

## Research interests

**Broadly**—Designing / building / evaluating user interfaces and information visualizations.

**Lately**—Communicating uncertainty to non-experts; building usable statistical tools (for uncertainty visualization, Bayesian analysis, and multiverse analysis); visualization literacy.

**I am excited** when technology baffles its users. Every new confusion surrounding how a system *is* carries fresh insight into how it *should be*.

## Employment

- 2023– **Associate Professor**  
Northwestern University Computer Science and Communication Studies
- 2020–2023 **Assistant Professor**  
Northwestern University Computer Science and Communication Studies
- 2016–2020 **Assistant Professor**  
University of Michigan School of Information

## Education

- 2010–2016 **PhD, Computer Science & Engineering, University of Washington**  
Advisors: Julie Kientz and Shwetak Patel  
Thesis: Designing for user-facing uncertainty in everyday sensing and prediction
- 2010–2012 **Master of Science, Computer Science & Engineering, University of Washington**  
Advisors: Julie Kientz and Shwetak Patel
- 2008–2010 **Master of Mathematics, Computer Science, University of Waterloo**  
Advisor: Michael Terry  
Thesis: Techniques and heuristics for improving the visual design of software agreements
- 2004–2008 **Bachelor of Computer Science, University of Waterloo**  
Minor in Fine Art (Studio Specialization)  
Honours with Distinction

## Awards & honours

- 2024 **Best Paper Award for “In dice we trust ...” (CHI 2024)**
- 2024 **Best Paper Honorable Mention for “Watching the election sausage get made ...” (CHI 2024)**
- 2024 **Best Paper Honorable Mention for “Odds and insights ...” (CHI 2024)**
- 2024 **Best Paper Honorable Mention for “Authors’ values and attitudes ...” (CHI 2024)**

- 2023 IEEE VGTC Visualization Significant New Researcher Award
- 2023 Best Paper Award for “Swaying the public? ...” (VIS 2023)
- 2023 Best Paper Honorable Mention for “CALVI ...” (CHI 2023)
- 2023 Best Paper Honorable Mention for “Subjective probability correction...” (CHI 2023)
- 2023 Best Paper Honorable Mention for “multiverse ...” (CHI 2023)
- 2022 NSF CISE Medium: PIs: Matthew Kay, Jessica Hullman ~\$1.2M (~\$600k each)
- 2022 CRA CI Fellowship for post-doc Fumeng Yang: (~\$120k/year for two years)
- 2022 Best Paper Honorable Mention for “Evaluating the use ...” (VIS 2022)
- 2020 Best Paper Award for “Visual reasoning strategies ...” (InfoVis 2020)
- 2020 Best Paper Honorable Mention for “A probabilistic grammar of graphics” (CHI 2020)
- 2019 NSF CISE Small #1910431: PI: Matthew Kay, ~\$500k
- 2019 Best Paper Award for “Increasing the transparency of research papers ...” (CHI 2019)
- 2018 NSF CISE Small #1815790: PIs: Matthew Kay, Lane Harrison, ~\$500k (~\$250k each)
- 2018 Best Paper Honorable Mention for “Uncertainty displays ...” (CHI 2018)
- 2016 Best Paper Award for “Mobile manifestations of alertness ...” (MobileHCI 2016)
- 2016 Best Paper Honorable Mention for “Researcher-centered design of statistics ...” (CHI 2016)
- 2015 Best Paper Honorable Mention for “Beyond Weber’s Law ...” (InfoVis 2015)
- 2015 Best Paper Award for “Unequal representation and gender stereotypes ...” (CHI 2015)
- 2013 Best Paper Award for “There’s no such thing as gaining a pound ...” (UbiComp 2013)
- 2012 Best Paper Award for “Lullaby: A capture & access system ...” (UbiComp 2012)
- 2011–2013 NSERC Postgraduate Scholarship (Doctoral)
- 2008–2010 NSERC Alexander Graham Bell Canada Graduate Scholarship (Master’s)
- 2008–2010 President’s Graduate Scholarship, University of Waterloo
- 2008 NSERC Undergraduate Student Research Assistantship
- 2004–2008 Descartes Scholarship, University of Waterloo

## Publications

Authors whose names are underlined were students at the time of publication.

— Journal articles (fully reviewed, archival)

- J23 2025 **The backstory to “Swaying the public”: A design chronicle of election forecast visualizations**  
Fumeng Yang, Mandi Cai, Chloe Mortenson, Hoda Fakhari, Ayse D Lokmanoglu,  
Nicholas Diakopoulos, Erik C Nisbet, and *Matthew Kay*  
IEEE Transactions on Visualization and Computer Graphics 31(1) (proc. VIS 2024)

- J22      2025      **What university students learn in visualization classes**  
Maryam Hedayati and *Matthew Kay*  
 IEEE Transactions on Visualization and Computer Graphics 31(1) (proc. VIS 2024)
- J21      2025      **Promises and pitfalls: Using large language models to generate visualization items**  
Yuan Cui, Lily Ge, Yiren Ding, Lane Harrison, Fumeng Yang, and *Matthew Kay*  
 IEEE Transactions on Visualization and Computer Graphics 31(1) (proc. VIS 2024)
- J20      2025      **VMC: A Grammar for Visualizing Statistical Model Checks**  
Ziyang Guo, Alex Kale, *Matthew Kay*, Jessica Hullman  
 IEEE Transactions on Visualization and Computer Graphics 31(1) (proc. VIS 2024)
- J19      🌸 2024      **Swaying the public? Impacts of election forecast visualizations on emotion, trust, and intention in the 2022 U.S. midterms**  
 Fumeng Yang, Mandi Cai, Chloe Rose Mortenson, Hoda Fakhari, Ayse Deniz Lokmanoglu, Jessica Hullman, Steven L Franconeri, Nicholas Diakopoulos, Erik Nisbet, and *Matthew Kay*  
 IEEE Transactions on Visualization and Computer Graphics 30(1) (proc. VIS 2023)  
 Best paper award
- J18      2024      **ggdist: Visualizations of distributions and uncertainty in the grammar of graphics**  
*Matthew Kay*  
 IEEE Transactions on Visualization and Computer Graphics 30(1) (proc. VIS 2023)
- J17      2024      **Adaptive assessment of visualization literacy**  
Yuan Cui, Lily W. Ge, Yiren Ding, Fumeng Yang, Lane Harrison, and *Matthew Kay*  
 IEEE Transactions on Visualization and Computer Graphics 30(1) (proc. VIS 2023)
- J16      🌸 2023      **Evaluating the use of uncertainty visualisations for imputations of data missing at random in scatterplots**  
Abhraneel Sarma, Shunan Guo, Jane Hoffswell, Ryan Rossi, Fan Du, Eunye Koh, and *Matthew Kay*  
 IEEE Transactions on Visualization and Computer Graphics 29(1) (proc. VIS 2022)  
 Best paper honorable mention (top 5%)
- J15      2022      **The risks of ranking: Revisiting graphical perception to model individual differences in visualization performance**  
Russell Davis, Xiaoying Pu, Yiren Ding, Brian D Hall, Karen Bonilla, Mi Feng, *Matthew Kay*, and Lane Harrison  
 IEEE Transactions on Visualization and Computer Graphics 30(3)
- J14      2022      **A survey of tasks and visualizations in multiverse analysis reports**  
Brain D Hall, Yang Liu, Yvonne Jansen, Pierre Dragicevic, Fanny Chevalier, *Matthew Kay*  
 Computer Graphics Forum 41 (1)
- J13      2021      **Evaluating Michigan’s administrative rule change on nonmedical vaccine exemptions**  
Nina B Masters, Jon Zelner, Paul L Delamater, David Hutton, *Matthew Kay*, Marisa C Eisenberg, and Matthew L Boulton  
 Pediatrics 148 (3)

