UNIVERSITY OF WATERLOO | THE GAMES INSTITUTE

INSTANT REPLAY

Gathering Global Guests

It would be a massive understatement to say that Fall 2023 was a busy semester at the Games Institute (GI). We hosted 19 events in the Fall 2023 term bringing up the GI event total for 2023 to 40! There were seven ADE speaker series events, the Town Hall, and many social events, guest lectures, talks, tours, and workshops.

We showcased GI member research at our booths during the Royal Society of Canada's "Celebration of Excellence and Engagement" and the Waterloo Institute for Sustainable Energy's 2023 Annual General Meeting. GI members attended and organized CHI PLAY 2023 (see pages 6-19), landed great jobs (pages 2-5), and secured funding to build more labs (page 15). A very special shout-out goes to Dr. Lai-Tze Fan who was appointed Canada Research Chair (page 14)!

We also earned our Green Office Initiative certification (page 17), dressed up for Halloween, celebrated the holidays, and even played a little *Smash* (page 19).

Catch up on everything in this latest edition of Instant Replay!
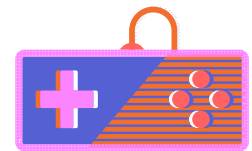
NEWSLETTER HIGHLIGHTS

Pay it Forward
Five Lessons from a Departing Postdoctoral Fellow

Dr. Hector Perez worked with many Indigenous communities during his time as a postdoctoral fellow including the Peguis First Nation in Manitoba who often asked him, "When are you coming back?" One of the most valuable lessons Perez learned was that Indigenous communities would expect visitors, including researchers, to return to the community to share their research insights and participate in social gatherings. As Perez moves on to new opportunities, there are five lessons he wants to impart on our community.

Lesson 1: Expand Your Skillset

Perez has an eclectic academic and work background; his bachelor's degree in economics and master's in business administration. Perez had not considered a future in health and games research, but he was always looking for opportunities to expand his knowledge and skill sets.

He's worked with NGOs in Poland, and has lived in Japan, Portugal, Spain, and Costa Rica, taking up different research positions at different institutions, learning local languages along the way. His journey eventually took him across the border to Minnesota, USA to work with the Mayo Clinic as he pursued a PhD in strategic planning and technology management, especially health technologies.

[Dr. Hector Perez (right) speaking with Dr. Lili Liu (left)]

Perez found himself learning an entirely new vocabulary, picking up a wide variety of health terminology. It was a leap from where he started, putting him out of his comfort zone, but he was up to the challenge and with considerable care and understanding he progressed through his degree and ended up working at Sick Kids, Toronto.

Perez is not one to shy away from new experiences. If he has the chance to do something new and exciting, He's ready to pursue it.
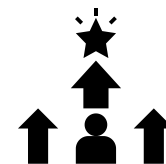
Lesson 2: Jump on Every Opportunity

Once Perez joined the University of Waterloo as a postdoctoral researcher for the Aging and Innovation Research Program working with Dr. Lili Liu, Dean of the Faculty of Health, he actively sought out new opportunities on campus.

[Dr. Perez demonstrating a training simulation with a VR headset]

A large part of Perez's work with Liu was utilizing immersive technologies like virtual reality (VR) to train first responders responsible for locating missing persons living with dementia. Used as a training tool, VR would better equip first responders with context specific skills.

Their initial steps into VR research, brought the team of researchers to the GI. Games and immersive technologies was certainly a new area of research for Perez, one that he was excited to learn more about.

Perez saw the opportunity to become a part of the GI's unique interdisciplinary research and collaboration efforts. He met GI health researchers Dr. John Muñoz (J&F Alliance, Adjunct Professor), who work with VR applications for aging populations, and PhD candidate Samira Mehrabi (Aging, Health and Well-being), who researchers the positive impacts of VR exercise games on physical and mental health.

[Dr. Perez speaking with UWaterloo President Dr. Vivek Goel]

Perez knew immediately that joining the GI would have a profound impact on his research; with so many disciplines represented in the membership, he had access to a wide range of perspectives that broadened his understanding of what it means to do research in games and immersive technologies.

Once a GI member, he joined the Anti-Racism, Decolonization, Equity, Diversity, and Inclusion Committee (ADE Committee). With the Committee's commitment to expand the GI's understanding of equity, diversity, and inclusion, he saw an opportunity to continue his personal and professional growth. Perez connected with other Committee members, learning about their lives and experiences, and taking the time to educate himself and reflect on his past experiences.
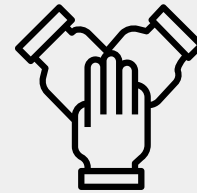
Lesson 3: Collaboration is Key

Members of the GI are encouraged to collaborate with researchers outside of their disciplines. GI events offer everyone the chance to broaden their perspectives, and Perez was very involved in what's happening at the GI.

In 2022, Perez spearheaded a networking event between the GI and AGE-WELL, a Canadian aging and technology research network. The event included networking, game and technology demonstrations and presentations from experts in aging research and serious game design. This was not the only time where Perez stepped up to the plate to connect with like-minded peers.

In 2023, the GI welcomed a delegation of researchers from the Saxion University of Applied Sciences. This visit included presentations from GI members, including Perez who shared the current state of his VR training simulation for first responders.

Perez's research and work with first responders, has led him to many communities within Ontario, Quebec, and Manitoba to discuss the effects of dementia within Indigenous communities. This has resulted in collaboration with the First Nations Chiefs of Police Association and the Kahnawá:ke Peacekeepers, a primary service for law enforcement with the Mohawk Council.


[Dr. Perez (right) receiving a gift from a member of the First Nations Chief of Police]

Perez then shared his knowledge from working with Indigenous communities on the research panel "Indigenous Research and Epistemology." as part of the GI's ADE for Games Communities speaker series. Perez joined the panel as a moderator with *Dr. Kelly Laurila*, (Renison) to share their perspectives and experience on what it means for Indigenous scholars and students to do research within colonial structures. Perez discussed working with first responders in the Peguis First Nation in Manitoba and his initial struggles to honour Indigenous protocols when it came to relationship building and answering the question "when are you coming back?" in an honest way.

[Dr. Perez (left) participating in a drum circle with Dr. Kelly Laurila (right)]
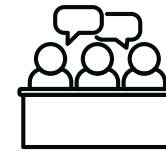
Lesson 4: Talk to People

If there's anything Perez has learned through his time globetrotting, conducting research, and relationship building it is that one of the easiest things an emerging scholar can do is simply talk to people. Since coming to the GI, Perez has been immersed in a community full of, what we here at the GI like to refer to as, 'misfits.' Researchers who don't belong to any one specific discipline who are looking for the ways to bridge the gaps between them.

One gathering of 'misfits' is the yearly GI Research Speed Dating, an event that allows members, both students and faculty, to talk to many people in quick succession. Members are paired up to participate in minute long conversations to familiarize themselves with each other's research. Perez recalls getting paired with PhD Candidate **Sid Heeg** (Sustainability Management) and learning more about farming than he's ever cared to know!

