

Please make sure you have a Sharpie and a stack of Post-its.

# Healthy Housing Coalition Rapid Presentations

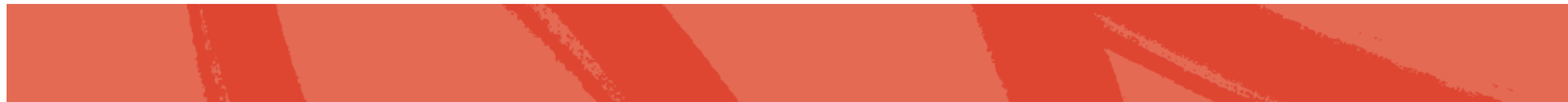
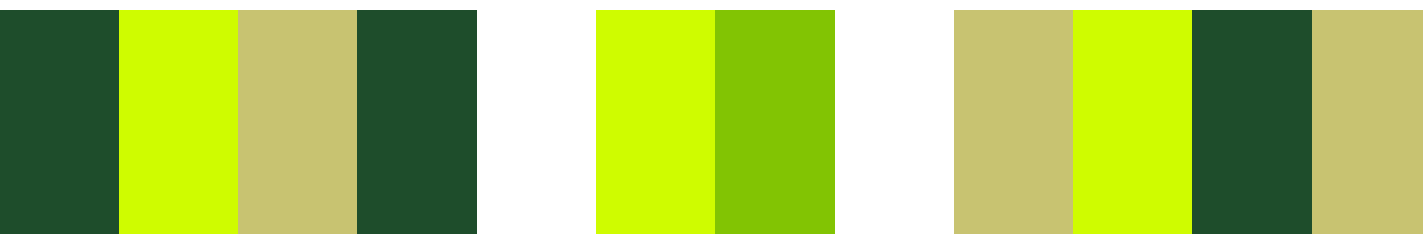
August 28, 2024

Powerhouse Energy Campus, Fort Collins Colorado



# After this, you'll have time to...

- Share what you're seeking and what you can offer
- Identify topics for (short) breakout groups



# Christa Timmerman

Colorado State University Extension

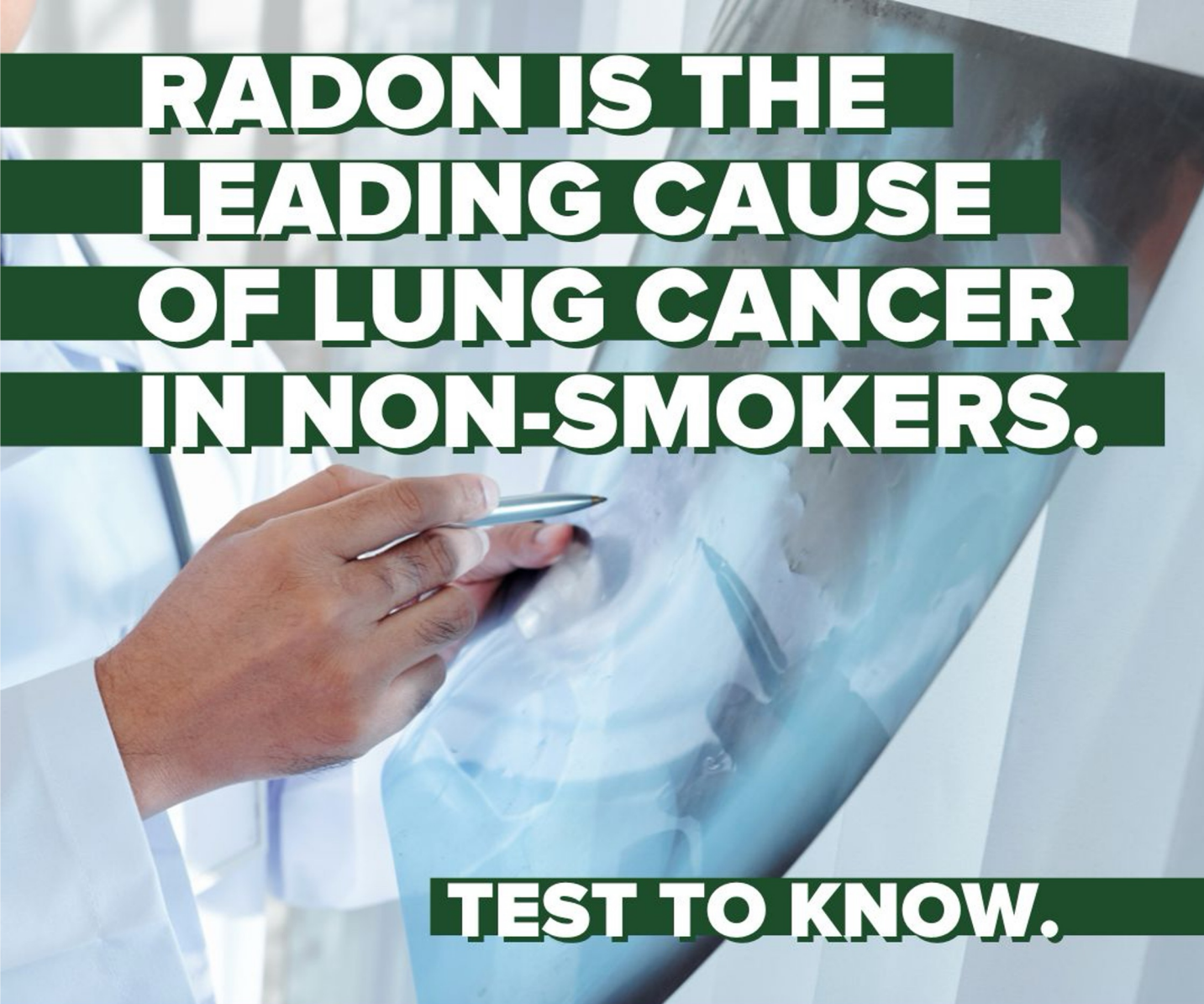
Next: Tracey Maruyama

# Larimer County “Test to Know” Campaign 2024

- Social media buy with Instagram, Facebook, and Next Door App
- Populations Served: rural and unincorporated Larimer County, Spanish speaking community
- Hosted two educational workshops
- 420 test kits distributed through online ordering with Alpha Energy Labs



**RADON IS THE LEADING CAUSE OF LUNG CANCER IN NON-SMOKERS.**



**TEST TO KNOW.**

**RADON LEVELS CAN VARY GREATLY FROM HOUSE TO HOUSE**



**TEST TO KNOW.**



**REMINDER!**

Re-test your home for radon every two years during the winter months



**TEST TO KNOW.**

**RADON IS COMMON IN LARIMER COUNTY**

Your home may be exposed to harmful radioactive gas. Free and easy radon tests are available.



**PROTECT YOUR FAMILY. TEST TO KNOW.**



## Lessons Learned

1. Partnerships are key
2. Rural communities like online options
3. Social media is a good channel for education

# Tracey Maruyama

American Lung Association

Next: Cisco Aguilar

# ONE Step Colorado

## Secondhand Smoke and Asthma Training



The **ONE Step** training prepares Early Childhood Educators (ECE), health agency/department staff, and organizations serving parents/caregivers to have health-focused conversations with parents/caregivers about:

- secondhand smoke, thirdhand smoke, and vaping devices.
- the health impact of exposure to secondhand smoke/aerosol and thirdhand smoke on children and infants.
- taking proactive steps to protect children from exposure to secondhand and thirdhand smoke.
- tobacco cessation resources and support.
- basic information about asthma and how to manage it.

- **Radon**

# Indoor Radon Grant

# Awareness, Testing, and Mitigation



## Learning About Radon and How to Save Lives

The American Lung Association's Radon Basics program features a free one-hour interactive online learning program designed to help you learn more about radon, a radioactive cancer-causing gas commonly found indoors at dangerous levels.

Radon Basics is ideal for:

- Anyone who wants to learn more about radon and its lung cancer risk
- Home buyers and sellers; landlords and tenants
- Real estate professionals and home inspectors
- Employers concerned about workplace safety and health
- Healthcare professionals
- Community health workers
- Environmental health educators
- Anyone who wants to learn about testing for and fixing radon problems

1-800-LUNGUSA | Lung.org/radon-basics



- Social Media Campaign
- Residents
- Schools
- Daycares
- Real Estate Associations, Brokerages
- Medical Community – Radon Healthcare Forum
- Provide Test Kits





# Cisco Aguilar

Children's Hospital Colorado

Next: Jill Bednarek & Raija McIntyre

# Just Keep Breathing Program

Objective of the Project: Our mission is to extend personalized asthma education into the home and practical life of the high risk asthma population. The goal was to address social determinates of health, achieve asthma control and decrease hospital admissions and revisits in general.

Counties Served: Adams, Arapahoe, Boulder, Broomfield, Denver, El Paso, Jefferson, Weld

Primary/ Priority Populations: High Risk Pediatric Asthma Patients Ages 2-17 Years old.

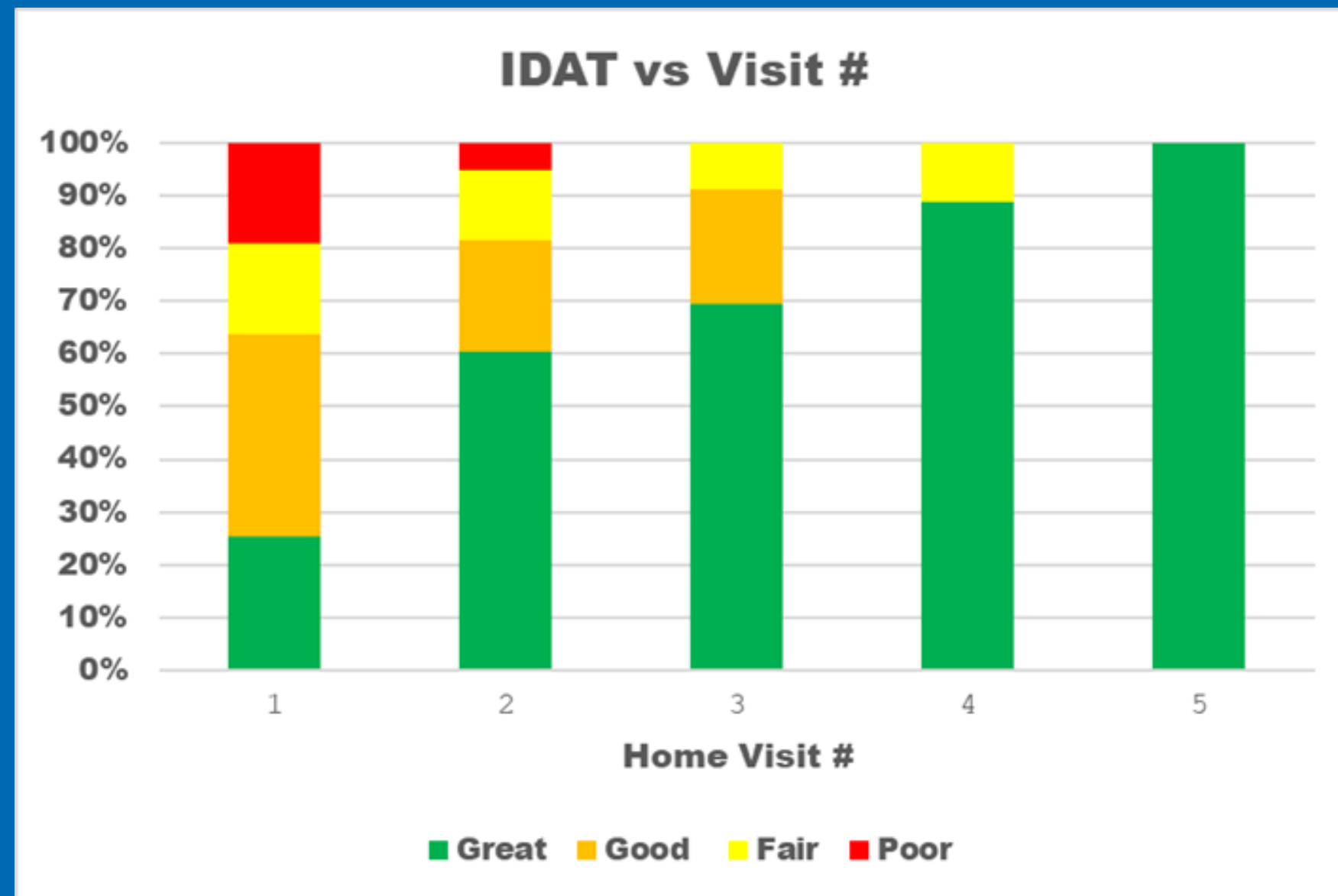
Enrolled 2023-2024: n=84

Demographic	Percentage
Sex	<ul style="list-style-type: none"><li>• Female (37%)</li><li>• Male (63%)</li></ul>
Ethnicity	<ul style="list-style-type: none"><li>• Hispanic or Latino (62.1%)</li><li>• Not Hispanic (37.4%)</li></ul>
Race	<ul style="list-style-type: none"><li>• White (48.1%)</li><li>• Other (22.6%)</li><li>• Black/African American (20.9%)</li><li>• Other (8.4%)</li></ul>
Medicaid	<ul style="list-style-type: none"><li>• Medicaid (75.3%)</li><li>• Other (24.7%)</li></ul>
Caregiver Language	<ul style="list-style-type: none"><li>• English (73.6%)</li><li>• Spanish (26.0%)</li></ul>