- J12 2021 **Fine-scale spatial clustering of measles nonvaccination that increases outbreak potential is obscured by aggregated reporting data**  
Nina B Masters, Marisa C Eisenberg, Paul L Delamater,  
*Matthew Kay*, Matthew L Boulton, and Jon Zelner  
 Proceedings of the National Academy of Sciences 117 (45)
- J11 🌸 2021 **Visual reasoning strategies for effect size judgments and decisions**  
Alex Kale, *Matthew Kay*, and Jessica Hullman  
 IEEE Transactions on Visualization and Computer Graphics (proc. INFOVIS 2020)  
 Best paper award (top 1 paper)
- J10 2021 **Revealing perceptual proxies with adversarial examples**  
Brian D Ondov, Fumeng Yang, *Matthew Kay*, Niklas Elmqvist, and Steven Franconeri  
 IEEE Transactions on Visualization and Computer Graphics (proc. INFOVIS 2020)
- JO9 2020 **Uncertain about uncertainty: How qualitative expressions of forecaster confidence impact decision-making with uncertainty visualizations**  
 Lace Padilla, Maia Powell, *Matthew Kay*, Jessica Hullman  
 Frontiers in Psychology 11
- JO8 2019 **In pursuit of error: A survey of uncertainty visualization evaluation**  
 Jessica Hullman, Xiaoli Qiao, Michael Correll, Alex Kale, and *Matthew Kay*  
 IEEE Transactions on Visualization and Computer Graphics 25(1) (proc. INFOVIS 2018)
- JO7 2019 **Hypothetical outcome plots help untrained observers judge trends in ambiguous data**  
Alex Kale, Francis Nguyen, *Matthew Kay*, and Jessica Hullman  
 IEEE Transactions on Visualization and Computer Graphics 25(1) (proc. INFOVIS 2018)
- JO6 2018 **Addressing the need for validation of a touchscreen psychomotor vigilance task: important considerations for sleep health research**  
 Michael Grandner, Nathaniel Watson, *Matthew Kay*, Demi Ocaño, and Julie Kientz  
 Sleep Health 4(5)
- JO5 2018 **A patient-centered proposal for Bayesian analysis of self-experiments for health**  
 Jessica Schroeder, Ravi Karkar, James Fogarty, Julie Kientz, Sean Munson, and *Matthew Kay*  
 Journal of Healthcare Informatics Research (2018)
- JO4 2018 **Imaging replications: Graphical prediction & discrete visualizations improve recall & estimation of effect uncertainty**  
 Jessica Hullman, *Matthew Kay*, Yea-Seul Kim, and Samana Shrestha  
 IEEE Transactions on Visualization and Computer Graphics 24(1) (proc. INFOVIS 2017)
- JO3 2017 **Semi-automated tracking: A balanced approach for self-monitoring applications**  
 Eun Kyoung Choe, Saeed Abdullah, Mashfiqui Rabbi, Edison Thomaz, Daniel A. Epstein, *Matthew Kay*, Felicia Cordeiro, Gregory D. Abowd, Tanzeem Choudhury, James Fogarty, Bongshin Lee, Mark Matthews, and Julie A. Kientz  
 IEEE Pervasive Computing 16(1), 1536–1268
- JO2 🌸 2016 **Beyond Weber's Law: A second look at ranking visualizations of correlation**  
*Matthew Kay* and Jeffrey Heer  
 IEEE Transactions on Visualization and Computer Graphics 22(1) (proc. INFOVIS 2015)  
 Best paper honorable mention (top 2 papers)

- J01 2015 **Consumer sleep technologies: A review of the landscape**  
Ping-Ru T Ko, Julie A Kientz, Eun Kyoung Choe, *Matthew Kay*,  
Carol A Landis, and Nathaniel F Watson  
JCSM: Journal of clinical sleep medicine 11(12), 1455–1461
- Conference papers (fully reviewed, archival)
- C34 🌸 2024 **In dice we trust: Uncertainty displays for maintaining trust in election forecasts over time**  
Fumeng Yang, Chloe Rose Mortenson, Erik Nisbet, Nicholas Diakopoulos, and *Matthew Kay*  
CHI '24: Conference on human factors in computing systems  
Best paper award (top 1%)
- C33 🌸 2024 **Watching the election sausage get made: How data journalists visualize the vote counting process in U.S. elections**  
Mandi Cai and *Matthew Kay*  
CHI '24: Conference on human factors in computing systems  
Best paper honorable mention (top 5%)
- C32 2024 **Milliways: Taming multiverses through principled evaluation of data analysis paths**  
Abhraneel Sarma, Kyle Hwang, Jessica Hullman, and *Matthew Kay*  
CHI '24: Conference on human factors in computing systems
- C31 🌸 2024 **Odds and insights: Decision quality in exploratory data analysis under uncertainty**  
Abhraneel Sarma, Xiaoying Pu, Yuan Cui, Eli T Brown, Michael Correll, and *Matthew Kay*  
CHI '24: Conference on human factors in computing systems  
Best paper honorable mention (top 5%)
- C30 2024 **To cut or not to cut? A systematic exploration of y-axis truncation**  
Sheng Long and *Matthew Kay*  
CHI '24: Conference on human factors in computing systems
- C29 🌸 2024 **Authors' values and attitudes towards AI-bridged scalable personalization of creative language arts**  
Taewook Kim, Hyomin Han, Eytan Adar, *Matthew Kay*, and John Joon Young Chung  
CHI '24: Conference on human factors in computing systems  
Best paper honorable mention (top 5%)
- C28 2024 **V-FRAMER: Visualization framework for mitigating reasoning errors in public policy**  
Lily W Ge, Matthew Easterday, *Matthew Kay*, Evanthia Dimara, Peter Cheng, and Steven L Franconeri  
CHI '24: Conference on human factors in computing systems
- C27 🌸 2023 **CALVI: Critical thinking assessment for literacy in visualizations**  
Lily W Ge, Yuan Cui, and *Matthew Kay*  
CHI '23: Conference on human factors in computing systems  
Best paper honorable mention (top 5%)
- C26 2023 **How data analysts use a visualization grammar in practice**  
Xiaoying Pu and *Matthew Kay*  
CHI '23: Conference on human factors in computing systems

