AC 2009-1463: THE POTENTIAL SOCIAL, ENVIRONMENTAL, AND PERSONAL BENEFITS OF AN ENVIRONMENTALLY FOCUSED STUDENT ORGANIZATION

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The Potential Social, Environmental, and Personal Benefits of an Environmentally Focused Student Organization

As concerns about environmental issues increase across college campuses, a need for a collective of students interested in promoting environmentally conscious practice has developed. In response to this need, Kettering University formed the Kettering Industrial Ecology Team, KIET, which is a collection of students, faculty and staff who are interested in educating students in making environmentally responsible decisions. KIET received National Science Foundation CCLI Phase 1 Grant (DUE#051132) to design and teach the Environmentally Conscious Design and Manufacturing class and start the Greener Engineering Organization (GEO), a student club, in Fall 2007. Since its formation, GEO has improved environmental awareness, stimulated environmental action, and enhanced the image of Kettering as an environmentally conscious university. They have improved the local and university community by giving its members service learning, leadership, and networking opportunities. Furthermore, they initiated paper and beverage container recycling programs, and sponsored 13 environmentally conscious presentations or events. The impact of these actions on the environmental mindset of the Kettering community has been assessed.

**Education and Networking**

GEO has used speakers and events to prompt environmental action, improve the university and give its members service learning opportunities. In total, GEO has sponsored 13 speakers including Gabe Wing, Design for the Environment Manager for Herman Miller, Partap C. Lall, Lake Wide Management Plan Environmental Engineer for the Environmental Protection Agency, Dr. Robert Lehmann, from the Michigan Department of Environmental Quality, Gerald Greer, Environmental Engineer for the Global Engine Manufacturing Alliance, David Rinard, Director of Corporate Environmental Performance for Steelcase, Keith Grass, CEO of the David J. Joseph Company, a scrap metal recycling company, and Rachel Charron, Environmental Engineer at GM Powertrain Flint Engine South. All speakers are asked to stay and speak with GEO students so that students can ask questions and explore career paths involving the environment.

In addition, GEO hosted a Kettering University section of Focus the Nation, a nation-wide simultaneous event to spread environmental awareness. This event consisted of four talks, focused around energy and the environment, given throughout the day on campus. GEO also hosted an outreach event for 200 elementary school students for Focus the Nation. The students were broken into groups where they learned about fuel cells and interacted with miniature fuel cell cars. They also played a Jeopardy game to see what choices they can make around their house to become more environmentally friendly. They learned about recycling and competed in a recycling race. The assessment of this activity from the principal of the school involved was that, “This event was eye
opening to have them visit Kettering University and how they can get involved in sustainability."

GEO participated in Green Week, which hosted three speakers and various companies from across Michigan that participate in sustainability. In addition, graduate schools that offer degrees in sustainability where on site to promote their programs.

To ensure that students interested in sustainability are taking classes in that area, GEO offers a luncheon where faculty members present their class on sustainability. This helps advertise the classes to the student body. This has doubled enrollment in KIET’s Environmentally Conscious Design and Manufacturing course. Furthermore, to promote the steps that the university is taking to be more sustainable, the Physical Plant director updates the group once a year on practices implemented.

**Service through Recycling**

GEO’s recycling program began in January 2007 with small recycling bins purchased with KIET grant money in computer labs and classrooms. During the weekly meetings, GEO members emptied the bins and took bags of paper to a central, outdoor location, and then to a recycling facility. As GEO membership increased, it began to expand the number of classroom and lab recycling bins on campus. The next progression in the recycling program was to get a large bin that would be directly emptied by a recycling company for Kettering University’s print shop. This project had a significant impact on Kettering’s environmental footprint because of the large magnitude of paper being recycled. In response to the high demand for recycling facilities, Kettering University instituted a voluntary paper recycling drop-off point, which Facilities now manages. In spring 2008, GEO received funds to purchase 200 desk side recycling bins for faculty and staff and distributed them in July 2008. Presently GEO is responsible for collection of all paper recycling in the student common areas but has drop off locations that are maintained by the university.

In April of 2008 GEO received a grant from the National Recycling Coalition and the Coca-Cola Company to purchase beverage container recycling bins. Thirteen bins were placed in July 2008. A staff member maintains the bins and tracks the numbers of cans and bottles being recycled in exchange for Michigan’s 10 cent bottle refund. The number of cans that were recycled are recorded for the grant, but due to the 10 cent refund, many of the cans were stolen. Therefore, GEO placed a sign-up sheet on all of the bins so that if people took the cans they could write down how many they took. Approximately 180 cans are recorded and collected month.

