



# Welcome to the Webinar

## EPA's Back-to-School Webinar: Managing Asthma in Schools

September 24, 2013  
2 – 3 p.m. EDT



Indoor Air Quality (IAQ)



# Introductions



## Facilitator:

Tracey Mitchell

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## Speakers:

Laura Wheeler

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Teresa Lipsett-Ruiz

Dean of the School of Science and Technology

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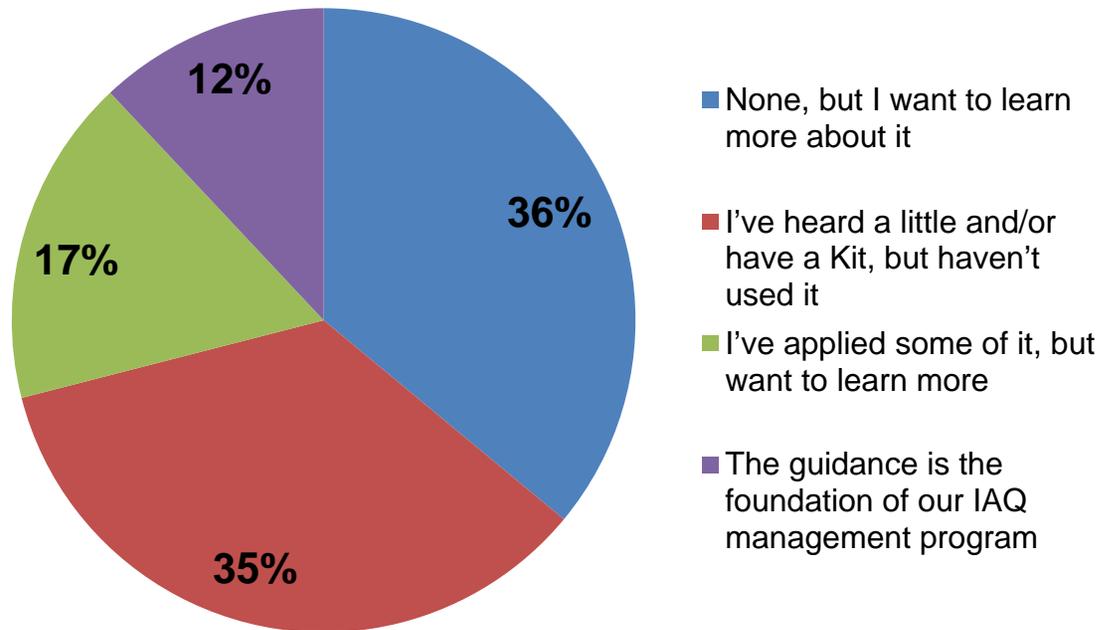
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# Polling Question #1

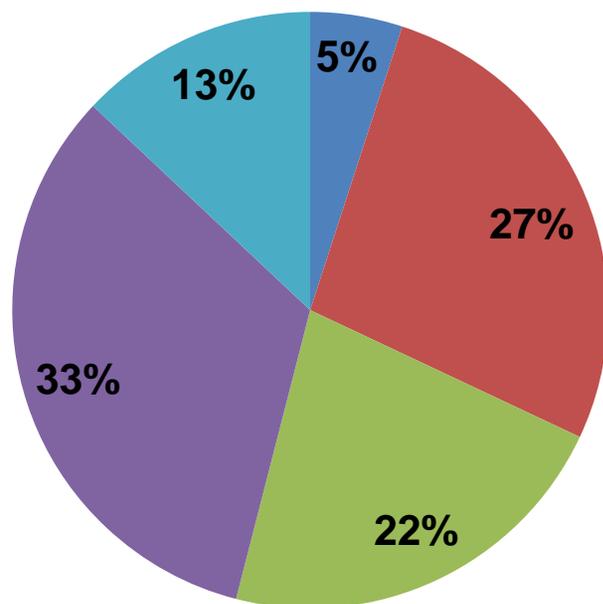
- What is your experience with the *IAQ Tools for Schools* guidance and Action Kit?





## Polling Question #2

- Are you currently involved with a school asthma management program?



