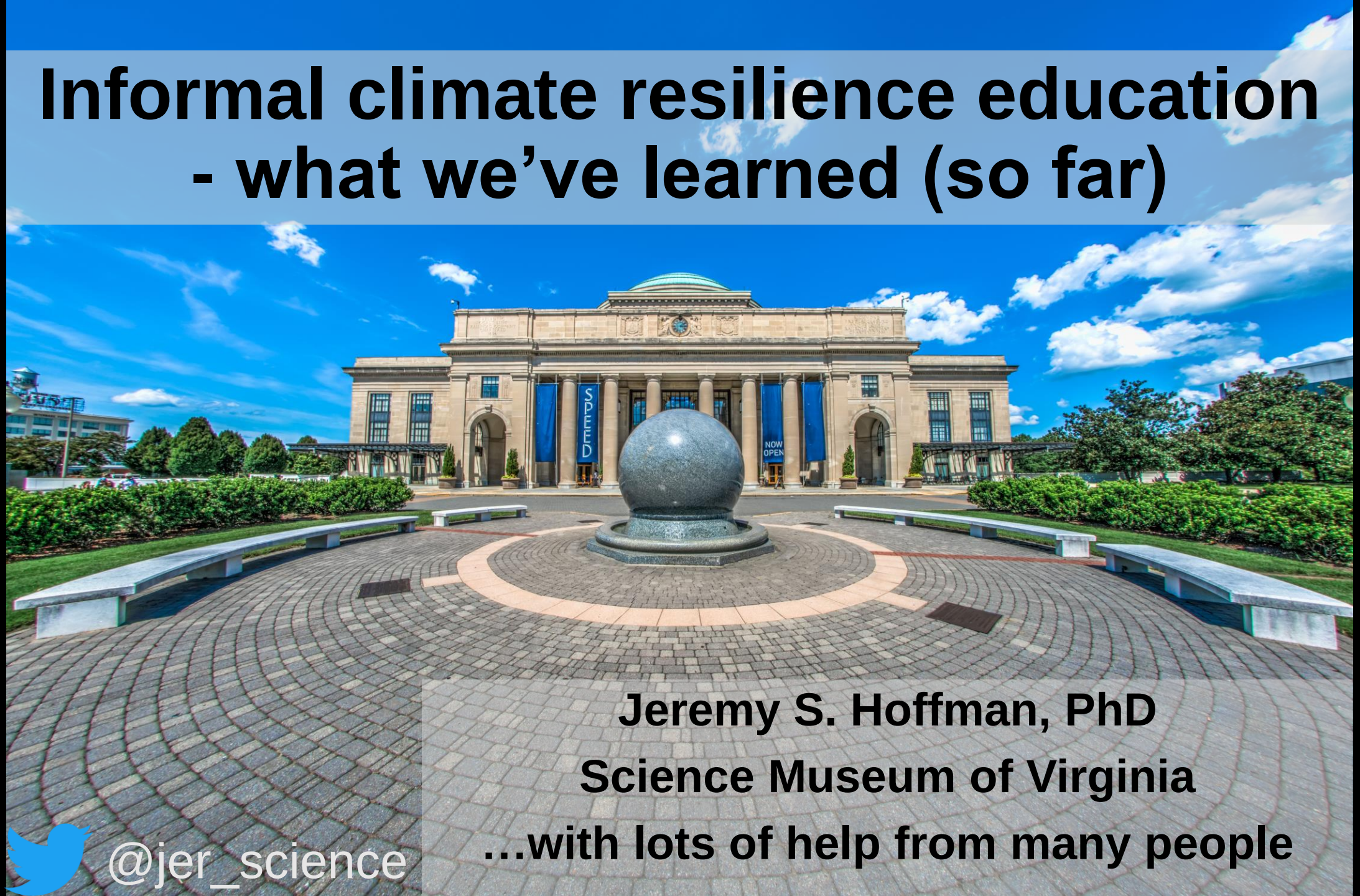
Informal climate resilience education - what we've learned (so far)



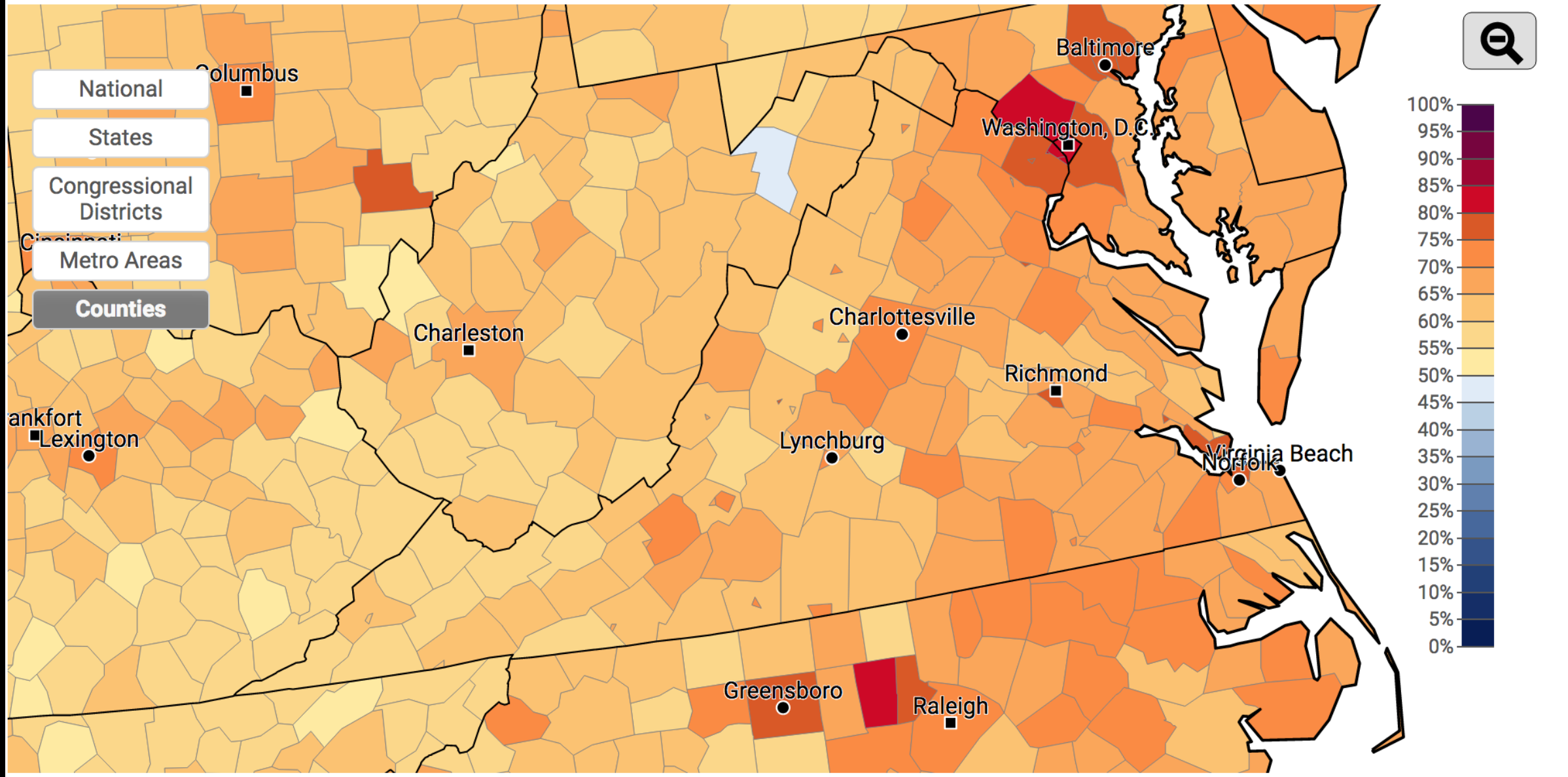
Jeremy S. Hoffman, PhD
Science Museum of Virginia
…with lots of help from many people

