Talk Nerdy to Me

Making Science Speak ‘Human’

- David Foss, Statewide Brownfields Coordinator, MassDEP
- Paula Middlebrooks, Environmental Consultant, TDEC
- Randi Mendes, Program Director, UConn TAB

David Foss, CPG, LSP

Statewide Brownfields Coordinator

MassDEP
Massachusetts Department
of Environmental Protection

Paula Middlebrooks, MS

Environmental Consultant

TDEC
Tennessee Department of
Environment and Conservation

Randi Mendes, PhD

Executive Director

UConn TAB
University of Connecticut
Technical Assistance to Brownfields

Talk Nerdy to Me:

Making Science Speak "Human"

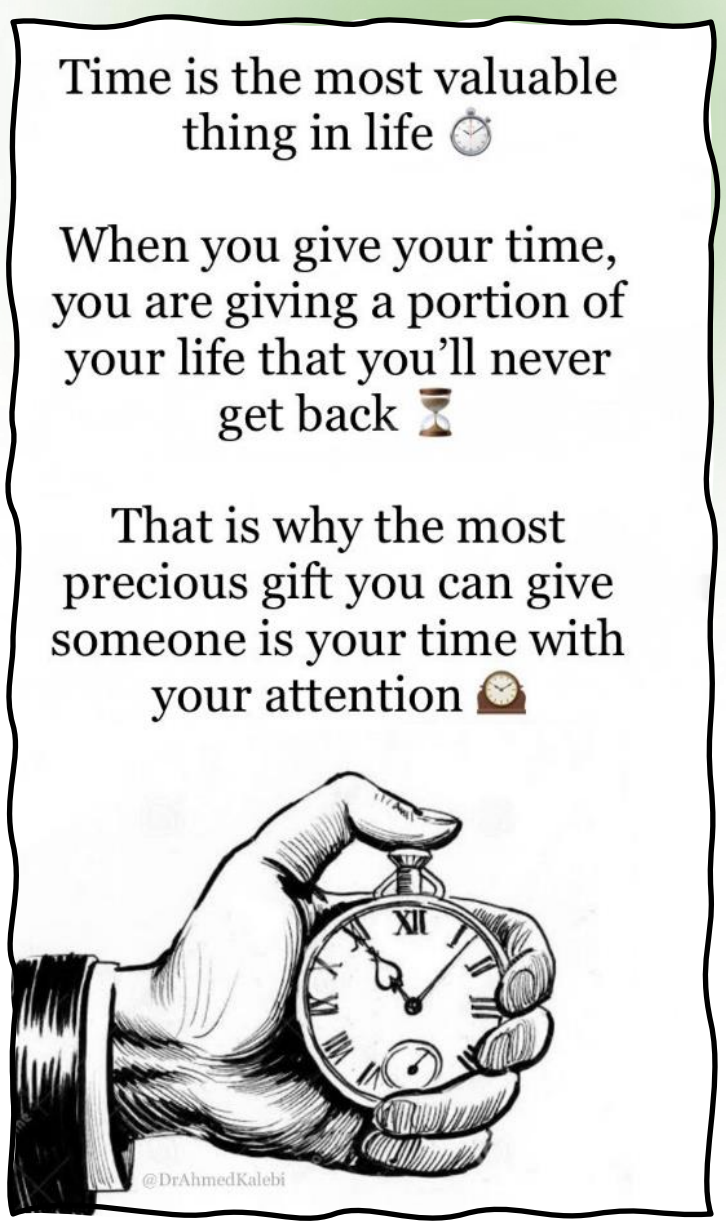
February 26, 2026

David Foss, CPG, LSP
Massachusetts Statewide Brownfields Coordinator
MassDEP | Bureau of Waste Site Cleanup

Credit: HTTP://XKCD.COM/

Time is valuable

- Face-to-Face meeting time is precious
- Appreciate your audience giving you ***their*** time & attention
- Make the most of this resource



Stuff Happens

AFFF

Aqueous Film Forming Foam

After the response,

How do we Communicate?

Top TEN Tips for Science Communication

1. Start with the Most Important Information (BLUF)
2. Know your Audience
3. Identify the Goals of the Communication
4. Talk about the Scientific Process
5. Focus on the Bigger Impact Topics
6. Avoid Jargon & Acronyms
7. Be Relatable
8. Provide Visuals
9. Stick to 2 or 3 KEY Points
10. Develop an Elevator Pitch

BLUF

Bottom
Line
Up
Front

BLUF is a standard in U.S. military communication whose aim is to make military messages precise and powerful. It differs from a more-traditional style in which conclusions and recommendations are included at the end, following the arguments and considerations of facts. The BLUF concept is not exclusive to writing since it can also be used in conversations and interviews.

TOO MANY WORDS

1. Start with the Most Important Information (BLUF)
2. Know your Audience
3. Identify the Goals of the Communication
4. Talk about the Scientific Process
5. Focus on the Bigger Impact Topics
6. Avoid Jargon & Acronyms
7. Be Relatable
8. Provide Visuals
9. Stick to 2 or 3 KEY Points
10. Develop an Elevator Pitch

Focus on Key Points

BLUF

Bottom
Line
Up
Front

BLUF is a standard in U.S. military communication whose aim is to make military messages precise and powerful. It differs from a more-traditional style in which conclusions and recommendations are included at the end, following the arguments and considerations of facts. The BLUF concept is not exclusive to writing since it can also be used in conversations and interviews.

No Jargon

Monoxide

Effective Communication

1. Know your audience
2. Use visuals to tell your story
3. Focus on key points

Three examples of slides that DON'T help "tell your story"

