Cooling Communities
Strategic Partnerships for Heat Resilience in the Carolinas

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PROJECT OVERVIEW

Extreme heat is an escalating public health and economic threat, particularly in rural, low-income communities across the Southeastern United States. In these areas, aging infrastructure, high energy burdens, and chronic health disparities intersect to create acute vulnerability during periods of excessive heat.

Cooling Communities is a seed initiative that brings together community leadership, trusted faith-based institutions, and financial innovation to explore scalable, locally rooted strategies for heat resilience. Rather than prescribing solutions, the initiative focuses on listening, cocreation, and building the foundations for long-term capacity.

It is grounded in the belief that effective heat resilience must be community-informed, operationally sustainable, and responsive to local needs.

PROJECT PARTNERS

Cooling Communities is led by Duke University's Heat Policy Innovation Hub, in collaboration with Duke Divinity School and Interfaith Power & Light (North and South Carolina). The initiative also benefits from deep engagement with academic researchers and two key industry partners—a national insurer and a regional utility—who are working together to explore innovative financial and delivery models for heat-related relief.

These diverse partners bring together expertise in public health, heat risk, community organizing, faith leadership, and financial instruments, allowing for a cross-sectoral approach to extreme heat resilience.

OBJECTIVES AND STRATEGY

The Cooling Communities initiative is designed to:

- Test the feasibility and value of parametric insurance as a proactive tool to reduce household energy burden during heat emergencies
- Support faith-based institutions in rural communities to serve as trusted resources during extreme heat events by offering cooling, communications, and care
- Codevelop replicable models that can be adapted across regions facing similar heat-health challenges

By combining public, philanthropic, and private-sector expertise, Cooling Communities is building a foundation for equitable, proactive heat risk management.

TWO CORE SEGMENTS OF THE PROJECT

A. Community Project: Partnering with Faith-Based Institutions

This segment engaged rural churches as trusted local institutions with the capacity to anchor heat resilience efforts through community presence, leadership, and infrastructure.

1. Recruitment

Fifteen churches across the Sandhills region of North Carolina and the Lowcountry of South Carolina were recruited through Interfaith Power & Light's regional networks, prioritizing congregations in areas with high energy burden and extreme heat vulnerability.

2. Engagement: Workshops and Interviews

Two in-depth workshops shaped the community learning process:

- **Workshop 1** took place in Clinton, SC, at the Creating a Climate for Change conference hosted by Rev. Leo Woodberry.
- **Workshop 2** was held at Duke University in March 2025 and featured guest speakers including Rev. Leo Woodberry, Angella Dunston (Warren County Environmental Action Team), and Rev. Neil Bernard (New Wine Christian Fellowship).

Additionally, student researchers from Duke Divinity School conducted semistructured interviews with 15 clergy across the region to understand community experiences of extreme heat, current responses, and barriers to adaptation.

3. Findings

- Some churches already provide informal heat relief—delivering water, checking on elders, and offering access to air conditioning—but often do not frame these activities as heat resilience.
- There is widespread interest in formalizing churches as Community Lighthouses—trusted, equipped hubs for cooling, backup power, communications, and resource coordination.
- Faith leaders expressed a desire for additional tools for educating congregations around extreme heat, paid leadership roles, and sustainable support structures to scale their efforts.

B. Insurance Model: Designing Proactive Financial Relief for Heat

This segment tested the viability of a parametric insurance model to trigger timely financial support when heat thresholds are exceeded, reducing risk to households and utilities.

1. Methods and Approach

The insurance model was developed using heat and health data from the Carolinas to establish outcome-based temperature thresholds (e.g., Heat Indices of 102°F, 104°F, or 106°F) at which intervention becomes critical. The approach emphasized:

- **Payout Simplicity and Speed:** Parametric insurance delivers automatic financial relief without the need for lengthy claims
- **Blended Finance:** Lower-tier responses (education, cooling centers) are supported through public and philanthropic contributions, while upper-tier responses (energy bill support) are triggered through insurance payouts
- **Utility-Based Policyholder Model:** Utilities (rather than individuals) would hold policies, allowing aid to be deployed at scale and through trusted delivery mechanisms

2. Findings

- A tiered activation framework was established, allowing for scalable responses at multiple thresholds.
- Parametric insurance can complement existing assistance programs and offer more equitable access to relief, especially for households that might otherwise fall through administrative cracks.
- Faith-based organizations are key partners in identifying at-risk populations and helping to distribute resources effectively.
- Three model types were compared: single-trigger, expanding pool, and escalating payouts. The escalating payout model was most aligned with stakeholder priorities and operational flexibility.
- For various reasons, a utility may not be the ideal holder of a parametric policy. Churches were interested in further exploring a model where a network of churches held the policy.

NEXT STEPS

The Cooling Communities initiative is now advancing toward full implementation and scale. Key priorities include:

- **Launching a Community Lighthouse Network:** Establish a cohort of rural churches and community centers that provide cooling, communications, and care during extreme heat, while also serving as a peer learning network to share strategies, codevelop solutions, and strengthen community-based response to extreme events. Each site will complete a readiness assessment and receive a tailored roadmap to readiness for infrastructure, staffing, and activation.
- **Implementing Two to Three Full Pilots:** Select diverse church partners to receive technical equipment, Lighthouse Keeper training, and integration into resilience activation protocols.
- **Refining the Parametric Insurance Model:** Continue modeling and stakeholder consultation to define pricing, policy structure, and regulatory pathways for implementation in partnership with utilities and insurers.
- **Disseminating Theological, Educational, and Public Health Resources:** Expand sermon guides, Bible studies, and discussion tools that help congregations frame extreme heat as both a spiritual and public health concern. Resources will support faith leaders in communicating heat

risks, promoting protective behaviors, and engaging their communities in heat and health resilience.

- **Document and Share Learnings:** Capture insights from pilot sites and community leaders to inform state and national heat-health policy and build support for broader replication.

LEARN MORE

To keep up with Cooling Communities and the Heat Policy Innovation Hub, please visit the project website: nicholasinstitute.duke.edu/project/cooling-communities-building-resilience-extreme-heat

CITATION

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