be passed for implementation in the coming year. Additionally, I began work on the chapter of the sustainability master plan relating to finances, a particular interest of mine. This largely involved research into various revolving funds, and endowment management plans, one of which centered on the idea of directing energy-related savings into a micro loan program for community members.

The highlight of this internship was working with other students and learning the ins and outs of the mechanics behind building efficiency and sustainability. Seeing one's work culminate into actual, measurable savings is a rewarding experience, particularly when those savings will be extended for years to come. As a perfectionist and a bit of a workaholic, I did not relish the flexibility of the internship, as while accountability and independence must be developed, in an atmosphere where collaboration is necessary it is best that all individuals be held accountable in a concrete manner, something this internship did not necessarily provide. Though, even this had

its upside as many professional atmospheres will allow for this type of scheduling and this was a lesson in communication and motivation within a team.

In terms of career goals, this particular internship was incredibly informative. I went into the summer thinking with very different ideas of what the internship was going to be, which informed my initial interest in the program. In years past this internship has been run mainly as a research seminar with each intern taking on an individual topic and research applicability of that concept to life at Sewanee. This year, though so incredibly different, was also incredibly rewarding for me. Though I never would have assumed I would be one to take interest crunching numbers, the efficiency associated with working with concrete tangible facts was rewarding. Though performing data analysis did at times get tedious, I found that I definitely enjoyed having strong data to draw on for the development of future policy and using that data to project future possibilities was also a rewarding experience as it allowed me to circumnavigate much of the trial and error associate with writing a policy. When one has the ability to analyze and extrapolate from data, the work of developing and implementing policy is essentially all but done. As far as an actual career is concerned, I do think this internship was incredibly helpful in helping my flesh out exactly where my interest lie. I do know that environmental issues remain at the heart of my interests, however, I would prefer a career that focused heavily on public policy, and the social welfare aspects of environmental regulation. While I learned a lot from the metrics side of the fence, this type of work is too static for me to feel fulfilled by a career in it, particularly in building efficiency. In the future, I will pursue internship opportunities focused more on people and politics than on numerical metrics.