Next Step for Citizen Science:

Interdisciplinary Collaboration

Alexandra Chrystal
California State University, Fullerton

Overview

- The rise of citizen science
- The problem: Communicating science
- The solution: Interdisciplinary collaboration
- The future of citizen science

The Rise of Citizen Science

Defining Terms:

- **Citizen science**: the involvement of non-scientist volunteers in science
- **The study of communication**: focuses on how people use messages to generate meanings within and across various contexts, cultures, channels, and media.
    - **Mass communication and media literacy**: The study of how mass forms of communication, such as print, radio, and television disseminate information and influence society.
    - **Public relations**: The study of the management of communication between an organization and its audiences.

Source

The Rise of Citizen Science

Human Scientific Inquiry

- Citizen science has been around as long as science has been a profession

Non-Scientist Participation

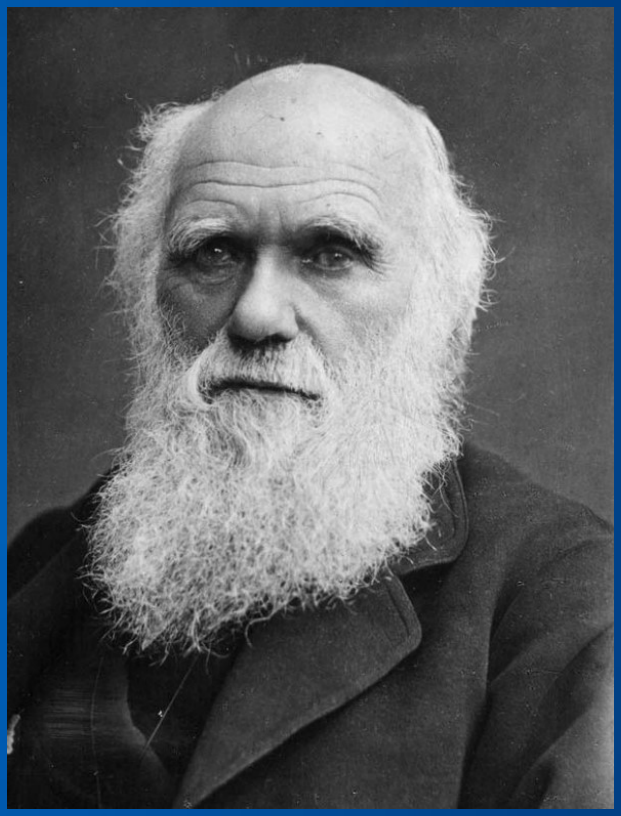
- The Audubon Society's *Christmas Bird Count* in North America has gathered info on bird sightings since 1900

Digital Technology

- The internet has increased opportunities for mass participation and 'crowdsourcing' data