X. Too many words

Y. Unclear visualization

Z. Dizzying graphics or animations

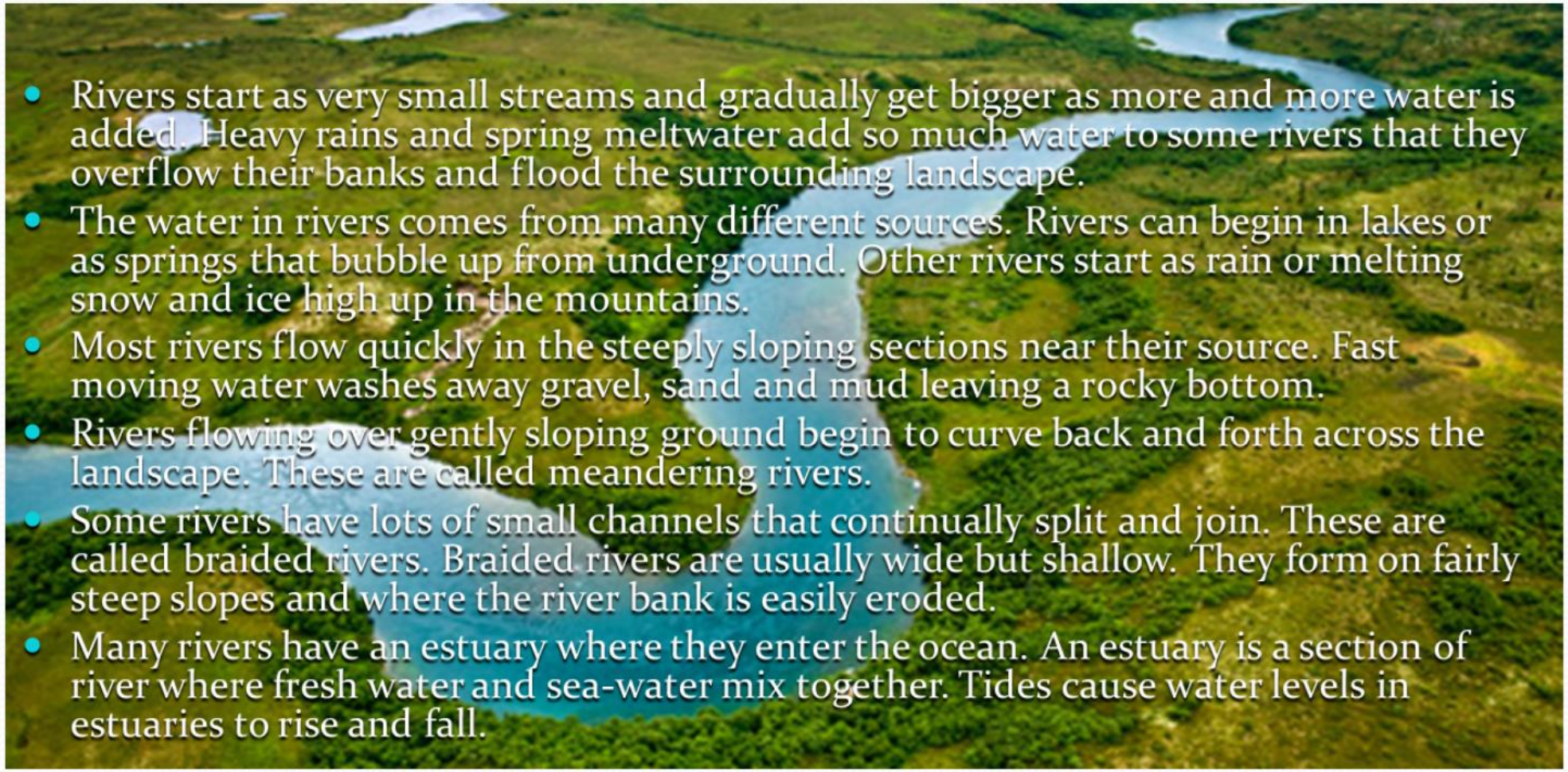
Example of “dense” slide

Here’s and example with a longer title

- This is called Death-by-Bullet-Point.
- Don’t do this because you don’t want your audience reading when they should be listening.
- Remember the Redundancy Principle.
- Don’t read what is on your slide.
- It is very painful if you are in the audience.
- If you really want to confuse your audience, start to make the font smaller
  - And then indent your bullet points
  - Try to fit everything on one slide
- Then go back to regular bullet points but change your font
- And you will have essentially killed your audience with too much text and thoughtless BULLET points!

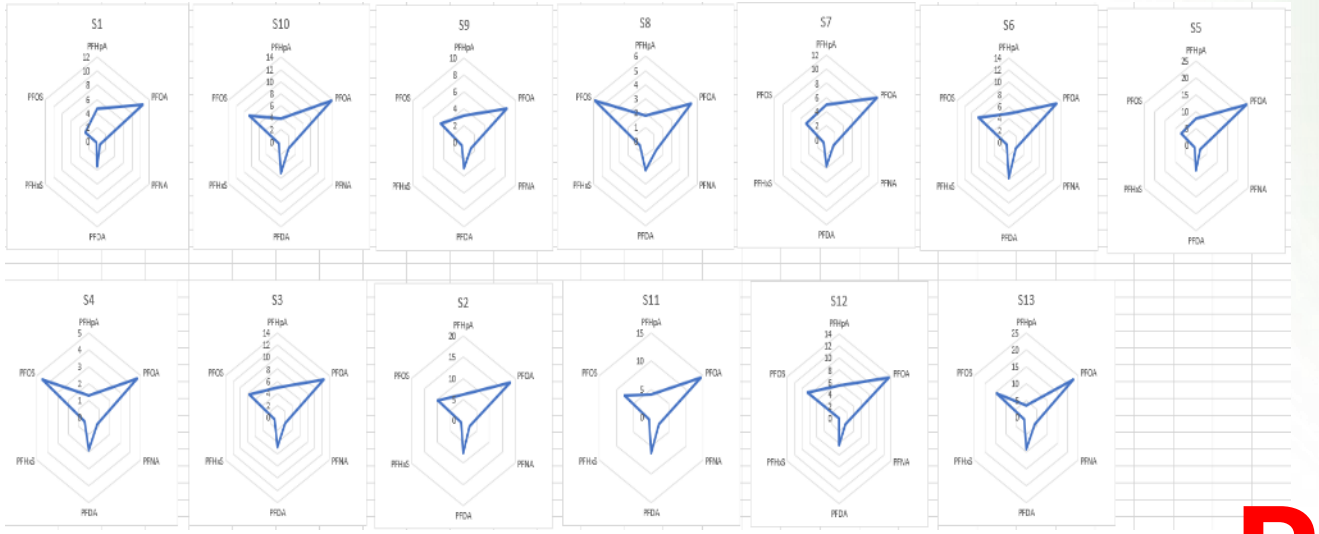
What do you expect your audience to learn?

How Rivers Are Formed



The Graphics SHOULD Illustrate Your Point

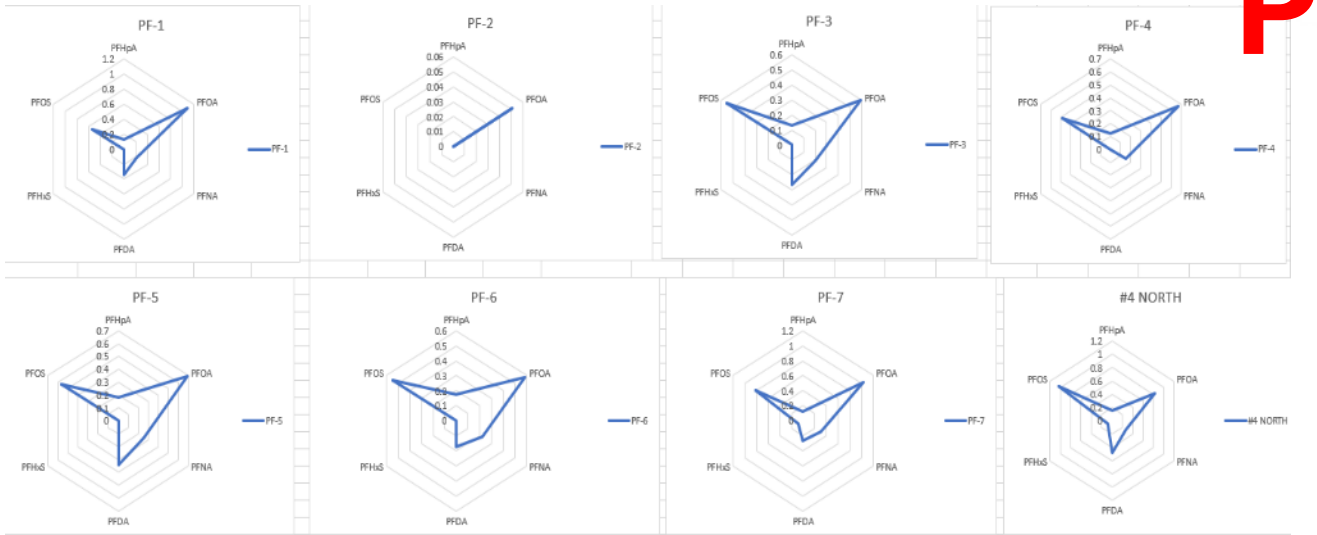
Source Material
Data Set #1



ANY SIMILARITIES?

