From: iweb.langara.bc.ca
To: Scholarly Activity
Subject: New submission from RSAF Final Report
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1. Please introduce yourself – include pertinent background information relating to the topic of your research project. Include your project title.

Philip Robbins - Faculty in Fine Arts and the Coordinator of Langara's Makerspace.

2. Please discuss your educational background and your work experience that led you to taking on this research project. If possible, include a quote that helps define your interest in this project.

I have a Master Degree from the Royal College of Art and have taught Art and Design in Vancouver for the past 20 year. I have a multidisciplinary practice that spans digital and analogue process and have worked extensively within the cultural sector through the film industry and public art. Currently my practice explores the relationships and opportunities between emerging technologies, their diverse and developing communities, and the ethics of production.

3. Please explain the concept for your project in terms that others not in your field would understand, like an executive summary.

This project built - in house and with local skills - a functional plastics shredder. This is the first phase in the creation of a plastic recycling ecosystem that will allow us to collect, remanufacture and repurposed plastic waste with the goal of applying the technology and knowledge gained to the problem of ocean plastic waste.

4. Identify goals and objectives for the project, and how the results may be used, perhaps to solve a problem, or to inform further research in that field.

The objective of this project was to build a functional plastics shredder that will create the feedstock for a future, purpose built, plastic injection molding machine. This first phase also proved the viability of building a complex machine from scratch utilizing only the physical and intellectual resources of Langara. This successful research lays the groundwork for future phases that will include the creation of more complex machinery, the design and production of objects, and dissemination of this knowledge to the broader community.

5. Briefly explain the steps taken to conduct the project research, and the results found.

-literature review and materials acquisition
-fabrication and hardware purchase
-redesign of digital files and waterjet output
-custom manufacture of parts in-house
-Initial assembly and testing
-refinement and electrical configuration
-final testing

6. Who else was involved in this project? How did their involvement help? Ie: other faculty, students, community partners

This project involved the collaboration and cooperation of a wide cross section of the Langara Community. Involved in the project were faculty from Fine Arts and Continuing Studies; Students from Fine Arts; and Staff from the Makerspace, Fine Arts, and KD Engineering. This project would not have been possible without this collaboration.

7. What were/are you hoping to get from conducting this research?

This research was intended as a proof of concept for Langara's ability to produce complex machines in house, and a proof of this open source machines ability to perform its intended task.

8. Can you share any personal stories that made this research experience memorable/valuable?

This project was a great way to collaborate much more closely with the Langara community and to share knowledge across disciplines. Having a "real" project that a team can see through to completion is a markedly different educational experience.

9. Do you have any tips/suggestions/ideas for applying this research in your field? Or for others in their fields? Or for conducting future research of this kind?

It is very important to recognize the time requirements to complete a project of this type within an institutional setting. Though the extra workload is not excessive, on a project of this size, the timeline is considerably longer, given the competing demands on Faculty time. It is also extremely important to hire good students. As the project has hard deadlines and real deliverables, student must be able to commit their time and have existing still sets. These projects are a great place for students to apply their knowledge and to learn new skills, but they need a good foundation of preexisting knowledge.

10. Any final comments? What are the “next steps” for this project? And for you?

The next step in this project is to shred some plastic and begin fabricating the plastic injection molding machine (RSAF1 Phase II)

Ps: I would prefer if this information did not go on social media.

Please upload any images that will help to showcase your project.

- RSAF-1-Report-med.pdf