

Sustainable Electronics Campus Consortium Education Meeting Summary

January 13, 2014

Graduate School of Library and Information Sciences (GSLIS), Champaign, IL

Meeting Attendees: Laura Barnes (ISTC Librarian & Executive Director, Great Lakes Regional Pollution Prevention Roundtable), William Bullock (Professor), Nancy Holm (Assistant Director, ISTC), Emily Joyce Magdelyn Knox (Assistant Professor, GSLIS), Gary Miller, (Associate Executive Director, Prairie Research Institute), Shantanu Pai (Visiting Waste Research Specialist, ISTC), Seth Rients (Visiting Waste Research Specialist, ISTC), Joy Scrogum (SEI Co-Coordinator), Kirsten Hope Walker (Environmental Education Specialist, ISTC), and Martin Wolske (Senior Research Scientist and Lecturer, GSLIS).

Unable to Attend: John Abelson (Professor, Dept. of Materials Science and Engineering), Bart Bartels (ISTC/F&S), and Jonathan Bressler (Student).

The main purpose of this meeting was for consortium members to learn about initiatives taking place at GSLIS and to foster awareness and collaboration among members of the GSLIS community and others on campus interested in sustainable electronics. We heard from two GSLIS faculty members: **Martin Wolske** (<http://www.lis.illinois.edu/people/staff/mwolske>) and **Emily Knox** (<http://www.lis.illinois.edu/people/faculty/knox>).

Martin described some of the work that people in GSLIS are involved with in general. Relevant to sustainable electronics, much of the work GSLIS does applies to the “social” aspect of sustainability. Examples of the sorts of project that take place in GSLIS include, but are not limited to: human-computer interactions, community development projects, a socio-technical data analytics group, projects related to community informatics, and people who examine government policy. GSLIS is home to the Center for Digital Inclusion, the mission of which is to “foster inclusive and sustainable societies through research, teaching, and public engagement about information and communication technologies (ICTs) and their impacts on communities, organizations, and governments.” See <http://cdi.lis.illinois.edu/cdi/> for more information on CDI and its projects. GSLIS is also home to the Center for Informatics Research in Science in Science and Scholarship (CIRSS); see <http://cirssweb.lis.illinois.edu/index.php> for further information. (Note that at one point the discussion turned toward how people in GSLIS could assist with the analysis of environmental data sets, and Martin mentioned that Cathy Blake would be the professor to contact regarding such projects. Professor Blake is the Associate Director of CIRSS and her profile page/contact information is available at <http://cirssweb.lis.illinois.edu/person.php?id=3>). See <http://www.lis.illinois.edu/research/areas> for further information on research areas at GSLIS and faculty working in those areas.

Emily focused on describing a project that she works on which is not directly part of her role in GSLIS. She is a member of **MakerSpace Urbana** (<http://makerspaceurbana.org/>). This is a joint project with the Independent Media Center, and is part of the global maker movement (<http://makerfaire.com/maker-movement/>) that fosters a DIY culture, empowering individuals to create and repair items on their own. “Makers” might also be considered “hackers,” “hobbyists,” “crafters,” “DIYers,” etc. People who build their own or modify electronics, home brewers, sewing enthusiasts, craft enthusiasts, artists, inventors, tinkers, innovators—all might be considered “makers.” The maker movement emphasizes learning by

doing and learning through collaboration. A “maker space” is any common workshop-type area where such enthusiasts can come together to tinker, use shared equipment and tools, have access to materials for creative projects, etc. MakerSpace Urbana holds an annual Mini Maker Faire, which is scheduled for September 14 in 2014 (see <http://ucmakerfaire.com/>). MakerSpace Urbana began in 2009 or 2010. Membership fees are ~\$20/month. Members can obtain a key to come in and use the shared equipment within the space. Emily said there were 13 “key members” and about 400 Facebook followers of MakerSpace Urbana.

Emily explained that MakerSpace Urbana receives a lot of old electronics as donations. There is limited storage space available, however, so members routinely hold “clean up” events in which they assess their inventory and dispose of items that no one commits to using in the near future. Unused electronics are taken to local recyclers for proper disposal. She said that information on various subjects is posted in the MakerSpace, and she believed information on Champaign County electronics recycling opportunities is also posted. (The Champaign County Electronics Recycling guide is available at <http://www.co.champaign.il.us/county%20RRR/recycle/recycleelectronics.pdf>.)

