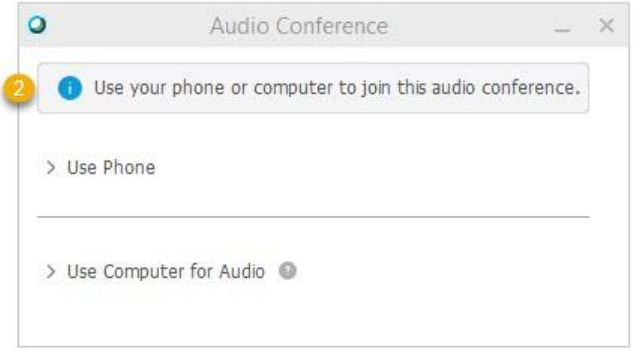
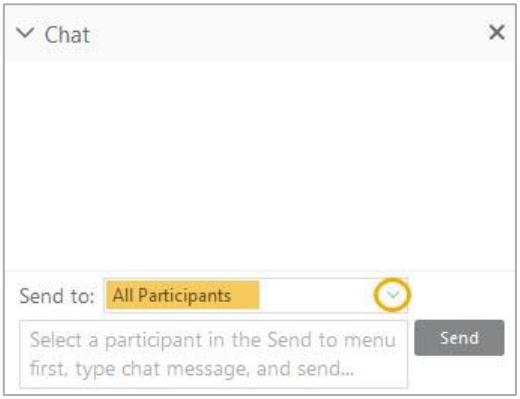
The webinar will begin at 3pm EST

While you're waiting…

Check your audio connection and find the chat box:



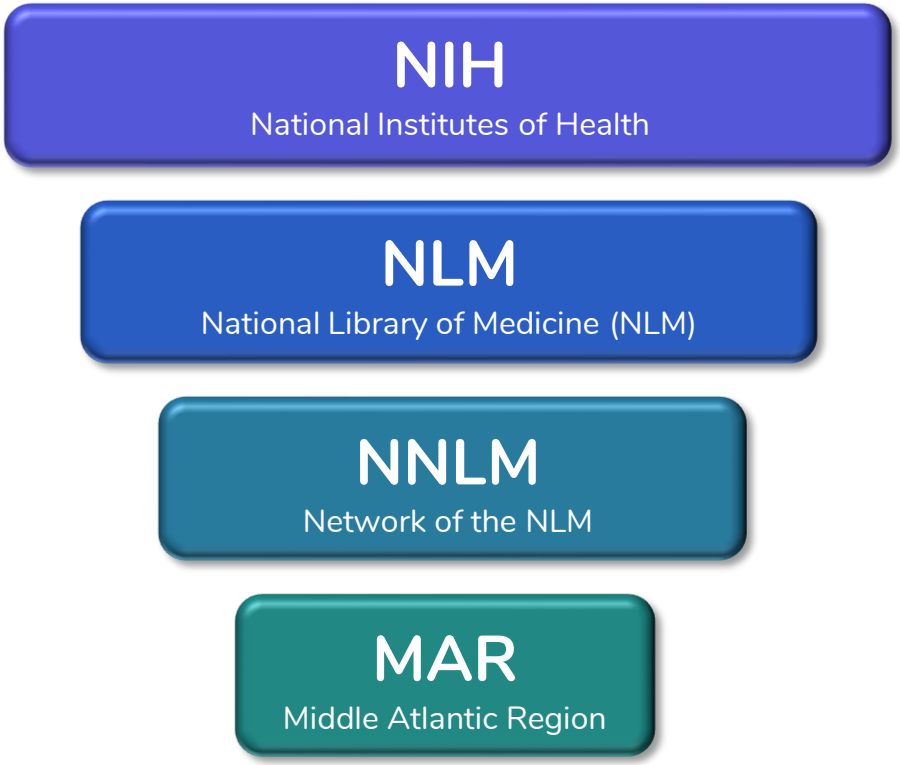


Citizen Science in the Academic Library

Part 1

Host:
Kelsey Cowles, MLIS - NNLM MAR

Speakers:
Megan Carlton, MLIS – UNC Greensboro
Danica Lewis, MLIS – NC State University
Dan Stanton, MA – Arizona State University, SciStarter
Caroline Nickerson, MPP – SciStarter


NIH
National Institutes of Health
NLM
National Library of Medicine (NLM)
NNLM
Network of the NLM
MAR
Middle Atlantic Region

Today's Topics

1. What is citizen science? (Megan)
2. How can academic librarians support faculty and students using citizen sciences in their courses? (Danica)
3. Where can I go to learn more and find citizen science projects to participate in or utilize on campus? (Dan & Caroline)

1. Live Poll!

Have you participated in citizen science before?