@jer_science

Estimated % of adults who think global warming is happening, 2016

Display model output: Global warming is happening | Absolute Value | Permalink

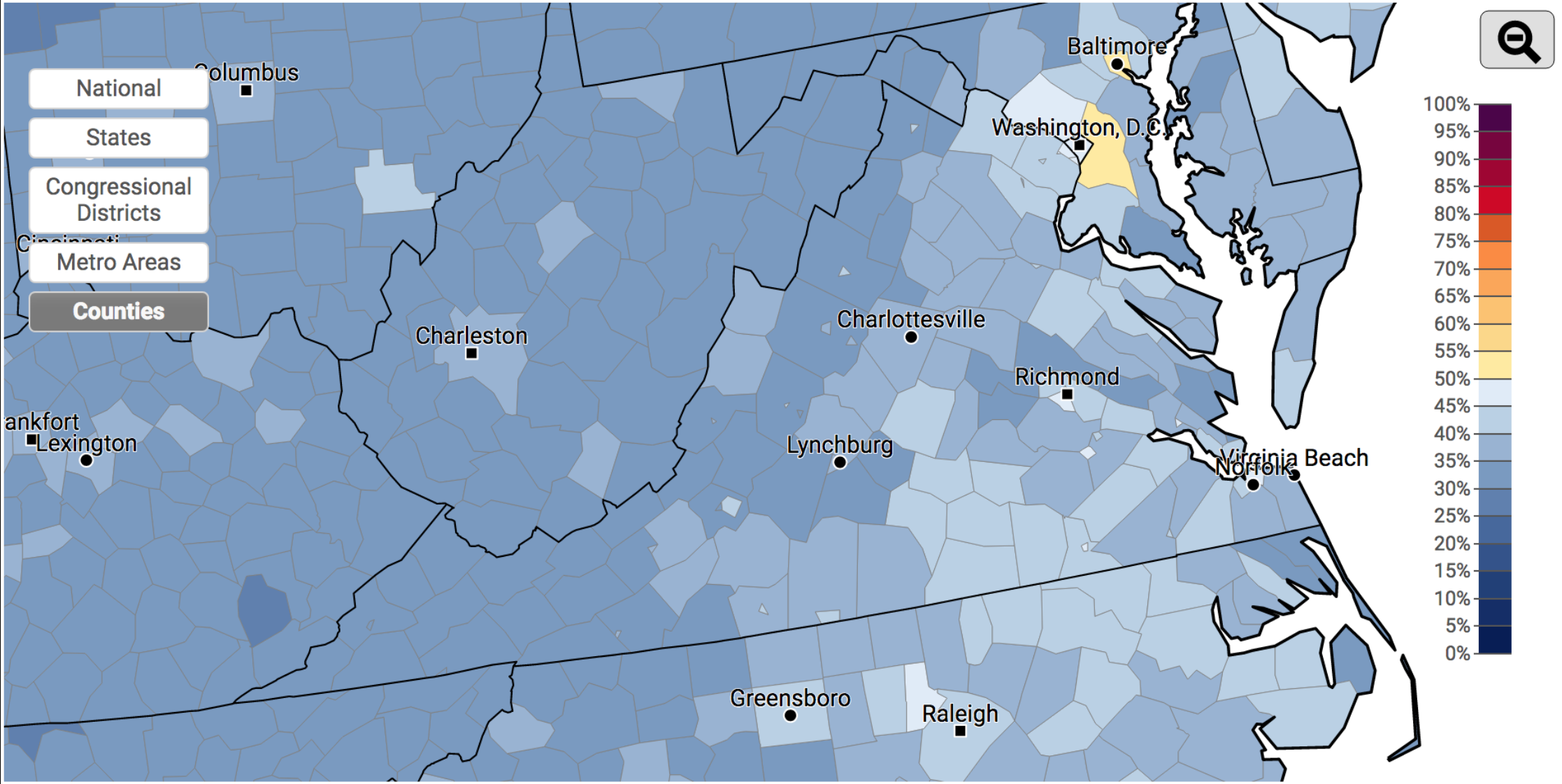
Click on map to select geography, or: Virginia | Select a County



Estimated % of adults who think global warming will harm them personally, 2016

Display model output: Global warming will harm me personally | Absolute Value | Permalink

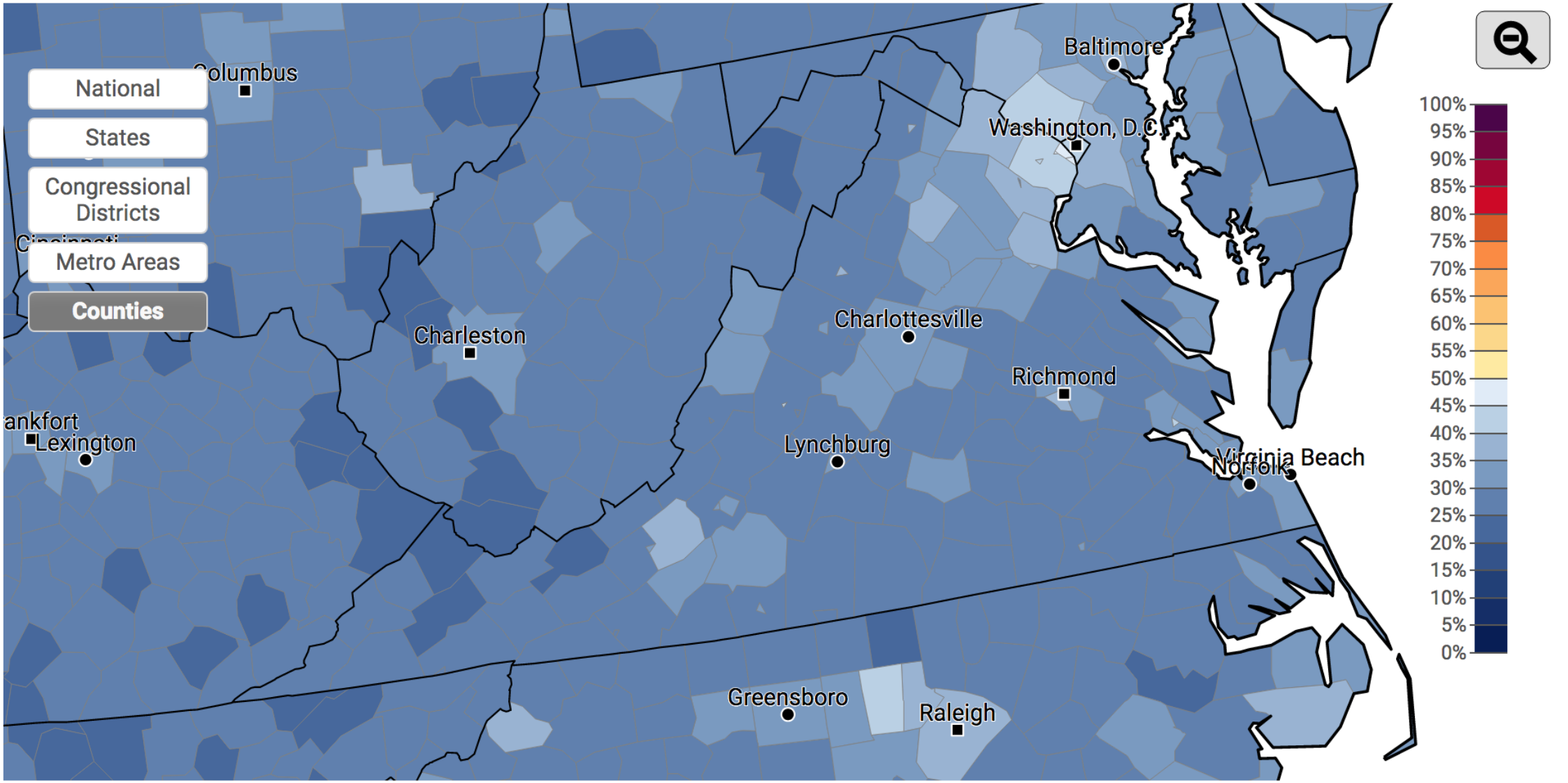
Click on map to select geography, or: Virginia | Select a County



