Toward Equitable Participatory Design: Data Feminism for CSCW amidst Multiple Pandemics

Catherine D’Ignazio∗∗
Massachusetts Institute of Technology
Cambridge, MA
dignazio@mit.edu

Erhardt Graeff
Olin College of Engineering
Needham, MA
egraeff@olin.edu

Christina N. Harrington
DePaul University
Chicago, IL
charri89@depaul.edu

Daniela K. Rosner
University of Washington
Seattle, WA
dkrosner@uw.edu

∗∗All authors contributed equally to this proposal.

ABSTRACT
CSCW, like many other academic communities, is reckoning with its roles, responsibilities, and practices amidst 2020’s multiple pandemics of COVID-19, anti-Black racism, and a global economic crisis. Reviewing our work with data and communities demands we address harms from overexposure caused by surveillance or algorithmic bias and from underexposure caused by design that is insufficiently participatory and equitable. This workshop will elicit narratives of good and bad design and data work with communities, apply the lenses of equitable participatory design and data feminism to current CSCW projects and our global context, and develop practical outputs for supporting academics and practitioners in pursuit of democratic and just partnerships.

CCS CONCEPTS
• Human-centered computing → Collaborative and social computing; HCI design and evaluation methods; • Social and professional topics → Computing profession.

KEYWORDS
data science, equitable participatory design, data feminism, social justice, collaboration, racism, sexism, COVID-19
COVID-19, anti-Black racism, and the economic crisis all plague the year 2020. These multiple, interrelated pandemics have exposed deep disparities and inequities in the United States and globally. The impact of COVID-19 on Black Americans is substantially greater than white Americans [8, 28], all while racial and ethnic inequities have caused global tensions [6, 7]. The strict lock-downs crippling tourism, service, and informal industries has hit hardest on the working class and poorer members of societies, also greatly impacting those marginalized along racial, gender, and immigration status lines. Globally, nearly half of the world’s workforce is at risk of losing their livelihoods due to COVID-19 [33]. Curfews and mandatory face coverings outdoors further threaten communities which are currently overpoliced such as Black and Brown Americans who are almost three times more likely to be killed by police than white Americans [13].

At the same time, the computing industry is booming. Demand is high for internet platforms that support knowledge industry work and virtual connections between people unable to leave their homes. Computing professionals are being asked to find solutions to these pandemics through contact tracing apps, police body cams and crime data tools, and increased opportunities for gig work. At the center of these interrelated injustices and purported solutions is the collection, interpretation, and use of data about people. The history of oppressive data science is long [27, 34]. But equally long is the history of data refusal, counter-data collection, and counter-visualization in support of Black liberation [4, 29, 37]. Although computing’s awareness of historical and structural inequalities and its repertoire of tools for anti-oppressive data science and technology design have grown [16, 22, 26], the pace of society’s datafication and the demand for solutionism have seemed to move even faster [17].

Current models of how researchers use data are exploitative and further push researched people to the margins. While data help those in the computing world to better understand how to develop systems to support marginalized communities, there are also instances where the collection of data is done in an unethical or misguided approach. Of even greater concern in these times of ongoing pandemics is the reality that collecting data in certain communities and environments can be inappropriately timed and more harmful. Academics with the privilege to be thinking about research and collecting data during the pandemics are burnishing their reputations and ensuring their jobs and overall well-being; at the same time they fail to uplift the communities who should benefit most from new research.

In this workshop, we will situate our conversation to address these serious challenges related to data collection among the theoretical frameworks of data feminism and equitable participatory design.
WORKSHOP ORGANIZERS

Erhardt Graeff is an educator, social scientist, and civic technologist. He works on the design and use of technology for civic engagement, civic learning, and empowerment, and the ethical responsibility of technologists as stewards of democracy. His current research is on articulating the responsibilities of engineers as citizens and developing new forms of civic education within undergraduate engineering. His current pedagogy is organized around creating spaces for student-owned and -led public interest technology projects. Graeff is an Assistant Professor of Social and Computer Science at Franklin W. Olin College of Engineering and a faculty associate at the Edmond J. Safra Center for Ethics at Harvard University.

