



# Climate & Urban Systems Partnership (CUSP): A multidisciplinary network developing strategies for informal climate change learning



Raluca Ellis, Ph.D., Director, Climate & Urban Systems Partnership, Environmental Scientist, The Franklin Institute

Lauren Allen, Learning Scientist, University of Pittsburgh Center for Learning in Out-of-School Environments

Mandela Lyon, Program Development Coordinator, Carnegie Museum of Natural History





**The mission of the Climate Change Education Partnership Alliance is to advance exemplary climate change education through research.**

**The CCEP Alliance Office is located at the University of Rhode Island Graduate School of Oceanography.**

[www.CCEPalliance.org](http://www.CCEPalliance.org)

# How are cities preparing for climate change?



**PHILADELPHIA**



**NEW YORK CITY**



**PITTSBURGH**



**DC**



[www.CUSPproject.org](http://www.CUSPproject.org)



# Climate & Urban Systems Partnership PHILADELPHIA

Large  
Informal  
Education  
Organizations

Small Informal  
Education  
Organizations

Local  
Government  
and Service  
Providers

Community  
and  
Environmental  
Advocacy  
Organizations



# Goals

- ▶ Develop a network of climate-focused organizations in each partner city
- ▶ Deliver coordinated climate change education programs
- ▶ Change urban populations' understanding of and engagement with climate change



# CUSP strategies



**NEIGHBORHOOD STRATEGY: Program**  
Residents participate in a CUSP-themed program



**NEIGHBORHOOD STRATEGY: Communications**  
Residents encounter CUSP-themed education on buildings, buses, t.v. and other places around town.



**DIGITAL STRATEGY**  
Residents join a digital community where they can learn and share with others



**COMMUNITY OF PRACTICE STRATEGY**  
Local stakeholders reinforce CUSP-themed education in their own work throughout the city



**KIT STRATEGY**  
Residents experience a kit demonstration at a festival



# The CUSP approach

Make it local, relevant, and concrete

Start with values, what people care about, what people love

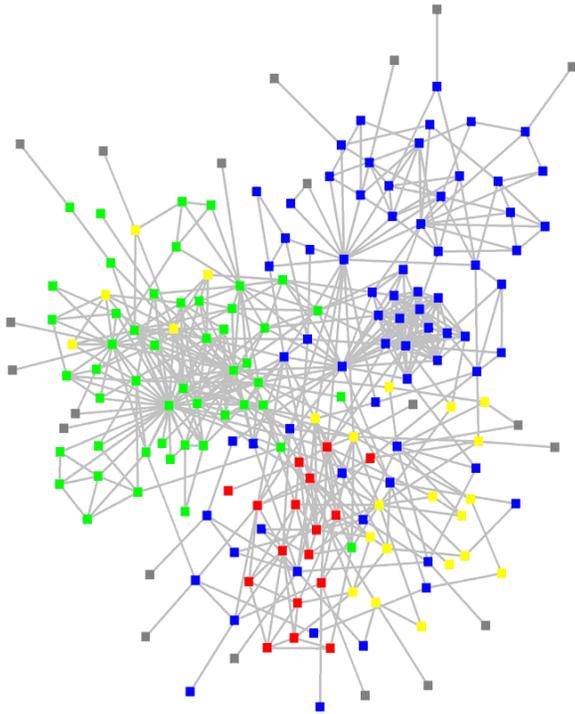
Describe climate risks\*

Provide collective solutions



# Learning Research

## Networks



## Public engagement





# What are the big assumptions we tend to make about climate change and education?

1. If people knew more climate change science, then they would make better decisions.
2. If people believed climate change were important, then they would make better decisions.



# What are the smaller or less common assumptions we make about climate change education?

1. If people felt like they could make a difference, then they would try
2. If people felt like they could influence larger systems (e.g. policy systems), then they would try

Individual Level Assumptions	Necessary?	Sufficient?
Scientific Knowledge about Climate Change	??	No
Belief that climate change is real and	??	No
Group Level Assumptions		
Collective efficacy for responding to climate change	Yes	??
Political efficacy for responding to climate change	Yes	??



# Participation





# Relevance

## THINK IT'S HOT NOW?

In Philly, 90° days are **projected to increase** from 26 to as many as **40 days per year** by the 2020s due to climate change.

### What is our community doing about it?



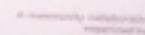
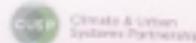
Planting urban farms like this one. Green spaces **cool** their surroundings.