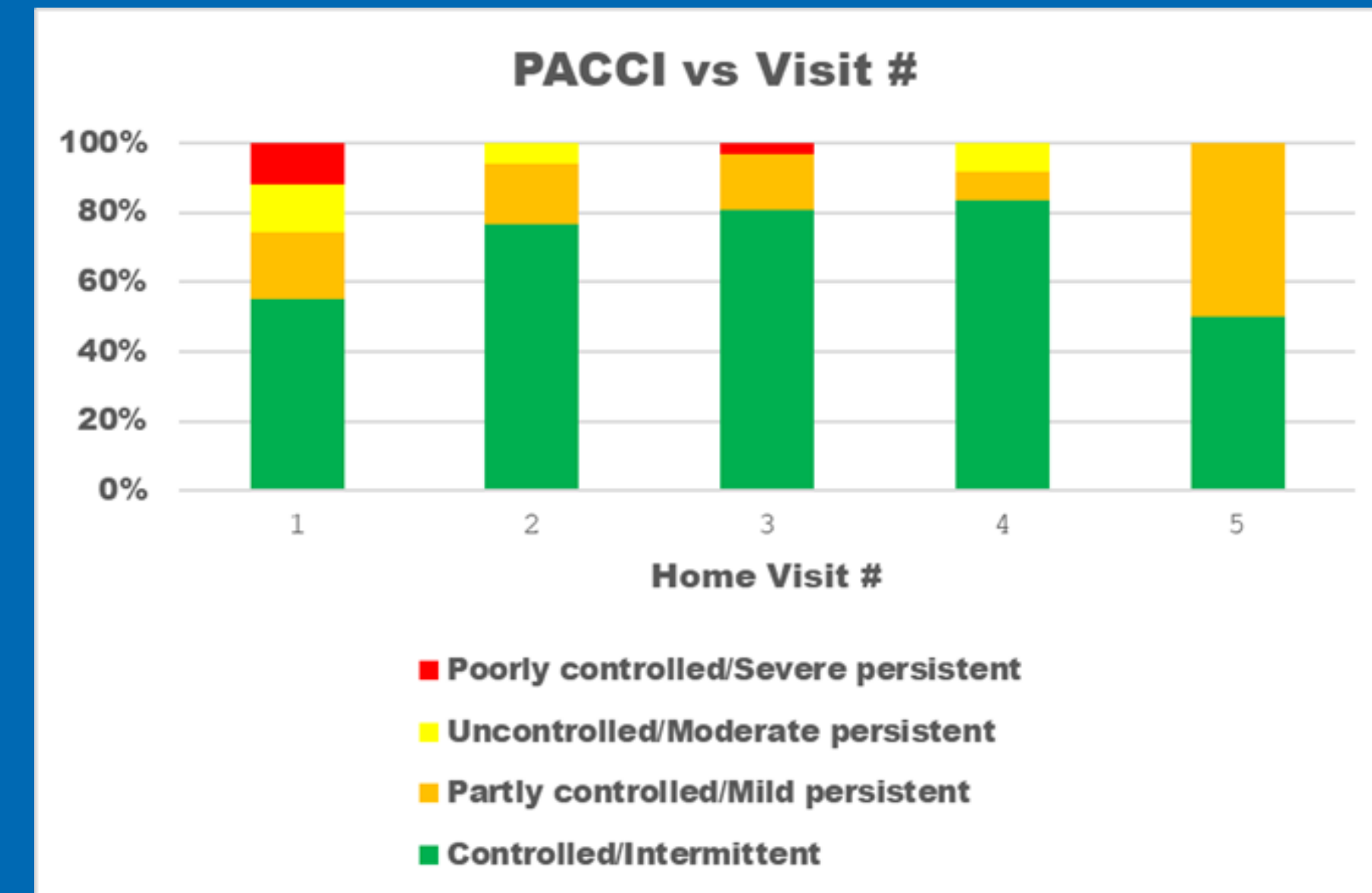


# 2023-24 Project Successes and Highlights

- Program Updates
  - Recruitment Process Expansion
  - Networking and New Partnerships
  - Air Quality and Air Purifier Education
- Sustained improvements in asthma outcomes



N=84



Inhaler Device Assessment Tool checks for technique for inhaler devices. This chart shows improved technique over our visits.

Pediatric Asthma Control and Communication Instrument is used to help assess asthma control. This chart overall shows increased asthma control.

# Jill Bednarek & Raija McIntyre

Colorado Dept. of Public Health and Environment

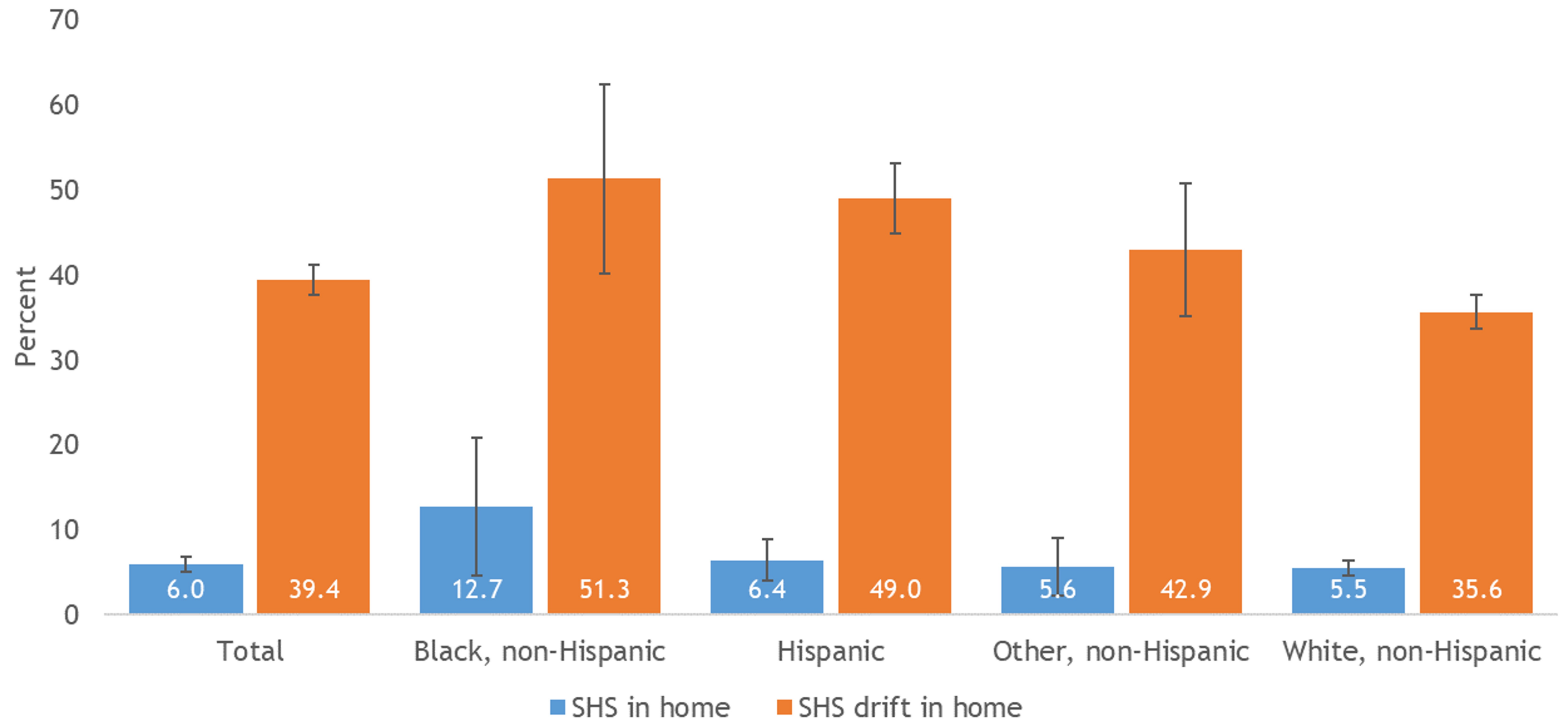
Next: Peggy Sarcomo

# Addressing tobacco and secondhand smoke health disparities through housing policy

Raija McIntyre, Smoke Free Policy Specialist and  
Jill Bednarek, Tobacco Policy Supervisor  
August 28, 2024



# Percent of Colorado adults who experienced any secondhand smoke in the home by Race/Ethnicity, 2020



# Estrella Nolasco & Misti Gonzales

City of Fort Collins

Next: Elicia Ratajzyck



# RENTAL HOUSING PROGRAMS

---

[FCGOV.COM/RENTALHOUSING](https://fcgov.com/rentalhousing)

970-416-2305





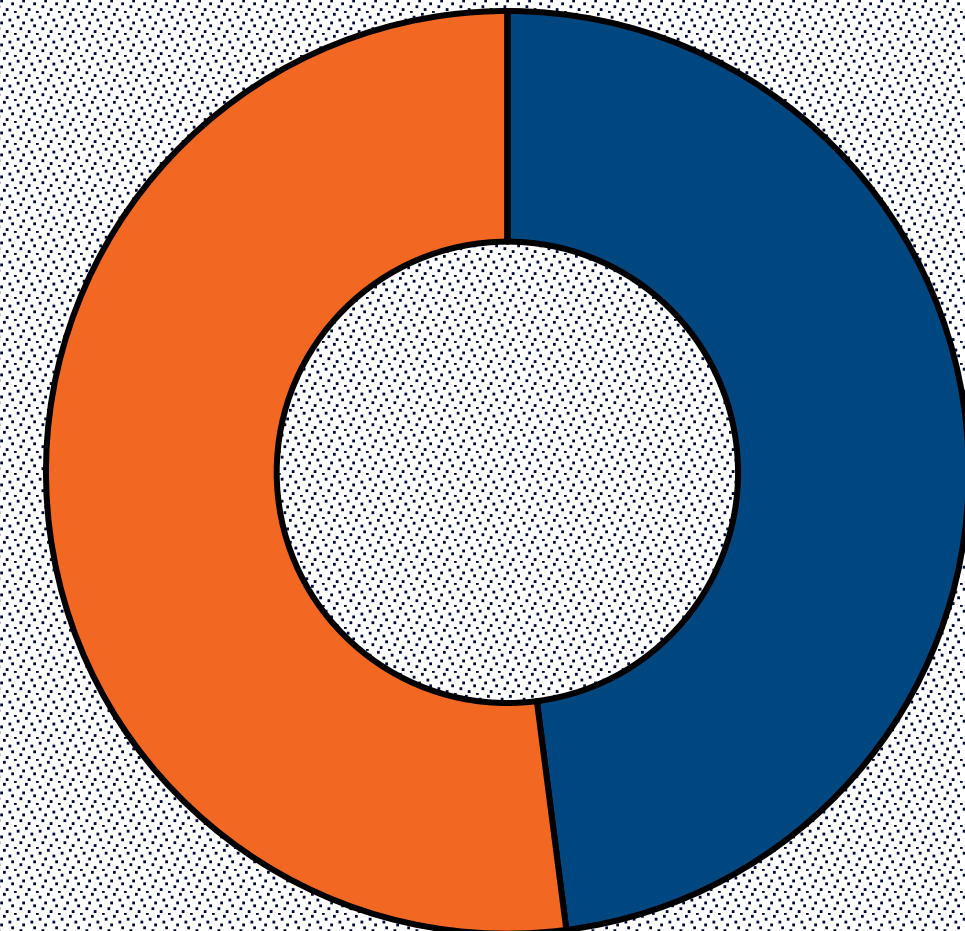
# Rental Registration



The **Rental Registration** program aims to ensure rental properties comply with **health, safety and building codes**, **enhancing renters' safety** and **preserving community standards**.

