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Carnegie Mellon University
Pittsburgh, PA
Spring 2005, Energy

BACKGROUND

Campus Profile

Carnegie Mellon University (CMU) is a four-year, private research university with 10,000 graduate and undergraduate students. The university specializes in computer science, robotics, engineering, business, public policy, and fine arts. About 1,300 faculty members and researchers are employed by Carnegie Mellon. CMU is one of the most technologically advanced universities in the country and has, in the past decade, also become known as an innovative "green" university. Greening efforts have been occurring academically as well as in the facilities. An academic initiative called "Greening of the Undergraduate Curriculum" focuses on interdisciplinary classes with environmental focus at CMU. The architecture program here on campus is known as one of the best in the country for green building. We are fortunate to have two LEED™ (Leadership in Energy and Environmental Design) certified dormitories on campus and a workplace-laboratory called the Intelligent Workplace, which houses technology-driven research demonstrations in heating, ventilation and air conditioning (HVAC), enclosure, and interior and telecommunications components. CMU also has a green practices committee, a recycling program, and a new green roof, but we rely on a coal-burning power plant for energy on campus.

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GOALS AND ACCOMPLISHMENTS

Goals

The Ohio River Life Boat Project has two main goals. The first is to create a sustainable houseboat suitable for summer living accommodations; to supply its own energy; to care for its own waste, grey water, and humanure; to supply a small amount of fresh vegetables through a garden, and to be capable of hosting small gatherings. The second goal is to invite people on board to discuss resource use plus clean energy and other topics related to global warming, with an emphasis on topics specific to the Ohio River, its past, present, and future. The Life Boat Project is a two-and-a-half-year project. This year (from September to June) the focus has mostly been on research, grant writing to support this initiative, and development and presentation of a large educational exhibit on campus.

Originally, we had set three short-term goals:

- Production and touring of an educational exhibition visiting 10 towns and cities along the Ohio River,
- Five "Humanities-in-Residence" opportunities to share the project with groups of K-12 students,
- Successful testing of all systems (energy, waste management, and navigation).

After the design-build phase of this project, which will conclude in late September, the next two years can be broken down into phases based on different goals for each phase. The following seven months: October through April will be spent preparing for the second phase of the project: the actual journey and public participation. Toward that goal we will do the following:

- Research and write for grants,
- Contact community and industry groups along the river to arrange for the dinner discussions,
- Acquire additional boat components that we were are unable to implement in the summer of 2005,
- Manage publicity for the boat, both the trip and the design of the boat through green architecture and design magazines, plus the local press,
- Learn more about the history and navigation of the Ohio River,
- Plan trips.

The trip will take place between May and September of 2006. Our goal for this phase, as stated in the original grant proposal, is to meet with 1,200 people and to have them experience the project, primarily by having dinner on the boat so we can all engage in a river dialogue. The rotating crew of one other person and the coordinator will direct the boat down the river. They will document the experience with video, audio, still images, and writing. From September to December of 2006, the coordinator will edit the extensive documentation from this project and will create both a documentary and a performance with those conversations, oral histories, images, and video. This documentation and performance are ways to share the project with an even larger audience and to bring a greater awareness of the connection of pollution to energy and resource use, as well as communities to their water.

Accomplishments

The first accomplishment was the production of an exhibit educating people and announcing the upcoming project. This exhibition, part of the Master's of Fine Arts Thesis exhibition, filled a space that was more than 2,000 square feet. More than 1,100 people were able to see the exhibit. The audience was largely from the CMU community, with other people coming from the Pittsburgh area and beyond. The exhibit was covered, along with the work of peers in an article in the local newspaper, the *Pittsburgh Tribune*. Some initial river stories were recorded through a computer interface in the exhibit. More than 75 people drank filtered Ohio River water, experiencing that resource in a very direct way. Although, as coordinator, I am interested in sharing the exhibit again in another town or city along the Ohio River before the actual trip, I decided that the goal of a touring exhibition would take my focus away from the overall goal of getting the boat ready to host river discussions. This goal shifted somewhat from my projection, as stated in the NWF grant proposal, so I could more fully support the long-term or overall goals of the project.

The second short-term goal was five "Humanities in Residence" opportunities to lecture about the project. This lecture series is a new project of the state of Pennsylvania, and I am still very interested in participating and am looking for other opportunities. For example, I presented the project to a small, continuing education class at Carnegie Mellon in mid-February.

The third short-term goal is the phase I am moving into right now with the project. As originally projected, this phase would be completed by now, but that prospect was unrealistic, given the amount of research and presentation needed to be done this spring. I had projected that the built environment of the boat would be part of that exhibition. I made an offer on the pontoon boat on June 12 and am awaiting the Marina's counter offer. My collaborator for the design-build phase of this project, Travis Anderson, and I will begin to take apart the boat in late June in order to outfit it with new, lightweight, and sustainable materials. We would like to use as many preexisting materials as possible, but the floor of the boat has some dry rot. In July, we will make the final design decisions on major components of the boat - kitchen, toilet, canopy, table, and garden – and will begin to build those systems. We will work with mechanical engineers to determine the optimal solar powering system and installment. Testing for this equipment will take place in August and September. This third goal should be complete by the end of September.

