

## Research interests

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

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

**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

- 2020– **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

- 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)

- J11 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
- J10 🌸 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)**
- J09 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)
- J08 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)
- J07 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)
- J06 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)

- J05 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)
- J04 2018 **Imagining 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)
- J03 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
- J02 🌟 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)
- C22 🌟 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%)**
- C21 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
- C20 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
- C19 🌟 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%)**
- C18 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

- C17 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
- C16 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
- 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
- Book chapters
- 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
- MO2 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
- MO1 2014 **Challenges in personal health tracking: The data isn't enough**  
*Matthew Kay*  
 XRDS: Crossroads, the ACM Magazine for Students 21(2), 32–37
- Workshop papers & abstracts (lightly reviewed)
- AO7 2019 **Designing for preregistration: A user-centered perspective**  
[Xiaoying Pu](#), [Licheng Zhu](#), *Matthew Kay*, and Frederick Conrad  
 CHI '19 extended abstracts

- AO6 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)
- Other articles
- OO2 2013 **UbiComp 2012 conference report**  
Sidhant Gupta and *Matthew Kay*  
IEEE Pervasive Computing 12(1)
- OO1 2012 **The changing nature of (ubiquitous) computing**  
*Matthew Kay*  
XRDS blogs, in Crossroads, the ACM Magazine for Students 19(1)
- Posters
- PO2 2014 **How good is 85%? Connecting classifier performance to acceptability of accuracy**  
*Matthew Kay*, Shwetak N. Patel, and Julie A. Kientz  
HCIC '14: Human Computer Interaction Consortium Workshop
- PO1 2009 **Textured agreements: Re-envisioning electronic consent**  
*Matthew Kay* and Michael Terry  
SOUPS '09: Symposium on usable privacy and security

## R packages

- RO3 2020– **ggdist: Visualizations of distributions and uncertainty**  
*Matthew Kay*  
<https://mjskay.github.io/ggdist/> | <https://cran.r-project.org/package=ggdist>

- RO2 2015– **tidybayes: Bayesian analysis + tidy data + geoms**  
*Matthew Kay*  
<https://mjskay.github.io/tidybayes/> | <https://cran.r-project.org/package=tidybayes>
- RO1 2014– **ARTool: R package for aligned rank transform for nonparametric factorial ANOVAs**  
*Matthew Kay* and Jacob O. Wobbrock  
<https://cran.r-project.org/package=ARTool>

## Publicly available research code & data

Since about 2014 I have made it a habit to release datasets and analysis code (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 **Data and analysis for “Uncertainty displays ...” [C15]**  
 Michael Fernandes, Logan Walls, Sean Munson, Jessica Hullman, and *Matthew Kay*  
<https://github.com/Michael-Fernandes/uncertainty-displays-for-transit>
- 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
- 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
- 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

## Student advising

- Current PhD students
  - Chaofeng Wu, Northwestern University Computer Science**
  - Maryam Hedayati, Northwestern University Computer Science + Learning Science**
  - Abhraneel Sarma, Northwestern University Computer Science (with Jessica Hullman)**
  - Xiaoying Pu, University of Michigan Computer Science and Engineering**
  - Brian Hall, University of Michigan School of Information**
- Doctoral pre-candidacy committee member
  - 2018 **Heeryung Choi, University of Michigan School of Information**
  - 2018 **Brian Hall, University of Michigan School of Information**
- Doctoral field prelim committee member
  - 2019 **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 Research Opportunity Program (UROP) mentor
- 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
- 2020 **BELIV Workshop Co-organizer**
- 2016 **ACM Interactions Editor-in-Chief Search Committee Member**
- 2015-2016 **CSCW 2016 Co-webmaster**
- 2014 **UbiComp 2014 Program Committee Student Volunteer**
- As a conference workshop or special interest group (SIG) organizer
- W06 2018 **Special Interest Group on Transparent Statistics Guidelines**  
Chat Wacharamanotham, *Matthew Kay*, Steve Haroz, Shion Guha, and Pierre Dragicevic  
SIG at CHI '18 | <https://transparentstatistics.org/chi2018/>
- W05 2017 **Moving Transparent Statistics Forward at CHI**  
*Matthew Kay*, Steve Haroz, Shion Guha, Pierre Dragicevic, and Chat Wacharamanotham  
Workshop at CHI '17 | <https://transparentstatistics.org/chi2017/>
- W04 2017 **Designing for Uncertainty in HCI: When Does Uncertainty Help?**  
Miriam Greis, Jessica Hullman, *Matthew Kay*, Michael Correll, and Orit Shaer  
Workshop at CHI '17 | [http://visualization.ischool.uw.edu/hci\\_uncertainty/](http://visualization.ischool.uw.edu/hci_uncertainty/)
- W03 2016 **Special Interest Group on Transparent Statistics in HCI**  
*Matthew Kay*, Steve Haroz, Shion Guha, and Pierre Dragicevic  
SIG at CHI '16 | <https://transparentstatistics.org/chi2016/>
- W02 2014 **Disasters in personal informatics: The unpublished stories of failure and lessons learned**  
Jon E. Froehlich, Jakob Eg Larsen, *Matthew Kay*, and Edison Thomaz  
Workshop at UBICOMP '14