Estimated % of adults who discuss global warming at least occasionally, 2016

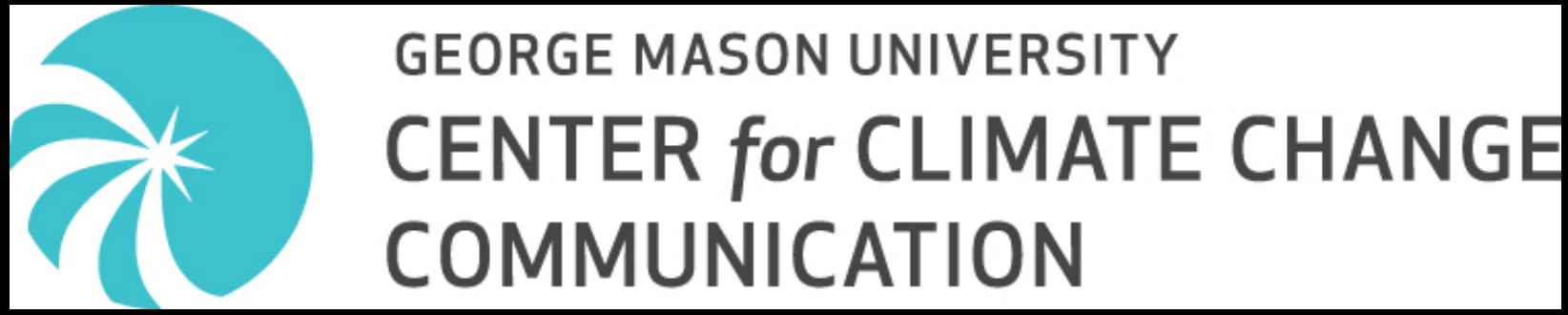
Display model output: Discuss global warming at least occasionally | Absolute Value | Permalink

Click on map to select geography, or: Virginia | Select a County



Underestimation of risk and low preparedness: lacking resilience?


Science Museum of Virginia
ETHYL
THE DOME
STOP


GEORGE MASON UNIVERSITY
CENTER for CLIMATE CHANGE
COMMUNICATION


WCVE
a community idea station


VIMS
WILLIAM & MARY
VIRGINIA INSTITUTE OF MARINE SCIENCE

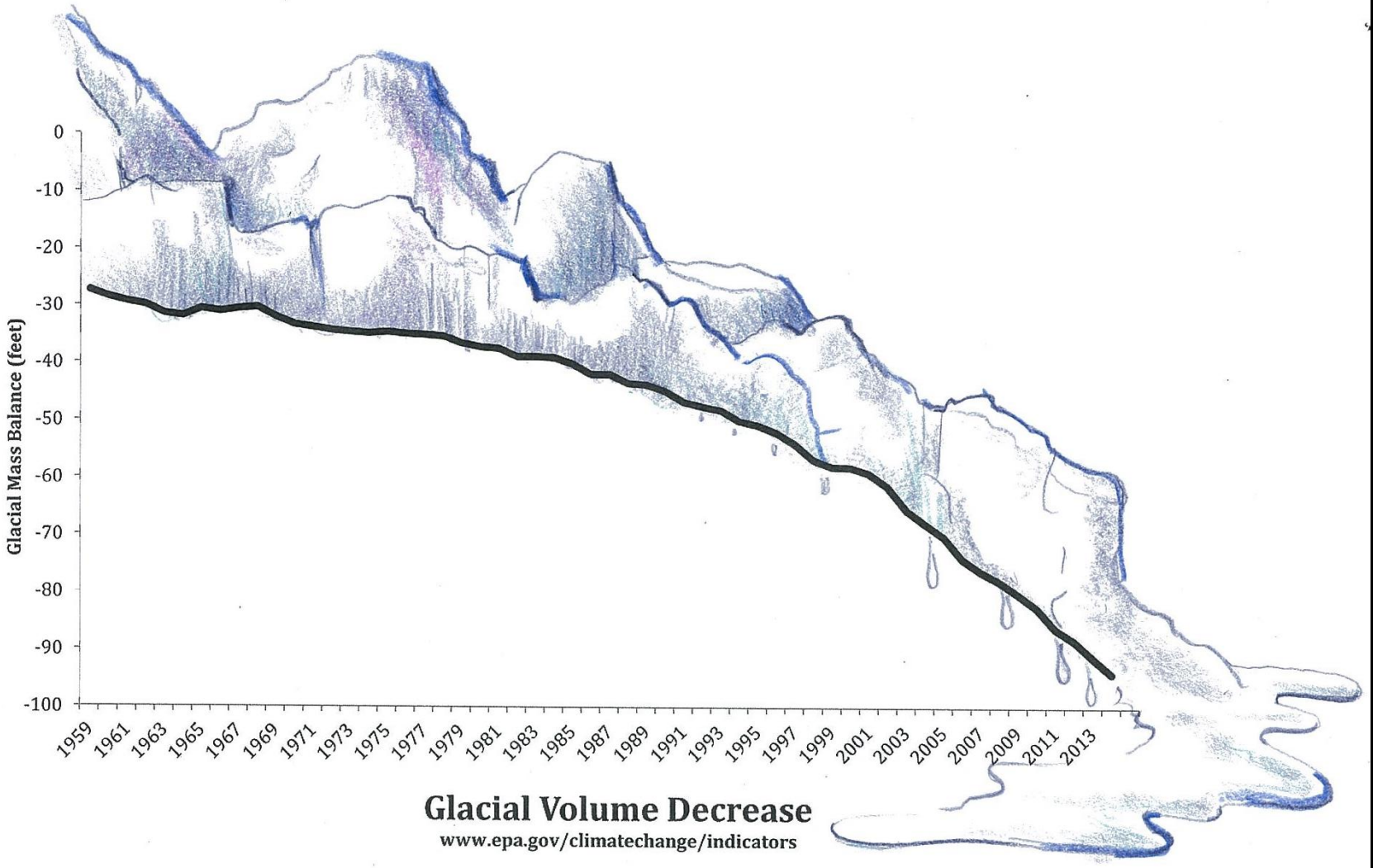

RESILIENT
VIRGINIA


RK&a


THAT
NEWS
CHANNEL
TROUBLE
IN
PARADISE
ATWAVE GRIPS ARCTIC: GLOBAL WARMING OR POLAR BEAR ACTI


HEAT


STAFF



Glacial Volume Decrease

www.epa.gov/climatechange/indicators

Causes: Increased air and ocean temperatures

Effects: Arctic habitat loss, ocean level rise, changes in ocean water chemistry, and changes in ocean circulation

