

CHECK
IT OUT!

**CITIZEN
SCIENCE**
AT YOUR LIBRARY

**Strengthening the Position of
Libraries as Community Hubs for
Citizen Science**





Today's Agenda

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Overview of Citizen Science



SciStarter



**Libraries as Community Hubs for
Citizen Science**



How to Get Involved



Discussion & Questions



Goals for Today

1) Identify ways libraries catalyze and support lifelong learning through citizen science

2) Find key strategies for introducing and scaling citizen science in libraries

3) Find resources for your library

4) Learn from each other!

What is citizen science?

A global movement that enables people from all walks of life (anytime, anywhere) to participate in **real scientific research** by making and sharing observations with scientists.

It's how people can make an impact on issues
they care about!

Citizen Science increases:

- long-term environmental, civic, and research interests
- representation of women and minorities in the scientific process
- confidence
- scientific literacy
- domain knowledge
- scientific progress

(Laura Trouille, Chris J. Lintott, Lucy F. Fortson)

Professional organizations and Federal support



**Australian
Citizen Science
Association**



CITIZEN SCIENCE
ASSOCIATION



H.R.6414 - Crowdsourcing and
Citizen Science Act of 2016

Federal Citizen Science and Crowdsourcing Community of Practice

Someone you know is a CITIZEN SCIENTIST

eBird
1.5 million
reports



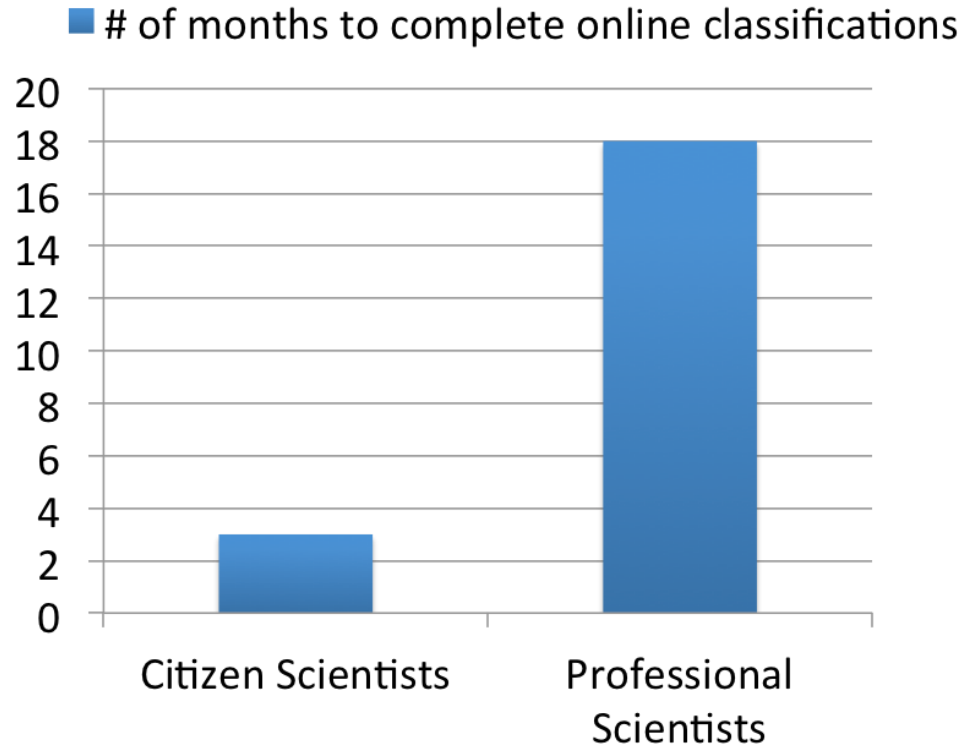
Water testing
1.5 million
monitors



SETI@home
5 million
volunteers



Because of Citizen Scientists:



Because of Citizen Scientists:

*Parrish, Julia. University of
Washington (2014)*

In a study of **338** citizen
science projects:

1.3–2.3 million citizen
scientists had an
economic value of **\$2.5
billion** per year.

