McIntyre Library Makerspace

Primary Proposal Contacts

Library Makerspace Implementation Task Force (lib.makerspace@uwec.edu):

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* Jill Markgraf (markgrjs@uwec.edu) – Interim Library Director
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* Trista Anderson (tomantn@uwec.edu) – Library Staff
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Collaboration

Interested parties in the Makerspace include:

* McIntyre Library (Jill Markgraf, Interim Director) – The Library has a long history of providing equitable access to resources, teaching how to use those resources, scheduling and managing access to resources, and encouraging their use. The Library will house the makerspace and make it available to all UWEC students/faculty/staff (Students will receive priority).
* Information and Technology Commission (ITC) (Alex Stout, ITC Director) – The ITC has provided funding for space renovation and safety equipment.
* SOS – The Makerspace can provide a great environment for sustainability projects which involve developing a device that promotes sustainability. For example, solar power and rechargeable batteries are a perfect fit for makerspace learning. We will also be focusing on electronic media creation such as print and digital signs—this could be a helpful resource for promoting SOS projects.
* The Makerspace will serve as a “sustainability lab” in which people and ideas come together to experiment, prototype and solve problems.

We also plan to collaborate with many departments and student groups:

* MakeUWEC: A student group which champions everything the Makerspace stands for—learning through creation
* Computer Science: Electronics, robotics, programming microcontrollers
* Physics: Making demonstration items
* Math: Modelling 3D surfaces and objects
* Business: Helping entrepreneurs with prototyping
* Art: Provide a space for students/staff to share their techniques (classic book binding for example)
* Blugold Beginnings: Participate in promoting UWEC campus to 5th graders
* SOS: Share a message of sustainability via events/sessions

Project Abstract

**What is a makerspace?**

A makerspace is a place where people come together to create. It contains shared high-tech and low-tech tools and resources. It is a community of experts and novices, sharing ideas and knowledge to inspire the creation of physical items and digital content.

**What is our plan? We will:**

* Renovate a room in the McIntyre Library and purchase furniture
* Purchase basic and advanced tools that facilitate creation
* Staff the makerspace with student workers and Library/University faculty/staff when possible.
* Work with Library/University faculty/staff as well as student groups to hold events and classes
* Work with University faculty to incorporate makerspace projects into the curriculum
* Work with students to complete their own personal and class projects

**How do students benefit from a makerspace?**

* Opportunity to develop lifelong and marketable skills
* Gain familiarity with state-of-the-art technologies
* Access to tools and expertise for personal and class projects
* A community. Opportunities for social and creative interaction
* Opportunities for collaboration, exploration, and experiential learning
* Prototyping for entrepreneurs/startups

**How does campus benefit from a makerspace?**

* It supports our mission to foster creativity in one another
* It provides us with stories of innovation to tell that will be attractive to potential students and donors
* It allows us to be competitive with schools that are already offering these spaces
* Increasing student involvement in extracurricular groups and activities will increase retention
* By providing *all* students with access to technology and resources, a makerspace supports our commitment to equity and inclusivity

For more proposal details, see: <http://lib01.uwec.edu/MakerspaceProposal/index.aspx>

Narrative

Sustainability Areas Addressed

Makerspace by definition promotes a sharing economy, in which people share—rather than duplicate—equipment, resources and expertise.

Reinvigorating local manufacturing has the potential to affect transportation and the environment.

Much of the Makerspace’s sustainability comes from projects and events: projects involving solar power affect the environment, presentations about aquaponics address food systems, projects that create networked sensors throughout your house to control the furnace address energy.

Sustainability Outcomes

**1. Economic Responsibilities**

Investment in the makerspace would not only have positive impact on the University community but in the local economy as a whole in the following ways:

* Bringing manufacturing back to the United States is frequently seen as an economic priority. A makerspace introduces students to the basic concepts of creation and helps reinvigorate US manufacturing
* Establishing a space that encourages the development of hands-on skills would ultimately help the advancement of technology. JAMF Software is an example of an international technology company which originated from a student on our campus. Technological learning and exploration will play a significant role in the makerspace
* We hope to work with the College of Business and entrepreneurs to facilitate product prototyping, potentially starting actual, local businesses
* By purchasing equipment and materials usable by all students, regardless of major or program, we maximize the value of our funds.