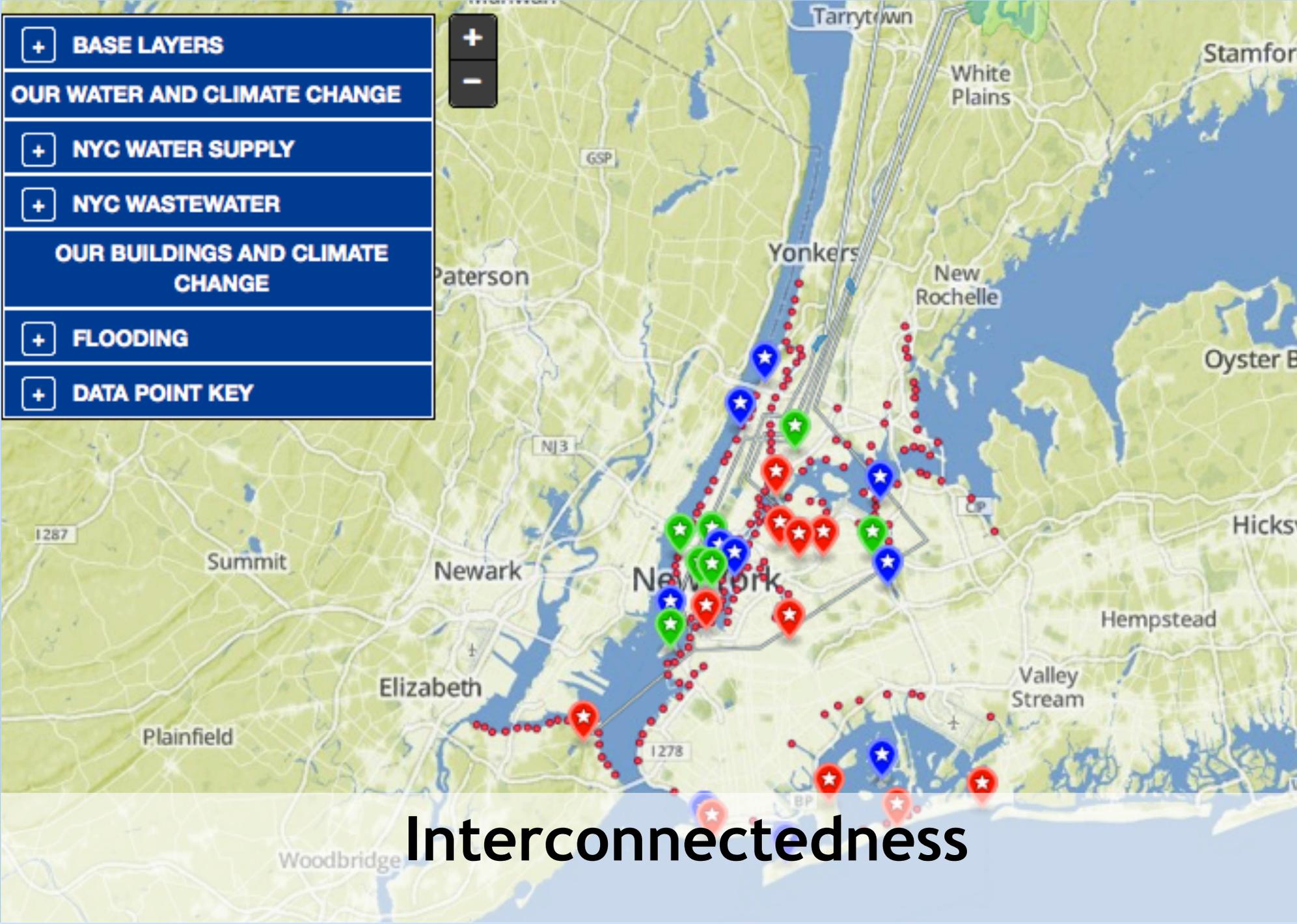
This urban farm was planted by Greensgrow Farms.



JOIN US

[www.PhillyCUSP.org](http://www.PhillyCUSP.org)





**Interconnectedness**



# Putting it all together: Festival Strategy

- ▶ Festivals important in community identity
- ▶ CUSP partner organizations often table at festivals for community outreach, education



- ▶ Short, engaging interactions connect visitor interests, climate-related messages, and work done by partner organizations



# The Festival Challenge



- ▶ Range of conditions: indoor vs. outdoor settings; weather
- ▶ Visits as short as 30 seconds; could be 5 minutes or longer
- ▶ Staff have many roles; e.g. activity facilitator; organizational representative
- ▶ Attention of adults, groups, kids, individuals each can require different hooks.



# Kit Design

- ▶ **Set up:** Easy to carry, set up and maintain during festival - even in wind and rain.
- ▶ **Message:** Clear connections to local, climate and city systems
- ▶ **Materials:** reflect our message, attract visitors to tables
- ▶ **Activity:** As close to self-facilitated as possible
- ▶ **Impacts:** how to capture what people get from experience?



