



## STUDENT SUSTAINABILITY COMMITTEE

### Semesterly Report

*Thank you for your commitment to green initiatives at the University of Illinois. One of the ongoing requirements listed in the terms of the funding agreement for your project is the submission of semesterly reports with key information about your project. In addition to this form, please provide additional financial documentation and/or progress photos if available.*

*Please be as accurate as possible in describing the project (including possible setbacks or challenges in meeting the initial goals of the project). Not fully meeting your project's goals will not disqualify you from making future funding requests as long as your reports are as complete and accurate as possible. If you have any questions, please contact Micah Kenfield, Program Advisor for the Student Sustainability Committee, at [kenfield@illinois.edu](mailto:kenfield@illinois.edu).*

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**Project Name:** Ilini Gadget Garage: Education through Electronic Product Life Extension

**Date of Report Submission:** 5/20/2016

**Project Purpose:**

ISTC proposed to launch a center where UI students and staff could bring their personal electronic devices for assistance with assessment and repair. We call this center the Ilini Gadget Garage (hereafter referred to as "Gadget Garage" or "Garage"). Using the same "collaborative repair" model employed at the campus bike shop and MakerSpace Urbana (<http://makerspaceurbana.org/projects/computer-help-desk/>), clients with devices in need of repair/ troubleshooting work together with Gadget Garage student staff and volunteers to perform the necessary device assessment and maintenance activities. Depending upon the situation, activities might range from guidance on how to make your computer/device run faster to actual repair and replacement of components.

Desired outcomes for students, staff, and the community include:

1. Hands on experiences for UI students, not only in terms of performing repairs, but also in process documentation and fostering sustainable behavior on a larger scale through the iFixit Technical Writing Project; marketing and business operations; lessons in industrial design for repair and recyclability; and in environmental education and communication.
2. Increased awareness of electronics laws and recycling options.
3. Increased awareness of sustainability issues surrounding electronic products throughout their lifecycles.
4. Decreased misconceptions regarding the disposability of devices and prohibitive complexity of electronics repair and maintenance.
5. Contribution to the overall efforts to make ours a more sustainable campus with a reduced carbon footprint.

**Detailed Accounting of Expenditures to Date:**

A copy of the most recent account statement is attached. To date, \$37,931.07 of the grant money have been spent. Since the last semester report, two HP Spectre Pro X360 convertible laptops/tablets have been received and paid for; these were acquired for use in the Garage (INHS Storage Building #3, hereafter called SB3) and at pop-up repair clinics. The majority of expenditures during the Spring 2016 were for personnel costs, utilities, and contractual services for Building Service Workers to clean, tend to trash, etc.

Expenditures that will be made in the near future, besides continued personnel costs for graduate student Madeleine Hall, include work on new estimates for renovations for ADA compliance for SB3, a tablecloth and/or banner printed with the Illini Gadget Garage identifying mark for use at pop-up repair clinics, a sponsor acknowledgement poster for SB3, and equipment (e.g. a top loading scale for more accurate tracking of device weights).

**Project Progress to Date:**

Since the last semesterly report, a new graduate student research assistant, Madeleine Hall, has been brought on board and taken the lead on establishing relationships critical for our launching “pop-up clinics” in spaces around campus to work around the issues of ADA compliance faced at the Gadget Garage’s permanent location, SB3. Madleine has worked with residence hall libraries to coordinate regular pop-up clinics in the latter part of the Spring 2016 semester. A total of 6 pop-up clinics were held at 2 residence hall libraries: Pennsylvania Resident Hall (PAR) and Allen Hall. At PAR, five people came up to our table and discussed the role of the Gadget Garage. At Allen, 11 people came up, 5 of whom brought in devices to repair. One person came out to SB3 during open hours. Additionally, two individuals contacted us via the Gadget Garage's Gmail account, with plans to come in, but never followed up; however, information to address their problems was sent to them via email, so they may have been able to resolve things on their own. Representatives from Montessori and Natural Discovery (local education company working with Montessori on a summer day camp), the Illinois EV Club, Parkland College, the Prairie Research Institute, and the Champaign Public Library are interested in collaborations, though either presentations, pop-up clinics, or workshops.

During Spring 2016 semester, open hours were held at SB3 in addition to the pop-up clinics, on Thursdays from 3:30 to 6 PM and on Fridays from 11 AM to 5 PM. Two regular student volunteers assisted at pop-up clinics and during open hours, each of whom had been involved with the Gadget Garage during Fall 2015 semester. During summer session, Madeleine Hall will continue as a graduate hourly (paid with grant funds) to continue fostering relationships for pop-up clinics, assisting with marketing and coordinating volunteers, and staffing open hours at SB3. Summer hours are Tuesdays 11 AM to 2 PM, Wednesdays 5 to 8 PM, and Fridays 12 to 3 PM.

