

Dr. Garreth W. Tigwell

Assistant Professor

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School of Information

B. Thomas Golisano College of Computing and Information Sciences

Rochester Institute of Technology

Short Biography

I research improving the accessibility of digital spaces for people with congenital, acquired, or situational impairments by supporting designers to improve the accessibility of their work.

Contact Information

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Academic Employment

Rochester Institute of Technology (RIT)

- Assistant Professor, School of Information; August 2019 – Present

University of Dundee (UoD) short term contract

- Postdoctoral researcher, Discipline of Computing; May 2019 – July 2019

Education

PhD in Human-Computer Interaction

University of Dundee; March 2015 – May 2019

Improving Content Design on Mobile Devices to Reduce Situational Visual Impairments

Supervised by Dr. David Flatla and Dr. Rachel Menzies

MSc in User Experience Engineering (Awarded Distinction)

University of Dundee; September 2013 – September 2014

Choosing Accessible Web Colours for Web Developers and Designers

Supervised by Dr. David Flatla

BSc with Honours in Psychology (Awarded Upper Second-Class)

University of Dundee; September 2008 – June 2012

Belief-desire reasoning: A further comparison between bilingual and monolingual speakers

Supervised by Dr. Alissa Melinger

Grants and Funding

Awarded

- **Garreth W. Tigwell (PI)**. January 2022 – December 2022. “Designing Adaptive User Interfaces for Augmented Reality During Textured Surface Interaction”. GCCIS Research & Scholarship Award. Award total: **\$7,525**.
- **Garreth W. Tigwell (PI)**. May 2020 – December 2021. “*Identifying Opportunities and Challenges in the Design Process to Increasing Collaborations Between Designers and Disabled People*”. RIT Grant Writers’ Boot Camp 2020 seed funding. Award total: **\$4,967.00**.
- Benjamin Gorman (PI), **Garreth W. Tigwell (Co-PI)**, Erin Brady (Collaborator), Rachel Menzies (Collaborator). June 2019 – December 2019. “*Accessible Emoji*”. Bournemouth University Acorn Fund. Award total: **£4,002**.
- **Garreth W. Tigwell (Student Recipient)**, David R. Flatla (faculty advisor). March 2015 – September 2018. Engineering and Physical Sciences Research Council (EPSRC) PhD Studentship covering 3.5 years. EP/M506497/1. Award total: **£70,000**.
- **Garreth W. Tigwell (Student Recipient)**. 2013-2014. Carnegie-Cameron Taught Postgraduate Bursaries. Award total: **£3,600**.

Awards and Special Recognition

- 2022 Best Paper award for MobileHCI 2022 (see publication J.4).
- 2022 One recognition for outstanding CSCW 2022 January review.
- 2022 Four recognitions for outstanding CHI 2022 paper reviews.
- 2021 One recognition for an outstanding CHI 2021 paper review.
- 2020 Two recognitions for outstanding CHI 2020 paper reviews.
- 2009 NCR Corporation Award for Top Level 1 Applied Computing Student, University of Dundee.

Service to Profession

Conference Program and Organizing Committees (total: 12)

- 2023 **Program Committee**, Associate Chair (AC), Technical Papers, The ACM CHI Conference on Human Factors in Computing Systems, Hamburg, Germany.
- 2022 **Co-Chair**, Experience Report, The 24th International ACM SIGACCESS Conference on Computers and Accessibility, Athens, Greece.
- 2022 **Co-Chair**, Accessibility, The ACM CHI Conference on Human Factors in Computing Systems, New Orleans, Louisiana.
- 2021 **Chair**, Proceedings, The 23rd International ACM SIGACCESS Conference on Computers and Accessibility, Virtual (due to COVID-19).
- 2021 **Co-Chair**, App & e-Rights, The 2021 ACM CHI Conference on Human Factors in Computing Systems, Virtual (due to COVID-19).
- 2020 **Co-Chair**, Doctoral Consortium, The 22nd International ACM SIGACCESS Conference on Computers and Accessibility, Virtual (due to COVID-19).
- 2020 **Program Committee**, Technical Papers and Poster Papers, The 22nd International ACM SIGACCESS Conference on Computers and Accessibility, Virtual (due to COVID-19).
- 2019 **Program Committee**, Associate Chair (AC), Late Breaking Work, The ACM CHI Conference on Human Factors in Computing Systems, Glasgow, Scotland.

- 2018 **Program Committee**, Associate Chair (AC), Late Breaking Work, The ACM CHI Conference on Human Factors in Computing Systems, Montréal, Canada.
- 2017 **Organizing Committee**, Scottish Informatics and Computer Science Alliance PhD Conference.
- 2017 **Senior Co-Chair**, University of Dundee Computing PhD Symposium.
- 2016 **Junior Co-Chair**, University of Dundee Computing PhD Symposium.

Conference Student Volunteer (total: 4)

- 2019 **Student Volunteer**, Accessibility and Aging subcommittee Program Committee meeting, The ACM CHI Conference on Human Factors in Computing Systems, Glasgow, Scotland.
- 2018 **Student Volunteer**, Various Roles, The 20th International ACM SIGACCESS Conference on Computers and Accessibility, Galway, Ireland.
- 2018 **Student Volunteer**, Various Roles, The ACM CHI Conference on Human Factors in Computing Systems, Montréal, Canada.
- 2017 **Student Volunteer**, Various Roles, The ACM CHI Conference on Human Factors in Computing Systems, Denver, Colorado.