Mobile Technology

- Mobile tech enables remote participation



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The Rise of Citizen Science

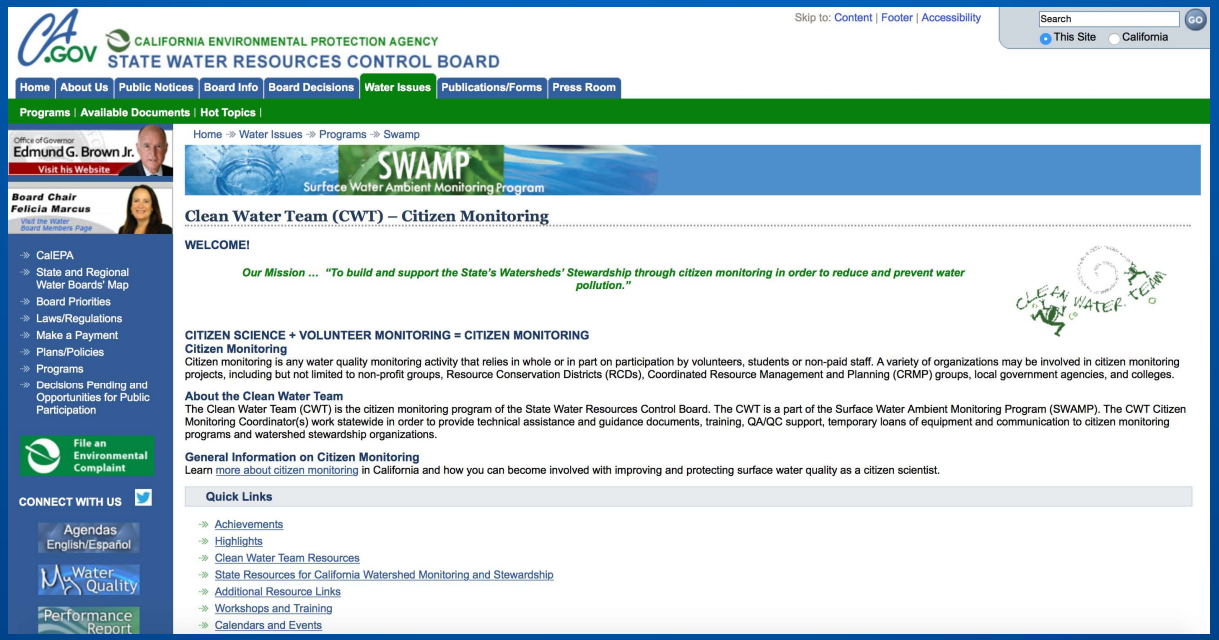
"Recent evolutions in computing science and web technology provide the environmental community with continuously expanding resources for data collection and analysis that pose unprecedented challenges to the design of analysis methods, workflows, and interaction with data sets." - *Vitoloa, Elkhatibb, Reusserc, Macleodd, & Buytaerta, 2015*

Source

The Rise of Citizen Science

A few examples of current citizen science initiatives

- Citizen Science: Theory and Practice Journal
- Creation of CitizenScience.gov
- CoCoRaHS
- Clean Water Team (CWT) – Citizen Monitoring
- Heal the Bay Stream Team



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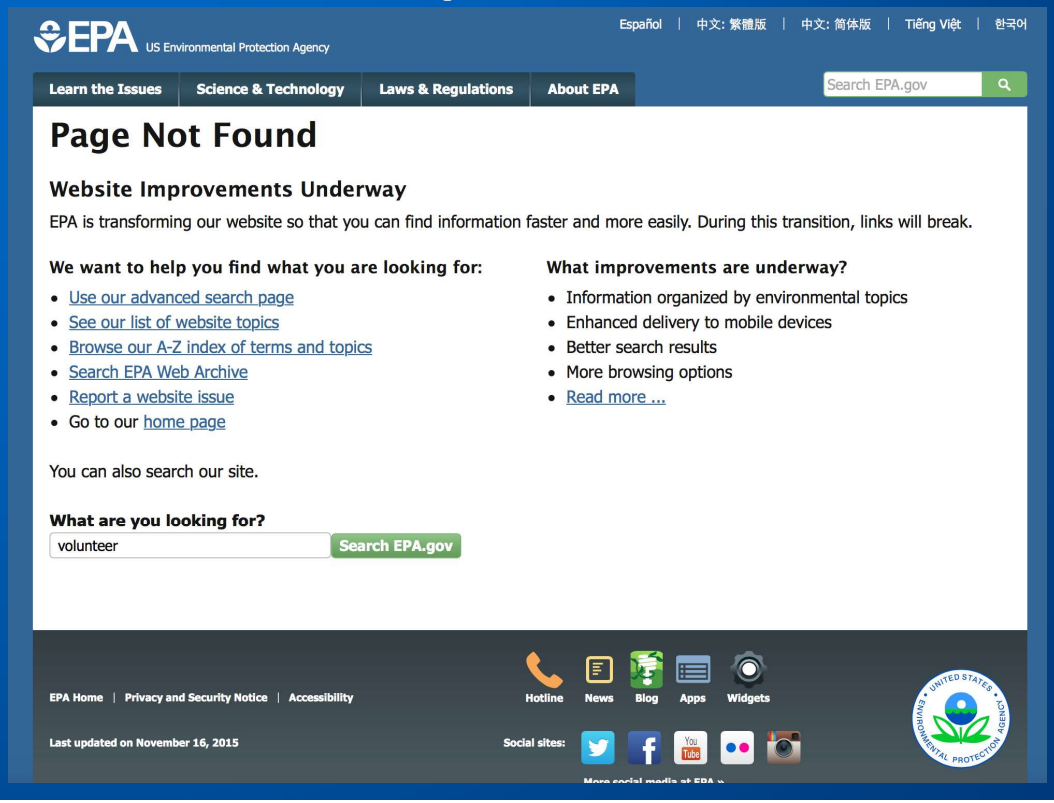