- Yes, my main role is to manage a school asthma program
- Yes, part of my role is to support a school asthma program
- Yes, I partner with a school asthma management program
- No, but my school or district wants to learn more
- No, and my school or district is not thinking about it



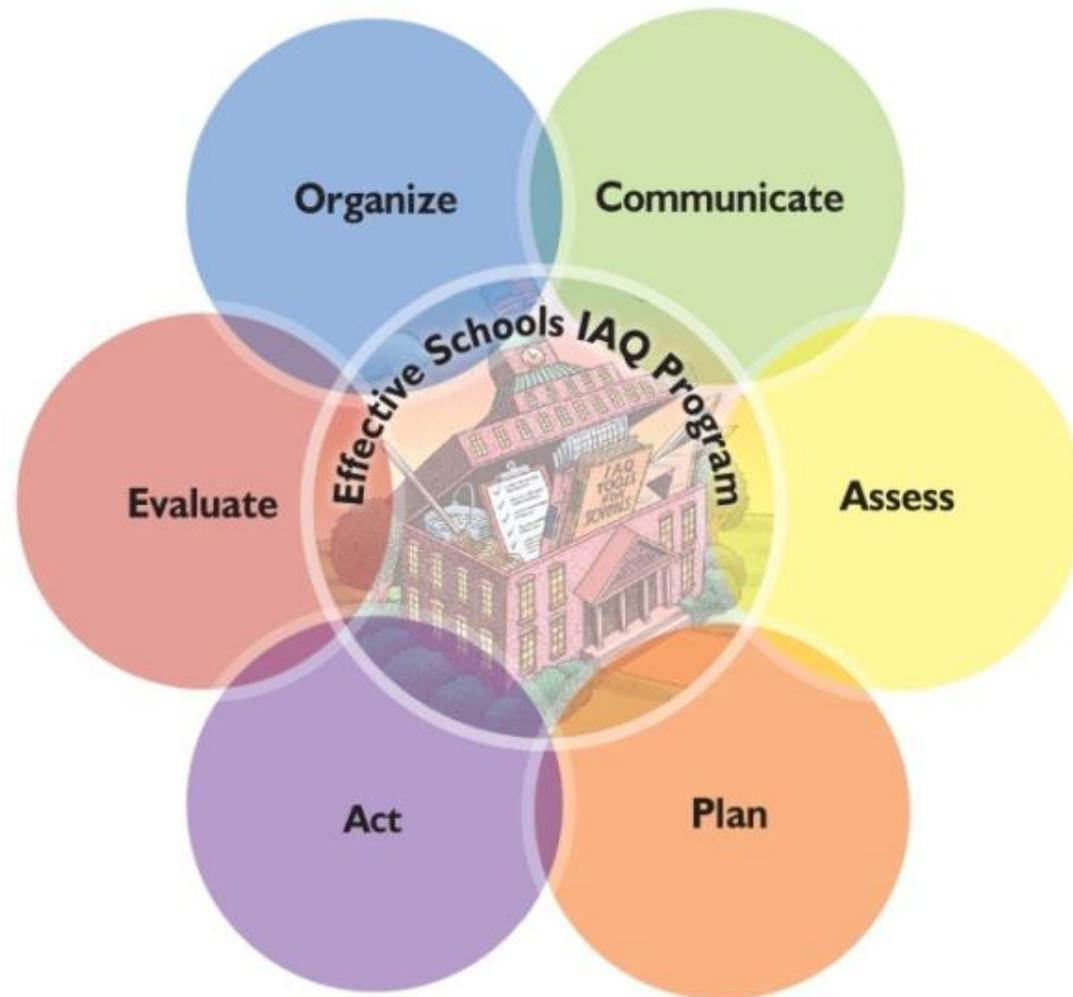


# Purpose of Webinar

- Hear innovative approaches for improving asthma outcomes in schools.
- Learn how to use EPA's *IAQ Tools for Schools* Framework to improve the IAQ in schools.
- Understand the connection between effective asthma management in schools and healthy learning environments.
- Gain answers to questions about comprehensive school-based asthma management programs from two program leaders.



# The Framework for Effective School IAQ Management



# The Framework for Effective School IAQ Management: Six Key Drivers





# Asthma in School Facts

- According to the Centers for Disease Control and Prevention (CDC), an estimated 25.9 million people, including almost 7.1 million children, have asthma.
- An average of one out of every 10 school-aged children has asthma, making asthma management particularly pertinent for schools.
- 10.5 million school days are missed each year due to asthma.