Mentoring (total: 2)


- 2021 **Accessibility Mentor**, offer advice to students taking part in Columbia University's premier student-led annual diversity hackathon called DivHacks. Virtual, Columbia University. October 9, 2021.
- 2018 **Senior PhD Mentor**, offer advice and support to the PhD students in attendance, Scottish Informatics and Computer Science Alliance HCI Doctoral Consortium held at Robert Gordon University. June 27, 2018.

Reviewing Academic Papers (2015-Present)

I have reviewed for the following venues: ACM ASSETS, ACM CHI, ACM CSCW, ACM DIS, ACM Transactions on Accessible Computing (TACCESS), ACM Transactions on Computer-Human Interaction (TOCHI), Graphic Interface (GI), International Journal of Human-Computer Interaction (IJHCI), International Journal of Human-Computer Studies (IJHCS), Universal Access in the Information Society.

Scholarship — ^{UG} = undergraduate student and ^G = graduate student at time of conducting the research

Journal papers (Peer Reviewed)

- J.5 Sarah Andrew ^G and **Garreth Tigwell**. 2022. Accessible Design is Mediated by Job Support Structures and Knowledge Gained Through Design Career Pathways. *PACMHCI (Track CSCW)*. Accepted and To Appear.
- J.4  Manisha Kamarushi ^G, Stacey L. Watson, **Garreth W. Tigwell**, and Roshan L. Peiris. 2022. OneButtonPIN: A Single Button Authentication Method for Blind and Low Vision Users to Improve Accessibility and Prevent Eavesdropping. *Proc. ACM Hum.-Comput. Interact.* 6, MHCI, Article 212 (September 2022), 22 pages. <https://doi.org/10.1145/3546747> [Best Paper]
- J.3 Rachel Menzies, **Garreth W. Tigwell**, and Michael Crabb. 2022. Author Reflections on Creating Accessible Academic Papers. *ACM Trans. Access. Comput.* 1, 1 (August 2022), 35 pages. <https://doi.org/10.1145/3546195>
- J.2 Jaisie Sin ^G, Cosmin Munteanu, Michael Nixon, Velian Pandeliev, **Garreth W. Tigwell**, Kristen Shinohara, Anthony Tang, and Steve Szigeti. 2022. Uncovering inclusivity gaps in design pedagogy through the digital design marginalization framework. *Front. Comput. Sci.* 4:822090. DOI: <https://doi.org/10.3389/fcomp.2022.822090>

- J.1 **Garreth W. Tigwell** ^G, David R. Flatla, and Neil D. Archibald ^{UG}. 2017. ACE: A Colour Palette Design Tool for Balancing Aesthetics and Accessibility. *ACM Transactions on Accessible Computing (TACCESS)*. 9, 2, Article 5 (January 2017), 32 pages.
DOI:<https://doi.org/10.1145/3014588>

Conference papers (Peer Reviewed)

- C.9 Esha Shandilya ^G, Mingming Fan, and **Garreth W. Tigwell**. 2022. "I need to be professional until my new team uses emoji, GIFs, or memes first": New Collaborators' Perspectives on Using Non-Textual Communication in Virtual Workspaces. In *CHI Conference on Human Factors in Computing Systems (CHI '22)*, April 29-May 5, 2022, New Orleans, LA, USA. ACM, New York, NY, USA, 13 pages. DOI:<https://doi.org/10.1145/3491102.3517514>. [Acceptance rate: 24.7%]
- C.8 Connor Geddes ^G, David R. Flatla, **Garreth W. Tigwell**, and Roshan L. Peiris. 2022. Improving Colour Patterns to Assist People with Colour Vision Deficiency. In *CHI Conference on Human Factors in Computing Systems (CHI '22)*, April 29-May 5, 2022, New Orleans, LA, USA. ACM, New York, NY, USA, 17 pages. <https://doi.org/10.1145/3491102.3502024>. [Acceptance rate: 24.7%]
- C.7 **Garreth W. Tigwell**. 2021. Nuanced Perspectives Toward Disability Simulations from Digital Designers, Blind, Low Vision, and Color Blind People. In *CHI Conference on Human Factors in Computing Systems (CHI '21)*, May 8–13, 2021, Yokohama, Japan. ACM, New York, NY, USA, 15 pages. DOI:<https://doi.org/10.1145/3411764.3445620> [Acceptance rate: 26.3%]
- C.6 Junchen Li ^G, **Garreth W. Tigwell**, and Kristen Shinohara. Accessibility of High-Fidelity Prototyping Tools. 2021. In *CHI Conference on Human Factors in Computing Systems (CHI '21)*, May 8–13, 2021, Yokohama, Japan. ACM, New York, NY, USA, 13 pages.
DOI:<https://doi.org/10.1145/3411764.3445520> [Acceptance rate: 26.3%]
- C.5 **Garreth W. Tigwell** and Michael Crabb. 2020. Household Surface Interactions: Understanding User Input Preferences and Perceived Home Experiences. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–14. DOI:<https://doi.org/10.1145/3313831.3376856> [Acceptance rate: 24.3%]
- C.4 **Garreth W. Tigwell**, Benjamin M. Gorman, and Rachel Menzies. 2020. Emoji Accessibility for Visually Impaired People. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–14. DOI:<https://doi.org/10.1145/3313831.3376267> [Acceptance rate: 24.3%]
- C.3 **Garreth W. Tigwell** ^G, David R. Flatla, and Rachel Menzies. 2018. It's Not Just the Light: Understanding the Factors Causing Situational Visual Impairments During Mobile Interaction. In *Proceedings of the 10th Nordic Conference on Human-Computer Interaction (NordicCHI '18)*. Association for Computing Machinery, New York, NY, USA, 338–351.
DOI:<https://doi.org/10.1145/3240167.3240207> [Acceptance rate: 24%]
- C.2 **Garreth W. Tigwell** ^G, Rachel Menzies, and David R. Flatla. 2018. Designing for Situational Visual Impairments: Supporting Early-Career Designers of Mobile Content. In *Proceedings of the 2018 Designing Interactive Systems Conference (DIS '18)*. Association for Computing Machinery, New York, NY, USA, 387–399. DOI:<https://doi.org/10.1145/3196709.3196760> [Acceptance rate: 22.9%]
- C.1 Katerina Gorkovenko ^G, **Garreth W. Tigwell** ^G, Christopher S. Norrie ^G, Miriam Waite ^G, and Daniel Herron ^G. 2017. ShopComm: Community-Supported Online Shopping for Older Adults.