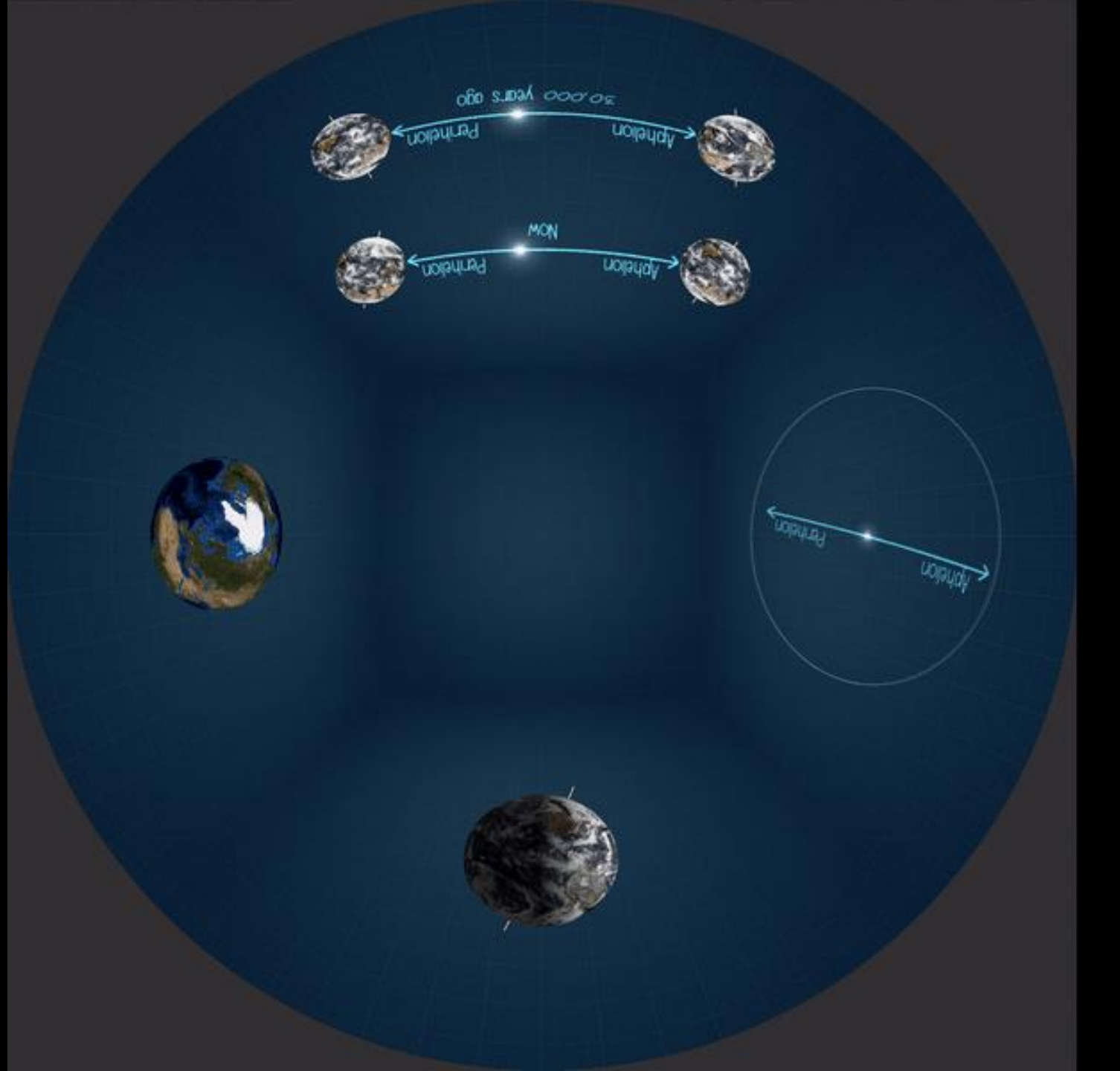
WWW.SMV.ORG NOAA AWARD #NA15SEC008009

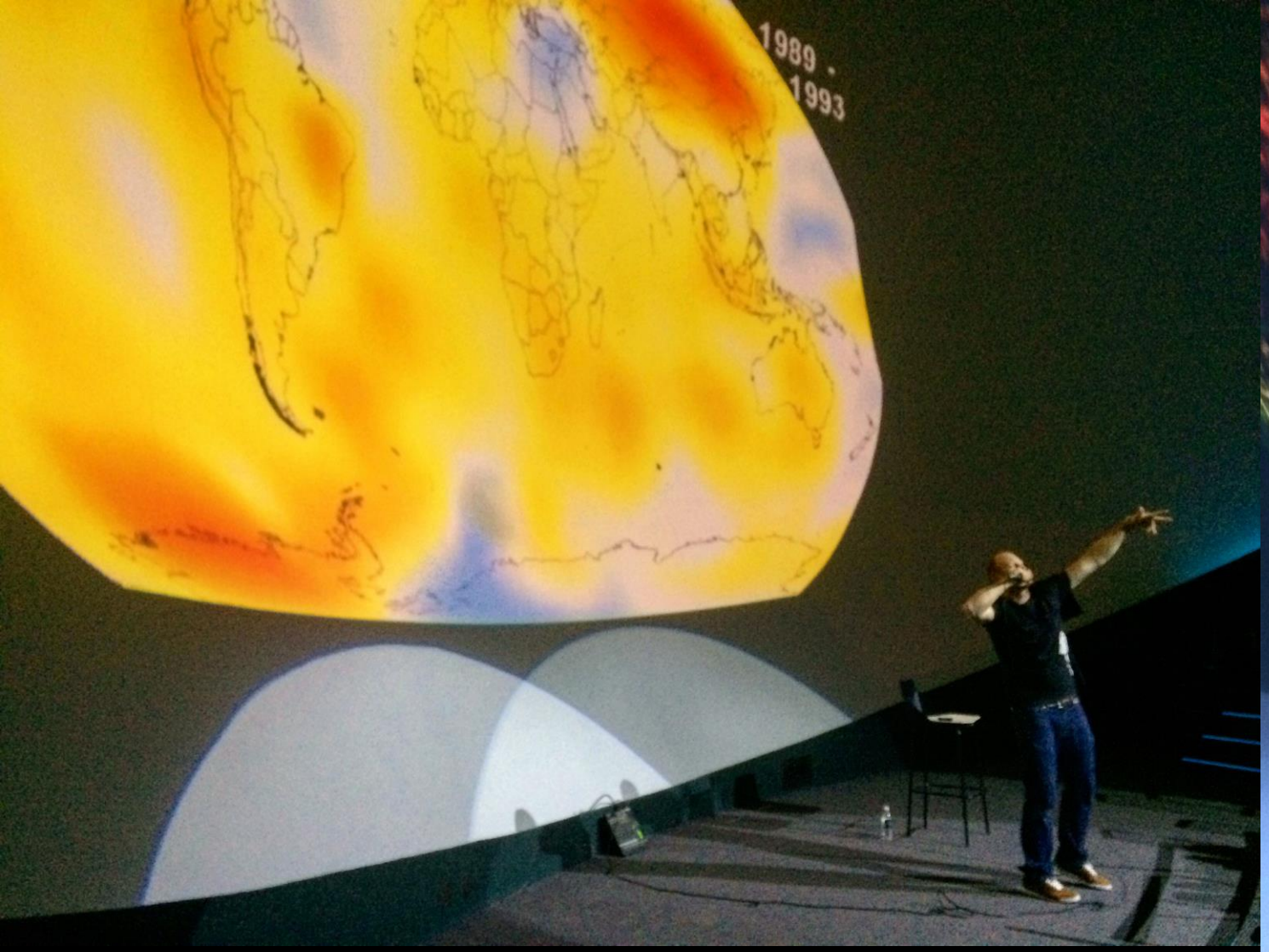
First Name: _____ Age: _____

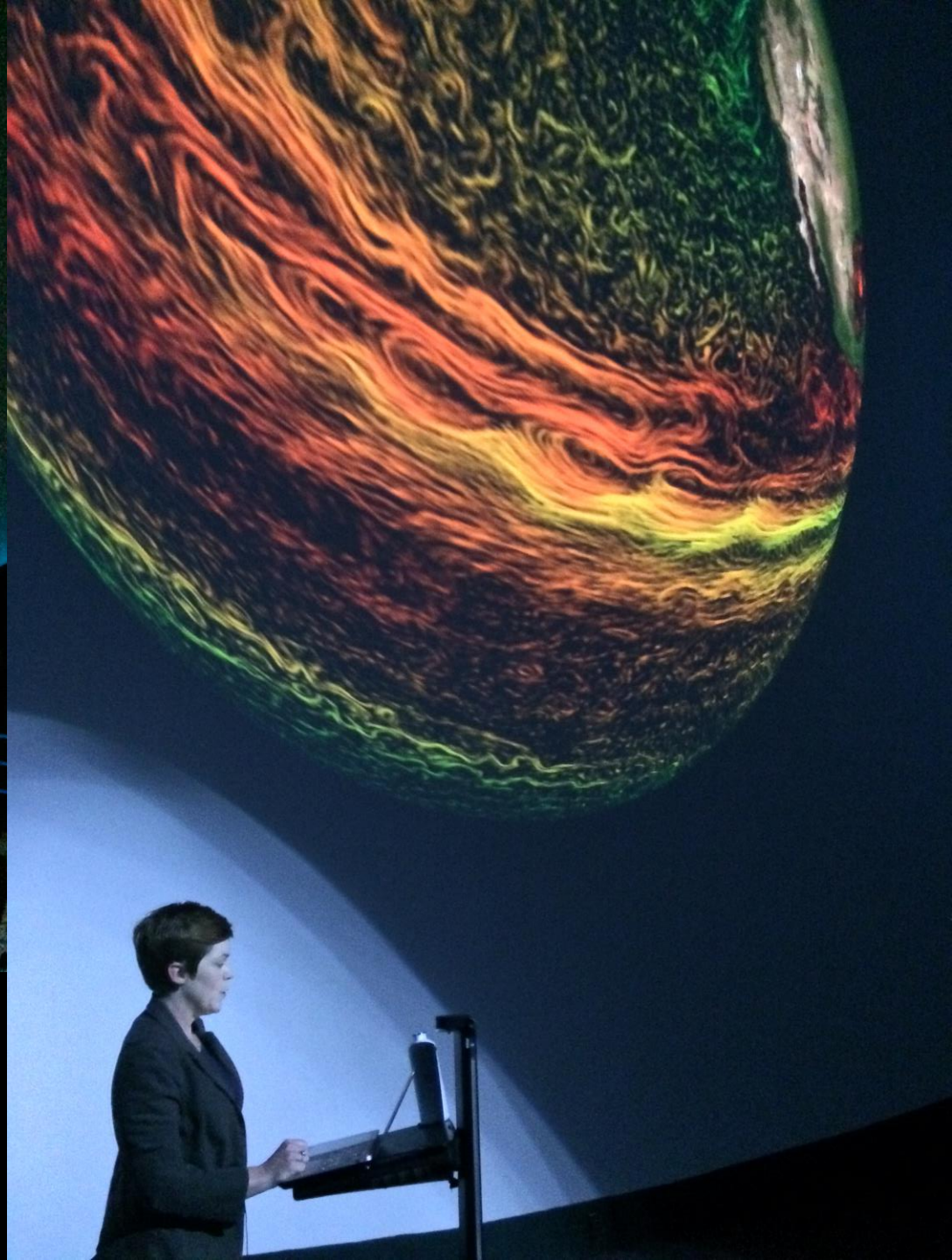
http://3d.chordsrt.com/instruments/18