Brainstorm Ideas

Test Simple Prototype

Test New Prototype

Adjust Prototype

What works?  
What doesn't?



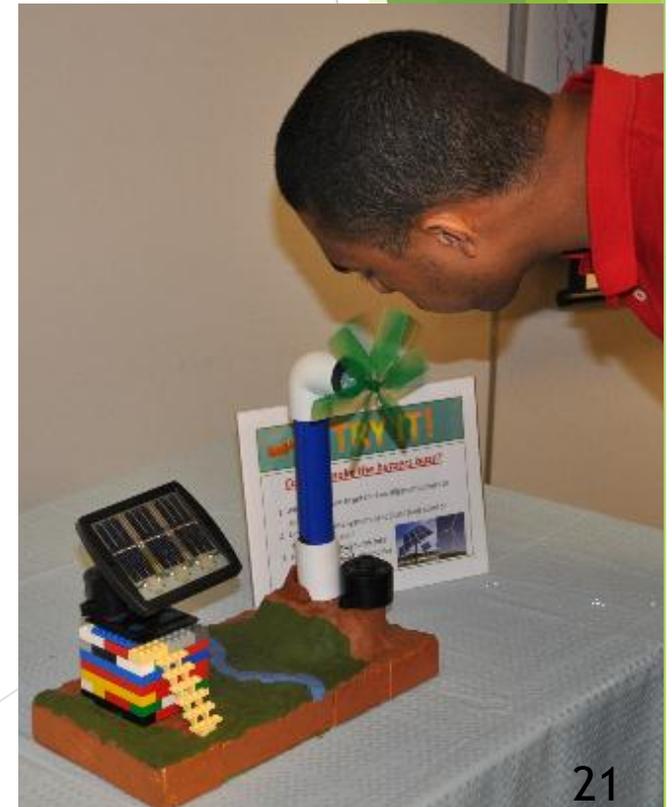
# Extreme Events

- ▶ **Connections:**
  - ▶ **Personal:** Impact of flooding on streets, homes, storm sewers.
  - ▶ **Climate:** Climate change brings more extreme weather events
  - ▶ **City System:** Aging sewer system; mandate to include green infrastructure
- ▶ **Activity:** Visitors place sponges = green infrastructure on paint tray city models and measure difference versus water flowing over impervious surfaces



# Energy Matters!

- ▶ **Connections:**
  - ▶ **Personal:** Utility bill expenses; interest in how electricity is generated
  - ▶ **Climate:** Reducing consumption or switching to alternate energy reduces fossil fuel use
  - ▶ **City System:** Organizations helping guide policy on electricity generation; opportunities to elect renewable sources
- ▶ **Activity:** Visitors turn hand crank generators to feel the difference in consumption between different bulbs; play with solar panels and wind turbines to make buzzers buzz.



# Hidden Cost Café

- ▶ **Connections:**
  - ▶ **Personal:** Interest in food, dining
  - ▶ **Climate:** There's a hidden greenhouse gas cost of growing, producing, and transporting food
  - ▶ **City System:** Community efforts to regionally and/or sustainably source food
- ▶ **Activity:** Visitors choose meals from a school lunch line and weigh their options to see the hidden carbon cost of their meal



# Galloping Gastropods!

- ▶ **Connections:**
  - ▶ **Personal:** Interest in urban wildlife
  - ▶ **Climate:** Climate change poses challenges to local biodiversity, potentially reducing urban resilience
  - ▶ **City System:** Parks and other green spaces act as buffers, providing habitat to help maintain urban biodiversity
- ▶ **Activity:** Visitors are the game pieces (snails) on a giant board, facing climate challenges as they all try to safely reach the other side.



# Salamander Snack

## ► **Connections:**

- **Personal:** Interest in urban wildlife
- **Climate:** Salamanders are an important part of the carbon cycle, eating insects that release carbon by consuming fallen leaves
- **City System:** Parks and other green spaces act as buffers, providing habitat to help maintain urban biodiversity

- **Activity:** Magnetic salamanders “eat” shredding insects from amongst leaves – the more insects that are eaten, the more carbon that will be stored in the soil.



# Can you beat the heat and slow the flow?



## ► Messages:

- **Personal:** Familiarity with expenses, insulation concerns of roofing choices
- **Climate:** Climate change brings more extreme rainfall events and more extreme heat days
- **City System:** Organizations helping connect businesses, schools, and others to resources
- **Activity:** Visitors compare external temps, internal temps, and water flow over green, blue, white, and traditional roofing options