

# Towards Cross-Pollination Between CSCW and Frontline Environmental and Climate Justice

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Environmental and climate justice (ECJ) are concerned with the unequal distribution of environmental hazards and climate change. Moreso, ECJ pay attention to how existing socio-political inequities undergird these risks. Frontline communities are the communities already experiencing the first and worst of these effects and actively resisting the conditions that cause these effects, yet often their needs are ignored and silenced in climate data and technologies. Through long-standing and emerging research, CSCW has engaged with participatory research with marginalized communities and climate change. In this workshop, we aim to identify how CSCW research engages with frontline communities around climate change and environmental injustice. We plan to discuss how future research can commit to epistemic justice for frontline communities in designing and maintaining climate data and technology. We aim for the workshop to foster a burgeoning research community of those engaging with frontline communities around ECJ.

CCS Concepts: • **Do Not Use This Code** → **Generate the Correct Terms for Your Paper**; *Generate the Correct Terms for Your Paper*; *Generate the Correct Terms for Your Paper*; *Generate the Correct Terms for Your Paper*.

Additional Key Words and Phrases: environmental justice, climate justice, frontline communities, sustainable HCI, climate change

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**1 Introduction**

Much HCI and CSCW work has focused on addressing climate and sustainability concerns, including subfields such as sustainable HCI [5, 20]. Increasingly, these fields have asked us to engage with communities already experiencing and taking action against climate change, extractivism, and environmental degradation [33, 59, 60]. To account for these disparate impacts, in this workshop, we aim to explore the intersection of existing CSCW and HCI work related to environmental and climate justice with an emphasis on work with and about frontline communities.

We ground our work in the legacies of environmental and climate justice (ECJ), and their critical turns. Environmental justice (EJ) in the United States is often traced to the Civil Rights movement through events such as the 1968 Memphis sanitation strike, and fully took off in the 1980s in Warren County, North Carolina [10, 42]. In parallel, this history dovetails with the struggle for farmworker rights in the 20th century and the long struggle of Indigenous nations for rights to their lands and waters to form the modern EJ movements [29, 67]. EJ is concerned with the unequal burdens faced by frontline communities, their inequitable access to environmental and infrastructural benefits, and their systemic disempowerment within decision-making and knowledge-production spaces [42, 44, 55]. From this lineage comes climate justice, which involves addressing the disproportionate impact of the climate crisis on frontline communities and equitable approaches to climate resilience [17, 56]. ECJ actions are rooted in the recognition that climate impacts are place-specific and experienced unevenly across geographies shaped by histories of racial, economic, and colonial inequity, where place becomes the terrain of both harm and resistance. In the last decade, academic theorization of ECJ took a critical turn [50, 62], asking several questions on the intersectional work needed to enact justice, the multi-scalar aspect of justice, the role of the state, and the indispensable nature of humans and other-than-human species [51]. Importantly, this turn has been shaped by interventions from the Global Majority, where disproportionate burdens of environmental harm and the climate crisis are most acutely felt in landscapes that are simultaneously targeted as sites of climate mitigation, conservation, and development intervention [6, 11, 16, 30, 48, 58, 69]. In these contexts, scholars and communities have challenged universalized approaches to ECJ and advanced understandings of justice as inseparable from solidarity with voices, knowledge, and political demands [62, 64, 65]. The critical ECJ orientation [37] draws us then as CSCW and HCI researchers concerned about climate impacts and environmental hazards to work with frontline communities who are in active resistance for “making the miracle of environmental justice commonplace and an everyday reality” [51].

Frontline communities are at the forefront of ECJ, experiencing “first and worst” climate and environmental impacts, with frontline identity centering on “active resistance against racist, colonial, patriarchal, assimilationist, and capitalist systems that perpetuate environmental harms” [37]. This language has been taken up within environmental and climate justice literature, such as examining hurricane recovery [76], coastal resilience planning with communities [43], development of climate policy [27, 54], and community-led resilience planning [68]. Moreso, the language of frontline communities has been taken up by communities themselves [15, 18, 45] and policymakers [1, 2, 35, 38, 46]. Marston et al. [37] outline four types of frontline communities that experience harm due to intersectional systems of oppression. Through collaborating with frontline communities, researchers engaged in questions of ECJ can bring epistemic justice

105 to communities who are the most knowledgeable about mobilizing for change and justice around the climate crisis and  
106 environmental hazards [43, 47, 77].