CUSP
Climate & Urban
Systems Partnership
I
SCIENCE

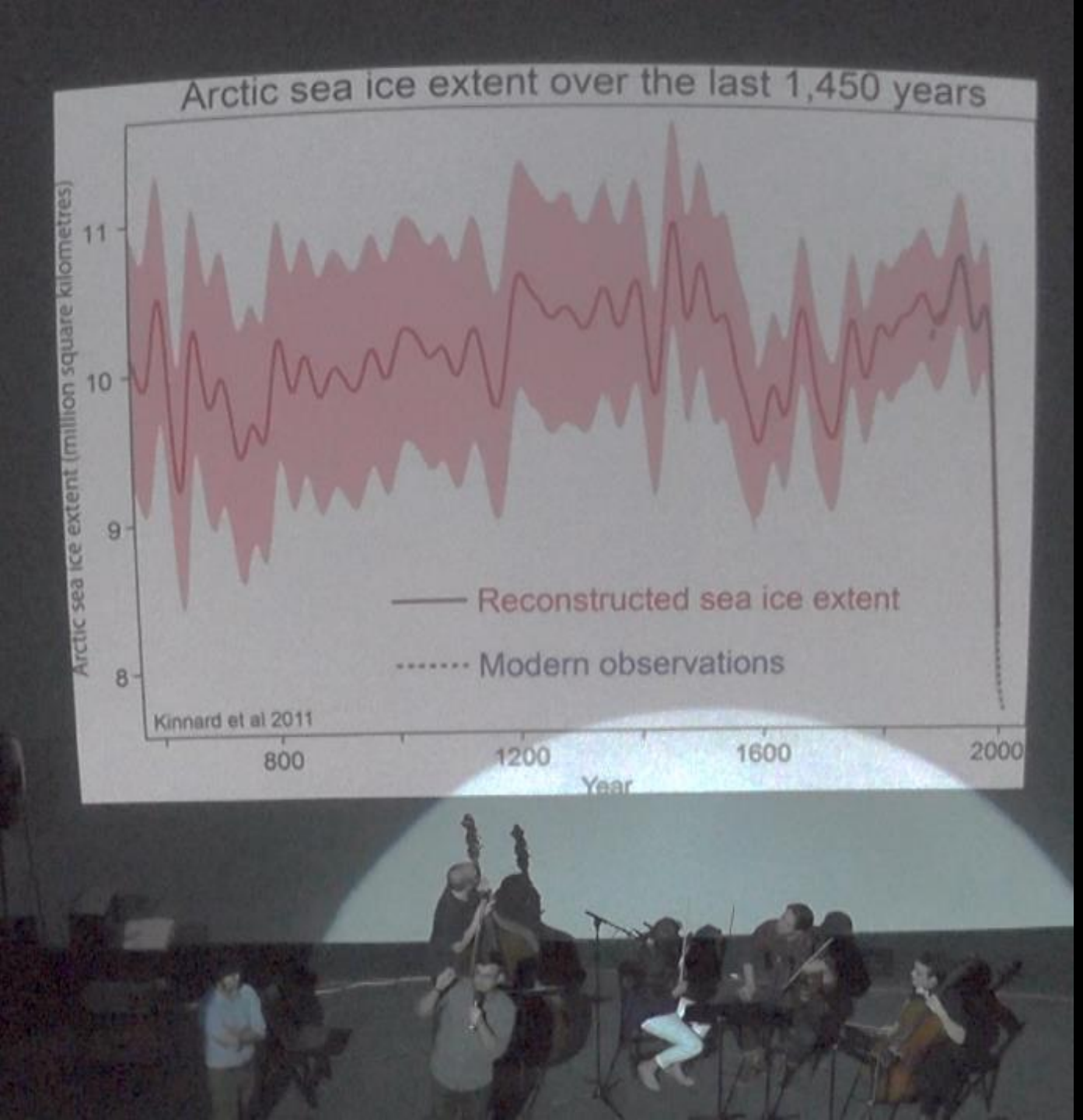
Cosmic Climate Cookbook







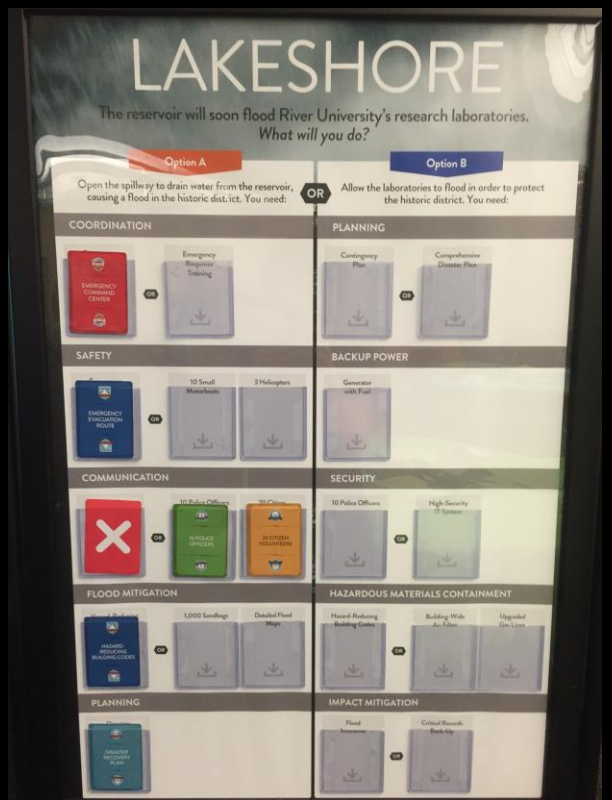
150+ attendance each week!