2. Live Poll!

Why are you joining us today?

What is citizen science?

Megan Carlton, Science Librarian

University of North Carolina, Greensboro

What is Citizen Science?

Scientific work undertaken by members of the general public, often in collaboration with or under the direction of professional scientists and scientific institutions (Oxford English Dictionary).

What is Citizen Science?

Public participation in scientific research.

A collaboration between scientists and those of us who are curious, concerned, and motivated to make a difference.

A very brief
History of Citizen Science

Lighthouse keepers collect data about bird strikes for scientists

National Audubon Society starts annual Christmas Bird Count

Public Participation in Ornithology (Cornell Lab)

1880 1890 1900 1958 1992

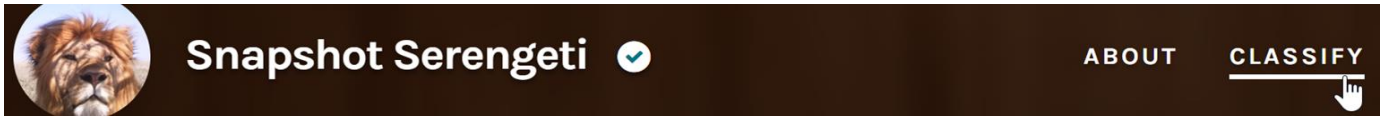
National Weather Service Cooperative Observer Program begins

NSF's Public Understanding of Science Program

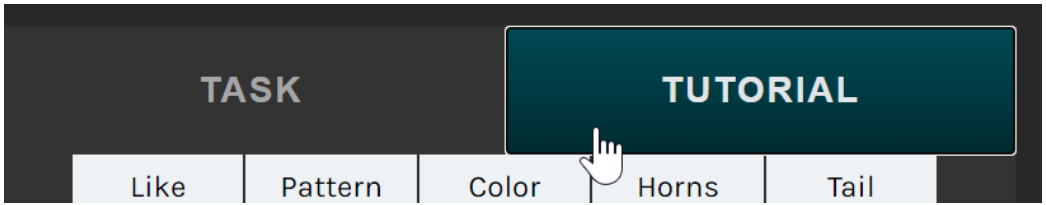
Let's do a project!

1. Go to: go.uncg.edu/snapshot

2. Click on 'classify'



3. Go through the tutorial

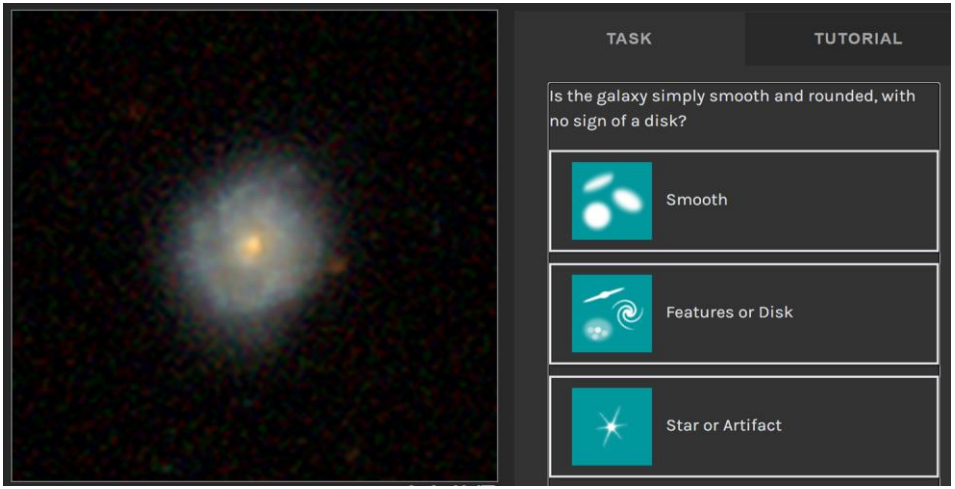


4. Classify images

Camera Trap Technology

- Can greatly expand geographic study area
- Noninvasive
- Easy to operate
- Reduces field time commitments
- No trapping/immobilizing training needed
- Produces a large amount of data…