Citizen Science is Serious Science

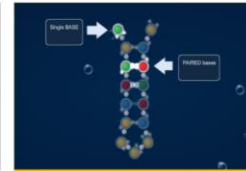
Because of citizen scientists we now know...

- Bird populations have declined by 50%
- Birds are breeding earlier
- 50+ types of bacteria live in your belly button
- There's a new type of aurora in the night sky (and the citizen scientists named it Steve!)
- Alzheimer's research is accelerating



STALL CATCHERS

Accelerate Alzheimer's research by playing an online game.



ETERNA

Design and study complex RNA molecules to help scientists develop RNA-based medicines to combat global diseases.



NEUREKA

Play games and answer questions to improve mental health and dementia research.



GLOBE AT NIGHT

Help gather light pollution data.



FLU NEAR YOU

Spread the word. Not the flu.



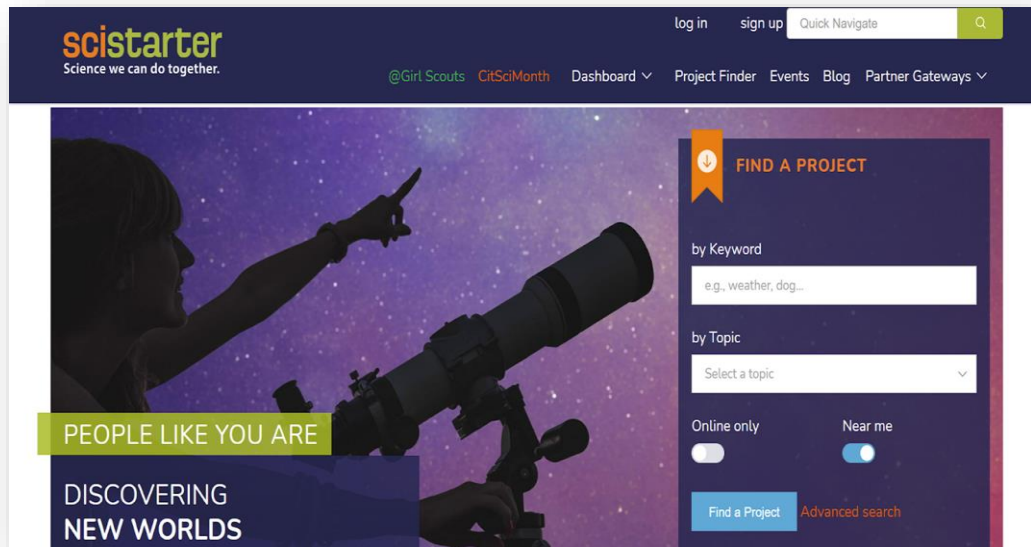
ISEECHANGE

Document change in weather and climate in your community.



What is SciStarter.org?

A globally acclaimed web and mobile site that connects millions of people to thousands of real science projects in need of their help.



Find open and replicable resources designed for libraries:
[SciStarter.org/Library](https://www.scistarter.org/Library)



Millions of people
enjoy
science and nature.

Thousands of
scientists need
volunteers.