107 The CSCW community has engaged with ECJ in particular through examining how intersectionally marginalized  
108 individuals, organizations, and communities engage in cooperative work through technology [31, 66]. This includes  
109 CSCW and HCI work such as understanding how low-capacity organizations adopt and refuse tech [8, 24, 49, 72],  
110 maintain partnerships [26, 63], and how movements interact with various technologies [14, 25, 32]. Specifically, within  
111 an ECJ framework CSCW and adjacent researchers examine data practices [28, 59], attitudes towards emerging  
112 technology like AI [21, 23, 41, 75], and local Indigenous climate observations [52]. These conversations have occurred  
113 at previous CSCW gatherings around climate [22, 73] and other similar conferences [3, 40]. These themes demonstrate  
114 the connection between “fourth wave” HCI’s focus on social implications of technologies, infrastructures, and systems  
115 [4, 12], and critical ECJ’s [50] focus on underlying systems that cause injustice, such as housing inequity [9], extractive  
116 logics of datification [71], carceral systems [51], and devaluing of place-based and Indigenous knowledge [34, 39, 53].  
117 From these conversations, we hope to focus more deeply on community-engaged and participatory research done with  
118 and in partnership with frontline communities and to continue the lineage of CSCW work in the vein of ECJ, and meld  
119 it with the parallel scholarship and activism within ECJ circles.

120 Through this workshop, we aim to (1) identify areas of CSCW and HCI research where engaging ECJ can generate  
121 new insights and research questions. Second, we seek to (2) identify the different scales at which researchers work, and  
122 the specific ECJ-related challenges emerging at those scales. Finally, our goal is to (3) build a network to engage in  
123 knowledge-sharing around how to best work with frontline communities.

## 130 2 Workshop Themes

131 In this workshop, we invite submissions around the following themes:

- 134 (1) Multi-Scalar Approaches: In what ways do CSCW approaches to scale help us think about the multi-scalar  
135 aspects of ECJ, be it through engagement with frontline communities at an individual, organizational, or  
136 community level? At these different scales, what are the different temporal aspects of justice that must be  
137 attended to and what methods are appropriate?
- 138 (2) Interrogating Critical ECJ: How can CSCW work related to sustainability move towards critical approaches  
139 in ECJ? This reflection examines if and how the field can create transformative and just futures through  
140 technology and design. These might also interrogate the meaning of creating justice in an increasingly datafied  
141 and surveilled world with tools such as AI.
- 142 (3) Sustaining Research: How can participatory research traditions and CSCW methods create a research infras-  
143 tructure that allows long-term engagement with frontline communities? What are the often invisible or omitted  
144 parts of working with frontline communities?
- 145 (4) Sociotechnical Systems: How can we use CSCW methods such as user studies, workplace ethnographies,  
146 and other evaluation methods to interrogate existing technologies, infrastructures, and sociotechnical norms  
147 utilizing an ECJ perspective? What design practices from CSCW might help inform technology development  
148 that is aligned with ECJ?
- 149 (5) Place: How does place shape frontline community experiences of climate harm, resistance, and data practice?  
150 How might we explore place-based knowledge systems, the role of local ecologies and histories in shaping  
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157 climate advocacy, or the ways CSCW methods can better attend to the situated, place-specific dimensions of  
158 ECJ work.  
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### 160 3 Workshop Details 161

#### 162 3.1 Workshop Goals 163

164 Our goals for the workshop center around building and tracing the existing CSCW research directly focused on ECJ in  
165 frontline communities and related disciplines. CSCW is an ideal venue to interrogate research with and about frontline  
166 communities, with its long-standing research focus on working with communities [7, 19, 70] and environmental and  
167 climate work [36, 57, 74]. We highlight three workshop outcomes:  
168

