

Proposal: TRU Library Makerspace Sustainability Incubator

Contact Person: Franklin Sayre, Makerspace Librarian, Department Co-Chair, Librarians' Department

YouTube video URL: <https://youtu.be/fbg1cIKsWPg>

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Project Overview

The TRU Library Makerspace is where students, staff, and faculty can learn about and experiment with technology and making in a safe, experiential, and supportive environment. The purpose of this grant is to help transform the Makerspace into a campus “sustainability incubator” by providing tools, resources, and infrastructure for design, innovation, and making that advances environmental, economic, and social sustainability. The idea is that by leveraging the Makerspace's strengths and role as a shared resource we can be a force multiplier that enhances many sustainability projects at TRU.

To help achieve this vision, this grant will fund a tool library and a fiber bank that will directly increase sustainability by providing resources to individuals and groups. Additionally, two student Makerspace Sustainability Champions will be hired to build relationships with campus groups and develop additional infrastructure and programming. At the end of the grant the tool library and fiber bank, as well as any infrastructure, relationships, and resources developed by the Champions will be folded into regular Makerspace operations and become an ongoing legacy of the grant.

Goal 1: Tool library

The first goal is to establish a lending library of basic household, bicycle, and gardening tools. This will help foster a culture of repair and maintenance, decrease duplication of purchases, and enhance equitable access to tools for the campus community.

Goal 2: Fiber Bank

The second goal is to create a fiber bank of donated textiles and other materials for the TRU community to access for completing assignments, prototyping designs, and creating/repairing clothing and other items. This will redirect items that are currently being wasted or underutilized and encourage re-use and repair of clothing and other textiles. The fiber bank also supports social sustainability by reducing barriers to accessing materials and increasing equity.

Goal 3: Makerspace as “Sustainability Incubator”

The third goal is to turn the Makerspace into a “Sustainability Incubator” that campus groups can utilize to pursue their economic, environmental, and social sustainability goals by providing infrastructure and resources and building relationships. This grant will facilitate this by funding 2 Student Makerspace Sustainability Champions who will work with the Makerspace Librarian and staff to develop relationships, pursue outreach activities, and create infrastructure and programming. The goal of this work will be to find ways to make it easier for campus groups to run sustainability programs and initiatives at the Makerspace. They will also assist with developing the Tool Library and Fiber Bank and help develop other resources such as educational materials and programming to encourage sustainability.

Impacts and Student Engagement

This grant is primarily a "behaviour change & education" project that seeks to create new opportunities through infrastructure, resources, and relationships to drive sustainability literacy, activism, and behavior change.

Goal 1: Tool Library

Outcomes:

- A tool library of lendable household, bicycle, and gardening tools that students, staff, and faculty can take out using their library card

Impacts:

- Promote and facilitate repair and maintenance therefore reducing waste (Environmental Sustainability, Economic Sustainability)
- Reduce the purchasing of low-quality and/or single-use items (Environmental Sustainability, Economic Sustainability)
- Increase equitable access to tools (Social Sustainability)
- Reduce barriers to innovation and entrepreneurship (Social Sustainability, Economic Sustainability)
- Increase access to gardening and bike repair tools (Environmental Sustainability)
- Increased access to tools for students doing class assignments in areas like engineering and fine arts where they often have one-off needs (Social Sustainability)

Student Engagement:

- Students will be the primary users of this resource, though it will also be accessible to staff and faculty as well
- Student clubs will be engaged to help determine what items they most need
- On January 25, 2023 we conducted an Instagram survey asking for feedback on our sustainability plans. 19 people responded to the question "How interested are you in using a tool library?" with 14 voting "Very" 4 voting "somewhat" and 1 voting "Not at all"
- We also asked "What types of tools are you most interested in borrowing?" and 14 people responded, with the following:
 - Home maintenance (9 votes)
 - Bike maintenance (2 votes)
 - Car maintenance (1 vote)
 - Garden tools (1 vote)
 - Other (1 respondent)
 - "Clothing repair"

Goal 2: Fiber Bank

Outcomes:

- A donation-based “Fiber Bank” that provides students, staff, and faculty with free access to textiles and fiber materials.