In *Proceedings of Association for the Advancement of Assistive Technology in Europe (AAATE '17)*. Sheffield, UK. DOI:<http://doi.org/10.3233/978-1-61499-798-6-175>

Consortium papers (Juried)

- Cnsrt.1 **Garreth W. Tigwell**, Kristen Shinohara, and Michael McQuaid. 2021. If You Don't Build It, They Won't Come: HCI has an Inaccessibility Problem. In *Human Computer Interaction Consortium (HCIC)*, June 20-24, 2021, Virtual Event. 5 pages.
https://www.researchgate.net/publication/352262053_If_You_Don%27t_Build_It_They_Won%27t_Come_HCI_has_an_Inaccessibility_Problem

Experience Reports (Peer Reviewed)

- ExpR.1 **Garreth W. Tigwell**, Roshan L. Peiris, Stacey Watson, Gerald M. Garavuso, and Heather Miller. 2020. Student and Teacher Perspectives of Learning ASL in an Online Setting. In *The 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '20)*, October 26–28, 2020, Virtual Event, Greece. ACM, New York, NY, USA, 6 pages.
<https://doi.org/10.1145/3373625.3417298> [Acceptance rate: 57%]

Poster papers (Peer Reviewed/Juried)

- P.11 Athira Pillai [¶], Kristen Shinohara, and **Garreth W. Tigwell**. 2022. Website Builders Still Contribute To Inaccessible Web Design. In *The 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22)*, October 23–26, 2022, Athens, Greece. ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/3517428.3550368> [Acceptance rate: 59%]
- P.10 Urvashi Kokate [¶], Kristen Shinohara, and **Garreth W. Tigwell**. 2022. Exploring Accessibility Features and Plug-ins for Digital Prototyping Tools. In *The 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22)*, October 23–26, 2022, Athens, Greece. ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/3517428.3550391> [Acceptance rate: 59%]
- P.9 Laleh Nourian [¶], Kristen Shinohara, and **Garreth W. Tigwell**. 2022. Digital Accessibility in Iran: An Investigation Focusing on Iran's National Policies on Accessibility and Disability Support. In *The 24th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '22)*, October 23–26, 2022, Athens, Greece. ACM, New York, NY, USA, 5 pages. <https://doi.org/10.1145/3517428.3550385> [Acceptance rate: 59%]
- P.8 Becca Dingman [¶], **Garreth W. Tigwell**, and Kristen Shinohara. 2021. Interview and Think-Aloud Accessibility for Deaf and Hard of Hearing Participants in Design Research. In *The 23rd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '21)*, October 18–22, 2021, Virtual Event, USA. ACM, New York, NY, USA, 3 Pages. <https://doi.org/10.1145/3441852.3476526> [Acceptance rate: 61.8%]
- P.7 Becca Dingman [¶], **Garreth W. Tigwell**, and Kristen Shinohara. 2021. Designing a Podcast Platform for Deaf and Hard of Hearing Users. In *The 23rd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '21)*, October 18–22, 2021, Virtual Event, USA. ACM, New York, NY, USA, 4 Pages. <https://doi.org/10.1145/3441852.3476523> [Acceptance rate: 61.8%]
- P.6 Trinh Le [¶], Hashini Senaratne [¶], Michael McQuaid, and **Garreth W. Tigwell**. 2021. Exploring a Multifaceted Framework to Support the Design of Mobile Apps for Self-Regulating Anxiety. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI '21*

- Extended Abstracts*), May8–13, 2021, Yokohama, Japan. ACM, New York, NY, USA, 7 pages.
<https://doi.org/10.1145/3411763.3451645> [Acceptance rate: 39%]
- P.5 Sarah Andrew ^G, Stacey Watson, Tae Oh, and **Garreth W. Tigwell**. 2020. A Review of Literature on Accessibility and Authentication Techniques. In *The 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '20)*, October 26–28, 2020, Virtual Event, Greece. ACM, New York, NY, USA, 4 pages.
<https://doi.org/10.1145/3373625.3418005> [Acceptance rate: 61.5%]
- P.4 Rachel Menzies, Benjamin M. Gorman, and **Garreth W. Tigwell**. 2020. Reflections on Using Chat-Based Platforms for Online Interviews with Screen-Reader Users. In *The 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '20)*, October 26–28, 2020, Virtual Event, Greece. ACM, New York, NY, USA, 4 pages.
<https://doi.org/10.1145/3373625.3418000> [Acceptance rate: 61.5%]
- P.3 Rachel Menzies, **Garreth W. Tigwell**, and Mandar Tamhane ^{UG}, and Annalu Waller. 2019. Weaving Accessibility Through an Undergraduate Degree. In *The 21st International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '19)*. Association for Computing Machinery, New York, NY, USA, 526–529.
 DOI:<https://doi.org/10.1145/3308561.3354611> [Acceptance rate: 59%]
- P.2 Kerr Macpherson ^{UG}, **Garreth W. Tigwell** ^G, Rachel Menzies, and David R. Flatla. 2018. BrightLights: Gamifying Data Capture for Situational Visual Impairments. In *Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '18)*. Association for Computing Machinery, New York, NY, USA, 355–357.
 DOI:<https://doi.org/10.1145/3234695.3241030> [Acceptance rate: 58%]
- P.1 **Garreth W. Tigwell** ^G and David R. Flatla. 2016. Oh that's what you meant! reducing emoji misunderstanding. In *Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct (MobileHCI '16)*. Association for Computing Machinery, New York, NY, USA, 859–866.
 DOI:<https://doi.org/10.1145/2957265.2961844>