# Managing Asthma in the School Environment

- Identify environmental asthma triggers commonly found in school buildings.
  - e.g., mold, roaches, pet dander, dust mites
- Create school health services supporting students with asthma.
- Raise awareness of asthma for students and staff.
- Develop a comprehensive plan addressing both the medical management of the disease and the avoidance of environmental triggers.
- Coordinate school, family and community efforts to better manage asthma symptoms.



# **Cedar Rapids Community School District**

## **Cedar Rapids, Iowa**

Laura Wheeler M.Ed., BSN, RN,  
NCSN



# Program Overview

- Location: Cedar Rapids, Iowa
- Population Served: Pre-school through Grade 12
  - Serve 15,975 students in 31 schools
    - 21 Elementary Schools
    - 6 Middle Schools
    - 4 High Schools
- Began program in Elementary School with 275 students in lower socio-economic environment with high incidence of asthma



# Objectives for this Presentation

- Share information about IAQ Program development at an Elementary School prior to and after the Flood of 2008.
- Describe the role of the School Nurse.
- Describe the value of the walkthrough process.
- Discuss use of the National Association of School Nurses (NASN) Managing Asthma Triggers (MAT) Program.
- Describe the importance of communication and involving necessary stakeholders.



# Establishing the Program

- The Challenge:
  - staff members developed adult onset asthma
  - Iowa Floods of 2008
- Our Response:
  - developed a team to explore IAQ concerns
  - implemented the Managing Asthma Triggers Program
  - conducted regular school walkthroughs
  - engaged district leaders



# Program Approach

- Key Stakeholders:
  - teachers, building engineer, principal, Director of Buildings/Grounds, school nurse and nurse practitioner for school-based health clinic
- Activities Leading to Action:
  - map of school with color coding of any type of respiratory, allergy or asthma symptoms



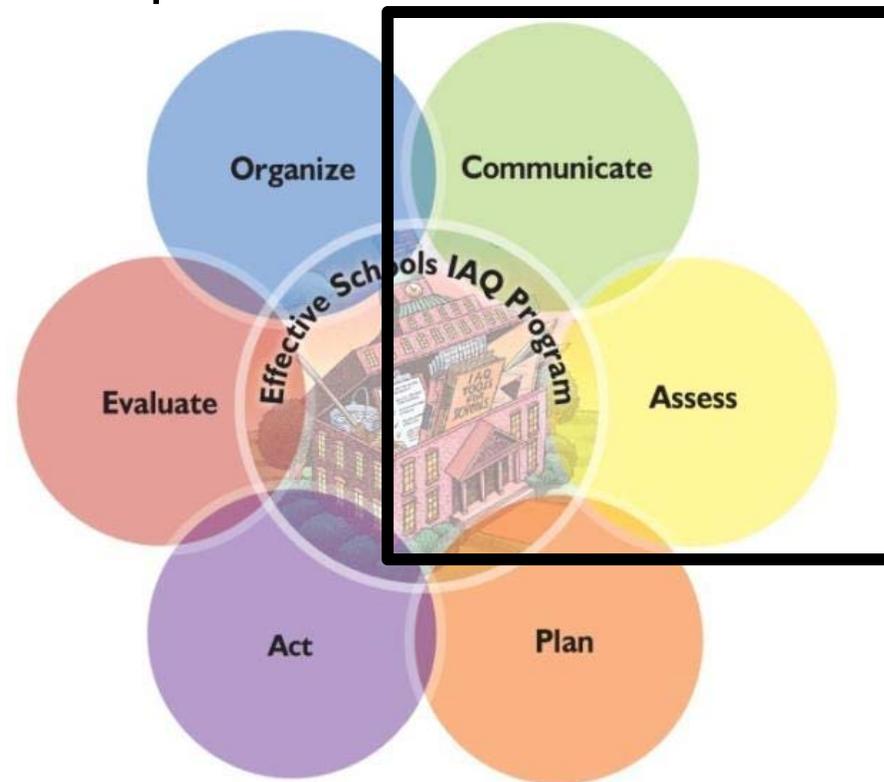
# Program Approach (cont'd)

