The Microfungi Collections Consortium:

A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems

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iDigBio Summit

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What are microfungi?

~4500 genera
~56,000 species

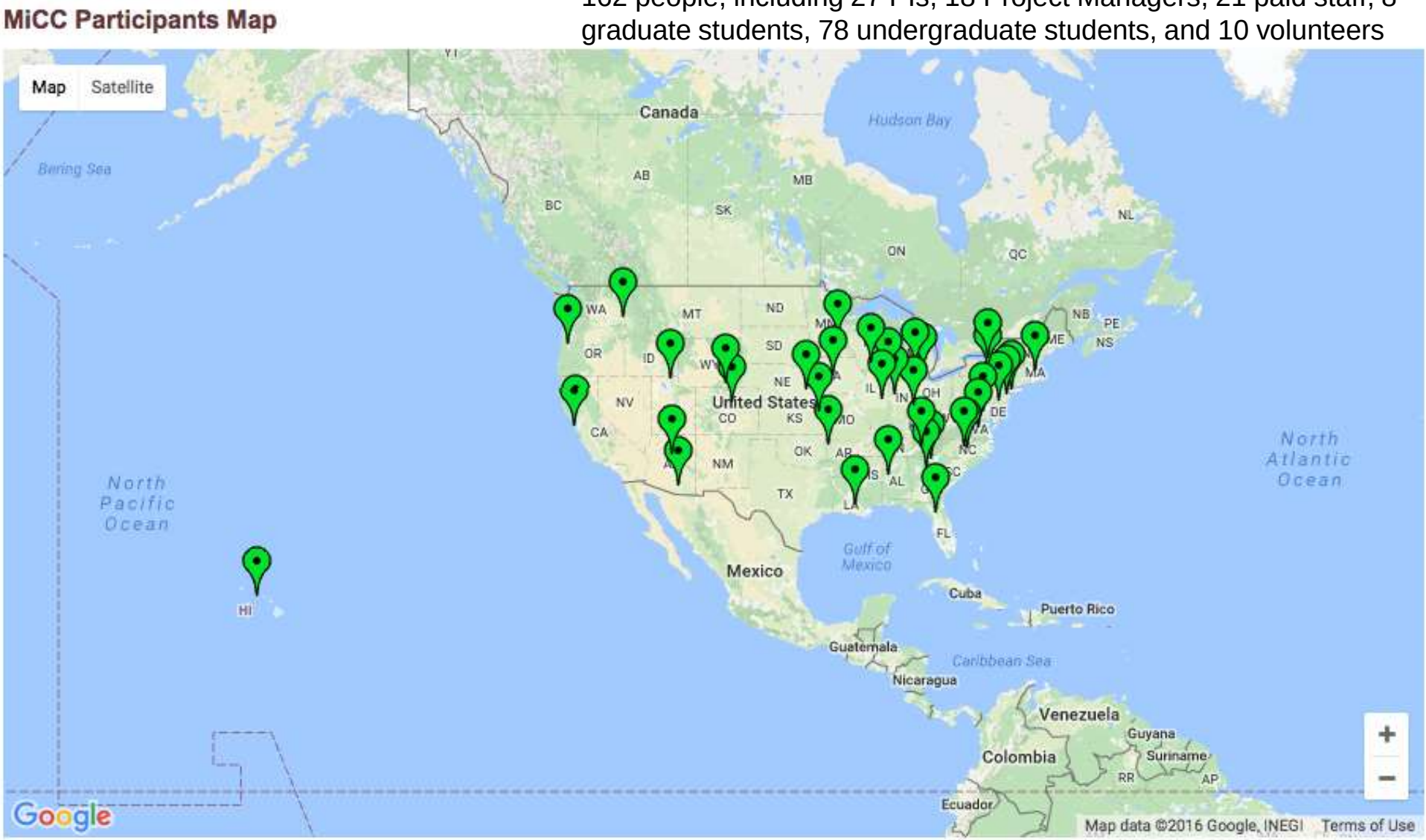
Kingdom Amoebozoa
- **Phylum Mycetozoa**
  - **Class Myxogastria (5 orders, 14 families, 62 genera and 888 species)**
  - **Class Dictyostelia (1 order, 2 families, 4 genera, 93 species)**