Workshop papers and proposals (Peer-reviewed/Juried)

- W.5 **Garreth W. Tigwell**, Kristen Shinohara, and Laleh Nourian ^G (2021). Accessibility Across Borders. In *CHI Conference on Human Factors in Computing Systems (CHI'21) Workshop: Decolonizing HCI Across Borders*, May 8–13, 2021, Yokohama, Japan. ACM, New York, NY, USA, 4 pages. <https://arxiv.org/abs/2105.01488>
- W.4 Cole Gleason ^G, Patrick Carrington, Lydia B. Chilton, Benjamin M. Gorman, Hernisa Kacorri, Andrés Monroy-Hernández, Meredith Ringel Morris, **Garreth W. Tigwell**, and Shaomei Wu. 2019. Addressing the Accessibility of Social Media. In *Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing (CSCW '19)*. Association for Computing Machinery, New York, NY, USA, 474–479.
 DOI:<https://doi.org/10.1145/3311957.3359439>
- W.3 **Garreth W. Tigwell** ^G, Zhanna Sarsenbayeva ^G, Benjamin M. Gorman, David R. Flatla, Jorge Goncalves, Yeliz Yesilada, and Jacob O. Wobbrock (2019). Addressing the Challenges of Situationally-Induced Impairments and Disabilities in Mobile Interaction. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA '19)*. Association for Computing Machinery, New York, NY, USA, Paper W30, 1–8.
 DOI:<https://doi.org/10.1145/3290607.3299029> [Acceptance rate: 31%]
- W.2 Michael Crabb, Rachel Menzies, **Garreth W. Tigwell** ^G, Daniel Clarke, Christopher Lim, and Cara Henderson ^G (2019) Take a GANDER. Gathering Accessibility Needs by Doing Explorative

Research. *The Design Journal*, 22:sup1, 2303-2306,
DOI:<https://doi.org/10.1080/14606925.2019.1595040>

- W.1 Michael Mauderer, **Garreth W. Tigwell**^G, Benjamin M. Gorman^G, and David R. Flatla (2017). Beyond accessibility: Lifting perceptual limitations for everyone. *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems Workshop: Amplification and Augmentation of Human Perception*. Association for Computing Machinery, New York, NY, USA, 5 pages. <http://arxiv.org/abs/1709.08957>

Magazine and Newsletter Articles

- Mag.3 Kristen Shinohara and **Garreth W. Tigwell**. 2021. Why getting more people with disabilities developing technology is good for everyone. *The Conversation*. June 3, 2021. <https://theconversation.com/why-getting-more-people-with-disabilities-developing-technology-is-good-for-everyone-159619>
- Picked up by well-known publishers such as Fast Company and Salon.
 - Actively Learn turned the article into an assignment for middle and high school students: <https://reader.activelylearn.com/authoring/preview/4023344/notes>
- Mag.2 **Garreth W. Tigwell**, Zhanna Sarsenbayeva, Benjamin M. Gorman, David R. Flatla, Jorge Goncalves, Yeliz Yesilada, and Jacob O. Wobbrock (2020). Future Directions for Situationally Induced Impairments and Disabilities Research. *Interaction*. Association for Computing Machinery.
- Mag.1 Cole Gleason, Patrick Carrington, Lydia B. Chilton, Benjamin M. Gorman, Hernisa Kacorri, Andrés Monroy-Hernández, Meredith Ringel Morris, **Garreth W. Tigwell**, and Shaomei Wu. 2020. Future research directions for accessible social media. SIGACCESS Access. Comput., 127, Article 3 (June 2020), 12 pages. DOI:<https://doi.org/10.1145/3412836.3412839>

Interviews

- Int.1 Freedom Scientific Official Podcast. Episode “FSCast 202” discussing emoji accessibility. Host: Glen Gordon. Interviewees: **Garreth W. Tigwell** and Benjamin M. Gorman <https://blog.freedomscientific.com/fscast-202-financial-educator-chris-peterson-plus-emoji-accessibility-with-garreth-tigwell-and-benjamin-gorman/> July 13, 2021.

Invited Talks (total: 6)

- 2022 “Let’s Talk Accessible Design”. HCI workshop iSchool at Syracuse University. August 5, 2022.
- 2022 “Addressing the Issue of Inaccessible Design”. UCLIC Research Seminar Series at the University College London. March 2, 2022.
- 2021 “Supporting Digital Designers in Creating Accessible Content”. GCCIS PhD Colloquium Series at the Rochester Institute of Technology. April 30, 2021.
- 2021 “Future Interactions”. The User Experience Club at the Rochester Institute of Technology. April 29, 2021.
- 2020 “Improving Accessibility and Usability Through Design”. Guest Lecture Talk for the undergraduate Introduction to HCI course at the University of Rochester. November 18, 2020.
- 2020 “Surviving an Unknown Future by Focusing on Research at the End of a PhD”. GCCIS PhD Colloquium Series at the Rochester Institute of Technology. February 21, 2020.
- 2019 “Supporting People Through Research”. Seminar Talk at Bournemouth University. April 5, 2019.

