Effectively Communicate Your "Salinity Story"

Annette deCharon
University of Maine
Aquarius Science Communications Lead
Background

- Science journalism has been the main conduit for the dissemination of scientific information to the public
Background

- Science journalism has been the main conduit for the dissemination of scientific information to the public.
- The recent transition from traditional to social media has had a big impact.

Researchers now have more opportunities to directly share their work with the public.
"Know Your Audience"

• **Information Deficit or Knowledge Deficit model**
  – Communication is a process of transmission
  – Facts speak for themselves and are interpreted by all
    citizens in similar ways
  – If they don't accept or recognize facts, then it's their fault

• **Does this approach sound familiar?**
"Know Your Audience"

- Understanding what motivates people to learn is more important than trusting your intuition

Highest belief in global warming, Most motivated: 26%

Lowest belief in global warming, Least motivated: 13%

Source: Yale / George Mason University (n = 1,035; Data from April 2013)
"Know Your Audience"

• Understanding what motivates people to learn is more important than intuition
  – Responses to "If you could ask a climate scientist one question, what would it be?" are tied to individuals' motivations and beliefs

Source: Yale / George Mason University
Tips on Effective Communication

• The audience for NASA Communications is the general public, which is very diverse.

• What does NASA Communications recommend?
  – Have a specific take-home message
    • Thing(s) you either want a viewer or reader of your story to come away remembering
  – Make it simple and short
  – Take out all of the jargon and avoid using acronyms
  – Use a language and comprehension level that the public will understand
Poll #1

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- You will next be prompted to answer a question about NASA's guideline on the language level to use with the public...
Poll #1

• What is the language grade level that NASA recommends using with the public?
  - Sixth grade (11-12 years old)
  - Eighth grade (13-14 years old)
  - Tenth grade (15-16 years old)
  - Twelfth grade (17-18 years old)
Poll #1

- What is the language grade level that NASA recommends using with the public?
  - Sixth grade (11-12 years old)
  - Eighth grade (13-14 years old) ** ✓ 
  - Tenth grade (15-16 years old)
  - Twelfth grade (17-18 years old)
Poll #2

• You will next be prompted to choose a message that closely follows the NASA guideline...
  – Statements were provided by Marine Science graduate students during a workshop.
  – Grade levels were determined using https://readability-score.com
Poll #2

Which one of the following statements is closest to the grade level recommended by NASA?

- In lakes, things change fast, so you have to keep an eye on it
- There is a balance needed between human energy needs and environmental health
- New satellite technologies can help us explore where different types of microscopic life are found in the ocean
- We need to understand how tidal power affects the environment before we can use it
- Ocean acidification can make it harder for clam harvesters to make money
Tips on Effective Communication

• Here are the grade levels for the students' statements:
  • *In lakes, things change fast, so you have to keep an eye on it* [2.9]
  • *There is a balance needed between human energy needs and environmental health* [11.5]
  • *New satellite technologies can help us explore where different types of microscopic life are found in the ocean* [13.2]
  ✓ *We need to understand how tidal power affects the environment before we can use it* [9.4]
  • *Ocean acidification can make it harder for clam harvesters to make money* [10.8]
Tips on Effective Communication

• Using Readability-score.com to analyze your take-home message is one of the options for this week's homework

• Text is analyzed based on:
  – Character count
  – Syllable count
  – Word count
  – Characters per Word
  – Syllables per Word
  – Words per Sentence
Tips on Effective Communication

• What else does NASA Communications recommend about take-home messages?
  – They should be *personal* to the audience
  – Relate your work to something that the *audience would care about* (e.g., current events)

• How do you assess how much people care or know about your research?
  – Ask them!
Tips on Effective Communication

• Using SurveyMonkey.com to gather data is options for this week's homework
  – The following examples are based on students' results from an online graduate course, *Broaden the Impacts of Your Research*
Tips on Effective Communication

• One student's results:

How much do you **know** about estuarine oceanography?

- A lot: 3%
- A moderate amount: 19%
- Don't know: 61%

61% replied "Not much"

How much do you **care** about estuarine oceanography?

- A lot: 10%
- A moderate amount: 43%
- Don't know: 30%

30% replied "Not much"
Tips on Effective Communication

• Another student's results:

How much do you **know** about innate immunity?

Over 50% chose "Not much"

How much do you **care** about innate immunity?

About 40% chose "A lot"
Tips on Effective Communication

• Students also collected *quantitative data* using surveys using this approach:
  – 6 = Heard this term and know what it means
  – 4 = Heard this term and am not sure I know what it means
  – 2 = Heard this term and don't know what it means
  – 0 = Have not heard this term before

• Terms with average scores *above 5* were recognized and understood by students' friends and family
Poll #3

• You will next be prompted to choose a term that averaged below 5 in the students' surveys...
Poll #3

- Only one of the terms below averaged below 5 in the students' surveys, which is it?
  - Pathogen
  - Immunocompromised
  - Estuary
  - Seasonality
  - Muscular Dystrophy
Poll #3

• Only one of the terms below averaged below 5 in the students' surveys, which is it?
  - Pathogen
  - Immunocompromised
  - Estuary
  - Seasonality**
  - Muscular Dystrophy

**Seasonality is a characteristic of a time series in which the data experiences regular and predictable changes that recur every calendar year
Tips on Effective Communication

• What did the graduate students learn from this exercise?
  – Relationship between "knowing" and "caring" is uneven and may be discipline dependent
  – It's not always easy to predict which scientific terms people understand

• Conducting this type of survey is one of the options for this week's homework
  – If you choose to do this, you'll likely be pleasantly surprised by the number of responses