

URBAN CANYON CAMPAIGN

Frequently Asked Questions



Roosevelt Road runs through the heart of Chicago's South Loop to the shore of Lake Michigan. This busy corridor's tall buildings, steady traffic and mixed land-use make it an ideal location to study climate conditions in an urban canyon.

The CROCUS Urban Canyon campaign will study how Chicago's built environment can influence local weather conditions. Researchers are set to measure temperature, air quality, wind speed and direction and more to help neighborhoods understand and plan for changing climate conditions.

What is CROCUS?

Funded by the Department of Energy's Office of Science, Biological and Environmental Research program, Community Research on Climate and Urban Science (CROCUS) studies urban climate change and the impact it has on communities, with particular focus on disinvested, under-resourced communities. This information leads to new insights on urban climate challenges and informs future actions for mitigating and adapting to climate change at the street, neighborhood and regional levels. CROCUS is led by the DOE's Argonne National Laboratory in partnership with academic and community organizations and civic and industry champions.

To date, we have installed CROCUS instrumentation at four permanent sites. These include Northeastern Illinois University, Chicago State University, Northwestern University and Argonne. Future deployment sites include University of Illinois Chicago and Olive Harvey College, as well as the communities of Chatham and Humboldt Park.

What does this campaign mean for my community?

CROCUS Urban Canyon Campaign is the first of three urban research campaigns that will take place in neighborhoods throughout the city. Different than a deployment, which is installing instrumentation at a permanent site, a campaign is a focused, temporary study, both in time



AT A GLANCE

17 Partner Organizations

7 Civic Industry Champions

5 Community-Driven Science Actions

4 Levels of Observations

9M Chicago Region Residents



During the campaign, researchers will use tools like weather monitoring sensors, weather balloons and mobile weather stations to better understand the impacts of climate change in Chicago neighborhood.

(a week, month or season) and space (a neighborhood or zone). This allows researchers to deploy resources such as state-of-the-art instrumentation or sophisticated simulations.

The goal of CROCUS Urban Canyon is to collect unique data sets to help scientists and residents understand the environment and inform community-based solutions that improve the overall health of the city.

What are urban canyons and why do you need to study them?

Picture a city street lined with buildings on both sides, forming what’s called an urban canyon. These structures, made of wood, glass and concrete, limit the view of the sky. The street below is like a narrow pathway between these urban walls, with the sunlight periodically shining into it.

Studying urban canyons is important because the tall buildings and compact layout can influence the local weather. The confined spaces trap heat, leading to what’s known as the urban heat island effect, where cities are warmer than surrounding areas. This phenomenon can impact energy use, air quality and overall climate patterns.

By examining how urban canyons affect temperature, air circulation, and other environmental factors, scientists can develop strategies to mitigate the impact of urbanization on climate and re-imagine the way we build and maintain our urban living spaces. Urban canyons are not yet included in simulations of climate or weather. It is vital we collect the data so we can understand the underlying science of how an urban canyon is different than, for example, an open field.

What is the difference between climate and weather?

Weather refers to short-term atmospheric conditions in a specific area, such as temperature, humidity, wind speed, and precipitation, which can change from day-to-day or hour-to-hour. Climate refers to long-term patterns and averages of weather conditions in a particular region over decades or centuries, encompassing factors like temperature ranges, precipitation levels and seasonal variations. While weather is what you experience on a daily basis, climate represents the broader picture of weather patterns over an extended period.

What can residents expect during the campaign?

Over a two-week period, we will conduct two intensive measurement sessions. Each session will last 48 hours. During the sessions, our scientists and researchers will be highly visible as we launch weather balloons and take measurements at mobile weather monitoring stations. We will measure temperature, wind speed, air quality and other factors. You can expect to see scientific equipment in the air, on the roads and around the community.

Why my neighborhood?

We developed criteria to determine the location that will provide the most useful data, including:

- Uniformity with building heights
- Proximity to the lake
- Proximity to parks
- Community connections and established partnerships
- Distance from highways and/or additional contributors to air pollution

Is the campaign safe?

Yes, CROCUS Urban Canyon prioritizes safety above all else. Our goal is to provide our communities with as much information as possible to ensure you understand what is happening in your neighborhood. We recognize that ensuring your privacy is a safety priority.

How can I see the data collected?

Much of the data collected by CROCUS is open to the public and can be viewed by visiting crocus-urban.org/data/observations/

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