- C25 🌸 2023 **Subjective probability correction for uncertainty representations**  
Maryam Hedayati, Fumeng Yang, and *Matthew Kay*  
 CHI '23: Conference on human factors in computing systems  
 Best paper honorable mention (top 5%)
- C24 🌸 2023 **multiverse: Multiplexing alternative data analyses in R notebooks**  
Abhraneel Sarma, Alex Kale, Michael Jongho Moon, Nathan Taback,  
 Fanny Chevalier, Jessica Hullman, and *Matthew Kay*  
 CHI '23: Conference on human factors in computing systems  
 Best paper honorable mention (top 5%)
- C23 2023 **"It can bring you in the right direction": Episode-driven data narratives to help patients navigate multidimensional diabetes data to make care decisions**  
Shriti Raj, Toshi Gupta, Joyce Lee, *Matthew Kay*, and Mark W Newman  
 CHI '23: Conference on human factors in computing systems
- C22 2021 **An aligned rank transform procedure for multifactor contrast tests**  
Lisa A Elkin, *Matthew Kay*, James J Higgins, Jacob O Wobbrock  
 UIST '21: Symposium on User Interface Software and Technology
- C21 🌸 2020 **A probabilistic grammar of graphics**  
Xiaoying Pu and *Matthew Kay*  
 CHI '20: Conference on human factors in computing systems  
 Best paper honorable mention (top 5%)
- C20 2020 **Prior setting in practice: Strategies and rationales used in choosing prior distributions for Bayesian analysis**  
Abhraneel Sarma and *Matthew Kay*  
 CHI '20: Conference on human factors in computing systems
- C19 2020 **How patterns of students dashboard use are related to their achievement and self-regulatory engagement**  
Fatemeh Salehian Kia, Stephanie D Teasley, Marek Hatala, Stuart A Karabenick, and *Matthew Kay*  
 LAK '20: Conference on learning analytics & knowledge
- C18 🌸 2019 **Increasing the transparency of research papers with explorable multiverse analyses**  
 Pierre Dragicevic, Yvonne Jansen, Abhraneel Sarma, *Matthew Kay*, and Fanny Chevalier  
 CHI '19: Conference on human factors in computing systems  
 Best paper award (top 1%)
- C17 2019 **Some prior(s) experience necessary: Templates for getting started with Bayesian analysis**  
Chanda Phelan, Jessica Hullman, *Matthew Kay*, and Paul Resnick  
 CHI '19: Conference on human factors in computing systems
- C16 2019 **Decision-making under uncertainty in research synthesis: Designing for the garden of forking paths**  
Alex Kale, *Matthew Kay*, and Jessica Hullman  
 CHI '19: Conference on human factors in computing systems
- C15 🌸 2018 **Uncertainty displays using quantile dotplots or CDFs improve transit decision-making**  
Michael Fernandes, Logan Walls, Sean Munson, Jessica Hullman, and *Matthew Kay*  
 CHI '18: Conference on human factors in computing systems  
 Best paper honorable mention (top 5%)

- C14 2017 **Self-experimentation for behavior change: Design and formative evaluation of two approaches**  
Jisoo Lee, Erin Walker, Winslow Burleson, *Matthew Kay*, Matthew P. Buman, and Eric B. Hekler  
 CHI '17: Conference on human factors in computing systems
- C13 2016 **Cognitive rhythms: Unobtrusive and continuous sensing of alertness using a mobile phone**  
Saeed Abdullah, Elizabeth Murnane, Mark Matthews, *Matthew Kay*, Julie Kientz, Geri Gay, and Tanzeem Choudhury  
 UBICOMP '16: Conference on ubiquitous computing
- C12 🌸 2016 **Mobile manifestations of alertness: Connecting biological rhythms with patterns of smartphone app use**  
 Elizabeth Murnane, Saeed Abdullah, Mark Matthews, *Matthew Kay*, Julie Kientz, Geri Gay, Tanzeem Choudhury, and Dan Cosley  
 MOBILEHCI '16: Conference on Human-Computer Interaction with Mobile Devices and Services  
 Best paper award (top 2 papers)
- C11 🌸 2016 **Researcher-centered design of statistics: Why Bayesian statistics better fit the culture and incentives of CHI**  
*Matthew Kay*, Gregory Nelson, and Eric Hekler  
 CHI '16: Conference on human factors in computing systems, 23% AR  
 Best paper honorable mention (top 5%)
- C10 2016 **When (ish) is my bus? User-centered visualizations of uncertainty in everyday, mobile predictive systems**  
*Matthew Kay*, Tara Kola, Jessica Hullman, and Sean Munson  
 CHI '16: Conference on human factors in computing systems, 23% AR
- C09 2015 **SleepTight: Low-burden, self-monitoring technology for capturing and reflecting on sleep behaviors**  
Eun Kyoung Choe, Bongshin Lee, *Matthew Kay*, Wanda Pratt, and Julie A. Kientz  
 UBICOMP '15: Conference on ubiquitous computing, 30% AR
- C08 🌸 2015 **Unequal representation and gender stereotypes in image search results for occupations**  
*Matthew Kay*, Cynthia Matuszek, and Sean Munson  
 CHI '15: Conference on human factors in computing systems, 23% AR  
 Best paper award (top 1%)
- C07 2015 **How good is 85%? A survey tool to connect classifier evaluation to acceptability of accuracy**  
*Matthew Kay*, Shwetak N. Patel, and Julie A. Kientz  
 CHI '15: Conference on human factors in computing systems, 23% AR
- C06 🌸 2013 **There's no such thing as gaining a pound: Reconsidering the bathroom scale user interface**  
*Matthew Kay*, Dan Morris, mc schraefel, and Julie A. Kientz  
 UBICOMP '13: Conference on ubiquitous computing, 23% AR  
 Best paper award (top 1%)
- C05 2013 **PVT-Touch: Adapting a reaction time test for touchscreen devices**  
*Matthew Kay*, Kyle Rector, Sunny Consolvo, Ben Greenstein, Jacob O. Wobbrock, Nathaniel F. Watson, and Julie A. Kientz  
 PERVASIVEHEALTH '13: Conference on pervasive computing technologies for healthcare, 34% AR