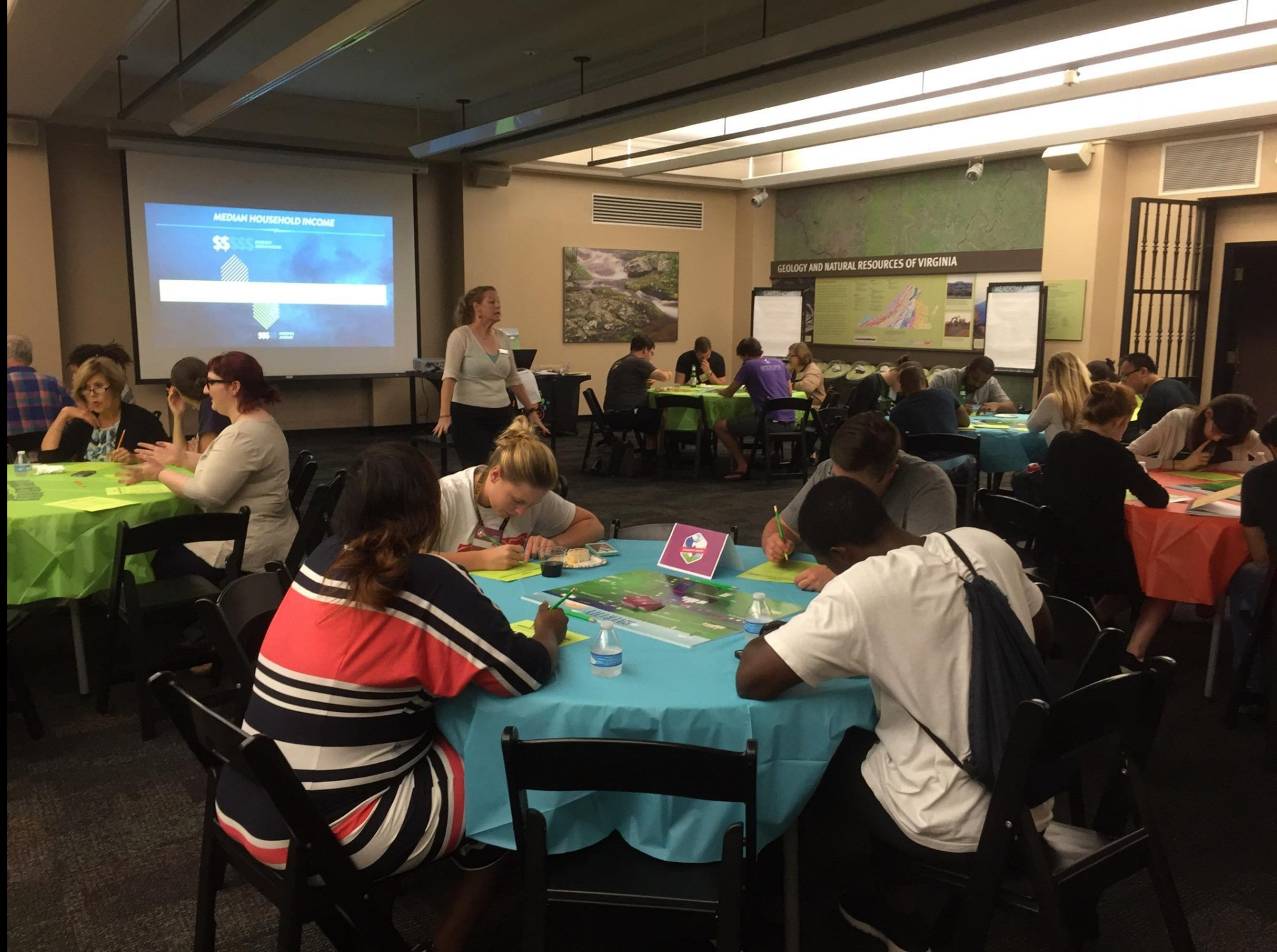


Creative Change

Art, Music, and Climate Science

Earth Day 2018


LAKESHORE
The reservoir will soon flood River University's research laboratories.
What will you do?
Option A
Open the spillway to drain water from the reservoir, causing a flood in the historic district. You need:
OR
Option B
Allow the laboratories to flood in order to protect the historic district. You need:
COORDINATION
PLANNING
SAFETY
BACKUP POWER
COMMUNICATION
SECURITY
FLOOD MITIGATION
HAZARDOUS MATERIALS CONTAINMENT
PLANNING
IMPACT MITIGATION


MEDIAN HOUSEHOLD INCOME
GEOLOGY AND NATURAL RESOURCES OF VIRGINIA

Your Home:

Cool, Dry and Green

Tuesday, April 3; 6 – 8 pm

Connect with local options for storm water and heat-reducing green infrastructure at your own home.

The workshop is free and includes a shade tree to plant your yard.
Light refreshments and adult beverages will be served.

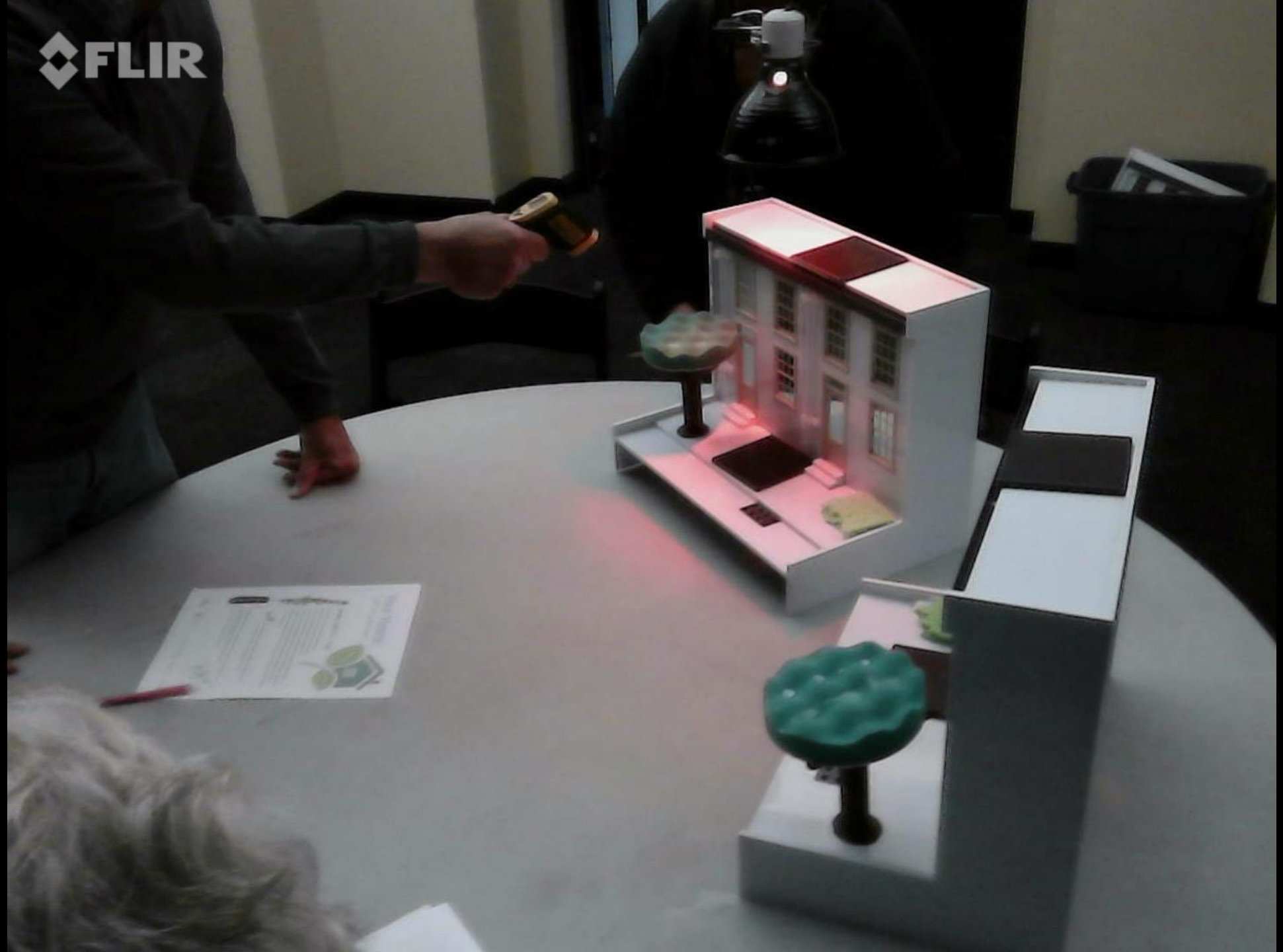
Your Home: Cool, Dry and Green is a free workshop for adults 18+.
Register at smv.org/upcoming-events.
Questions? Contact us at 804.864.1400 or info@smv.org.