Data Feminism

Data Feminism outlines seven principles for integrating an intersectional feminist lens into data science [14]. The principles seek to both make visible and contribute to dismantling power asymmetries undergirding data collection, analysis, visualization, and decision-making. An intersectional feminist analysis examines power (the first principle) in a given environment in order to challenge power (the second principle). The analysis explicitly includes gender, race, class, and more. Here the term “power” is drawing from sociologist Patricia Hill Collins’s “matrix of domination.” This is a Black feminist conceptual model that describes how oppression works at multiple scales: the structural domain, the disciplinary domain, the hegemonic domain, and the interpersonal domain [11]. Power, therefore, is used to denote “the current configuration of structural privilege and structural oppression, in which some groups experience unearned advantages—because various systems have been designed by people like them and work for people like them—and other groups experience systematic disadvantages—because those same systems were not designed by them or with people like them in mind” [14]. As prior feminist work in HCI has outlined, feminist approaches ask “who questions” [2, 3, 31]: Data science for whom? Data science by whom? and Data science with whose interests and goals in mind?

One of the starting points of data feminism is that structural inequalities like racism and heteropatriarchy infiltrate and infect the data processing pipeline at all stages. We see evidence of this in the over-representation of elite white men working in AI [38], in training data sets [9], in Google search results [32], in resume-screening software [19], in social-service allocation algorithms [15], and in carceral technologies dubbed “the New Jim Code” [5]. We also see evidence of this in the data aspects of the triple pandemic currently at play in the U.S. These manifestations of structural inequality include the fact that there is no comprehensive U.S. federal data set on COVID cases and deaths disaggregated by race/ethnicity or sex [21, 30]. They include the fact that proposed contact tracing apps either exclude the poor and other vulnerable groups, or place them at high risk for targeting [1]. They include U.S. government decisions to fly Predator drones over protests to collect data instead of using data-informed decision-making to prioritize testing in vulnerable communities [24].

To the CSCW community, we might ask: What is our role in designing data-driven technologies that engage with this deeply asymmetric and flawed environment that has precipitated three simultaneous and interrelated pandemics? What is our role in taking political action against technologies that incarcerate, discriminate, and subjugate? Who are we accountable to? How do we work in mutually beneficial partnership with communities who have no good reason to trust academics?

Here we look to the fifth principle of data feminism: embrace pluralism. This emphasizes the importance of bringing together multiple perspectives in any knowledge-making process, with priority given to local, Indigenous, and embodied ways of knowing. Following feminist HCI [2, 3], feminist PAR [10, 18], design justice [12], and theorists such as Donna Haraway [20] and Kim Tallbear [35], the
underlying premise is that designers and researchers can gain better, more detailed, more accurate, and ultimately more responsible knowledge if we pool perspectives from a wide range of individuals and groups, especially centering the perspectives and lived experiences of those who are closest and most directly impacted by the issues at hand.

But how we embrace pluralism and engage the participation and co-design of interactive systems matters deeply. We must consider this pluralism in the context of equitable participatory design methods and their development.

**Equitable Participatory Design**

Moving towards a feminist approach to data engagement involves also considering the ways that we engage in our research practice. Harrington et al. suggest equitable participatory design as an ethical approach to community-based computing research with marginalized and vulnerable populations [22], extending the ways the HCI and CSCW community have discussed PD with these groups [26]. While equitable PD as a methodological approach is not new among scholars who seek to ground both their method and analysis in participatory action research and community-based practices, this has yet to become widespread across our field. There are still several facets of community-driven participatory design that are needed to drive a level of accountability behind the politics of participatory design around data practices. Accordingly, those who engage in data-related research have begun to consider how we center community outcomes over our own as researchers.