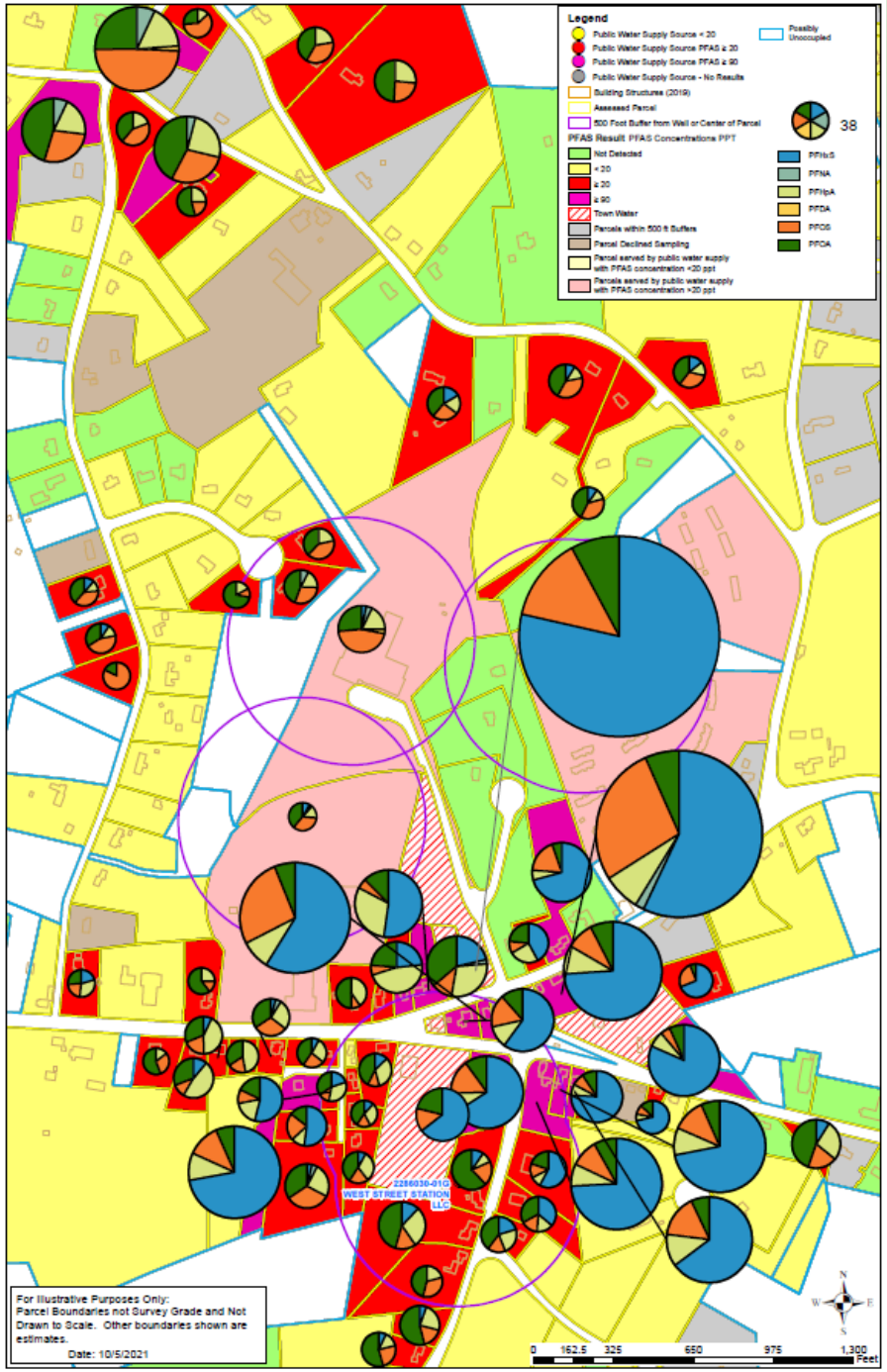
PERHAPS?

Receiving Site
Data Set #2



More Effective Communication

- Know your audience
- Use visuals to tell your story
- Focus on key points



Goal of Effective Communication = Connection

Who do people believe?

Random Stranger

Talking Head on TV

Family / Friend

Qualified Expert

Trusted advisor

Short Term Goal

Today

Long Term Goal
(requires multiple contacts)

Establish Relationships

- Long Term → Build Relationships
- Short Term → Establish Credentials &
  Identify one or more key **TRUSTED Allies**

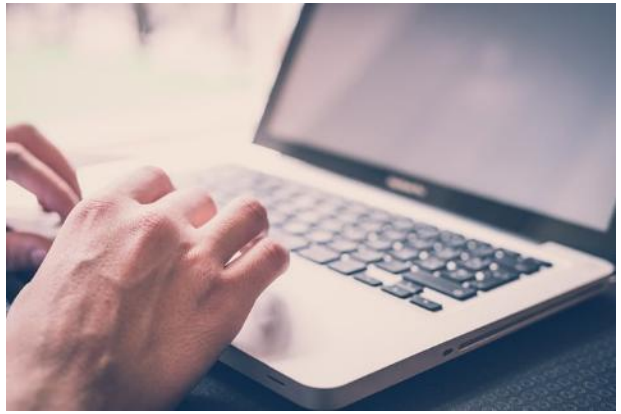
If you don't have time to build relationships

- Neighborhood Association Leader
- Church Leader
- Municipal Health Director / Health Clinics / Pediatricians Offices
- Local Translator

Trust takes time

Communication is about the listener receiving information, learning & understanding.

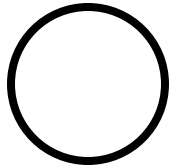
- Think about your audience
- Different people [generations / cultures] receive information differently




Try to Connect with Your Audience

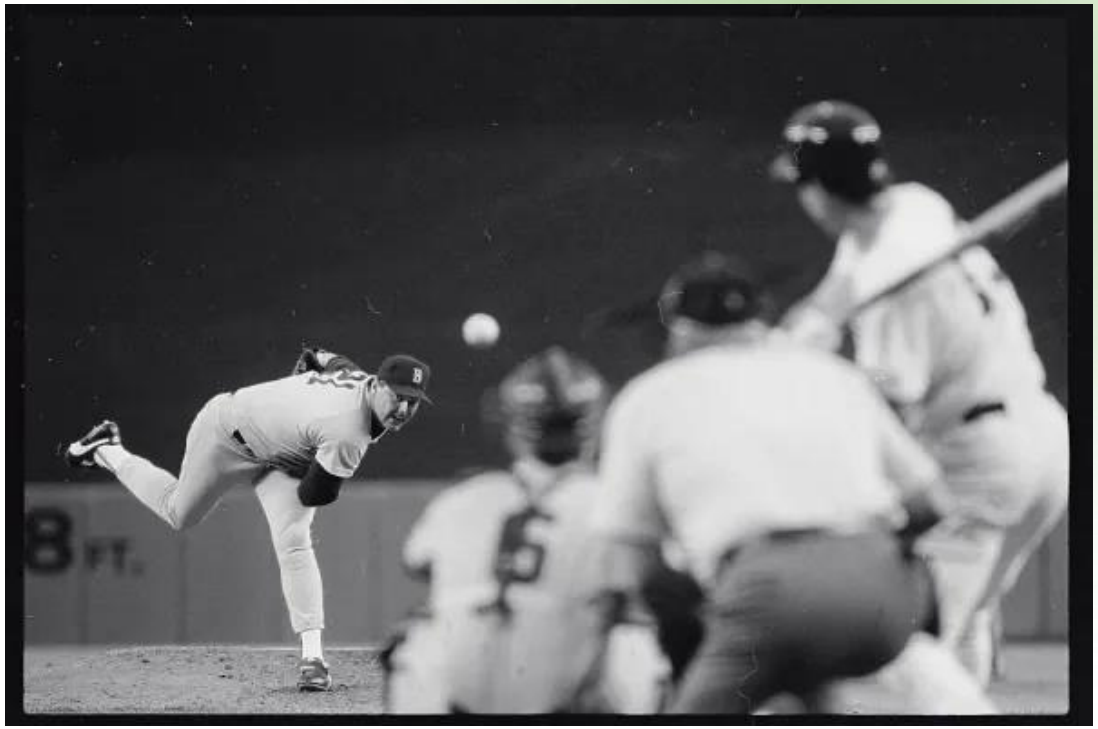
Historic dry cleaner in a residential neighborhood Worcester MA

