Agenda for today's talks

- Andrew Miller (MiCC PI): *The Microfungi Project* (45 mins)
- Elizabeth Lippoldt (Program Manager): *Digitization Workflows & The MyCoPortal* (45 mins)
- Break for 30 mins (10:30 – 11:00am)
- Phil Anders (Biological Informatician): *The Voice Driven Command Control* (30 mins)
- Scott Bates (Project Consultant): *The MyCoPortal Taxonomic Thesaurus* (30 mins)
- Discussion (30 mins)
- Lunch from 12:30-1:30pm; iDigBio presentations from 1:30-5pm

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The Microfungi Collections Consortium: A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems

Andrew N. Miller
University of Illinois Urbana-Champaign
Illinois Natural History Survey

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Topics

- What we are going to do
- What we have done so far
- How we will get there

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What we are going to do

Digitize microfungi specimen labels

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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)**

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Research Theme

1) What are the effects of anthropogenic disturbance to the environment on the temporal and spatial distribution and phenology of microfungi?

2) Can we use historic and current distributional patterns of microfungi as models for the early detection of invasive species to reduce their potential deleterious effects? Can we use these same data to detect endemism and biodiversity hotspots in microfungi?

3) How do climatic changes influence the dispersal, distribution, and functioning of soil microfungi?

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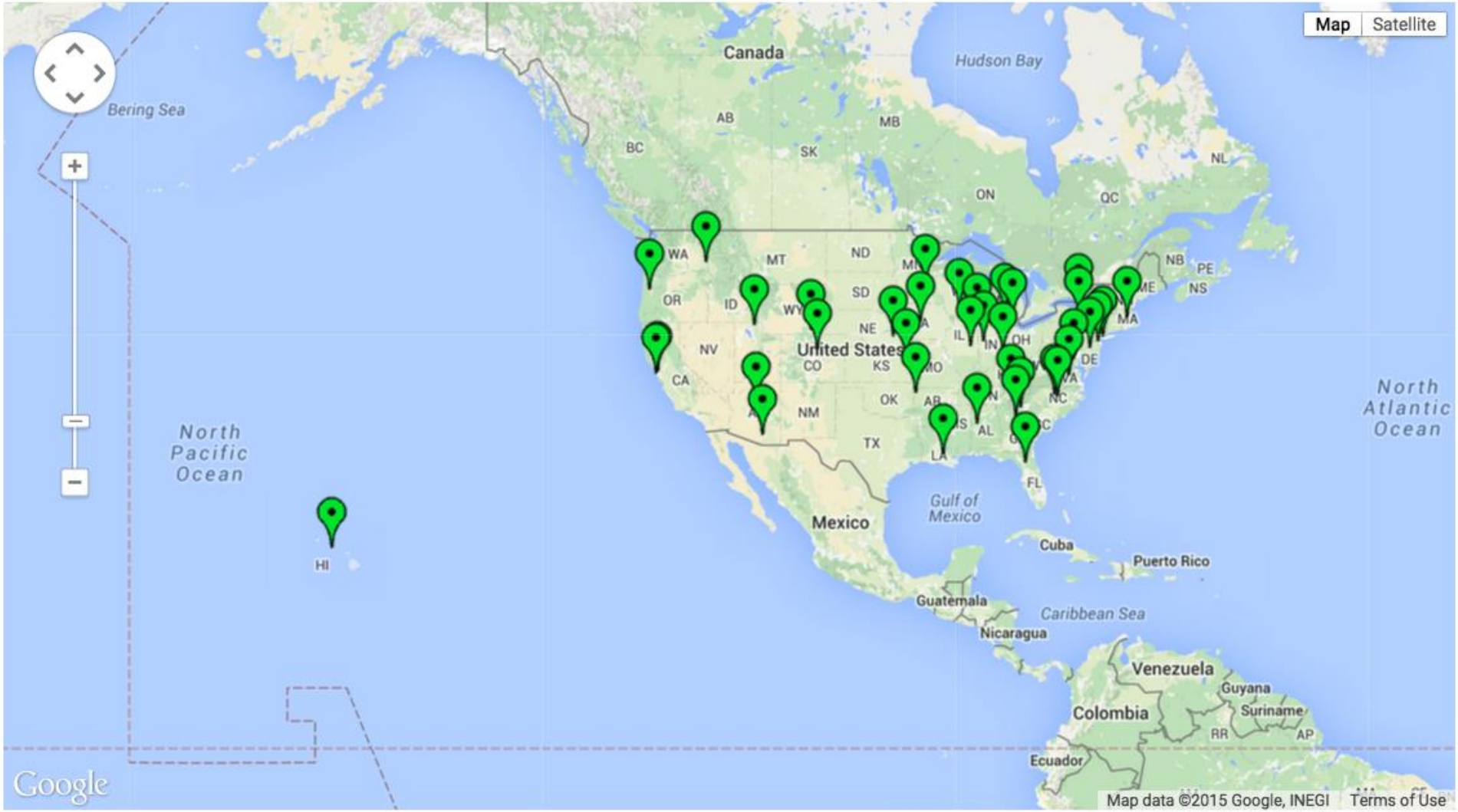
MiCC Participants Map



- 1.2 million microfungi specimens
- 380,000 existing records
- 53,000 existing images
- 264,000 specimen slides
- 38 institutions in 31 states

