CIRCAD Request for Proposals (RFP)

Issued: November 19, 2025

Submission Deadline: December 8, 2025 (Pre-Proposal), January 15, 2026 (Full Proposal)

CIRCAD Overview and Vision

The Center for Innovation in Risk, Catastrophes, and Decisions (CIRCAD) is a new National Science Foundation partnership between Duke University, the University of Georgia, and leading entities working to manage climate risk. Its mission is to strengthen climate resilience and the stability of insurance and financial systems through **integrated research**, **education**, and **industry collaboration**. CIRCAD's outputs, including open data, modeling tools, and pilot implementations, bridge the gap between scientific innovation and real-world applications in risk and resilience. It also serves as a **training hub** by embedding students and postdocs in applied research and creating shared courses, internships, and training programs.

IUCRC Model

CIRCAD operates within the NSF Industry–University Cooperative Research Centers (IUCRC) Program, a proven framework for long-term collaboration among universities, industry, and government. Through this model, the Center combines NSF's foundational support with direct industry investment to sustain **applied, industry-driven research**, ensure transparent governance through its Industrial Advisory Board (IAB), and maintain the infrastructure needed for cross-site coordination, data sharing, and workforce development.

CIRCAD Industry Members

CIRCAD's founding Industry Members include **reinsurers**, **insurance companies and brokers, ratings agencies, and catastrophe-modeling and risk-analytics firms**. CIRCAD also has a wide range of **public and nonprofit sector partners** in climate and disaster risk management. Additional members and partners are expected to join as the Center's portfolio expands through new projects and initiatives.

Purpose of the RFP

This Request for Proposals (RFP) seeks **high-impact, interdisciplinary research projects** that advance CIRCAD's mission and foster collaboration between Duke University and the University of Georgia. The topics outlined in this RFP reflect research priorities identified through engagement with CIRCAD industry partners. Selected projects will form the initial portfolio of CIRCAD-funded research, laying the foundation for a long-term program of collaborative research and innovation. To streamline review, this RFP uses a two-stage process: **a brief pre-proposal** to confirm alignment with CIRCAD priorities, followed by **a three-page proposal and short pitch presentation** developed with feedback from Center leadership and Industry Members.

Benefits for participating faculty include:

- Direct engagement with Industry Members who provide feedback, data access, and potential collaboration on pilot initiatives;
- Opportunities for interdisciplinary and cross-institutional partnerships;
- Access to CIRCAD's shared research infrastructure, data resources, and workforce development programs;
- Resources to support students through funding, internships, and professional training; and
- A streamlined proposal process with rapid deployment of funds.

Projects should demonstrate:

- Clear relevance to one or more topics within CIRCAD's research themes;
- Alignment with industry needs and production of tangible research outputs valuable to Industry Members;
- A credible plan for implementation, partnership, or translation to practice, with defined first-year deliverables and the potential for multi-year continuation based on progress and impact;
- Meaningful student engagement, consistent with CIRCAD's Center-Wide Workforce Development Plan; and
- Appropriate scale and budget to achieve proposed outcomes within the project timeline.

Priority Research Themes and Questions

Proposals are expected to align with one or more of CIRCAD's three Priority Research Themes, outlined below. Each theme includes a set of topics and motivating questions that are based on Industry Members' priorities.

Priority Theme 1: Modeling, Data Integration, and Uncertainty

Focus: Advancing the technical foundations of climate and catastrophe risk analysis by improving model interoperability, uncertainty representation, and data integration.

Topics	Motivating Questions
Evaluating climate and catastrophe models	What transparent, reproducible protocols can be developed to evaluate and communicate differences among climate and catastrophe models?
Integrating data across hazards	What scalable data architectures from across sectors (e.g., APIs, FAIR repositories, and automated pipelines) can be designed and deployed to integrate weather, climate, exposure, social, and economic data across hazards? How can data be standardized and aggregated across perils to provide a holistic view of risk?
Curated inventories of data and models	What curated inventories of open or semi-open datasets, hazard models, or standardized data products would enable insurers and other end users to more easily access, understand, and appropriately apply risk-relevant climate and hazard information?
Modeling dynamic vulnerability	How can changes in the built and natural environment, demographics, and behavior be represented in models to capture evolving vulnerability, adaptive investments, and feedbacks between risk, exposure, and community resilience?
Assessing model uncertainty and near-term variability	How can natural variability and model uncertainty be better characterized to capture a realistic range of futures, particularly over shorter time horizons?
Guiding model selection for decision-making	What decision-theoretic and model-aptitude metrics can be developed, tested, and applied to guide model selection and use in insurance, finance, and policy contexts?

