

INSTANT REPLAY

Interdisciplinarity at Play

Fall 2021



Welcome back to the GI—your warm (virtual) oasis amongst the frosty and frigid Canadian winter. And what is better for this weather besides curling up with some cozy reading? Each new term, we take time to reflect, rewind, and remember; retroactively admiring the dedicated work our members have been doing to contribute to the fields of game and interactive media studies, game and interaction science, and interactive media for understanding.

The Fall 2021 term brought with it a plethora of presentations, collaborations, and jams, and highlighted a variety of ways of how people go about research creation and knowledge dissemination. And at the heart of this, interdisciplinary continues to break down the walls existing between different research fields and disciplines, and the work that GI members did this term demonstrates that effectively. New faculty additions like **Drs. Cayley MacArthur** and **Ville Mäkelä** continue to add to the GI's expansive network of interdisciplinary researchers and professors.

The GI had the privilege of digitally hosting a wide variety of talks and panels on disparate topics as well as cultivating a hybrid experience for events like the Data Jams run by the Feminist Think Tank. CHI PLAY went forward with a digital front and GI students at the Stratford Campus organized a watch party to participate in the proceedings. Talks hosted and moderated by the GI such as "Building XR Devices to Sense Mind and Body," and the "Misogyny in Games and Gaming Culture" bring together GI members, with industry professionals to consider the intersections of technology and humanity, and it's exciting to see how people continue to think of these connections and come together to pool their knowledge.



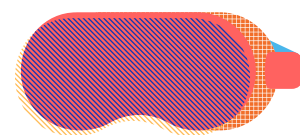
NEWSLETTER HIGHLIGHTS

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DR. CAYLEY MACARTHUR AND THE QUEST FOR TRIPLE E (EEE) DEGREES

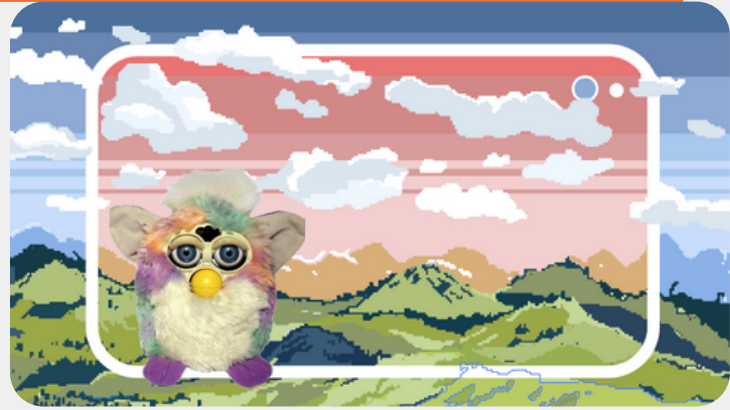
Cayley MacArthur is a long-standing name in the GI ever since the GI opened its physical doors to researchers and students. She's spent time here working on her Undergraduate and Master's theses, her Doctoral research, and has officially joined the GI as a faculty member. As Assistant Professor, **Dr. Cayley MacArthur** teaches out of UW's Stratford School of Interaction Design and Business. But how did she get here? Well, luckily, Cayley took the time to answer questions we had for her about her time at the GI and her hopes of continuing on with her research.

Cayley's journey starts off in the Knowledge Integration program in the Faculty of Environment during her Bachelor's degree. She often thinks of herself as a risk averse person, but she's glad she went into this program as it helped her approach the intricacies of analyzing complex problems. And throughout this time, she wondered what she would pursue after her degree; art history, medicine, or maybe she would go into marketing? She never thought she'd continue on in academia until later in her Bachelor's when she started taking more English courses and started working on her Knowledge Integration thesis. It was around this time that Cayley started to get ideas of what she wanted to do. She was interested in rhetoric, semiotics, and user experience (UX) design, so why not pursue a Master's degree in the English department's Rhetoric and Communication Design program? Also, why not pursue a double degree while she's at it?

And that's part of how Cayley ended up pursuing a Master's degree in both English and Engineering with **Drs. Neil Randall** (English) and **Mark Hancock** (Engineering) as her co-supervisors. The joint degree kept her busy bouncing between departments to meet both degree requirements. "I don't have the coding skills to succeed in an HCI program," she said, so this was a good compromise into delving into the world of technology while not feeling like she needed an excuse to read theory, which she got to do plenty of in the English program.