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State	Institution Name and (Herbarium Code)	Specimens in MyCoPortal	Specimens Databased	Specimens to Digitize
Alabama	University of Alabama (UNA)	0	500	0
Arizona	Rocky Mountain Research Station (FPF)	0	4,622	0
Arizona	**University of Arizona (ARIZ)**	**8,474**	**11,526**	**20,000**
Arkansas	**University of Arkansas (UARK)**	**0**	**40,000**	**10,000**
California	San Francisco State University (SFSU)	0	500	0
California	**University of California (UC)**	**297**	**0**	**56,500**
Colorado	Denver Botanical Garden (DBG)	2,774	0	0
Florida	**University of Florida (FLAS)**	**104**	**0**	**40,000**
Georgia	**University of Georgia (GAM)**	**0**	**0**	**40,000**
Hawaii	Bishop Museum (BISH)	0	7,973	0
Illinois	**The Field Museum (F)**	**3,898**	**6,102**	**70,000**
Illinois	**University of Illinois (ILL/ILLS)**	**37,929**	**10,177**	**55,000**
Indiana	**Purdue University (PUR/PUL)**	**0**	**96,480**	**55,570**
Iowa	**Iowa State University (ISC)**	**9,000**	**1,000**	**35,800**
Kansas	University of Kansas (KANU)	0	2,971	0
Louisiana	**Louisiana State University (LSUM)**	**945**	**0**	**10,000**
Maryland	U.S. National Fungus Collections (BPI)	518,290	0	0
Massachusetts	**Harvard University (FH)**	**7,719**	**5000**	**54,000**
Michigan	**Michigan State University (MSC)**	**0**	**0**	**31,500**
Michigan	**University of Michigan (MICH)**	**8,856**	**0**	**65,000**
Minnesota	**University of Minnesota (MIN)**	**5,569**	**931**	**50,000**
Nebraska	University of Nebraska (NEB); specimens digitized by University of Illinois	0	2000	50,000
New Jersey	**Rutgers University (CHRB)**	**0**	**0**	**40,000**
New York	**Cornell University (CUP)**	**26,590**	**60,000**	**18,000**
New York	**New York Botanical Garden (NY)**	**65,511**	**25,000**	**248,000**
New York	**State University of New York (SYRF)**	**0**	**0**	**18,000**
North Carolina	**North Carolina State University (NCSLG)**	**518**	**1,892**	**0**
North Carolina	University of North Carolina (NCU); specimens digitized by University of Florida	318	0	18,000
Ohio	**Miami University (MU)**	**0**	**0**	**50,000**
Oregon	Oregon State University	10,624	19,376	0
Pennsylvania	**Academy of Natural Sciences (PH)**	**0**	**9,335**	**32,000**
South Carolina	Clemson University (CLEMS); specimens digitized by University of Florida	0	0	4,800
Tennessee	University of Tennessee (TENN)	11,170	5,000	0
Utah	Utah State University (UTC)	1,481	0	0
Virginia	University of Richmond (URV); specimens digitized by NYBG	0	0	3,000
Washington	Washington State University (WSP)	0	70,156	0
Wisconsin	**University of Wisconsin (WIS)**	**0**	**0**	**120,000**
Wyoming	**University of Wyoming (RM/RMS)**	**0**	**0**	**28,200**
	Totals:	720,067	380,541	1,223,370
			GRAND TOTAL:	2,323,978

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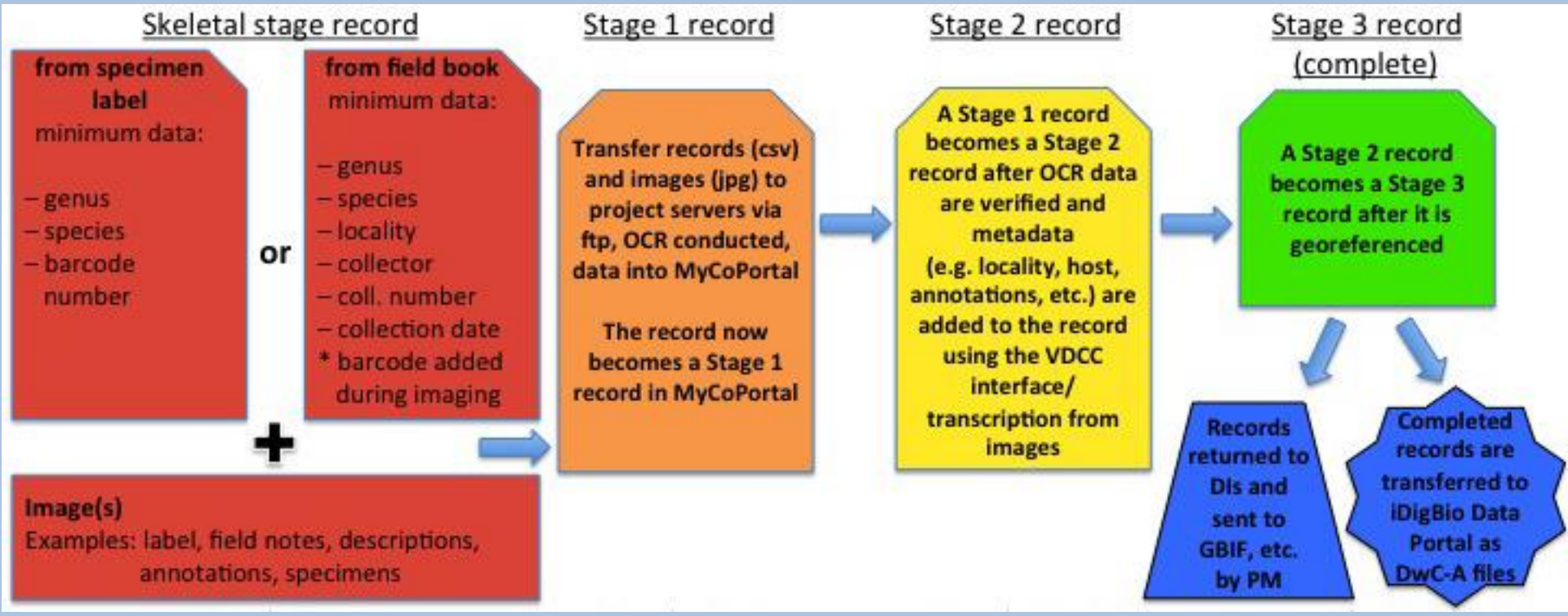
Table III. Project timeline showing tasks/deliverables and estimated period(s) of completion (S=Summer, F=Fall, W=Winter, Sp=Spring). **Red=INHS Team**, **Green=DIs**, **Blue=Outreach**. INHS Team member responsible for each task is abbreviated as above. Project website and MyCoPortal are already established and, thus, are not shown.

