

2023 NIEHS EHSCC MEETING: Disaster Research Response & Climate Change & Health

We are inviting members of the NIEHS P30 Centers to present their disaster research response-themed or climate change-themed work at the October 2023 NIEHS EHSCC MEETING in Houston, Texas.

The leadership of each P30 Center is encouraged to nominate a member of their center to present at the October meeting. To participate, the nominated member should send an abstract of their work to the 2023 NIEHS EHSCC MEETING planning committee by completing this online questionnaire.

Up to four abstract authors will be invited as plenary speakers. Others will be invited to share their work during poster sessions.

Please submit your abstract by July 24, 2023. Plenary speakers will be notified by August 7, 2023.

Thank you - 2023 NIEHS EHSCC MEETING planning committee.

Response was added on 07/24/2023 3:48pm.

ABSTRACT AUTHOR'S CONTACT INFORMATION

Author's name (first name last name):	Jeremy Hess (The abstract author is the prospective presenter)
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Author's title	Professor
Author's primary department & institution	Departments of Emergency Medicine, Environmental Health, and Global Health, University of Washington
P30 Center where the author is a member:	EDGE Center, UW
The project PI/Lead	<input checked="" type="checkbox"/> Same as abstract author <input type="checkbox"/> Different from abstract author, if so, specify

PROJECT FOCUS

The primary focus of the project (you may select more than one option, if applicable)

- Disaster Research Response (DR2)
 Climate Change and Health (CCH)
 Other, please specify

The type of DR2 issues (being) studied

- Natural - cause not traceable to a single action by identifiable persons
 Industrial - cause traceable to an industry, usually due to business activities
 Individual/group - cause traceable to one or more persons (intentional act or accidental)
 Other, please specify

The climate change and health issues (being) studied

- Exposure pathways (extreme heat, air quality, water quality/quantity, vector ecology, etc.)
- Vulnerability factors (demographic, biological, social determinants, geographic, etc.)
- Health system capacity & resilience - (governance, EHS workforce, health information systems, etc.)
- Stress response (pathways, psychosocial stress, eco-anxiety)
- Climate and geospatial modeling
- Other, please specify

PROJECT DETAILS - DR2/CCH AND HEALTH GAPS, PROJECT OBJECTIVES, FINDINGS, & LESSONS LEARNED

Study Title

A novel decision support tool to advance climate adaptation to heat

DR2- or CCH-specific research gaps that the project addressed/is addressing

There is a need to support a range of decisions related to climate-sensitive hazards to promote climate change adaptation at scale. Many hazards, such as extreme heat, can precipitate disasters by overwhelming local response capacity. Evidence-based adaptation requires linkage of scientific information with community input to support decisions. However, adaptation to these hazards is hampered by limited information about risk at the community level, limited information and expertise regarding potential adaptation options and their implementation, and lack of location-specific information about the decision context. While much of this information may be available or discoverable on a case-by-case basis, there are no resources that support evidence-based adaptation at scale. There are research gaps about how such information might be best collated, presented, and used to support adaptation decisions, and how such decision support might facilitate adaptation actions appropriate to the decision context.

Project goals and objectives

The goals of the project are to advance adaptation to climate-sensitive hazards by providing rapid, standardized risk assessment and linking localized risk assessment findings with decision support guidance to support evidence-based adaptation. The project's objectives are 1) to develop a decision support tool linking a causal pathway for heat-related illness and to use this pathway to develop location-specific risk estimates, 2) to develop narratives describing potential risk reduction interventions including information related to effectiveness and implementation timing and cost, and 3) to develop a platform linking the location-specific risk estimates with narrative information regarding priority interventions that can be used to advance adaptation decision making at the community level.

Research methods/approaches used

- Community-engaged research methods
- Communications research methods
- Field epidemiological methods
- Fundamental/basic science methods
- Other, please specify

Project stage/status:

- Project is ongoing - process findings available to present; no primary outcomes findings available yet
- Project is ongoing - process findings and/or primary outcomes findings available to present
- Project completed - process findings and/or primary outcomes findings available to present
- No stage/status to report
- Other, please specify

Describe the process/primary outcomes findings from the project.

Using a systematic literature review, we developed a causal pathway linking extreme heat with a composite endpoint of heat-related illness morbidity and mortality. We identified hazard, vulnerability and exposure variables in the pathway and developed a hierarchical fuzzy logic model linking these variables to generate time- and location-specific risk estimates. We applied this modeling framework to Washington state and developed heat-related illness risk estimates at the census tract level for the state. We conducted a scoping literature review to identify high priority risk reduction interventions and generated narrative summaries of these interventions, their effectiveness, and implementation considerations including time and resources required. We developed a web-based platform linking location-specific risk outcomes with adaptation guidance to support evidence-based decision making at the community level (<https://climatesmarthealth.org>) and can present this tool and its functions. We are currently piloting the tool with partners in state and local health departments, community organizations, and community organizations and assessing the tool's utility in supporting preparedness and risk reduction for heat-related illness, and will have preliminary findings related to these engagements to present.

Describe key challenges or lessons learned.

The key challenges we have encountered relate to limited information, lack of coordinated networks, and insufficient resources for applied adaptation research. There is limited information in the literature regarding decision contexts for climate change health adaptation. And, while there is substantial information regarding risk for heat-related illness, there is much less information regarding risk reduction interventions and their effectiveness and implementation. These information gaps make it challenging to provide comprehensive information to support decision-making at the community level. In addition, the decision landscape for climate adaptation is complex, with multiple actors with overlapping jurisdictions and practice partners; engaging the wide range of stakeholders and avoiding unintended consequences are persistent challenges. Lastly, while some additional resources are flowing to climate change and health research, funding remains siloed and more focused on etiologic research rather than implementation of interventions known to be effective, and identifying resources to support adaptation at scale.

PROJECT SPONSORSHIP/SUPPORT

Project sponsorship (choose all that apply)?

- P30 inter-center collaborative pilot funding (via NIEHS)
- Other NIEHS - (NOT inter-center collaborative funding)
- NIH - other institutes (NOT NIEHS)
- Any other federal agency (NOT NIH)
- Non-federal government agency (state, local, etc.)
- Non-government, non-profit entity
- For-profit entity
- Insitutional (intramural) funding
- Project not sponsored
- Other, please specify