- Activities Leading to Action (cont'd):
  - Walkthrough of school to assess concerns
  - Ordered *IAQ Tools for Schools* Kit
- A Barrier:
  - IAQ committee felt it did not have authority to initiate significant change. We started by involving people in the district that were the decision-makers; presented data obtained along with list of specific concerns



# IAQ Tools for Schools Framework

- We utilize all of the Key Drivers throughout our process but the most important ones to our work are:



View of Cedar River, Cedar Rapids



View of Cedar River during the 2008 flood



# Taylor Elementary School



# Flood Devastation



# And One Year After the Flood....



# Post Flood Ambient Mold Levels

- July 2008 500,000 mfu/m<sup>3</sup>
- August 2008 5,000 mfu/m<sup>3</sup>
- February 2009 50-100 mfu/m<sup>3</sup>
- April 2009 1,900 mfu/m<sup>3</sup>
  
- Generally Acceptable Levels <50 mfu/m<sup>3</sup>

Data from Linn County Public Health Department



# The National Association of School Nurses (NASN)

- **Mission:** NASN advances the specialty practice of school nursing to improve the health and academic success of all students.
- **Core Purpose:** Promote student success through the advancement of school health services by professional, registered school nurses.

“Every child deserves a school nurse all day, every day.”



# Incorporating the MAT Program

- The Managing Asthma Triggers (MAT) Program is created by NASN for training school nurses to help staff, parents, administrators and students learn how to manage asthma triggers.
- Online training program takes 2.5 hours.
- In person training program takes 4.5 hours.