- C04  2012 **Lullaby: A capture & access system for understanding the sleep environment**  
Matthew Kay, Eun Kyoung Choe, Jesse Shepherd, Benjamin Greenstein,  
Nathaniel F. Watson, Sunny Consolvo, and Julie A. Kientz  
UBICOMP '12: Conference on ubiquitous computing, 19% AR  
Best paper award (top 1%)
- C03 2010 **Textured agreements: Re-envisioning electronic consent**  
Matthew Kay and Michael Terry  
SOUPS '10: Symposium on usable privacy and security, 25% AR
- C02 2010 **Perceptions and practices of usability in the Free/Open Source Software (FOSS) community**  
Michael Terry, Matthew Kay, and Ben Lafreniere  
CHI '10: Conference on human factors in computing systems, 22% AR
- C01 2008 **Ingimp: Introducing instrumentation to an end-user open source application**  
Michael Terry, Matthew Kay, Brad Van Vugt, Brandon Slack, and Terry Park  
CHI '08: Conference on human factors in computing systems, 22% AR
- Workshop papers & abstracts (lightly reviewed)  
For a listing of workshops I have co-organized, see the Service section.
- A12 2024 **Old wine in a new bottle? Analysis of visual lineups with signal detection theory**  
Sheng Long and Matthew Kay  
BELIV '24: Evaluation and beyond – Methodological approaches for visualization
- A11 2024 **Tasks and telephones: Threats to experimental validity due to misunderstandings of visualisation tasks and strategies**  
Abhraneel Sarma, Sheng Long, Michael Correll, Matthew Kay  
BELIV '24: Evaluation and beyond – Methodological approaches for visualization
- A10 2024 **The role of data journalists as educators**  
Mandi Cai, Matthew Kay  
CHI '24 workshop toward a more comprehensive understanding of visualization literacy
- A09 2024 **From pixels to practices: Reconceptualizing visualization literacy**  
Maryam Hedayati, Ayse Hunt, Matthew Kay  
CHI '24 workshop toward a more comprehensive understanding of visualization literacy
- A08 2023 **“Choose-your-own” D3 labs for learning to adapt online code**  
Maryam Hedayati, Matthew Kay  
VIS '23 workshop on visualization education, literacy, and activities (EDUVIS)
- A07 2018 **The garden of forking paths in visualization: A design space for reliable exploratory visual analytics**  
Xiaoying Pu and Matthew Kay  
BELIV '18: Evaluation and beyond – Methodological approaches for visualization
- A06 2017 **Validation of a touchscreen psychomotor vigilance task for Android devices**  
Demi Ocano, Nathaniel F. Watson, Matthew Kay, Julie A. Kientz, and Michael Grandner  
SLEEP 40 (Abstract supplement): A88



- AO5 2013 **Initial validation of an Android-based psychomotor vigilance task**  
Matthew Kay, Michael Grandner, Jared Bauer, Rebecca Lang,  
Nathaniel F. Watson, and Julie A. Kientz  
SLEEP 36 (Abstract supplement)
- AO4 2012 **Evaluating Zeo and Fitbit for tracking sleep behaviors**  
Matthew Kay, Eun Kyoung Choe, and Julie A. Kientz  
UBICOMP '12 workshop on evaluating off-the-shelf technologies for personal health monitoring
- AO3 2012 **Lullaby: Capturing the unconscious in the sleep environment**  
Matthew Kay, Eun Kyoung Choe, Jesse Shepherd, Benjamin Greenstein,  
Nathaniel F. Watson, Sunny Consolvo, and Julie A. Kientz  
CHI '12 workshop on personal informatics
- AO2 2011 **Lullaby: Environmental sensing for sleep self-improvement**  
Matthew Kay, Eun Kyoung Choe, Jesse Shepherd, Benjamin Greenstein,  
Sunny Consolvo, Patrick Gage Kelley, and Julie A. Kientz  
CHI '11 workshop on personal informatics
- AO1 2010 **Communicating software agreement content using narrative pictograms**  
Matthew Kay and Michael Terry  
ALT.CHI '10 (CHI '10 extended abstracts)
- Book chapters
- BO3 2021 **User-centered design for a student-facing dashboard grounded in learning theory**  
Stephanie D. Teasley, Matthew Kay, Shannon Elkins, Jackson Hammond  
in Visualizations and Dashboards for Learning Analytics, eds. Muhittin Sahin, Dirk Ifenthaler  
Springer
- BO2 2020 **Uncertainty visualization**  
Lace Padilla, Matthew Kay, Jessica Hullman  
in Wiley StatsRef: Statistics Reference Online, eds. N. Balakrishnan, T.  
Colton, B. Everitt, W. Piegorsch, F. Ruggeri and J.L. Teugels
- BO1 2016 **Nonparametric statistics in human-computer interaction**  
Jacob O. Wobbrock and Matthew Kay  
in Modern Statistical Methods for HCI, eds. Judy Robertson and Maurits Kaptein  
Springer International Publishing
- Magazine articles
- MO4 2017 **How do you know if 85% accuracy is good enough for your application?**  
Matthew Kay, Shwetak N. Patel, and Julie A. Kientz  
GETMOBILE: Mobile Computing and Communications 21(2), 5–8
- MO3 2014 **Challenges in personal health tracking: The data isn't enough**  
Matthew Kay  
XRDS: Crossroads, the ACM Magazine for Students 21(2), 32–37
- MO2 2013 **UbiComp 2012 conference report**  
Sidhant Gupta and Matthew Kay  
IEEE Pervasive Computing 12(1)

MO1	2012	<b>The changing nature of (ubiquitous) computing</b> <i>Matthew Kay</i> XRDS blogs, in Crossroads, the ACM Magazine for Students 19(1)  —— Posters
PO3	2019	<b>Designing for preregistration: A user-centered perspective</b> <u>Xiaoying Pu, Licheng Zhu, Matthew Kay</u> , and Frederick Conrad CHI '19 Late-breaking Work
PO2	2014	<b>How good is 85%? Connecting classifier performance to acceptability of accuracy</b> <i>Matthew Kay</i> , Shwetak N. Patel, and Julie A. Kientz HCIC '14: Human Computer Interaction Consortium Workshop
PO1	2009	<b>Textured agreements: Re-envisioning electronic consent</b> <i>Matthew Kay</i> and Michael Terry SOUPS '09: Symposium on usable privacy and security

