

Citizen Science for Teaching, Learning and Research

Sujan Henkanathgedara, Ph.D.
Longwood University & Virginia Academy of Science

If you have any questions or ideas for collaboration, please contact at:

Henkanathgedarasm@longwood.edu

What is citizen science? Participation of volunteer citizens in scientific studies as research assistants in collecting data, monitoring wild animals, plants and environmental markers” (Cohn 2008)

Benefits for SCIENCE

- Data for wider geographic areas
- Data for longer time spans
- Rich data
- Cheap/free data
- Intellectual stimulation
- Civic engagement
- Train next generation scientists

Benefits for YOU

- Great teaching and learning opportunities
- Be a “scientist”
- Learn new knowledge and skills
- Contribute to major scientific work
- Family activity
- **Have fun!**

(1) What's in your backyard? Natural Products Discovery Group (<https://whatsinyourbackyard.org/>)

- Goal – Find chemical compounds made by nature (i.e. natural products) that have the capacity to combat human diseases.
- Extract natural products from soil microbes (e.g. fungi).
- They will send you a kit, and you will send a soil sample.
- Many teaching and learning opportunities!

- Soil organisms (fungi) and their role in the ecosystem
- Microbiology
- Natural products
- Scientific method

Educator's resources:

<https://whatsinyourbackyard.org/educate/>

(2) eBird (<http://ebird.org/content/ebird/>)

- A real-time, online checklist program.
- Information on bird abundance and distribution.
- As of 2018,
 - 420,000 people have entered data
 - 590 million observations
 - Every country in the world!

- 10,245+ species (98%+ of all bird species)
- Available data:
 - 1) Distribution of species
 - 2) Species richness
 - 3) Species composition
 - 4) Habitat information

(3) iNaturalist (<http://www.inaturalist.org/>)

- Online repository for ALL species.
- A dynamic community to identify species.
- You take a picture, upload it to the program and identify it.
 - Available data:
 - 1) Distribution of species
 - 2) Species richness
 - 3) Species composition
 - 4) Habitat information
- **Education toolkit by City Nature Challenge:**

<https://citynaturechallenge.org/education-toolkit/>

- Explore more about **Virginia BioBlitz Project** - <https://sites.google.com/view/virginiabioblitz/>
- **Virginia BioBlitz iNaturalist project** - <https://www.inaturalist.org/projects/virginia-bioblitz>

More information:

<https://www.citizenscience.gov/#>

<https://scistarter.org/citizen-science>