Sloan Digital Sky Survey (SDSS)



Dark Energy Survey

Produced 1 petabyte (1,000 TB) of data (2.5 TB per night)

Large Synoptic Survey

Will collect 15-30 TB of data every night

2007: Oxford graduate student spent 1 month classifying galaxies for 12 hours/day = 50,000

Launched Galaxy Zoo

70,000 per/hour in first days, 50 million in first year

Accuracy of Data: Snapshot Serengeti

From June 2010 to May 2013, produced 1.2 million image sets (1–3 images taken in a single burst over approximately 1 s)

Within 3 days of launching the website, volunteers contributed 1 million species classifications and processed an 18-month backlog of images

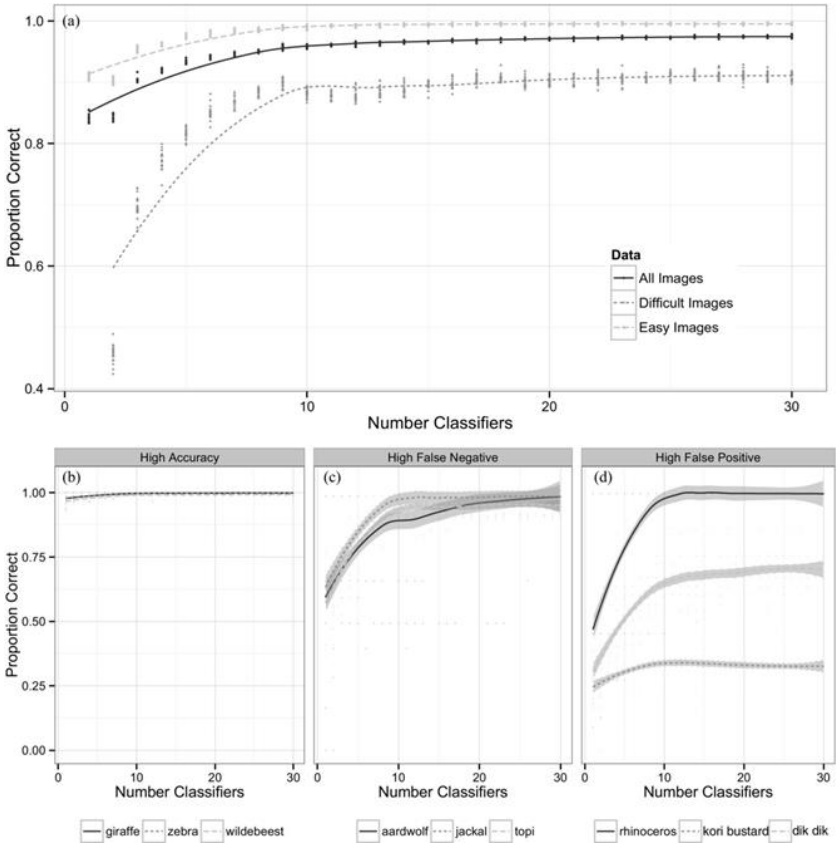
Accuracy of Data

In Snapshot Serengeti, images achieved approximately:

90% accuracy at 5 classifiers,

95% accuracy at 10 classifiers,

approached 98% accuracy after 20 classifiers



Supporting Established Course Integrations

Danica Lewis, Collections & Research Librarian for Life Sciences

North Carolina State University Libraries

Citizen Science Challenge Examples

2016: camera trap study of mammal populations on campus

- Two course integrations

2018: widespread sampling and targeted genetic sequencing of campus microbes

- Five course integrations

Customized Library Instruction

Selecting and Refining Your Topic - Challenges Specific to Citizen Science

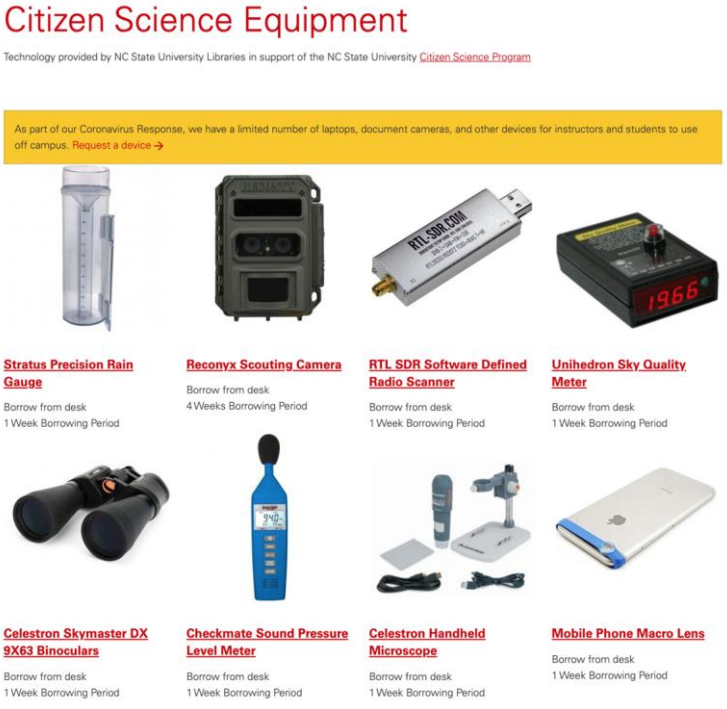
Sequence Searching and NCBI Databases - Working with “Live” Data

Library Resources and Lending

"Traditional" Resources
- Books
- Journals and Databases

Funding

Technology Lending
- Tools
- Components



Final Presentations and Engagement

- Forums for students to present their work
- Expanding the reach and scope of course projects
- Making science “real”

Building a Network of Cooperating Courses

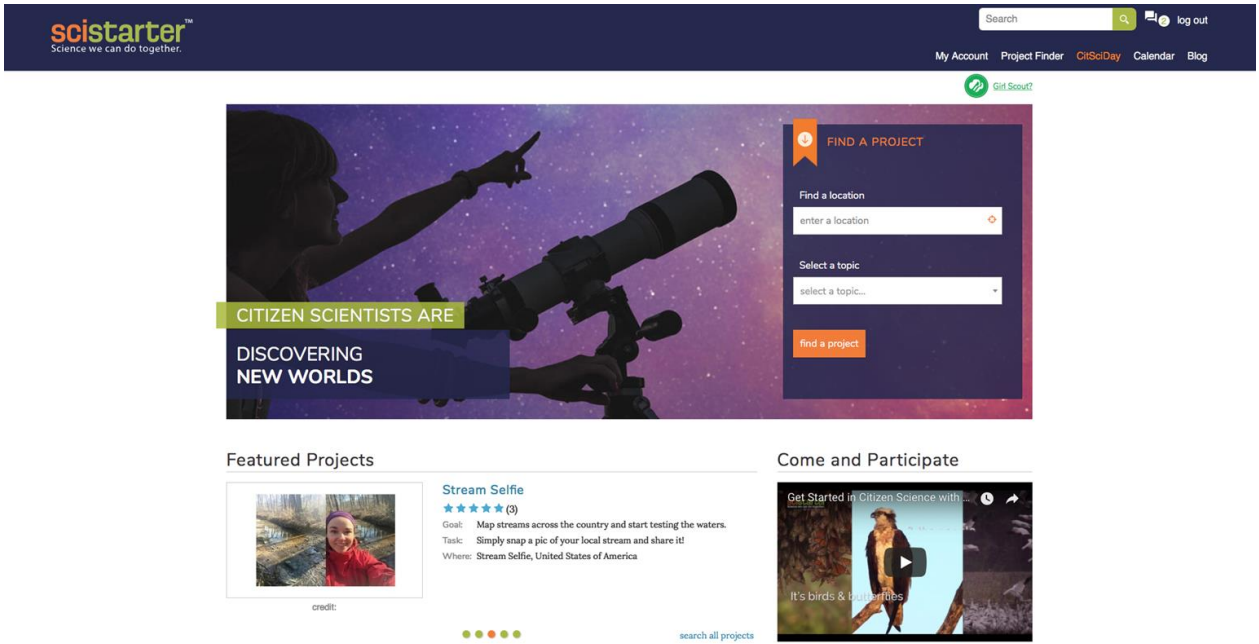
Undergraduate Research &
Metagenomics &
First Year Writing &
Environmental Sciences &
Informal Science Education
& Microbiology