- 32% of Students in ELL program
- 70 different languages in the public schools



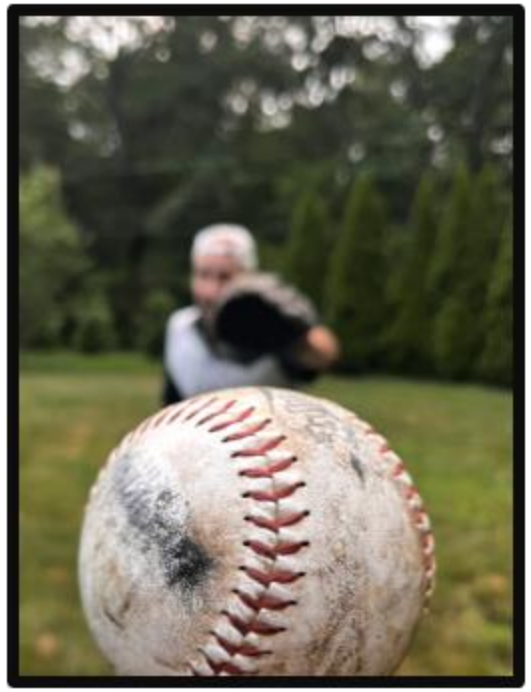
How to Make Connections

- Plan ahead: anticipate your attendees
- Craft your message for **this** audience
- Understand the technical background of your audience



Roger Clemens
Sports Illustrated Vault
Copyright SI.com

Major League Catcher



Uncle Jim

Communication = when the listener understands

- Lead with your conclusion
- Focus on 2 or 3 key points
- Use visuals and graphics
- Make data and resources available

Conclusion & Key Take-aways

No Jargon Monoxide

Communication skills can be learned

- Find your voice … practice
- Tell a story to make connections
- Watch & Listen to your Favorites

Rachel Carson

Hank Green

Neil deGrasse Tyson

Nova

Make Connections

David Foss, CPG, LSP
MassDEP

David.Foss@Mass.Gov

LinkedIn:
https://www.linkedin.com/in/fosslsp/

Introductions & Pitches

Paula Middlebrooks, MS

TDEC, Environmental Consultant

Tennessee Department of Environment and Conservation

Introductions & Pitches

Paula Middlebrooks, MS
Environmental Consultant
Division of Remediation
paula.middlebrooks@tn.gov
tn.gov/environment

TN Department of Environment & Conservation

About Me…

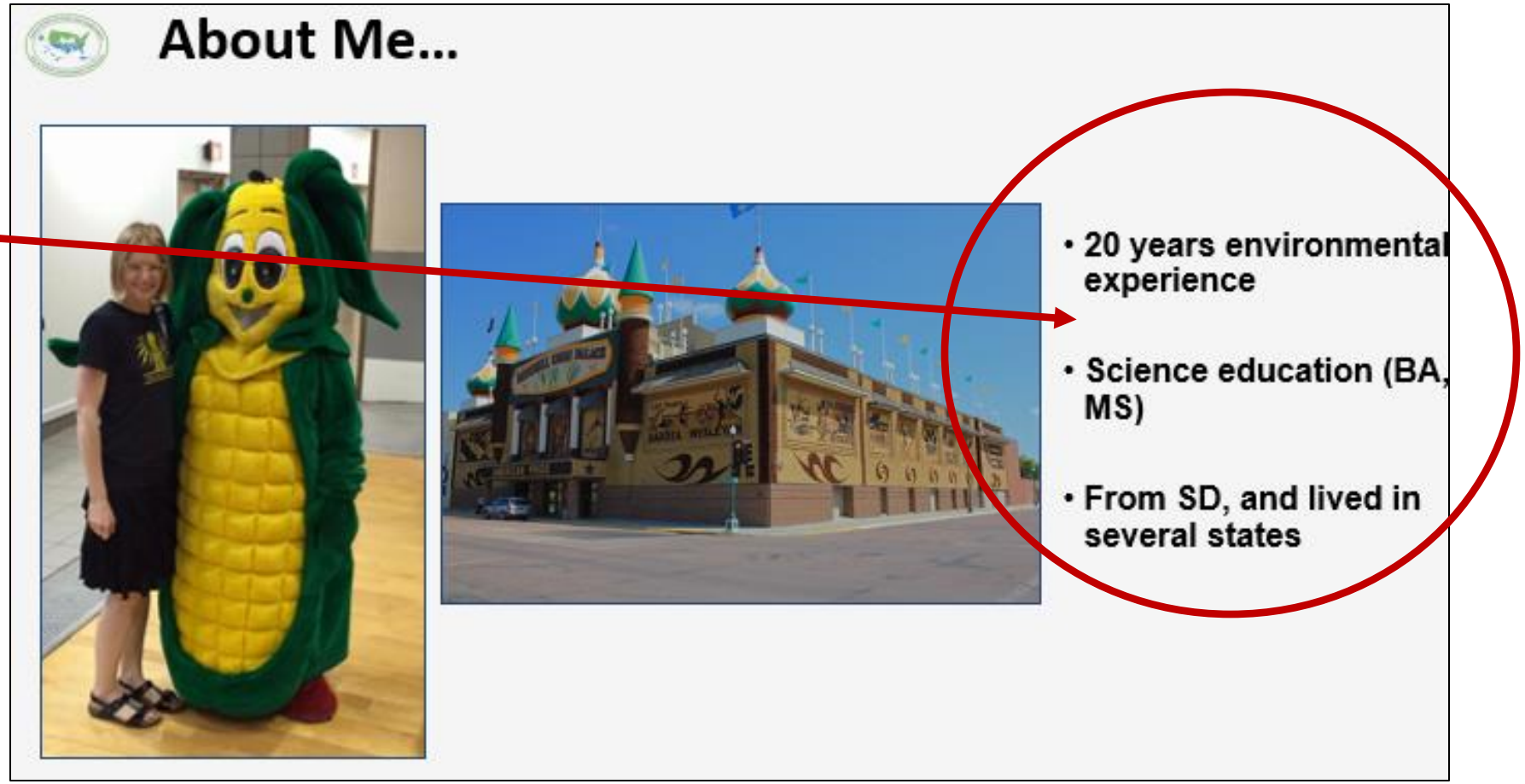
- 20 years environmental experience
- Science education (BA, MS)
- From SD, and lived in several states

Introduction

Paula Middlebrooks has worked for the State of Tennessee for 20 years. Paula serves as a Brownfields Coordinator specific to federal brownfields funding in the Department of Environment and Conservation. Paula has consistently proven herself to be a champion for public health and the environment as a skilled leader and dedicated public servant. She is responsible for developing relationships at the local level that have successfully facilitated and secured EPA Brownfields Grants worth more than $20 million for Tennessee communities. These grants allow contaminated properties to be addressed by cleaning up and reinvesting in them, which increases local tax bases, facilitates job growth, and improves and protects the environment. In 2017, Paula received an Excellence in Service Award from Governor Haslam. While her professional focus is improving public health and the environment, Paula also gives back to her community as a volunteer leader for the Historic Belcourt Theater and volunteers with A Step Ahead. A native of South Dakota, Paula earned a Bachelor's Degree in Biology from Dakota Wesleyan University and a Master's Degree in Environmental Health from the University Of Minnesota School Of Public Health.