Impacts:

- Promote and facilitate repair and maintenance therefore reducing waste (Environmental Sustainability, Economic Sustainability)
- Reduce waste related to under-utilized textiles (Environmental Sustainability, Economic Sustainability)
- Increase equitable access to fiber materials (Social Sustainability)

Student Engagement:

- Students will be the primary users of this resource, though it will also be accessible to staff and faculty
- On January 25, 2023 we conducted an Instagram survey asking for feedback on our sustainability plans. 16 people responded to the question “How interested are you in using a fibre bank?” with 11 voting “Very” 4 voting “somewhat” and 1 voting “Not at all”

Goal 3: Turn the Makerspace into a “Sustainability Incubator”

Outcomes:

- 2 Student Makerspace Sustainability Champions supporting this initiative under the supervision and mentorship of the Makerspace Librarian
- Outreach and relationship development with student clubs and other campus units related to:
 - Environmental Sustainability (e.g. ECO Club, Sustainability Office, etc)
 - Social Sustainability (Women in STEM Club, Lean In club, Indigenous Education, etc.)
 - Economic Sustainability (TRU Generator, Kamloops Innovation, ICE Club, Etc.)
- Infrastructure to support club activities in the Makerspace, including
 - Room and space booking processes, guidelines, and promotional materials
 - Access to a calendaring system
 - A process for helping groups promote their events and plans
 - A hub for information on resources, including funding, for groups looking to host events or other initiatives related to any form of sustainability

- Additional resources related to making, design, and sustainability, including:
 - Educational materials
 - Promotional materials
- Something we've learned working with student groups is that they have an incredible amount of energy and creativity, but need support bringing ideas to fruition. The cyclical nature of student groups means that the infrastructure for running events such as calendaring and booking systems and access to technologies are often barriers to running events. Our hope is that by providing some of this infrastructure, more of ideas can come to fruition.

Impacts:

- Increase relationships with and between campus groups involved in social, environmental, and economic sustainability (Environmental Sustainability, Economic Sustainability, Social Sustainability)
- Facilitate events and programming related to social, environmental, and economic sustainability (Environmental Sustainability, Economic Sustainability, Social Sustainability)
- Changes to infrastructure (booking system, supplies, processes) that facilitate campus groups using the Makerspace for activities related to sustainability broadly defined (Environmental Sustainability, Economic Sustainability, Social Sustainability)
- Organizing textile repair events using Makerspace equipment and run by the Environmental Sustainability Champion (Environmental Sustainability)

Student Engagement:

- Students and student groups will be key stakeholders for this goal. Makerspace staff and faculty, along with the sustainability champions, will reach out and hold events with students and student groups to learn about their needs
- Student clubs will gain access to resources (makerspace equipment and the new tool library and fiber bank that they can use)
- Student Sustainability Champions will be students and will gain valuable experience enacting these goals under the direction and mentorship of the Makerspace Librarian

Performance Measurements

Performance measurements will be based on three sets of data:

- A survey of users
- Interviews with Makerspace student ambassadors, staff, and faculty
- Data collected in the course of operations, specifically the number and types of events, number of participants in events, and circulation stats for lendable technologies and tools

	Social	Economic	Ecological
Goal 1: Tool Library	<p>Track use and impact related equitable access to tools</p> <p>Survey users to learn more about social benefits</p>	<p>Track estimated cost savings</p> <p>Survey use to learn more about other economic savings and benefits</p>	<p>Survey use of tools to learn how they are being used</p>
Goal 2: Fiber Bank	<p>Track use and impact related equitable access</p> <p>Survey use to learn more about social impact of access to Fiber Bank</p>	<p>Track estimated cost savings</p> <p>Survey use to learn more about other economic savings and benefits</p>	<p>Track use and estimated waste avoided</p>
Goal 3: Turn the Makerspace into a "Sustainability Incubator"	<p>Track number of events and participants related to social sustainability</p> <p>Interview Makerspace Student Sustainability Champions, Makerspace staff, and faculty about impact of program</p>	<p>Track number of events and participants related to economic sustainability</p> <p>Interview Makerspace Student Sustainability Champions, Makerspace staff, and faculty about impact of program</p>	<p>Track number of events and participants related to environmental sustainability</p> <p>Interview Makerspace Student Sustainability Champions, Makerspace staff, and faculty about impact of program</p>

People and Partnerships

People:

Faculty:

- Franklin Sayre, Makerspace Librarian, Department Co-Chair, Librarians' Department

Staff:

- Olivia Strodl, Makerspace Staff
- Sarah Porter, Makerspace Staff
- Valentine Bilton, Makerspace Staff

Students:

- 3 Student Sustainability Champions (grant dependent)
- 5 Student Makerspace Ambassadors

Partnerships

Partnerships and student engagement are essential components of the project. The Makerspace has existing relationships with a number of campus groups and student clubs. A major goal of this grant is to build on those relationships and create new partnerships with campus groups related to social, environmental, and economic sustainability.