**Renters and Housing Providers** can **communicate** easily with the City and **access City Programs, Education and Grant Resources**

**Rental Registration Incentives Awarded for Early Registration in 2024.**



48.93% of the households in Fort Collins are Renter Occupied. 51.7 % are owner occupied

## Education and Outreach Initiative

To support Landlords and Tenants with Resources and Education

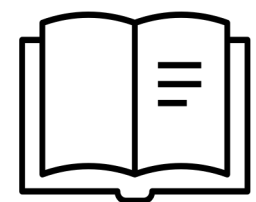
### Key Focus Areas



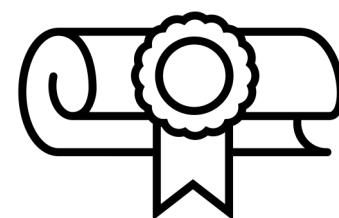
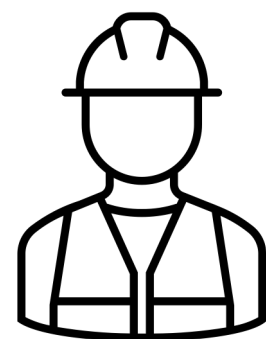
Minimum health and safety standards



Providing safe living environments



Educational opportunities



## Program Highlights

- Comprehensive landlord & tenant education
- Maintenance guidance for both parties
- Registration incentives for properties

## Grant Funding

- \$300K+ in grants already provided to improve rental housing stock and maintain naturally occurring affordable housing

*Areas of Improvement focused on to date:*

- Windows
- Electrical safety
- Decks
- HVAC

# Elicia Ratajzyck

Colorado State University

Next: Luke Montrose

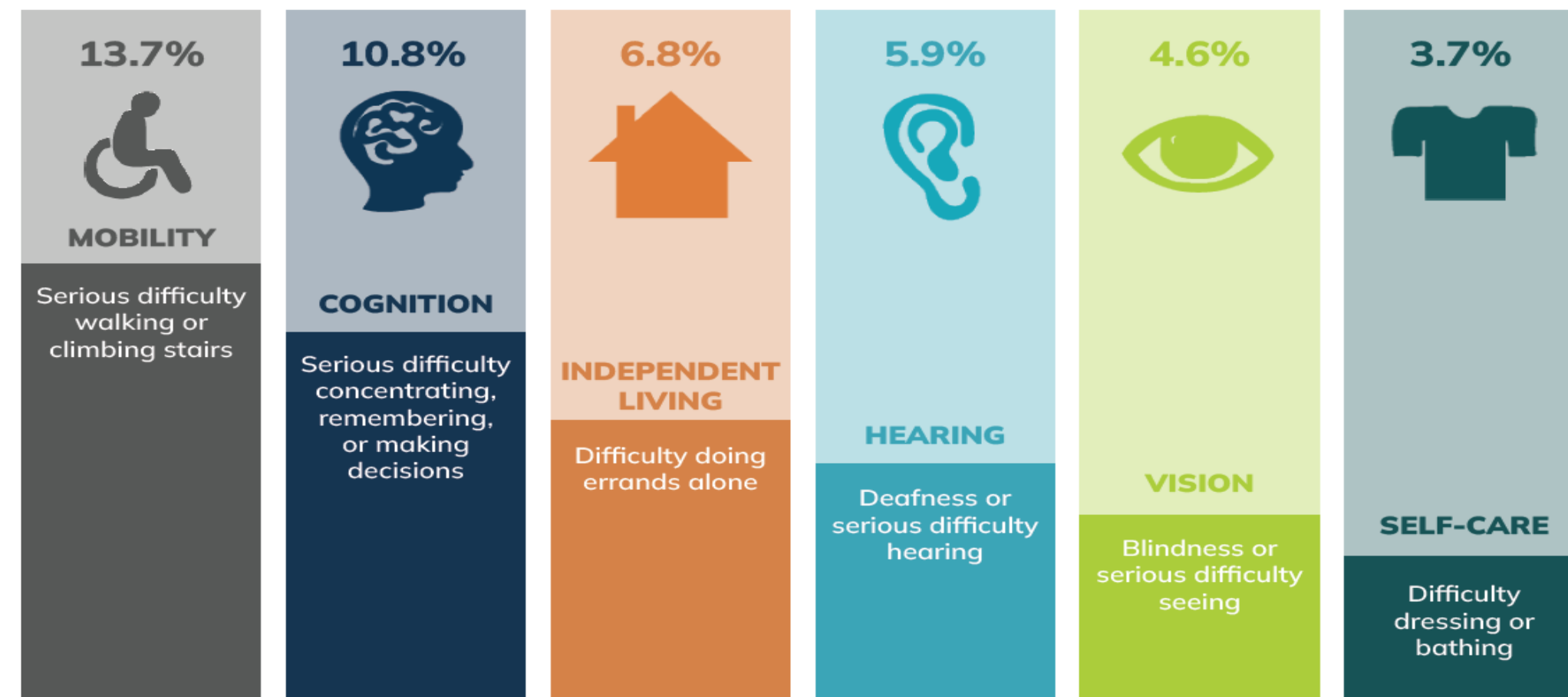


# INSTITUTE FOR THE BUILT ENVIRONMENT

COLORADO STATE UNIVERSITY

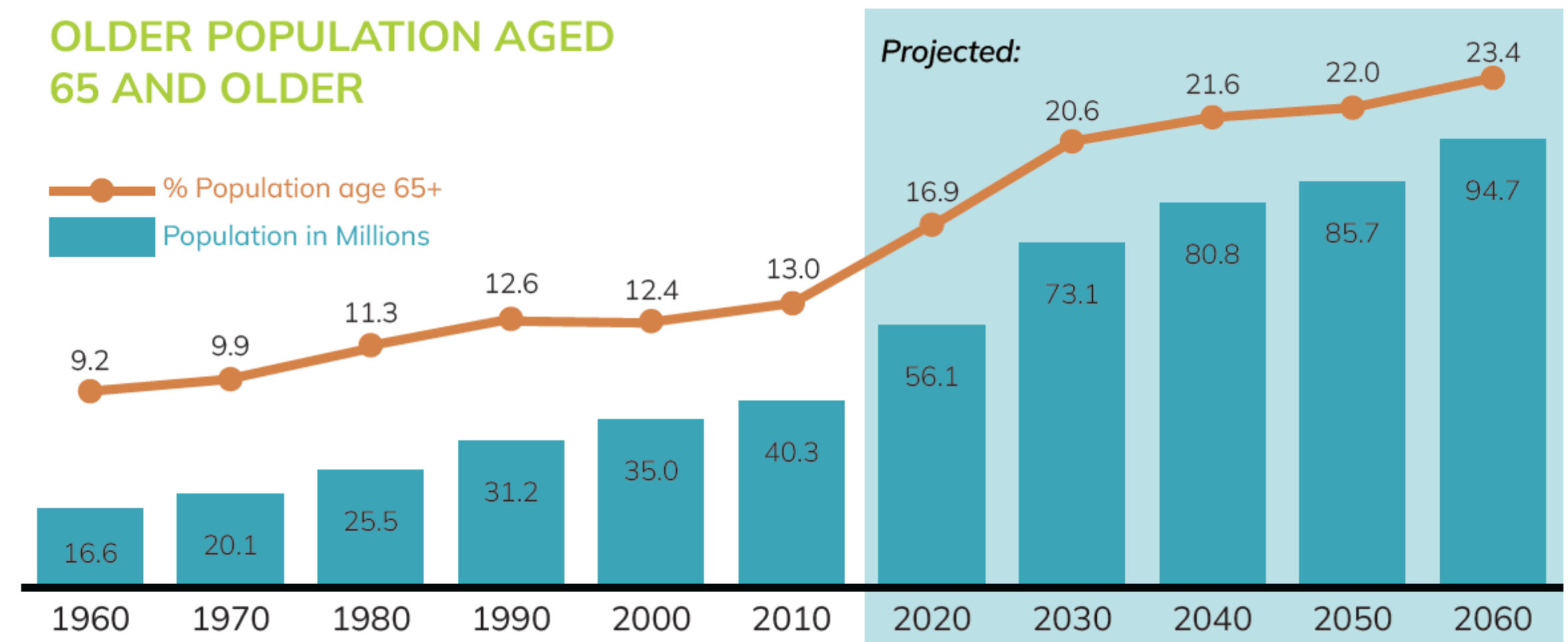
We create healthy, thriving places by elevating collaboration between people, teams, and organizations.

## PERCENTAGE OF ADULTS WITH FUNCTIONAL DISABILITY TYPES



GRAPHIC ADAPTED FROM (source: CitizensDisability, How Disabilities Impact Americans, Part 1 – Citizens Disability - SSDI & Benefit Advocates, DATE)

## OLDER POPULATION AGED 65 AND OLDER



GRAPHIC ADAPTED FROM (source: Old Housing, New Needs: Are U.S. Homes Ready for an Aging Population? census.gov)

### Lack of Supply:

Most existing homes were not designed to current standards of safety, health, and accessibility.

### Lack of Awareness:

Homebuyers and homeowners are not thinking about lifelong design, either because they are unaware that such options exist or because they are not thinking ahead to when their life circumstances will require accessibility accommodations.

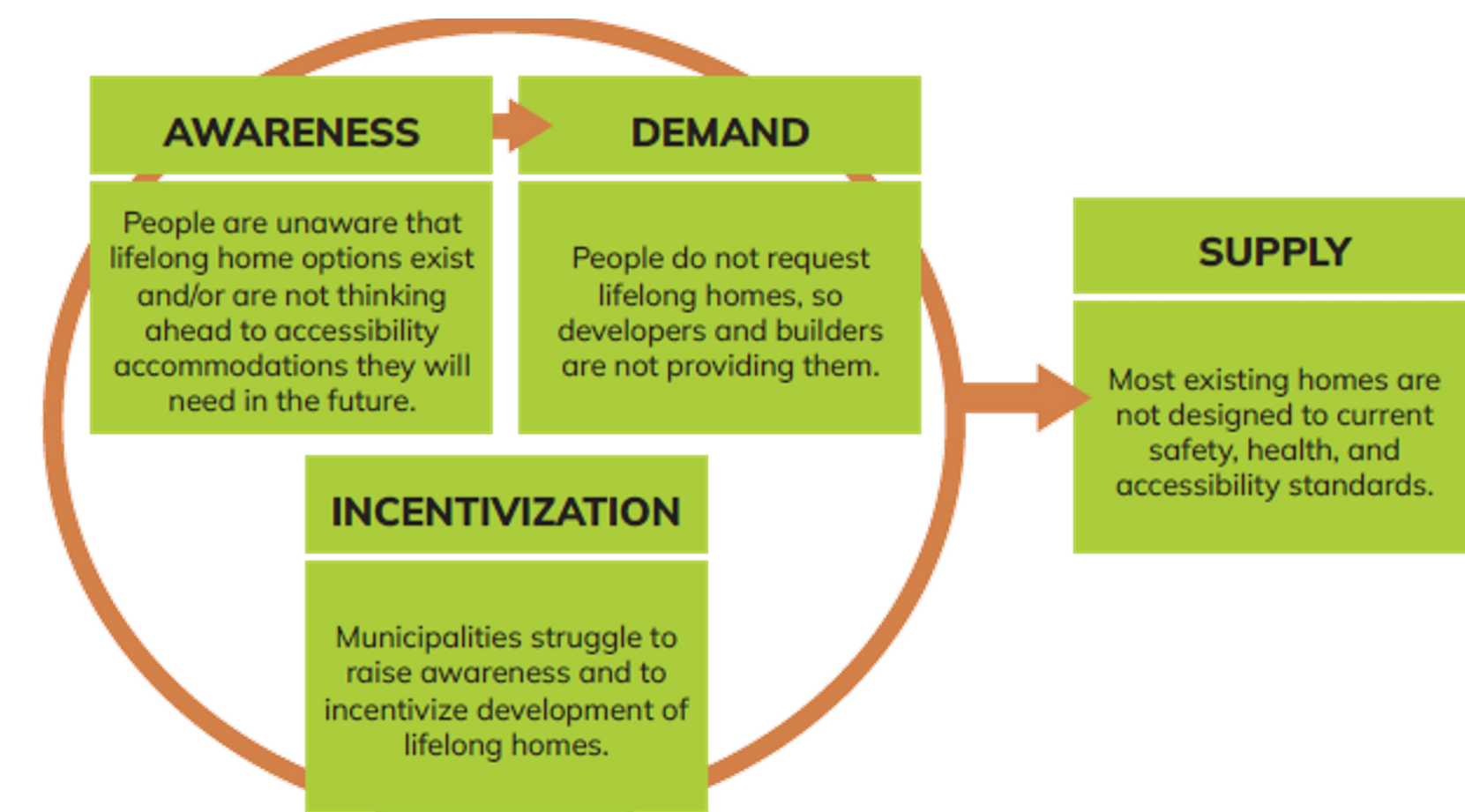
### Lack of Demand:

Homebuyers are not requesting lifelong homes and thus, developers and builders are not building them.