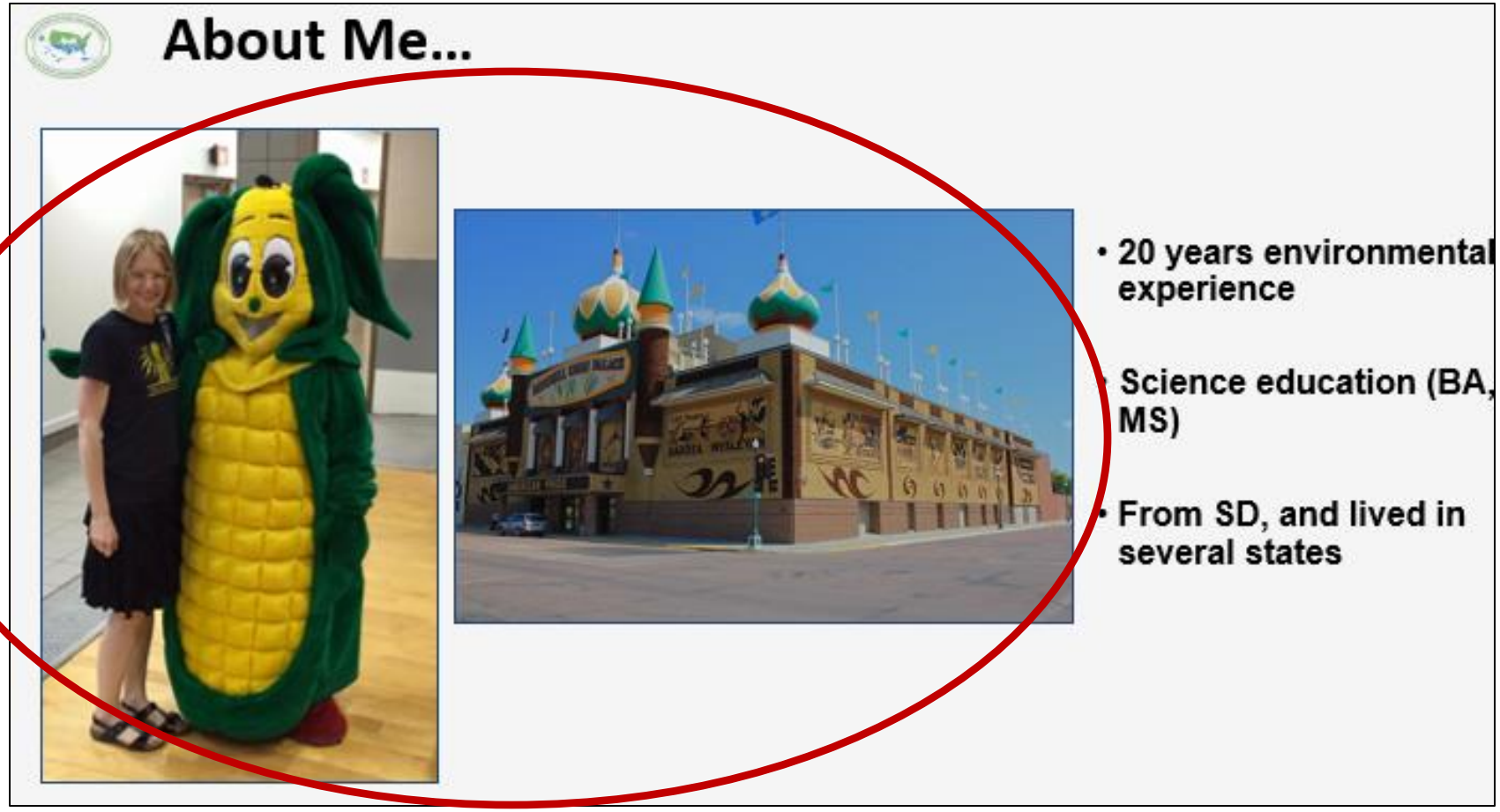
Introduction

- **Brief**
- Interesting
- Connect with audience



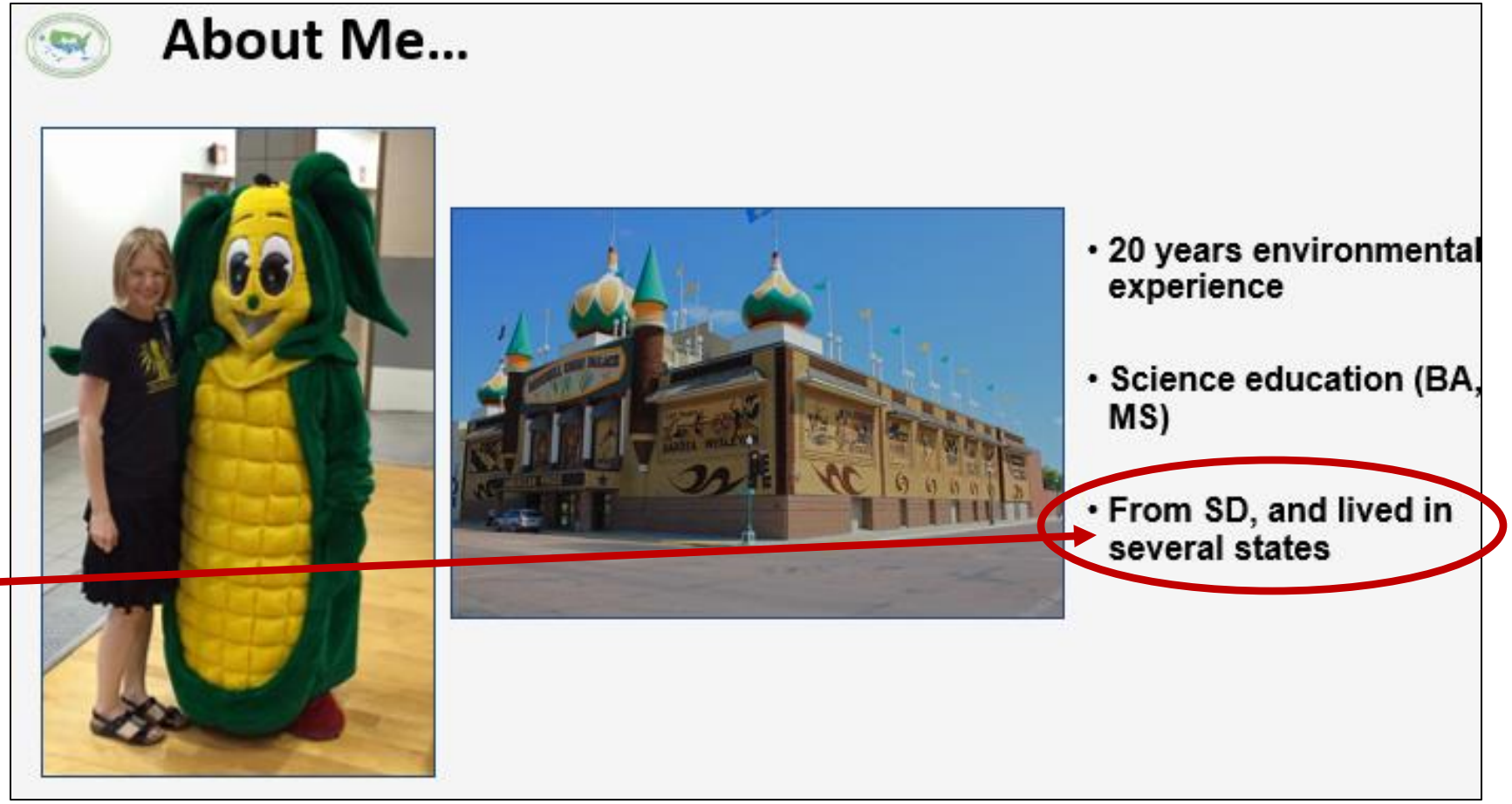
Introduction

- Brief
- **Interesting**
- Connect with audience



Introduction

- Brief
- Interesting
- **Connect with audience**



Get to the Point

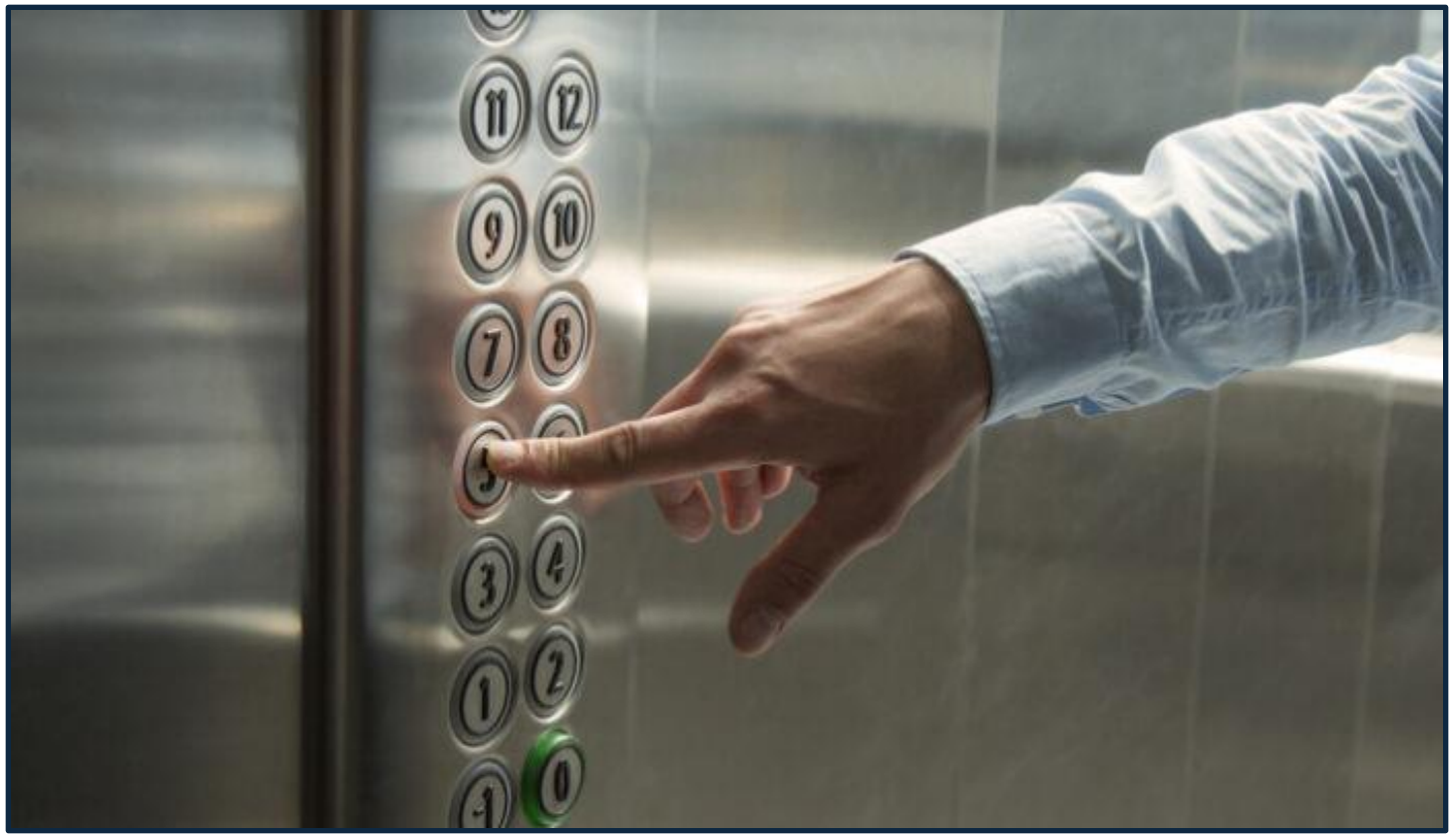
Elevator Pitch Goal

Pique listeners interest enough for them to act.

Elevator Pitch Goal

<u>Actions</u> the listener can take:

- **Asking for more information**
- **Scheduling a follow-up conversation**
- **Asking for your business card**
- **Missing their stop on the elevator…**



Elevator Pitch: Components

A project I'm working on is **re-purposing a former railway into a trail** between the most economically distressed communities in Appalachian Tennessee, addressing contamination for safe reuse.

What?

Elevator Pitch: Components