In addition to Madeleine continuing through the summer, Kinyetta Nance, GSLIS graduate research assistant (paid with GSLIS funds), will work with project staff through the summer on business planning, expanding upon initial ideas developed in Fall 2015 as part of Professor William Bullock's class (see previous semesterly report for details and a link to the project book produced by Professor Bullock's students). Central to Kinyetta's efforts will be ideas for making the Gadget Garage financially self-sustaining, working on fee structures for memberships, off-campus clinics, etc. We plan to host 1-2 Sustainable Electronics Campus Consortium meetings over the summer to comment on business plan ideas and other issues.

We promoted the Gadget Garage at a booth during the Sonified Sustainability Festival at Krannert on April 16<sup>th</sup>. A Facebook page was established for the project in January 2016, and the Twitter account established in Fall 2015 has continued to be used for promotion (see response under "Student Involvement and Outreach" below for further details).

As the result of client interactions this semester, one device was wholly repaired; 5 other devices were in-process or parts were ordered and no follow up was received. The estimated weight of devices serviced (potentially diverted from landfill) is 26 lbs.

Online forms were developed to solicit diagnostic information from individuals planning to attend a pop-up clinic or open hours at SB3. This allows volunteers and staff to do research in advance, hopefully making the time spent during one-on-one interaction more productive. See <http://goo.gl/forms/MOMGZVijEdOfuQan1>. Also, a contact form for collecting information from people interested in volunteering, scheduling an appointment, or other information, has been developed (<http://goo.gl/forms/NQomrs5kzwbGctsq1>), as well as a form for any organization or department interested in hosting a pop-up clinic (<http://goo.gl/forms/rJdKf6ab5BxBvpL82>). These forms have been promoted via social media and the Sustainable Electronics Initiative (SEI) blog, and will hopefully increase our reach.

We have continued to reach out to potential collaborators and possible sponsors. PI Joy Scrogum will be presenting at a summer day camp coordinated by Natural Discovery this summer; one of her presentations will be focused on sustainable electronics and e-waste, and Gadget Garage information will be provided to students to take home, in an effort to spread the word to the broader community. Joy has met with the director of Natural Discovery, who is interested in possibly exploring clinics with schools she works with, when the fee structure for off-campus clinics has been worked out. Communications between ISTC staff and a farm equipment manufacturer have taken place during the later part of Spring 2016 semester; a representative of that company was very interested in the Gadget Garage and potential collaboration on repair training materials. That representative unfortunately was pulled into a different direction by supervisors, however. Lessons learned from the interest shown by this company will, however, be useful in formulating ideas for other potential interactions with industry. See "Outreach" section below for further information on potential collaborators.

As the SSC is aware, additional funds for this project were applied for as part of the Spring 2016 call for proposals. Funds were awarded to be put toward renovating SB3 to make it ADA

compliant. Estimates for work will need to be redone; this and subsequent construction tasks will also be worked on during summer 2016.

On May 10<sup>th</sup>, our project team met with Lisa Bievenue of the CU Fablab to get advice on how that campus project reached out to the community, charges fees to recover costs, etc. This was very informative and Lisa was gracious enough to offer guidance and feedback as we navigate some of these concerns ourselves in the near future.

#### **Student Involvement and Outreach to Date:**

As noted above, we have a graduate student overseeing daily operations, another working on business plan aspects this summer, and students are involved both as volunteers and clients. We have had two active volunteers during the Spring 2016 semester, who will likely continue to be involved: Patrick Harrington and Kate Butterworth. Additional students have indicated interest in volunteering at the result of outreach, but although Madeleine Hall followed-up via email, she has received no response.

The Gadget Garage had a very successful booth at the Sonified Sustainability Festival, and received the contact information from 14 people interested in either hosting a Pop-Up or volunteering. Positive feedback was received from all the students we interacted with, many stating how useful a program like this is, and how they wished they knew about us sooner.

With our pop-ups being advertised on Facebook and other media, we've reached around 700 people with our most popular and shared posts, and have had 86 people actively interact with our posts/page.

Because SB3 is not ADA compliant, it cannot be open to the general public. We didn't develop the idea of "test pilots" without need for accomodation until late in the Fall 2015 semester, and avoided widely publicizing the opening of the space for even limited interactions while we were trying to ascertain what was necessary for compliance. Thus, the number of clients at SB3 has been minimal. However, the total number of clients served, between SB3 and pop-ups, is 24, with an additional 14 from the Sonified Sustainability Festival who gave us their contact information.