Project Timetable	Team Member (or DIs)	S	F	W	Sp	S	F	W	Sp	S	F	W	Sp
		2015				2016				2017			2018
Take Project Management Workshops	PL												
VDCC implementation	BI												
Complete list of exsiccati on portal	PM												
Annual project meetings	PL/PM/GM												
Digitization training (INHS)	GM/Digitizer												
Georeferencing training (online)	GM												
Advisory Committee updates/meetings	INHS team												
Enhance project website	PL/BI												
Transfer existing records to portal	PM												
Georeference existing records	GM												
Annual project reports	PL												
Add sequence tracking to portal	PM												
Data transfer to other portals	PM												
Develop data migrators	BI												
Transfer specimen images to portal	PM												
Update fungal thesaurus in portal	PM, DIs												
Digitize 521,452 records (CUP, F, FLAS, GAM, ILL, ISC, LSUM, MICH, NY, PUR, RM, SYRF, WIS)	DIs												
Digitize 489,002 records (ARIZ, CHRB, FH, FLAS, ILL, ISC, MSC, MU, NY,PH, PUR, UARK, UC, WIS)	DIs												
Digitize 212,916 records (FH, MINN, MU, NY, UC)	DIs												
Present results at national meetings	DIs												
Outreach activity – teacher training	NCSLG, CHRB												
Outreach activities – K-12/general pub	DIs												
Crowdsourcing project	PM/BI												

Digitization Workflow



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Outreach and Education

NCSLG NC State, Marc Cubeta

To empower teachers to promote greater student initiative and leadership in developing research questions and inquiry-based investigations using the MyCoPortal

Outreach and Education

Workshop: "Microfungi - nature's small wonders"

Target audience

a) North Carolina high school biology teachers
b) Undergraduate students from Georgia and New Jersey pursuing a science teaching degree

Low socioeconomic and underrepresented populations, and first generation college students.

Premise - There is limited time to teach about fungi as isolated taxonomic units (<1 week)

Development of assessment tools and inquiry based assignments with microfungi as

a) invasive species
b) pathogens of plants, animals and other fungi
c) insect pollinator partners
d) components of soil ecosystem

What we have done so far

LOTS! (in the first 4 months)

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INHS Team

Andrew Miller
PI

Elizabeth Lippoldt
Project Manager

Phil Anders
Biological
Informatician

Alexander Kuhn
Digitizer

Scott Bates
Project
Consultant

Lee Crane
Exsiccati and
Nomenclature
Expert

Tiffany Bone
Digitization
Expert

Agilda Dema
Transcriber

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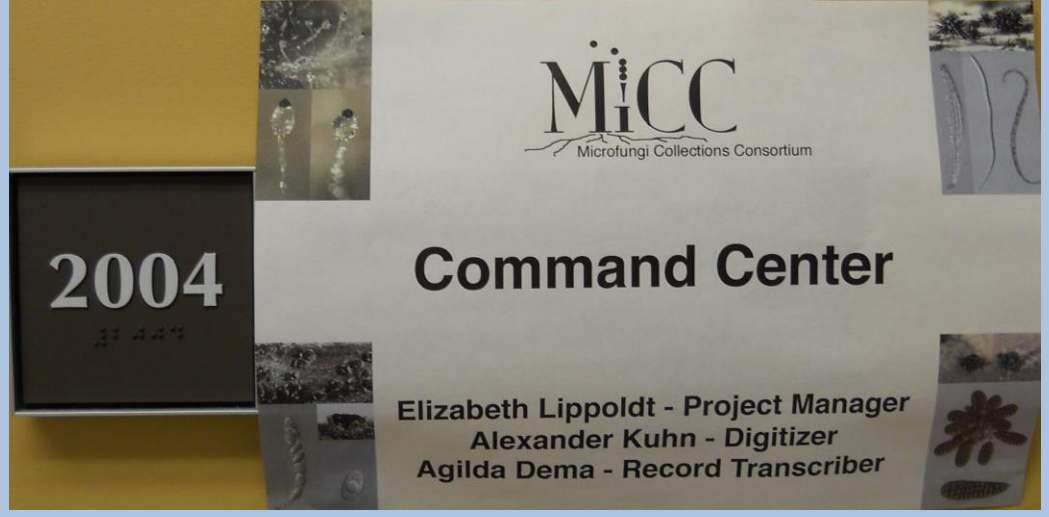
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2004
Command Center
Elizabeth Lippoldt - Project Manager
Alexander Kuhn - Digitizer
Agilda Dema - Record Transcriber

ASK US QUESTIONS!!!