In 2021, Perez successfully applied for the GI Seed Grant for his project "Dementia-friendly Frist Responders Edu-action: An Interactive Participatory and Co-designed Training Course for Indigenous First Responders." Being a member of the GI meant that he had access to the technology, infrastructure, and highly qualified interdisciplinary researchers.

From people like PhD Candidate **Marco Moran Ledesma** (Systems Design Engineering) and **Dr. John Muñoz**, Perez learned how to design within a VR environment to suit his needs. He also worked with GI administrative staff **Agata Antkiewicz** (Associate Director) and **Pamela Maria Schmidt**, (Research Project Manager) to purchase the needed equipment, pay his study participants, and work on the scope of his knowledge mobilization deliverables. Perez appreciated the chance to learn how to make his research accessible to researchers outside of health.

[Left to right: Dr. Hector Perez, Karen Haines, and Jamie Stirling attending the First Nations Chiefs of Police Association annual conference]

Lesson 5: Pay it Forward

"When are you coming back?" isn't just something Perez heard during his time with the Peguis First Nation but a sentiment that he is actively trying to embody and understand. He works to give back to the community he finds himself in a instead of simply taking what he needs and leaving. Therefore, Perez feels that his moving on to a new job isn't so much as a 'goodbye' to the GI community but rather a 'see you later.'

In his time at the GI, Perez has built up the skills and connections he needed to find himself working with the Hamilton Police Services as a Business and Program Evaluation Specialist. This transition feels natural to Perez after working with police services over the past two years as part of his research.

[Left to right: Dr. Hector Perez, Agata Antkiewicz, Marco Moran Ledesma, Pamela Maria Schmidt, and Ana Lucia Derby dressed in supporting colours for their home countries of Mexico and Poland during the World Cup 2022]

"I feel lucky to have these sorts of interactions and opportunities," he said, and he looks forward to continuing his work on building and programming tools to aid in search and rescue efforts.

Perez fondly recalls the sense of community garnered at the GI. He remembers the football (that's soccer for all the North Americans out there) matches that were broadcasted in the GI Collaboration Space during the 2022 World Cup season.

He appreciates the constant support and mentorship that he was given by **Executive Director, Dr. Neil Randall** and wishes he had access to a place like the GI when he was a student. "Not a lot of students in Health know about this place," he said, "but I wish they would get more involved at the GI."

Perez won't be gone for long; he continues to be an active member in the GI from a distance and seeks out ways to pay forward the skills he developed during his time here. Of course, we never doubted that Hector *will* be coming back. In early 2024, he'll return for the GI Seed Grant Symposium so if you've got any burning questions for him, he'll be happy to answer them then!

Aspects of Play in Academia
Women of CHI PLAY 2023

The following is an excerpt from a longer piece about GI member experiences at CHI PLAY 2023. The full version will be featured in GI's 2023 Annual Report (upcoming).

CHI PLAY is a specialized conference for Human Computer Interaction (HCI) researchers interested in games and play. This includes user research, game design and development, gamification, biofeedback, hardware use, industry studies, and more. Organizers call this interdisciplinary intersection "player-computer interaction".

From October 10th to October 13th, 2023, CHI PLAY took place at the Stratford School of Business and Interaction Design. This year the conference was co-chaired by two GI faculty members, **Dr. Jennifer Whitson** (Sociology and Legal Studies, Stratford), and **Dr. Jim Wallace** (School of Public Health Sciences). GI faculty and students helped with the conference logistics, from supplying games to play at socials, to giving recommendations for what to do and see in Stratford; all while chairing panels, presenting their research, and networking with others in their field.

From humanities students studying how game mechanics enhance narrative storytelling, to engineers employing ethnographic research methods to examine technology designed for small spaces, CHI PLAY offers a venue to present and publish interdisciplinary work and receive feedback from globally recognized researchers.

In this retrospective, we sit down with GI faculty **Drs. Cayley MacArthur**, **Jen Whitson** and **Leah Zhang-Kennedy** who recount their experiences at CHI PLAY, including what makes it so unique, what they took away from the 2023 conference, and what advice they would give to those looking to attend in the future.

Encouraging Engagement

Dr. Cayley MacArthur has been attending CHI PLAY since she was a student at the University of Waterloo; this was her first CHI PLAY since becoming an Assistant Professor at the University of Waterloo Stratford School of Interaction Design and Business.

MacArthur's first CHI PLAY was in Australia, in 2018, which she felt was "pretty hard to top." As a student, she appreciated the chance to interact with faculty members and make connections with people outside of her academic discipline and Waterloo network; something MacArthur now encourages her own students to do.

Player engagement and interaction is a large topic among CHI researchers and game developers alike—how can people be better engaged? To encourage conference attendees to interact with projects on display, the conference's Engagement Chairs (including GI Member Alê Luz Lam!) designed a token system. For each interaction, people would receive a token and could exchange it for fun little stickers.

"Can I show you the sparkle stickers?" MacArthur shows off a handful of stickers she received after engaging with some of the interactive demos of works and games in progress at CHI PLAY. This is just one of the innovations CHI PLAY implemented this year to encourage more interactive participation and engagement with games and research over the course of the conference.

Shout out to Alê Luz Lam, the CHI PLAY Conference Engagement and Sticker Queen!

[A collection of stickers Dr. MacArthur picked up from CHI PLAY]

This year, MacArthur sat in on an interesting paper that examined how people can better decide if compliments they receive while playing games are genuine or snide. "There was a lot of work in general about toxicity in online gaming communities and how people would understand intent and people's personal reactions to online interactions" MacArthur explains.

She hopes that students will take conferences as an opportunity to be exposed to new ideas like these, "You're exposed to so many new ideas and things you wouldn't necessarily think about, talks that you wouldn't even think of attending". MacArthur also served as SIG-CHI Cares Representative - more about that on page 16!

Care and Community

As a graduate student, Dr. Whitson experienced CHI PLAY in its infancy when it was known as "Future PLAY." While "Future PLAY" was intended for academics in computer science and adjacent disciplines, Whitson was doing work in game studies, a growing field of humanities scholars and social scientists studying games and technology. Whitson noticed that the topics game scholars in game studies, and HCI engaged with such as games and affect, representation in games, and matters of privacy, were quite similar. Now, more than a decade later as an Associate Professor in Sociology and Legal Studies and the Stratford School of Interaction Design and Business, Whitson was returning to CHI PLAY as co-chair.

Over the years, CHI PLAY has curated a strong sense of community, culture, and tradition. For example, attendees give standing ovations after every presentation and there is always at least one night of karaoke after the conference is done for the day. To Whitson, it's these small moments that make the community a wonderful thing to be a part of, and as co-chair, it was important to her to help maintain the sense of community that CHI PLAY is known for.

One thing that sets CHI PLAY apart for Whitson is that acceptance to the conference is also acceptance to the published conference proceedings, which isn't standard at many other conferences. CHI PLAY provides graduate students emerging in the field with valuable training on the submission, reviewing and publishing process.