- 169 • Develop and maintain a community of CSCW researchers working on topics related to and adjacent to environ-  
170 mental and climate justice and frontline communities.
- 171 • Advance a research agenda and resources for CSCW researchers through tracing past and emerging research  
172 topics, methods, and frameworks in ECJ to learn from previous (mis)alignments and establish a shared vocabu-  
173 lary.
- 174 • Share and document experiences of researching ECJ and working with frontline communities in a political  
175 climate that has exacerbated precarity and reduced resources.  
176  
177

#### 178 3.2 Recruitment 179

180 We invite researchers and practitioners working in ECJ, directly with frontline communities, and adjacent topics such  
181 as housing justice, mobility justice, equitable transportation, Indigenous sovereignty, food justice, just transitions,  
182 among other areas, to our workshop. We anticipate recruiting roughly 25 attendees. Prior to recruitment, the organizers  
183 will create a website to host information about the workshop. We will recruit through posting on social media and  
184 other relevant channels. Potential attendees will be invited to submit through a myriad of methods that connect to  
185 the workshop themes discussed above. These will include either a 2-3 page research brief or a provocation, artwork  
186 submitted with a 300-500 word statement of interest in the workshop, and/or a zine accompanied by a 300-500 word  
187 statement of interest. All submissions will also be required to submit an artifact (eg., photo, poem, collage, etc) with a  
188 100-word statement contextualizing the artifact in relationship to a workshop theme. These artifacts will be used to  
189 spark conversation among attendees. The organizers will conduct a review of the submissions to determine acceptance.  
190 Upon acceptance and attendee permission, the workshop submissions will be posted to the workshop website at least  
191 three weeks before the workshop. Organizers will reach out to encourage attendees to engage with each other's work  
192 before the workshop.  
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#### 197 3.3 Workshop Activities and Schedule 198

199 The core workshop will be held during the day from 9:00am to 3:30pm with breaks for lunch and other activities  
200 described in Table 1. The workshop will be held in person and include activities around creating a common vocabulary  
201 for CSCW research engaged with ECJ, and at what scale of ECJ that CSCW research can be helpful. Organizers will  
202 supply all required materials (pens, markers, paper, post-its, easel pads, and collage materials) and manage A/V.  
203

204 *3.3.1 Gallery Walk.* The organizers will print the artifacts that participants submitted. These will be hung up and  
205 displayed around the workshop room. Attendees will have twenty minutes to walk around the room and engage  
206 in informal discussion about the artifacts. Attendees will also have sticky notes to leave notes and impressions on  
207

Time	Activity
9:00–9:30am	Introductions
9:30–10:30am	Gallery Walk
10:30–10:45am	Break
10:45am–12:00pm	Multiscalar Conversation
12:00–1:30pm	Lunch
1:30–2:30pm	Zine Making activity
2:30–3:00pm	Share Out and Discussion
3:00–3:30pm	Reflection and Closing
After 3:30pm	Optional Post-Workshop Event

Table 1. Workshop Schedule

different artifacts. After this, attendees will organize into small groups with their artifacts to engage in thirty minutes of discussion to create a broader thematic organization of themes and concepts into a concept map or diagram. These conversations will help surface shared dimensions of participatory research and ECJ. Finally, smaller groups will share their reflections with the larger group.

**3.3.2 Multiscalar Conversation.** One key issue of ECJ is at what scale justice occurs, at the individual, organizational, community, state, and/or national level. Currently, the political landscapes at each of these scales are very different in various research contexts and locations [13, 61]. Attendees will be given each of these scalar frames to think about in small groups. At each scale, attendees will brainstorm potential avenues for CSCW research with frontline communities and challenges. There will also be flexibility in this space for other methods of visualization or mapping that are of interest to attendees. After roughly forty-five minutes, attendees will have the chance to join a new small group in a half-hour jigsaw conversation format to compare and contrast their ideas. This will also be a chance to explore temporal dimensions of justice and various research methods for different scales and contexts. From this, participants will self-organize for a lunch break.