Support Through SciStarter and the Citizen Science Library Network

Dan Stanton
Research and Engagement Librarian
Arizona State University Library/SciStarter

Caroline Nickerson, Program Manager
SciStarter

Organized and searchable inventory of 3000 projects. Distribution partners include Discover, PBS, Science Friday, NSTA.



Matchmaker to help researchers connect with communities.

Featured projects: SciStarter.org/NLM

GLOBE AT NIGHT

Help gather light pollution data.

FLU NEAR YOU

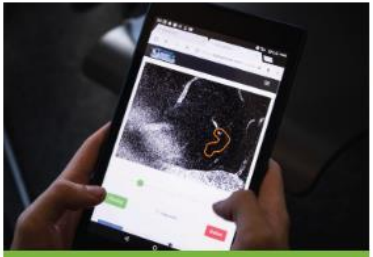
Spread the word. Not the flu.

DEBRIS TRACKER

Submit sightings of litter where you are.

ISEECHANGE

Document change in weather and climate in your community.



STALL CATCHERS

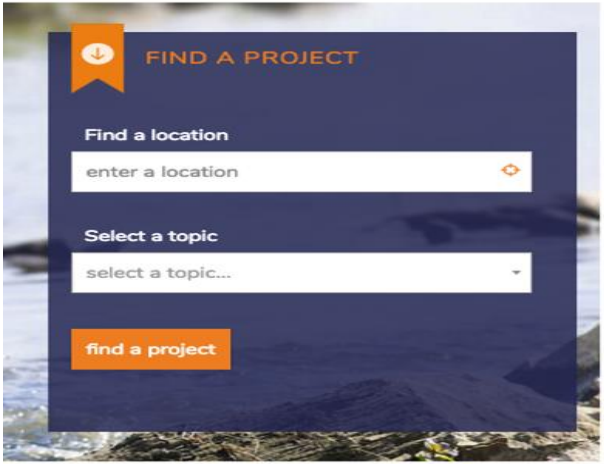
Accelerate Alzheimer's research by playing an online game.

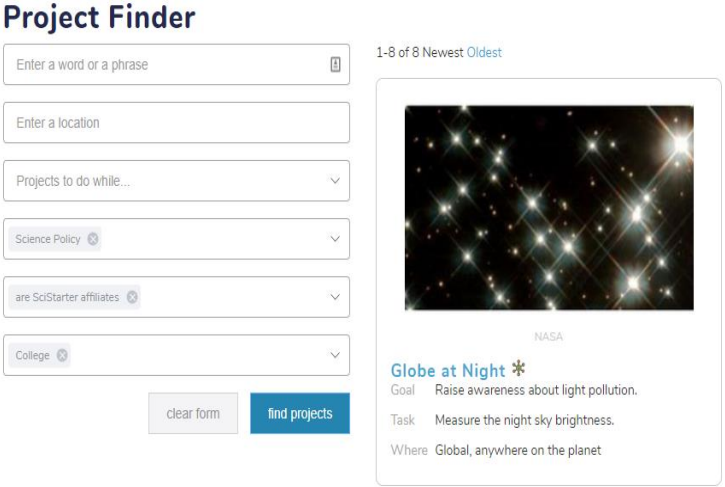
CROWD THE TAP

As a first step towards safe drinking water, help create a national inventory of tap water pipes.