## R packages

RO5	2021–	<b>posterior: Tools for working with posterior distributions</b> Paul-Christian Bürkner, Jonah Gabry, <i>Matthew Kay</i> , Aki Vehtari <a href="https://mc-stan.org/posterior/">https://mc-stan.org/posterior/</a>   <a href="https://cran.r-project.org/package=posterior">https://cran.r-project.org/package=posterior</a>
RO4	2021–	<b>multiverse: Explorable multiverse data analysis and reports</b> Abhraneel Sarma, Michael Moon, <i>Matthew Kay</i> , Alex Kale, Nathan Taback, Fanny Chevalier, Jessica Hullman, Pierre Dragicevic, Yvonne Jansen <a href="https://mucollective.github.io/multiverse/">https://mucollective.github.io/multiverse/</a>   <a href="https://cran.r-project.org/package=multiverse">https://cran.r-project.org/package=multiverse</a>
RO3	2020–	<b>ggdist: Visualizations of distributions and uncertainty</b> <i>Matthew Kay</i> <a href="https://mjskay.github.io/ggdist/">https://mjskay.github.io/ggdist/</a>   <a href="https://cran.r-project.org/package=ggdist">https://cran.r-project.org/package=ggdist</a>
RO2	2015–	<b>tidybayes: Bayesian analysis + tidy data + geoms</b> <i>Matthew Kay</i> <a href="https://mjskay.github.io/tidybayes/">https://mjskay.github.io/tidybayes/</a>   <a href="https://cran.r-project.org/package=tidybayes">https://cran.r-project.org/package=tidybayes</a>
RO1	2014–	<b>ARTool: R package for aligned rank transform for nonparametric factorial ANOVAs</b> <i>Matthew Kay</i> and Jacob O. Wobbrock <a href="https://cran.r-project.org/package=ARTool">https://cran.r-project.org/package=ARTool</a>

## Publicly available research code & data

Since about 2014 I have made it a habit to release datasets and analysis code (usually in R) with all papers where I am first author. Previous work may not have ethics approval for this. Most of the code for later papers with students not listed here is also publicly available (see the papers).

2018	<b>Data and analysis for “Uncertainty displays ...” [C15]</b> Michael Fernandes, Logan Walls, Sean Munson, Jessica Hullman, and <i>Matthew Kay</i> <a href="https://github.com/Michael-Fernandes/uncertainty-displays-for-transit">https://github.com/Michael-Fernandes/uncertainty-displays-for-transit</a>
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- 2017 **Materials for “Imagining replications ...” [J04]**  
 Jessica Hullman, Matthew Kay, Yea-Seul Kim, and Samana Shrestha  
[https://github.com/jhullmanuw/imagining\\_replications\\_infovis2017](https://github.com/jhullmanuw/imagining_replications_infovis2017)
- 2016 **Data and analysis for “Research-centered design of statistics ...” [C11]**  
 Matthew Kay, Gregory Nelson, and Eric Hekler  
<https://github.com/mjskay/bayes-for-chi>
- 2016 **Data and analysis for “When (ish) is my bus? ...” [C10]**  
 Matthew Kay, Tara Kola, Jessica Hullman, and Sean Munson  
<https://github.com/mjskay/when-ish-is-my-bus>
- 2015 **Data and analysis for “Beyond Weber’s Law ...” [J02]**  
 Matthew Kay and Jeffrey Heer  
<https://github.com/mjskay/ranking-correlation>
- 2015 **Data and analysis for “Unequal representation and gender stereotypes ...” [C08]**  
 Matthew Kay, Cynthia Matuszek, and Sean Munson  
<https://github.com/mjskay/gender-in-image-search>
- 2015 **Code for “How good is 85%? A survey tool ...” [C07]**  
 Matthew Kay, Shwetak N. Patel, and Julie A. Kientz  
<https://github.com/mjskay/acceptability-of-accuracy>

## Talks & panels

All first-author conference papers listed above were also given as presentations at their respective conferences and are not listed again in this section.

- Invited talks
- 2024 **Systematic uncertainty visualization design**  
 Novartis
- 2022 **Visualizing multiverse analyses**  
 Multiverse workshop at SIPS (Society for the Improvement of Psychological Science) 2022
- 2021 **A biased tour of the uncertainty visualization zoo**  
 Lawrence Livermore National Laboratory | [https://youtu.be/eyLxh\\_YY3Hw](https://youtu.be/eyLxh_YY3Hw)
- 2021 **Uncertainty visualization with tidybayes and ggdist**  
 Bayes@Lund | <https://youtu.be/EtrmxMX8zWw>
- 2021 **Strategies for effective uncertainty visualization**  
 Nonclinical Biostatistics Conference 2021
- 2021 **Strategies for effective uncertainty visualization**  
 Rostock Retreat, Max Plank Insitute for Demographic Research
- 2021 **Uncertainty visualization as a moral imperative**  
 BostonCHI | <https://www.youtube.com/watch?v=mfQ3QVyw4No>
- 2020 **Uncertainty visualization and Bayes**  
 Generable | <https://www.youtube.com/watch?v=PqCaljvE89k>

- 2020 **Building effective uncertainty visualizations with tidybayes and ggdist**  
StanCon 2020 | [https://www.youtube.com/watch?v=wbzfqh\\_3LyM](https://www.youtube.com/watch?v=wbzfqh_3LyM)
- 2019 **Uncertainty visualization as a moral imperative**  
Northwestern University Technology and Social Behavior Speaker Series
- 2019 **tidybayes: Tidy data + Bayesian analysis + geoms**  
Ann Arbor R Users Group
- 2018 **A biased tour of the uncertainty visualization zoo**  
Tapestry 2018 | <https://www.youtube.com/watch?v=E1kSnWvqCwo>
- 2018 **Tidy data and Bayesian analysis make uncertainty visualization fun**  
OpenVisConf 2018 | <https://www.youtube.com/watch?v=vqzO-9LSoG4>
- 2018 **Uncertainty visualization for scientific communication**  
Psychology Methods Hour, University of Michigan
- 2018 **Discrete outcome uncertainty visualization**  
Center for Bioethics and Social Sciences in Medicine, University of Michigan
- 2014 **On weight scales, sensing, and accuracy: Improving the user interface of user-facing uncertainty in ubiquitous computing**  
University of Waterloo
- 2013 **Personal informatics & sleep**  
UW CSE Summer Academy for Advancing Deaf & Hard of Hearing in Computing
- 2012 **Lullaby: A capture and access system for the sleep environment**  
UW CSE Industry Affiliates' Day 2012
- Course guest lectures
- 2024 **Uncertainty visualization, misinformation, and election forecasting**  
Introduction to grad studies (Northwestern Computer Science)
- 2023 **Uncertainty visualization**  
STA 313: Advanced data visualization (Duke)
- 2021 **Introduction to uncertainty visualization**  
PSYCH 252: Graduate-level statistical methods (Stanford)
- 2017–2019 **Information visualization for data science**  
BDSI 2019: Big Data Summer Institute at the University of Michigan  
BDSI 2018: Big Data Summer Institute at the University of Michigan  
BDSI 2017: Big Data Summer Institute at the University of Michigan
- 2018 **Visualization for scientific communication**  
EHS 869: Doctoral seminar on scientific presentation and communication
- 2017,2018 **Visualization for scientific communication**  
NUTR 802: Professional development and technical writing
- 2016 **Quantitative methods**  
ARTDES 650.1: Research Methods