Outreach has been made to local repair shops, and FYXit, which does device repair on campus, has expressed interest in collaborating with a workshop. For example, they would supply specific parts and give guidance/assistance to students interested in repairing their iPhone covers or a tutorial on what to do if you submerge your laptop in water. We will continue to explore and develop this possibility.

In terms of other workshops, we're collaborating with Champaign Public Library to offer a phone screen workshop (tentatively planned for mid-July). Other potential collaborations being explored include: Emily Knox of MakerSpace Urbana (soldering workshop during the Fall semester); outreach to the Urbana Farmer's Market; Common Ground Food Co-op (to host a workshop); UIUC orientation committee; Pizza M's pop-up shop; discussion with professors in

the College of Engineering, in the hopes of creating course credit for those who volunteer at the Gadget Garage in the future; Figure 1 architecture space downtown; summer camp possibilities with Montessori/Natural Discovery; and Espresso Royale.

Over the summer we plan to continue reaching out to student groups and to hopefully offer some pop-up clinics in addition to open hours at SB3. Based on conversation with Lisa Bievenue, who noted that involvement of staff and retiree volunteers was really important to the early success of the CU Fablab, we also plan to gear some of our summer pop-up clinic efforts toward raising awareness and garnering interest among staff members who may themselves become volunteers. This would add an educational aspect for students involved, as they could learn from experienced, older members of our campus community.

In Fall 2015, three classes were taught in association with the Gadget Garage last fall (see <http://www.sustainelectronics.illinois.edu/research/gadgetgarage.cfm>). The students in these classes were impacted by the Gadget Garage project as much, or more, than any clients for whom repair assistance was provided. As noted in the last grant report, there were 15 students in the Art and Design class taught by Professor William Bullock. Those students worked on design elements related to the Gadget Garage project, such as an identifying mark, space design (for SB3), etc. The book of their ideas was shared with SSC as part of the last grant report. Links to 5 guides on iFixit.com created by students in that class, as well as one additional link created by a student, which was deemed not in fitting with iFixit's guidelines, were provided in that report. Looking at the use statistics as of 4/26/16 for the 5 guides created by Professor Bullock's students (available at the bottom of the guides on the iFixit site), those have been accessed a total of 464 times since creation, indicating the impact of these students' involvement in the Gadget Garage project on the global community via the Internet.

The number of students in Dr. Wolske's class was 17. One of Dr. Wolske's students wrote 5 iFixit guides centered around one device; the links for these guides were not available at the time the last semester report was written. See the following: <https://www.ifixit.com/User/1352760/Alec+Gramm>. Together, the 5 guides written by this student have been viewed 306 times since their creation.

No new classes were taught in conjunction with the Gadget Garage in Spring 2016.

#### **Marketing and Promotion Efforts to Date:**

Most of the marketing this semester has been done via the Twitter and Facebook accounts for the project, for SEI, and ISTC. The Gadget Garage Facebook page currently has 61 likes; we have 31 followers on Twitter. We've also promoted the project, open hours, and online forms via the SEI and ISTC blogs, and emails to the Sustainable Electronics Campus Consortium. Word of mouth among students in the residence halls where pop-up clinics have taken place, as well as students stopping by the tables in the libraries, have been effective means of promotion. Flyers for pop-ups were posted in the residence hall libraries--around 8 for PAR and 2 for Allen (Allen is dramatically smaller than PAR)--and flyers placed around the corresponding residence hall. As noted above, participation in the Sonified Sustainability Festival was an effective means of

raising awareness and interest among not only students and staff, but members of the broader community.

During the summer we will explore ads in the campus E-week emails, departmental newsletters, the Daily Illini, and other local media outlets. We will be writing up a brief sponsorship pitch to use in communications to potential sponsors/donors.

Emails have been sent out to multiple RSOs, but we are waiting on responses.

Our project team has also discussed the development of a email newsletter, and the possibility of moving the Gadget Garage's web presence from a page on the SEI web site to a stand alone site. Various possibilities are under consideration for that, and we hope to create a separate site in the near future. Having a separate site will make it easier for interested parties to find information on the project, and allow student volunteers to assist with maintenance and content generation for site.

We previously reported that iFixit expressed interest in covering the Gadget Garage on its blog. At the time, we had not started the pop-up clinics and didn't have much to discuss. Now that clinics are underway, we will reach out to iFixit staff and work with them to spread the word about our project to their followers.

**Additional Comments:**

Any additional comments/relevant information for the semesterly report