For 2023, CHI PLAY received and reviewed almost 300 total submissions which resulted in 52 full papers (226 were reviewed), 31 short "work-in-progress" papers, 10 "perspectives on play" papers, 4 interactive demos, and 8 student games. These were then published online by the Association for Computer Machinery in the _CHI PLAY Companion '23: Companion Proceedings of the Annual Symposium on Computer-Human Interaction in Play._

[Various CHI PLAY attendees performing at a karaoke bar. Source: Dr. Lennart Nacke]

Whitson enjoyed the blend of academic and industry panels and presentations especially the keynote presentation by Kitfox Games' Creative Director Tanya Short, "Work Healthy, Play Healthy" which explored her advocacy work in the games industry, including her commitment to anti-crunch studio culture.

Whitson sees presentations like these as a valuable opportunity for academia and industry to learn from each other.

[The main hall at Stratford campus with a CHI PLAY 2023 banner. Source: Martin Dechant]

Whitson also added, "If researchers find the conference proceedings to be daunting, there are opportunities to submit to the works in the 'work in progress' track." In this track, students can present a poster, receive feedback on their work, submit games to the design competition, and attend CHI PLAY as an audience member. Whitson says: "If you are someone who makes games, absolutely submit games."

First-Time Experiences

Dr. Leah Zhang-Kennedy's (Stratford School of Interaction Design and Business) research focuses on the privacy and safety aspects of people's interactions with digital technologies. When searching for a community of scholars doing this work, she found relevant papers within past CHI PLAY

searching for a community of scholars doing this work, she found relevant papers within past CHI PLAY proceedings, "with such a wide variety of content," she said, "there is something there for everyone even though your research might not focus on games, gaming, or gamification. Everyone speaks a common language through HCI."

With the conference happening locally, Zhang-Kennedy decided to not only attend but also volunteer to be a mentor for students attending CHI PLAY. She finds it important to encourage students to develop their own research and design skills. As a student mentor Zhang-Kennedy met with three graduate students and assisted in judging the game design competition as the only academic judge.

Another key piece of advice she passes on to students is that while attending presentations is important, don't skip out on the conference dinners and socials, "there are opportunities to interact with people who are different from you. Get out of your own lab and talk to people; you might learn something new."

[Left: GI member Sukran Karaosmanoglu participating in a demo using VR equipment | Source: Sukran Karaosmanoglu]

The Future of CHI PLAY

This year's CHI PLAY worked to build bridges between academics and industry experts; curate a supportive and engaging environment for students and newcomers and establish the growing body of interdisciplinary research within games and interactive technologies.

After this year's conference, Whitson has some final thoughts for her successors and for those in the humanities disciplines who might want to consider submitting to CHI PLAY in the future "for academic games work, regardless of discipline, CHI PLAY is right now the hub in terms of the largest collection of games-related research."

Congrats to all GI members involved in organizing CHI PLAY 2023! In alphabetical order by first name:

- Alessandra Luz Lam (Engagement Chair)
- Ali Rizvi (Local Arrangements Chair)
- Dr. Daniel Harley (Student Design Competition Chair)
- Derrick Wang (Interactivity and Play Chair)
- Greg McIntyre (Virtualization Chair)
- Dr. Jen Whitson (General co-Chair)
- Dr. Jim Wallace (General co-Chair)
- Ken Jen Lee (Student Volunteer Chair)
- Dr. Pejman Mirza-Babaei (Connections Chair)
- Veen Wong (Accessibility Chair)
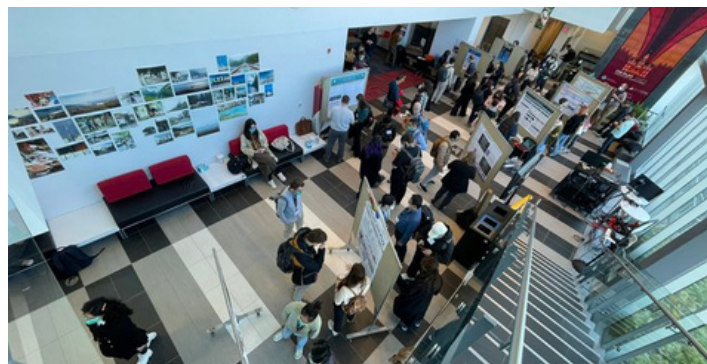
[A top down view of student research projects and works in progress
Source: Anke Aphasia]

EVENTS

GI Events - A Term Like None Other

The second part of the ADE Speaker Series, which held seven events this term, along with many guest lectures brought the total event count during the F23 semester to 19. This wouldn't have been possible without the help of GI members and staff especially Research Project Manager **Pamela Maria Schmidt.** We have assembled attendance statistics how widely attended events this term have been. Thank you all to those who presented, moderated, attended in person or online, and volunteered!

Top Three Most Attended Events of F23:

1. The Case for Paratopian Design (ADE Speaker Series)
2. The Psychology of Fun and Frustration (Guest Lecture)
3. Workshop on Building Equitable and Sustainable Game Development Education (ADE Speaker Series)
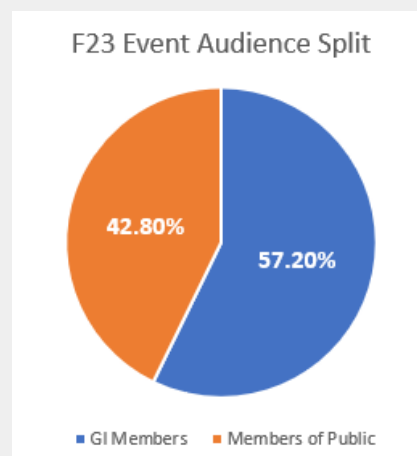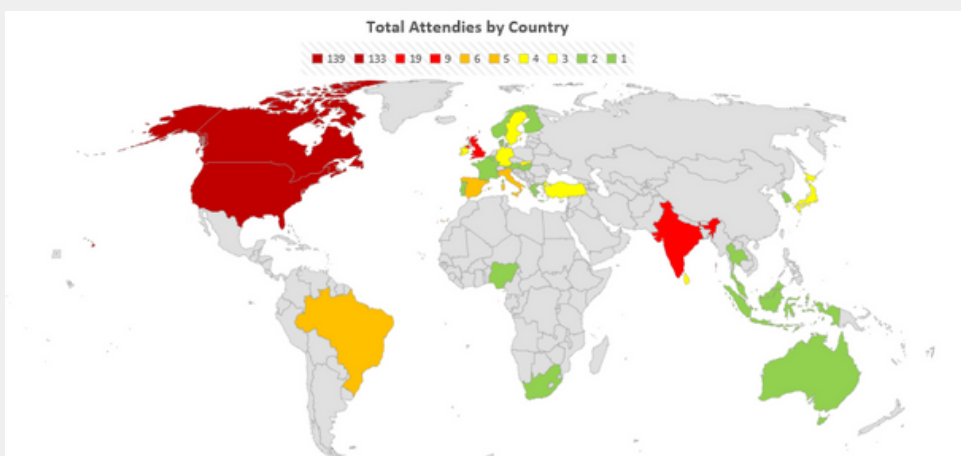
ADE for Games Communities Workshop and Speaker Series - F23 Events

Drs. Gerald Voorhees (Communication Arts) and **Daniel Harley** (Stratford School of Interaction Design and Business), in association with the Anti-Racism, Decolonization, and Equity, Diversity, and Inclusion (ADE) Committee at the Games Institute, continued their SSHRC-funded ADE for Game Communities: Workshop and Speaker Series with an additional seven events this term. The Speaker Series creates opportunities for meaningful equitable change in games academia and industry that requires active and inclusive community-building.