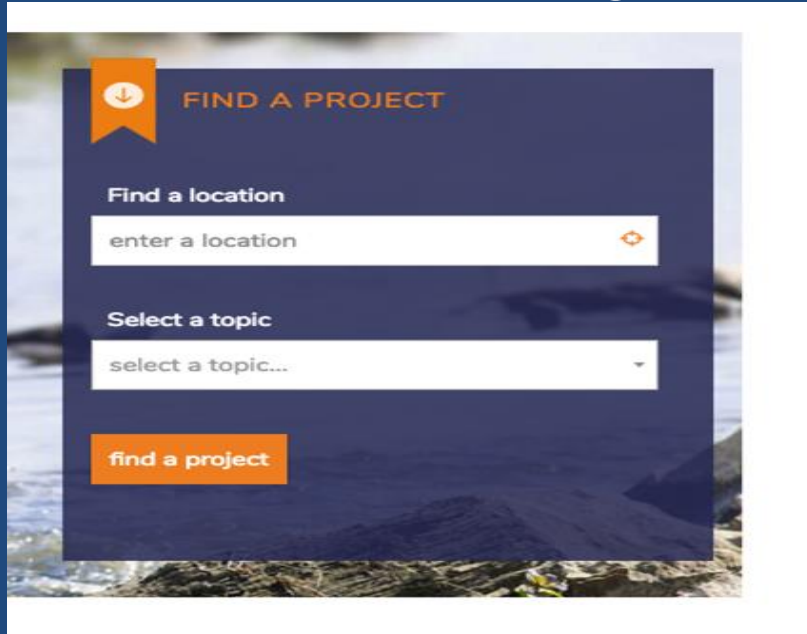
*But they can't find
each other.*



SciStarter
connects
them.



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



or the **Advanced Search** option
to find projects.

A screenshot of the 'Project Finder' advanced search page. The title 'Project Finder' is in green. It features a search bar with the placeholder 'Enter a word or phrase' and a magnifying glass icon. Below it is a location input field with the placeholder 'Enter a location' and a location pin icon. There are two dropdown menus: 'All Activities' and 'All Topics'. A list of filters is shown, each with a white 'x' icon for removal: 'has classroom materials', 'elementary school (6-10 years)', 'middle school (11-13 years)', 'high school (14-17 years)', 'college', 'adults', and 'seniors'. At the bottom are two buttons: a grey 'clear form' button and a blue 'find projects' button.

Search by:

Activities

Location

Indoor/outdoor

Interest













Online/offline

Age level



scistarter
affiliate

Curated list of gold-standard projects:
SciStarter.org/Affiliates

 <p>(edit)</p> <p>MARINE DEBRIS TRACKER</p> <p>Contribute research data to help tackle the plastic pollution crisis.</p> 	 <p>(edit)</p> <p>QUESTAGAME</p> <p>Play the game to discover, map and ultimately help protect life on our planet.</p> 	 <p>(edit)</p> <p>GLOBE AT NIGHT</p> <p>Help gather light pollution data.</p> 
 <p>(edit)</p> <p>COCORAHS</p> <p>Investigate extreme precipitation by measuring rain, hail, and snow.</p> 	 <p>(edit)</p> <p>ISEECHANGE</p> <p>Document change in weather and climate in your community.</p> 	 <p>(edit)</p> <p>NATURE'S NOTEBOOK</p> <p>Help scientists take the pulse of our planet.</p> 

Our tools benefit everyone in citizen science!



Project Leaders

Amplify projects, recruit more participants, and learn more about participants' experiences and interests while advancing scientific research



Participation API

Amplify your project, recruit more participants, and help your volunteers earn credit for contributions to your project.

BEST FOR:

- Project owners that want to be part of our **affiliate program** which allows your project to be eligible for inclusion in special, curated programming with the Girl Scouts, Discover, PBS, Nature, schools, universities, libraries, and more!

SciStarter.org/AP

Our tools benefit everyone in citizen science!