Alignments and Feasibility

Alignments with current makerspace development projects

The goals in this plan align with the developmental projects the Makerspace is currently undertaking. Specifically, this term we are focused on:

1. Growing the number of groups using the Makerspace as a meeting, teaching, or project space. We already have basic infrastructure like staff, calendaring, etc in place. We are currently working on creating a club space that can be used when our main space is closed. We are also creating policies and processes to make this as easy as possible.
2. Creating a section of our website and social media process to support a cross-campus community of innovation that brings together people involved in design and making to celebrate their work, through the #TRUMakes hashtag and semesterly awards.

Alignments with Staff Expertise

- The Library and the Library Makerspace have expertise and infrastructure related to these goals, including processes for maintaining, cataloging, and lending equipment, tracking use, conducting assessment, and making connections between campus groups.
- The Makerspace Librarian has experience overseeing and mentoring staff and student workers, including research assistants and ambassadors.
- Makerspace staff have expertise with facilitating access, event booking, equipment maintenance, and other required skills.
- One of our staff spent multiple years working in a tool shed in the oil and gas industry and has extensive experience with best practices for lending tools.

Alignment with TRU Values

- Inclusion and Diversity: Inclusion and Diversity are two of our core values, and we've worked hard to create a space and code of conduct that reflects those values. One reason for including social sustainability in this grant is to actively work with groups focused on Equity, Diversity, and Inclusion to support and learn from them, and to create a space they can come together in community with other campus groups.
- Community-Mindedness: One thing we've learned in the Makerspace is that our students, staff, and faculty are looking for places to come together in community. We've seen the power of creating a culture that supports that as work side by side, get to know one another, and eventually work together to learn and collaborate.
- Curiosity: Trying out new ideas and taking risk is at the heart of the Makerspace. Every failure is an opportunity to learn and grow. Each of our goals facilitates turning the raw material of curiosity into experimentation and real-world solutions.
- Sustainability: Sustainability is one of the core values of the Makerspace, and each of these goals is aimed at helping our community become more sustainable, environmentally, economically, and socially.

Reasonableness of Goals

As demonstrated in the above section, these goals align with the core role of the TRU Library Makerspace, our current development projects, and staff and faculty expertise. All three goals build on what we already do and are therefore well within the abilities of our organization.

Cost Effectiveness

We believe these goals are cost effective and indeed should reduce costs to the institution over time. By proving a shared resource for all campus we can reduce purchasing of equipment and supplies, ensure maintenance, and maximize utilization.

Planning

Project Timeline

March 2023:

- Advertise for student sustainability champion positions
- Start developing the implementation plan for the tool library and fiber bank

April 2023:

- Hire sustainability champions
- Sustainability Champion orientation and training
- Start developing assessment plan
- Start developing outreach plan for Sustainability Champions

May 2023:

- Finalize tool list and start purchasing items
- Work with library cataloging staff and faculty to begin cataloging tools
- Finalize assessment plan and submit for ethics review

June 2023:

- Finalize fiber bank language and infrastructure
- Start promoting donations to fiber bank
- Start outreach to service units and departments where staff are on-site during summer
- Meet with TRUSU staff and leadership to plan fall outreach
- Finalize language and processes for tool library and fiber bank
- Launch the tool library and fiber bank

September 2023:

- Start main outreach to TRUSU Clubs, TRUSU Caucus
- Start outreach to departments

November 2023:

- Host stakeholder meetings to finalize plans for next year

January 2024:

- Evaluate the progress of the tool library, fiber bank, and student sustainability champions, and make adjustments as needed
- Start implementing findings identified through outreach and stakeholder meetings

March 2024:

- Evaluate the overall success of the project and plan for the next academic year

Budget and Purchasing

Please see attached budget template. Some additional notes:

- Tools costs were estimated based on an initial draft list of potential tools with an additional amount estimated to allow for additions and changes. This initial list can be viewed here but should be seen as a draft and starting point only:
<https://docs.google.com/spreadsheets/d/1m5mLVPVB-1MRwgGUYR6Lh0pRdZSAZ62dE1kSq0aKaRw/edit#gid=0>
- Tools will be purchased through our normal purchasing processes and will remain the property of TRU and lent to students, staff, and faculty through the Makerspace.
- Costs for Student Makerspace Sustainability Champions are based on 2 students, 8 hours a week for 40 weeks at \$20 an hour, and include 13.6% fringe costs.
- A \$1000 budget was included for outreach activities and costs, primarily for providing food and coffee to student groups and hosting several outreach events in the fall

Permissions

This project does not require any additional permissions.

Project Sustainability

The Tool Library and Fibre Bank will continue after the end of the grant and will be run as part of regular Makerspace operations. The Makerspace has an existing budget for replacement equipment and supplies that will allow us to replace occasional item. Long-term (3-5 years) we may need to look at a refresh of equipment.

At the end of the year the resources developed by the Makerspace Sustainability Champions will be folded into the Makerspace website and regular infrastructure.