A project I'm working on is re-purposing a former railway into a trail between the **most economically distressed communities in Appalachian Tennessee**, addressing contamination for safe reuse.

Where?

Elevator Pitch: Components

A project I'm working on is re-purposing a former railway into a trail between the most economically distressed communities in Appalachian Tennessee, **addressing contamination for safe reuse**.

The Big Picture

Elevator Pitch: Follow Up

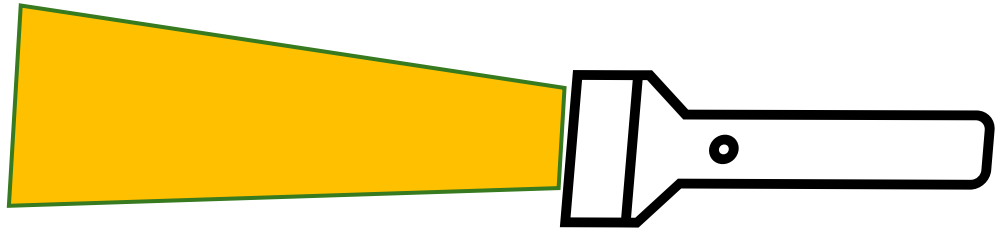
A project I'm working on is re-purposing a former railway into a trail between the most economically distressed communities in Appalachian Tennessee, addressing contamination for safe reuse.

Getting to the Point

Preparation is Key

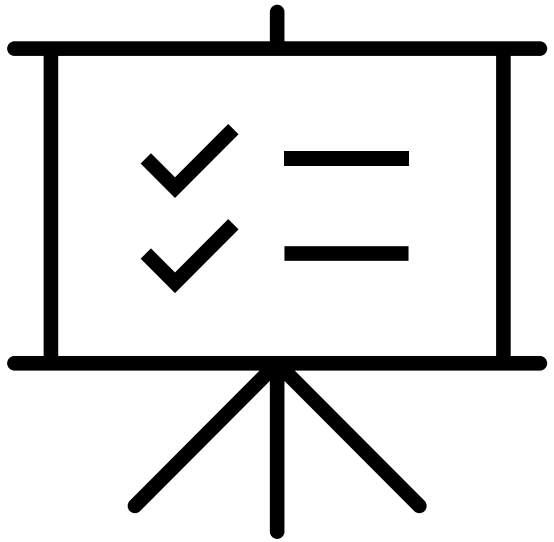
Know your presentation

- **Technology can fail.**
- **It's fine if you don't know something that you are asked.**



Preparation is Key

- Invest in your introduction
- Don’t bury the lede
- Develop a pitch
- Practice! Practice! Practice!