Priority Theme 2: Valuation and Market Signals for Resilience and Nature-Based Solutions

Focus: Linking quantitative modeling with economic valuation and behavioral insights to measure, communicate, and incentivize investments in resilience and nature-based solutions. The following topics are interdependent elements of a broader resilience value chain, and proposals that connect multiple elements are strongly encouraged.

Topics	Motivating Questions
Revealing behavioral responses to risk information	How does the disclosure of climate and catastrophe risk information influence risk management and investment choices? What communication and framing strategies most effectively motivate awareness and understanding of risk?
Motivating and sustaining action for resilience	What combinations of behavioral approaches—such as education, cultural engagement, and choice architecture—most effectively drive and sustain proactive customer actions to increase resilience?
Valuing and communicating the benefits of resilience	How can avoided losses, co-benefits, and distributional impacts be incorporated into valuation frameworks and translated into credible, stakeholder-specific measures of return on investment (ROI) for resilience measures—including retrofits, hybrid infrastructure, and nature-based solutions—for both individual policyholders and communities as a whole?
Stimulating market demand for resilience investments	How can policy, regulatory, and market mechanisms—such as building codes, zoning regulations, credit enhancements, resilience bonds, risk-based insurance pricing, or disclosure standards—create market signals that derisk, reward, and scale investment in resilience?
Co-funding and coordination among beneficiaries	How can the shared benefits of resilience investments be structured to support joint funding and risk-sharing among municipalities, utilities, local businesses, insurers, and other stakeholders?

Priority Theme 3: Insurance, Finance, and Policy Innovation

Focus: Designing and evaluating innovative insurance, finance, and policy mechanisms that sustain insurability, align incentives, and expand equitable access to protection.

Topics	Motivating Questions
Establishing parametric and CBCI programs	What markets would benefit most from parametric products and/or community-based catastrophe insurance (CBCI) programs and what is the role of traditional insurers in those markets?
Addressing holistic drivers of loss and insurability	What are the drivers (e.g., physical, economic, social) of escalating losses and declining insurability, how do these drivers differ across markets and regions, and what portfolio and policy strategies can reduce losses and in turn promote insurability? What is the residual affordability gap after taking into account loss reduction strategies?

Topics	Motivating Questions
Mobilizing resilience investments	What types of consumer financing products and resilience-linked financial instruments can mobilize private capital toward resilient home retrofits and community infrastructure?
Aligning adaptation incentives across sectors and markets	What frameworks and coordination mechanisms can align the objectives of insurers, lenders, regulators, and public agencies to encourage investment in adaptation and resilience, particularly in high-risk or under-insured regions?
Coordinating multi-component resilience interventions	How can multi-component resilience interventions—for example, building code modernization, customer engagement, insurance incentives, and skilled workforce capacity—be coordinated and evaluated to reduce losses and improve long-term insurability?

Cross-Cutting Criteria for Impact and Member Value

In addition to aligning with one or more priority research topics, **all proposals should demonstrate a credible pathway to impact** (examples below), showing how the project will ultimately create value for CIRCAD's Industry Members and deliver measurable societal benefits. While all projects should seek to demonstrate industry impact within the first year, these broader impacts may occur after the first year and proposals should outline how research activities will evolve toward these outcomes over time.

Example Impact Pathways:

- **Pilot Implementations:** Integrate CIRCAD-supported modeling, valuation, or product innovations into real-world pilot projects that demonstrate measurable ROI and community resilience benefits.
- **Public–Private Partnerships:** Design projects with clear pathways for replication or scaling through collaborations with public agencies, adaptation networks, and industry consortia.
- **Data Sharing and Transparency:** Leverage CIRCAD's secure data infrastructure to promote transparent sharing of models and datasets while maintaining member confidentiality.
- **Model Standards and Benchmarking:** Contribute to the development of benchmarking and certification processes that enhance trust, comparability, and transparency in climate and catastrophe risk modeling.
- **Impact Metrics:** Define indicators to evaluate the societal, economic, and policy impacts of CIRCAD-supported tools and products, ensuring real-world learning and continuous improvement.