### Lack of Incentives:

Municipalities are aware of the need for lifelong housing but are struggling to raise awareness and incentivize the development of better housing options.

## BARRIERS TO AGING IN PLACE



# Qualities of **LIFELONG HOMES & COMMUNITIES**



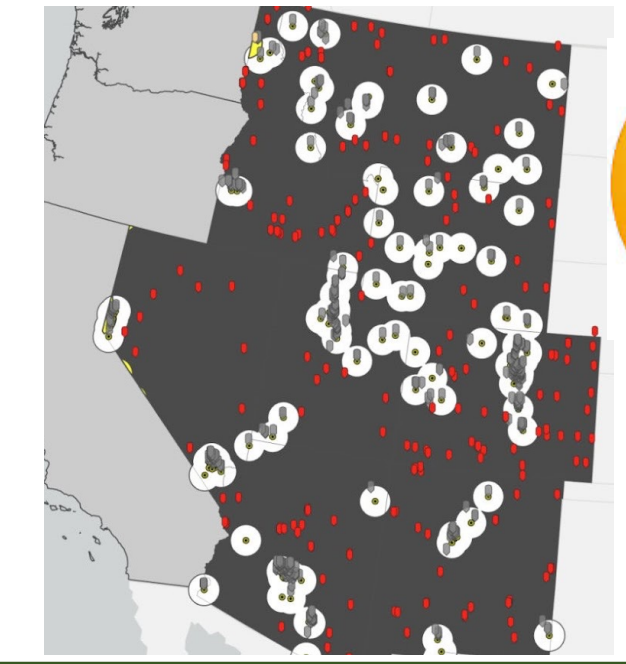
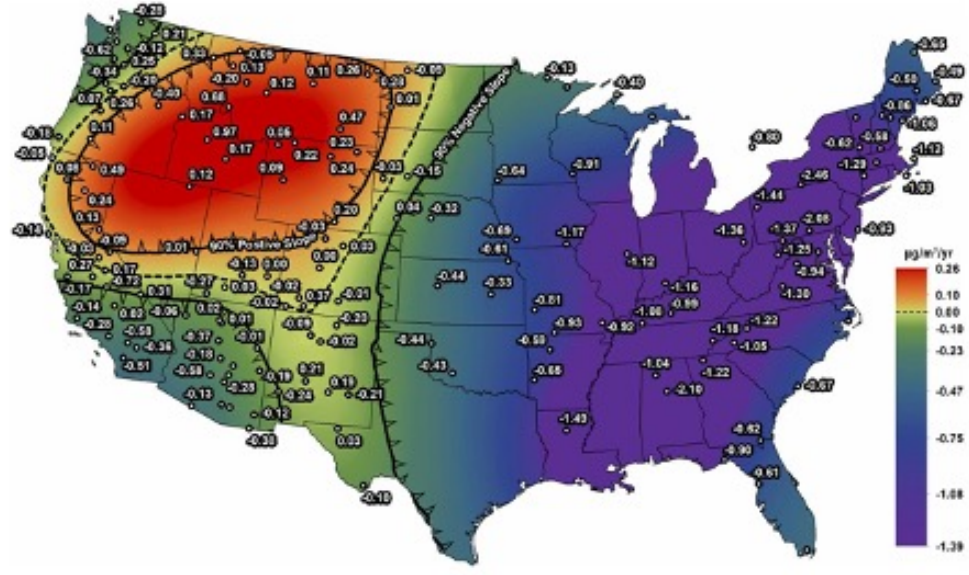
	<p><b>Community Context</b>                  Consideration of access to community, services &amp; neighborhood amenities from the home</p>	<ul style="list-style-type: none"> <li>• Recreation, beauty, &amp; active living</li> <li>• Socializing, purpose, &amp; culture</li> <li>• Basic needs &amp; healthy food</li> <li>• Services</li> </ul>
	<p><b>Visitability</b>                  Welcoming all visitors, regardless of age &amp; ability</p>	<ul style="list-style-type: none"> <li>• Exterior access to the home</li> <li>• Interior access to common spaces</li> <li>• Accessible guest bathroom</li> </ul>
	<p><b>Design &amp; Adaptability</b>                  Livable and adaptable interior spaces</p>	<ul style="list-style-type: none"> <li>• Universal Design Principles &amp; adaptability</li> <li>• Integrated design</li> <li>• Accessible Kitchen &amp; Accessible Full Bath</li> <li>• Accessible Bedroom</li> </ul>
	<p><b>Health, Safety &amp; Wellness</b>                  Thoughtful application of health &amp; safety measures</p>	<ul style="list-style-type: none"> <li>• Safety &amp; Fall Prevention</li> <li>• Visual &amp; Lighting</li> <li>• Healthy Indoor Environmental Quality</li> <li>• Health &amp; Wellness Features</li> </ul>
	<p><b>Affordability &amp; Maintenance</b>                  Consideration of first costs &amp; the cost and ease of maintenance</p>	<ul style="list-style-type: none"> <li>• Home Affordability</li> <li>• Resource Efficiency</li> <li>• Low Maintenance</li> </ul>

# Luke Montrose

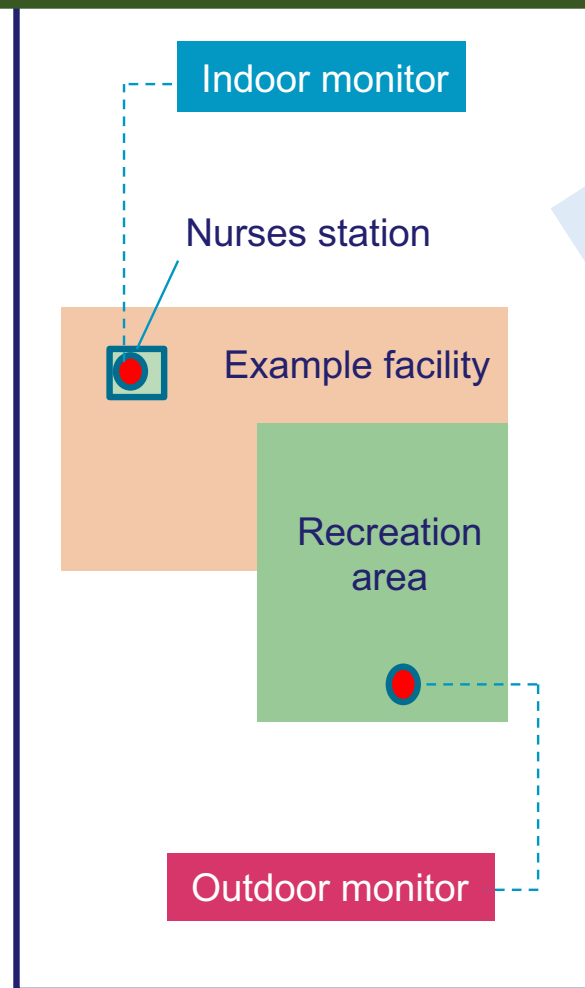
Colorado State University

Next: Margaret Horton & Paul Francisco

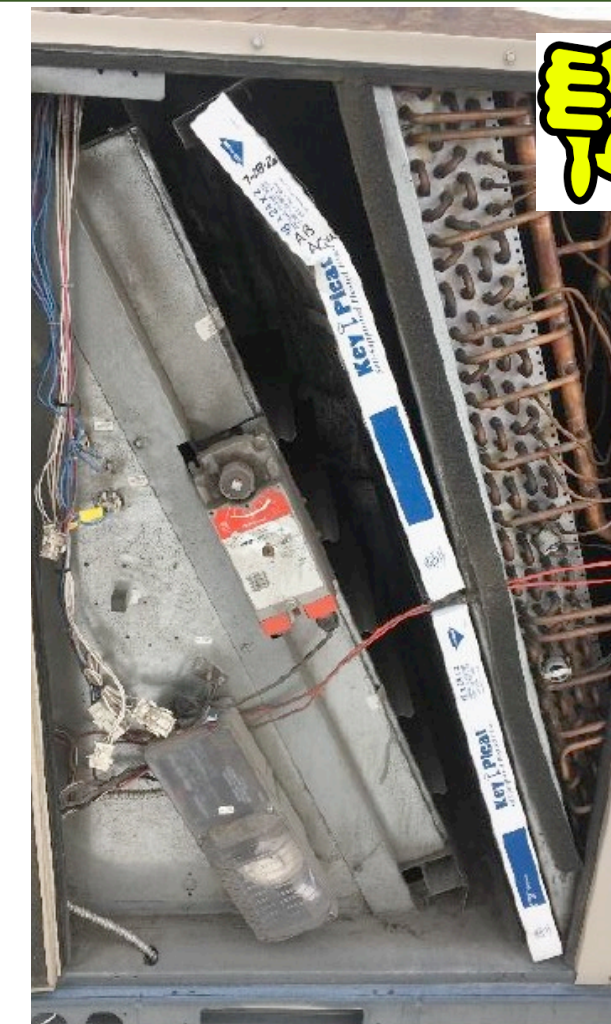
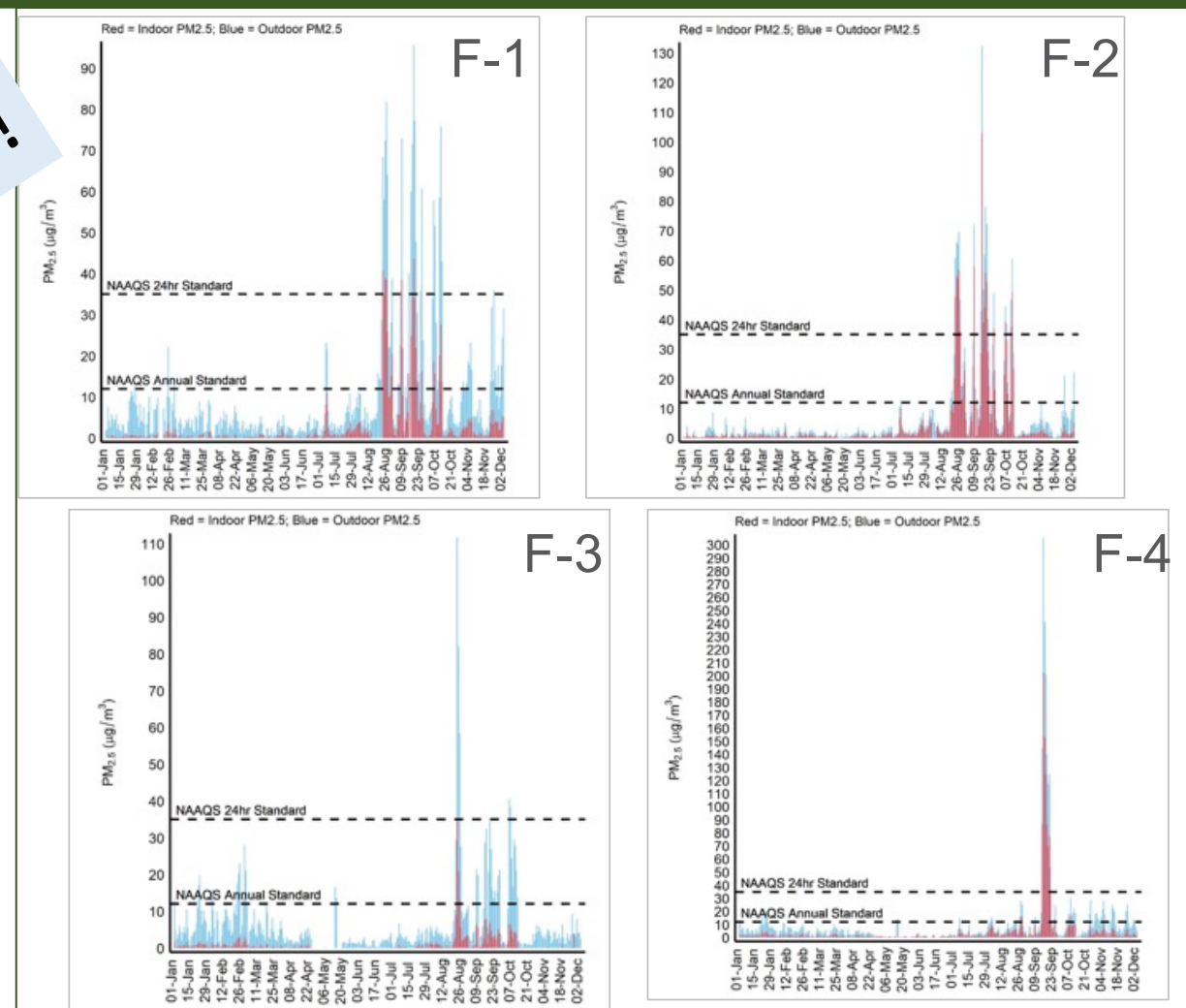
# Overarching question



## Phase 1



2020!!