Equitable PD calls for employing several considerations and action items prior to entering vulnerable and marginalized communities to conduct academic research [22]. This premise seeks to restore participatory design research as a truly democratized process, acknowledging global and local historical injustices and pushing for community-driven methods and mutual outcomes. An equitable PD approach with a data feminism lens may best serve academic researchers in appropriately situating the insertion of research studies in communities that experience ongoing systemic oppression. Building and maintaining meaningful relationships and working alongside community organizations and partners to understand the best use of data science should be a critical focus of the CSCW community at this time.

How can we make this relational commitment and accountability more widespread as a foundational practice in CSCW research when engaging with communities that are not our own? To explore this question, we address the following ongoing strands of CSCW and PD research: (1) Community-driven engagement (de-center researchers and ensure that those without institutional power drive inquiry and design); (2) Accountable positionality (begin by accounting for researcher’s privileges, roles, and responsibilities); (3) Responsible citational practices (responsibly consider whose voices get amplified and credited); and (4) Maintaining transparency (put mechanisms in place to keep budgets, promises, and transactions open and trackable).
Toward Equitable Participatory Design: Data Feminism for CSCW amidst Multiple Pandemics

WORKSHOP ORGANIZERS

Daniela K. Rosner is an Associate Professor in Human Centered Design & Engineering (HCDE) at the University of Washington and co-directs HCDE’s Tactile and Tactical Design Lab (TAT Lab). Her research investigates the social, political, and material circumstances of technology development, with an emphasis on foregrounding marginalized histories of practice, from maintenance to needlecraft. She is the author of several articles on craft and technoculture, including “Legacies of craft and the centrality of failure in a mother-operated hackerspace,” Journal of New Media & Society, 2016 and “Binding and Aging,” Journal of Material Culture, 2012. In her book, Critical Fabulations, she investigates new ways of thinking about design’s past to rework future relationships between technology and social responsibility (MIT Press, 2018). She serves as co-Editor-in-Chief of Interactions magazine, a bimonthly publication of ACM SIGCHI.

Questions for the Field

The centrality of data to our techno-social reality and ongoing inequalities in agency and representation through data collection, interpretation, and use demand that the CSCW community continually interrogate its data and design practices. Data feminism, equitable PD, and the politics of accountability help us dive into relevant questions to be explored during this workshop:

• Who are you? In what ways do you hold privilege? What harmful data practices has your privilege protected you from?
• Who gets to frame challenges for data and design? How is the problem framing stage part of participatory design?
• What does it mean to have data collection and interpretation practices as care work?
• How are marginalized groups currently excluded from each phase of data-centric efforts?
• How do we honor bodies and eliminate trauma to those bodies in our data practices?
• How can identifying missing data, collecting counterdata, performing intersectional analysis, and creating counter-hegemonic algorithms be incorporated into more projects?
• What is the larger responsibility of computing professionals with their individual and institutional power when it comes to data work during these multiple pandemics, and what should public scholarship in HCI look like as it increasingly engages such questions of public interest?

GOALS AND ACTIVITIES

Session 1: Community-building exercises focused on positionality and identity of participants

The goal of the first session is to introduce ourselves to each other as well as ground ourselves in relation to the communities we are accountable to, both personally and professionally. All too often, mainstream academia asks us to bracket out our various identities in the service of an “imagined objectivity” [5]. In line with feminist participatory action research [10, 18], we believe that our personal histories, group identities, and political commitments are central to the work that we undertake. Activities in this session may include mapping our personal identities vis-a-vis dominant group identities (e.g., The Power Flower [36]), reflecting on our personal experiences of the recent pandemics (e.g., Unfolding History [25]) and mapping our roles in relation to social ecosystems [23].