Another related project of MakerSpace Urbana is the Computer Help Desk described on the MakerSpace web site as “a project of the Tech & Makerspace working groups. It was established to provide free personal computer diagnostic and repair services to the community. The Help Desk is staffed entirely by volunteers. All donations to the Help Desk, including suggested donations for standardized services go towards the Makerspace Group and its projects.” (See <http://makerspaceurbana.org/projects/computer-help-desk/>). In addition to providing repair services, Emily noted that the Help Desk volunteers sometimes refurbish computers which are then made available for the public to buy at low cost (~\$70).

Joy Scrogum noted that this project sounded very much in line with an idea that she and William Bullock had been considering for a few years—an “electronics repair café.” Originally, this idea involved a concept for a class in which engineering students would repair/refurbish computers set to be surplus from the Prairie Research Institute for reuse by the Institute. That project did not move forward due to a number of factors, but the idea has persisted, and has been a topic of discussion amongst members of the sustainable electronics campus consortium, as it could relate to a potential change in Illinois Central Management Services (CMS) policy that could allow donation of State owned electronics, as well as the individual efforts of consortium members such as Martin Wolske and Brian Bell (the latter of whom works on the Parkland Digital Divide training program). In fact the “students working to repair electronics” idea has been packaged in a few different ways by SEI in the past, but has not successfully received funding. An iteration of the idea was actually very similar to the Computer Help Desk and submitted as a potential Pepsi Refresh project call Community Care Computer Connection (C4) and part of the proposal was to involve community groups, including the Independent Media Center, among others. Joy also mentioned the potential connection to iFixit, a company which fosters the writing and sharing of repair manuals for anything and everything (see <http://www.ifixit.com/>). The co-founder of iFixit has presented at past SEI symposia and served as a 2013 juror for the International Sustainable Electronics Competition (www.ewaste.illinois.edu) which SEI hosts. iFixit has a technical writing program in which university students can work on writing repair manuals (<http://edu.ifixit.com/>); this will be an option for the final class project in a Spring 2014 ENG 498 course that SEI/ISTC is collaborating on with the Technology Entrepreneur Center (Sustainable Technology: Environmental and Social Impacts). Joy also mentioned that there is a potential for collaboration involving the MakerSpace, possibly the Parkland Digital Divide project, and an Engineering Learning in Community (LINC) course (see <http://linc.illinois.edu/>), which is something she has considered as a means to bring the “electronics

repair café” idea to fruition. In LINC courses, UI students collaborate on projects with non-profits and community partners. Emily said MakerSpace Urbana would be interested in working on something like that. Joy will follow up on the process of submitting ideas for new LINC courses. Joy also mentioned that Bart Bartels had provided information on an electronics recycling drive that will occur on campus as part of Recyclemania; Emily said that MakerSpace Urbana would be interested in being involved in that in some way if they could.

Questions were asked regarding how MakerSpace assesses its effectiveness. Emily explained that there is no formal evaluation or metrics applied to this; they essentially believe that as long as it seems true that there is a need or desire within the community which MakerSpace Urbana is addressing, then they consider themselves effective. A related question was asked about whether they are required to submit metrics for grant reports, and Emily explained that this is not really the case because the grants they tend to receive are fairly small, and for the amount of money being asked for a given project, that sort of reporting is not typically required. For example they receive some funding from the Urbana Arts Council for the Mini Maker Faire, but they do not need to report metrics to the Arts Council.

It was also noted that the Urbana Free Library offers a program called “Maker Mondays.” That is separate from MakerSpace Urbana, but they are hoping to help UFL with that project.

Martin began working at GSLIS in 1995 on the PrairieNet project. He currently works on computer literacy, digital literacy and training, demystifying technology, issues related to getting community content online, bridging the digital divide, effectively equipping community collaborative spaces with information technology, and service learning, among other things. His students have worked on refurbishing computers and get those out to the community. In workshops at Kenwood Elementary related to involving parents with helping their children use eToys and learning about how people would use and interact with that learning tool, Martin and his students helped the workshop participants (parents of Kenwood students) to dismantle and reassemble computers and learn about software. The participants were able to take home the equipment, which had been donated by local businesses. This process helped to make the families more comfortable with computers and the software, so they might then be more apt to use eToys and provide feedback, which could in turn inform improvements to use of eToys as an effective learning tool. Martin also described how he has asked new students to take apart a computer and reassemble it, telling them they couldn’t leave the room until they had the device back together and working again. He talked about how empowering it is for a person to realize that they are able to work on devices in this way, and Emily echoed the idea that empowerment is a big part of the MakerSpace project as well.

Opportunities for collaboration between GSLIS and other campus entities interested in sustainable electronics will surely continue to be explored in future campus consortium meetings. A meeting will likely be scheduled for some time in February; details will be distributed via email and on the SEI web site as they are available.