Response time

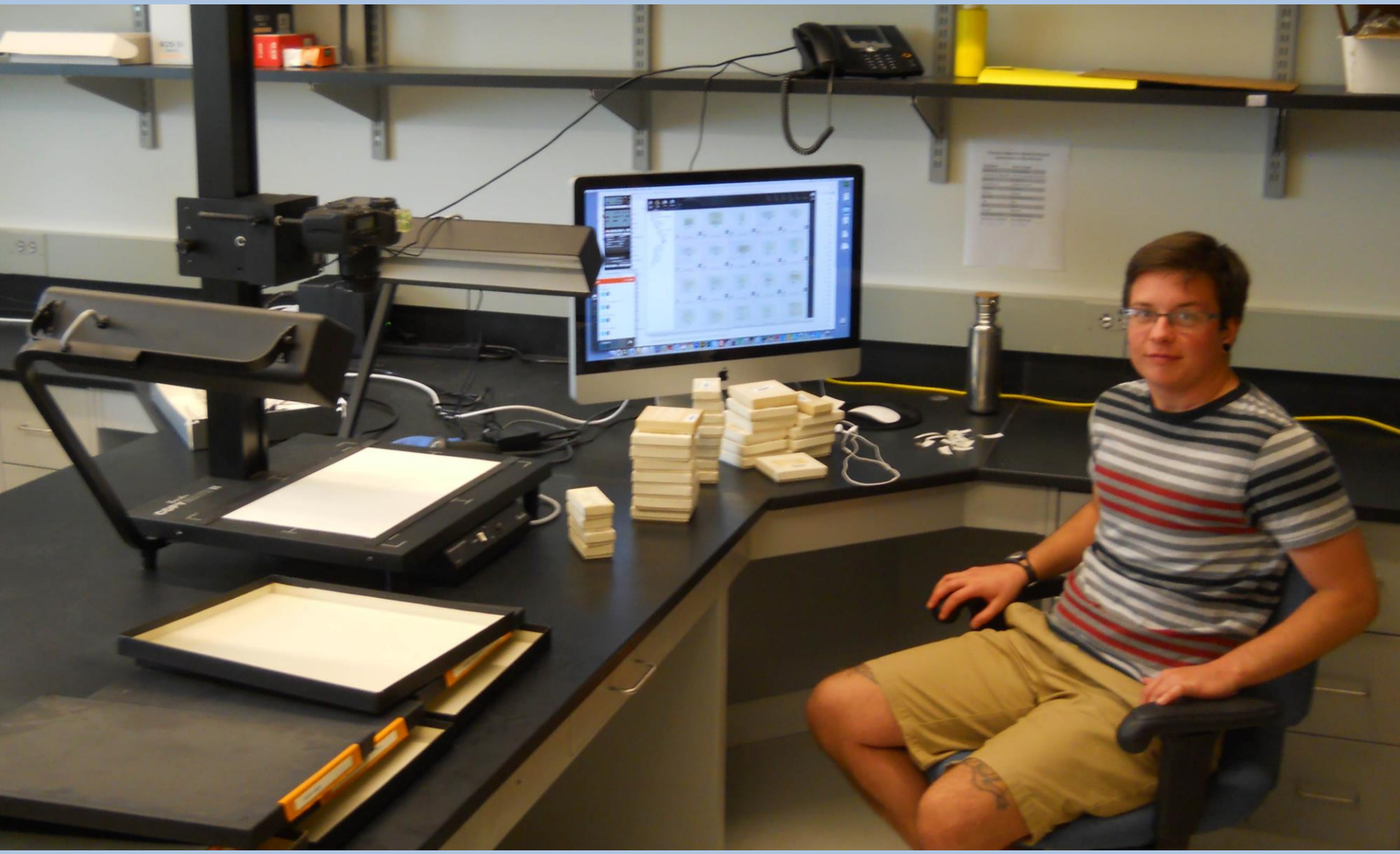
Average rate of ~92 seconds!

If we don't hear from you, you will <u>certainly</u> hear from us!

INHS Team Training

INHS Team Training

INHS Team Training



INHS Team Training

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MiCC 1st Year Participants Training

SYRF & WIS

22-July-2015

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MiCC 1st Year Participants Training