- Building Systems/Areas
- Doors
- Windows, especially operable windows
- Roofs
- Attic Space
- Crawl Spaces



Indoor Air Publication!

Low/no cost solution??

- AQ know-how
- Good/accessible data
- Feasible action plan

## Phase 2



December 2021  
Virtual workshop



April 2022  
Interviews



July – October 2022  
Anticipated wildfire season

“...left me really thirsty for more...”

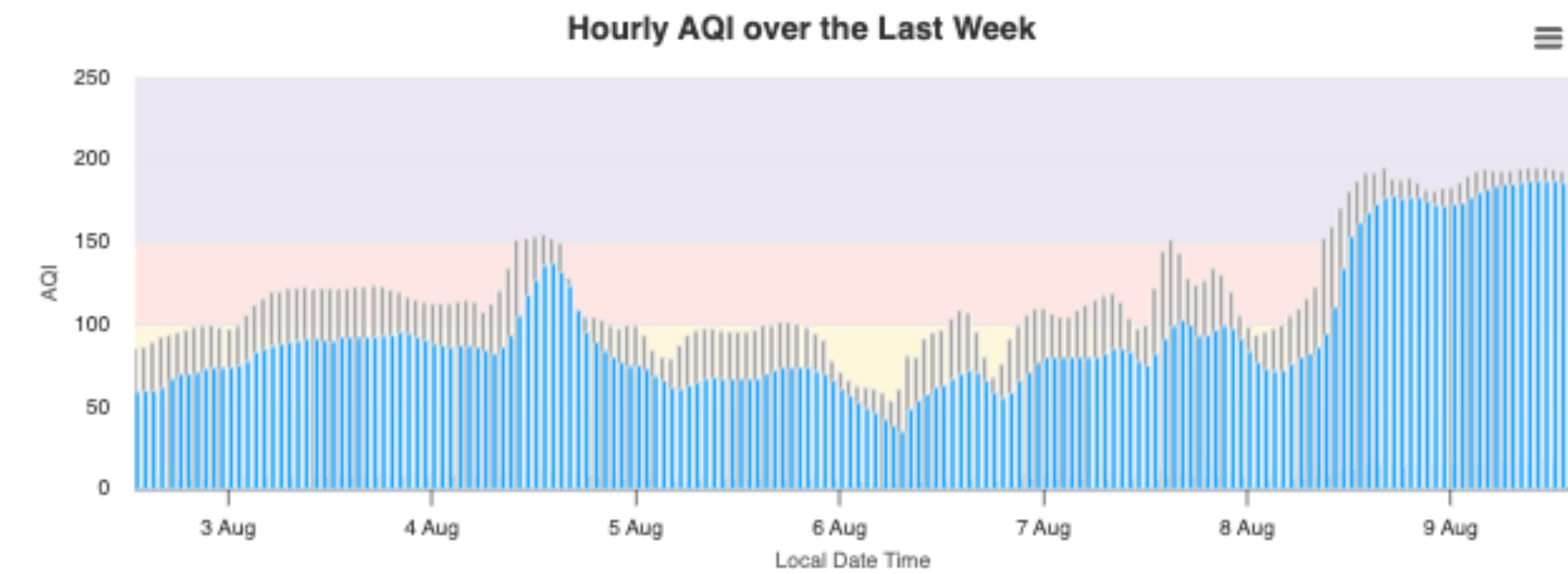
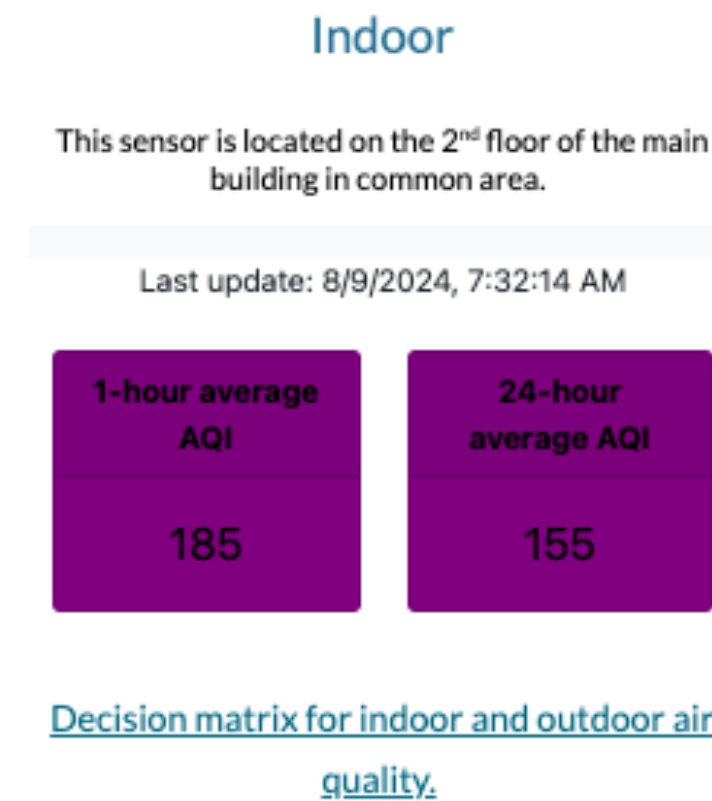
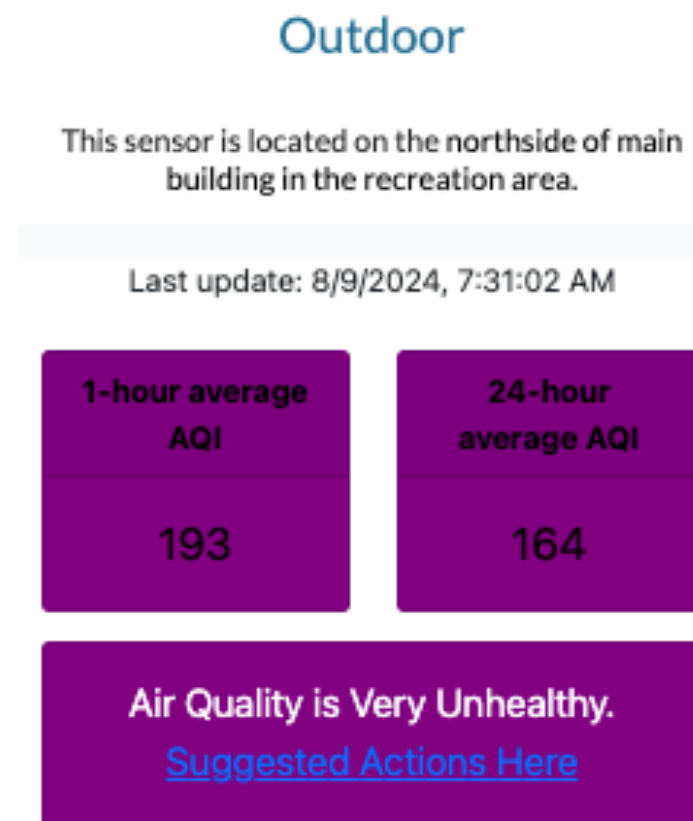


Atmosphere  
Publication!

# Phase 3



## What have we learned?



More work to do....

## Next Steps

Low/no cost solution??

- AQ know-how
- Good/accessible data
- Feasible action plan

AHRQ R01 – Collaboration with UMT  
Larger scale version of Phase 3 + air purifiers

NIA R01 – Collaboration with OHSU  
CMS data to understand health impacts of WFS



# Margaret Horton & Paul Francisco

Colorado Dept. of Public Health and Environment | Colorado State University

Next: Annareli Morales

Radon resistant new construction is the best way to protect the public



# Jurisdictions that have adopted RRNC

## Municipalities: 43

Arvada	Gunnison	Ridgway
Aspen	Hahn's Peak Village	Sheridan
Breckenridge	Hayden	Silverthorne
Boulder	Lake	Snowmass Village
Carbondale	Lakewood	Steamboat Springs
Cedaredge	LaVeta	Sterling
Clark	Louisville	Superior
Crested Butte	Longmont	Toponas
Denver	Milner	Trinidad
Dillon	Mount Crested Butte	Vail
Durango	Oak Creek	Walsenburg
Edgewater	Orchard City	Wheat Ridge
Erie	Pagosa Springs	Yampa
Frisco	Phippsburg	
Ft Collins		
Golden		

## Counties: 22

Adams County  
Arapahoe County  
Archuleta County  
Boulder County  
Clear Creek County  
Denver County  
Eagle County  
Elbert County  
Gunnison County  
Huerfano County  
Jefferson County  
La Plata County  
Larimer County  
Las Animas County  
Logan County  
Montrose County  
Ouray County  
Pitkin County  
Routt County  
San Miguel County  
Summit County  
Weld County

# Annareli Morales

Weld County Dept. of Public Health and Environment

Next: Ellison Carter & John Volckens

## Weld County Radon Project Goals

- Understand test kit usage
- Map radon levels and test usage
- Guide future outreach strategies

>4 pCi/L



- 1 in 3 respondents mitigated their home
- 50% of respondents did not mitigate because of financial burden
- Other reasons for not mitigating
  - Result very close to threshold
  - Planning on doing it in the future
  - Further testing being done/needed
  - Did not receive results [actionable]



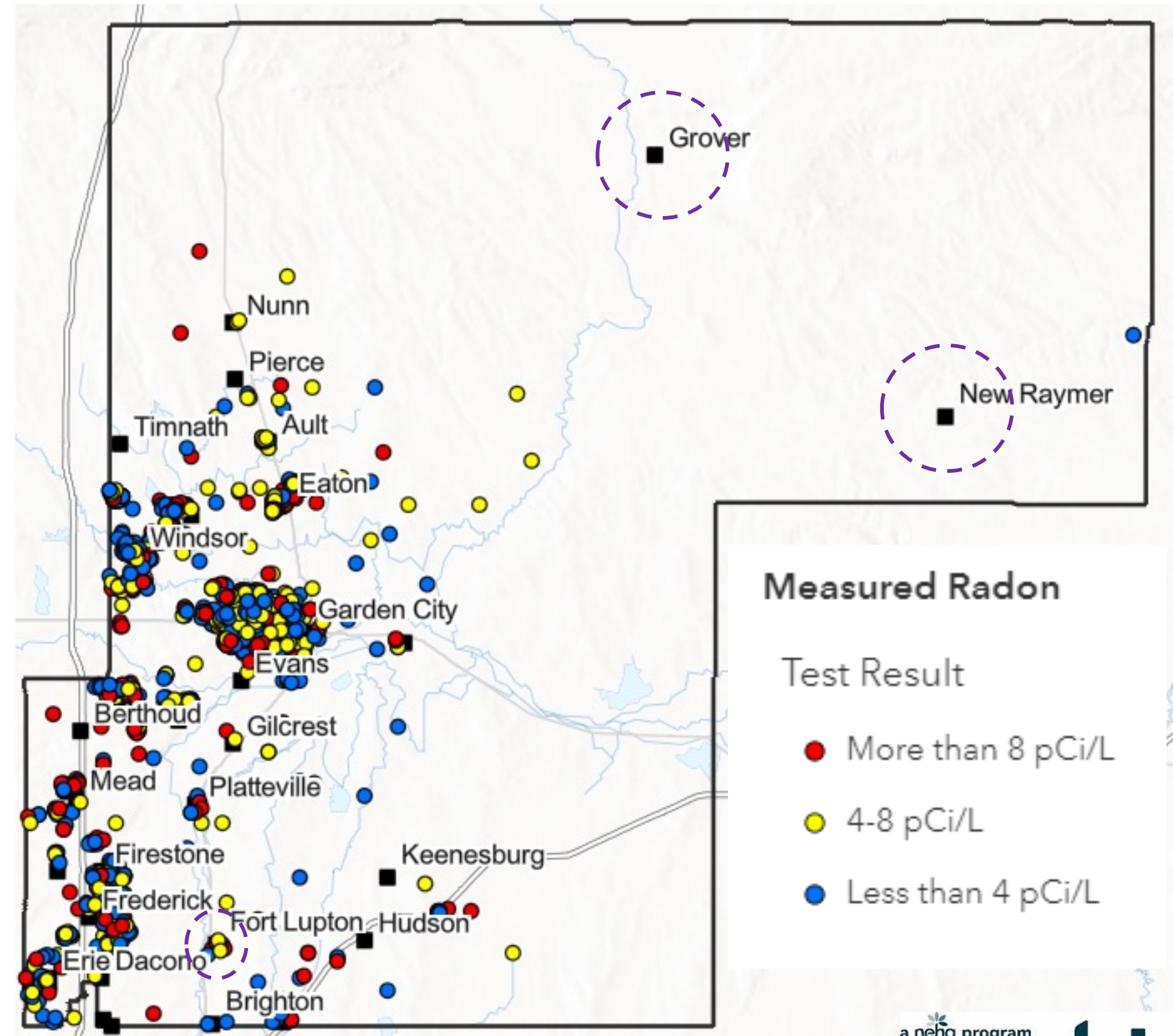
### Respondents who did not use kit

- 19% said they didn't have time
- 66.5% said other - did not receive test, forgot, lost test