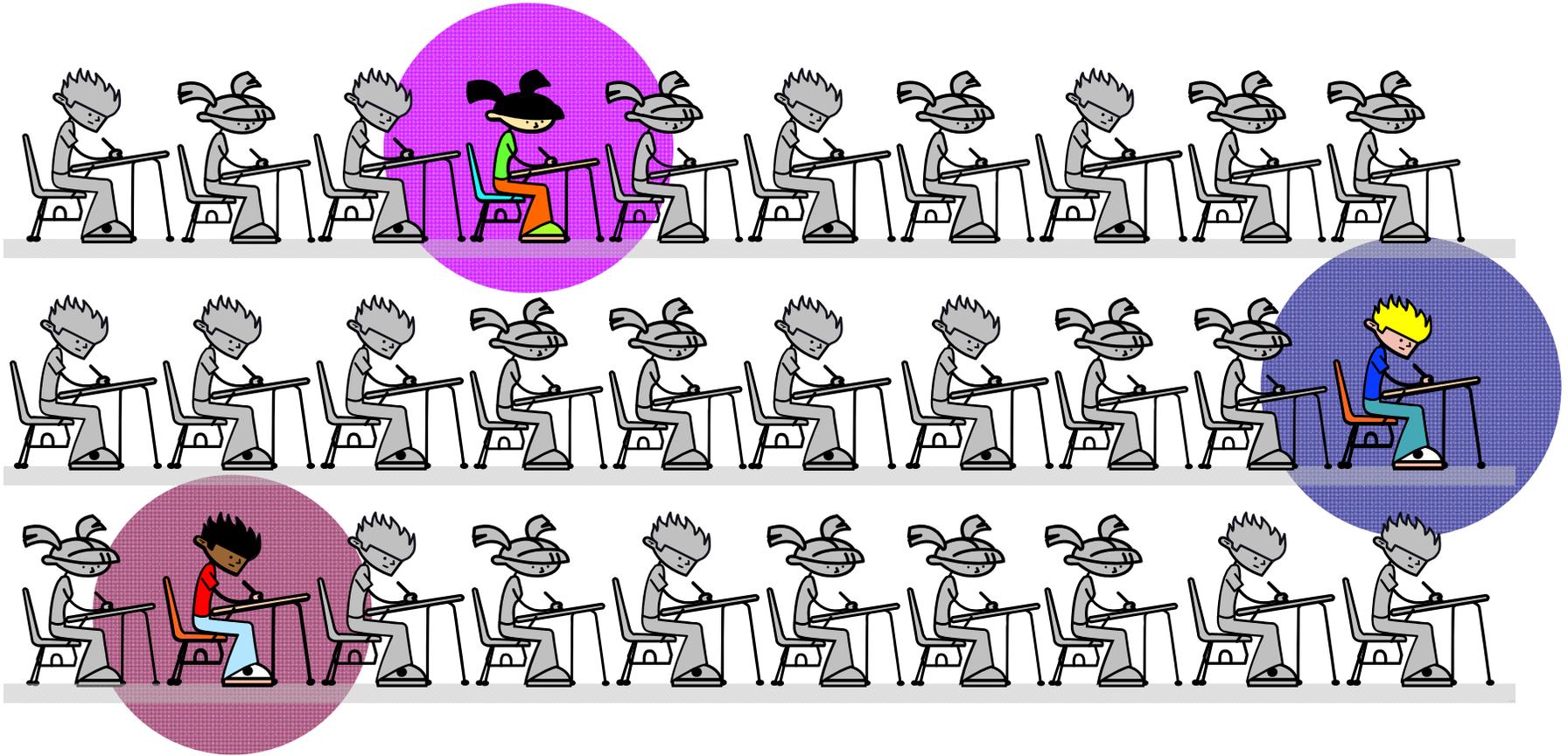


# MAT Program Goals

- Increase awareness of potential asthma triggers in the school environment.
- Encourage optimal management of the school environment to reduce asthma triggers and asthma episodes.
- Create a healthy learning environment through improving IAQ.



On average, 3 children in a classroom of 30



are likely to have asthma.<sup>4</sup>

<sup>4</sup> Epidemiology and Statistics Unit. Trends in Asthma Morbidity / and Mortality. NYC: ALA, July 2006.

[http://www.nhlbi.nih.gov/health/prof/lung/asthma/basics\\_schools](http://www.nhlbi.nih.gov/health/prof/lung/asthma/basics_schools)

# Indoor Environmental Asthma Triggers

- Exercise
- Temperature Changes
  - cold air
  - changes in temperature or humidity
- Irritants
  - cigarette smoke
  - strong odors/perfumes/scented products
  - incense/candles
  - pollution that transfers inside through vents/ducts
- Allergens/infections
- Medicines/chemicals
- Pollens
- Dust
- Mold
- All pets have potential to be a trigger



# Asthma Management Strategies

- Identify people with asthma.
- Know and avoid the “triggers” that initiate an episode.
- Recognize and respond to the symptoms of an episode onset.
- Promote asthma education.



# Role of the School Nurse

- Identify students with asthma.
- Identify students with allergies.
- Develop an Asthma Action Plan.
- Advocate for school policies to address environmental issues.
- Address student, staff and parent concerns regarding class and school environment.
- Participate in the IAQ team.



# Role of the School Nurse (Cont'd)

- Assist students in identifying / avoiding “triggers.”
- Provide care when asthma episodes occur.
- Monitor asthma management.
- Provide asthma education programs for students, staff, parents and community.
- Key Educational message: teach and reinforce at every opportunity.

(Guidelines for the Diagnosis and Management of Asthma October 2007,  
<http://www.nhlbi.nih.gov/guidelines/asthma/>)



# Conducting a Walkthrough

- Take a camera, iPad or similar device to take photos.
- Make note and document any concerns.
  - location – look all around
  - are the air flow vents in a classroom open or on they covered with classroom materials?
  - chemicals, cleaning products, volatile organic compounds
  - pets, cages
  - unusual odors including perfume, cologne or fragrances



# Examples of Water Damage



# Tile Removal



# Classroom Pets



# Alternate Classroom Pets



# Classroom Plug in Air Freshener



# Cleaners Under the Sink



# Building Leadership Buy-In

- Describe the importance of having a healthy school environment for all staff, students and families.
- Reinforce costs of having lost school days for students and staff due to potential/actual IAQ problems.
- Use data to demonstrate the value of addressing IAQ issues in the school.



# Program Impact

- Decrease in school absenteeism and increase in awareness of IAQ issues and impact on asthma.
- Removed old carpet and installed new tile flooring prior to the flood and no carpet was reinstalled after the flood.
  - policies and procedures put in place prior to the flood impacted how the buildings were rebuilt after the flood
- Animals removed from classroom settings.
- Implemented preventative maintenance schedules.
- Incorporated Green Cleaning practices.
- School Personnel now have a better idea of how IAQ affects students, staff and families.