F, ISC & PUR

11-Aug-2015

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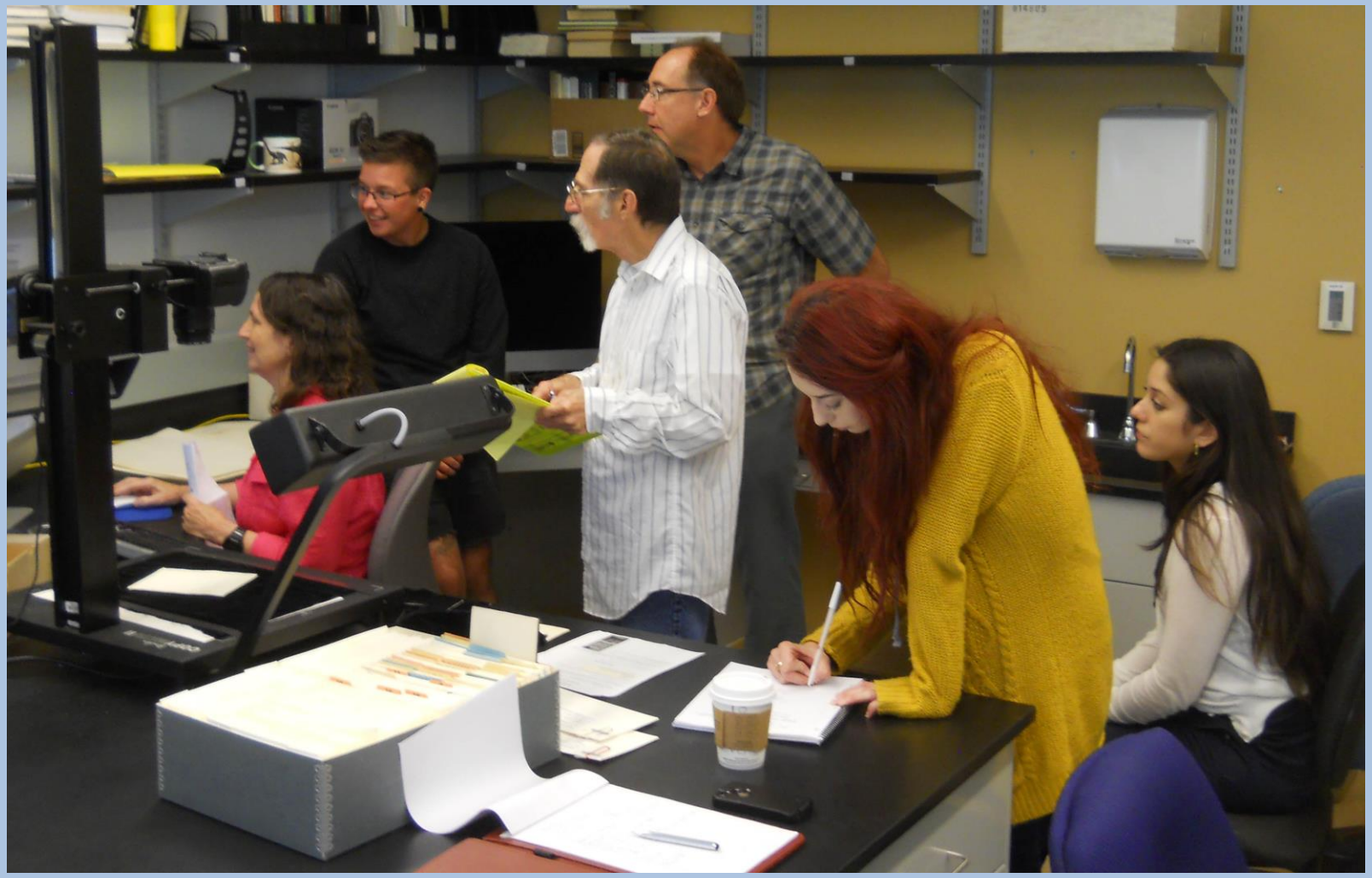
MiCC 1st Year Participants Training



FLAS, NY & RMS
26-Aug-2015

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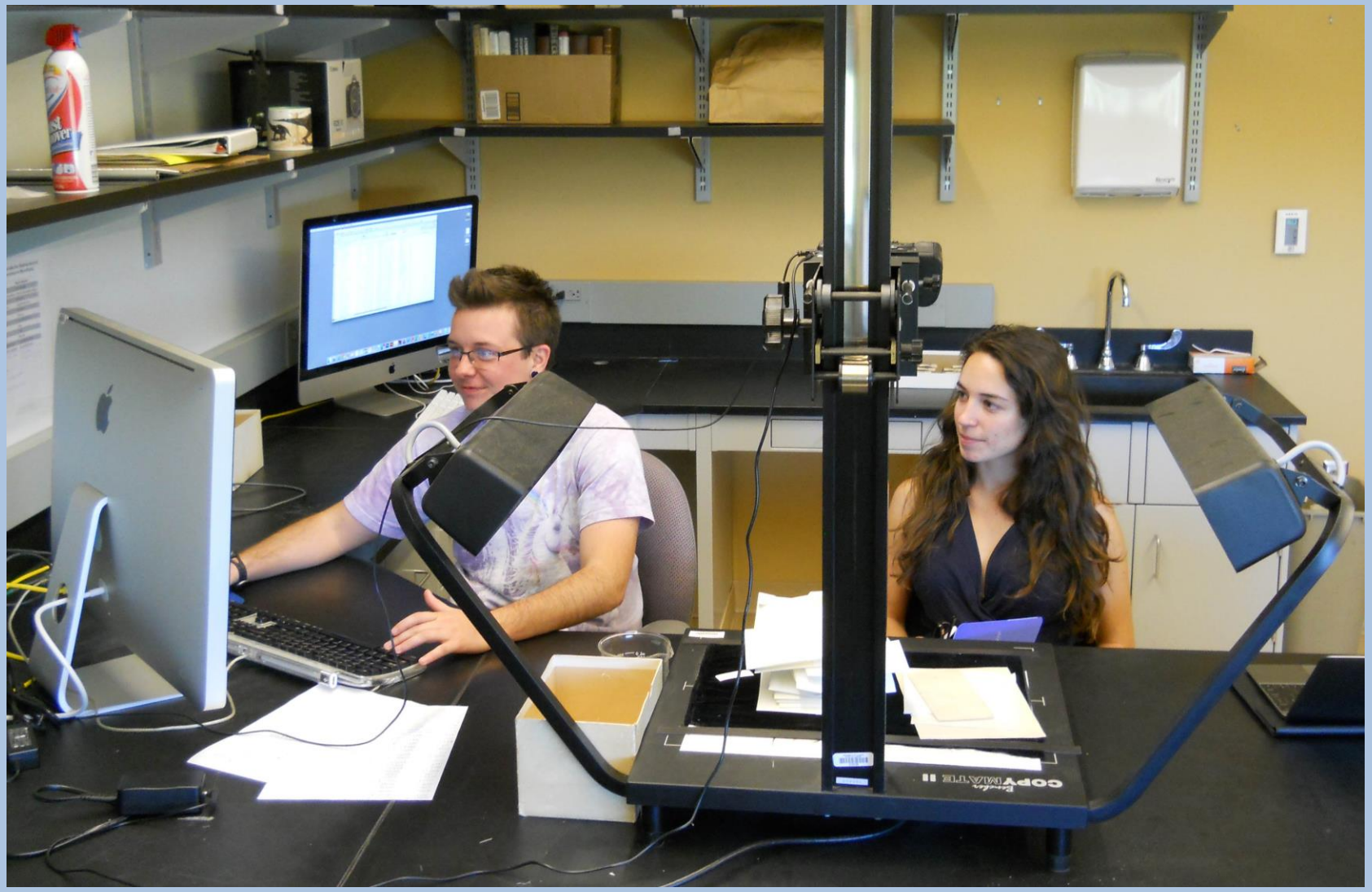

