U.S. National Library of Medicine
National Network of Libraries of Medicine

NNLM *All of Us* Environmental Engagement Center

nnlm.gov/all-of-us

All of Us RESEARCH PROGRAM | The Future of Health Begins With You

Activate!

Program Summary

The Environmental Engagement Center will allow patrons to tap into their inner citizen scientist and to examine how environmental factors influence health. The Environment Engagement Center is a space created in the library that provides environmental health information through NLM resources, like ToxTown and the Environmental Student Health Portal, as well as resources for patrons to continue their examination of environmental health in their community. The Environmental Engagement Center can feature tablets and computers (for use and instruction of National Library of Medicine health resources) and supporting materials like printed resources, air quality monitors, and citizen science toolkits. Libraries can supplement the engagement center with additional instruction classes, guest speakers, experiments for students, and citizen science projects (public participation in scientific research) concerning local environmental issues.

National Library of Medicine Resources

ToxTown, https://toxtown.nlm.nih.gov/, provides consumer-level information on everyday locations and situations where you might be exposed to toxic chemicals. This site will help you better understand risks of exposure, potential health effects, and how to protect yourself.

Household Products Database, https://householdproducts.nlm.nih.gov/, links over 10,000 consumer brands to health effects and allows consumers to research products based on chemical ingredients.

Environmental Health Student Portal, https://kidsenvirohealth.nlm.nih.gov/, provides a useful resources for students and teachers on how the environment can impact health.

Outside Resources

SciStarter, https://scistarter.com/, is the place to find, join, and contribute to science through providing people access to more than 2700 searchable formal and informal research projects and events.

Centers for Disease Control and Prevention, https://www.cdc.gov/nceh/, CDC's National Center for Environmental Health plans, directs, and coordinates a program to protect the American people from environmental hazards. They promote a healthy environment and prevent premature death, avoidable illness and disability caused by non-infectious, non-occupational environmental and related factors.

Earth Time, https://earthtime.org/#, enables users to interact with visualizations of the Earth's transformation over time. Combining huge data sets with images captured by NASA satellites between 1984 and 2016, EarthTime brings to life patterns of natural change and human impact.

Kids Environmental Health, https://kids.niehs.nih.gov/index.htm, is a resource for kids, parents, and t eachers to find fun and educational materials related to health, science, and the environment we live in today.

Collaborate!

Possible Partnerships

This program could take on many community partnerships and extension activities. Some examples include:

- Partner with local environmental organizations and centers to provide educational events about environmental factors. The Millvale Public Library's program, https://triblive.com/local/hamptonshaler/13139993-74/millvale-event-helps-educate-about-lead-exposure, about lead exposure is one example.

- Engage patrons with a citizen science project that concerns environmental factors of your community. Provide a space, possibility for connection, and tools for people to engage with research.

- Colleges and Universities (as a connection for guest speakers and local experts)

- Local environmental health institutions to solicit guest speakers at your library

- Provide resources for people to check out of the library to check environmental health conditions in their home, this could include the Speck Air Quality Control Monitor, https://www.alleghenyfront.org/heres-a-home-air-quality-monitor-you-can-check-out-at-the-library/, available at Cargie Library of Pittsburgh.

- Look for inspiration with other libraries' focus on environmental education and citizen science. Libraries are connecting patrons with projects, tools, and local experts for engagement. A great example is Green Stacks Environmental Center, https://sfpl.org/?pg=2000035701, from the San Francisco Public Library

For help connecting with potential partners in your community, contact your NNLM Regional Medical Library, https://nnlm.gov/regions.

Educate!

Relevant NNLM Trainings

Information about NNLM Trainings, https://nnlm.gov/training, and full course descriptions can be found on-line. Many of the courses are offered throughout the year online; however, feel free to reach out to your local NNLM representative to discuss the possibility of in-person training for your library. NNLM course offerings include:

- Discovering TOXNET

- National Library of Medicine Resources for Citizen Scientists

There are also some great outside and additional resources for more information about the role libraries play in providing health information to the public, especially resources for finding citizen science projects. Possible resources for citizen scientists projects include:

- CitizenScience.gov, https://www.citizenscience.gov/#
- SciStarter, Scistarter.com
- Zooniverse, Zooniverse.org
- National Institute of Environmental Health Sciences, https://www.niehs.nih.gov/

Program Plan

Environmental Health Resource Information Session

Resources

- Tablets or computers
- Prompts or scenarios that can be used to explore resources

Audiences

- Adaptable to ages tween and up

Planning

The goal of the health information session is to introduce patrons to environmental health resources like Tox Town, Household Product Database, and the Environmental Health Student Portal. This program allows for participants to improve skills of both health literacy and digital literacy. These health information sessions can be targeted towards certain population groups (seniors, educators, new adults) or with a particular environmental topic in mind (water quality, air quality, etc). Decide on what focus would be best for your community and their health information needs. Schedule a space to conduct the health information sessions.