Cayley's MA thesis titled, "The Effects of Ambiguity: A Feminist Study of Human Signifiers in Human-Computer Interaction" (which you can read more of at the GI on its own poster) talked about the lack of diversity in STEM fields and incorporate feminist theory in her examination of technology and HCI.

Her desire to continue bridging the gap between STEM fields and the humanities is what started pushing Cayley to consider a PhD, and after speaking with **Dr. Adam Bradley** (A) (who also did the impossible: he completed a double degree in English and Engineering for his PhD), Cayley realized that if she wanted to, she could continue to forge a path in this area of research without having to choose one discipline over the other. And this would take her to her third degree at UW: a PhD in Systems Design Engineering (SYDE).



Around this time, Cayley started to get more interested in virtual reality (VR) and cyber sickness. Eventually, she published "You're Making Me Sick: A Systematic Review of How Virtual Reality Research Considers Gender and Cybersickness" in May 2021, which, later, would be incorporated into her dissertation. During her time in SYDE, she started thinking about more of where she was going with her research in UX, and continued to make English based theory arguments as it applied to work in HCI contexts and honing her skills in rhetoric to make these arguments in a language commonly used in HCI disciplines.

By the end of her degree, the teaching position at Stratford opened and Cayley was encouraged by many to apply—before she even finalized her dissertation, that is. The job talk she delivered gave her one last push to hone in on the narrative that would eventually feed into her dissertation. She knew she needed to get it done, so she sat down, and a month later, her dissertation was finished. "Making Spaces: Mapping Opportunities for Improve Equity in Makerspaces and Virtual Really" would cap off Cayley's education and she successfully defended in 2021 in time to start her new job at the Stratford Campus.

Having completed her quest for the *Triple E Degrees* (Environment, English and Engineering), **Dr. Cayley MacArthur** is looking forward to no longer being limited to publishing in just one field. She can continue to expand her research horizons, and we're excited to see where that takes her.

Remember Grace Van Dam? She put Furby as Cayley's photo on the GI website because Cayley was ignoring her requests for a photo file. It kind of stayed that way.



ONTARIO MINISTER OF DIGITAL GOVERNANCE, KALEED RASHEED VISITS THE GI

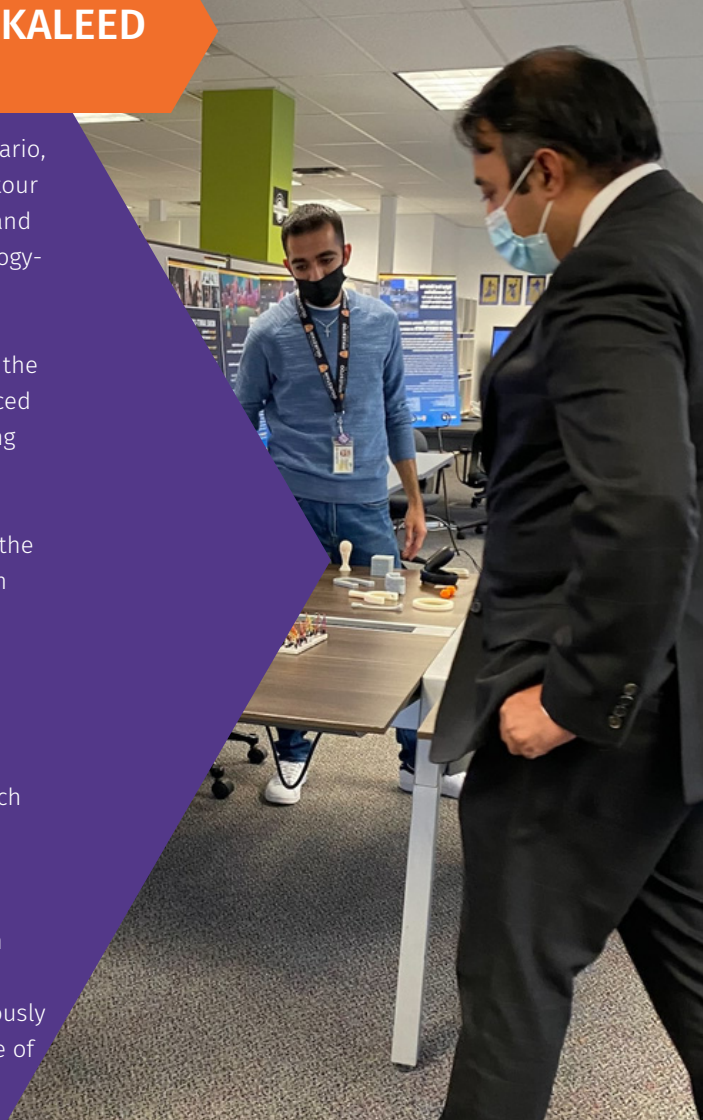
On November 9th, the GI welcomed Associate Minister of Digital Government for Ontario, Mr. *Kaleed Rasheed*. It was exciting to have the GI included as part of Mr. Rasheed's tour of UW's main and Stratford Campuses. Mr. Rasheed, who studied computer science and business himself, was able to see first-hand Waterloo's human-centred and technology-first approach, highlighted through the work of the GI's hard-working researchers.