GAM

15-Sep-2015

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MiCC 1st Year Participants Training

CUP

13-Oct-2015

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MYCOLOGY COLLECTIONS PORTAL

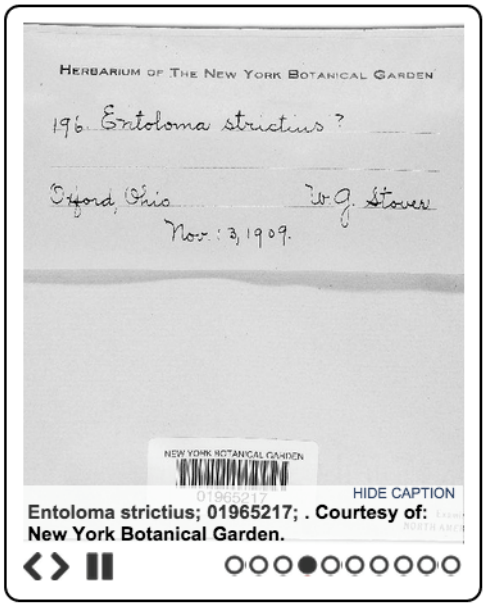
Home | Explore | Crowdsource | Checklist Projects | Other Resources | Acknowledgements | Welcome Andrew! My Profile Logout Sitemap

Welcome to the Mycology Collections data Portal

The Mycology Collections data Portal (MyCoPortal) is more than just a web site - it is a suite of user-friendly, web-based data access technologies to aid taxonomists, field biologists, ecologists, educators, and citizen scientists in the study of fungal diversity. The data are derived from a network of universities, botanical gardens, museums, and agencies that provide taxonomic, environmental, and specimen-based information. Using the Symbiota (http://symbiota.org) system of virtual online floras, these data are directly accessible to dynamically generate geo-referenced species checklists, distribution maps, and interactive identification keys, all linked with a rich collection of digital imagery documenting fungal diversity of North America.

Fungus of the Day

What is this fungus?
Click here to test your knowledge



News and Events

- **NSF Press Release** (#15-092) - NSF awards fifth round of grants to enhance America's biodiversity collections
- **NSF Press Release** (#12-082) - US National Science Foundation awards support for The Macrofungi Collection Consortium, a collaboration of 35 institutions in 24 states for the purpose of databasing some 1.4 million dried scientific specimens of macrofungi (NSF ADBC 1206197).
- **December 2013** - 1,546,358 occurrence records supplied by 31 different data providers have been integrated into MyCoPortal.
- **NEW** - MaCC records are now part of the Zooniverse project *Notes from Nature*. Please help us by transcribing specimen labels (link).
- Image provided by New York Botanical Garden.

Please join the Mycology Collections Portal as collaborators or regular visitors, and send your feedback to mycoportal.contact@gmail.com.

MiCC Microfungi Collections Consortium

www.mycoportal.org

Symbiota Portals: 18 million records served through 22 Total Portals (9 TCN Portals)

Data Management

Open access of data

Management & Oversight

Collections added to MyCoPortal

53 collections

Arthur Fungarium, Purdue University (PUR) more info		
Center for Forest Mycology Research, USDA Forest Service (CFMR) more info	53,478	
Clemson University Herbarium (CLEMS) more info		
E. C. Smith Herbarium (ACAD) more info	9,080 (coming soon)	
Julian H. Miller Mycological Herbarium (GAM) more info		
Rocky Mountain Research Station, USDA Forest Service (FPF) more info	4,622 (coming soon)	
University of British Columbia (UBC) more info	29,753	
University of Nebraska State Museum, C.E. Bessey Herbarium (NEB) more info	2,135	
University of Wisconsin-Madison Herbarium (WIS) more info		

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MyCoPortal hit the 2 million record mark!!!