Science Museum of Virginia

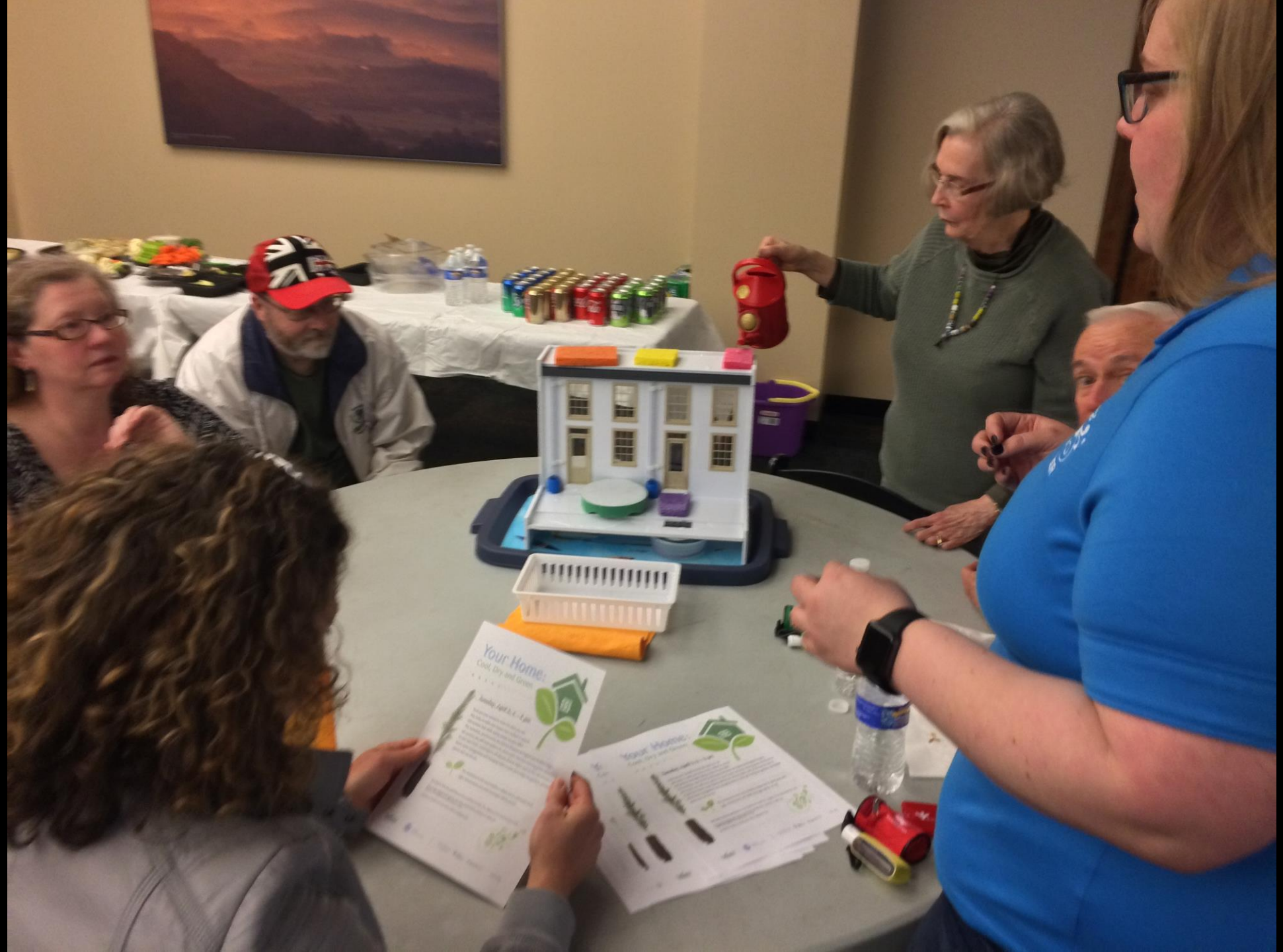
RESILIENT VIRGINIA

Award # NA15SEC0080009

Special thanks to our premier partners: Bon Secours Virginia529 smv.org


FLIR


FLIR


Your Home:

PrepareAthon

at the Science Museum of Virginia

Saturday, August 27 • 11 am – 4 pm

Prepare yourself for extreme events during **PrepareAthon**, a free community event on **August 27**. Uncover life-saving information to protect your family during an emergency and learn more about resiliency.

~2400 guests

>30 NGO/GOs

PrepareAthon

VA-04 Congressman A. Donald McEachin

at the Science Museum of Virginia

Saturday, August 27 • 11 am – 4 pm

Prepare yourself for extreme events during **PrepareAthon**, a free community event on **August 27**. Uncover life-saving information to protect your family during an emergency and learn more about resiliency.

Planet Earth is changing.

Our 4.5 billion-year-old home is seeing some wear and tear, and some factors are causing Earth to change faster than others. But what "home repairs" can we make to help improve things?

The Museum is digging into this question and has created special, climate-focused programming to help students understand the science behind our changing climate. We've created labs, demonstrations and even our first original Dome feature.

You'll see these programs peppered in throughout our grade-level-specific field trips. But we'd be happy to create an all-climate field trip with you. Just say the word!

Cosmic Climate Cookbook

Energy, an atmosphere and liquid water are critical ingredients for supporting life on a planet. This original Dome feature explores the cosmic recipe for planetary habitability, what life here on Earth can tell us about our Universe and how our planet is changing from the cosmic perspective.

Science on a Sphere® Demonstrations

Weather vs. Climate
What is the difference between weather and climate? See how heat is distributed around the planet, and learn about hurricanes, typhoons and cyclones.

Climate Resiliency
What can we do as individuals and communities to be resilient as the climate continues to change? A gallery educator will guide your students in a data-driven, deep dive into the science of climate change and community resiliency.

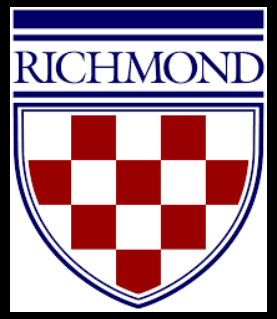
Hands-on Labs

Renewable Resources
What are renewable and non-renewable resources? Students will investigate the pros and cons of each as they design and construct their own eco-friendly creation.

Preparing for a Hotter and Wetter Virginia
Extreme heat and rain events are already becoming more common here in Virginia. How can we leverage design, engineering and natural landscapes to make our houses more resilient to these changes? Students will learn actionable steps they can take at home to become more resilient today.

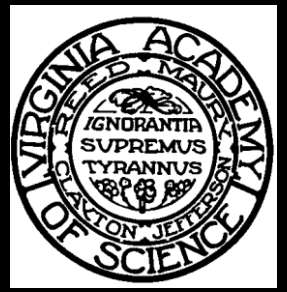
Now – the future!