- No hotspots found – Emphasizes need to test individual homes
- **Specific communities identified for outreach (unincorporated and towns)**

**85% of respondents would consider testing in the future!**



amorales@weld.gov



# Ellison Carter & John Volckens

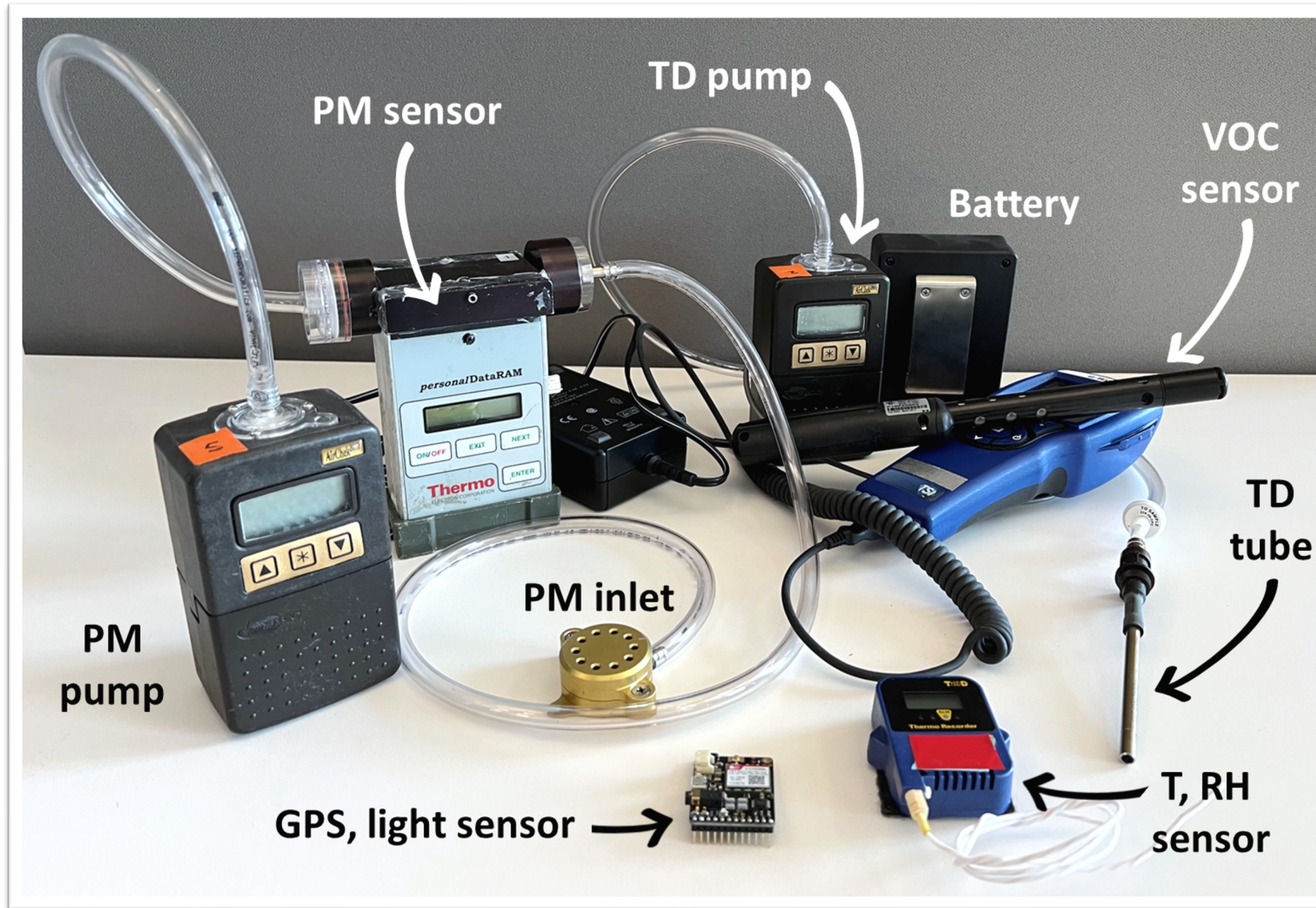
Colorado State University

Next: Tami Bond

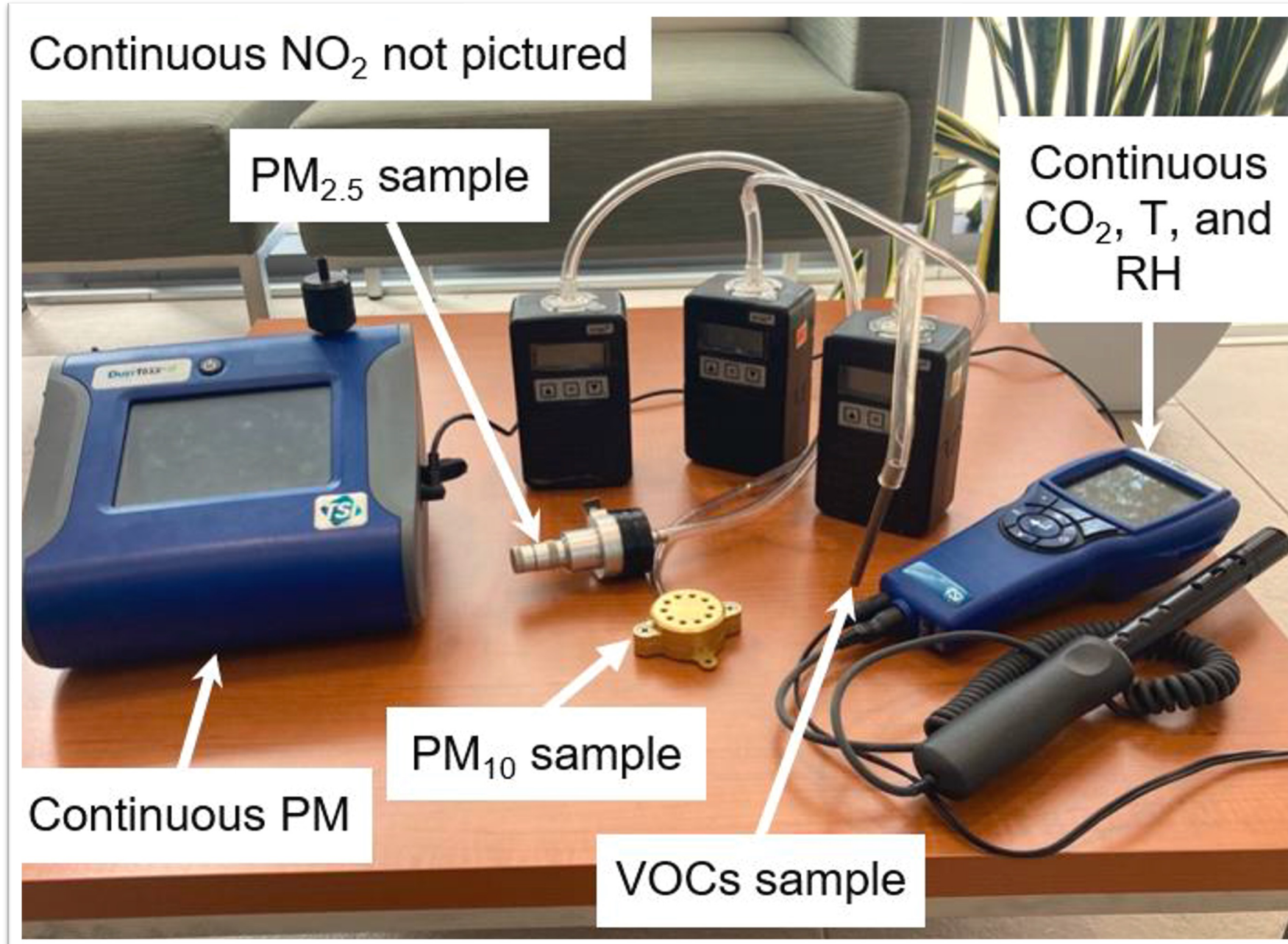
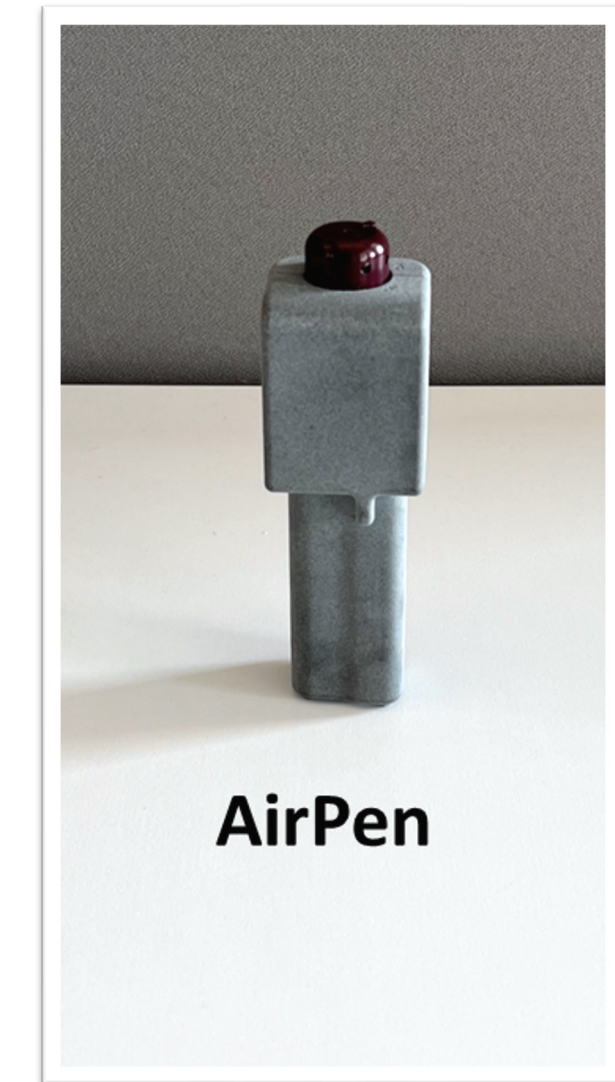
# The Status Quo