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New features in MyCoPortal

Past Year Totals

Institution	Object	2014-10	2014-11	2014-12	2015-1	2015-2	2015-3	2015-4	2015-5	2015-6	2015-7	2015-8	2015-9	2015-10
Ada Hayden Herbarium, Iowa State University	Specimens	5	7	0	0	0	0	0	0	0	0	128	150	818
	Stage 1	0	0	0	0	0	0	0	0	0	0	0	0	1
	Stage 2	0	0	0	0	0	0	0	0	0	0	128	149	774
	Stage 3	0	0	0	0	0	0	0	0	0	0	0	0	0
	Images	0	0	0	0	0	0	0	0	0	0	0	411	1404
Bernard Lowy Mycological Herbarium (Louisiana State University)	Specimens	0	1050	341	218	112	0	0	2	0	0	1	244	334
	Stage 1	0	0	0	0	0	0	0	0	0	0	0	14	2
	Stage 2	0	562	180	117	43	0	0	0	0	0	1	208	325
	Stage 3	0	482	155	100	69	0	0	2	0	0	0	22	4
	Images	0	215	615	0	4154	7	5	24	1	0	1	0	415
Cornell Plant Pathology Herbarium	Specimens	0	107	57	0	1	0	7	0	5003	233	0	0	488
	Stage 1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Stage 2	0	0	0	0	0	0	0	0	0	0	0	0	2
	Stage 3	0	0	0	0	0	0	0	0	0	0	0	0	0
	Images	0	1300	1547	443	6	0	181	0	8853	4	0	35	584
Field Museum of Natural History	Specimens	6	90	0	0	0	0	0	0	0	0	476	1047	1133
	Stage 1	0	0	0	0	0	0	0	0	0	0	1	0	0
	Stage 2	0	0	0	0	0	0	0	0	0	0	246	405	303
	Stage 3	1	16	0	0	0	0	0	0	0	0	0	0	0
	Images	0	0	0	0	0	0	0	0	0	0	55	772	1009
Julian H. Miller Mycological Herbarium	Specimens	0	0	0	0	0	0	0	0	0	0	0	559	1183
	Stage 1	0	0	0	0	0	0	0	0	0	0	0	0	1049
	Stage 2	0	0	0	0	0	0	0	0	0	0	0	559	134
	Stage 3	0	0	0	0	0	0	0	0	0	0	0	0	0
	Images	0	0	0	0	0	0	0	0	0	0	0	592	2548
University of Florida Herbarium	Specimens	2	558	1005	81	3	0	2	10	0	0	2	3833	574
	Stage 1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Stage 2	0	0	2	0	0	0	0	0	0	0	0	0	0
	Stage 3	0	0	0	0	0	0	0	0	0	0	0	0	0
	Images	0	17	0	0	5	1	0	0	0	6	0	64	1215
University of Illinois Herbarium	Specimens	0	203	71	0	0	0	0	0	31	6109	2775	3406	2106
	Stage 1	0	0	0	0	0	0	0	0	0	159	0	0	1
	Stage 2	0	164	71	0	0	0	0	0	31	1306	5	1034	2103
	Stage 3	0	0	0	0	0	0	0	0	0	3	0	0	0
	Images	0	0	0	0	0	0	0	1	15	8328	12423	6515	2345
University of Wisconsin-Madison Herbarium	Specimens	0	0	0	0	0	0	0	0	0	0	1805	3631	3968
	Stage 1	0	0	0	0	0	0	0	0	0	0	0	1	6
	Stage 2	0	0	0	0	0	0	0	0	0	0	1775	3624	3960
	Stage 3	0	0	0	0	0	0	0	0	0	0	0	0	0
	Images	0	0	0	0	0	0	0	0	0	0	0	820	2243
Wilhelm G. Solheim Mycological Herbarium	Specimens	0	0	0	0	0	0	0	0	0	0	0	195	587
	Stage 1	0	0	0	0	0	0	0	0	0	0	0	194	587
	Stage 2	0	0	0	0	0	0	0	0	0	0	0	0	0
	Stage 3	0	0	0	0	0	0	0	0	0	0	0	0	0
	Images	0	0	0	406	0	0	442	0	0	0	0	0	434

Download CSV

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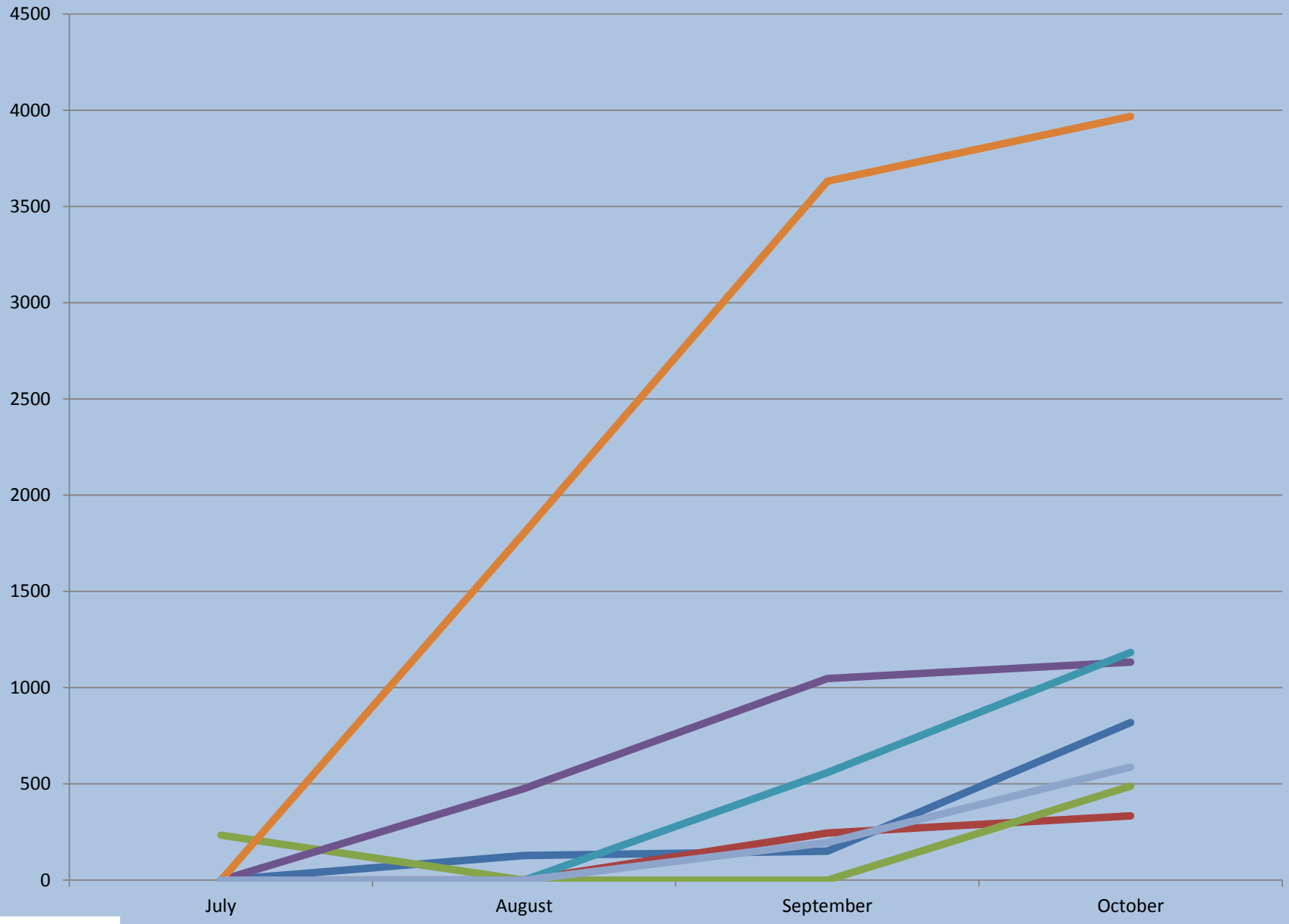
Specimen records