As a part of this mission, the ADE Committee created the speaker and workshop series to centre the voices of individuals from marginalized groups. This includes, but is not limited to, persons who are Black and/or Indigenous or otherwise racialized, women-identified, LGBTQ2S+, disabled and/or neurodivergent, and people from other under-represented communities. The following events were hosted by a variety of researchers across the globe, discussing themes related to decolonization, equity, accessibility and diversity in games and game communities.

By highlighting historically marginalized voices, the GI community and audience members gained fundamental understandings, were challenged with critical questions, and learned practical skills and insights to address current issues in both academia and industry. You will soon be able to watch the events on YouTube, and you can read more about them on the GI website.

The Fall 2023 Events

"Panel on Emerging Voices in Black Games Studies" with Dr. Akil Fletcher, Dr. Steven Dashiell, and Cyan Devaux	"Black Virtuality" with A.M. Darke	"Workshop on Building Equitable and Sustainable Game Development Education" with Kenzie Gordon, Vishal Sooknanan, Dr. Jennifer Whitson, Dr. Sean Gouglas, Dr. Alison Harvey, and Dr. Johanna Weststrar	"The Case for Paratopian Design" with Dr. Rilla Khaled

"Skins Deep: Race, Gender, and Nationality in eSports" with Dr. Tara Fickle	"Panel on Emerging Voices in Asian/American Games Studies" with Dr. Huan He, Dr. Sarah Ganzon, and Dr. Matthew Howard	"Onkwehonwe Games Workshop" with Dallas Squire

[A collage of images of the ADE Speaker Series events and workshops from Fall 2023]

GI Members at the Urgency of Social Justice Event

On Wednesday, September 20th, GI Members attended The Urgency of Social Justice event presented by the Gender and Social Justice program.

Feminist Think Tank (FTT), a research group co-led by **Drs. Shana MacDonald** (Communication Arts) and **Brianna Wiens** (English Language and Literature) joined the event with an information booth. At the booth, FTT members **Jay Smith** (English Language and Literature), **Jared Cubilla** (English Language and Literature), and **Sid Heeg** (School of Environment, Enterprise and Development) had the chance to speak with prospective members about the inclusive community FTT cultivates. They also handed out handmade buttons and stickers while answering questions about how new members can get involved.

Another GI member joining the event was **Dr. Marcel O'Gorman** (English Language and Literature), director of the Critical Media Lab (CML). O'Gorman spoke about the intersections between social justice and technological development. He paid particular attention to ChatGPT and the ethics surrounding generative artificial intelligence (AI), noting how AI replicates colonizing practices, stating that it is "theft from art and artists for profit." He emphasized the need to decolonize innovation and urged students and faculty to be critical of the technologies they use in the classroom.

[Dr. Brianna Wiens and Jay Smith making buttons at the FTT booth]

The Psychology of Fun and Frustration with Dr. Nick Bowman

[Left to right: Drs. Eugene Kukshinov, Nick Bowman, and Lennart Nacke]

On September 27th, visiting scholar *Dr. Nick Bowman*, Associate Professor of Emerging Media at the S.I Newhouse school of Public Communications at Syracuse University, presented his research at the Games Institute.

The lecture was titled "The Psychology of Fun and Frustration: Understanding the Demands and Interactivity" and discussed the "interactivity-as-demand" model as it applies to video games and virtual reality technologies, highlighting its implications for game design and player psychology.

Bowman explained that interactivity is complex in part because it is a "myriad of demands that do not always get along." For example, interactive entertainment media, like video games invite users to co-create an on-screen experience with the technology, demanding the users constant attention.

Physiological Measures for Games and VR: Novel Tools and Approaches

Dr. John Muñoz, Chief Science Officer at J&F Alliance Group and an Adjunct Professor at the University of Waterloo, hosted an interactive workshop on October 4th, 2023, in person at the GI.

Muñoz's workshop, titled "Physiological Measures for Games and VR: Novel Tools and Approaches" showcased how the growing body of research in game studios and start-ups is linking psychological states (mental conditions) to physiological signals and how this has strengthened the use of biometric technologies like heart-rate monitors and eye tracking equipment.

The workshop was a follow-up to an guest lecture that occurred in Spring 2023 with Muñoz's colleague *Dr. Ifi Mavridou.* It provided valuable insights to complement user experience methodologies in the fields of psychology, technology and gaming.

[Dr. John Muñoz, pictured far right, and the workshop attendees]

Fused Spectatorship with Rakesh Patibanda

On November 2nd, visiting PhD candidate *Rakesh Patibanda* from Monash University gave a lecture on the topic of spectatorship within video games and how electrical muscle stimulation (EMS) systems can be used to enhance spectator's overall engagement with a game.

Patibanda discussed how he and his team designed three games where spectators loan control over both their hands to the EMS system and watch them play competitive and collaborative games. He demonstrated the use of the EMS system on himself and how the use of this technology helped create four spectator experience themes and four fused spectator types. He ended the lecture with a discussion on ethical design considerations.

[Left to right: Dr. Sebastian Cmentowski, Federica Gini, Dr. Eugene Kukshinov, Rakesh Patibanda, Joe Tu, and Dr. Lennart Nacke]

[Patibanda wearing the EMS on his left and right arms]

GI NEWS

GI Podcast co-hosts **Sid Heeg** (Sustainability Management) and **Toben Racicot** (English) return with four new episodes this term, sitting down with researchers from across the country and their experience with games. Catch the episodes wherever you listen to podcasts!

- Lord of the Rings and Adaptation with Dr. Neil Randall
- Home-away-home with Dr. Derritt Mason
- Theatre and Narrative Games with Shawn Desouza-Coelho
- Adapting Player Experience with Joe Tu

Dr. Lai-Tze Fan is a Canada Research Chair!

[Dr. Lai-Tze Fan]

The government of Canada has announced that **Dr. Lai-Tze Fan (**Sociology and Legal Studies) is now a Tier 2 Canada Research Chair (CRC) in Technology and Social Change for her work with inclusive artificial intelligence (AI).

Fan's research revolves around biased data sets and the risks of how rapidly AI technologies are developing as they are mostly influenced by human experiences and emotions—often leading to stereotypes. These learned stereotypes reinforce social inequalities such as sexism, racism, and classism.