# Best Practices for Success

- Develop a committee of concerned people.
  - begin with those who express concerns or symptoms
  - send out an e-mail asking for those who would like to be a part of IAQ committee and then also personally ask to attend meeting
  - set up a meeting and have an agenda
    - listen
    - prioritize and start with something that can actually be completed such as a walkthrough
- Include the following stakeholders:
  - school nurse, staff, administration, maintenance, parents, students, interested community members



## Best Practices for Success (Cont'd)

- Institute the Framework for Effective School IAQ Management throughout the district.
  - start small, change takes time
  - small, incremental changes will make a difference in the long-term
- Believe that concerned people such as the School Nurse can make a difference and promote a systemic change.
- Use your knowledge, skills and evidence-based practice to provide a healthy environment for students, families and staff.



# Next Steps

- Continue incorporating best practices with use of the *IAQ Tools for Schools* guidance.
- Monitor and assess any concerns.
- Continue to educate and be a resource.
  - presenting the NASN Managing Asthma Triggers Program
  - as a member of the Iowa School Nurse Organization help provide guidance to other school nurses



# Resources

- Cleaning for Healthy Schools Toolkit:  
[www.cleaningforhealthyschools.org](http://www.cleaningforhealthyschools.org)
  - free, easy to use modules
  - NASN is a partner that helped develop the modules
- Environmental Health (NASN web page):  
<http://www.nasn.org/ToolsResources/EnvironmentalHealth>
- Asthma Online Tool Kit  
<http://www.nasn.org/ToolsResources/Asthma>
- National Association of School Nurse website:  
[www.nasn.org](http://www.nasn.org)



# Creating School Indoor Air Quality Champions in Puerto

**Teresa Lipsett-Ruiz, Ph.D.**

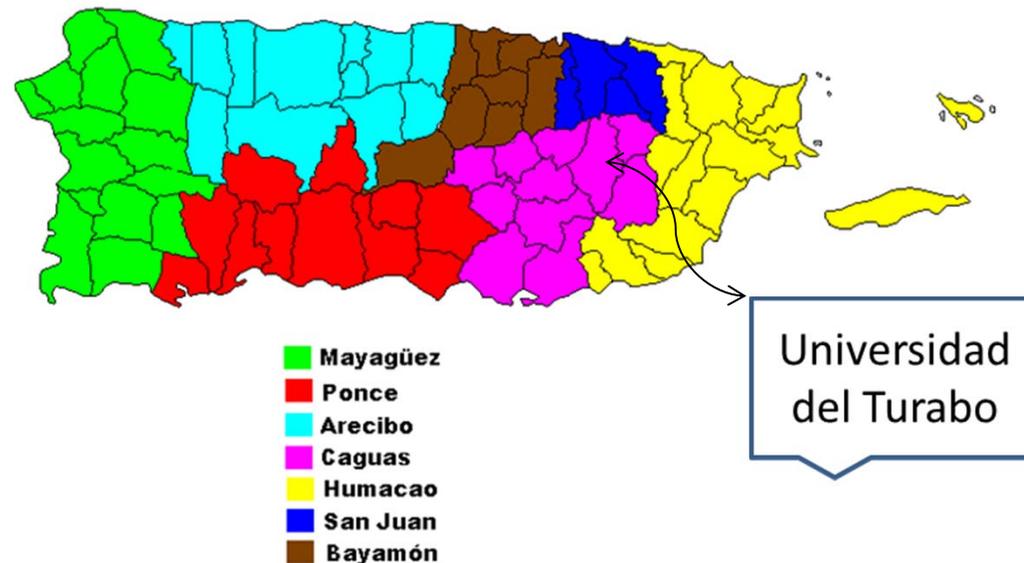
Dean, School of Science and Technology

Universidad del Turabo, Puerto Rico



# Program Overview: Location

- The Puerto Rico IAQ Champions Centre is located at University of Turabo in the municipality of Gurabo. The Program works principally with the two educational regions where the asthma hot spots are concentrated: Caguas and Humacao.



# Program Overview

- Population Served:
  - high incidence of asthma related hospitalizations as provided by the Health Maintenance Organizations (HMOs) on the island
  - number of hospitalizations related to asthma are estimated between 19 and 31 percent

\*The population of these municipalities as per the 2002 US Census is 259,502.