# New Paradigm



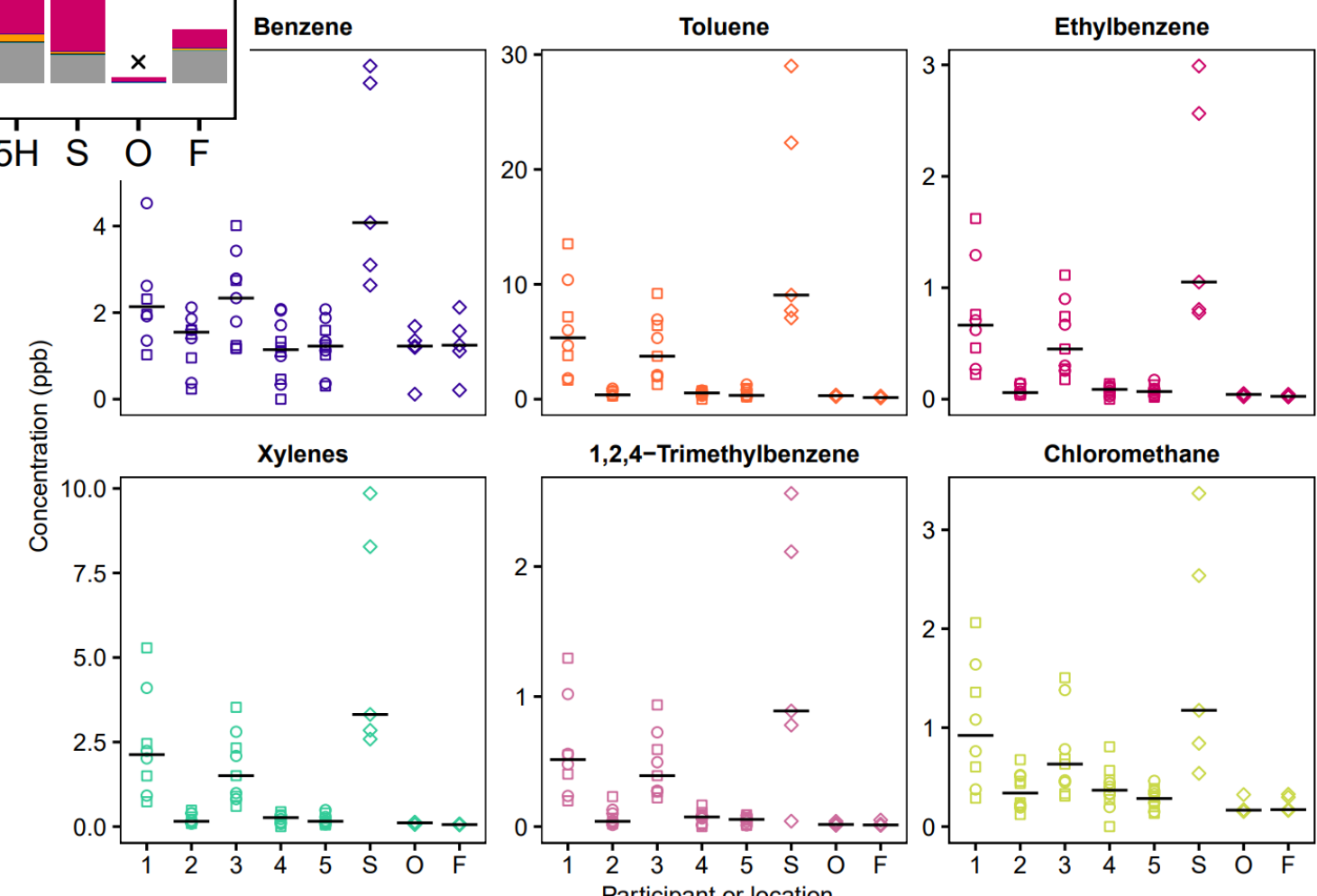
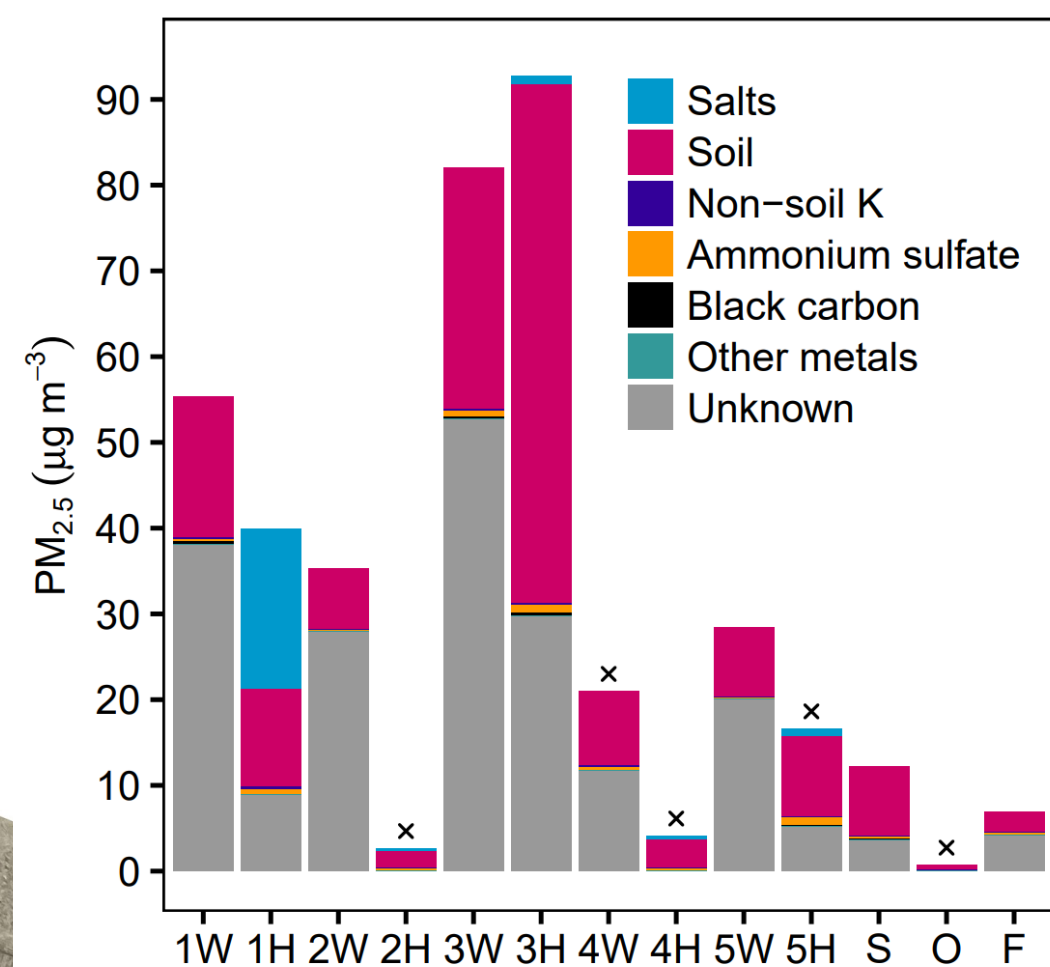
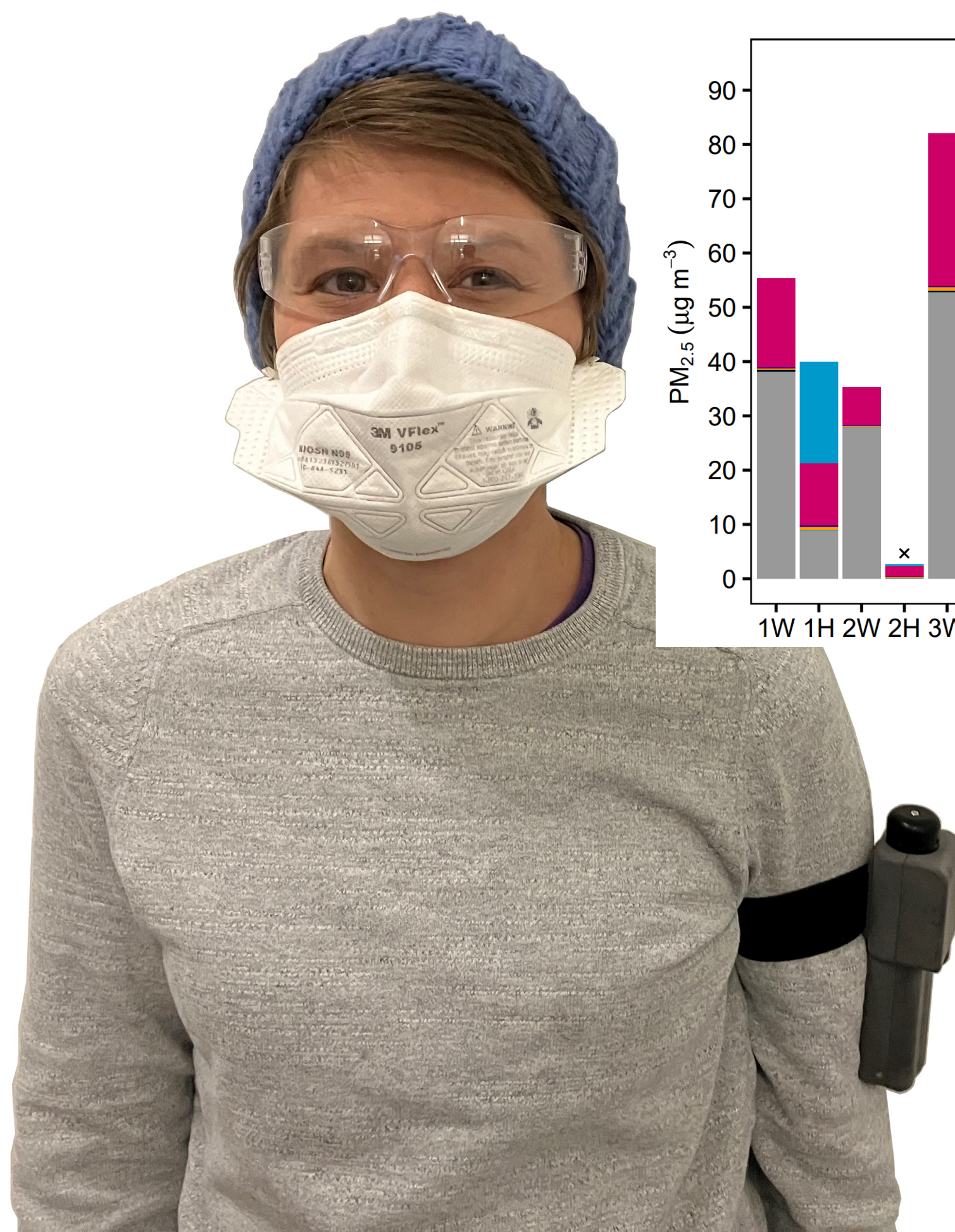
## Personal Air Sampling



## In-Home Air Sampling



# AirPen and Home Health Box: Integrated Sensor and Sampling Platforms for Measuring Personal and In-Home Gas and Aerosol Exposures



○ AirPen □ Conventional ◇ HHB

Tryner et al., 2022

Paired with personalized, actionable recommendations to improve home air quality and reduce exposures.

We're recruiting!





# Tami Bond

Colorado State University

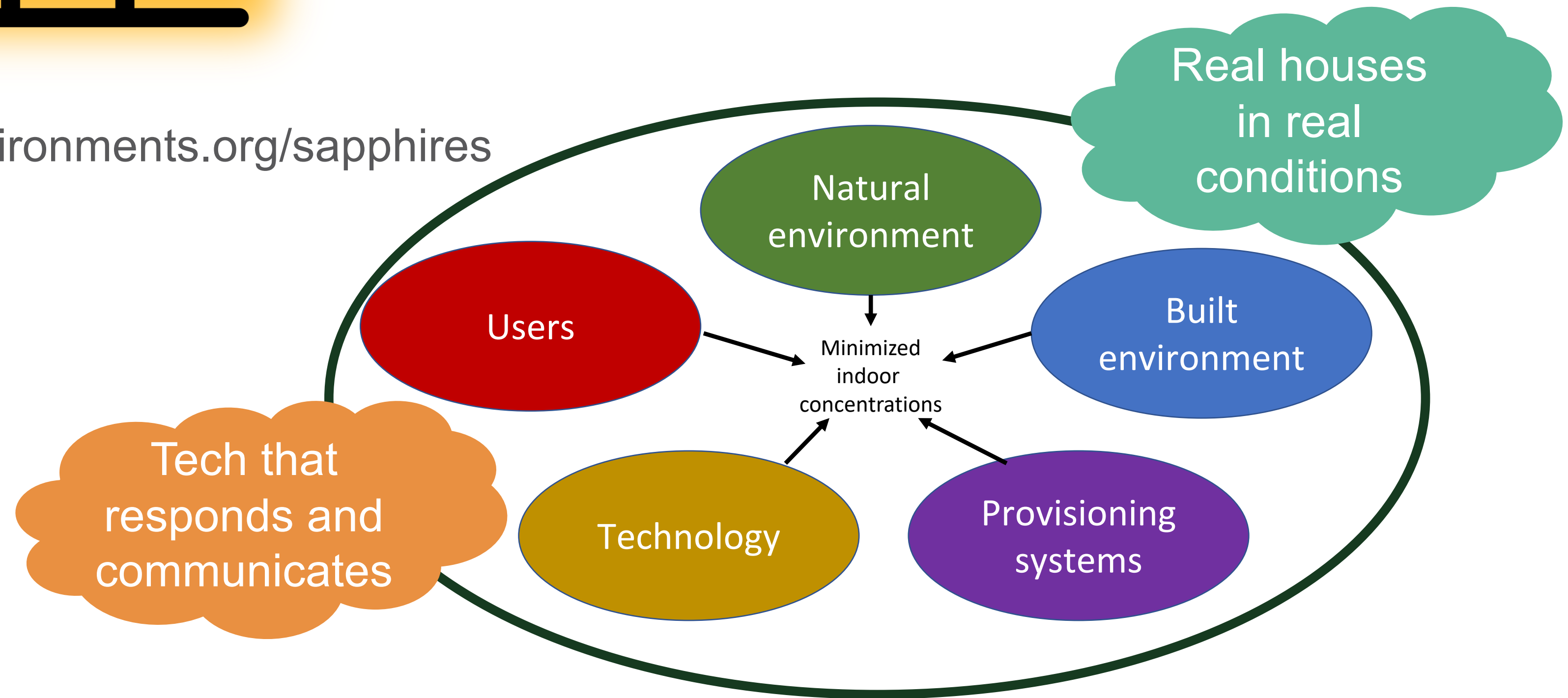
Next: Katie Miller & Glenn Pease



## Technical Goal:

Minimize concentrations of indoor air pollutants in a complex system (the home)  
*Focus on protection from wildfire smoke*