- 2018 “Improving Content Design on Mobile Devices to Reduce Situational Visual Impairments”. PhD Mentor Talk. Scottish Informatics and Computer Science Alliance HCI Doctoral Consortium held at Robert Gordon University. June 27, 2018.

Organized Workshops and Activities (total: 5)

- 2020 Michael Crabb, Rachel Menzies, Benjamin M. Gorman, and **Garreth W. Tigwell**. Teaching Accessibility in Computing Workshop. *Scottish Informatics and Computer Science Alliance*. Held virtually on October 7, 2020.
- A SICSA workshop that explored the state of accessibility teaching in Scotland through discussion of our collective experiences.
- 2019 Cole Gleason [¶], Patrick Carrington, Lydia B. Chilton, Benjamin M. Gorman, Hernisa Kacorri, Andrés Monroy-Hernández, Meredith Ringel Morris, **Garreth W. Tigwell**, and Shaomei Wu. Addressing the Accessibility of Social Media. The *22nd ACM Conference on Computer-Supported Cooperative Work and Social Computing*. Held in Austin, Texas on November 10, 2019.
- A CSCW workshop that forged collaborations between researchers and practitioners, and defined high-priority accessibility challenges for social media platforms.
<https://socialandaccessible.wordpress.com/>
- 2019 **Garreth W. Tigwell** [¶], Zhanna Sarsenbayeva [¶], Benjamin M. Gorman, David R. Flatla, Jorge Goncalves, Yeliz Yesilada, and Jacob O. Wobbrock. Addressing the Challenges of Situationally-Induced Impairments and Disabilities in Mobile Interaction. The *ACM CHI Conference on Human Factors in Computing Systems 2019*. Held in Glasgow, Scotland on May 5, 2019.
- A CHI workshop that brought together researchers working on understanding, sensing, modelling, and adapting technologies to ameliorate the effects of Situationally-Induced Impairments and Disabilities. Acceptance rate: 31%. <https://siid2019.wordpress.com>
- 2019 Michael Crabb, Rachel Menzies, **Garreth W. Tigwell** [¶], Daniel Clarke, Christopher Lim, and Cara Henderson [¶]. Take a GANDER. Gathering Accessibility Needs by Doing Explorative Research. The *13th International Conference of the European Academy of Design*. Held in Dundee, Scotland on April 12, 2019.
- A walk where participants would interact with their devices, which were simultaneously collecting environmental and eye-tracking data to provide ecologically valid data on the effects of situational impairments.
- 2017 **Garreth W. Tigwell** [¶], Nadia Taou [¶], Sasa Radomirovic, Benjamin M. Gorman [¶], Keith Edwards, David R. Flatla, and Alison Pease. Academic Writing with LaTeX. The *Scottish Informatics and Computer Science Alliance PhD Conference*. Held in Dundee, Scotland on June 28, 2017.
- A workshop that introduced PhD students to the process of writing documents in LaTeX.

Doctoral Consortium Participation (total: 2)

- 2016 Scottish Informatics and Computer Science Alliance HCI Doctoral Consortium at the University of Strathclyde. June 29, 2016.
- 2015 Scottish Informatics and Computer Science Alliance HCI Doctoral Consortium at the University of Dundee. August 24, 2015.

Conference Paper and Poster presentations I have delivered (total: 22)

- 2021 *"Designing a Podcast Platform for Deaf and Hard of Hearing Users"*. The 23rd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '21), October 18–22, 2021. Virtual presentation due to COVID-19.
- 2021 *"If You Don't Build It, They Won't Come: HCI has an Inaccessibility Problem"*. The Human-Computer Interaction Consortium (HCIC). June 20 – 24, 2021. Virtual presentation due to COVID-19.
- 2021 *"Nuanced Perspectives Toward Disability Simulations from Digital Designers, Blind, Low Vision, and Color Blind People"*. The 2021 ACM CHI Conference on Human Factors in Computing Systems (CHI). May 8 – 13, 2021. Virtual presentation due to COVID-19.
- 2020 *"Household Surface Interactions: Understanding User Input Preferences and Perceived Home Experiences"*. The ACM International Conference on Interactive Surfaces and Spaces (ISS). November 8 – 11, 2020. Invited as a CHI author. Virtual presentation due to COVID-19.
- 2020 *"Student and Teacher Perspectives of Learning ASL in an Online Setting"*. The 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS). October 26 – 28, 2020. Virtual presentation due to COVID-19.
- 2020 *"Emoji Accessibility for Visually Impaired People"*. SICSA PreCHI day. May 12, 2020. Virtual presentation due to COVID-19.
- 2020 *"Household Surface Interactions: Understanding User Input Preferences and Perceived Home Experiences"*. SICSA PreCHI day. May 12, 2020. Virtual presentation due to COVID-19.
- 2020 *"Emoji Accessibility for Visually Impaired People"*. The ACM CHI Conference on Human Factors in Computing Systems (CHI). Conference cancelled due to COVID-19 and recorded video put online.
- 2020 *"Household Surface Interactions: Understanding User Input Preferences and Perceived Home Experiences"*. The ACM CHI Conference on Human Factors in Computing Systems (CHI). Conference cancelled due to COVID-19 and recorded video put online.
- 2019 *"Weaving Accessibility Through an Undergraduate Degree"*. The 21st International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS). October 28 – 30, 2019.
- 2018 *"BrightLights: Gamifying Data Capture for Situational Visual Impairments"*. The 20th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS). October 22 – 24, 2018.
- 2018 *"It's not just the light: understanding the factors causing situational visual impairments during mobile interaction"*. The 10th Nordic Conference on Human-Computer Interaction (NordiCHI). October 1 – 3, 2018.
- 2018 *"It's Not Just the Light: Situational Visual Impairments During Mobile Interaction"*. Scottish Informatics and Computer Science Alliance PhD Conference held at Robert Gordon University. June 28 – 29, 2018.
- 2018 *"Designing for Situational Visual Impairments: Supporting Early-Career Designers of Mobile Content"*. The ACM SIGCHI Conference on Designing Interactive Systems (DIS). June 9 – 13, 2018.
- 2018 *"Improving Content Design on Mobile Devices to Reduce Situational Visual Impairments"*. Annual Computing PhD Symposium, University of Dundee. May 16 – 17, 2018. 30 minutes.