Session 2: Story-sharing around data, equity and community-academic collaborations

The second session will involve sharing short stories around data, equity, and community-academic collaborations. Prior to the workshop, we will prompt participants to think in advance of a story they will share in this session. Stories may be positive or negative examples, or surface more complicated and entangled ethical dilemmas. By sharing stories, untangling their meanings and takeaways through
discussion, we will create a shared digital whiteboard of potential topics for zines and memes. At the end of Session 2, participants will be guided in a process of group formation for the last making session.

**Session 3: Zine/Meme-making**
The third and final session will involve participants working together in breakout groups to create digital zines and social media shareable memes. Each breakout group will be facilitated by an organizer and aided by a student who will be in charge of helping to lay out the zine or meme. Group topics might include (but are not limited to) “How to recognize a trustworthy academic partner?”, “Collaborative Grant Writing for Community Groups and Academics”, “Ethical Community Interactions” (for academic groups), “Sample MOU”, “Data Pitfalls”, “Examining your own Positionality”, “How to Approach the Academy” (for community groups). We will pursue topics based on expressed interest, urgency, and salience. The final part of Session 3 will be a shareback where each group presents the zine or meme they created and discusses group conversations.

**EXPECTED OUTCOMES**
- Building connections with other researchers in and outside of academia who are doing grassroots data collection
- Recommendations for how we might challenge the current interpretations and reading of data based on race and gender
- An ethical framework for working with communities to not just collect or understand what data should be collected but also what data means to them—understanding ethics of care
- Documentation of our conversation published as a blog post, website, and/or article for ACM Interactions magazine
- Document/write content in ways that cross boundaries and emphasize public scholarship and community partnerships
- Strengthened relationships between individual academics and specific community groups

**LOGISTICS**
**Recruiting participants**
We will create a website detailing the workshop and actively recruit people from the CSCW community, cognate fields, and practitioners from community organizations engaged in the types of data and design work addressed by our workshop. Interested participants from academia will be asked to submit short position papers and a short biography tailored to the workshop themes. Interested practitioners will also be asked to submit a tailored biography, but in lieu of a position paper they can submit reports...
from their organization or other media they have created that address the workshop themes. We will encourage co-authored position papers, especially between academics and community partners. We will also encourage accepted academic participants to extend invitations to their community partners, regardless of co-authorship, to be full participants in the workshop. Our goal is 20–30 participants in addition to the organizers and facilitators. We intend to compensate community partners for their time.

Facilitation and documentation
The organizers will be the primary facilitators of the workshop. We intend to bring in an artist experienced in zine making to help provide a quick tutorial and layout support. Students of the organizers will help with breakout facilitation and documentation. Our hope is to produce a post-workshop publication detailing participant sentiments and next steps for the larger CSCW field.

Technology and tools
All position papers and shareable submission materials will be posted to the workshop website or to an open access publication platform like PubPub. The workshop’s discussion elements will take place in Zoom meetings, utilizing the breakout rooms feature for small group interaction and recordings of the sessions that will be shared with participants but not publicly. We will create online whiteboard spaces for brainstorming and note-taking using a tool like Miro. Collaborative writing leading to our zine making, workshop documentation, and partnership language outputs will use a tool like Google Docs.

