



Makerspace

ANNUAL REPORT

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May 2022

2021-2022

Summary

Langara's Makerspace has adapted to the changes brought to the institution in response to Covid 19 and has maintained its services levels through remote, mixed mode and the transition back to face-to-face access for Curriculum, Research and Personal Projects. During this period of time there has been a corresponding increase in access to Makerspace resources through our website.

The Makerspace has seen multiple renovations in 2022 that will allow for much improved access for mobile technologies and has expanded the Makerspace footprint with the development of shared exterior space adjacent to Fine Arts (rm. A003/A007). This year-round space will provide a new, outdoor working locations for metal working with the Makerspace's newly acquired CNC plasma cutter.

The Makerspace has advanced its outreach and institutional awareness over 2021-22 by presenting Makerspace resources and opportunities at multiple department meeting including Computer Science, Management, Biology, Mathematics and Statistics, and Accounting. These presentations will continue throughout 2022 as a means to expand Makerspace awareness across the Langara community. Makerspace presentations have also been given to regional ITA's (Industry Technology Advisers) from the National Research Council to broaden awareness of Langara's Makerspace, its capabilities and its affinities with applied research and industry partnership. The Makerspace has again presented at Langara's annual Applied Research Day, showcasing Makerspace technologies, our NSERC funded applied research with the Trailrider wheelchair, successful SSHRC grant application exploring Canada and the Circular Economy, and our pending CCSIF grant exploring Maker technologies, ecosystem health and community resilience. The Makerspace was additionally invited to present at British Columbia's 6th annual Research and Innovations Partnerships Expo (RIPE) hosted by Okanagan College, At which we presented on Makerspaces ability to leverage the opportunities within applied research and act as a means of generating positive change.

Throughout 2022-23 the Makerspace will continue to pursue the advancement of (1) curricular integration of Makerspace concepts and capabilities within existing and newly developed courses; (2) the ongoing development of technical competencies across the Langara community of staff, faculty and students through workshops, clubs, and applied research opportunities, and (3) the innovative research/partnership/work integrated learning opportunities that help co-build the ethos and opportunities of the Makerspace.

2022-2023

Planning

There have been multiple thread of planning and development throughout 2021-22. The Makerspace has pursued multi year grants that will help situate the Makerspace within regional and national research into circularity and the Canadian economy (SSHRC), and how community/ecosystem resiliency can be bolstered through the activation of Maker ideals and technologies (NSERC). In addition, the Makerspace has continued to broaden its place within the Langara community with the formation of the Applied Research Club and its association with the Neil Squire society. This new student-based club will explore how Makerspace resources can be brought to bear on the assistive technology needs of individuals from Neil Squire. These new Makerspace initiatives will continue to diffuse the Makerspace ethos into the Langara community as Research Assistants, and Student Aids are hired to participate in new research opportunities and as new club members are welcomed to share their knowledge with each other and with the real world needs of an outside partner. These new

Langara College Makerspace

initiatives will add additional strength to Langara's Makerspace as an adaptive and welcoming nucleus for research, community engagement, and creative inquiry.

Participation (September to April 2022)

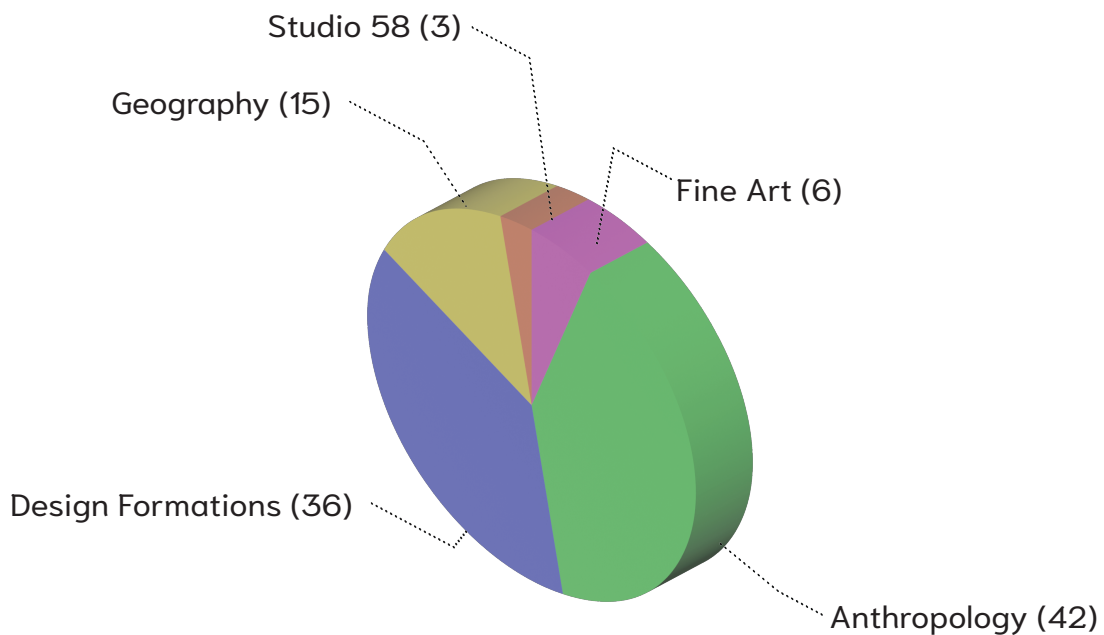
In 2022, as Langara transitions back to Face to Face learning the Makerspace saw renewed and sustained access from across the Langara community.