- 2017 *"ACE: A Colour Palette Design Tool for Balancing Aesthetics and Accessibility"*. The 19th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS). October 30 – November 1, 2017.
- 2017 *"It's not just the light: Situational Visual Impairment During Mobile Interaction"*. Scottish Informatics and Computer Science Alliance PhD Conference held at the University of Dundee. June 27 – 28, 2017.
- 2017 *"Improving Content Visibility on Mobile Devices Under Bright Lighting"*. Annual Computing PhD Symposium, University of Dundee. May 23 – 24, 2017. 30 minutes.
- 2016 *"'Oh that's what you meant!': Reducing Emoji Misunderstanding"*. The 18th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI). September 6 – 9, 2016.
- 2016 *"Improving Content Visibility on Mobile Devices under varying lighting"*. Annual Computing PhD Symposium, University of Dundee. May 23 – 24, 2016. 30 minutes.
- 2015 *"Improving Intercultural Human-to-Human Interaction Through Nonverbal Visualisation"*. Scottish Informatics and Computer Science Alliance PhD Conference held at the University of Glasgow. June 24 – 25, 2015.
- 2015 *"Improving Intercultural Human-to-Human Interaction through Non-verbal Visualisation"*. Annual Computing PhD Symposium, University of Dundee. May 25 – 26, 2015. 15 minutes.
- 2012 *"Belief-desire reasoning: A further comparison between bilingual and monolingual speakers"*. BPS Scottish Undergraduate Dissertation Conference held at the University of Glasgow. March 17, 2012.

Outreach and Public Engagement

- 2018 I helped demo BrightLights to an industry audience attending the Scottish Informatics and Computer Science Alliance's DemoFest. Developed by University of Dundee undergraduate student Kerr Macpherson. Dynamic Earth, Edinburgh, November 6, 2018.
- 2014 – 2018 Volunteer for Computing University of Dundee Strathmore Trophy. The Strathmore Trophy competition is an annual event that began in 1996. S1/S2 level high school students are invited to take part in a computing-related challenge. Previous challenges include designing "Technology T-Shirts", "Smart Watch Applications", and "Authentication Invulnerable to Shoulder Surfing".
- 2014 – 2018 Open Days Speaker and Lab Demonstrations for the Discipline of Computing, University of Dundee.
- 2018 Judging for Angus Games Con 2018 at Computing, University of Dundee. Teams from 3 primary schools were invited to create a game/animation on the topic of staying safe online and the teams took part in an accessibility coding challenge on the day. May 2018
- 2017 I helped demo Virtual Virtuoso to an industry audience attending the Scottish Informatics and Computer Science Alliance's DemoFest. Virtual Virtuoso is a VR sandbox for musical exploration using musical metaphors with an immersive experience for novice music creators. Developed by University of Dundee undergraduate student Lewis Davie. Dynamic Earth, Edinburgh, October 3, 2017.
- 2017 Supporting High School students during a Scratch evening class, University of Dundee. March 2017.

- 2016 Dundee Science Festival evening technology demonstrations for the public. November 2016.

Teaching

Rochester Institute of Technology

Instructor, School of Information

- 2022 HCIN-630 Usability Testing, graduate-level course delivered in-person. Spring 2022.
- 2021 HCIN-600 Research Methods, graduate-level course delivered in-person. Fall 2021.
- 2021 HCIN-700 Current Topics in HCI, graduate-level course delivered online. Spring 2021.
- 2020 HCIN-610 Foundations of Human-Computer Interaction, graduate-level course delivered in a hybrid format (online/in-person). Fall 2020.
- 2020 HCIN-700 Current Topics in HCI, graduate-level course delivered online. Spring 2020.
- 2019 HCIN-610 Foundations of Human-Computer Interaction, graduate-level course delivered in-person. Fall 2019.

Guest Instructor, School of Information

- 2019 HCIN-794 MS Human-Computer Interaction Capstone Proposal, graduate-level course delivered in-person. Fall 2019.
- 2019 HCIN-600 Research Methods, graduate-level course delivered in-person. Fall 2019.

University of Dundee

Various Roles, Discipline of Computing

- 2015-19 HCI, Programming, Research, UX, and Web courses. Mix of graduate/undergraduate students and in-person/online format.

Research Advising

PhD Student Advisees

2. **Sarah Andrew**, Computing & Information Sciences, RIT. August 2021 to present.
1. **Laleh Nourian**, Computing & Information Sciences, RIT. January 2021 to present.