Use the mini Project Finder on the home page...

or the Advanced Search Option to find projects.





Search by:
Location
Science Interest/Discipline

Search by:
Location
Grade level
Science Topic/Discipline
Curricular Materials


Introduction to Citizen Science
What it is
How to join
Who can do it
Why participate

Tools Database

FIND A CITIZEN SCIENCE TOOL Search for a tool by name Advanced search

Add to SciStarter

Some citizen science projects require specialized tools to make an observation, record data, etc. The SciStarter Tools database will help you discover and access low-cost tools. Makers and manufacturers can **add tools**, too.

- All Tools
- Agriculture
- Animals
- Archeology & Cultural
- Astronomy & Space
- Awards
- Biology
- Birds
- Chemistry
- Climate & Weather
- Computers & Technology
- Crowd Funding
- Disaster Response
- Ecology & Environment
- Education
- Events
- Food
- Geography
- Geology & Earth Science
- Health & Medicine
- Insects & Pollinators
- Nature & Outdoors
- Ocean, Water, Marine & Terrestrial
- Physics
- Psychology
- Social Science
- Sound
- Transportation
- Science Policy

Citizen Science Library Network

Twitter Feeds

Tweets by @CitSciLib

Dan Stanton
@CitSciLib

Graduating ASU seniors publish children's science book asunow.asu.edu/20200430-gradu…'s-science-book

5h

Dan Stanton
@CitSciLib

https://twitter.com/thebeatles/status/1258694920476536832

7h

Dan Stanton Retweeted

Cit Sci Association
@CitSciAssoc

Join us next week for a webinar introducing a new community-inspired study to co-create trustworthy data practices for #CitizenScience with @CoopSciScoop & @edobsonjones . Co-creation process launching this summer.

Register here for connection details: bit.ly/webinarTrustwo…

May 7, 2020

What is Citizen Science?

Citizen Science is scientific work undertaken by members of the general public, often in collaboration with or under the direction of professional scientists and scientific institutions. Citizen science allows everyone to contribute to science no matter where they are. Whether by asking questions, reporting observations, conducting experiments, collecting data, or developing low-cost technologies and open-source code, members of the public can use their talents to help advance scientific knowledge and contribute to a greater good.

With citizen science and crowdsourcing, we can help:

- Accelerate scientific research through group discovery.
- Provide information at resolutions that would otherwise be difficult to obtain given time and cost constraints.
- Improve the quality and relevance of observations due to the unique perspectives and local knowledge volunteers bring to projects.
- Increase science skills. Students can gain skills to excel in science, technology, engineering, and math. Gain hands-on experience doing real science beyond a classroom setting.
- Improve government services while lowering costs.
- Connect with public service and work for a greater good.

- The Story of Citizen Science
  Caren Cooper's simple (but not simplistic!) presentation of Citizen Science.

Key Citizen Science Organizations

- SciStarter
  SciStarter is the place to find, join, and contribute to science through more than 1600 formal and informal research projects and events. Our database of citizen science projects enables discovery, organization, and greater participation in citizen science.
- Citizen Science Association
  CitizenScience.org aims to harness the knowledge gained by practitioners and researchers across the field of citizen science to build collaboration, community and credibility.
- Citizenscience.gov
  Citizenscience.gov is an official government website designed to accelerate the use of crowdsourcing and citizen science across the U.S. government.
- The Crowd and the Cloud
  Citizen science has amazing promise, but also raises questions about data quality and privacy. Its potential and challenges are explored in The Crowd & The Cloud, a 4-part

Citizen Science Library Network

Academic Libraries

Library Guides

Circulating resources

Project curation

Science literacy

Ties to Public, School, and Special Libraries

Student Clubs/Researcher Networks

Share your resources, best practices, and questions:
academiccitscilib@gmail.com

The Librarian's Guide to Citizen Science

Understanding, planning, and sustaining ongoing engagement in citizen science at your library.

scistarter™
Science we can do together.

ASU School for the Future of Innovation in Society
Arizona State University

Thank you!
Please join us next week for Part 2!

Further Questions?

Email Kelsey: kac221@pitt.edu

I will direct your question to the speaker(s) as appropriate!

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