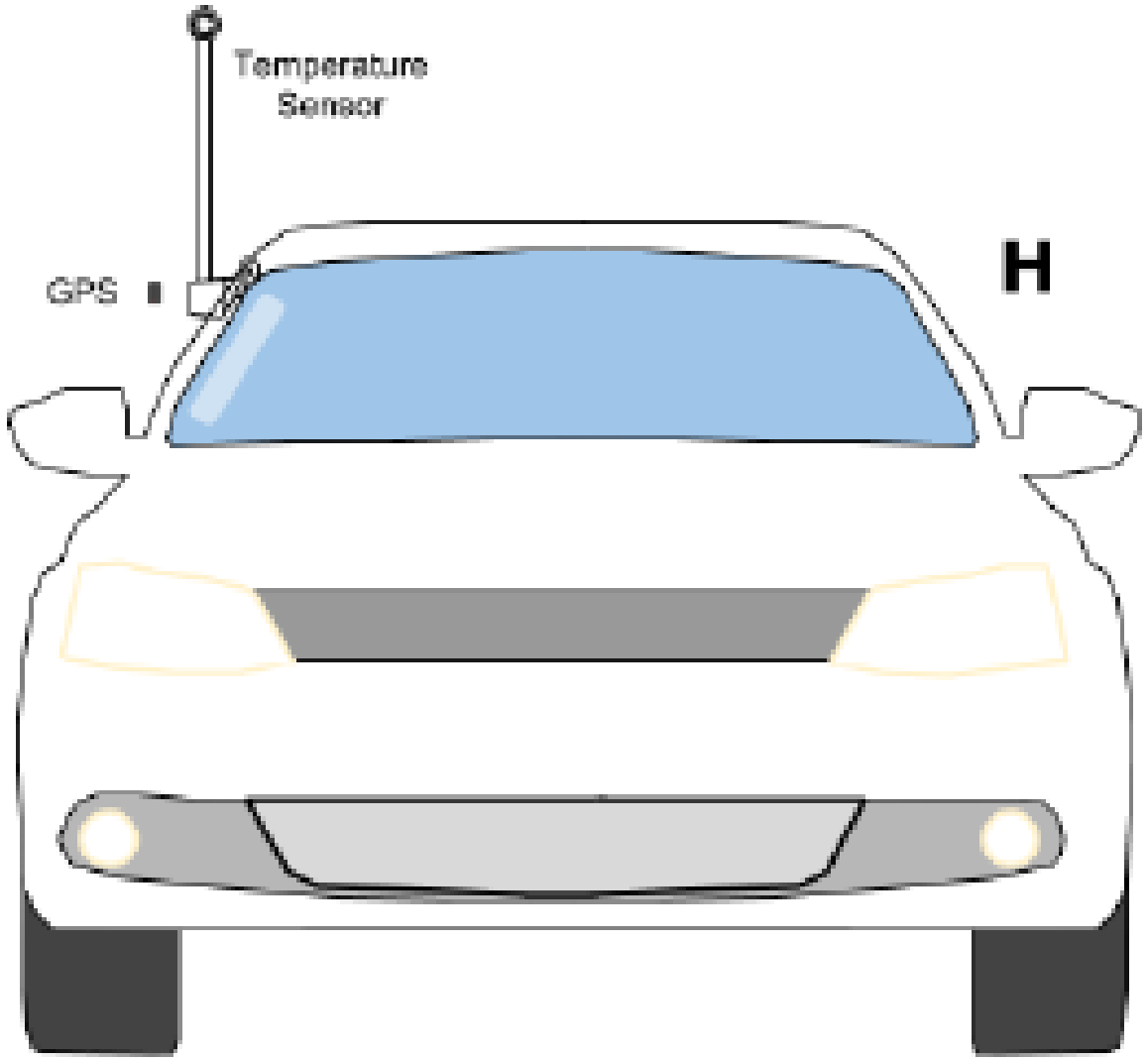
RICHMOND URBAN HEAT ISLAND CONSORTIUM



VCU

Richmond Times-Dispatch

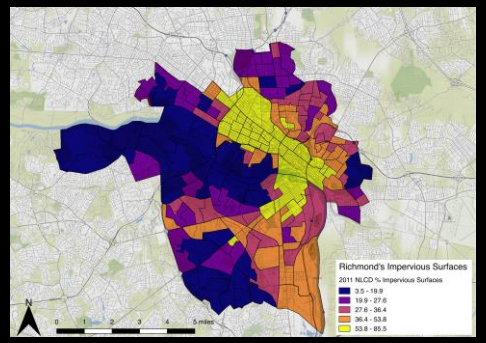




Jackson Voelkel, PSU


CODERS

Urban Heat Vulnerability =
Many Impervious Surfaces +
Low Tree Canopy +
High Temperature +
High Poverty



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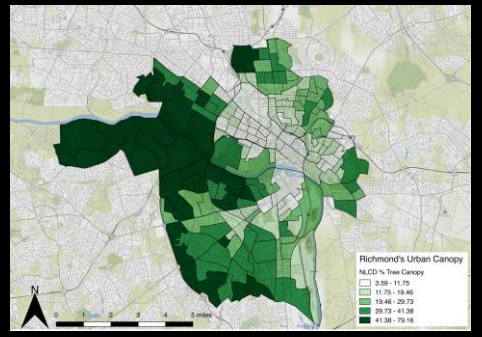

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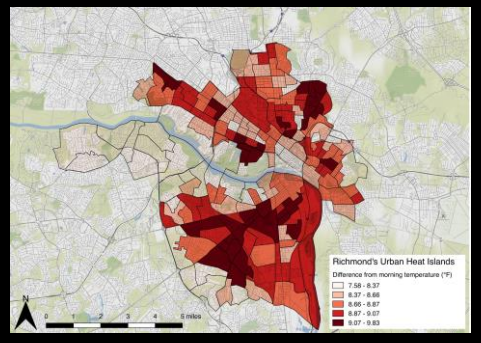

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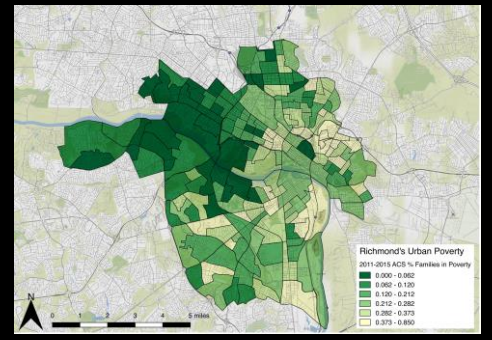

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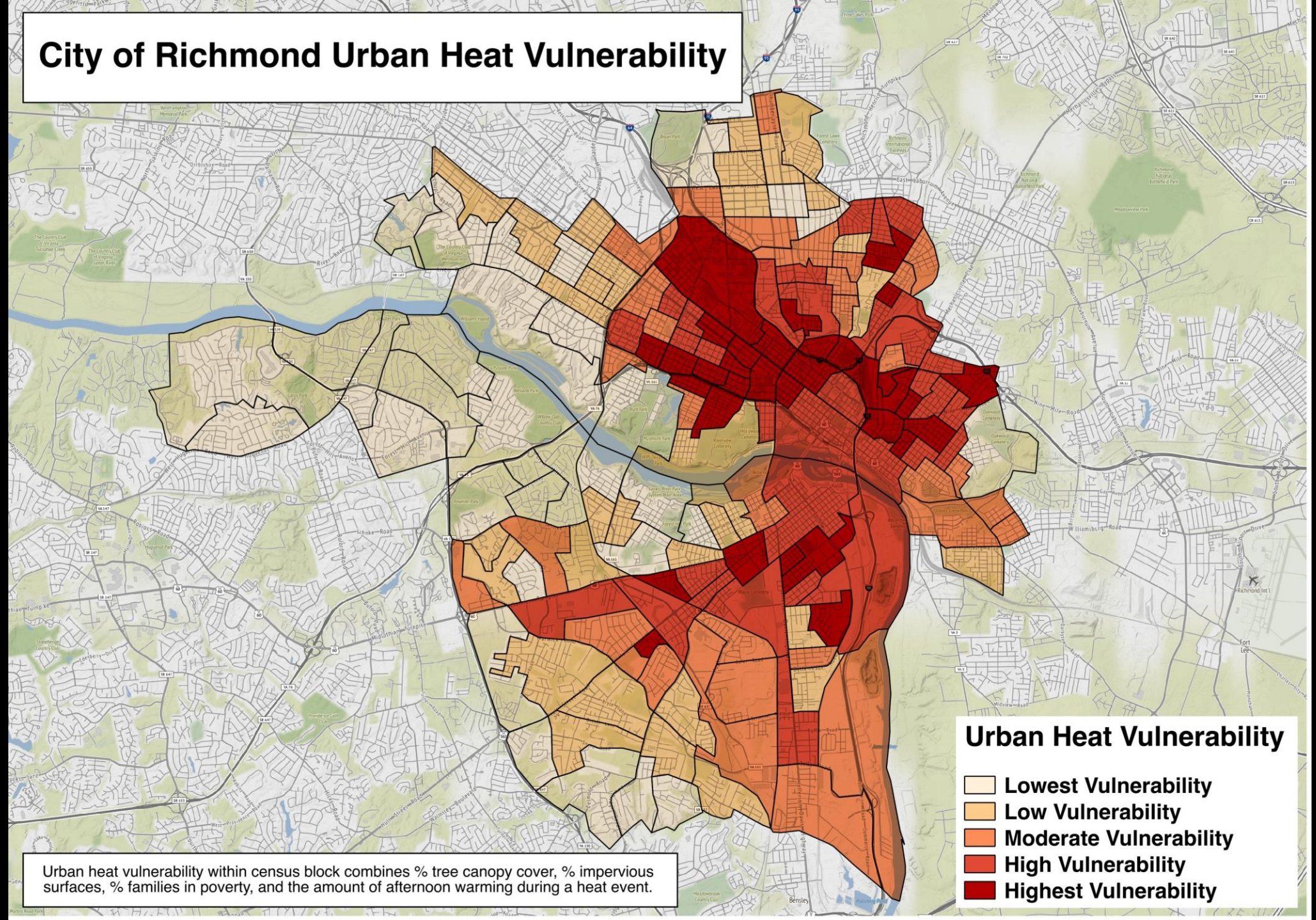
City of Richmond Urban Heat Vulnerability



Urban heat vulnerability within census block combines % tree canopy cover, % impervious surfaces, % families in poverty, and the amount of afternoon warming during a heat event.


FLIR

“Throwing Shade in RVA”

- https://toolkit.climate.gov/case-studies/where-do-we-need-shade-mapping-urban-heat-islands-richmond-virginia

Students use model homes to investigate differential heating in various surfaces.

Next up: WeatherCubes in RVA

Thanks!