Dissertation Committee

3. **Matthew Seita**, Computing & Information Sciences, RIT. On committee from October 2021 to present. Proposal defended April 2022.
2. **Oliver Alonzo**, Computing & Information Sciences, RIT. On committee from August 2021 to present. Proposal defended December 2021.
1. **Sovantharith Seng**, Computing & Information Sciences, RIT. On committee from November 2019 to present.

Research Potential Assessment (Qualifier) Committee Member

6. **Ziming Li**, Computing & Information Sciences, RIT. Defended May 2022.

5. **Caluã de Lacerda Pataca**, Computing & Information Sciences, RIT. Defended May 2022.
4. **Murtaza Tamjeed**, Computing & Information Sciences, RIT. Defended May 2021.
3. **Xiaofu Jin**, Computing & Information Sciences, RIT. Defended May 2021.
2. **Abraham Glasser**, Computing & Information Sciences, RIT. Defended May 2020.
1. **Saad Hassan**, Computing & Information Sciences, RIT. Defended May 2020.

M.S. Student Advisees (Capstones/Theses)

18. **Sagarika Verma**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Donation Hero: a mobile application for identifying and notifying donors of fraudulent crowdfunding websites for a worry-free donation in India"*. January 2022 to Present. Proposal accepted.
17. **Ajay Chaudhary**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Understanding the privacy concerns of using AR mirrors in the home"*. November 2021 to Present. Proposal accepted.
16. **Anna Jacobsen**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Experiences of the Blind Community with Smart Retail Technology"*. November 2021 to Present. Proposal accepted.
15. **Emily Lederman**, Human-Computer Interaction M.S. student, RIT. Capstone: *"The Usability of TikTok Captions"*. 2021 to 2022. Defended: June 2022.
14. **Ian Mackenzie**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Redesigning an Outdated Training System for ITS at RIT"*. 2021 to 2022. Defended: April 2022.
13. **Nisanth Rajavelu**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Don't let the dogs out: Online dog adoption using persuasive design technology in India"*. 2021 to 2022. Defended: April 2022.
12. **Jiaxuan Sun**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Accessibility for Blind People Interaction with Household Surfaces"*. November 2021 to Present. Proposal accepted.
11. **Urvashi Kokate**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Evaluating the Accessibility Check Features in Popular Prototyping tools"*. 2020 to 2021. Defended: December 2021.
10. **Esha Shandilya**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Role of Non-textual Communication in Developing Interpersonal Bonds in Virtual Workspaces"*. 2020 to Present. 2020 to 2021. Defended: July 2021.
9. **Ma' kiah Holliday**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Providing College Students Safe Access to On-Campus Food Pantry Post COVID-19"*. 2020 to 2021. Defended: May 2021.
8. **Ralph Thelusma**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Factors contributing to poor alphanumeric password authentication practices among military members on overseas assignments stationed in Vilseck, Germany"*. 2020 to 2021. Defended: May 2021.
7. **Sarah Andrew**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Designing for Mobile Authentication Situational Impairments caused by COVID-19 Preventions"*. 2020 to 2021. Defended: April 2021.

6. **Athira Pillai**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Withstanding an Increasingly Inaccessible Web: Incorporating Accessibility into Website Builders"*. 2020 to 2021. Defended: April 2021.
5. **Xinyue Zhang**, Human-Computer Interaction M.S. student, RIT. Capstone: *"An Educational System for Exploring and Understanding Situational Visual Impairments"*. 2019 to 2020. Defended: August 2020.
4. **Alexandra Hannaway**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Developing Context Driven Messaging Aids with User-Centered Design to Improve Online Dating Conversations"*. 2020 to 2020. Defended: July 2020.
3. **Hui-yu Ho**, Human-Computer Interaction M.S. student, RIT. Capstone: *"ACE 2.0: Digital Design Tool to Help Designers Increase Visual Accessibility"*. 2019 to 2020. Defended: July 2020.
2. **Liam Kiniry**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Alt-Text Supplemented by Social Media Crowdsourcing: Closing Gaps in Social and Contextual Understanding of Memes"*. 2019 to 2020. Defended: April 2020.
1. **Trinh Le**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Desired Features and Capabilities of Assistive Mobile Technology for Self-Regulating Anxiety"*. 2019 to 2020. Defended: April 2020.

M.S. Student Committee Member (Capstones/Theses)

9. **Roshan Mathew**, Human-Computer Interaction M.S. student, RIT. Capstone: *"DHH Perspectives on AR/MR-based Interfaces for Improving Accessibility of Voice-based Interactions"*. November 2021—Present.
8. **Chloe Keilers**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Study on current data visualization accessibility for blind audience"*. November 2021—Present.
7. **Roshni Wadhwa**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Recommending Guidelines for a Holistic Solution to Simplify the Process of Onboarding Incoming Students"*. 2021. Defended: December 2021.
6. **Madhura Valvaikar**, Human-Computer Interaction M.S. student, RIT. Capstone: *"An automated system for managing Grab-and-Go meals at a college cafeteria"*. 2021. Defended: December 2021.
5. **Dymen Barkins**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Accessible Design: Exploring the Ideation and Sketching Process with Blind/Low-Vision Individuals"*. 2021. Defended: December 2021.
4. **Manisha Varma Kamarushi**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Haptic Authentication: One-touch Authentication for Blind/low vision users to mitigate Shoulder-Surfing Attacks"*. 2020 to 2021. Defended: September 2021.
3. **Becca Dingman**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Creating Accessible Podcasts: A platform for transcribing podcasts"*. 2020 to 2021. Defended: May 2021.
2. **Wenhao Luebs**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Making Sketching Activity Accessible to Blind and Low-Vision People in User Experience Design"*. 2019 to 2020. Defended: November 2020.