Fan aims to find ways to intercept biases and social inequalities inhabited by AI and reroute answers to be more sensitive to issues involving equity, diversity and representation. Her deeply interdisciplinary work in social change has created a new intersection between disciplines. With a focus on EDI-enhanced change, Fan is moving to alter and enhance AI design in order to stop the perpetuation of inequitable data and representation.

Dr. Cayley MacArthur Announced as Equity Co-Chair for SIGCHI
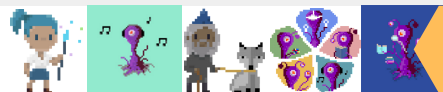
Dr. Cayley MacArthur (Stratford School of Interaction Design and Business) was named Equity Co-Chair for the Special Interest Group on Computer-Human Interaction (SIGCHI). Having been a part of SIGCHI since she was a student, MacArthur has served on the Equity Committee since its inception and has also been a part of the SIGCHI CARES committee which serves as a resource for those who experience discrimination and/or harassment within the academic community.

MacArthur's research work has always taken a focus on issues of equity, diversity, and inclusion within the field of human-computer interaction (HCI). Her MA thesis examined gendered language in HCI, and her PhD dissertation discussed how inclusion and exclusion function in makerspaces and virtual reality.

We are excited to see where this position takes MacArthur! If you would like to learn more about her research, check out our Research Spotlight on her academic career thus far and the highlights of her time as a keynote speaker at the Jeux & Accessibilité / Game Accessibility conference.

[Dr. Cayley MacArthur]

GI Faculty Members Secure Funding

The Games Institute is happy to announce that three of its members, **Drs. Lai-Tze Fan** (Sociology and Legal Studies), **Neil Randall** (English Language and Literature), and **Susan Roy** (History) have been recognized through The Canadian Foundation for Innovation (CFI) and Social Sciences and Humanities Research Council (SSHRC). The three have been awarded a sum of $412,000 for their research.

- Fan, received $89,154 of CFI funding to develop the Unseen-AI Lab (U&AI), which moves to expose biases in AI technology. While the field of AI is expanding fast, so too are its deep-rooted racist, sexist, and classist design flaws. Fan aims to create equitable human-AI experiences using a multidisciplinary approach that improves technological literacy.

- Randall received $125,000 of CFI funding for the CAVERNs project (Cave Automatic Virtual Environment Research Nodes) which focuses on communication and interaction within Virtual Reality (VR) settings. The CAVERNs Lab will house a VR Cave system from Arcane Technologies; it will also include head and hand trackers, laser projections, and high-performance computing.

- Roy received a $197,791 SSHRC Partnership Development Grant for the project "Dancers for Life: HIV/AIDS and Dance in Canada", a collaboration between universities, researchers, and dance companies across the country.

The Light Within Interactive Display

"The Light Within" is an an interactive outdoor light installation created by PhD candidate **Ludwig Wilhelm Wall** (Computer Science) and recent UWaterloo graduates *Nathan Fischer* and *Diana Tran.* The installation is on display in the lobby of East Campus 1 (EC1). The installation was displayed at the Lumière: The Art of Light, a free outdoor light experience at Ontario Place's Trillium Park from March 10th to May 7th 2023 as well as Waterloo's 2023 light festival Lumen which took place on September 23rd.

"The Light Within" exhibit is like a mirror, where a person stands in front of it, and a camera captures their image and projects it back to them using a wall of large-scale pixels. It aims to show that we all have a 'light within' that, when at its brightest, can do great things. The exhibit is interactive and can be manipulated by the viewer, allowing them to control the noise or clarity of the image, and alter the image from black and white to vibrant colours.
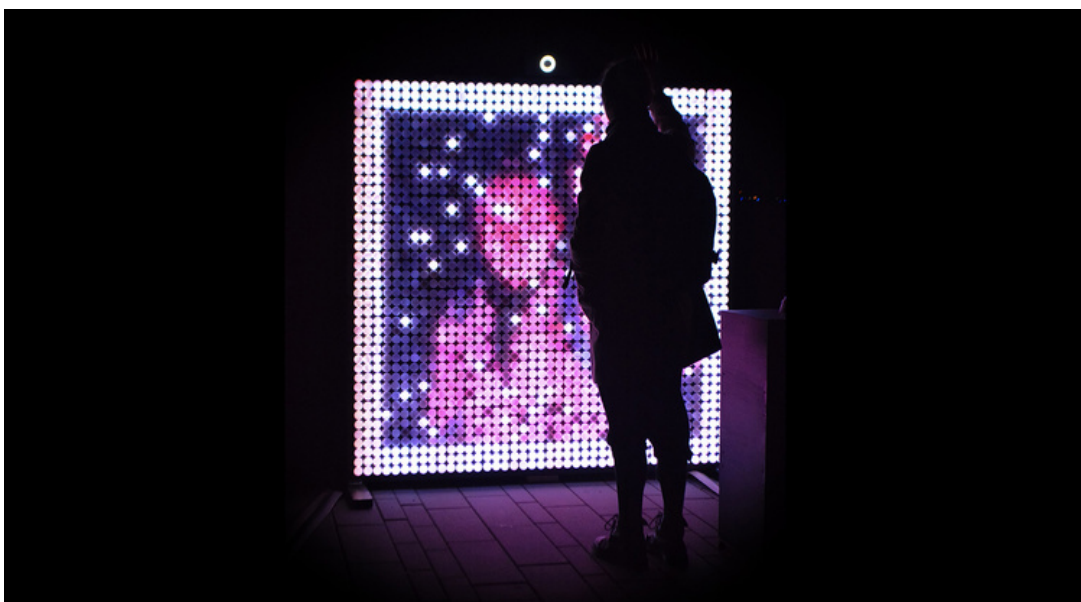
[A person interacting with The Light Within interactive display. Source: Cheriton School of Computer Science]

GI Showcase at Royal Society of Canada Celebration of Excellence and Engagement

For the first time in over five years, the Royal Society of Canada | La Société royale du Canada hosted their Celebration of Excellence and Engagement in the Waterloo Region on November 15, 2023.

The GI was proud to demonstrate the many collaborative projects our members have worked on in collaboration with other institutes like the Institute for Quantum Computing and Quantum Cats; the Waterloo Climate Institute and Illuminate; and the Waterloo Institute for Nanotechnology and "COVID-19 Vaccines and Nanotechnology: an Interactive Game."

PhD candidates **Marco Moran Ledesma** (Systems Design Engineering) and **Sid Heeg** (Sustainability Management) gave demonstrations of their research work, with Moran-Ledesma displaying the current iteration of his interactive, 3D printed human leg and knee and Heeg speaking about COVID-19 vaccine mis and disinformation. Alongside them, Research Project Manager **Pamela Maria Schmidt** offered demonstrations of the virtual reality game _Seas the Day_, created and designed by PhD candidate **Samira Mehrabi** (Aging, Health, and Wellbeing) and **Dr. John Muñoz** (J&F Alliance, Adjunct).

It was wonderful see Waterloo's fellow research institutes at the symposium including the Centre for Bioengineering and Biotechnology, the Cybersecurity and Privacy Institute, and the Institute for Sustainable Energy. The GI is looking forward for the opportunity to work on additional collaborative projects with them in the future.