Eligibility

Proposals may be submitted by faculty at Duke University or the University of Georgia. **Collaborative, cross-institutional teams are strongly encouraged**, and CIRCAD will facilitate opportunities for joint engagement to develop new projects.

Principal Investigators (PIs) must be faculty or researchers eligible for PI status under their home institution's policies. Co-PIs and collaborators may include postdoctoral researchers or research staff with appropriate institutional approval.

Proposals may also identify external collaborators from other universities, industry, government agencies, or nonprofits. Such collaborators may participate intellectually in CIRCAD projects but are not eligible to receive direct financial support from CIRCAD funds unless they are approved by

the IAB as Industry Members or official partners under the terms of the CIRCAD Membership Agreement.

Award Details

- **Award Amounts:** Average project awards will range from **$50,000 to $75,000** in the first year. Exceptional projects demonstrating outstanding value to CIRCAD members and a strong vision for broader impact may be considered for awards of up to **$150,000**.
- **Duration:** Projects are expected to be funded for a **one-year term**. Projects may be designed for a two-year duration when a longer timeline is clearly justified and critical to achieving project goals. Such proposals must include a detailed year-by-year budget, defined milestones and deliverables for each year, and a clear rationale for the multi-year scope. Continuation into the second year will be contingent upon satisfactory progress demonstrated at the mid-year and annual reviews, as determined by the CIRCAD Leadership Team and IAB.
- **Allowable Costs:** Funding may be used for personnel (limited faculty support, postdoctoral researchers, graduate and undergraduate students), data acquisition, software, equipment, travel, and stakeholder engagement. Funds may not be used for course buyouts.
- **Expectations:** Projects should demonstrate a clear pathway to industry and societal impact, as described above, while producing tangible deliverables—such as **datasets, model code, analytical workflows, or prototype tools**—that contribute to CIRCAD's shared repository. They should also create strong opportunities for **student engagement** through meaningful research, mentorship, and professional development activities that reinforce the Center's workforce development goals.

Industry Engagement

Funded project teams are expected to engage directly with CIRCAD Industry Members throughout the research process. **Each project will be paired with an industry project advisor** to provide academic researchers with useful feedback, ensure alignment with member priorities, facilitate data access and sharing, and strengthen the translation of research findings into practice.

Projects are also encouraged to identify additional potential external partners, including insurers, reinsurers, analytics firms, financial institutions, or public agencies, who may be eligible for CIRCAD membership or partnership. These collaborations are intended to expand the Center's applied impact and foster sustained industry–academic interaction.

CIRCAD Project Support

CIRCAD provides targeted administrative, technical, and engagement support throughout the project lifecycle to help teams maximize impact, visibility, and alignment with Center goals. Available support includes:

- **Industry Engagement:** Assistance in identifying and connecting with industry partners and project champions to ensure relevance and facilitate applied collaboration.
- **Data Governance and Integration:** Guidance on data management, sharing, and compliance with CIRCAD's shared repository and FAIR data principles.
- **Student Involvement:** Opportunities for student placements, internships, and participation in CIRCAD short courses and training programs.
- **Cross-Site Collaboration**: Coordination with related efforts through cross-site working groups, biannual Center-wide meetings, and shared communication platforms to promote synthesis and knowledge exchange.

Evaluation Criteria

Proposals will be reviewed by the CIRCAD Academic Leadership Team and selected IAB representatives. Evaluations will be based on the following criteria:

- **Relevance to CIRCAD Themes**: Alignment with one or more of CIRCAD's core research themes and motivating questions.
- **Responsiveness to Industry Needs:** Demonstrated practical value proposition for CIRCAD Industry Members and partners.
- **Feasibility:** Clarity and realism of goals, methods, timeline, and budget, including the ability to deliver actionable insights and outputs at regular intervals throughout the first year.
- **Collaboration and Teaming:** Strength of cross-site (Duke–UGA) and cross-disciplinary partnerships, as well as engagement with industry champions.
- **Workforce Development**: Inclusion and mentorship of students or trainees through research participation, internships, or Center activities.
- **Vision for Impact:** Potential for real-world adoption, scalability, or pilot implementation through CIRCAD's networks.
- **Funding and Continuity:** Evidence of existing or complementary funding, related research efforts, and a credible vision for securing future support—through CIRCAD or other sources—to sustain and expand project impact.