During his visit to the GI, he met with leaders of multiple research groups housed at the GI as part of the GI's interdisciplinary research network. This included being introduced to the Living Room Lab and the Virtual Reality Storytelling Lab which received funding from the Canada Foundation for Innovation grant and the Ontario Research Fund.

Dr. **Oliver Schneider** (Management Sciences) got to introduce Mr. Rasheed to one of the newest labs in the GI, the Haptic Experience Lab. Dr. Schneider spoke on his research with haptics, and PhD Candidate **Marco Aurelio Moran Ledesma** (Systems Design Engineering), a member of the Haptic Experience Lab, showcased his work that included a variety of 3D printed objects.

Mr. Rasheed also spoke with Dr. **Shana MacDonald** (Communication Arts) of the qCollaborative lab and the Feminist Think Tank. Dr. MacDonald discussed her research about the value of Instagram for feminist activism and digital culture, which are demonstrated on the Instagram account @aesthetic.resistance.

It was a wonderful opportunity to be able to show Mr. Rasheed what the GI has been able to do with the space we've been provided. Especially since the offices the GI inhabits happen to have once been old Blackberry Offices, which Mr. Rasheed previously worked for. We look forward to the opportunity to be able to show Mr. Rasheed more of the work we do here should he ever want to visit again.



CHI PLAY CONFERENCE

CHI Play is an international and interdisciplinary conference sponsored by the ACM Special Interest Group for Computer-Human Interaction that was co-founded by GI's **Dr. Lennart Nacke**. This conference highlights and fosters discussion around research in games and HCI to look to the future of digital play. It involves the presentation of papers, masterclasses, interactive demo plays, student game design competitions, poster sessions and industry insights. GI members and alumni who specialize in HCI participated in the symposium to demonstrate their work.

The *Annual Symposium on Computer-Human Interaction in Play* was hosted digitally from October 18-21, 2021. Students from the GI's HCI group hosted a watch party at the Stratford Campus to participate in the event virtually and support GI members at CHI Play.

Standing applause for the team who published the paper "Nature vs. Stress..." - a joint interdisciplinary endeavour by researchers from: management sciences, public health, kinesiology, math, and industry!



GI members at CHI Play, include:

Chairs:

1. **Dr. Katja Rogers** "Rapid Communication" and "Games for Health"
2. **Dr. Lennart Nacke** "Player Experience"
3. **Dr. Mark Hancock** "Detection and Prediction"
4. **Dr. Pejman Mirza-Babaei** (UOIT) "Applied Gaming"
5. **Dr. Katta Spiel** (A) "Game Design"

Workshops:

1. Katherin Gerling, Regan L Mandryk, and **Dr. Lennart Nacke** "Masterclass: How to Write a CHI PLAY Review"

Panels:

1. **Dr. Pejman Mirza-Babaei**, Simone Kriglstein, Josh Andrew, Neha Kumar "SIGCHI Across Borders: Strengthening Local and Global Ties"