Curricular Access - Sept 2021 to April 2022 (Shutdown June-August) - **Curricular students - 292**
Workshops – Sept 2021 to May 2022 (Shutdown June-August) - **Langara Students - 279**
Total cumulative daily visit - Sept 2021 to April 2022 - **Workshops, Curricular, Personal - 1400**

Curricular Access - January to April 2022

DEPARTMENT	ACTIVITY	# OF STUDENTS
Anthropology	Class	42
Geography	Class	15
Design Formation	Class	36
Theatre	Class	3
Fine Art (Design)	Class	6

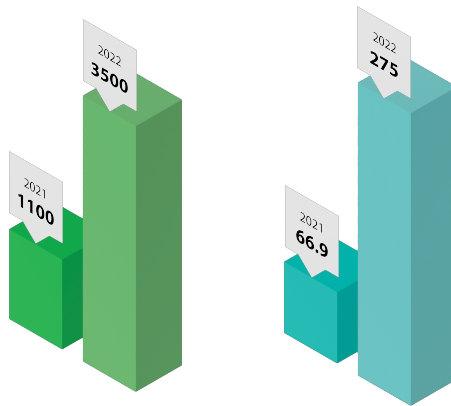
CURRICULAR ACCESS (JAN 2022- APRIL 2022)



Workshops (June 2021 to May 2022 - 279 students.)

All Makerspace in-person workshops, and on-site curricular instruction has transitioned back to face to face from mid 2021. As a result of the COVID shutdown the Makerspace now has a comprehensive suite of online resources (Video's, How-To guides) that complement our face to face workshops and these resources have helped drive a considerable increases in website use between 2021 and 2022.

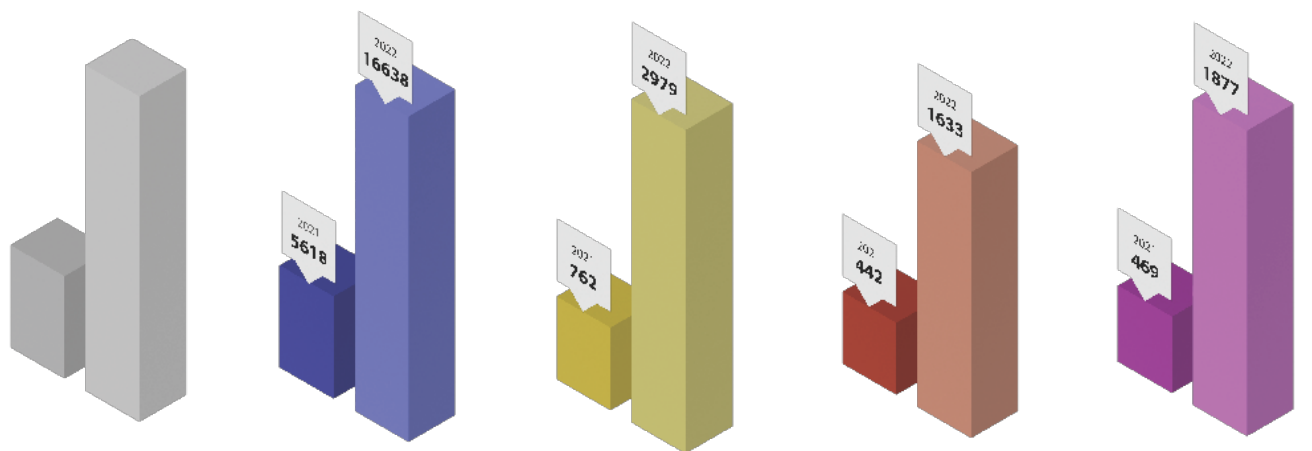
YOUTUBE STATISTICS (JUNE 2021- MAY 2022)