Kingdom Stramenipila
- **Phylum Oomycota (1 class, 13 orders, 25 families, 106 genera, 956 species)**

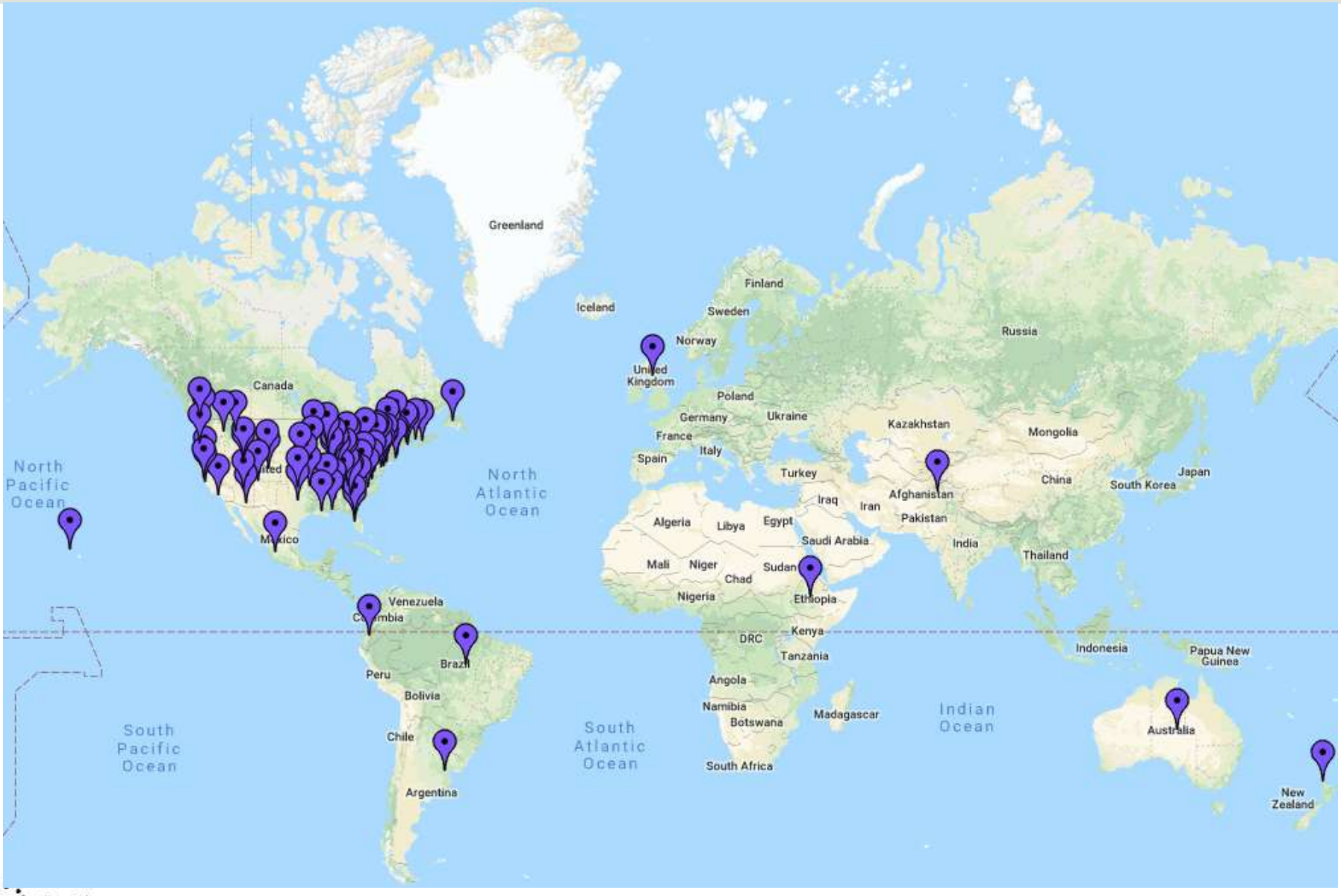
Kingdom Eumycota (Fungi)
- **Phylum Ascomycota**
  - **Subphylum Pezizomycotina**
    - **Class Arthoniomycetes (1 order, 4 families, 78 genera, 1608 species)**
    - **Class Dothideomycetes (11 orders, 90 familes, 1302 genera, 19,010 species)**
    - **Class Eurotiomycetes (10 orders, 27 families, 281 genera, 3401 species)**
    - Class Geoglossomycetes (all macrofungi)
    - **Class Laboulbeniomycetes (2 orders, 5 families, 151 genera, 2072 species)**
    - Class Lecanoromycetes (all lichens)
    - **Class Leotiomycetes (5 orders, 19 families, 641 genera, 5587 species;** ~100 species of macrofungi in Leotiales)
    - Class Lichinomycetes (all lichens)
    - **Class Orbiliomycetes (1 order, 1 family, 12 genera, 288 species)**
    - Class Pezizomycetes (all macrofungi)
    - **Class Sordariomycetes (15 orders, 64 families, 1119 genera, 10,564 species;** ~1000 species of macrofungi in Clavicipitales, Hypocreales, and Xylariales)
  - **Subphylum Saccharomycotina (1 class, 1 order, 13 families, 88 genera, 906 species)**
  - **Subphylum Taphrinomycotina (4 classes, 4 orders, 5 families, 10 genera, 140 species)**
- **Phylum Basidiomycota**
  - Subphylum Agaricomycotina (all macrofungi)
  - **Subphylum Pucciniomycotina (8 classes, 18 orders, 36 families, 247 genera, 8324 species)**
  - **Subphylum Ustilaginomycotina (1 class, 3 orders, 12 families, 62 genera, 1113 species)**
- **Phylum Blastocladiomycota (1 class, 1 order, 5 families, 14 genera, 179 species)**
- **Phylum Chytridiomycota (2 classes, 4 orders, 14 families, 105 genera, 706 species)**
- **Phylum Glomeromycota (1 class, 4 orders, 9 families, 12 genera, 169 species)**
- **Phylum Neocallimastigomycota (1 class, 1 order, 1 family, 6 genera, 20 species)**
- **Phylum Zygomycota (4 subphyla, 10 orders, 27 families, 168 genera, 1065 species)**