Papers Published:

1. **Tina Chan** (A), **Robert P. Gautheir**, **Ally Suarez**, **Nicholas Sia**, and **Dr. Jim Wallace** "Merlynn: Motivating Peer-to-Peer Cognitive Behavioral Therapy with a Serious Game"
2. **Dr. Adrian Reetz** (A), **Dr. Deltcho Valtchanov** (A), **Dr. Michael Barnett-Cowan**, **Dr. Mark Hancock**, and **Dr. Jim Wallace** "Nature vs. Stress: Investigating the Use of Biophilia in Non-Violent Exploration Games to Reduce Stress"
3. **Enrica Loria**, **Dr. Lennart Nacke**, and **Annapaola Marconi** "On Social Contagion in Gamification: The Power of Influencers in a Location-Based Gameful System"

This term, the GI partnered with multiple groups and individuals to host panels and talks centering discussions of the use of technology for increased accessibility diversity and inclusion within games, and the gamification of game design and data collection.



Building XR Devices to Sense Mind and Body

Moderated by **Dr. John Edison Muñoz Cardona**, GI postdoctoral fellow, the panel explored applications of extended reality (XR) devices and how they are currently being used today. It showcased three companies and their usage of physiological sensors embedded into head mounted XR displays in order to connect mind and body for more natural interfaces for XR applications. Featured on the panel were Looxid Labs, Cognixion, and EMTEQ who specialize in the use of eye-tracking, electroencephalography (EEG) and facial electromyography (EMG) technologies. The panel presented work being done to advance the use of these technologies to make them more accessible to people who live with facial paralysis, speech impairments, and other physical disabilities. The goal of this work is to enhance their quality of life and improve their ability to communicate and participate in the world around them. Dr. John Muñoz is currently completing working with UW's Intelligent Technologies for Wellness and Independent Living (ITWIL) Lab.

Brian Chae

CEO and co-founder of Looxidlabs



Dr. John Muñoz

Post-Doctoral Fellow, GI and SYDE



Charles Nduka

CSO and co-founder of Emteq Labs



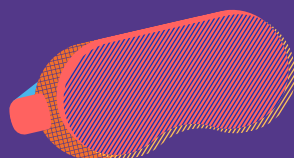
Sarah Pearce

Biosignals Engineering Lead at Cognixion



Guest Lecture: Carbon Collector Creation & Gameplay with Prof. Matt Parker

Professor Matt Parker delivered a guest talk about the game *Carbon Collector* produced by the OpenAir Collective, a volunteer-led network that Parker co-founded. The Collective aims to advance, accelerate, and co-invent carbon dioxide removal solutions through the work of collaborative advocacy and research. During the talk, Parker demonstrated the use of games as an effective way to communicate difficult scientific concepts given their interactive nature. Participants were invited to play the game and provide feedback on their experience.



GI GAME JAM

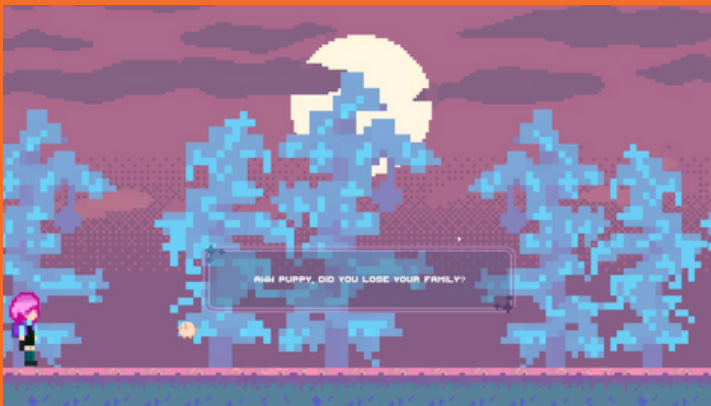
The GI Game Jam continued this Winter as a thrice-annual, multi-day event hosted by the GI where playful people gathered together to create original games together. The event was hosted on the GI's Discord server by Captains **Arielle Grindberg** and **Alexander Glover** (PhD students in SYDE). The teams were required to present a presskit of their game and share their finished product with all participants.