Organizations

Including Girl Scouts USA, Discover, PBS, school districts, college campuses, libraries and others share projects from SciStarter with their communities and acquire evidence needed to award badges, credits, and recognition



verizon^v

NC STATE UNIVERSITY

Citizen Science Campus



America250 Foundation



All of Us
RESEARCH PROGRAM



Arizona State University

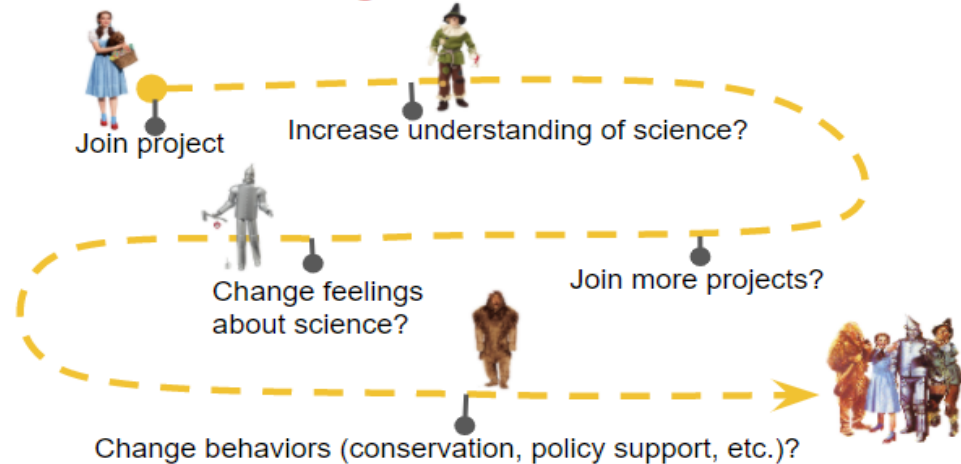
Our tools benefit everyone in citizen science!



Researchers

Learn more about the motivations, behaviors, and learning outcomes of participants

Understanding Volunteer Outcomes



Citizen science may help to “democratize science” (R. Bonney), but there are known barriers towards realizing this goal:

1) participation feels “**socially isolating**”

2) lack of **access to**, and understanding of, protocols, materials and **instruments** needed to participate in projects

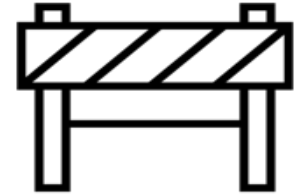
Libraries hold a key to addressing these barriers, thereby **broadening participation** and **increasing data fidelity**.

Leveraging the expertise of libraries experienced in lending physical resources, university faculty that are recognized leaders in the field of citizen science, and SciStarter, a centralized online resource for public participation in science, we:

- 1) develop and evaluate physical citizen science toolkits lent through the public library system;
- 2) create associated physical and online resources to train, support, and communicate with librarians, volunteers and researchers; and
- 3) work with community based organizations to iterate and scale

ASU and SciStarter partner with public libraries to advance citizen science.

Lower Barriers to participate in projects that require tools



citizen scientists & scientists find & access the right tools

Partner with **libraries** and **museums** to curate, bundle projects, tools, instructions into kits so people can do >1 project



A photograph of two women sitting at a table in a library, surrounded by bookshelves. They are looking at a blue circular object, possibly a sample tray or a piece of equipment. The woman on the left is wearing a red sleeveless top, and the woman on the right is wearing a blue long-sleeved shirt and glasses. The background is filled with bookshelves containing many books.


**CITIZEN
SCIENCE
MONTH** **APRIL 2020**

TURN YOUR CURIOSITY INTO IMPACT.