Participants (38 institutions)

162 people, including 27 PIs, 18 Project Managers, 21 paid staff, 8 graduate students, 78 undergraduate students, and 10 volunteers



Collections (90 institutions; 59 Live, 31 Snapshot)



Management of the network

INHS Team

INHS MiCC Team

Andrew Miller
PI

Diego Barroso
Project Manager

Phil Anders
Biological
Informatician

Scott Bates
Project
Consultant

Lee Crane
Exsiccati and Nomenclature
Expert

Ashley Maras
Transcriber

help@mycoportal.org

iDigBio
Integrated Digitized Biocollections

MiCC
Microfungi Collections Consortium

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credits

Microfungi comprise a loosely defined artificial group of Fungi and fungal-like organisms that include such things as bread molds, plant pathogens, powdery mildews, rusts, slime molds, and water molds. In general, these fungi are difficult or impossible to see with the unaided eye. A **taxonomical classification of microfungi** suggests the group contains 4468 genera and 55,989 species.

Microfungi are ubiquitous throughout the world and some cause major economic impacts as pathogens of animals, plants, and other fungi. Many **microfungi** are harmless saprobes, breaking down large complex chemical structures such as lignin found in wood into usable simple compounds. Despite their importance, little is known about the diversity, distribution, ecology, or host relationships of microfungi throughout the United States.

The Microfungi Collections Consortium (MiCC) is a collaborative effort among **38 US institutions** to digitize specimen label data from 2.3 million North American microfungi specimens and make these data available online to the broader community through the **MyCoPortal** website. A proposal submitted in October 2014 to the National Science Foundation's **Advancing Digitization of Biodiversity Collections** program was **granted in July 2015**. **Dr. Andrew N. Miller** of the **Illinois Natural History Survey** serves as the Project Leader.

www.microfungi.org

www.facebook.com/microfungi.org

www.mycoportal.org

Progress

Selected Collection Statistics

Display List of Collections Analyzed

- 4,005,792 occurrence records
- 1,689,603 (42%) georeferenced
- 1,898,191 (47%) imaged
- 3,279,348 (82%) identified to species
- 1,675 families
- 8,277 genera
- 112,399 species
- 118,668 total taxa (including subsp. and var.)