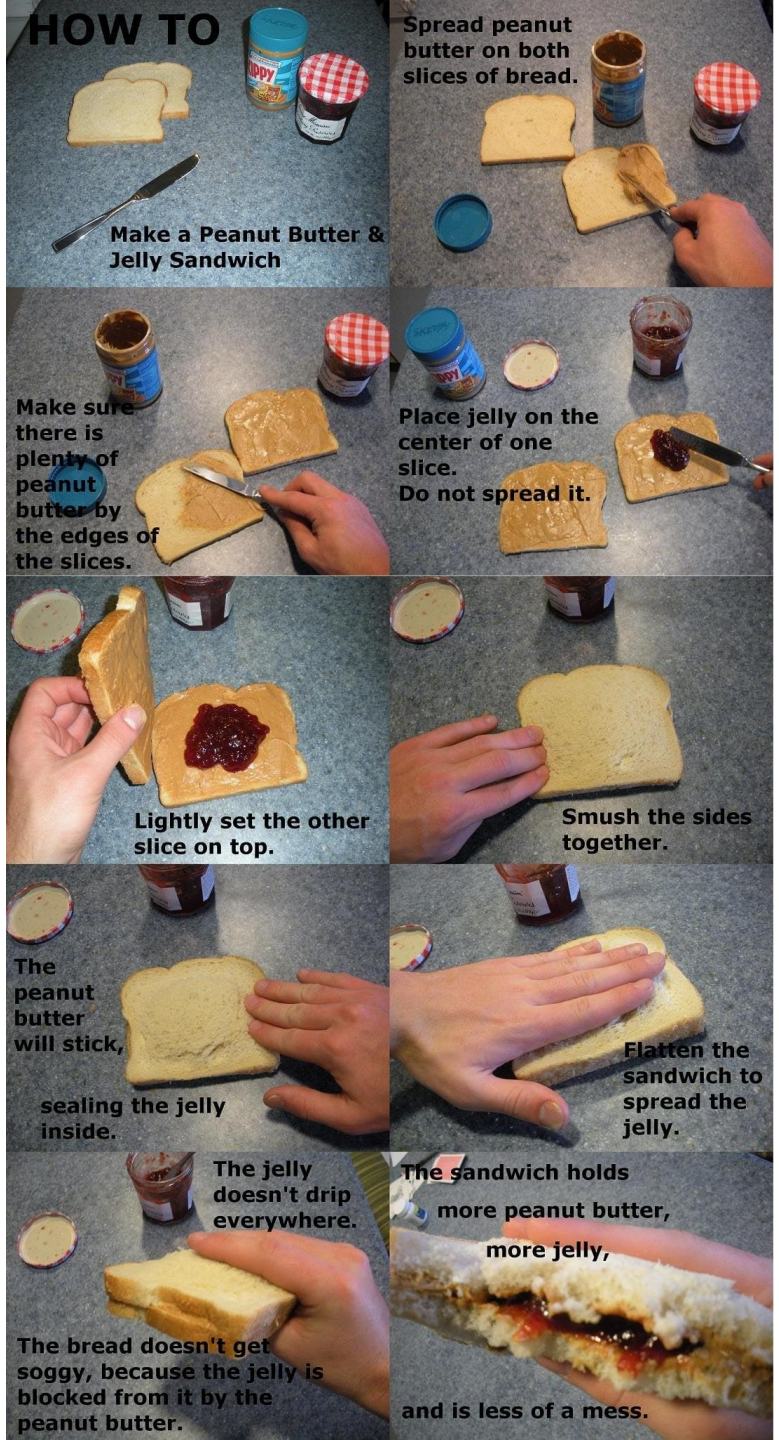


IMPLEMENTING SCIENCE COMMUNICATION

Randi Mendes, Ph.D.
UConn TAB
Executive Director

LET’S MAKE A PEANUT BUTTER AND JELLY SANDWICH

Case Study



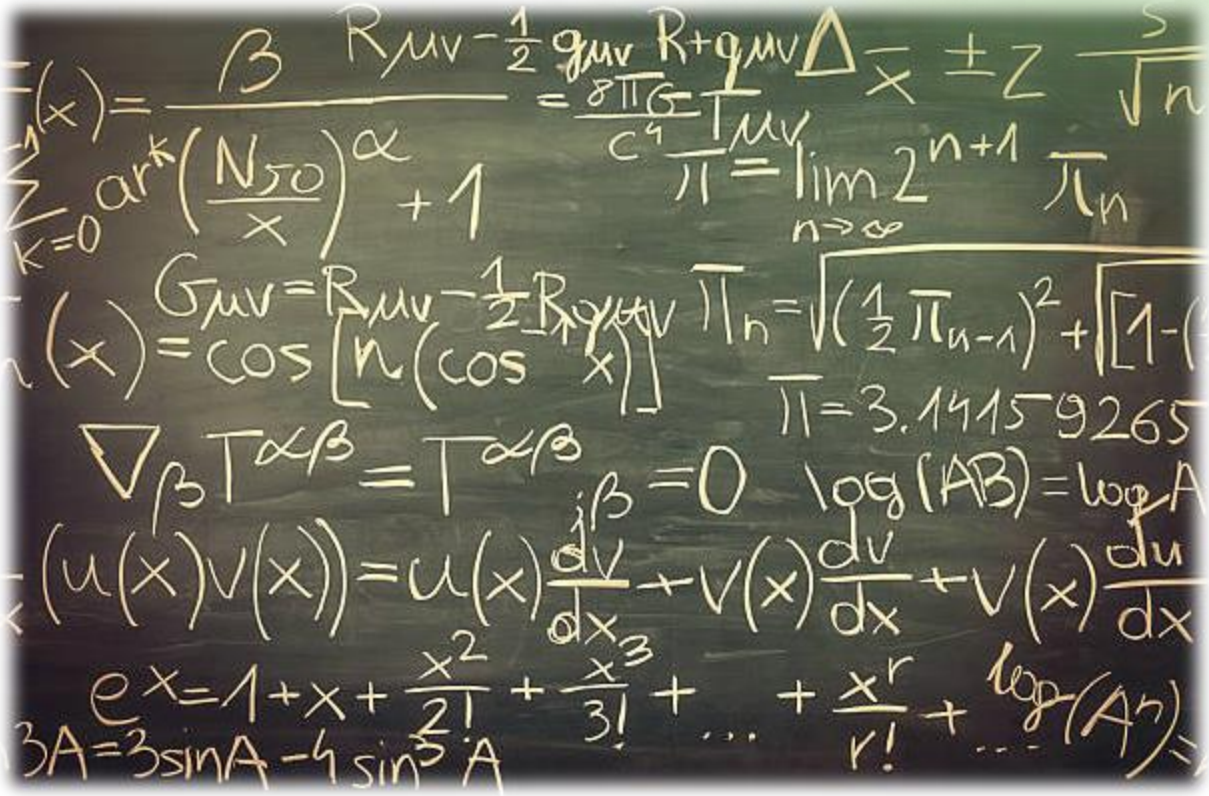
Preparing a Peanut Butter and Jelly sandwich

- Step 1, open the loaf of bread and, remove two slices of bread.
- Step 2, place the two slices of bread on a flat surface, such as a plate.
- Step 3, now open the peanut butter .
- Step 4, now scoop with a spoon some peanut butter (make sure your peanut butter fill's the spoon completely)
- Step 5, place the peanut butter take is on the spoon on one of the slices of bread.

So Which Way is the Right Way?

THERE IS NO EXACT FORMULA

- Think about your audience – How do they best learn and understand?
- Get feedback and work on improving every time -
- Have others review
- Remember that what might work for some groups might not work for others



RESOURCES TO HELP YOU PREPARE & TO BE SUCCESSFUL

PLANNING: IDENTIFYING YOUR AUDIENCE & STAKEHOLDERS

- This can be the hardest step
- Who do you bring to the table?
- Are they representative of the community you are helping?
- What are their roles once they are there?

Stakeholder Mapping

Identify key stakeholders in brownfields redevelopment and decide how to engage them

What is a Stakeholder Analysis?

In brownfields redevelopment, a stakeholder analysis is the process of collecting and understanding information about the people and organizations that:

- Have the interest and power to impact your project
- Will be impacted by your project

A power-interest grid, which you can find below, is a useful tool for stakeholder analyses.

Who are Stakeholders?

Primary Stakeholders: beneficiaries or targets of the redevelopment project

Secondary Stakeholders: people whose jobs or lives will be impacted by the redevelopment project

Key Stakeholders: people or organizations who can influence others, hold power, or have an interest in the outcome of the redevelopment project

When Should a Stakeholder Analysis be Completed?

A stakeholder analysis should be completed as early as possible when considering redeveloping a brownfield site. Conducting a stakeholder analysis is an important component to community engagement.