1. **Junchen Li**, Human-Computer Interaction M.S. student, RIT. Capstone: *"Using Prototyping Tools via Screen Reader Software: Usability and Accessibility Issues"*. 2019 to 2020. Defended: April 2020.

M.S. Independent Study Advisee

2. **Anna Jacobsen**, Human-Computer Interaction M.S. student, RIT. Project: *"Understanding the experiences of blind people using smart retail technology"*. January 2022 – April 2022.
1. **Bryan Basham**, M.S. student in School of Individualized Study, RIT. Project: *"Improving the Student User Experience of an Experimental Learning Management System"*. May 2020 – December 2020.

Research Assistantship Advisee

4. **Renee Bogdany**, Human-Centered Computing B.S. student, RIT. Supporting ongoing lab projects. January 2022 – April 2022.
3. **Shwetha Subramanian**, Human-Computer Interaction M.S. student, RIT. Project: *"Designing Adaptive User Interfaces for Augmented Reality During Textured Surface Interaction"*. October 2021 – Present.
2. **Chelsea Bishop**, Human-Centered Computing B.S. student, RIT. Supporting ongoing lab projects. August 2021 – April 2022.
1. **Shantanu Jamble**, Game Design and Development M.S. student, RIT. Project: *"Mobile Games for Understanding the Effects of Ambient Lighting, Display Brightness, and Design on Task Performance"*. March 2020 – April 2020.

Graduate Assistantship Advisee

2. **Nash Lyke**, Human-Computer Interaction M.S. student, RIT. Project: *"Accessibility of Government Disability Assistance (AGDA)"*. August 2021 – May 2022.
1. **Sarah Andrew**, Human-Computer Interaction M.S. student, RIT. Project: *"Inclusive Privacy and Security"*. August 2020 – May 2021.

Advising roles undertaken during my PhD studies at the University of Dundee

From 2014-2018 I co-advised two final year undergraduate students, one graduate student, and three high school students on a Nuffield Research Placement. Two publications resulted from this [J.1, P.1].

Service to Department/School/College/University

August 2019 – present, RIT (total: 8)

- 2021 – 2022 **Committee Member**, Search Committee for Tenure-Track Assistant Professor, School of Information, Golisano College of Computing and Information Sciences, RIT. School-level. August 2021 – April 2022.
- 2021 **Committee Member**, Ad Hoc Committee to identify UX Resources for the usability lab, School of Information, Golisano College of Computing and Information Sciences, RIT. School-level. Fall 2021.
- 2020 – present **Course lead**, HCIN-610 Foundations of HCI, School of Information, Golisano College of Computing and Information Sciences, RIT. School-level. May 2020 – present.
- 2020 – 2022 **Committee Member**, 20th Anniversary Celebration Committee. Golisano College of Computing and Information Sciences, RIT. College-level. March 2020 – March 2022.

- 2020 – present **Committee Member**, Digital Capstone Committee. School of Information, Golisano College of Computing and Information Sciences, RIT. School-level. March 2020 – present.
- 2019 – present **Chair**, Increasing Undergraduate Students' Engagement in Research. School of Information, GCCIS, RIT. School-level. October 2019 – present.
- 2019 – present **Faculty Member**, Computing and Information Sciences Ph.D. Department, GCCIS, RIT. College-level. October 2019 – present.
- 2019 – present **Core faculty Member**, HCI/HCC faculty meetings to keep HCI-MS and HCC-BS program updated/relevant. School of Information, GCCIS, RIT. School-level. October 2019 – present.

March 2012 – May 2019, University of Dundee (total: 4)

- 2019 **Judge**, Annual Computing PhD Symposium, Discipline of Computing, School of Science and Engineering, University of Dundee. Department-level. May 2019.
- *I was invited to be an academic judge for the University of Dundee's Computing PhD Symposium. The panel was tasked with selecting the best presentations by a non-transfer student (PhD Student) and a transfer student (PhD Candidate).*
- 2016 – 2019 **Committee member**, Computing Ethics Committee, Discipline of Computing, School of Science and Engineering, University of Dundee. Department-level. October 2016 – February 2019.
- *I reviewed human subjects research proposals to ensure they were ethically appropriate with controlled risks, and then inform the chair of my decision on whether the research can take place or if amendments were required. I also mentored new members of the committee.*
- 2012 **Volunteer**, Alternative Formats, Library, University of Dundee. University-level. March 2012 – May 2012.
- *I volunteered with the Alternative Formats service to convert resources (e.g., books) into a different medium for students who had physical and/or visual impairments.*
- 2011 – 2012 **Mentor**, fourth year psychology undergraduate mentor, School of Psychology, University of Dundee. School-level. September 2011- July 2012.
- *The psychology mentor system was set up to encourage interaction between the different years in the School of Psychology. In 4th year, I was a mentor to psychology undergraduate students in earlier years to provide academic and personal advice and support.*

Current Academic and Professional Memberships

- 2020 – present **Member at large and Support Access Chair Liaison**, AccessSIGCHI.
- 2016 – present **Member**, Association of Computing Machinery.

Professional Development

- 2022 Faculty and Staff Sign Language ASL 1A TWA. Instructor: Danielle Graybill, NTID.
- 2021 Inclusive Hiring Training. Instructor: Dr. Taj Smith, Director of Diversity Education.
- 2020 Faculty and Staff Sign Language ASL 1B TWA. Instructor: Heather Miller, NTID.
- 2019 Faculty and Staff Sign Language ASL 1A TWA. Instructor: Heather Miller, NTID.