Show Statistics per Collection

MiCC
- **1.1M digitized records (1.2M)**
- **1.4M exisiting records (1.1M)**

2.5M records total

***including 117,066 type specimens and 2301 records linked to/from GenBank**

MiCC Microfungi Collections Consortium

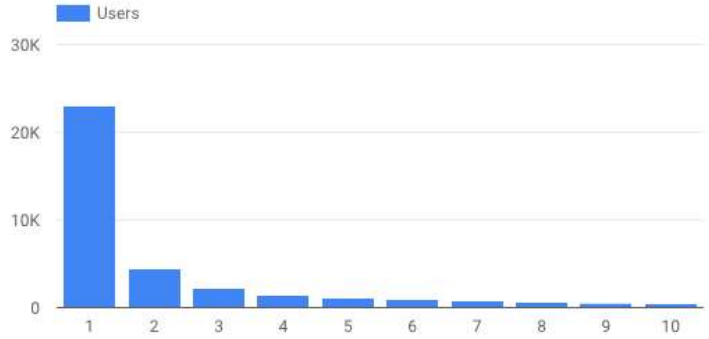
Analytics

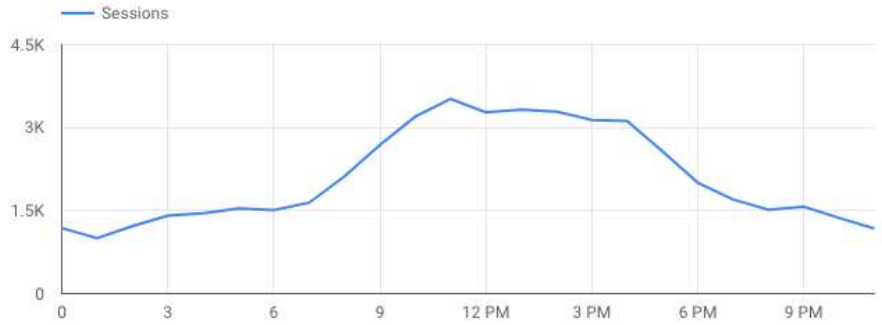
MyCoPortal Data Portal Statistics

www.mycoportal.org — Data from Google Analytics

MYCOLOGY COLLECTIONS PORTAL

Users	New Users	Sessions	Number of Sessions per User	Pageviews	Pages / Session	Avg. Session Duration	Bounce Rate
24,220	23,106	50,508	2.09	152,171	3.01	00:03:23	55.49%





	Country	Sessions
1.	United States	22,283
2.	Spain	2,557
3.	France	2,046
4.	Canada	1,931
5.	Italy	1,697
6.	Germany	1,349
7.	Mexico	885
8.	India	866
9.	Brazil	824
10.	Japan	772
11.	Russia	771