Games and Teams presented at the Jam:

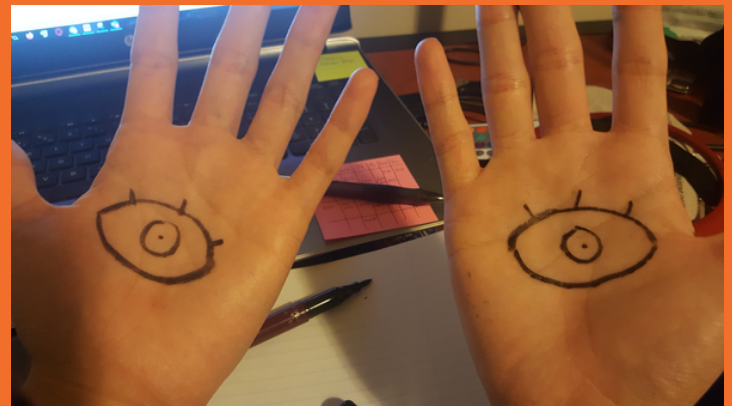
- *Spirit Mayhem* by The Procedural Lions follows a witch's journey through the afterlife where the player can fight against evil ghosts.
- *Leave Me Alone!* by MAPLE'S FINEST is a game that has the player fighting off white blobs that are trying to ruin the player's alone time.
- *Session* by Overtime is inspired from Neapolitan horror and creepypastas that invites the player to put themselves into a situation that makes them feel unease and afraid.
- *Without You* by Pixl positions the player as a 14-year-old programmer as they move through the world, learning why they can't live without classic masterpieces of artwork.
- *YGN* by Sage presents a battle card design for the data jam called the Wandering Lady of Battle.



Without You



Session



Spirit Mayhem



YGN



Leave Me Alone!



INTERNAL GI SEED FUNDING PROGRAM ANNOUNCEMENT

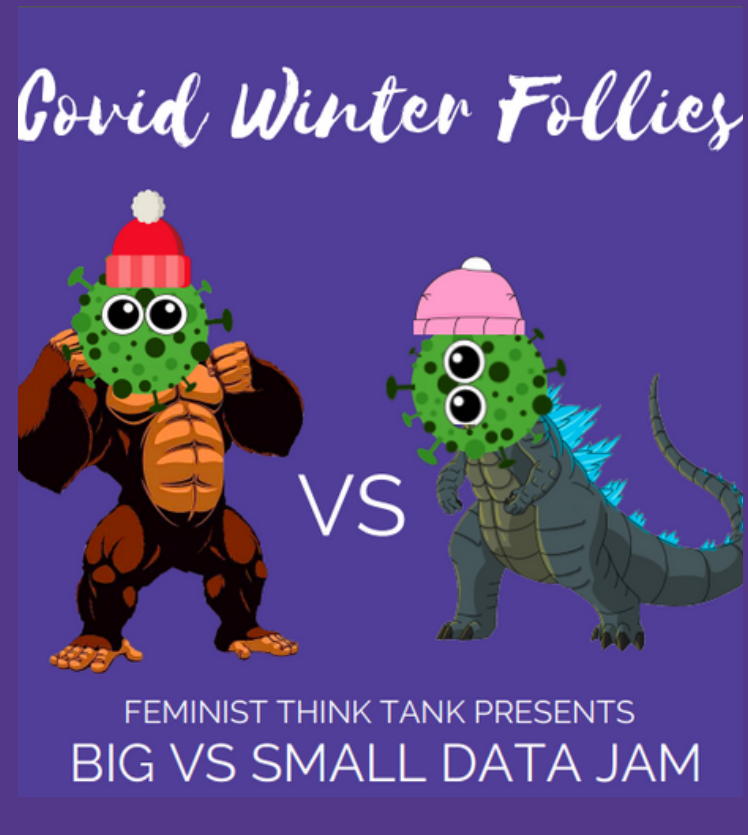
In December 2021, the GI announced a Seed Program, which would provide funding to GI researchers to support new, interdisciplinary projects and collaborations. The application process is currently being finalized and the Seed Program will be launched in Spring 2022.