- 2014 **Critique**  
CSE 440: User Interface Design, Prototyping, and Evaluation
- 2014 **Designing for mobile web, responsive web, and mobile apps**  
HCID 520: User Interface Software and Technology
- 2013 **Challenges in personal informatics**  
CSE 440: Introduction to HCI
- Discussion panels
- 2020 **A picture is worth a thousand stories: Visualizing COVID-19**  
with Jessica Hullman  
Northwestern Buffett Institute for Global Affairs | <http://youtu.be/IVvBzMs-AnU>
- 2018 **Frontiers of data visualization**  
with Martin Wattenberg, Michelle Borkin, and Arvind Satyanarayan  
MIT Statistics and Data Science Convention 2018 | <http://youtu.be/zd97cxduPgM>
- 2018 **Increasing replicability: Emerging tools and associated challenges**  
with Nick Michalak and Yilin Wang  
American Psychological Association 2018 Conference
- 2016 **How can we improve empirical research on understanding visual information?**  
with Steve Haroz, Pierre Dragicevic, Ronald Rensink, and Jessica Hullman  
InfoVis 2016
- 2014 **Research design and collaboration**  
with Jason Bobe and Eric Hekler  
Quantified Self Public Health Symposium 2014

## Advising

- Former Postdocs
  - Fumeng Yang, Northwestern University
  - Alireza Karduni, Northwestern University (with Jessica Hullman and Steven Franconeri)
- Current PhD students
  - Mandi Cai, Northwestern University Technology and Social Behavior
  - Taewook Kim, Northwestern University Technology and Social Behavior
  - Lily Ge, Northwestern University Computer Science
  - Sheng Long, Northwestern University Computer Science
  - Yuan Cui, Northwestern University Computer Science
  - Maryam Hedayati, Northwestern University Computer Science + Learning Science
  - Abhraneel Sarma, Northwestern University Computer Science (with Jessica Hullman)

- Former PhD students
  - Brian Hall, University of Michigan School of Information**
  - Xiaoying Pu, University of Michigan Computer Science and Engineering**
- Doctoral qualifier / prelim committee member
  - 2021 **Dongping Zhang, Northwestern University Computer Science**
  - 2021 **Priyanka Nanayakkara, Northwestern University Computer Science**
  - 2021 **Hyeok Kim, Northwestern University Technology and Social Behavior**
  - 2018 **Heeryung Choi, University of Michigan School of Information**
  - 2018 **Brian Hall, University of Michigan School of Information**
  - 2018 **Carl Haynes, University of Michigan School of Information**
  - 2018 **Shiqing He, University of Michigan School of Information**
  - 2017 **Hariharan Subramonyam, University of Michigan School of Information**
- Master's thesis chair
  - 2018 **Abhraneel Sarma, University of Michigan School of Information**
- Master's thesis committee member
  - 2018 **Josh Gardner, University of Michigan School of Information**
- Other Master's students mentored in research
  - 2018 **Ruchi Ookalkar, University of Michigan School of Information**
  - 2018–2019 **Puhe Liang, University of Michigan School of Information**
- Undergraduate student mentor
  - 2021 **Daniel Wang, Northwestern University Computer Science**
  - 2018–2019 **Dillon Zaugg, University of Michigan Computer Science and Engineering**
- Computing Research Association Distributed Research Experiences for Undergraduates (DREU) mentor
  - 2016 **Tara Kola, Tufts University (mentored at University of Washington)**

## Service

- To the research community
  - 2024–2025 **VIS Area Paper Chair (Theoretical and Empirical)**
  - 2022–2023 **CHI Visualization Paper Subcommittee Co-chair**
  - 2020 **BELIV Workshop Co-organizer**
  - 2016 **ACM Interactions Editor-in-Chief Search Committee Member**

2015–2016	<b>CSCW 2016 Co-webmaster</b>
2014	<b>UbiComp 2014 Program Committee Student Volunteer</b>
—	As a conference workshop or special interest group (SIG) organizer
W09	<b>2024 Toward a more comprehensive understanding of visualization literacy</b> Lily W Ge, Maryam Hedayati, Yuan Cui, Yiren Ding, Karen Bonilla, Alark Joshi, Alvitta Ottley, Benjamin Bach, Bum Chul Kwon, David N Rapp, Evan Peck, Lace M Padilla, Michael Correll, Michelle A Borkin, Lane Harrison, and <i>Matthew Kay</i> Workshop at CHI '24
W08	<b>2024 Experimenting with new review methods, open practices, and interactive publications in HCI</b> Lonni Besançon, Florian Echtler, <i>Matthew Kay</i> , and Chat Wacharamanatham SIG at CHI '24
W07	<b>2021 Special Interest Group on Visualization Grammars</b> Xiaoying Pu, <i>Matthew Kay</i> , Steven M Drucker, Jeffrey Heer, Dominik Moritz, and Arvind Satyanarayan SIG at CHI '21
W06	<b>2018 Special Interest Group on Transparent Statistics Guidelines</b> Chat Wacharamanatham, <i>Matthew Kay</i> , Steve Haroz, Shion Guha, and Pierre Dragicevic SIG at CHI '18   <a href="https://transparentstatistics.org/chi2018/">https://transparentstatistics.org/chi2018/</a>
W05	<b>2017 Moving Transparent Statistics Forward at CHI</b> <i>Matthew Kay</i> , Steve Haroz, Shion Guha, Pierre Dragicevic, and Chat Wacharamanatham Workshop at CHI '17   <a href="https://transparentstatistics.org/chi2017/">https://transparentstatistics.org/chi2017/</a>
W04	<b>2017 Designing for Uncertainty in HCI: When Does Uncertainty Help?</b> Miriam Greis, Jessica Hullman, <i>Matthew Kay</i> , Michael Correll, and Orit Shaer Workshop at CHI '17   <a href="http://visualization.ischool.uw.edu/hci_uncertainty/">http://visualization.ischool.uw.edu/hci_uncertainty/</a>
W03	<b>2016 Special Interest Group on Transparent Statistics in HCI</b> <i>Matthew Kay</i> , Steve Haroz, Shion Guha, and Pierre Dragicevic SIG at CHI '16   <a href="https://transparentstatistics.org/chi2016/">https://transparentstatistics.org/chi2016/</a>
W02	<b>2014 Disasters in personal informatics: The unpublished stories of failure and lessons learned</b> Jon E. Froehlich, Jakob Eg Larsen, <i>Matthew Kay</i> , and Edison Thomaz Workshop at UBICOMP '14
W01	<b>2014 Biological rhythms and technology</b> Mark Matthews, Erin Carroll, Saeed Abdullah, Jaime Snyder, <i>Matthew Kay</i> , Tanzeem Choudhury, Geri Gay, and Julie A. Kientz Workshop at CHI '14
—	At Northwestern University
2022	<b>School of Communication Arts Strategy Advisory Committee member</b>
2022	<b>Computer Science CS+X postdoc search committee member</b>
2021	<b>Communication Studies HCI faculty search committee member</b>
2020–2021	<b>Technology and Social Behavior PhD admissions committee member</b>