REFERENCES
[1] Ali Alkhatib. 2020. We Need to Talk About Digital Contact Tracing. https://ali-alkhatib.com/blog/digital-contact-tracing
[2] Shaowen Bardzell. 2010. Feminist HCI: Taking Stock and Outlining an Agenda for Design. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI ’10). ACM, New York, NY, USA, 1301–1310. https://doi.org/10.1145/1753326.1753521
[3] Shaowen Bardzell and Jeffrey Bardzell. 2011. Towards a Feminist HCI Methodology: Social Science, Feminism, and HCI. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI ’11). ACM, New York, NY, USA, 675–684. https://doi.org/10.1145/1978942.1979041
[4] Witney Battle-Baptiste and Britt Rusert (Eds.). 2018. WEB Du Bois’s data portraits: Visualizing black America. Chronicle Books, San Francisco.
[5] Ruha Benjamin. 2019. Race after Technology: Abolitionist Tools for the New Jim Code. Polity, Malden, MA.
[6] Edna Bonhomme. 2020. George Floyd, a survivor’s guilt and a global Black Lives Matter. Al Jazeera (2020). https://www.aljazeera.com/indepth/opinion/george-floyd-survivor-guilt-global-black-lives-matter-200620181544441.html
[7] Edna Bonhomme. 2020. Ill Will. The Baffler (2020). https://thebaffler.com/latest/ill-will-bonhomme
[8] Edna Bonhomme. 2020. Racism: The most dangerous ‘pre-existing condition’. Al Jazeera (2020). https://www.aljazeera.com/indepth/opinion/racism-dangerous-pre-existing-condition-200414154246943.html
Toward Equitable Participatory Design: Data Feminism for CSCW amidst Multiple Pandemics

[9] Joy Buolamwini and Timnit Gebru. 2018. Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification. In Proceedings of the 1st Conference on Fairness, Accountability and Transparency (Proceedings of Machine Learning Research, Vol. 81), Sorelle A. Friedler and Christo Wilson (Eds.). PMLR, New York, NY, USA, 77–91. http://proceedings.mlr.press/v81/buolamwini18a.html

[10] Caitlin Cahill, Farhana Sultana, and Rachel Pain. 2007. Participatory ethics: politics, practices, institutions. ACME: An International Journal for Critical Geographies 6, 3 (2007), 304–318.

[11] Patricia Hill Collins. 2002. Black feminist thought: Knowledge, consciousness, and the politics of empowerment. Routledge, New York.

[12] Sasha Costanza-Chock. 2020. Design justice: Community-led practices to build the worlds we need. MIT Press, Cambridge, MA.

[13] Sarah DeGue, Katherine A Fowler, and Cynthia Calkins. 2016. Deaths due to use of lethal force by law enforcement: Findings from the national violent death reporting system, 17 US states, 2009–2012. American journal of preventive medicine 51, 5 (2016), S173–S187.

[14] Catherine D’Ignazio and Lauren F Klein. 2020. Data Feminism. MIT Press, Cambridge, MA.

[15] Virginia Eubanks. 2018. Automating inequality: How high-tech tools profile, police, and punish the poor. St. Martin’s Press, New York.

[16] Sarah Fox and Christopher Le Dantec. 2014. Community Historians: Scaffolding Community Engagement through Culture and Heritage. In Proceedings of the 2014 Conference on Designing Interactive Systems (Vancouver, BC, Canada) (DIS ’14). Association for Computing Machinery, New York, NY, USA, 785–794. https://doi.org/10.1145/2598510.2598563

[17] Sarah E. Fox, Kiley Solber, and Daniela K. Rosner. 2019. Managerial Visions: Stories of Upgrading and Maintaining the Public Restroom with IoT. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (Glasgow, Scotland UK) (CHI ’19). Association for Computing Machinery, New York, NY, USA, 1–15. https://doi.org/10.1145/3290605.3300723

[18] Bev Gatenby and Maria Humphries. 2000. Feminist participatory action research: Methodological and ethical issues. Women’s Studies International Forum 23, 1 (01 2000), 89–105. https://doi.org/10.1016/S0277-5395(99)00095-3

[19] Dave Gershgorn. 2018. Companies Are on the Hook If Their Hiring Algorithms Are Biased. https://www.nytimes.com/2020/04/03/us/coronavirus-male-female-data-bias.html

[20] Donna Haraway. 1988. Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. Feminist Studies 14, 3 (1988), 575–599. https://doi.org/10.2307/3178066

[21] Alisha Haridasani Gupta. 2020. Does Covid-19 Hit Women and Men Differently? U.S. Isn’t Keeping Track. https://www.nytimes.com/2020/04/03/us/coronavirus-male-female-data-bias.html