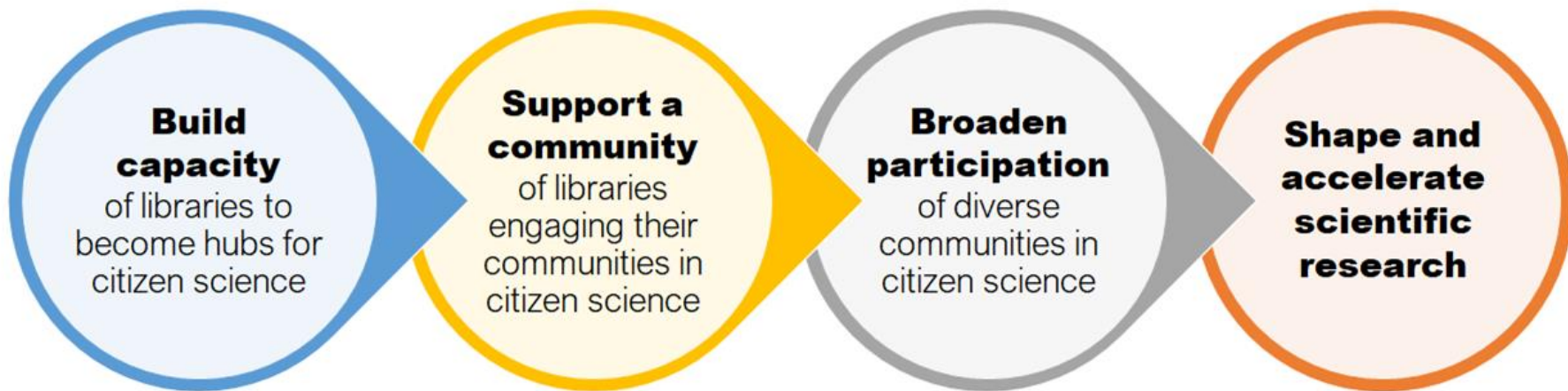
Citizen Science at Your Library



- 2017 - Phase I begins with six Maricopa County (AZ) libraries; scales to 50+ libraries in AZ!
- 2018 - Citizen Science Day scales to annual Citizen Science Month in partnership with several federal agencies and major media partners
- 2021 - National expansion begins with 10 pilot libraries; community based organizations (Girl Scouts, NASA Night Sky Network, etc.)
- 2022 - National Network already serves over 350 libraries!



National Citizen & Community Science Library Network



SciStarter.org/library-network

We use “Journey Mapping” to design, test, iterate, and scale.



Evaluation Questions

1. How can the project partners engage local community groups, and what are the best methods to do so?
1. How can libraries obtain the kits and what funding sources can they explore?
1. What kit materials can be developed to facilitate ease of use in libraries?