**Community Service**

Protecting the environment is not GEO’s only goal. It is also involved in other community service events and organizations. The majority of community service at Kettering is done by the minority of students, so GEO can greatly assist other community service organizations by lending its resources and
members. GEO has partnered with Habitat for Humanity, the Genesee County Humane Society, the Flint Children’s Museum and the Crim Festival of Races. Kettering University is sponsoring programming for the month of April 2009 at the Flint Children’s Museum and has asked GEO to develop environmentally-focused programming for the entire month. GEO also planted and maintains several flower beds to beautify the campus. Kettering University has established a Civic Engagement Center to help Kettering’s community service organizations collaborate and share resources. GEO has already worked with realService, a Kettering community service organization, for several of the above events and looks forward to further collaboration in the future.

**Assessment of Activities**

The obvious benefactor of GEO has been the environment. The library estimates that it fills its four 50 gallon dumpsters every four to six weeks. The other recycling location on campus has four 48” x 40” x 36” Gaylord bins that are emptied once to twice a month. Annually, this recycles about 100 cubic yards of paper. The beverage container recycling program has received 1266 containers since it began. The actual number is greater due to people not recording when they took cans out of the receptacles. Kettering University also benefits from GEO’s presence. GEO has provided Kettering students with a more dynamic learning environment with speakers, events and volunteer opportunities. One student, who is not a GEO member, said, “David Rinard’s presentation about planning to recycle your products before you build them - that was really interesting and made me consider possible applications of green thinking to my engineering job.”

To ascertain the impact of GEO on the environmental mindset of the Kettering University community, an anonymous survey of the campus was conducted using the on-line learning tool, Blackboard. In the survey students, faculty and staff where asked, “Have you used any of the recycling bins on campus?” Approximately 90% of the respondents answered yes. They were then asked a follow-up question: “If seeing students in GEO working with recycling bins or on other projects changed your perception of the environment or motivated you to take environmentally conscious action please explain.” One respondent said, “I do feel more obligated to help put forth extra effort in taking care of the environment because I see that my peers are taking care of the environment and it helps beautify the campus.” The survey then asked, “Have you attended any environmentally focused speakers or events sponsored by GEO?” Only 17% answered yes. Those who answered yes where asked: “Please explain if and how the speaker or event changed your perception of the environment or motivated you to take environmentally conscious action.” Responses included, “Speakers have helped me understand the complexity of environmental issues,” “[I] enjoyed seeing how industry is cost-effectively responding to environmental concerns,” “I attended the information session about green classes on campus, this really inspired me to take the classes,” and “In fact, I now recycle because of my involvement with this program.”
Conclusions

The local community has received valuable community service hours and more environmentally conscious citizens and graduates from Kettering. Another symbiotic effect of GEO’s recycling program, events and volunteering is the service learning of its members. At the lowest level of involvement, attending meetings and maintaining a recycling bin, all members are practicing punctuality, handling responsibilities, building their resumes and gaining an appreciation for the role of sustainability. GEO leadership and event organizers are furthermore gaining invaluable leadership, communication, and networking opportunities. A GEO officer stated that, “[T]he added responsibilities of an officer position helped me refine my time management skills.”

Through experience and the above assessment conducted, GEO leadership has learned valuable lessons. For example, GEO had placed paper recycling bins in the freshman dorms during move out, thinking that students would have lots of paper waste. When GEO members went to collect the bins, they were mostly full of trash. Since then, GEO has not placed bins in the dorms. Another lesson learned by the organization is that the majority of leadership and work is provided by a minority of students. GEO’s membership typically is 10 members, with two or three of the members performing all leadership responsibilities. GEO now utilizes its more active members to their fullest potential, while giving less interested member specific tasks. People are far more likely to contribute if they are given a specific assignment rather than general leadership. Involvement in GEO events by non-GEO was at first minimal, but as professors offered extra credit for attending a GEO event, attendance increased. This caused students to realize that one can practice sustainability without being a “tree-hugger.” Another lesson learned is that recycling has to be convenient to the students or they will not participate, so GEO strives to place its recycling bins in the most prominent locations. Through the above survey, GEO leadership learned that they need to increase their visibility on campus. In response to the question, “If seeing students in GEO working with recycling bins or on other projects changed your perception of the environment or motivated you to take environmentally conscious action please explain,” there were six of 31 responses stated that they respondent had not seen GEO students working on the campus.

An environmentally-focused student group like GEO can have an impact beyond just helping the environment. The local community can benefit from outreach and community service. The university gains a varied learning experience for its students and a greener image. Members of such groups are able to practice responsibility, leadership and communication, which are the foundation of any business professional.