**2. Environmental Responsibilities**

The makerspace will incorporate environmental responsibility and foster a culture of material conservation through…

* Reuse donated tools and materials. We hope to find students, faculty, staff, and even community users with old tools and spare materials to donate
* Share material reuse ideas. We will be maintaining a list of project ideas. One tag that we can apply to projects could be ‘sustainable’. This tag could be applied to projects such as: using cloth scraps in quilting, or using 3D printer scraps for sculptures. See [this Pinterest board](https://www.pinterest.com/crimansqua/sustainability/) (https://www.pinterest.com/crimansqua/sustainability/) for ideas
* Bringing manufacturing back to the US. Manufacturing products on the opposite side of the world and shipping them to the US has a significant carbon footprint. This could be greatly reduced by returning manufacturing back to the US. Also, the environmental protections in the US are much stronger than most of the countries that currently produce our imports

**3. Social Responsibilities**

Establishing a library makerspace would provide many benefits to the campus community by incorporating many facets to social responsibility and encouraging sustainability practices. This culture of social responsibility and sustainability in a makerspace includes (but is not limited to):

* The makerspace strongly encourages people to temporarily set aside the digital world and interact with the real world—with physical tools, materials, and people, as well as providing a digital presence for interaction.
* By holding events that promote and encourage a culture of repurposing, reusing or extending usability of items (mending clothes, bike repairs, upcycling, etc.), we would offer opportunities to interact with others as well as promoting environmental responsibility.
* Creating a culture of safety, production, and utilizing resources responsibly in the makerspace through training and documentation in the space.
* Promoting sharing of niche resources and emphasizing that care should be taken of these resources to prolong their use for community benefit would be an integral component of the makerspace.
* Promoting the concept of “technological citizenship” which encourages and teaches people to repair devices and use them for longer. (See <https://therestartproject.org/>).

Project Timeline

We would like to open the makerspace in a very limited fashion later this spring, perhaps the last 4-5 weeks of the semester. This soft opening would likely be by invitation, a small number of open hours by request, and scheduled events. This would give us experience to have a grand opening in the fall. In the fall and going forward, open hours and availability will be dependent on demand.

We are waiting on Facilities to do space renovation work—including flooring, electrical, and network, but we may be able to operate in a limited fashion before the renovation.

We have funding for space renovation and safety equipment, but so far do not have funding for equipment. This is perhaps the biggest time factor.

In addition, we are in contact with the Loss Prevention and Safety office for advice on safety concerns.

Assessment

The makerspace will be collecting as much data as possible about its usage and operations. This data will be reviewed at least yearly to identify strengths which should continue and weaknesses which should be modified or discontinued. Some of the relevant sustainability statistics are:

* Number of sustainability events held
* Number of attendees at sustainability events
* Number of projects related to sustainability

Information will be disseminated as part of the Library’s annual report. Additionally, the library will communicate findings in its communication tools (newsletters, social media) and in concert with IMC. The Library will report annually to SOS.

Maintenance

The Makerspace will be operated as a part of the McIntyre Library. Library staff will take overall responsibility for the continued operation and maintenance of the project.

Project Budget

Creation of the McIntyre Library Makerspace starts with a space. The McIntyre Library has identified a room, L109, which has a sink and which is currently unused. The space needs flooring, electrical, data, and other misc. work done on it. We need to purchase furniture, safety equipment, creation tools and equipment, and initial materials.

Within each of these categories, we have separated out the items into three packages. Package A is fundamental to the Makerspace. Package B is useful, but not quite necessary. Package C is our wish list of a-la-carte items.

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| --- | --- | --- | --- |
|  | Package A | Package B | Package C |
| Space |  $ 11,260.00  |  $ 800.00  |  $ 4,700.00  |
| Furniture |  $ -  |  $ 3,964.00  |  $ 1,672.00  |
| Safety |  $ 7,472.00  |  $ -  |  $ -  |
| Equipment/Tools |  $ 13,119.38  |  $ 4,454.50  |  $ 22,869.00  |
| Initial Materials |  $ 1,620.00  |  $ -  |  $ -  |
|  |   |   |   |
|  |  $ 33,471.38  |  $ 9,218.50  |  $ 29,241.00  |

The ITC has already agreed to fund the Package A space renovation and the Package A Safety equipment.

We are asking that the Student Office of Sustainability fund, at least, Package A Equipment/Tools and Package A Initial Materials. For a complete list of the items involved, please see attachment InitialBudget.xlsx, also available here: <http://lib01.uwec.edu/MakerspaceProposal/InitialBudget.xlsx>