- WO1 2014 **Biological rhythms and technology**  
 Mark Matthews, Erin Carroll, Saeed Abdullah, Jaime Snyder, *Matthew Kay*,  
 Tanzeem Choudhury, Geri Gay, and Julie A. Kientz  
 Workshop at CHI '14  
 — 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 committee member
- 2021 IEEE VIS

2020–2021 ACM CHI  
 2019 ACM FAT\*  
 2018 ACM CHI  
 — As a reviewer (for conferences)

🌀 **Special Recognitions** for exceptional reviews.

2017–2021 EuroVis  
 2016–2021 CSCW 🌀 (2016) 🌀 (2017)  
 2015–2020 UIST 🌀 (2015) 🌀 (2016)  
 2013–2019 CHI 🌀 (2016) 🌀 (2018) 🌀 🌀 (2019)  
 2019 FAT\*  
 2016–2019 InfoVis  
 2016–2018 BELIV  
 2016–2018 MobileHCI  
 2018 SciVis  
 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)

2017–2020 ACM IMWUT  
 2017–2020 IEEE Transactions on Visualization and Computer Graphics  
 2018–2019 ACM TOCHI  
 2017 Risk Analysis  
 2016 Human–Computer Interaction  
 2016 Human Factors  
 2015 IEEE Pervasive Computing

## Press

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>
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## Teaching experience

— at Northwestern University

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 **SI 649 / EECS 548: Information Visualization**  
Co-taught with Eytan Adar. Students: ~60

— Curriculum development at University of Washington CSE

2014 **CSE 440: Introduction to HCI**  
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 **CSE 440: Introduction to HCI**  
Professor: Maya Cakmak. Students: 50  
Led weekly group critiques, marked assignments

WINTER 2011 **CSE 510: Human-Computer Interaction**  
Professor: James Fogarty. Students: 16  
Marked labs and reading reports

- FALL 2010 **CSE 321: Software Design and Implementation**  
 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 **CS 349: User Interfaces**  
 Professor: Michael Terry. Students: 128  
 Tutored students one-on-one, marked, covered some lectures
- FALL 2009 **CS 489: Human-Computer Interaction**  
 Professor: Michael Terry. Students: 31  
 Provided feedback at group critiques, marked, covered some lectures
- SPRING 2009 **CS 349: User Interfaces**  
 Professor: Byron Becker. Students: 50  
 Tutored students one-on-one, marked
- WINTER 2009 **CS 489: Human-Computer Interaction**  
 Professor: Edward Lank. Students: 13  
 Provided feedback at group critiques, marked, covered some lectures
- FALL 2008 **CS 489: Human-Computer Interaction**  
 Professor: Michael Terry. Students: 23  
 Provided feedback at group critiques, marked, covered some lectures

## Research assistantships & internships

- 2014-2016 **Research Assistant, Intel Science & Technology Center for Pervasive Computing at UW**  
 Supervisor: Julie Kientz  
 Exploring pervasive technology for health and behaviour change
- FALL 2013 **Research Intern, Microsoft Research Cambridge**  
 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