Pilot Project Outcomes

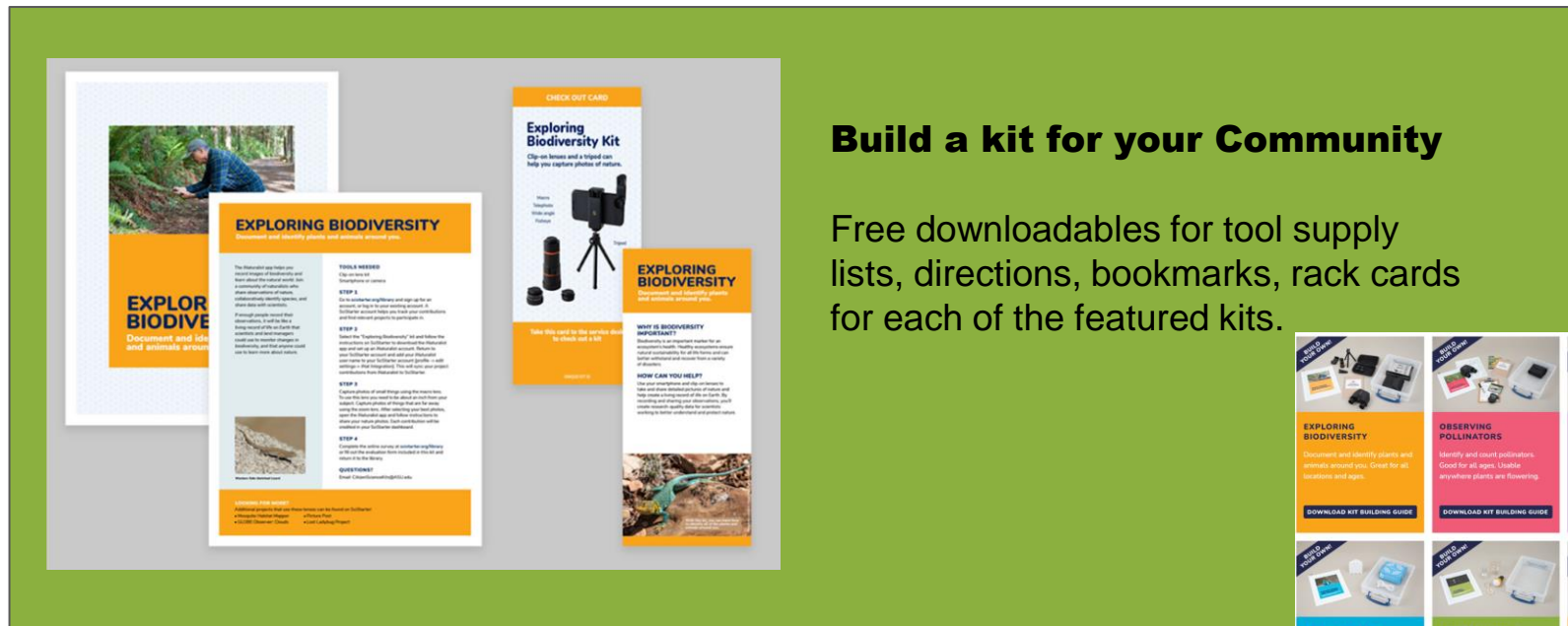


PILOT SUMMATIVE OUTCOMES:

Libraries and patrons reported:

- Increased interest and knowledge of citizen science
- Greater confidence in their ability to collect and interpret data
- 92% of participants (the majority were women, underrepresented in STEM) expressed interest in checking out another citizen science kit
- Scientists reported a notable increase in data submitted to their projects

Kits Supporting Citizen Science



Build a kit for your Community

Free downloadables for tool supply lists, directions, bookmarks, rack cards for each of the featured kits.



SciStarter.org/library-build-a-kit

Free Online Trainings



Foundations of
Citizen Science



Data Literacy



Libraries as Hubs for
Citizen Science

SciStarter.org/training

How can your community participate in citizen science?



Library centered citizen science projects



Book discussions



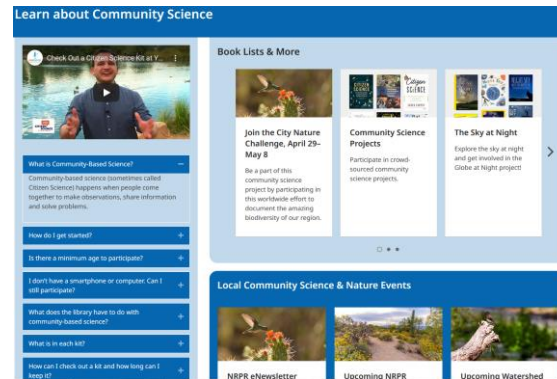
Facilitation tools: Introductions to Citizen Science



As additive activities: Astronomy Programs, Nature Clubs, OLLI



Events - Bioblitz



Library web pages



Scaling Strategies



1. Leverage the strengths and communities of partners
2. Make materials open source
3. Make resources discoverable
4. Offer peer-to-peer and professional support
5. Iterate as needed
6. Become a “Hub for Citizen Science” for your community

Join the Library Network!



TRAINING

Online training tutorial for librarians, library staff and library patrons.

LEARN MORE

RESOURCES

Turnkey materials to help you promote and facilitate citizen science projects in your community.

LEARN MORE

KITS

Step-by-step guides for building citizen science kits for your library.

LEARN MORE

SciStarter.org/library-network



Consider Activation during Citizen Science Month (April)

- **250+** events resulting in more than **350,000** data contributions to projects
- **Two-thirds** of survey respondents said Citizen Science Month helped change the way they think about libraries and the services libraries provide
- **100%** of event organizers reported CitSciMonth **matched or exceeded expectations**
- More than **one million people** reached through social media!

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**Questions &
Thank you!**