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The Problem: Communicating Science

Four major communicative deficiencies facing citizen science:

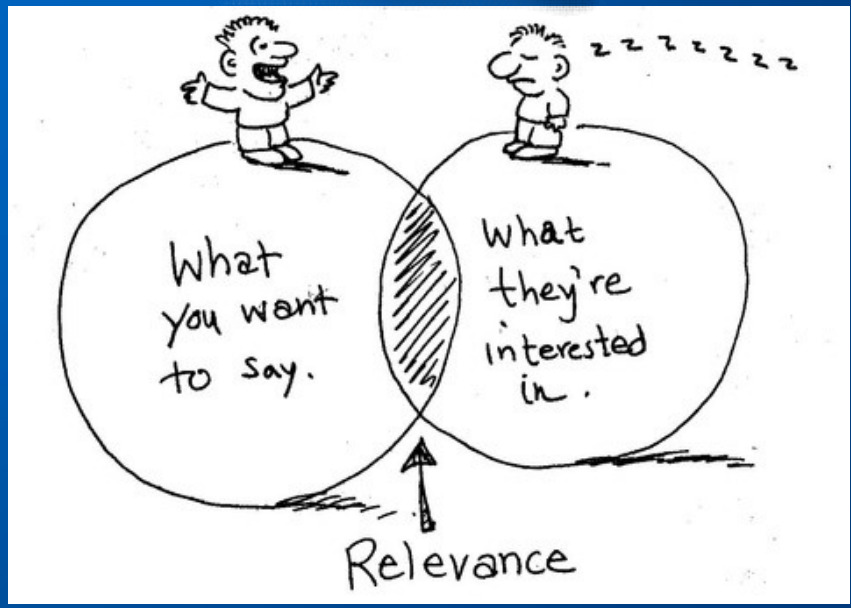
- Communication with potential volunteers
- Communication between volunteers and organization
- Communication between organization and media
- Communication with the public

Source

The Problem: Communicating Science

Communication with potential volunteers

- Citizen science is useless without citizens who want to participate in the science project
  - Are the right and max. number of individuals being targeted?
- There are numerous channels available to reach potential volunteers
  - Are the right channels being used?
- The overall *message* is essential to generating interest
  - Is the message a powerful one?



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The Problem: Communicating Science

Communication between volunteers and organization

- Effective communication of the goals and procedures of the project are vital to its success
  - Do the volunteers understand the goal(s) of the project?
  - Do the volunteers understand how to participate and contribute ethical and valuable data?
  - Do the volunteers understand the significance of the project?
  - Are there open lines of communication so that the volunteers can ask questions and provide feedback?

Source

The Problem: Communicating Science

Communication between organization and media

- Effective communication of the goals, processes, and outcomes of the project to media is important
  - Has the media received the message?
  - Do media understand why your project and its findings are relevant and significant?
  - Do media understand how the project was achieved and the valuable role of citizen science?
  - Do media see the value in the project?