# Population Served

- Data from the Puerto Rico Department of Health estimates that in 2010:(Rivera, 2012)
  - 12 of 100 children had asthma, for a total of 125,209
  - 8 of 100 adults had asthma, for a total of 239,981
  - about 80 people die due to asthma complications annually
  - 80 percent of asthmatic patients have an allergic component. Treating the condition means better health



# Program Goals and Objectives

- **Goal:** Educate and increase awareness of IAQ and asthma management within the Hispanic community of Puerto Rico, specifically the identified asthma “hot spot.”
- **Objective:** Transform dedicated school teachers into IAQ champions in their schools and school districts by providing the training required to implement *IAQ TfS* strategies, as well as the capabilities to create an IAQ team in each school.



# Establishing the Program

- Created the Program in response to school teachers demands for additional asthma environmental trigger awareness, training and continuation of educational support for their respective schools and school districts.
- Absenteeism from schools of children with asthma or chronic asthma means less class days, and as a consequence, less academic development and progress.



# Establishing the Program (cont'd)

- What makes our schools unique?
  - warm and humid climate
  - often located near roads and highways
  - families are often living in poverty
  - parent's educational level is typically between middle and high school level
  - many parents do not fully understand asthma



# Findings from Walkthroughs



# Innovative Approach

- Recruit graduate and undergraduate students to:
  - educate the school community about environmental asthma triggers
  - visit the schools and do a walkthrough
  - work with the liaisons in the schools for the preparation and implementation of an asthma-friendly environment action plan to be used at each school
- Puerto Rico Department of Education collaborates.
- Supervisor and director select a liaison at each school. Liaisons are invited to the workshop related to IAQ and asthma.



# Program Activities

- Organize student clubs.
- Collect mold samples in the school rooms, before and after the use of the *IAQ TfS*.
- Organize mega green cleaning.
  - families and students clean the **inside** of the school once each academic semester
- Translate *IAQ TfS* into Spanish.
- Develop and digitalize two plays explaining how to be healthy and avoid asthma triggers.
- Hold conferences for the school community with physicians and health professionals.
- Use social media (e.g., Facebook, blogs).



# Program Activities

## Collect Mold Samples

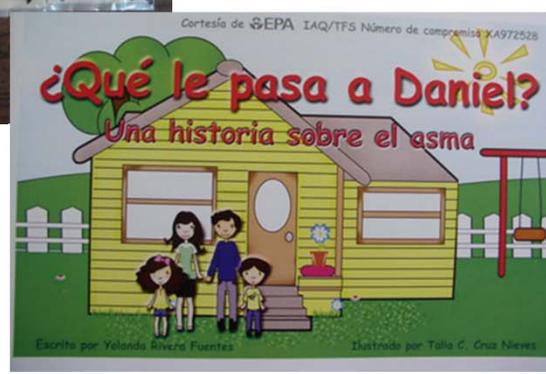
Mold Samples Before Cleaning



Mold Samples After Cleaning



## Green Mega Cleaning



## Program Materials



# Overcoming Barriers

- Teachers are busy and wary of taking on more work.
- University students help in all phases of implementation of the program including the preparation and discussion of the IAQ Management Plan with the school director and teachers. The director's response is crucial.



# Program Outcomes

- Two *IAQ TfS* workshops held annually to increase knowledge on creating and maintaining a healthy indoor environment and eliminating asthma triggers.
- 132 schools have been visited and walked through. Each school has an *IAQ Management Plan*.
- *EKOLOG* clubs in schools have kept promoting *IAQ TfS* at schools.



# Program Impact

- Absenteeism data due to asthma shows:
  - in general a 38 percent decrease in absences of school students due to asthma\*

\*Data was collected in 32 schools during the years 2010 to 2012

Schools In the sample n=32	Year 2010-12	# of Asthmatic Students in the schools	# of the Asthmatic Students in the sampled rooms (32 rooms participated, one room per school)	Absenteeism Before TFS (From ten to twenty days absenteeism data was collected)	Absenteeism After TFS (From ten to twenty days absenteeism data was collected)	Percent Difference Before and After	Diminishing Percent
		1742/9736 (18%)	251/1742 (14%)	464/3600 (13%)	305/3600 (8%)	5%	38%



# Program Impact

- Teachers that participate in the workshop, evaluate it through a survey. From a total of 133 participants, 95 answered the survey for a 71 percent response rate. Results shows that:
  - 85 percent of the workshop participants gained better knowledge on how to achieve and maintain a healthy indoor environment
  - 97 percent of the workshop participants understand better what asthma is and what are the triggers



# Best Practices for Success

- To be successful, the people working with you have to be convinced that the program will be of great help for our children's health.
- Presenting the program as one that will be done by students as part of their community work for the older kids; and/or do activities through clubs for both was a good motivation for teachers to accept the program.



