



# STEM librarians and STEM researchers: Collaborating to enhance global biodiversity initiatives

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# GEODE

Genomic Observatories Diversity Explorer

**Only about 20% of potentially biodiversity-relevant genetic data in the Sequence Read Archive (SRA) of the International Nucleotide Sequence collaboration currently have geospatial metadata attached to them**

# Research Goals

**1**

**GEODE will visualize the world's most foundational layer of biodiversity: genetic diversity**

**2**

**Crowd-sourced curate-a-thon and datathon to capture essential spatiotemporal metadata for population genomic datasets from the Sequence Read Archive**

**3**

**Calculate essential biodiversity variables for genetic composition and share these via a co-designed educational web-interface**

# Research Team

- Researchers from universities in Australia, New Zealand, United States
- Biologists (early career and more established), IT Design Specialist, STEM Librarians



Eric Crandall,  
Marine population genetics, capacity development  
Pennsylvania State University



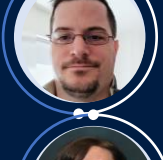
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Spatial population genetic methods  
Michigan State University



John Deck,  
Biodiversity informatics  
UC Berkeley



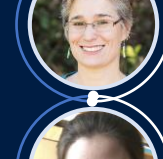
Libby Liggins,  
Marine population genetics, data sovereignty  
Massey University



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Pennsylvania State University



Andrea Pritt,  
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Marine Population Genetics, Open Data  
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Rachel Toczydlowski  
Plant population genetics, bioinformatics  
Michigan State University



Briana Wham,  
Research Data Librarian  
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# Librarians – Researchers Collaboration

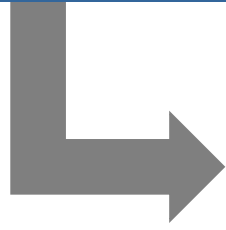
- Leverage the scientific expertise of researchers
- Leverage the information/data curation expertise of librarians
- Trust each group to do their work, meet deadlines



# DATA CURATION

“The technical work put into datasets to make them fit-for-use and accessible over the long term” (Thomer et al. 2022)

# GEODE Curate-A-Thon



Curate-A-Thon

1

Link SRA record to article

**MOLECULAR ECOLOGY**

Original Article  
**Adaptive evolution during an ongoing range expansion: the invasive bank vole (*Myodes glareolus*) in Ireland**  
Thomas A. White, Sarah E. Perkins, Gerald Heckel, Jeremy B. Searle  
First published: 24 May 2013 | <https://doi.org/10.1111/mec.12343> | Citations: 112

Read the full text > PDF TOOLS SHARE

**Abstract**

Range expansions are extremely common, but have only recently begun to attract attention in terms of their genetic consequences. As populations expand, demes at the wave front experience strong genetic drift, which is expected to reduce genetic diversity and potentially cause 'allele surfing', where alleles may become fixed over a wide geographical area even if their effects are deleterious. Previous simulation models show that range

<https://doi.org/10.1111/mec.12343>

2

Determine BioProject relevance for GEODE

**Determining BioProject Relevance**

During the Curate-A-Thon, participants will be determining relevance of SRA BioProjects to inform the upcoming Datathon work. To be relevant: samples should come from natural populations, including introduced and invasive species. Exclude domesticated species, lab or brood stock, and qualitative studies. Complete the following form and contact your Curate-A-Thon leaders with any questions.

bde125@psu.edu (not shared) Switch account

\* Required

project\_index \*

Your answer

project\_acc\_bioprj \*

Your answer

3

Link associated datasets

**DRYAD**

Data from: Adaptive evolution during an ongoing range expansion: the invasive bank vole (*Myodes glareolus*) in Ireland.

White, Thomas A., Cornell University, University of Bern  
Perkins, Sarah E., Cardiff University  
Heckel, Gerald, Swiss Institute of Bioinformatics, University of Bern  
Searle, Jeremy B., Cornell University  
Publication date: April 10, 2013  
Publisher: Dryad  
<https://doi.org/10.5061/dryad.fb782>

**Citation**

White, Thomas A.; Perkins, Sarah E.; Heckel, Gerald; Searle, Jeremy B. (2013). Data from: Adaptive evolution during an ongoing range expansion: the invasive bank vole (*Myodes glareolus*) in Ireland., Dryad, Dataset, <https://doi.org/10.5061/dryad.fb782>

**Data Files**

Download dataset

April 10, 2013

**Related Works**

Article  
<https://doi.org/10.1111/mec.12343>

**Metrics**

175 views

58 downloads

1 citations

<https://doi.org/10.5061/dryad.fb782>

Crowd-sourced metadata enhancement events that will scale efforts, offer data curation training to participants, and highlight the value of good metadata for data discoverability, interoperability, and reusability.



# GEODE Datathon