[A collage of images of the RSC symposium]

Games Institute Receives Bronze Green Office Certification

In Spring 2023, the GI staff began the task of turning their office into a green-certified space. Using the Sustainability Office guidelines, the GI qualified for a bronze certificate in a single semester. From small changes like energy-saving power bars to bigger changes like localized garbage bins; the GI made a myriad of effective long-term changes.

An Eco-Summit is held at UWaterloo each year with panels of student involvement in sustainability efforts; faculty representatives introducing sustainable strategies to departments; and staffing directors further illuminating how sustainability can be implemented at all levels of the University. GI Research Communications Coordinator **Shae Ashcroft** attended the Eco-summit to receive our certificate and returned to the office with more green-forward ideas.

The GI began this project in May, completing a full certification in just six months. With so much progress in such little time, the GI is already on pace for a silver certificate by the next Eco-Summit!

[The audience in attendance at the Eco-Summit. Source: Waterloo News]

Dr. John Muñoz Interviewed about Seas the Day on Rogers TV

[Dr. Muñoz (left) demonstrating a VR headset to Angela Liu (right)]

On Thursday, November 17th, **Dr. John Muñoz**, Chief Science Officer at J&F Alliance Group and Adjunct Professor at the University of Waterloo, was interviewed by *Angela Liu* on Rogers TV to showcase *Seas the Day* a virtual reality game that promotes physical activity and healthy living for people living with dementia and other cognitive impairments. *Seas the Day,* created by PhD candidate **Samira Mehrabi** (Health Sciences) and Muñoz, allows participants to take part in virtual activities such as Tai Chi, rowing, and fishing to promote upper limb strength, flexibility and cardiorespiratory fitness.

Seas the Day was created in partnership with an interdisciplinary team of faculty and graduate co-researchers as well as Reality Well (VR Vision), Schlegel Villages age-friendly community, and The Schlegel-UW Research Institute for Aging (RIA).

In the future, Muñoz hopes to continue collaborating with healthcare professionals to design more games that assist those living with illness and impairments. He plans to use the data from these gaming experiences to better understand physical and cognitive decline in aging people.
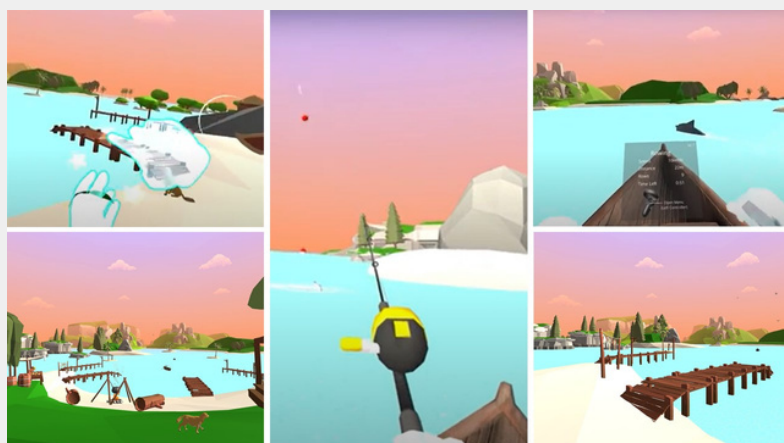
[A collage of images from different activities and settings in *Seas the Day*]

GI VISITS

University of Warwick Visit for eSports Partnership

On Wednesday October 11th, Waterloo International hosted a campus tour for international delegates from the University of Warwick, including *Dr. Carsten Maple*, professor of Cyber Systems Engineering, and *Emily Lim* Associate Director, International Strategy and Relations to explore potential areas for collaboration in eSports research.

One of the pivotal stops of this tour was the GI, showcased by **Agata Antkiewicz** (Associate Director) and **Dr. Neil Randall** (Executive Director). They were joined at the GI by members **Dr. Luke Potwarka** (Director of the Spector Experience and Technology Laboratory [SEAT]), **Greg Mittler** (eSports and Gaming Coordinator), and **Roly Webster** (Athletics and Recreation Director). This tour concluded with a roundtable discussion on eSports and partnership opportunities, of which the GI is heavily involved in. Learn more about the ongoing research efforts into eSports involving GI members.

Researchers Near and Far

Throughout the term, many of our members have invited researchers and colleagues to visit the GI. It's always exiting to welcome new faces to the space whether their visit is for research purposes, events, or simply meeting a friend. If you're thinking of inviting someone to the GI, don't forget to have them sign in! We love seeing the reasons why people come to visit!
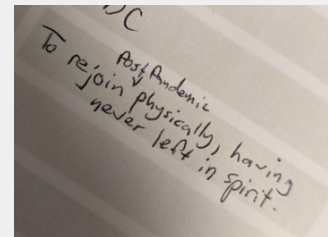

[Pictured right: One of the many reasons left by a visitor to the GI in the guest log. Alt text: "To rejoin post-pandemic physically, having never left in spirit"]

[GI graduate members participating in the research lightning talks]

The Student Association for Graduates in English (SAGE) invited graduate students to visit the GI for a round table of lightning talks about GI member research and how the GI has supported them. Taking part in the talks were **Alex Fleck** (English Language and Literature), **Jenn Rickert** (English Language and Literature), **Sabrina Sgandurra** (English Language and Literature), **Sid Heeg** (Sustainability Development), and **Toben Racicot** (English language and Literature).

Theodore Cheung and *Amanda Li* visited from Hong Kong to meet with **Dr. John Muñoz** (J&F Alliance, Adjunct) to discuss their VR work.
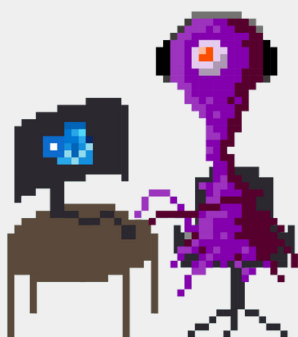
[Left: Amanda Li, Dr. John Muñoz, and Theodore Cheung. Right: Theodore pictured using a VR headset in the Living Room Lab. Source: Theodore Cheung]

THE GAMES INSTITUTE GETS SOCIAL!

Coffee and Games

The GI Operations Coordinators, **Kyle Mason** and **Elradia Suliman**, continued the tradition of Coffee and Games, weekly social that encouraged GI members to take part in an hour long play session on Thursdays in the Collaboration Space. While a busy term for many, Mason often enjoyed the opportunity to play Super Smash Bros. on the Nintendo Switch, sometimes with a few other people and sometimes by himself, earning the fun colloquial of "Kyle & Games."

Before Mason left, he asked Chat GPT to write something about "Kyle & Games", and this is what it had to say:

> *Kyle & Games: A Weekly Oasis of Fun and Fellowship*
> In the bustling world of academia, where schedules are often filled to the brim with lectures, research, and meetings, there exists a shining beacon of joy and camaraderie—Kyle & Games. This weekly event, held every Thursday from 1:00 PM to 2:00 PM at the esteemed Games Institute (GI), has become a cherished tradition for both Kyle and the GI members, offering a delightful escape into the realm of games and good company.
>
> The one-hour duration of Kyle & Games is perfectly calibrated to strike a balance between providing a meaningful break and ensuring that participants can seamlessly return to their academic pursuits. It acts as a refreshing interlude, a pocket of time where stress takes a back seat, and the joy of play takes center stage.