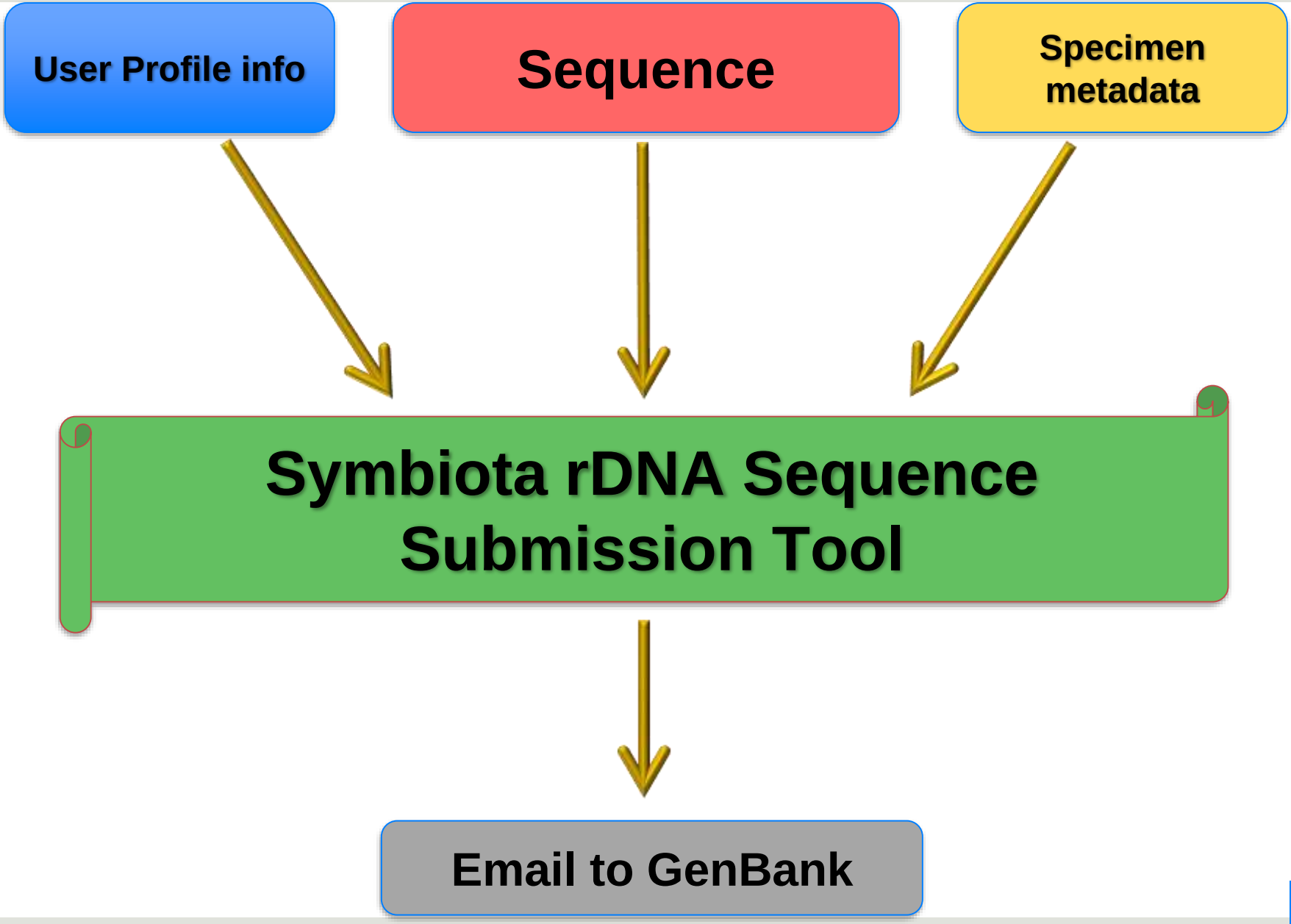
1 - 100 / 161

Google Scholar

MyCoPortal.org cited 82 times
– 20 peer-reviewed publications

Jan 1, 2018 - Sep 30, 2018

Highlight


User Profile info
Sequence
Specimen metadata
Symbiota rDNA Sequence Submission Tool
Email to GenBank

Education

MSU Advanced Mycology course - Fall 2018 (MSC)

PLP 847 Advanced Mycology: Systematics, identification, physiology, genetics, and molecular biology of plant pathogenic fungi.

Contact: Gregory Bonito (bonito@mail.msu.edu)
Collection Type: Observations
Management: Live Data managed directly within data portal
Global Unique Identifier: 018acd90-d7ec-4516-979f-433f62b98459
Live Data Download: DwC-Archive File
Digital Metadata: EML File
Usage Rights: CC0 1.0 (Public-domain)

Purdue University Northwest Mycology (PNW)

Contact: (stbates@purdue.edu)
Collection Type: General Observations
Management: Live Data managed directly within data portal
Global Unique Identifier: b052ed6d-6ae3-44c7-8863-941ee45fe941
Live Data Download: DwC-Archive File
Digital Metadata: EML File
Usage Rights: CC0 1.0 (Public-domain)

Education and Outreach

Fungal Biology and Biodiversity STEM Educational Module Development Workshop

MyCoPortal helps save life!