The Feminist Think Tank (FTT) kicked off the event series *Data Jam* in November with the first event *Everything but the Kitchen Sink* led by **Dr. Shana MacDonald** and other FTT members. Participants were asked to collect "everything but the kitchen sink" on their phone which included saved posts, screenshots, liked content, and more from sites like Instagram, TikTok, and Twitter. This gave participants a chance to enter the world of data visualization and toss around hypotheses of how to tag posts by playing a few rounds of Bingo where they were required to find a piece of data that matched the Bingo sheet.

The second event of this series *Covid Winter Follies: Big vs Small Data* presented a collection of Covid digital ephemera (memes, hashtag threads, etc.) to see if participants could make sense of this "hot mess" of a collection. Anyone who is interested in data was welcome to join these events and learn how to play with data—both big and small. Participants made their own memes based on the collections they had access to. The memes were then shared and discussions were had on what the memes represent and what connections participants made when viewing the datasets.

The Data Jams are continuing in Winter 2022, with **Dr. Marcel O’Gorman** (English) of the Critical Media Lab taking inspiration from what creations participants put forth.



MISOGYNY IN GAMES AND GAMING CULTURE

In collaboration with the GI, the UW Women’s Centre hosted a panel on *Misogyny in Games and Gaming Culture* as part of the Centre’s annual “Love Your Body” week.

This panel featured PhD candidate **Lindsay Meaning** (English), Development Instructor **Dr. Emma Vossen** (English), and **Drs. Shana MacDonald** and **Bri Wiens** (both in Communication Arts). The moderator, **Gioia Myers** (UW Women’s Centre), guided the panel on a whole range of issues within gaming such as misogyny, homophobia, racism, among others.

Panelists made connections between current events in games and historical and feminist events in media at large which, inevitably, meant discussing "the elephant" in the room: #Gamergate and the larger #Metoo movement.

All panelists saw #Gamergate as a backlash to on-going changes in games culture such as the inclusion of more diverse characters and themes. Look at *The Last of Us II*; the main character Ellie is shown to be in a relationship with another woman, Dina, and many people critiqued the game’s antagonist, Abby, for being a larger muscular woman.

These creative decisions received backlash from some just by virtue of not being what many see to be the norm in gaming: characters that are white, strong, cis-men.

Not only did the panelists touch upon the games themselves, but they also looked to the industry and the people who make these games. They concluded that the gaming industry, at large, is not spending enough time on addressing the toxicity within their businesses and that diversity alone won’t fix the current problems.

And as a final note, the panelists encouraged the audience to seek out games that are better tailored to their specific interests.

Suggested Games:

- Horizon Zero Dawn (PS4, Windows)
- Curses - Coming in 2022 - (Mac and PC)
- Cibelle, Freshman Year, and all other games by Nina Freeman (Mac and PC)
- Life is Strange - episode one free! (All Platforms)
- Life is Strange: True Colors - The newest Instalment in the Series (All Platforms)
- Cozy Grove (All Platforms)
- Unravelled (Xbox, PlayStation, Windows)
- Night in the Woods (All Platforms)
- Tacoma (Xbox, PlayStation, Windows, Mac)
- Gone Home (PlayStation, Windows, Mac)
- Hades (All Platforms)
- A Short Hike (All Platforms)
- Boyfriend Dungeon (All Platforms)
- Assassins Creed Odyssey - panelists specified playing as Cassandra *not* Alexios (Windows, PS4, Xbox, Switch)
- Disco Elysium (All Platforms)



Publications:

- **Marco Moran-Ledesma, Drs. Oliver Schneider and Mark Hancock** (2021). User-Defined Gestures with Physical Props in Virtual Reality.
- Samantha Fritz, **Ian Milligan**, Nick Ruest, and Jimmy Lin, "Fostering Community Engagement through Datathon Events: The Archives Unleashed Experience"
- Chakraborty A, Tran TT, Silva AE, Giaschi D, **Thompson B.** (2021). Continuous theta burst TMS of area MT+ impairs attentive motion tracking.
- Chow A, Quan Y, Chui C, Itier RJ, **Thompson B.** (2021). Orienting of covert attention by neutral and emotional gaze cuing appears to be unaffected by mild to moderate amblyopia.
- Chow A, Silva AE, Tsang K, Ng G, Ho C, **Thompson B.** (2021). Binocular integration of perceptually suppressed visual information in amblyopia.
- Paudel N, **Thompson B**, Chakraborty A, Harding JE, Jacobs RJ, Wouldes TA, Yu TY, Anstice NS. (2021). Relationship between visual and neurodevelopmental measures at two years with visual acuity and stereopsis at 4.5 years in children born at risk of neonatal hypoglycaemia.
- Radzikowska M., **Kadir A, MacDonald S, Roberts-Smith J, Ruecker S, Wiens B.** (2021). Feminists Colouring Feminists.
- In November, **FTT** published the edited collection *Networked Feminism: Activist Assemblies and Digital Practices* (2021, Lexington Books) and got a contract for a second volume, *Stories of Digital Performative Assembly: Feminist Protest and Resistance* (Lexington Books, 2022).

Conference Presentations:

- **Dr. Jen Boger** had quite the busy term this year for conferences! As part of her research in aging, intelligent living, and technology, Jen has presented at a plethora of conferences including IEEE International Symposium on Antennas and Propagation, the Gerontology Society of America 2021, and the Canadian Association on Gerontology (CAG) 2021. Check out her work as part of the Intelligent Technologies for Wellness and Independent Living (ITWIL) Lab.
- Stephanie Aboueid, Samantha B. Meyer, **James Wallace**, Ashok Chaurasia. Latent classes associated with the intention to use a symptom checker for self-triage.

Grants:

- **Dr. Oliver Schneider** received an NSERC Alliance grant for "Human-in-the-loop Algorithms for Generative Haptic Design"

Awards:

- Queenie Chie and Yetian Wang won the Chrysanne Di Marco Computational Rhetoric Undergraduate and Graduate Scholarships, respectively, for their work on GoFigure with **Dr. Randy Harris**.
- **Ben Thompson** was awarded the University of Waterloo Excellence in Science and Research Award.

Projects:

- The Rhetoricon group, led by **Dr. Randy Harris**, continues its development of GoFigure, a crowdsourcing game emphasizing the role of citizen science.
- **Dr. Ian Milligan** continues to lead the Archives Unleashed Project supported by the Andrew W. Mellon Foundation.

Other Updates:

- **Dr. Jen Boger**. Guest lecture. (Nov 2021). "I am more than my vital signs!" Technology to support dementia. Dementia Care (HLTH 427/627). University of Waterloo, Waterloo, ON.
- **Dr. Jen Boger**. Presenter. (Nov 2021). Developing Ethical Engineers with Empathy. CEEA IDDEA 2021 Mini-Conference, Online.
- **Dr. Neil Randall** was an invited expert on RTE Radio 1, hosted by A. O'Connell in Dublin, Ireland for a program titled "Return to Hogwarts" to talk about the Harry Potter 20th Reunion of the movie cast (aired on December 30, 2021).
- **Ben Thompson** was the lead editor of a Brain Sciences special issue: Neurorehabilitations of the Senses.
- **Ben Thompson** was also a guest editor along with Jiawei Zhou, Krista Kelly, Zhikuan Yang, and Minbin Yu for the journal *Frontiers in Neuroscience*, overseeing a special issue: Functional Eye Diseases, Visual Deficits, and Rehabilitation, published February 10, 2022.

The GI's Unofficial Busiest Bees Award goes to Drs. Jen Boger and Ben Thompson!



GI ANTI-RACISM, DECOLONIZATION, AND EQUITY, DIVERSITY AND INCLUSIVITY (ADE) COMMITTEE

Following the ratification of its Terms of Reference, the ADE Committee welcomed **Arielle Grinberg** as a new student member. The Committee has also said farewell to the following individuals:

- Dr. Jennifer Roberts-Smith,
- Dr. Rina Wehbe,
- Apoorva Sanagavarapu, and
- Marisa Benjamin.

On behalf of the GI Community, the ADE Committee expressed their gratitude to these individuals for serving on the committee and providing input at a critical point in its development.