Marketing

Highlight the program in the library's program newsletter and/or website

Implementation

Steps take from the program lesson plan

- Schedule a space where you can hold an environmental health information session for interested participants without much interruption. This is also a good program to do for outreach to a set population (senior center, youth drop-in center, school, etc).
- Introduce participants to the NLM environmental health resource (like Tox Town or Household Products Database) by providing an overview, walking attendees through how to use, and providing assistance if they are navigating it on their own device along with you.
- It may also be helpful to prepare prompts or scenarios that attendees can use to look up health information. For instance, provide a list of possible environmental issues that are relevant to your community for further examination.
- These health information sessions can be as short or long as you would like, experiment with different formats for your patrons. Conduct short fifteen minute demonstrations of resources at outreach events or health fairs or long in-depth instruction in conjunction with a computer class or health-focused guest speaker at the library. The possibilities for this program are numerous and all aim to show the library as a source of connecting patrons with trusted information.

Additional environmental health lesson plans for this program can be supplemented with the following lesson plans from the Idaho Department of Health and Welfare, https://healthandwelfare.idaho.gov/Health/EnvironmentalHealth/Education/tabid/182/Default.aspx:

- Health Hazards of Toxic Household Products
- Identifying Pathways of Exposure to Toxic Chemicals

Evaluation and Reporting

For evaluation of this program if you receive NNLM funding -- The NNLM National Evaluation Office, https://nnlm.gov/neo/members/evalmaterials, has a list of evaluation methods that should be used when completed this project. For any questions, please feel free to contact NNLM MAR Coordinator. Library staff involved in the project will fill out the All of Us Partner Staff Questionnaire as well as any additional follow-up surveys for staff.

Program Plan
Environmental Citizen Science

Resources

- Computers or tablets
- Handouts of NLM Resources and Local Environmental Resources
- Environmental Citizen Science Toolkits
- Guest Speaker (optional)

Audiences

- Adaptable to various ages

Planning

Create citizen science toolkits for specific project(s) or create them based on the interest of target populations for the program. You can search for citizen science projects:

- National Geograpnic Citizen Science Projects, https://www.nationalgeographic.org/idea/citizen-science-projects/
- Zooniverse, https://www.zooniverse.org/
- Scistarter, https://scistarter.com/
- CitizenScience.gov, https://www.citizenscience.gov/#

Marketing

Highlight the program in the library's program newsletter and/or website. Create library displays surrounding environmental issues that will be discussed in the program. You can also build buzz for the project by doing informal polls of library patrons to provide feedback about environmental issues that are important to them or vote on citizen science projects that may interest them.

Implementation

The purpose of this program is to introduce the public to environmental issues in their community and how they can get involved through citizen science projects. Citizen Science Kits and related programs can provide relevant information from NLM resources such as:

- Tox Town's Community Action Tools, https://toxtown.nlm.nih.gov/community-action-tools
- CDC's National Environmental Public Tracking, https://ephtracking.cdc.gov/InfoByLocation/

Create Citizen Science Kits that can be used by patrons or groups. An example of a public library creating kits and related events includes:

- San Francisco Public Library Bioblitz Kits, https://sfpl.org/?pg=1025860801, Bioblitzes are gatherings of community members all working together to find and identify as many different species as possible. There kits include tablets, the iNaturalist app, https://www.inaturalist.org/pages/bioblitz%2Bguide, and other tools.

- Santa Cruz Public Library, https://www.santacruzpl.org/news/permalink/741/, holds citizen science events that invites experts on particular topics to share their knowledge.

- Science Action Club at the California Academy of Sciences, https://www.starnetlibraries.org/uncategorized/citizen-science-at-the-library-science-action-club/

- Chapel Hill Public Library and their caterpillar count project, https://chapelhillpubliclibrary.org/eventscalendar/citizen-science/

This program can be led by interested library staff who take participants out of the library to gather information. If the citizen science kits are available for independent check-out from patrons, provide opportunities for feedback and follow up about projects or opportunity for different participants to connect and share information about their findings.

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Example Budget

Summary budget is presented as an example. You can edit and modify budget to fit the needs of your library, your individual library program plan, and prices of your library's approved vendors for materials.

Item	Price	Quantity	Total
Tablets or computers for NLM resource interaction/demonstrations	$350.00	8	$2,800.00
Anti-theft tablet table mount or floor stand	$80.00	8	$640.00
Speck Air Quality Montior, https://www.specksensor.com/	$150.00	3	$450.00
Paper and printing for programs	$100.00	1	$100.00
Supplies for Citizen Science Kits (can contain tablets with down-loaded apps, paper and pencils, tips for best practices, and additional supplies for selected projects)	$2,000.00	1	$2,000.00
Marketing and Promotion, printing and copying	$100	1	$100
Staff Time - to plan and conduct program (per hour)	$30.00	80	$2,400.00
Total			**$8,490.00**

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