

Meet the Carolinas Collaborative on Climate, Health, and Equity

We are a team of physical and social scientists, community leaders, educators, and on-the-ground subject matter experts working on co-creating and securing a thriving climate-resilient future for the most at-risk Carolinas communities.

The core focus of the ***Carolinas Collaborative on Climate, Health, and Equity (C3HE)***, a NOAA Regional Integrated Sciences and Assessments (RISA) team, is on advancing climate, health, and equity in the Carolinas through solutions-oriented community engaged research. Our work seeks to enhance local decision-making, strengthen local partnerships, and increase the capacity of communities to develop their own climate resilience solutions.

An overview of the team's expertise includes:

- Developing climate futures for regional adaptation and mitigation efforts
- Understanding the unequal health risks and impacts of climate change
- Risk management and decision making for climate concerns
- Building community partnerships to mobilize climate action



Our team integrates this interdisciplinary expertise into each community-led project. Each investigator is deeply rooted in the communities they serve. We believe our community-centered approach and local partnerships will help us ask new questions and develop more creative and effective solutions in partnership with local leaders.

Some examples of our past community-centered work includes:

Developing a regional climate and health plan for rural communities in Western North Carolina.

Assisting a Durham neighborhood with developing strategies for heat relief.

Training the next generation of environmental scholars at NC Central and South Carolina State University, two Historically Black Colleges and Universities.



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Year in Review

For our first year as a new center, our work was focused on building institutional capacity, especially with our HBCU partners, and establishing and strengthening connections with community partners.

The major work and successes of our first year included:

- assembling the project team with PIs at seven universities and organizations across the Carolinas;
- establishing C3HE processes for identifying, engaging, and funding work with frontline communities in the Carolinas;
- convening an advisory board comprising a diverse group of regional voices that will provide guidance on integrating justice, equity, diversity, and inclusion principles into our work and establishing and maintaining community partnerships;
- partnering with the NC Climate Justice Collective to train and support their work in assessing climate vulnerabilities
- working in four diverse local communities, from tribal groups to health providers to majority minority towns who have recently experienced climate change impacts, with the groundwork laid for additional community engagement over the coming year.
- Recruiting a graduate student cohort at NC State and UNC to focus on recurring and compounding climate hazards and;
- Hosting a 4-day intensive summer experience for students to explore climate resilience careers and learn about environmental justice.

Community Focus & Partnerships

Capacity-Building with the North Carolina Climate Justice Collective

The C3HE team worked with the North Carolina Climate Justice Collective (NCCJC), a multiracial intergenerational movement ecosystem rooted in the communities who are first and worst impacted by climate and environmental harms. This first year of work was focused on enhancing the NCCJC's capacity to better engage with their regional hubs to advance local understanding of how community members are experiencing the effects of climate change in combination with other social stressors (e.g., COVID-19 pandemic, environmental injustice, social inequality). The partnership with NCCJC provides a working community-engaged model for the C3HE team to use internally to help focus our efforts in project Years 2–5. We are especially proud of this partnership, because our work with the NCCJC is helping to boost the adaptive capacity of the region to build community resilience in a changing climate.

Community Focus & Partnerships (continued)

Eastern Band of Cherokee Indians (Western North Carolina)

A five-year collaboration with the Division of Agriculture & Natural Resources of the Eastern Band of Cherokee Indians (EBCI) to integrate climate into all aspects of tribal governance

Our C3HE team entered a new five-year partnership with the EBCI to enhance the capacity of tribal leaders to plan, adapt, and respond to a changing climate. The team will scope regional-scale physical science analyses to explore current and future climate hazards (e.g., fire, flood, heat) and use that science to explore climate futures and move toward practical solutions. Results will directly inform a 21st-century vision for climate action integrated as a cross-cutting theme across governmental sectors. While we're only in the first year, we aim to move beyond developing a report that sits on the shelf and instead work closely with the EBCI to co-develop an Indigenous model that elevates tribal knowledge, values, realities, and priorities to address climate, health, and equity in Western North Carolina. We are partnering with the Department of Interior's Southeast Climate Adaptation Science Center (SECASC) to leverage the capacity and expertise of our respective teams, and presenting as one team to reduce the institutional and community burden on the EBCI.

It's Hot Y'all: Mapping Urban Heat in Raleigh and Durham

With funding from the National Integrated Heat Health Information System (NIHHIS), the C3HE team participated in Raleigh and Durham's citizen-powered urban heat mapping campaign. The teams of local volunteers were led by a team of partners in each city, collecting valuable high-resolution urban heat data to inform city and regional planning.

Impact: After the research team presented study results in early 2022, Raleigh City Council voted to authorize \$70,000 to treat streets that are located in the urban heat island.

Building Climate Resilience and Adaptation Through Low-Impact Development, Home Elevation, and Cultural Preservation in Bucksport, South Carolina

Located in the floodplain between the Pee Dee and Waccamaw Rivers, the Bucksport, SC community has experienced a sudden onslaught of catastrophic flooding events since 2015, which has led to property damage and population outmigration. Bucksport comprises a population of 750 people, of which 89% are African American, 22.6% are in poverty, and 50% live in mobile homes. Residents hold a strong Gullah Geechee cultural heritage. Due to historical ramifications, many residents reside on heirs' property, so they lack the necessary property deeds to receive previous disaster funding from the Federal Emergency Management Agency.

Impact: Furman University students from the C3HE team broke ground on a community rain garden alongside community members and researchers. This community-driven low-cost resilience project highlights cultural preservation, reduces groundwater flow, and protects infrastructure.



Looking Forward

Enhancing Climate Literacy and Health Equity with Albemarle Regional Health Services (Northeastern North Carolina)

The C3HE team is working with Albemarle Regional Health Services (AHRHS) leadership and others in an 8-county region in rural Northeastern North Carolina to plan a climate workshop to assess the needs of the community, identify linkages between climate and health stressors, and develop a communication and response plan for regional environmental safety and health providers. The team is working with local rural schools to provide interactive weather kits for 5th grade classrooms to aid in achieving North Carolina's science standards for that year. The C3HE team plans to kick off this work with ARHS in fall 2022.

Advancing Sustainability Solutions in Greenville County, SC by training the next generation of climate resilience professionals

This summer our center partnered with a community coalition working to develop a long-term sustainability plan for one of the fourth fastest growing cities in the nation, Greenville SC. Because at-risk communities often share hazard geography with more affluent communities, the developmental and regulatory decisions of these upstream communities often have direct impact on downstream less affluent communities. One central goal of our center is to bring communities across jurisdictional boundaries together to the table to more effectively coordinate climate resilience efforts. Community listening sessions will start this year to better understand climate concerns in surrounding cities. A team of undergraduate students are working alongside the larger team to engage in culturally sensitive and place-based research that integrates community input and local ways of knowing.

For Community Partners

At C3HE, our goal is to develop community-driven partnerships that support historically marginalized communities to develop and own community-centered climate resilience solutions. We're actively recruiting new community partners to blend their community history & knowledge with our technical expertise to create on-the-ground climate resilience collaboratives: solutions for the rapidly changing Carolinas that last beyond the lifetime of a grant.

If interested, reach out to C3HE at c3he-contact@ncsu.edu