

Sabbatical Leave Plan  
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# How can makerspaces be sites of kin-making and ecological thinking in the more-than-human-world of the Chthulucene?

*"Kw'seltknéws: we are all related and interconnected with nature, each other, and all things" (TRU's Vision Statement)*

*"When we try to pick out anything by itself, we find it hitched to everything else in the Universe." (John Muir, 2011)*

*"Seeing, finding pattern: two different acts, both key to learning plants by name. Both helped, I've come to believe, through drawing. Convincing biology students that drawing belongs in science can be a hard sell, but artists have long understood the way drawing can transform looking into seeing." (Lyn Baldwin, 2023)*

*"The order is reknitted: human beings are with and of the earth, and the biotic and abiotic powers of this earth are the main story" (Donna Haraway, 2016)*

Describe the scholarly or professional or creative purpose of your proposed sabbatical leave.

**How can makerspaces be sites of kin-making and ecological thinking in the more-than-human-world of the Chthulucene?**

This 6-month sabbatical will explore this question. Let's start by breaking down the concepts embedded in the question, working from the end and the widest frame back to the start and the most specific frame.

**The Chthulucene**

In *Staying with the Trouble: Making Kin in the Chthulucene* philosopher Donna Haraway proposes the story of the Chthulucene as a counterweight to the anthropocentrism and despair of the Anthropocene. The Chthulucene takes us out of the centre of the story and puts us back into the messy soup of life with the rest of the biological world. Clear-eyed about the challenges we face, Haraway's Chthulucene is always hopeful: not turning away or giving up in despair but muddling our way forward in interconnected symbiotic relationships and multispecies collaborations.

**The More-Than-Human World**

The more-than-human world is a way of thinking coined by ecologist and philosopher David Abram that acknowledges that our experience of the world (including embodied, sensory, cognitive, cultural, etc.) is only one facet of a world that includes a much larger set of ways of being that include non-human animals, plants, fungi, bacteria, viruses, and even the land and water. These other ways-of-being are not props for our stories; they are agents - subjects not objects - that actively participate in the world and shape us as we shape them. Arguably, especially in the context of makerspaces, this includes technologies like artificial intelligence.

**Ecological Thinking**

Ecological thinking encourages us to think about the interrelationships between things. In the words of naturalist John Muir "When we try to pick out anything by itself, we find it hitched to everything else in the Universe" (Muir, 1911). We tend to think of ecology in terms of nature, but technologist James Bridle points out that ecology is really a scope and attitude of study; there is an ecology of all disciplines, including technology. Ecological thinking asks us to look for multi-directional and layered influences and seek out facets that need to be integrated into our understanding, including technological, spiritual, scientific, social, artistic, and humanistic.

## **Kin Making**

According to Haraway the proper work of the Chthulucene is "making kin" with the non-human species with whom we share the more-than-human world. They are, of course, already objectively our kin, but "making kin" means getting to know them and see them as equals. Kin making is about transformative experiences that change how we see our relationship with other species.

## **Makerspaces**

Makerspaces are usually considered sites for inclusive STEAM education, access to technology, and incubators for innovation. That is all true, but what I think makes them interesting is how they function as communities based around activities related to making (broadly defined to include creating, crafting, designing, tinkering, repairing, prototyping, etc.) with an ethos of play and experimentation. As active-learning spaces that emphasize hands-on and inquiry-based learning Makerspaces share many features with other spaces and activities that focus on hands-on and inquiry-based learning.

## **How does this apply to makerspaces (and other sites of hands-on and inquiry-based learning)?**

Let's work from specific to general this time.

Kin-making is the easiest idea to apply in the context of makerspaces. It involves using the activity of making (or any other form of hands-on and inquiry-based learning) as a transformative experience that aims to collapse the division between human and non-human species. For example, I am currently working with faculty from Biology and Fine Arts on a workshop that has students create representations of local plants, animals, and ecosystems (art + technology) to teach about local ecologies and remediate plant blindness. How else can we use making, community, technology, experimentation, and play to make kin?

Ecological thinking is a lens to see the importance of context. In the Makerspace it is about thinking -- and caring -- about how what we make is connected to the other disciplines, communities, and the more-than-human world. How can we use ecological thinking to encourage students to look for deeper and wider connections between what they make and the rest of the world? How can we help students seek partners from other disciplines and communities to explore these questions? How can we imbue a space with these ideas so that the things made fit into ecological contexts in healthy ways?

The idea of the more-than-human world is a lens that brings us a step closer towards specific beings and places than ecological thinking or the Chthulucene; it asks us to take other ways of being seriously in the things we do and make. Can it be used to prompt users to think about specific species, or individuals/collectives, when designing objects, imagining possible collaborations, or considering the impacts of their work?

The Chthulucene is the widest possible lens for this project; big enough to hold all the hopeful stories of multispecies collaboration and attempts to "stay with the trouble" of surviving together. It provides us with the answer to why, which is that "We become-with each other or not at all" (Haraway, 2016, p. 4). More importantly, it provides much of the how: Haraway's rich prose is full of fertile metaphor and ideas for action. Haraway's ideas about interspecies collaboration through symbiosis (making together) and storytelling provide the hooks necessary to imagine the broadest possible applications for ecological thinking and kin making in active learning spaces. Can we ask students to imagine engaging with different species as partners, framing AI interactions as other ways of being, or reimagining economies as inter-species symbiosis.