With the GI's network ever expanding, past students and faculty have moved on to other institutions to further their research interests. They remain members of our extended GI community and will be welcomed back when collaboration opportunities present themselves:

- Dr. Jen Boger, University of British Columbia, Okanagan Campus
- Dr. Aynur Kadir, University of British Columbia
- Dr. Jennifer Roberts-Smith, Brock University
- Dr. Rina Wehbe, Dalhousie University

STAFFING CHANGES

The Fall semester has seen exciting additions to the GI staff as well as a few goodbyes.

New Staff

- **Sid Heeg** joins the GI as a Research Communications Writer. They are currently a first year PhD student in the Sustainability Management program and Faculty of Environment.
- **Sophie Valleteau De Moulliac** joins the GI for her Winter 2022 co-op term as the Operations Coordinator. She is majoring in Environment and Business with a minor in English
- **Grace Van Dam** (re)joins the GI as a GI Podcast producer. She graduated with a Bachelor of Science in 2021, majoring in Psychology with a minor in Biology.
- **Dr. Emma Vossen** (re)joins the GI as a Research Communications Writer having previously received her PhD in English Language and Literature in 2018.

Departing Staff

- **Marisa Benjamin** joined the GI staff in 2018 as a Research Communications Officer. She is currently pursuing a law degree at the University of Toronto.
- **Aathani Raveendran** finished her fall co-op term with the GI as Operations Coordinator and is continuing her education in her third year as a Science and Business student.



GI NETWORK EXPANSION

NEW MEMBERS

- **Sahand Ajami** is an Applied Science student, working on his Master's of Science. His research focuses on upper-limb rehabilitation with wearable robots and haptic feedback.
- **Hannah Delamere** is an undergraduate student, studying English Language and Literature. She is currently Dr. Shana MacDonald's research assistant.
- **Amerald Fang** is a Bachelor of Science student in Geomatics.
- **Alexander Glover** is from Systems Design Engineering and focusing on explainable artificial intelligence.
- **Eliana Hill-Zeesman** is completing her Bachelor of Arts in the field of Legal Studies and is assisting Drs. Shana MacDonald and Brianna Wiens.
- **Dr. Cayley MacArthur** is an assistant professor, teaching at the Stratford School of Interaction Design and Business
- **Thuvaraka Mahenthiran** is a Bachelor of Science student, majoring in Psychology and currently assisting Dr. Shana MacDonald.
- **Dr. Ville Mäkelä** is an assistant professor from the Faculty of Arts and teaches out of the Stratford School of Interaction Design and Business. His research dabbles in the realm of HCI, mobile computing, virtual reality, and games.
- **Luka Ugaya Mazza** is completing their Master's of Science in Public Health and Healthy Systems. Their research is interested in serious games, games for mental health, data visualisation and more.
- **Sydney McAffer** is current an undergraduate research assistant, working on her Bachelor's in Science with a major in Psychology and minors in Biology and Cognitive Science
- **Melanie Lim** is a Master's student in the Department of Recreation and Leisure Studies. She is a research assistant for Dr. Shand MacDonald.
- **Sumeet Sandhu** is an undergraduate student who worked alongside Dr. Randy Harris as a research assistant for a co-op term.
- **Emily Shiu** is a PhD candidate in the Department of Psychology. Her research focuses on adult bilingualism.
- **Veen Wong** is a PhD student in the School of Public Health Sciences, studying in Public Health and Health Systems.
- **Fiona Yang** is from the Faculty of Arts, majoring in Psychology. She is assisting in research of AR/VR and accessible storytelling.

Bolded names in this document denote GI members while *italicized names* denote collaborators and guests.

Names marked with "(A)" denote former GI members.

The Games Institute and its members acknowledge that the land on which our community works and lives today is the traditional land of the Attawandaron (Neutral), Anishinaabeg and Haudenosaunee peoples. We recognize that the University of Waterloo, of which the Games Institute is part, is situated on the Haldimand Tract – the land taken without consent and subsequently promised to the Six Nations – that includes ten kilometers on either side of the Grand River.

We recognize the enduring presence and deep traditional knowledge, laws and philosophies of the Indigenous Peoples with whom we share this land today. As the Games Institute facilitates researchers of games, digital spaces, and interactive technologies, we undertake to make space for Indigenous scholars, designers, commentators and creators to uplift voices that are marginalized in the academic and gaming community.

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