Source

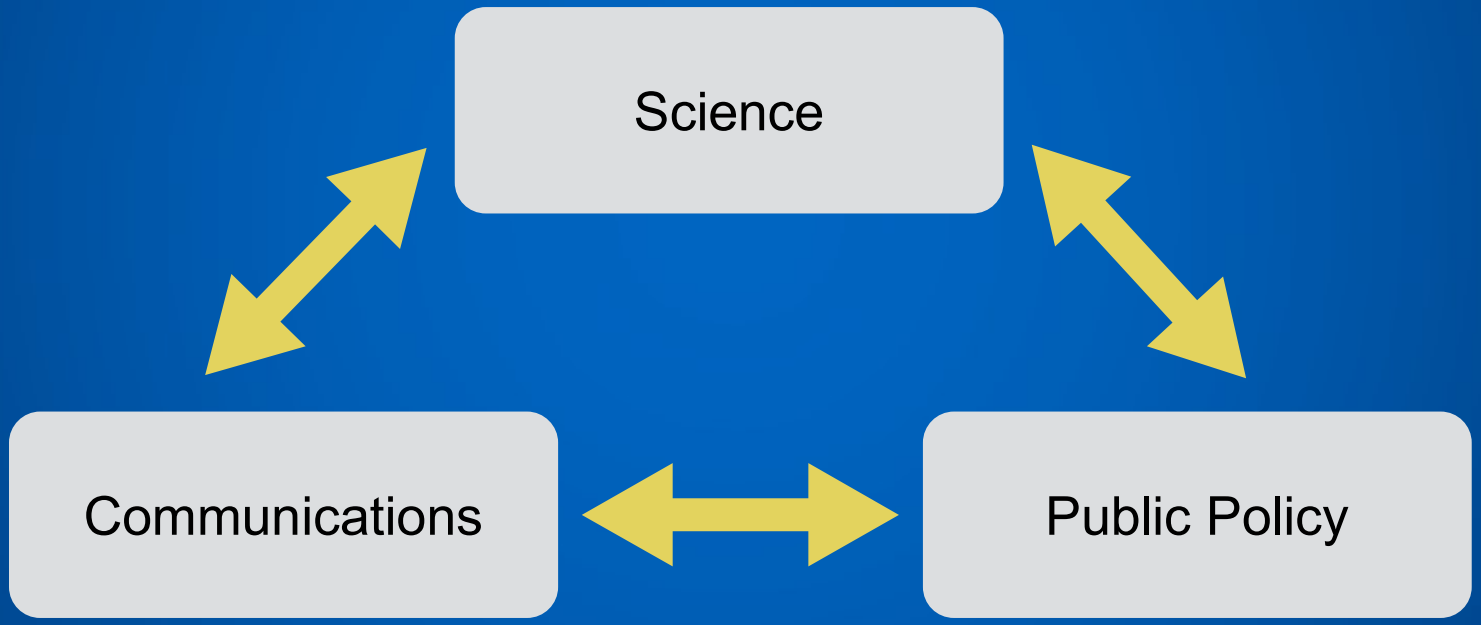
The Problem: Communicating Science

Communication with the public

- Effective communication of the relevance of the project and its findings is critical to public interest
  - Has the public received the message?
  - Does the message include how the data and findings are related to the public's values and identities?
  - Does the public understand scientific inquiry and integrity?
  - Does the message relate to public policy? Does it have the potential to influence it?
  - Does the communication include a call to action or an invitation to become involved?

Source

The Solution: Interdisciplinary Collaboration



The Solution: Interdisciplinary Collaboration

Citizen science would benefit from greater…

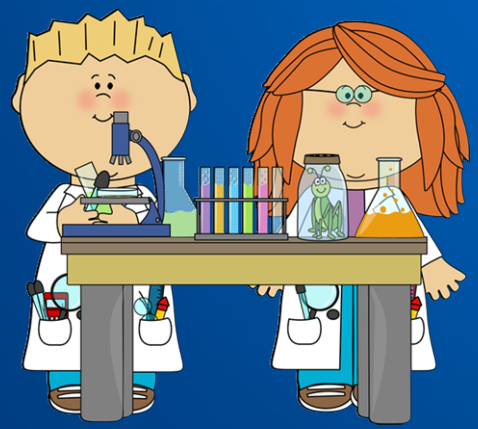
- Resources/knowledge
- Outreach/visibility
- Participation/interest
- Understanding/support
- Impact/outcomes
- Chance of sustainability
- Opportunities

Source

The Solution: Interdisciplinary Collaboration

All fields could benefit

- Science professionals
- Communications professionals
- Public policy officials/professionals