2020 **Computer Science PhD admissions committee member**

2020 **Computer Science teaching postdoc search co-chair**

—— At University of Michigan

2018–2020 **ArtsEngine faculty representative for the School of Information**

2018 **oSTEM (Out in Science Technology, Engineering, and Math) LGBTQ faculty panel member**

2017–2018 **MISC (Michigan Interactive and Social Computing) seminar co-organizer**

2017 **Speaker at CS KickStart program to introduce first year women to Computer Science**

2017 **SIGCHI Chapter Faculty Mentor**

—— At University of Michigan School of Information

2018–2019 **Data Science Faculty Search Committee Member**

2018 **Bachelor's Program Committee Member**

2017–2018 **Doctoral Program Committee Member**

—— At University of Washington CSE

2014–2015 **dub Speaker Series Student Committee Member**  
Responsible for coordinating speakers for the weekly dub group HCI speaker series

SPRING 2015 **Paul Allen Computing Challenge Judge**  
Judged ~30 personal informatics-related research posters from high school student teams

WINTER 2014 **Prospective Graduate Student Admissions Reviewer**  
Reviewed prospective graduate student applications for UW CSE

SUMMER 2013 **Speaker at Summer Academy for Advancing Deaf & Hard of Hearing in Computing**  
Presented research to deaf and hard of hearing high school students

SPRING 2013 **Graduate Student Satisfaction Survey Coordinator**  
Organized the annual survey of grad student happiness and reported on its results

SPRING 2012 **Prospective Student Committee After-party Coordinator**  
Organized after-party for visiting prospective grad students

FALL 2011 **New Graduate Student Orientation Co-coordinator**  
Organized panels, talks, and activities to introduce new students to UW CSE and Seattle

SPRING 2011 **Prospective Student Committee Graduate Student Whip**  
Ensured graduate students scheduled time to meet prospectives

—— At University of Waterloo CS

SPRING 2010 **Human–Computer Interaction Tutorial Leader**  
Designed and ran two introductory HCI tutorials for high school girls interested in CS

—— As a conference program subcommittee chair / area chair

2024 **IEEE VIS Theroetical & Empirical area co-chair**

2022–2023 **ACM CHI Visualization subcommittee co-chair**



————	As a conference program committee member
2021–2022	IEEE VIS
2020–2021	ACM CHI
2019	ACM FAT*
2018	ACM CHI
————	As a reviewer (for conferences)
✿	Special Recognitions for exceptional reviews.
2013–2024	CHI ✿ (2016) ✿ (2018) ✿ ✿ (2019) ✿ ✿ ✿ (2021) ✿ (2024)
2016–2023	IEEE VIS ✿ ✿ ✿ (2023)
2016–2022	BELIV
2016–2021	CSCW ✿ (2016) ✿ (2017)
2017–2021	EuroVis
2015–2020	UIST ✿ (2015) ✿ (2016)
2019	FAT*
2016–2018	MobileHCI
2017	Digital Health
2013–2017	CHI Works-in-Progress / Late-Breaking Work
2016	HealthWear
2014–2016	UbiComp
2014	Pervasive Health
2010	GI
————	As a reviewer (for journals)
2017–2021	IEEE Transactions on Visualization and Computer Graphics
2017–2020	ACM IMWUT ✿ (2020)
2018–2019	ACM TOCHI
2017	Risk Analysis
2016	Human–Computer Interaction
2016	Human Factors
2015	IEEE Pervasive Computing

# Media

- 2022 **Uncertainty Visualization & Usable Stats**  
*Learning Bayesian Statistics Podcast*, Alexandre Andorra, Aug 17 2022, <https://learnbayesstats.com/episode/66-uncertainty-visualization-usable-stats-matthew-kay>
- 2020 **Forecast Election Results With Presidential Plinko**  
*Lifehacker*, David Murphy, Oct 8 2020, <https://lifehacker.com/forecast-election-results-with-presidential-plinko-1845313040>
- 2019 **Visualizing Uncertainty with Jessica Hullman and Matthew Kay**  
*Data Stories Podcast*, Enrico Bertini and Moritz Stefaner, Jan 2019, <http://datastori.es/134-visualizing-uncertainty-with-jessica-hullman-and-matthew-kay/>
- 2015 **For “Unequal representation and gender stereotypes ...” [C08]**  
*The New York Times*, Claire Cain Miller, When algorithms discriminate, Jul 9 2015, <http://nyti.ms/1JX8Wwv>  
*CBC Radio Spark*, Nora Young, Women at work in image search, May 3 2015, <http://www.cbc.ca/1.3057841>  
*Fast Company*, Lydia Dishman, The hidden gender bias in Google image search, Apr 22 2015, <http://www.fastcompany.com/3045295/strong-female-lead/the-hidden-gender-bias-in-google-image-search>  
*BBC Newsbeat*, Amelia Butterly, Google image search for CEO has Barbie as first female result, Apr 16 2015, <http://www.bbc.co.uk/newsbeat/article/32332603/google-image-search-for-ceo-has-barbie-as-first-female-result>  
*@ChelseaClinton*, What happens when you Google image search “CEO”? 10 rows down you find the first female face—Barbie, Apr 15 2015, <https://twitter.com/ChelseaClinton/status/588394572545466369>  
*Pacific Standard*, Nathan Collins, Image searches misrepresent women in the workplace, Apr 13 2015, <http://www.psmag.com/nature-and-technology/image-searches-misrepresent-women-in-the-workplace>  
*The Cut*, Molly Oswaks, This is the first female face Google finds when you search ‘CEO’, Apr 13 2015, <http://thecut.io/1yoCPE6>  
*The Washington Post*, Jennifer Langston, The uncomfortable truth about how we view working women in one simple Google search, Apr 9 2015, <http://wapo.st/1EzDMKP>  
*The Atlantic*, Adrienne LaFrance, Be careful what you Google, Apr 10 2015, <http://www.theatlantic.com/technology/archive/2015/04/be-careful-what-you-google/390207/>  
*The Verge*, T.C. Sottek, Google search thinks the most important female CEO is Barbie, Apr 9 2015, <http://www.theverge.com/tldr/2015/4/9/8378745/i-see-white-people>  
*PCWorld*, Zach Miners, The first woman CEO to appear in a Google images search is ... CEO Barbie, Apr 9 2015, <http://www.pcworld.com/article/2908592/the-first-woman-ceo-to-appear-in-a-google-images-search-is-ceo-barbie.html>  
*GeekWire*, Molly Brown, Study puts Google image search results to the gender bias test, Apr 9 2015, <http://www.geekwire.com/2015/study-puts-google-image-search-results-to-the-gender-bias-test/>

