TELLING YOUR RESEARCH STORY

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TO ENGAGE AN AUDIENCE
PEOPLE INTERPRET INFORMATION THROUGH THE LENS OF THEIR OWN VALUES AND CULTURAL IDENTITIES

OVERVIEW

- Message Box: What is it and why use it?
- Section-by-section: How to build your message box
  - The Issue
  - The Problem
  - The So What?
  - The Solutions
  - The Benefits
- Bring on the bling: Storytelling & Your Message Box
- Your turn: “Speed dating” your story
- Thoughts/Questions/Next Steps
MESSAGE BOX: WHAT IT IS & WHY USE IT

- A communication tool
- Helps distill essential information
- For specific audience and purpose
- To convey what you do and why it matters
- In many different contexts

- Preparing for interview
- Writing a grant proposal
- Creating presentations (students, policymakers, others)
MESSAGE BOX: FIVE PARTS

- The Issue
- The Problem
- The So What
- The Solutions
- The Benefits

https://www.compassscicomm.org
Questions to as yourself as you articulate the ISSUE:

- If you were looking for information about this online, what would be the 2-3 word search term you’d use?
- What signal does your word choice send (e.g., climate change versus global warming)?
THE PROBLEM

Greg

Is/was Mars a place life could exist?
Types and amounts of energy sources (food) for microbes on Mars is unknown.
Complicated data collected on Mars by Curiosity Rover needs detailed analysis to tell us about possible energy sources.

Problem

Issue

Becca

- Oxygen very low for the first ½ of Earth’s history; most geologic proxies for the atmosphere only tell us about the composition of the atmosphere near the surface—this is heavily influenced by regional conditions (weather, climate, life, etc.) + tells us nothing about the upper atmosphere.
- Tiny, sand-grain sized meteorites have been suggested as a way to measure the upper atmosphere, but this idea is largely unexplored.

Question to ask yourself as you articulate the PROBLEM: What specific dimension of the issue am I addressing?

ISSUE

Life on Mars

Understanding the composition of the ancient Earth’s atmosphere

ISSUE

Benefits?

So What?

What’s the Issue?

Why?

Problems?

Benefits?

So What?

What’s the Issue?

Problems?
Questions to ask yourself as you articulate the SO WHAT?:

- What does my audience value?
- How does this information impact them, or something they care about?
- What is important for them to understand about what I’m sharing (scale, timeframe)?
WHAT DOES YOUR AUDIENCE CARE ABOUT?

- Whittle away by focusing on what’s important to your audience.

REFINING YOUR MESSAGE: KATHY ZELLER EXAMPLE

Before:

Audience: Staffers in Rep. Buyer’s office

Problems/Issue:
- Importance of wildlife corridors
- Solutions:
  - A clear, detailed platform to assure natural areas, wildlife corridors, and ecosystems healthcare across the nation.

Benefit:
- Identifying corridors as a natural asset and having legislation in place.
- Identifying corridors in a national context regardless of political boundaries or jurisdiction.
- Magnifying land and native species corridors.
- A review of 25 years of peer-reviewed articles revealed that the native flora and fauna would be the key, healthy populations to keep these species safe and healthy.

After:

Audience: Members of Congress & their staff

Problems/Issue:
- Conserve wildlife and the multiple values they provide by slowing movement.
- Prevent species Extinction through the elimination of negative outcomes.

Benefit:
- Many species of wildlife in the US are declining.
- The US loses about 2 million acres of natural land per year, which is about the size of Rhode Island and Delaware combined. This loss fragments wildlife habitats and reduces wildlife movement.
- Wildlife do not observe political boundaries; federal, state, tribal, and local agencies don’t coordinate land use decisions.

Solutions:
- 35 years of scientific research indicates that connections between natural areas is crucial for wildlife movement and long-term survival.
- Congress should pass the Wildlife Corridors Conservation Act to create a national geographic information system with maps to identify and prioritize natural corridors for wildlife and to require all relevant federal, tribal, state, and local government agencies to coordinate on land use decisions.

Biology Kathy Zeller’s Refined Message Box

https://www.compassscicomm.org/mb-kathy-comparison
THE BENEFITS

Question to ask yourself as you articulate the BENEFITS:
• Who does this help and how?
• What improves in the short-term and/or long term?

SO WHAT? = REASONS to CARE
BENEFITS = Things that will HAPPEN (deliverables)
THE SOLUTIONS

Greg

Audience: Community college students

- Bring humanity closer to understanding place in the Universe.
- Help us know if life could have lived on Mars since energy is there.

Problem:
- Life on Mars

Benefits?

So What?

Solutions?

Comparison of simpler analogue samples from lab work to complex Mars data can tell us if energy sources are present on Mars.

Becca

Audience: General audience (museum visitors?)

Problem:
- Understanding the composition of the ancient Earth's atmosphere

Benefits:
- Oxygen very low for the first 3/4 of Earth's history; most geologic proxies for the atmosphere only tell us about the composition of the atmosphere near the surface—this is heavily influenced by regional conditions (weather, climate, life, etc.)

So What?

Solutions?