<https://humanenvironments.org/sapphires>



## Colorado State University

- Dominic Bledsoe
- Tami Bond
- Ellison Carter
- Naomi Chang
- Will Clagett
- Paul Francisco
- Carsen Hobson
- Christian L'Orange
- Marilee Long
- Ganesh Pai Mangalore
- Erika Miller
- Jordan Rice
- Danny Rodriguez
- Misa Soto
- Whitney Weber

## What we have learned:

It's challenging to make these elements work together – communication!





## Indoor Climate Research and Training

Lori Shupe  
Bethany Ragains



### How do we reach them?

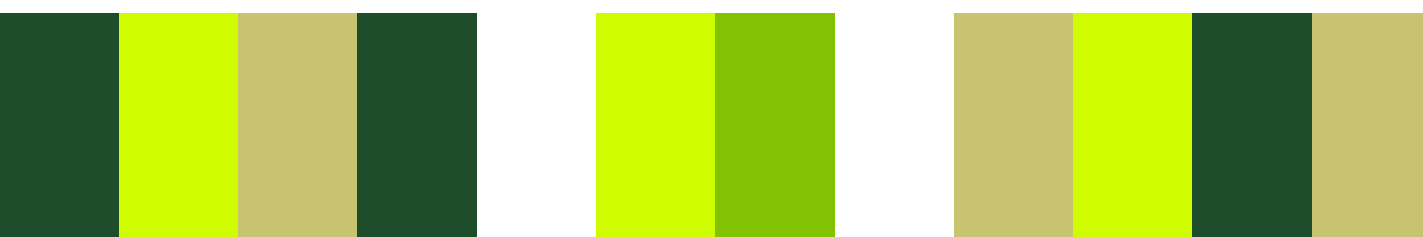
Bring knowledge about Healthy Home principles to energy auditors in the weatherization program

### What are we doing?

Developing Clean Indoor Air training that can be offered to earn Continuing Education Units

### Who are we serving?

Target is households with incomes below 200% of poverty level



# Katie Miller & Glenn Pease

City of Fort Collins

Next: Ashley Feiertag & Evelin Preciado

# Epic Homes and Efficiency Works

**Glenn Pease & Katie Miller**

Fort Collins Utilities – Energy Services

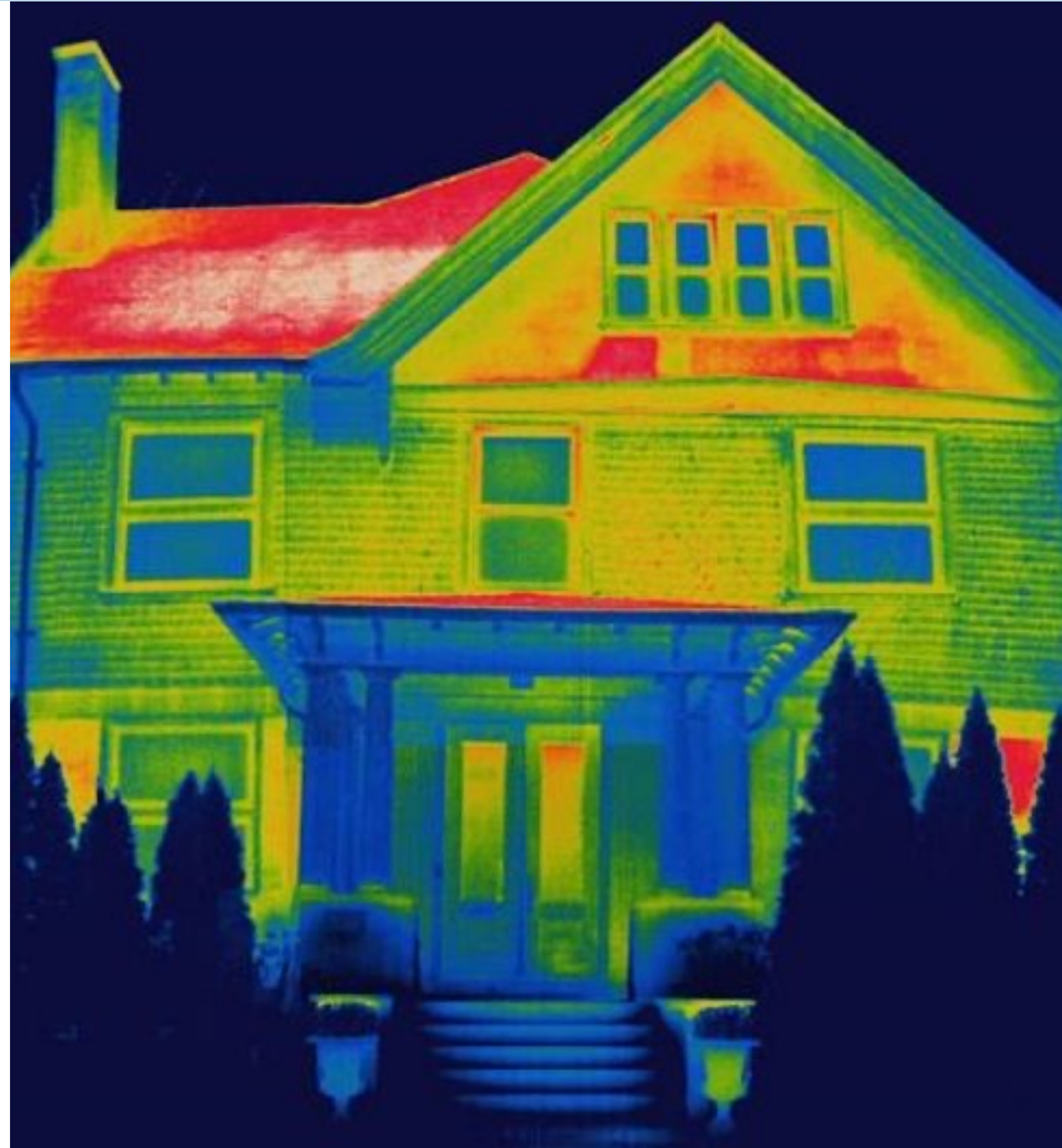


**Epic Homes:** Your one-stop shop for home & rental energy efficiency.



## **Rebates available:**

- Heat Pumps
- Windows & Doors
- Insulation & Air Sealing
- Whole House Mechanical Ventilation
- Radon Fans





---

Fort Collins Utilities residential *electric* customers get:

---

Below market rates with on-bill financing

---

Energy Certificates to document upgrades

---

Free energy advising to all customers

---

In-home energy assessments for rentals are free!

*Non-Rentals - \$60*

---

# Marcus Redden & Mick McHone

Energy Resource Center

Next: Ryan Scott





## WE ARE WORKING ON:

### Weatherization Assistance Program (WAP)

- Energy Audit
- Insulation/ air sealing
- Combustion appliance safety
- ASHRAE 62.2
- Heat pumps and Solarv



## WE ARE SERVING:

- Income qualified clientele
- No cost to our clients
- Tax-payer funded
- Boulder, Larimer, Weld Counties
- 27 counties 5 locations



## WE HAVE LEARNED:

### WAP and Healthy Homes are complimentary

- WAP = energy efficiency
- Healthy Homes = health and safety in the home environment

### Caution

- Air sealing, insulating and ventilation can cause atmospheric draft woes



# Ryan Scott

Colorado State University

Nobody next!

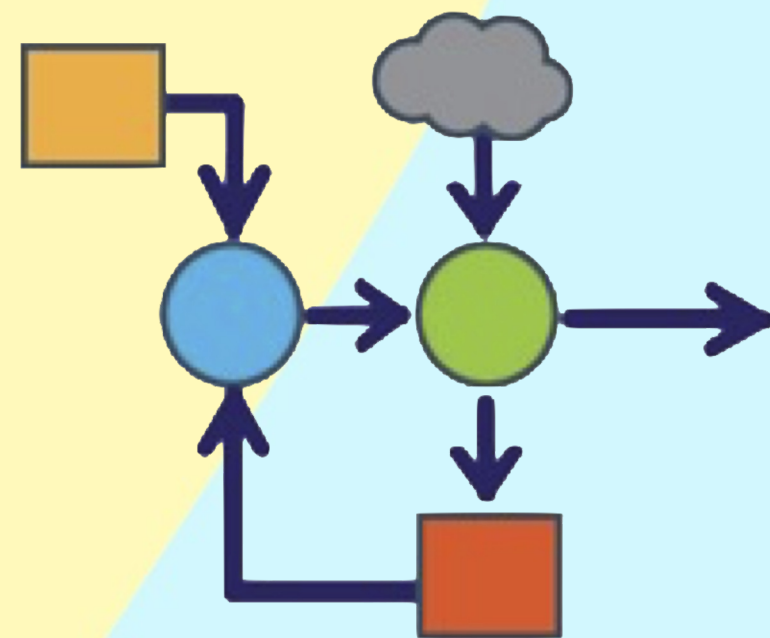
# Realism, Equity, and Salience in Projections of Energy-Coupled Transitions



HETEROGENEITY



WELL-BEING



PARADIGM OF CHANGE

- Characterize heterogeneity in residential energy transitions
- Evaluate well-being as a driver/component/outcome of change
- Leverage multiple levels and types of data (national, local, qualitative, quantitative) for modeling

# What have we learned?

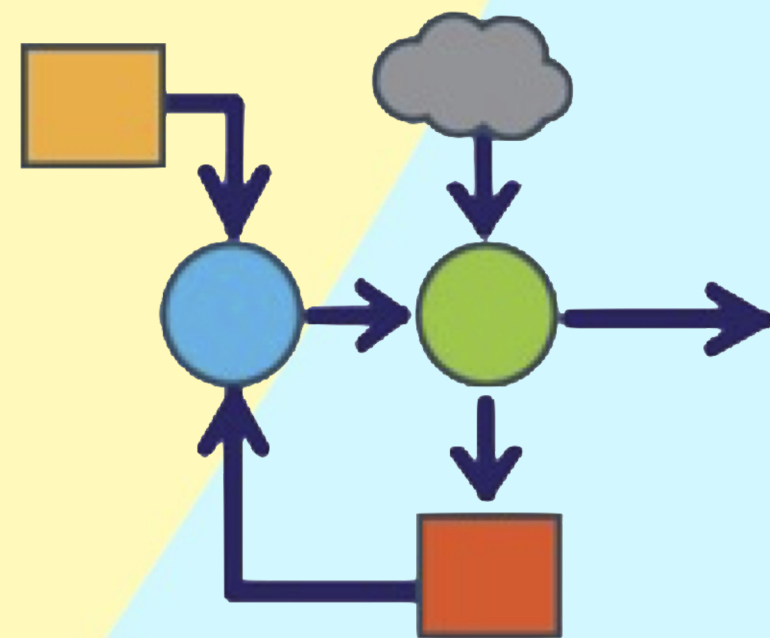
- Change is not a single decision point (like models pretend)
- Residents do think about comfort, sometimes at detriment of energy goals
- Lack a proper understanding of how middle actors (like contractors) impact change



HETEROGENEITY



WELL-BEING



PARADIGM  
OF CHANGE

UP NEXT: GROUP ACTIVITY