**3.3.3 Zine Making.** Drawing on the previous conversations and artifact diagramming, attendees will be invited to organize into pairs or trios for an hour to create zines about specific keywords or scales of ECJ. Zines are a creative format for sharing short ideas in an artistic and open-ended format, which can include images from artifacts, collage materials that organizers will source, and other illustrations from attendees. Examples of zines may be comparing and contrasting traditional and critical approaches of ECJ in CSCW research, exploring just transition’s connection to ECJ, and best practices for working with different frontline communities, among others. The purpose of these zines will be to create a shared resource that can be uploaded to the workshop website, with creators’ permissions, for future reference for other CSCW researchers working in ECJ.

Attendees will have a chance to share their zines to identify commonalities and shared contexts. Following this, attendees will have a chance to reflect on all of the conversations and discussions that happened throughout the workshop. Together, we will consider what outputs we may want to co-create from the workshop, such as guidelines, a keyword document, a resource list, or blog series. Attending to the various contexts that attendees may work in, these may have different levels of public presence, such as creating a private mailing list or other sharing mechanisms.

**3.3.4 Optional Post-Workshop Activities.** We will aim to offer optional post-workshop activities for participants interested in engaging more deeply with the Salt Lake City context and local climate justice efforts. We plan to connect

with community-based organizations through the organizers' connections to explore hosting an informal dinner gathering with local practitioners and advocates. In addition, we will identify opportunities for place-based learning, such as guided walks along the Jordan River or relevant public events focused on ECJ. Participation in these activities will be entirely optional and subject to availability.

### 3.4 Post-Workshop Outputs

Based on the concluding conversation, information about outputs will be posted on the workshop website or other distribution channels. The goal of the workshop is to create dialogue and share vocabulary in the CSCW space for researchers working with frontline communities on topics of ECJ. We hope this will nurture a budding community of CSCW researchers in ECJ and will foster future collaborations and gatherings.

## 4 Organizers

**Amelia Lee Doğan** is a PhD student at the University of Washington (UW) Information School. Amelia's doctoral research focuses on how climate justice activists and frontline communities use, shape, and resist data and technology.

**Nino Migineishvili** is a PhD student at the UW Paul G. Allen School of Computer Science and Engineering. Nino's research focuses on the intersection of technology and the environment, with a particular focus on understanding, measuring, and evaluating AI-related opportunities and challenges.

**Rachel Marston** is a research project manager at the Environmental Defense Fund. Her work focuses on the Frontline Resource Institute, bridging frontline community needs and research.

**Katlyn M. Turner** is an incoming Assistant Professor at the University of Colorado Boulder's Department of Information Science, and a research affiliate at the MIT Media Lab. Her research focuses on environmental justice, emerging technologies, and complex systems.

**Taneeva S Agrawaal** is a PhD student in the Department of Computer Science at the University of Toronto. Her research lies at the intersection of Human Computer Interaction, Climate Informatics, and Critical Data Studies to examine and design climate informatics technologies — including the maps, models and data — in the Greater Toronto Area, particularly in applications of climate change and associated risk impacts.

**Hongjin Lin** is a PhD Candidate in Computer Science at Harvard University. Her research focuses on AI and social impact. She is currently co-designing technologies with communities in Boston to support participation in local collective climate actions.

**Ashley Boone** is a PhD student in Human Centered Computing at the Georgia Institute of Technology. Her research focuses on how local community-based organizations, including conservation and climate-focused organizations, produce and use data to achieve social change at the local level.

**B. Biira** is a PhD student at the UW Information School. She researches climate information technologies as constituted through social and institutional life.

**Nina Lutz** is a PhD student at the UW in Human Centered Design and Engineering. She researches information disorder, such as misinformation, which is increasingly intersecting with ECJ.

**Ufuoma Oviemhada** is an incoming Assistant Professor at the University of Arizona's School of Geography, Development, and Environment. She conducts multi-method research to understand how geoscience and geospatial tools can support environmental justice monitoring and advocacy.

**Benjamin Xie** is an Assistant Professor of Computer Science and Affiliate Faculty of Public Policy at the University of Denver. His research focuses on building youth advocates' capacities to work with environmental data from low-cost sensors and mobile technologies.

**Lindah Kotut** is an Assistant Professor at the UW Information School. Her work focuses on leveraging storytelling tools and associated technology, especially in the context of resource scarcity, with a focus on Indigenous communities.

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