PAGE VIEWS

WATCH TIME
(Cumulative Hours)

WEBSITE ANALYTICS (JANUARY 2021 - MAY 2022)



2021-2022

WEBSITE VIEWS

SESSIONS
(Pages Per Session 5.59,
Average session 3.33 min.)

NEW USERS
(New IP's)

USERS
(Returning IP's)

Faculty Research Projects

Through the ongoing relationships between the Makerspace, The Applied Research Centre, and Langara Faculty we are co-building several funded, curricular, and personal research projects.

- NSERC – CCSIF College and Community Social Innovation Fund - up to \$120K (per year for 3 years) (announcement pending)
- SSHRC – Canada’s Future Ideas Lab - up to \$250K (for two years) (Grant Awarded)
- RIPE research presentation - presentation on Makerspace research capability
- Demountable Skull - Faculty production of curriculum aides
- 3D Terrain - Faculty research into digital production methods
- Ceramic printer - Faculty research into crossover printing methods
- DF – Laser engraving - Faculty personal project upcycling material

Students Hired

Covid 19 has continued to place severe restrictions on the hiring of students for on campus work. SWAP students are again anticipated to be hired for the summer 2022 semester as well as a team of Student Aids for the installation of the Heat Islands project in the summer of 2022.

Outreach

Post Covid shutdown, The Makerspace has re-commenced its Langara based outreach activities for 2022, focusing on internal events and external grant funding.

Departmental Presentations (Computer Science, Management, Biology, Mathematics and Statistics, Accounting, Financial Management, Kinesiology, Chemistry)

Fine Arts Department tours

NSERC ITA presentation

Grants (SSHRC/NSERC)

Langara Global tours and outreach

Student Engagement IRL event and formation of applied Research club

Applied Research Day

New Technology

In 2022, the Makerspace continued to make strategic purchases of new of technology that broaden the scope of our material production and reinforce the Makerspace’s commitment to sustainability and mindful production.

Feltloom



Our new hardware will allow for the expansion of textile-based research as it provided for the recombining and upcycling of textiles and the repurposing of surplus garments into new sheet goods suitable for laser cutting and/or industrial sewing. Non-standard materials - such as hair and fur - can also be utilized. In addition this new technology provided for the production of new types of custom, non-woven, variable density fabrics.

Summary

The Makerspace foundation of innovation, technical flexibility and the open-ended exploration of new digital tools has allowed our community to relatively seamlessly adapt to the rapidly changing and challenging circumstances of 2020/2021. As the Institution transitions back to an on campus instructional model, we will continue to : **(1)** maintain Makerspace broad, cross disciplinary access and inclusion, **(2)** continue to foster technical and conceptual competencies through hands-on exploration **(3)** help co-build new forms of opportunity through research, partnership, and work integrated learning, both within and external to, the institution.



Trailrider research project assembly



Project digitization



TRAILRIDER
RESEARCH &
DEVELOPMENT
PROJECT

Research report

Imagining Circular Hubs:



A 'making' approach for co-creating community & social values towards the Canadian circular economy

SSHRC research project proposal



Archeology printing



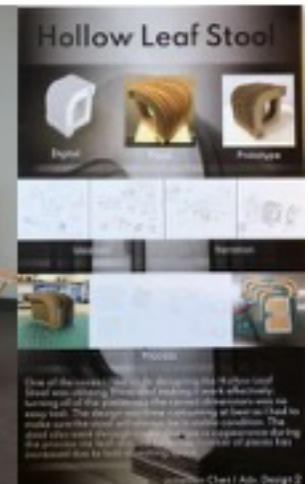
Trailrider electronics



Design poster printing



Fine Art CNC output



Poster printing