As sites of community makerspaces are already places where people come together to collaborate, make, and work in interdisciplinary teams. They are therefore well placed to be spaces where ecological thought and the idea of the more-than-human-world is introduced and encouraged. As sites of creation, makerspaces are where ideas can be applied to real-world projects. As sites of experimentation and play, makerspaces are excellent places to try new things, either through developing transformative experiences that involve making or through applying these ideas to new innovations.

### **How should local and Indigenous knowledge and contexts inform this work?**

There is no way to address the question of this sabbatical without asking about the role of local contexts. As sites of community makerspaces exist in a specific place at a specific time shared with specific species, ecosystems, and the land. There is no way to ask that question without also asking how Indigenous knowledge, land rights, and ways of learning should also inform this work. Many of the ideas here have deep connections with Indigenous beliefs, knowledge, and ways of teaching and learning. I am being brief because I am humbled by how little I know and how what I do know is not my knowledge to claim. This sabbatical will also seek to address these issues.

### Describe the benefits of the proposed sabbatical to you and to the University.

By probing the intersection of ecological thinking and maker practices, this sabbatical proposal dovetails with TRU's Vision of Kw'seltnéws, ("we are all related and interconnected with nature, each other, and all things") as well as the commitment to sustainability, curiosity, and community engagement. The outcomes will hopefully enrich the TRU Library Makerspace, result in new research and collaborations, and contribute valuable insights to the broader academic and maker communities.

I envision this project directly resulting in new programming for the Makerspace that will increase ecological thinking and kin-making. This project also addresses several areas of

research identified as federal funding priorities, especially the need to invent the sustainable economy, biomimicry, and Living within the Carrying Capacity of Planet Earth (Policy Horizons Canada 2018). I hope another outcome will be new collaborations with faculty from across the university addressing some of these priorities.

I have spent over 2 years building the TRU Library Makerspace and its now a vibrant hub filled with students and faculty making and learning together. Now it is time to explore how I can have a deeper impact. This sabbatical plan benefits me by providing focused and uninterrupted time to investigate the questions I outlined above.

## A clear plan of the activities contemplated and anticipated scholarly or professional or creative outcomes including the planned dissemination of findings

I will start with a preliminary literature review and environmental scan before engaging with experts, elders, and educators with diverse perspectives on the link between making and ecological thinking and kin-making. The outcome of these activities will be a series of dialogues and experiences that will inform a set of provocations for future programming and research.

### **Environmental Scan**

First, I will conduct a preliminary literature review and environmental scan of activities in similar pedagogical spaces. The goal will be exploratory instead of comprehensive; wide instead of deep. I will focus on active-learning spaces where making is a fundamental component and will not restrict the review to makerspaces. This will be iterative and ongoing and will inform the main activities of the project.

The primary outcome of this will be an annotated list of research, projects, people, sites, and other things related to this topic.

### **Dialogues, Self-Reflections, and Experiences**

Second, I will reach out to people doing similar work to learn from them, including community members, researchers, teachers, Elders, and others working at the intersection of ecological-thinking and making-maintenance-innovation. Wherever possible I will learn directly from their work and method through hands-on experience and self-reflection. I will start locally with people from TRU and Tk'emlups. I know several people at TRU doing related work and there is power in working locally on this topic, but I may also interview and work with people further afield. I expect there will be a snowball effect as I meet new people and they introduce me to others.

The primary outcome of this work will be a series of dialogues/reflections in the form of text, audio, or video. I initially thought of this as an open podcast that wouldn't require ethics review, but I've decided I will go through ethics review anyway to ensure that I am operating in a good way.

### **Provocations for further action**

The aim of the activities outlined above will be to produce a list of provocations for future research and programming in the form of questions and prompts. These provocations will act as scaffolds for future projects. The hope is that some of them become programming implemented in the Makerspace, and collaborations with other faculty at TRU.

### **Other Outcomes**

1. Website: My activities and outcomes will be shared on a website. This will include the environmental scan, the dialogues (when possible) and reflections, and the provocations. This will be available to anyone.
2. Podcast: I will create a short podcast or podcast series based on the interviews (dialogues), experiences, and self-reflections.
3. Teaching Practices Colloquium: I will apply to present at the TPC to share my findings with the TRU community. Simultaneously I plan to run a several workshops on applying my findings, in partnership with CELT and/or within the TRU Library Makerspace.
4. I may publish one or more scholarly articles about this research, depending on if I think it will add anything to the literature that isn't captured on the website or in the podcast.

### **Feasibility**

This project builds on previous work I've done at TRU. Last year I was awarded a sustainability Grant from TRU to create a tool library, a donation-based fiber bank, and conduct outreach to student clubs and campus departments (Sayre, 2023). I've also worked with the sustainability office to plan for operational sustainability efficiencies such as recycling material from 3D Printers and collaborating with student clubs on repair and maintenance events.

This year I've been re-designing how I introduce the Makerspace to students to highlight their responsibility to think about stewardship of resources and responsibilities to the community. I am also collaborating with faculty from Arts and Sciences on a workshop meant to support kin-making by using art and technology to learn about local plants, animals, and ecosystems.

In terms of finding people to interview, I've worked with many faculty across campus now and have a community across North America I can reach out to for contacts and advice.

The location of the proposed project or projects;

Primarily Kamloops and the surrounding region. I may follow interesting threads throughout Canada and the United States if I find something interesting and have the opportunity.

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