Challenges and Responses

So far this project has been met with overwhelming support and encouragement. The main obstacles have to do with learning how to structure and manage multiple roles (design, public relations, outreach and education, research and grants writing) simultaneously for the project. One continuing challenge the project faces is getting more funding. I have been very fortunate thus far with grants totaling $12,000, but this project could easily use $75,000, by the time it is finished. I aspire to hire assistants in research and marketing, but so far I have only enough to fund the purchase and retrofitting of the boat, plus a small salary for me for the next several months. One thing I would change is to put less energy into the explanatory exhibition. Shifting more of that labor and finances directly into the boat project would have been more efficient.

ENGAGEMENT AND SUPPORT

Leaders and Supporters

Although I have not had the structure of classroom support for this project, I have been fortunate enough to build a sturdy support network that I anticipate will grow. My graduate advisors, Bob Bingham, associate professor of art; Michelle Illuminato, visiting professor of art; Laurie Palmer, associate professor of art, University of Chicago; Shannon McMullen, PhD candidate, University of California, San Diego; and Joel Tarr, Richard S. Caliguiri university professor of history and policy, Carnegie Mellon. Additionally, I have been awarded a fellowship at the STUDIO for Creative Inquiry at Carnegie Mellon where I will be able to access many of the resources that the university has to offer, in addition to an official home for the project.

Four collaborators, who are among my circle of friends, have helped the project in various stages. Jen Kramer contributed hundreds of hours of her labor with the exhibition, both the to-scale model of the boat and the extensive sound editing. John Oduroe and Alexandra Woolsey-Puffer assisted me with their design skills on the proposal and with the invitation to participate, respectively. Travis Anderson is my collaborator for this next part of project, the design-build phase. Travis is a young contractor applying to graduate school programs to support his further

study of sustainable design and building. He will be able to use this project as a portfolio piece.

Nancy Klancher, director of the graduate programs office, has been a wonderful resource during my tenure at Carnegie Mellon. She assisted me with the grant I received from Ford Motor Company to support this project. A new local business, Artemis, which specializes in sustainable building materials, has offered to help with this next phase.

Funding and Resources
The project costs to date have been a little more than $1,900, but purchasing the boat and associated mooring and registration costs will bring that total to $5,000 in the next couple of weeks. The total costs for the project including producing a documentary and performance will be between $60,000 and $75,000. I have raised $12,000 thus far. Obviously, this is a big hurdle, but the confidence expressed by the initial funders – NWF's Campus Ecology Fellowship Program, Steinbrenner Institute for Environmental Education and Research, and the Ford Motor Company Graduate Research Grant - will encourage future large and small contributions.

Community Outreach and Education
The major outreach initiative has been the explanatory exhibit at the Miller Gallery. One-fifth of the exhibit, which was called "Too Far Gone," was dedicated to the Ohio River Life Boat Project. This exhibit included a to-scale model of the boat that visitors could enter. Inside, visitors could listen to edited interviews with past and present residents of the Ohio River Valley talking about their memories or experiences along the river. There was also a map of the Ohio River with a collage of information associated with the project. And a place to record stories about your own Ohio River adventures or memories, along with filtered Ohio River water to drink. The response to the exhibit was very positive with a lot of questions from undergrads and a number of people who shared their stories. I hope to show elements from this exhibit in the future to generate more excitement and anticipation for the project, as well as an awareness about the environmental issues that face the Ohio River and water resources in this country.

Climate Change
This project directly addresses global climate change in terms of how the Life Boat is choosing to have the relationship with the river be one of floating on it, and drinking from it, *not* emptying our waste or polluting it with gasoline, oil, or human excrement. This act of sustainable boating is symbolic rather than a measurable usage change for the river. However, by bringing our choices into the public sphere through this project, I hope to influence the way other people make choices about the river. My intention with this boat is to be an inspiration to others to turn to sustainable choices both on the river and in their homes along the river.

National Wildlife Federation's Campus Ecology® Program
At this time, I cannot measure the extent that the NWF Campus Ecology Program helped with the success of this project. As the first funders of the project, NWF made it possible to move ahead and achieve some early goals. I envision that connections made at the NWF annual meeting may play the most important role. I have just begun to use the resources that NWF has to offer, and I look forward to continuing to benefit, especially from the name recognition of the organization.

CLOSING COMMENT

I encourage any students who have freedom in their curriculum to pursue the project of their choice and to follow three pieces of advice with any project:

- Work with collaborators whom you trust and with whom you have good communication,
- Have a support network: let someone who is in a position of power at your school be an advisor and advocate for you and your project,
- Don't be afraid of your mistakes or of the curveballs the project throws at you. This are is where the adventure and learning takes place.