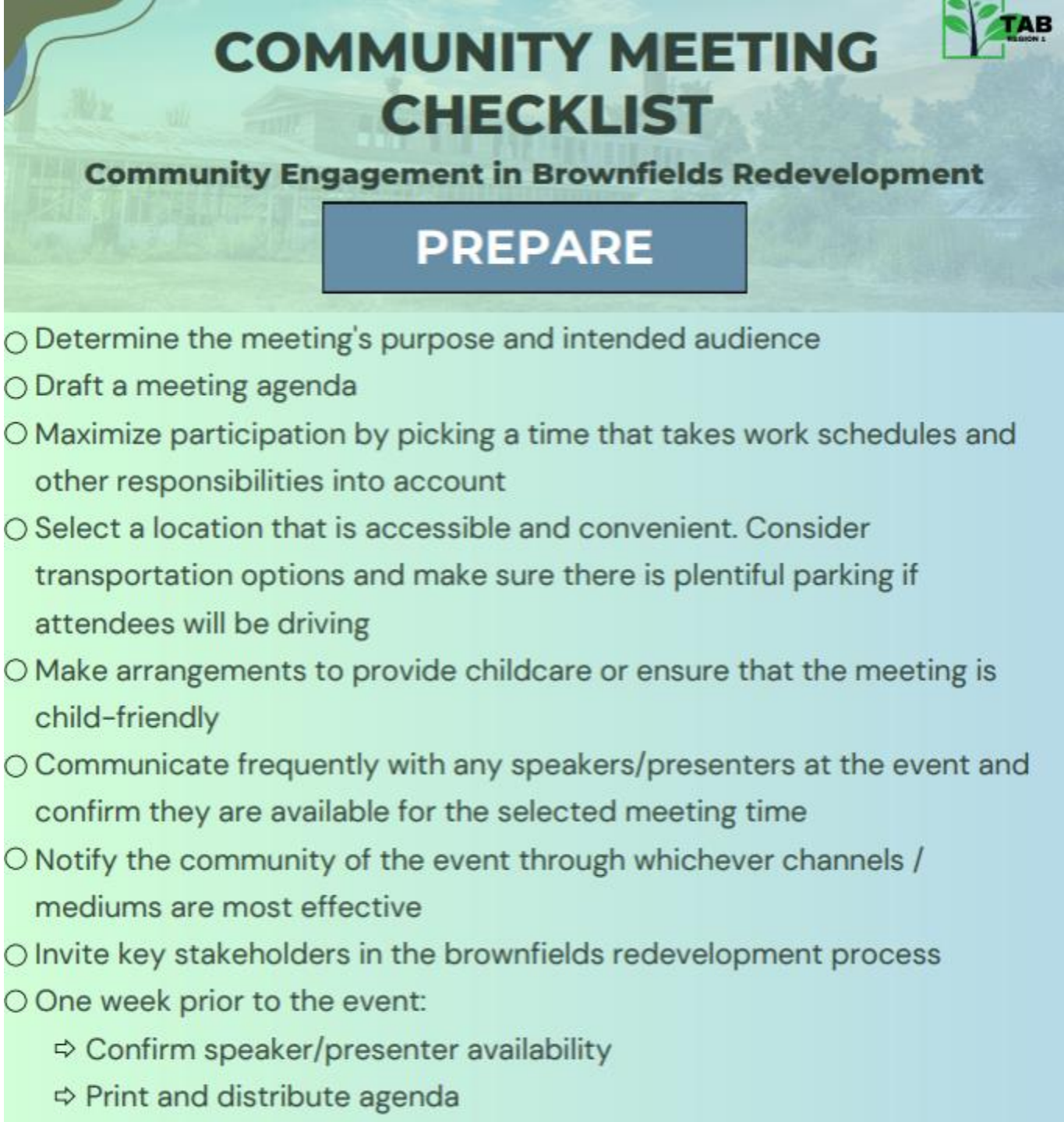
Why is a Stakeholder Analysis Important?

Brownfields redevelopment should be a participatory effort that involves as many diverse stakeholders as possible. Engaging stakeholders effectively has many benefits:

- Gaining buy-in and support for the project
- Strengthening your project against opposition
- Building participation that is inclusive, fair, and equitable
- Increasing credibility and chances of success
- Understanding stakeholders can save your project from being blindsided with concerns later on in the process

PLANNING: SETTING UP SUCCESSFUL MEETINGS

- How will you get people to your meetings?
- Is the meeting accessible to all that you've invited and want to be there?
  - Location, language, timing, ADA, advertisement, setting, etc.
- **UConn TAB provides a community meeting checklist that follows the before, during, and after**



ACTION: PROVIDE AN ACRONYMS AND JARGON REFERENCE GUIDE

- Avoid as much as possible but sometimes it's not possible!
- **Provide your audience with a cheat sheet – sometimes we forget.**
- It's helpful to not only include acronyms but also jargon or terms
  - For example, ESA = Environmental Site Assessment but what is that?

ACTION: MAKE INFORMATION ACCESSIBLE

- Avoid information overload!
- Consider how you are communicating both in person and as a takeaway.
- What is it important for the audience to know?
- Who is the audience?
- **Let others review that are within your audience or have no background in the topic. Can they understand?**

PCBs

Polychlorinated Biphenyls (PCBs)

PCBs are synthetic chemicals once used in electrical equipment, caulks, paints, and other construction materials, and are a common contaminant at brownfield sites. Even though they were banned in the U.S. in 1979, PCBs still linger in the environment, posing ongoing health and environmental challenges.

Environmental Impacts:

Water Contamination: Industrial dumping and wastewater runoff allows PCBs to settle into waterways by binding to sediments thus, contaminating fish. Soil Pollution: Landfills, dumping site, leaking electrical equipment and dust/debris from building materials can cause chemicals to leach into the surrounding soil. This can pose risks to crops and livestock.

How are PCBs Impacting Rural Communities?

Fishing and Waterways: PCBs in rivers like the Housatonic River (MA/CT) and Penobscot River (ME) have led to long-term contamination of ecosystems, killing wildlife, and making fish unsafe to eat.

Agriculture: Farms located near industrial sites or old landfills may have PCB contamination in soil from dust or runoff, which can impact crops & livestock.

Schools and Homes: Many older schools and homes still contain PCB-laden building materials. When these materials deteriorate, they release PCBs into the air, creating potential health risks.

Original Sources:

- Electrical equipment (transformers and capacitors) in the oil
- Construction materials (caulk, paint, and finishes)
- Industrial machinery and adhesives

HEALTH RISKS

Exposure: PCBs can enter the body through inhalation, ingestion of contaminated food or water, or skin contact

Health Effects: Exposure to PCBs is associated with cancer, immune system suppression, liver damage, and reproductive health issues.

Groups at Highest Risk: Children and pregnant mothers

EPA BANS ONGOING USES OF PCBS

ACTION: TAKE TIME TO MAKE PRESENTATIONS ENGAGING

- Tell a story to engage your audience
- Utilize captivating visuals
- Avoid text heavy slides
- Avoid graphs and heavy data slides
- Use titles that indicate what the takeaway message should be
- Use ‘Slide Master’ and ‘Design’ feature in PowerPoint to help!
- Frame the content in terms of impact – why does it matter to them?

ACTION: INFORM WITHOUT OVERWHELMING, AND ENGAGE WITHOUT OVERSIMPLIFYING

- Practice your talk!
- Don’t read everything directly off the slide
- Be mindful of time – nothing worse than going over
- Make eye contact and be yourself
- Engage with audience through relating and story telling – analogies and metaphors
- Check in throughout for questions, understanding, and feedback.

TALK NERDY TO ME TAKEAWAYS

PLANNING: IDENTIFYING YOUR AUDIENCE & STAKEHOLDERS

PLANNING: SETTING UP SUCCESSFUL MEETINGS

ACTION: PROVIDE AN ACRONYMS AND JARGON REFERENCE GUIDE

ACTION: MAKE INFORMATION ACCESSIBLE

ACTION: TAKE TIME TO MAKE PRESENTATIONS ENGAGING

ACTION: INFORM WITHOUT OVERWHELMING, AND ENGAGE WITHOUT OVERSIMPLIFYING

David Foss, CPG, LSP

Statewide Brownfields Coordinator

MassDEP

David.Foss@Mass.Gov

Paula Middlebrooks, MS

Environmental Consultant

TDEC

Paula.Middlebrooks@TN.Gov

Randi Mendes, PhD

Executive Director

UConn TAB

Randi.Mendes@UConn.Edu

Brownfields Bites and Insights

Upcoming Webinars

- **12:00 pm March 19, 2026**

  Enhanced Community Engagement: Not Just Checking a Box

  Presenters: Jamilah Harris, Rebecca Wells-Albers, Abigail Anderson

- **Coming in April 2026**

  History of the CERCLA BFPP Liability Defense, Current State Implementation, and What's Next

ASTSWMO CaBS
Brownfields Focus Group

Thank you for joining us