# Next Steps

- Reach Additional Communities.
  - expanding to the nearby community where one of the participant schools is located
  - preliminary meeting with community organizations was held and commitments were made:
    - play presentation in the church
    - program participation in a community health fair



# Tips for Engaging School Leaders

- Identify higher education programs in health or environmental science in your community.
- Involve department heads, professors and students. Professors could learn about the tools to work with asthma and motivate undergraduate students to also learn and volunteer to work in schools.
- Disseminate leaders' work and notify the University authorities about the relevance of an asthma management plan for the nearby communities.



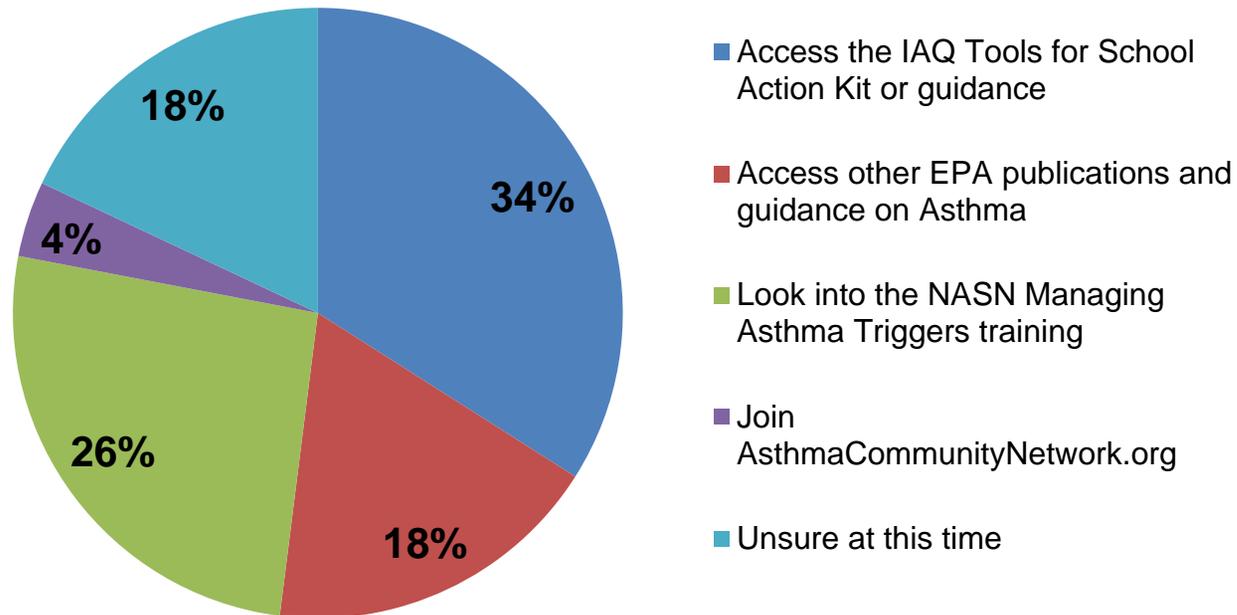
# Resources

- *IAQ TfS* Checklists in Spanish Contact:
  - [ut\\_tlipsett@suagm.edu](mailto:ut_tlipsett@suagm.edu)



# Polling Question #3

- After hearing this presentation, what is the first action you will take?





# Resources

- EPA's *IAQ Tools for Schools* Action Kit
- [AsthmaCommunityNetwork.org](http://AsthmaCommunityNetwork.org)
- NASN's Managing Asthma Triggers Program





# Question and Answer

Please refer to the EPA's Schools Webinar Questions and Answers document:

<http://www.epa.gov/iaq/schools/webconferences.html>