- 2012 **For “Lullaby: A capture & access system ...” [C04]**  
 97.3 *KIRO FM News*, The Lullaby could help you get a better night’s sleep some day, Sept 11 2012, <http://mynorthwest.com/?nid=577&a=9946148&p=1011>  
*Mashable*, Device uncovers the secret things you do in your sleep, Sept 10 2012, <http://mashable.com/2012/09/10/lullaby-sleep-lab/>  
*NBCNews.com*, Francie Diep, Lullaby puts a sleep lab in your bedroom, Sept 7 2012, [http://www.nbcnews.com/id/48947316/ns/technology\\_and\\_science-innovation/t/lullaby-puts-sleep-lab-your-bedroom](http://www.nbcnews.com/id/48947316/ns/technology_and_science-innovation/t/lullaby-puts-sleep-lab-your-bedroom)

## Teaching experience

—— at Northwestern University

- WINTER 2022 **MTS 525 / COMP SCI 496: Visualization for Scientific Communication**  
 Students: ~15
- WINTER 2022 **COMP SCI 333: Interactive Information Visualization**  
 Students: ~40
- FALL 2021 **COMM ST 395: Information Visualization**  
 Students: ~10
- SPRING 2021 **COMM ST 395: Information Visualization**  
 Students: ~10
- WINTER 2021 **MTS 525 / COMP SCI 496: Visualization for Scientific Communication**  
 Students: ~10
- WINTER 2021 **HLTH COM 455: Human–Computer Interaction for Healthcare**  
 Students: ~45

—— at the University of Michigan

- WINTER 2020 **SI 649 / EECS 548: Information Visualization**  
 Students: ~50
- WINTER 2019 **SI 649 / EECS 548: Information Visualization**  
 Students: ~50
- FALL 2018 **SI 330: Data Manipulation**  
 Students: ~50
- WINTER 2018 **SI 710: Practical Use and Communication of Bayesian Statistics**  
 Students: ~15
- WINTER 2018 **SI 649 / EECS 548: Information Visualization**  
 Students: ~60
- FALL 2017 **SI 649 / EECS 548: Information Visualization**  
 Students: ~60
- WINTER 2017 **SI 330: Data Manipulation**  
 Students: ~50

FALL 2016	<b>SI 649 / EECS 548: Information Visualization</b> Co-taught with Eytan Adar. Students: ~60
—	Curriculum development at University of Washington CSE
2014	<b>CSE 440: Introduction to HCI</b> Assisted James Fogarty in redesigning the fourth year Human–Computer Interaction curriculum for the Fall 2014 and Winter 2015 offerings
—	as a Teaching Assistant at University of Washington CSE
WINTER 2015	<b>CSE 440: Introduction to HCI</b> Professor: Maya Cakmak. Students: 50 Led weekly group critiques, marked assignments
WINTER 2011	<b>CSE 510: Human–Computer Interaction</b> Professor: James Fogarty. Students: 16 Marked labs and reading reports
FALL 2010	<b>CSE 321: Software Design and Implementation</b> Professor: David Notkin. Students: 42 Tutored students one-on-one, marked, ran labs / recitations
—	as a Teaching Assistant at University of Waterloo CS
WINTER 2010	<b>CS 349: User Interfaces</b> Professor: Michael Terry. Students: 128 Tutored students one-on-one, marked, covered some lectures
FALL 2009	<b>CS 489: Human–Computer Interaction</b> Professor: Michael Terry. Students: 31 Provided feedback at group critiques, marked, covered some lectures
SPRING 2009	<b>CS 349: User Interfaces</b> Professor: Byron Becker. Students: 50 Tutored students one-on-one, marked
WINTER 2009	<b>CS 489: Human–Computer Interaction</b> Professor: Edward Lank. Students: 13 Provided feedback at group critiques, marked, covered some lectures
FALL 2008	<b>CS 489: Human–Computer Interaction</b> Professor: Michael Terry. Students: 23 Provided feedback at group critiques, marked, covered some lectures

## Research assistantships & internships

2014–2016	<b>Research Assistant, Intel Science &amp; Technology Center for Pervasive Computing at UW</b> Supervisor: Julie Kientz Exploring pervasive technology for health and behaviour change
FALL 2013	<b>Research Intern, Microsoft Research Cambridge</b> Supervisors: Kenton O’Hara, James Scott Designed and prototyped novel hardware for smartphone interaction

- SUMMER 2012    **Research Intern, Microsoft Research Redmond**  
Supervisors: Dan Morris, m.c. schraefel  
Studied of user perceptions of consumer health sensing data with a focus on weight
- WINTER 2011    **Research Assistant, Intel Labs Seattle**  
Supervisors: Ben Greenstein, Sunny Consolvo  
Built and evaluated Lullaby, a system for tracking environmental factors that disturb sleep
- 2008–2010    **Graduate Research Assistant, University of Waterloo**  
Supervisor: Michael Terry  
Designed and evaluated user interfaces for software agreements
- 2007–2008    **Undergraduate Research Assistant, University of Waterloo**  
Supervisor: Michael Terry  
Developed and user-tested narrative pictograms for informed consent