Halloween Social

On October 31st, GI members dressed up for Halloween. This year, Operations Coordinators **Kyle Mason** and **Elradia Suliman** with Research Communications Coordinator **Shae Ashcroft** put together a murder mystery game which had GI members trying to weed out who was the killer. Afterwards, we held a costume competition. Congratulations to **Alessandra Luz Lam** (Computer Science) for winning with her costume as a character from League of Legends. Thank you to all who participated and showed up in costume!

[A collage of images from the Halloween Social with many members coming out dressed up for the festivities and participating in the murder mystery game]

GI Holiday Social and Potluck

On December 2nd, the GI Holiday Social was the final event of the year before many residents left for the holidays. Everyone was encouraged to share dishes from their cultures, and at the end, they played a round of GI Trivia. It was amazing to see so many people gather and celebrate the end of the year!

[A collage of images from the Holiday Social and Potluck, including Joe Tu dressed as Santa Claus (pictured far right)]

New Members

Welcome to all the following faculty, researchers, and other individuals who have joined us this term!

- **Ali Yamini** (he/him) is a MASc student at University of Waterloo, Currently working in social robotics under supervision of Prof. Dautenhahn at Social and Intelligent Robotics Lab. I'm working on helping student's with Amblyopia to facilitate their healing using a robotic agent.
- **Ansh Sharma** (he/him) an MA student in computer science working with Dr. Jim Wallace. Ansh is an open-source enthusiast, and his research interests encompass Machine Learning, Natural Language Processing, Computer Vision, and Artificial Intelligence.
- **Elraida Suliman** (she/her) GI Operations Coordinators for F23.
- **Georgia Lowen** (she/her) is an incoming PhD student working with Dr. Karen Cochrane who is focusing on gaming accessibility.
- **Hongliang Lyu (he/him)** Currently, he is pursuing a Master's degree in Geography at the University of Waterloo. Hongliang's research focus revolves around exploring the potential of game engines as tools for research in the fields of Geography and Environmental Science. He aspires to harness the power of game engines not only to enhance visualization experiences for researchers but also to open up new avenues of research by integrating them with traditional Geographic Information System (GIS) tools.
- **Jacob Teng** (he/him) is a Master's student working with Dr. Ville Mäkelä on interactive technology design and development in Extended Reality (ER)
- **Jalaja Shanmugalingam** (she/her) is a Ph.D. in Management Sciences. Her research engages employees in obtaining the guidance necessary for continuous professional growth while enabling companies to reduce the time their senior management while implementing a gamified model within our system that leverages real-time tracked data to incentivize and reward employee contributions. She intends to continue her Ph.D. studies within the same research domain.
- **Jieun Lee** (she/her) is a MASc student in System Design Engineering under the supervision of Professor Cayley MacArthur and Professor Oliver Schneider. She has a background in UX research and Design through her Bachelor's degree, Global Business and Digital Arts, and is interested in human-computer interaction.
- **Dr. Karen Cochrane** (she/her) is an Assistant Professor at Stratford who's research centers on crafting customized assistive technology alongside healthcare providers, families, and individuals with disabilities. She's also interested in creating tangible and wearable technologies to enrich the lives of the disabled community, encompassing diverse applications such as crafting and video games. She isequally interested in the prospect of reshaping autoethnographic methodological processes to promote the emotional well-being of researchers, whether they are abled or disabled.

- **Dr. Kerstin Dautenhahn** (she/her) is a Professor who works on REMind, which is a transformational game that uses social robots to help children learn how to intervene in bullying situations. Inspired by applied drama techniques, the game engages children in an interactive story that allows them to observe a bullying scenario between two robots, and then intervene by controlling a third bystander robot. REMind is designed to promote internal reflection and situated learning.
- **Kyle Mason** (he/him) GI Operations Coordinator for F23.
- **Nadia Formisano** (she/her) is an MA student in Rhetoric and Communication Design. Her academic interests include translation studies, language acquisition, and adaptation studies, with a particular interest in how a translation of a text can affect its perception in different language groups
- **Dr. Nicholas Bowman** (he/him) is an Associate Professor of Emerging Media at the S.I. Newhouse School of Public Communications at Syracuse University. His research focuses on the uses and effects of interactive and immersive media, with specific interests in social media, video games, and metaverse technologies. He has published more than 150 peer-reviewed manuscripts and co-authored more than 200 competitively selected conference presentations. He is the editor of Journal of Media Psychology and associate editor for Technology, Mind, and Behavior. He is a lifelong gamer, part-time mechanic, and an excited-yet-skeptical futurist.
- **Noel Brett (he/they)** PhD candidate at McMaster University and is a computer scientist and a critical games researcher and designer. Their goal is to improve the world through games by bridging the areas of critical digital studies, game design, and gaming culture. Their ongoing research centers on both queer game design and pro-social game design, with a shared goal of developing innovative design frameworks that prioritize accessibility, self-expression, experimentation, and entertainment, all while placing queer individuals at the forefront of the gaming experience.
- **Macy Takaffoli** (she/her) a visiting master's student working with Dr. Ville Mäkelä, Macy is an a User Experience Designer with a background in architecture, who feels they can utilize their experiences to integrate various digital technologies into existing spaces to offer smart experiences like Virtual Reality, for individuals. She is also interested in implementing AI in UX design and user research to find out if it can help the Designers' approach in their design process.
- **Sasha Soraine** (she/they) are currently working on their PhD dissertation at the G-ScalE lab in the Department of Computing and Software at McMaster. Sasha's research focuses the intersections of game design and human-computer interaction, specifically looking at player experience, game difficulty, gameplay challenges and accessibility.
- **Tianzheng Shi** (he/him) is working on his MASc, researching the topic of using quantitative methods to develop tools for evaluation of haptic experience and utilizing the tool to help achieve better haptic experience.

Farewell to...

It is always bittersweet to have members graduate and leave the GI. We are so proud of them and excited to see what they do next after their time at the GI!

- **Shae Ashcroft** (she/her) was the Research Communications Coordinator and launched GI's Green Office Initiative. She has since returned to her home town in Thunder Bay and is looking forward to continuing her academic pursuits.
- **Sukran Karaosmanoglu** (she/her) joined the GI as an international PhD student from the Universität Hamburg (Germany), visiting Dr. Lennart Nacke and the HCI Games Group. She will be continuing her research into asymmetrical game design and VR.
- **Tor-Salve Dalsgaard** (he/him) joined the GI in Spring 2023 as a visiting international graduate student, working work Dr. Oliver Schneider on the Haptiverse network.

No matter how long members have been with us, whether it's a few weeks to a few years, we always like to recognize their time with us. Thank you to all the co-ops, interns, and (U)RAs!