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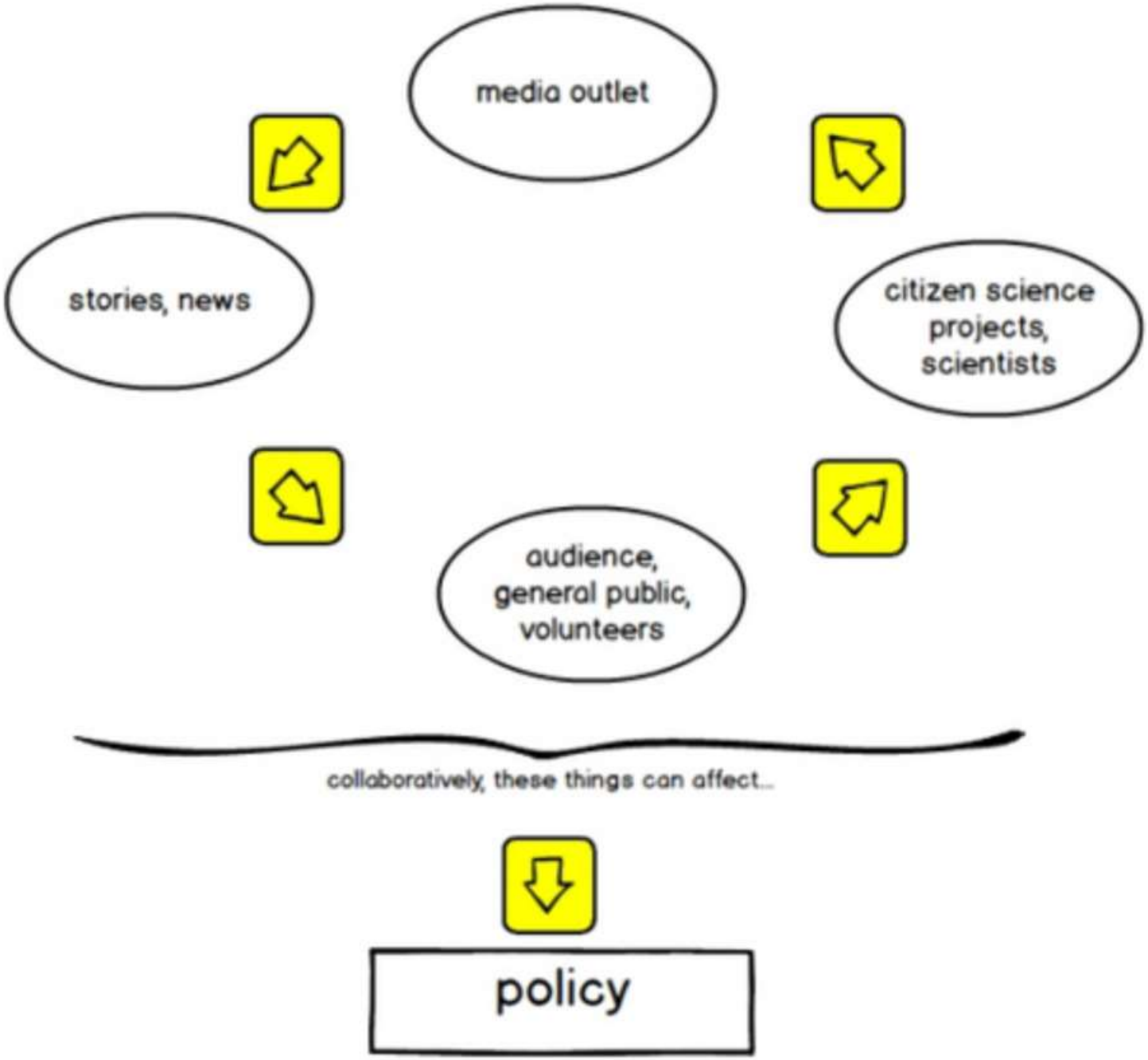
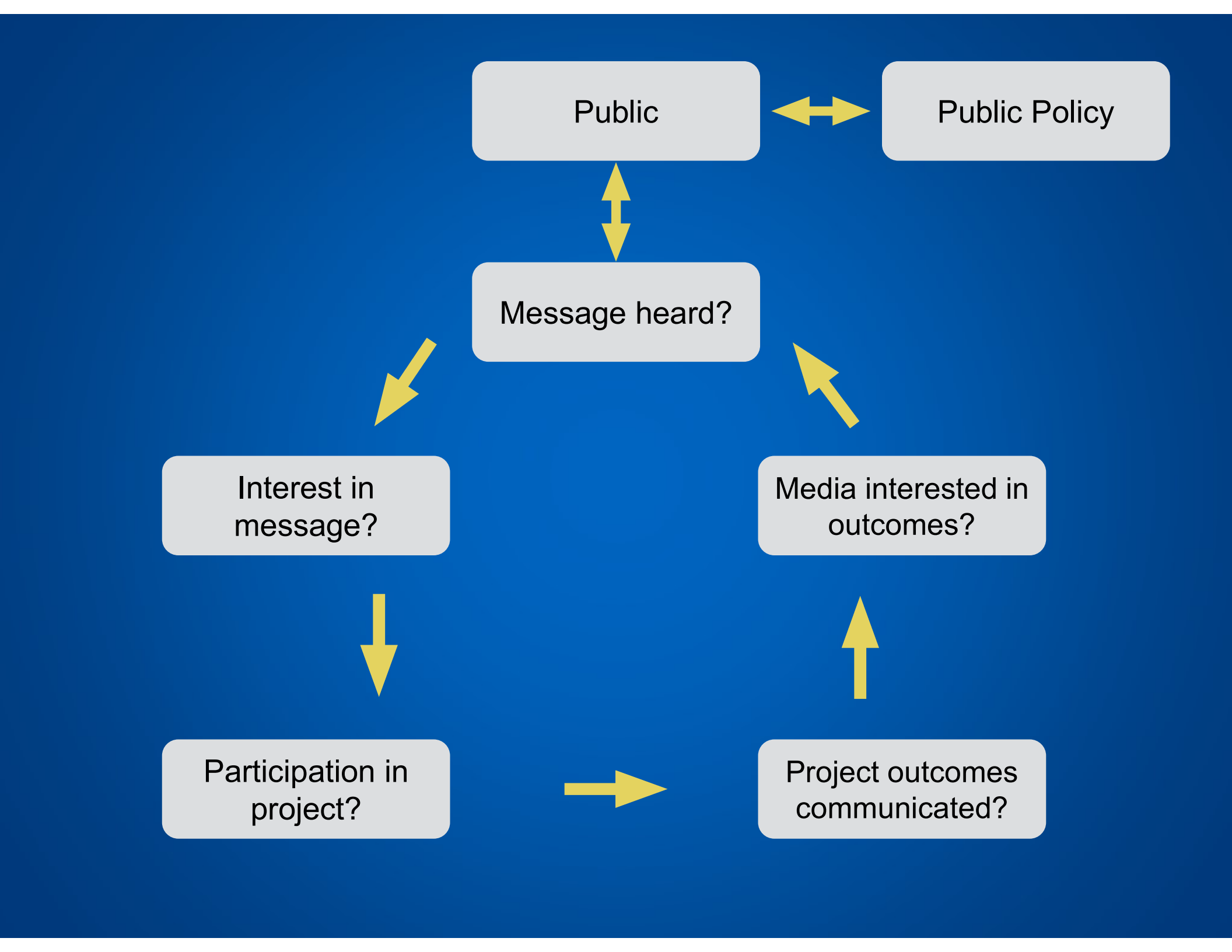