[22] Christina Harrington, Sheena Erete, and Anne Marie Piper. 2019. Deconstructing Community-Based Collaborative Design: Towards More Equitable Participatory Design Engagements. Proc. ACM Hum.-Comput. Interact. 3, CSCW, Article 216 (Nov. 2019), 25 pages. https://doi.org/10.1145/3359338

[23] Deepa Iyer. 2020. Mapping Our Roles in Social Change Ecosystems. https://buildingmovement.org/wp-content/uploads/2020/06/Final-Mapping-Ecosystem-Guide-CC-BY-NC-SA-4.0-Handles.pdf

[24] Jason Koebler. 2020. Customs and Border Protection Is Flying a Predator Drone Over Minneapolis. Vice.com (2020). https://www.vice.com/en_ca/article/5dzbe3/customs-and-border-protection-predator-drone-minneapolis-george-floyd

[25] Creative Reaction Lab. 2018. Equity-centered Community Design Field Guide. Creative Reaction Lab, St. Louis, MO.

[26] Christopher A. Le Dantec and Sarah Fox. 2015. Strangers at the Gate: Gaining Access, Building Rapport, and Co-Constructing Community-Based Research. In Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (Vancouver, BC, Canada) (CSCW ’15). Association for Computing Machinery, New York, NY, USA, 1348–1358. https://doi.org/10.1145/2675133.2675147

[27] Katherine McKittrick. 2014. Mathematics Black Life. The Black Scholar 44, 2 (2014), 16–28. https://www.jstor.org/stable/10.5816/blackscholar.44.2.0016 Publisher: Taylor & Francis, Ltd.
[28] Gregorio A. Millett, Austin T. Jones, David Benkeser, Stefan Baral, Laina Mercer, Chris Beyrer, Brian Honermann, Elise Lankiewicz, Leandro Mena, Jeffrey S. Crowley, Jennifer Sherwood, and Patrick S. Sullivan. 2020. Assessing differential impacts of COVID-19 on black communities. *Annals of Epidemiology* 47 (2020), 37 – 44. https://doi.org/10.1016/j.annepidem.2020.05.003

[29] Yeshi Milner. 2019. Abolition means the creation of something new. https://medium.com/@YESHICAN/abolition-means-the-creation-of-something-new-72fc67c8f493

[30] Yeshi Milner. 2020. We Will Not Allow the Weaponization of COVID-19 Data. https://medium.com/@YESHICAN/we-will-not-allow-the-weaponization-of-covid-19-data-e775d31991c

[31] Michael Muller. 2011. Feminism asks the “Who” questions in HCI. *Interacting with Computers* 23, 5 (2011), 447–449.

[32] Safiya Umoja Noble. 2018. *Algorithms of oppression: How search engines reinforce racism*. NYU Press.

[33] Press Release. 2020. ILO: As job losses escalate, nearly half of global workforce at risk of losing livelihoods. https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_743036/lang--en/index.htm

[34] James C Scott. 1998. *Seeing like a state: How certain schemes to improve the human condition have failed*. Yale University Press, New Haven, CT.

[35] Kim TallBear. 2014. Standing with and speaking as faith: A feminist-indigenous approach to inquiry. *Journal of Research Practice* 10, 2 (2014), N17–N17.

[36] Barb Thomas. [n.d.]. The Power Flower: Reflection on our Social Identities. https://www.oise.utoronto.ca/edactivism/Activist_Resources/The_Power_Flower.html

[37] Ida B Wells. 1895. *A Red Record: Tabulated Statistics and Alleged Causes of Lynchings in the United States*. Technical Report. 1892-1893-1894, Chicago.

[38] Meredith Whittaker, Kate Crawford, Roel Dobbe, Genevieve Fried, Elizabeth Kazinias, Varoon Mathur, Sarah Myers West, Rashida Richardson, Jason Schultz, and Oscar Schwartz. 2018. *AI now report 2018*. AI Now Institute at New York University New York.