- Simulating the ancient atmosphere with computer models to recreate the conditions needed to form iron oxides found in these tiny meteorites tells us what the upper atmosphere may have been like before there was oxygen
- This, in turn, tells us something about the ancient Earth's climate, which is strongly influenced by atmospheric composition

Question to ask yourself as you articulate the SOLUTIONS: What can be done to address the problem?
USING THE RHETORICAL TECHNIQUE OF STORYTELLING TO ENGAGE

ADDING THE BLING: TELL IT LIKE A STORY!
YOUR TURN: SPEED DATING YOUR RESEARCH STORY
I’m working on <The Issue>
Specifically, I’m examining <The Problem>
Some people don’t realize why this is important but…<The So What>
We can take steps to remedy the situation by <The Solutions>
If we did, we’d see improvements in <The Benefits>
GREG’S BEFORE AND AFTER

Before

The Message Box

Audience: Community college students

Is/was Mars a place life could exist?

Types and amounts of energy sources (fossil) for microbes on Mars is unknown.

Complicated data collected on Mars by Curiosity Rover needs detailed analysis to tell us about possible energy sources.

Bring humanity closer to understanding place in the Universe.

Help us know if life could have lived on Mars since energy is there.

Life on Mars

Benefits?

Comparison of simpler analogue samples from lab work to complex Mars data can tell us if energy sources are present on Mars.

So What?

Want to know the answer to the long held question “Are we alone in the Universe?”

Knowing sources of energy for microbes could lead to future engineering practices to make Mars habitable for humans.

Problems?

After

The Message Box

Audience: Lecture to community college geology students during an interview

Lots of data from Mars, but little interpretation

Unknown if certain energetic minerals are present on Mars

Improved understanding of where life could survive beyond Earth

Interpreted data will be used in future Mars mission planning

One possible career path is planetary science

Knowledge for the sake of knowledge

Detective work unlocking the mysteries of the Universe

Understanding humanity’s place in the Universe

Benefits?

More people – trained students – looking at the data

Additional laboratory work

Fresh ideas and ways to look at the data

Problems?

ISSUE

Searching Martian risks for the ingredients of life

Solutions?
BECCA’S BEFORE AND AFTER

Before

The Message Box

Audience: General audience (museum visitors)

- Scientists: New and exciting possible gravy field of study, e.g. modelers and lab-based scientists
- Resolve discrepancies in current knowledge

Non-scientists: Applications to the search for life elsewhere in the universe, and to studying the early Earth

Problems

Understanding the composition of the ancient Earth’s atmosphere

Benefits

- Today we look at distant planets to search for life, most often all we are able to see is the atmosphere (especially the upper atmosphere) — so, understanding how the lower and upper atmosphere of a planet are related is critical when searching for life
- It’s also important for understanding the history of Earth and how the atmosphere has changed over time along with life

Solutions

- Simulating the ancient atmosphere with computer models to recreate the conditions needed to form iron oxides found in these tiny meteorites tells us what the upper atmosphere may have been like before there was oxygen
- This, in turn, tells us something about the ancient Earth’s climate, which is strongly influenced by atmospheric composition

So, What?

- Oxygen very low for the first 1% of Earth’s history, most gaseous species for the atmosphere only tell us about the composition of the atmosphere near the surface — this is heavily influenced by regional conditions (weather, climate, life, etc.) — tells us nothing about the upper atmosphere
- Tiny, sand-grain-sized meteorites have been suggested as a way to measure the upper atmosphere, but this idea is largely unexplored

After

The Message Box

Audience: Hiring committee at a liberal arts college

- Geologists have several proxies (e.g., minerals in preserved soils) commonly used as a record of the atmosphere’s composition in the past, but these can be strongly influenced by regional geography/weather, and only represent the air at the surface — they tell us nothing about the upper atmosphere
- Tiny, sand-grain-sized meteorites have been suggested as a new record of the upper atmosphere, but this idea is new and largely unexplored

Problems

Determining the composition of the ancient Earth’s atmosphere

Benefits

- Potential new proxy has the potential to enhance existing knowledge (a reason and means to revisit old hypotheses) and open new areas of research, both for modelers and lab-based scientists
- Relevance to both Earth’s paleoclimate and informing the search for extraterrestrial life

Solutions

- Using computer models to determine what the atmosphere’s composition was in the past, based on minerals formed in these tiny meteorites as they entered the Earth’s atmosphere, can tell us about the upper atmosphere
- Knowing both the lower and upper atmospheric composition can inform our understanding of past climate change — which is motivation to search for more of these meteorites and expand testing

So, What?

- Opportunities for collaborative research (lab work, theoretical modeling, etc.)
- Interdisciplinary nature of astrobiology as a whole gives it broad appeal to students interested in conducting research in many different fields — work within this field can help to generate interest in departmental projects, and attract new students
- Relatively new, uncommon field of research
Don’t just talk about your work, tell stories about it!

https://www.compassscicomm.org/message-box-online
USE THIS LIBRARY RESOURCE FOR GENERAL QUESTIONS ABOUT WRITING

https://guides.libraries.psu.edu/EMS_science_communication


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