Selection Process

1. **Pre-Proposal Review:** The CIRCAD leadership team will review all submitted pre-proposals for eligibility, fit, and alignment with CIRCAD's mission and research themes. A subset of projects will be invited to develop full proposals.
2. **Feedback and Full Proposal Development:** Invited teams will receive constructive feedback on their pre-proposal and be paired with industry mentors to refine their scope, deliverables, and value proposition before submitting a full proposal.
3. **Final Selection:** Approximately ten full proposals will be invited for presentation to the IAB. Following discussion, the IAB will vote to recommend a subset of projects for funding, based on the stated evaluation criteria and availability of Center resources.

Reporting Requirements

Award recipients are required to submit regular reports to ensure accountability and alignment with CIRCAD's goals:

- **Quarterly Progress Updates:** Brief summaries of accomplishments, milestones achieved, student involvement, and industry engagement.
- **Mid-Year Review (6-Month Checkpoint):** Clear evidence of tangible progress toward proposed deliverables must be demonstrated at the six-month mark. Projects not showing sufficient progress may be asked to submit corrective action plans or may be ineligible for continuation funding.
- **Annual Report (for multi-year projects):** Projects proposed for a two-year duration must submit a detailed annual report at the end of Year 1. Continued funding will be contingent upon satisfactory progress as determined by the CIRCAD Leadership Team and the IAB.
- **Final Report:** A comprehensive summary describing project deliverables, student and industry engagement, and next-step opportunities for scaling or pilot implementation.

Reports will be shared with both CIRCAD leadership and the IAB to inform future project planning and continuation decisions.

Important Dates

Milestone	Date
RFP Released	November 19, 2025
RFP Informational Webinars	November 21 & December 1
Pre-Proposal Submission Deadline	December 8, 2025, 11:59 PM
Feedback to Selected Teams	December 15, 2025
Deadline for Final Proposal & Draft Pitch Slides	January 15, 2026, 11:59 PM
In-Person Project Pitch to IAB	February 9, 2026
Funding Decisions Announced	February 23, 2026

Submission Instructions

Pre-proposals are to be submitted through the **CIRCAD online submission portal:**
https://duke.qualtrics.com/jfe/form/SV_0O39iZFh2EPfCSO

Submit Your Pre-Proposal Here!

Text boxes will be used to request the following information:

1. **Project Title**
2. **PI and Co-PIs** (names, departments, and institutions)
3. **Relevant Research Theme(s)**
4. **Problem Statement and Motivation** (what industry need does this address?)
5. **Proposed Approach** (concise description of the methods or innovation)
6. **Expected Year-1 Outputs** (tangible deliverables)
7. **Student Engagement Plan** (anticipated roles for students)
8. **Anticipated Budget Range** ($50–75k or justification for up to $150k)

Pre-proposals are intended to confirm alignment with CIRCAD's mission and priorities. A subset of teams will be invited to submit full proposals.

Contacts

Duke University:
Mark Borsuk (mark.borsuk@duke.edu) and Lydia Olander (lydia.olander@duke.edu)

University of Georgia:
Marc Ragin (mragin@uga.edu) and Matt Bilskie (mbilskie@uga.edu)

About CIRCAD

The Center for Innovation in Risk, Catastrophes, and Decisions (CIRCAD) is a National Science Foundation Industry–University Cooperative Research Center (IUCRC) jointly led by Duke University and the University of Georgia. The Center brings together experts from academia, industry, and government to address the growing financial and societal impacts of climate-related hazards.

Designed as an integrated two-site center, CIRCAD coordinates shared data infrastructure, joint working groups, and biannual meetings to ensure seamless collaboration across institutions and sectors. Its research portfolio is organized around three interconnected themes— Modeling, Data

Integration, and Uncertainty; Valuation and Market Signals for Resilience and Nature-Based Solutions; and Insurance, Finance, and Policy Innovation —that link scientific discovery to applied solutions tested through pilot implementations with CIRCAD's industry partners.

The Center's Industrial Advisory Board (IAB), composed of organizations from the (re)insurance, finance, and risk-analytics sectors, reviews and selects projects for funding and helps guide the translation of research into operational practice. Through this NSF-IUCRC framework, CIRCAD provides a durable platform for co-investment, transparency, and shared innovation.

CIRCAD also advances workforce development by engaging students in funded projects, internships, and professional training programs that build skills in climate risk analysis, resilience finance, and data-driven decision-making—creating a pipeline of talent equipped to turn research into real-world impact.