- **Ai-Jou Pan** (she/her) visiting scholar from the National Cheng Kung University in Taiwan working with Dr. Will Zhao as an RA.
- **Benjamin Valles** (he/him) URA assisting Dr. Ville Mäkelä in projects surrounding Virtual Reality and HCI.
- **Jared Cubilla** (he/him) URA working with Drs. Gerald Voorhees and Daniel Harley on the ADE Speaker Series.
- **Justine Scheifele** (she/her) URA working with Drs. Gerald Voorhees and Daniel Harley on the ADE Speaker Series.
- **Negin Azizi** (she/her) is research assistant in the Social and Intelligent Robotics Research Lab, in the Electrical and Computer Engineering (ECE) department, under the supervision of Dr. Kerstin Dautenhahn.
- **Po-Chun Wang** (he/him) visiting undergraduate and URA for Dr. Will Zhao, interested in applying games to classroom teaching.
- **Sarah Casey** (she/her) is an MA student in English and RA for Dr. Randy Harris this term, who is interested in the many (many!) ways humans manage to confuse and irritate one another via communication.

Conference Presentations and Talks

- **Dr. John Muñoz** (J&F Alliance, Adjunct) (November 2023) "ViTAL (Virtual Training Augmentation Layer)." Interservice/ Industry Training, Simulation and Education Conference.
- **Dr. Lai-Tze Fan** (Sociology and Legal Studies), *Axel Ngoga, Ehsan Amjadian,* and *Koray K.* (November 2023) "Mitigating Risks of AI." University of Waterloo, Maths Innovation Research Discovery Days.
- **Dr. Michael Barnett Cowan** (Kinesiology and Health Science). (October 2023) "Temporal and Multisensory Processing in Virtual Reality." Timing Research Forum.

- **Dr. Reza Hadi Mogavi** (HCI Games Groups), *Dr. Ehasan Ul Haq, Yiming Zhu, Zijun Lin, Haodi Weng, Gareth Tyson, Lik-Hang (Paul) Lee, Tristan Braud,* and *Pan Hui.* "Understanding Catalyst Users in the WallStreetBetsCommunity." The 2023 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining.

CHI Play 2023

- *Audrey Serna,* **Dr. Stuart Hallifax** (A), and *Elise Lavoue.* "Investigating the Effects of Tailored Gamification on Learners' Engagement Over Time in a Learning Environment."
- **Derrick Wang** (Systems Design Engineering), *Dennis Reidsma*, and *Licinio Roque.* "Interactivity Lightning Round."
- *German Schabert, Marc Schubhan, Michael Shcmitz*, and **Maximilian Altmeyer** (HCI Games Group). "Faster, Harder? Investigating the Impact of Changing Background Music Speed on Gameplay Performance and Player Experience in an Endless Runner Game."
- **Dr. Jennifer Whitson** (Sociology and Legal Studies), **Dr. Stuart Hallifax** (A), *Jayme Last, Graeme Lenonn, Shahrin Kahn,* and *Damian Sommer.* "Inside Industry: Game Maker's Panel."
- **Joseph Tu** (Systems Design Engineering), **Derrick Wang** (Systems Design Engineering), **Ekaterina Durmanova** (A), **Dr. Lennart Nacke** (Stratford). "LEVI: Exploring Possibilities for an Adapative Board Game Design."
- **Dr. Katja Rogers (A)**, *Katie Seaborn, Somang Nam,* and *Miu Kojima.* "Kawaii Game Vocalics: A Preliminary Model."
- *Michael Wijkstra*, **Dr. Katja Rogers** (A), *Regan Mandryk, Remco Veltkamp,* and *Julian Frommel.* "Help, My Game is Toxic! First Insights from a Systematic Literature Review on Intervention Systems for Toxic Behaviors in Online Video Games."
- *Cody Phillips, Nico Trick,* **Dr. Lennart Nacke** (Stratford), and *Regan Mandryk.* "The Role of Generative AI in Games Research."
- **Dr. Pejman Mirza-Babaei** (Ontario Tech University), **Sabrina Sgandurra** (English), *Scott DeJong, Winnie Kan, Effie Argyropoulos,* and *Kahentawaks Tiewishaw.* "Educational Games Aren't Bad, But They Need Attention!"
- **Dr. Sebastian Cmentowski** (HCI Games Group), **Sukran Karaosmanoglu** (HCI Games Group), *Fabian Kievelitz, Frank Steinicke,* and *Jens Harald Krueger.* "A Matter of Perspective: Designing Immersive Character Transitions for Virtual Reality Games."
- *Silvia Ruzanaka,* and **Dr. Daniel Harley** (Stratford). "Student Game Design Competition Lightning Round."
- **Dr. Stuart Hallifax** (A), **Maximilian Altmeyer** (HCI Games Group), **Kristina Kolln** (HCI Games Group), *Maria Rauschenberger,* **Dr. Lennart Nacke** (Stratford). "From Points to Progression: A Scoping Review of Game Elements in Gamification Research with a Content Analysis of 280 Research Papers."
- *Vahid Ranandeh*, and **Dr. Pejman Mirza-Babaei** (Ontario Tech University). "Beyond Equilibrium: Utilizing AI Agents in Video Game Economy Balancing."

Publications

- **Samira Mehrabi** (Aging Health and Well Being), **Dr. John Muñoz** (J&F Alliance, Adjunct), **Dr. Michael Barnett-Cowan** (Kinesiology), *Aysha Basharat, Laura Middleton, Shi Cao,* and *Jennifer Boger.* (November 2023). "Virtual Reality as a Tool to Explore Multisensory Processing Before and After Engagement in Physical Activity." Frontiers in Aging Neuroscience.

Media and Interviews

- **Dr. Kristina Llewellyn** (Social Development Studies) was interviewed in The Waterloo Region Record about student wellness in schools and how it correlates to academic achievement.
- **Jonathan Baltrusaitis** (English) had his PhD work on the use of digital technology to be used in war memorials showcased in The Waterloo Region Record.
- **Dr. Oliver Schneider** (Management Science and Engineering), *Karon Mclean,* and *Vincent Levesque* were hosted at Innovobot Labs.
- **Dr. John Muñoz** (J&F Alliance, Adjunct) spoke on RogersTv on how work with VR games and how it can be used to assist people living with dementia.
- **Dr. Lai-Tze Fan** (Sociology and Legal Studies) was interviewed by The Star about her research on AI and voice assistants and the gendered way things like Alexa are constructed and built.

New Jobs

- **Dr. Michael Barnett-Cowan** (Kinesiology) was appointed associate chair of graduate studies in the Department of Kinesiology and Health Sciences.
- **Dr. Igor Grossman** (Psychology) was elected to become a member of The Royal Society of Canada's College of new Scholars, Scientists and Artists.

Drs. John Muñoz, Lennart Nacke, and Stuart Hallifax (A) share the unofficial Busy Bee Award for the term!

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.

UNIVERSITY OF WATERLOO | THE GAMES INSTITUTE