Office of Sustainability

Overview

This past January, during Independent Activities Period (IAP), a partnership between MIT's Office of Sustainability and the Priscilla King Gray Public (PKG) Service Center kicked off "IAP Climate: Winter Warm-Up", a cohort of students focused on campus and regional heat risk and preparedness—a key community concern in a changing climate. The first-of-its-kind program centered on several projects on MIT's campus as well as the cities of Cambridge and Boston that included policy research, designing a shade structure, and plotting heat trends. Over four weeks, the students, who represented multiple courses and class years at MIT, produced research, data, and other deliverables that could inform heat resiliency work and planning at MIT and the Cities of Boston and Cambridge—work that can be carried forward by both staff and future cohorts.

Program Structure

IAP Climate is a pilot initiative aimed at enhancing collaboration, real-world learning, and solutions among MIT, local governments, and mission-driven partners in the Boston area. The program was designed for four weeks as part of IAP 2025 and included hands-on work alongside wraparound programming to support learning goals. Students were assigned to one of four host partners (City of Cambridge Community Development Department & Office of Sustainability, City of Boston Office of Climate Resilience, The Architecture Group of New York / Urban Risk Lab, MIT Office of Sustainability) to meet the goals of the program. The Climate IAP program was structured around four tenets:

- **Internship Program:** A cohort of 10 MIT undergraduate students completed full time 4-week long internships focused on heat mitigation projects
- **Real World Engagement:** Interns worked on collaborative projects with municipal and MIT offices and presented their findings and recommendations to campus and community stakeholders.
- **Collaborative Development:** The program leveraged the infrastructure and assets of each partner to encourage regional collaboration and student learning.
- **Campus + Community Impact:** A model is being developed for ongoing regional collaboration on climate change initiatives between MIT and local governments. This IAP program also serves as a proof of concept for how MIT can foster real-world student learning while also providing valuable outcomes for the MIT campus, City of Cambridge and City of Boston staff grappling with preparing for a changing climate.

Partners

Climate IAP was designed to foster a framework for addressing climate challenges through partnerships and collective action.

Program Partners: PKG Center, MIT Office of Sustainability (MITOS), Urban Risk Lab

- PKG Center – Student-focused hub for social impact experiential learning
- MITOS – Operational sustainability office integrating research and education
- Urban Risk Lab – Faculty led community-engaged research center
- Community partners – Municipal, non-profit, and campus offices

Intern Host Site Placements:

- City of Cambridge Community Development Department & Office of Sustainability
- City of Boston Office of Climate Resilience
- The Architecture Group of New York / Urban Risk Lab
- MIT Office of Sustainability (MITOS)

Student Involvement

Ten undergraduate students were selected to collaborate on assigned climate projects. The students were encouraged to work collaboratively within the large cohort and were also assigned to small-team projects within each larger project. The projects required regular check-ins with host staff to answer questions, provide more information, and guide work. Each student was tasked with submitting a final presentation of their work alongside a series of blog posts about the program. Students worked on site in the MITOS Office, Boston and Cambridge city offices, and at the MIT Urban Risk Lab. Students received $2,500 stipends to participate in the program.

Key Projects

Projects for the students were chosen by program partners and reflected real needs of their organization or municipality. Projects produced by students would inform planning and action by the host organizations. The projects included:

1. **Heat Resilience Guide** – Developing an illustrated guide for heat resilience strategies in Cambridge.
2. **Indoor Cooling Policies** – Creating policy recommendations for establishing maximum indoor temperatures for residential spaces (City of Boston).
3. **Shade & Social Justice** – Designing a shade structure in East Cambridge to promote climate equity (Urban Risk Lab).
4. **Community Farm Transformation** – Strategizing to convert a community farm into a hybrid community space in Dorchester (Urban Risk Lab).
5. **Heat Sensor Dashboard** – Developing an online dashboard to display data from outdoor temperature and humidity sensors placed throughout MIT's campus (MITOS).

Learning Outcomes

At the close of the program, students reported that they gained insight into government operations and policy making processes, the importance of teamwork and communication, communicating data and the roles of social impact and climate justice alongside more technical skills like mastering ArcGIS and data collection.

Additional Outcomes:

- Students were exposed to the impacts of climate change on marginalized communities
- Students we briefed on MIT's strategies to address climate change
- Students learned about environmental and climate justice actions in Boston
- Students studied and analyzed heat risk and mitigation Strategies In Boston, its effects on communities, and municipal and community responses to mitigate harm
- Students reflected on values, power, and privilege in social equity work, explored social justice frameworks and strategies for change, and developed professional skills to contribute meaningfully to host organizations

Deliverables

The IAP Climate: Winter Warm-Up serves as a model for working with community partners in a limited timeframe, for example, a single semester or winter term. In this short time frame, students made progress toward the outlined deliverables of the program and needs of each host institution, including:

- The City of Cambridge is integrating the **heat resilience guide** as one of the resources it is developing for communicating heat risk preparedness in the City.
- The **indoor cooling policy** review noted critical temperature thresholds that, if exceeded, can start to cause heat-related health challenges starting at 77 degrees fahrenheit, based on research and practices used by other cities.
- The design studies advanced through the **Shade & Social Justice** project are currently being integrated into the 2025 project design process.
- The MIT **campus heat risk dashboard** beta version (developed by the IAP students) is being used to raise awareness of localized heat risk in MIT classes, to understand how micro-climates in campus outdoor spaces might impact temperatures, and to seek understanding from the MIT community of how more frequent and extreme temperatures impacts their daily lives. MITOS is planning to continue the study of outdoor temperatures on campus in partnership with the Urban Risk Lab in summer of 2025, including additional refinement of this beta dashboard.
- Students began the process of converting the **Dorchester Community Farm Project** into a resilient, hybrid space by creating a physical model of the space. That model is being used in course 4.182 - Resilient Urbanism: Green Commons in the City with instructors Calvin Zhong, Justin Brazier, and Professor Kate Brown. Students in the course will will continue to collaborate with Kafi Dixon, executive director ofWomen of Color Rural & Urban Farmer Cooperative to envision expansive possibilities for the farm as a comprehensive farming system that can support, among others, essential workforce development and readiness programs, small-business incubation, co-op services, and community empowerment.