media outlet
stories, news
citizen science projects, scientists
audience, general public, volunteers
collaboratively, these things can affect...
policy

Source


Public
Public Policy
Message heard?
Interest in message?
Media interested in outcomes?
Participation in project?
Project outcomes communicated?

The Solution: Interdisciplinary Collaboration

Source

The Future of Citizen Science

Where are we going?

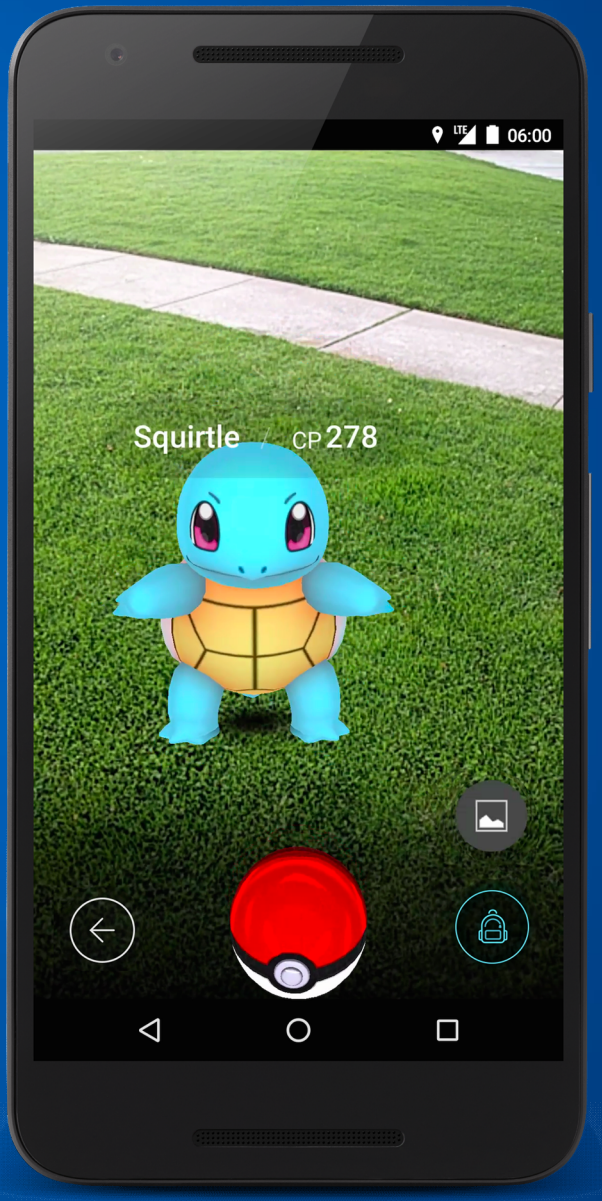
- Technology is advancing daily
- Our world is becoming smaller
- We are in an *interesting* sociopolitical state
- New age of enlightenment?

Source

The Future of Citizen Science

Could gaming meet science?

- Why not?!
- Current success of Pokemon Go opens new doors for citizen science
- Whatever the future, mobile technology will play a big role



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The Future of Citizen Science

With interdisciplinary collaboration the future of citizen science could entail…

- Bigger, better projects
- Bigger, better data
- More public engagement
- Public appreciation of science
- Greater influence on public policy
- Symbiotic relationships
- Meaningful opportunities for scientific advancement

Source

Sources

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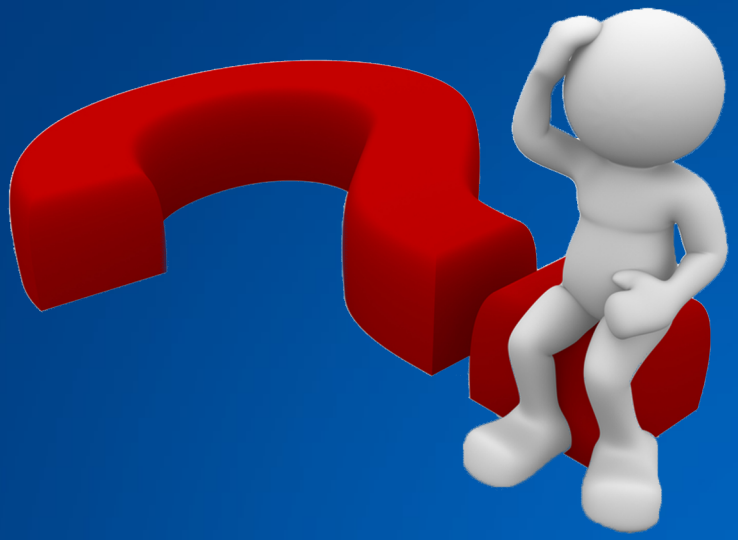

Questions?

Contact:

Alexandra Chrystal

Teaching Associate

California State University, Fullerton

alchrystal@fullerton.edu


Thank You!