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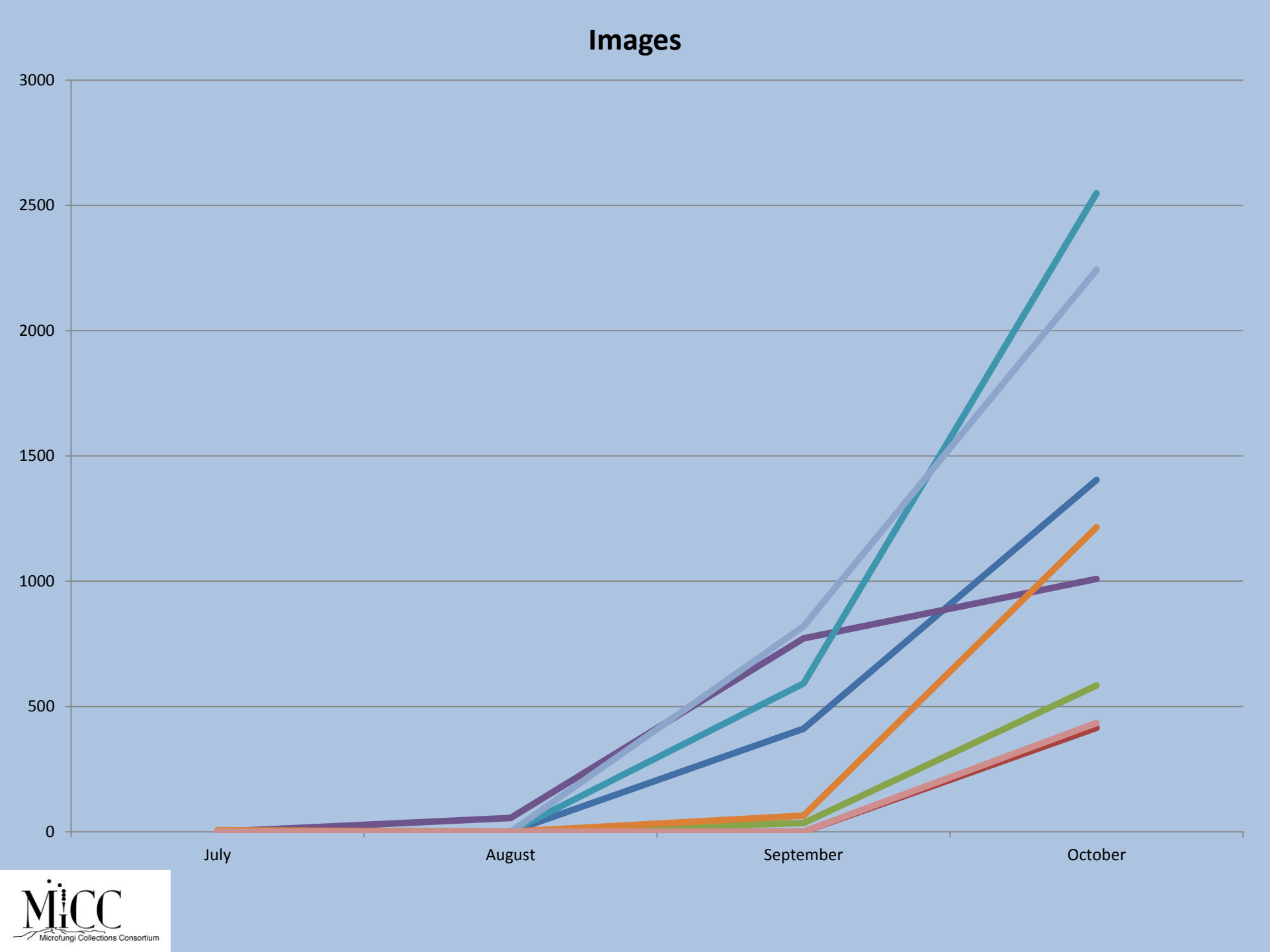

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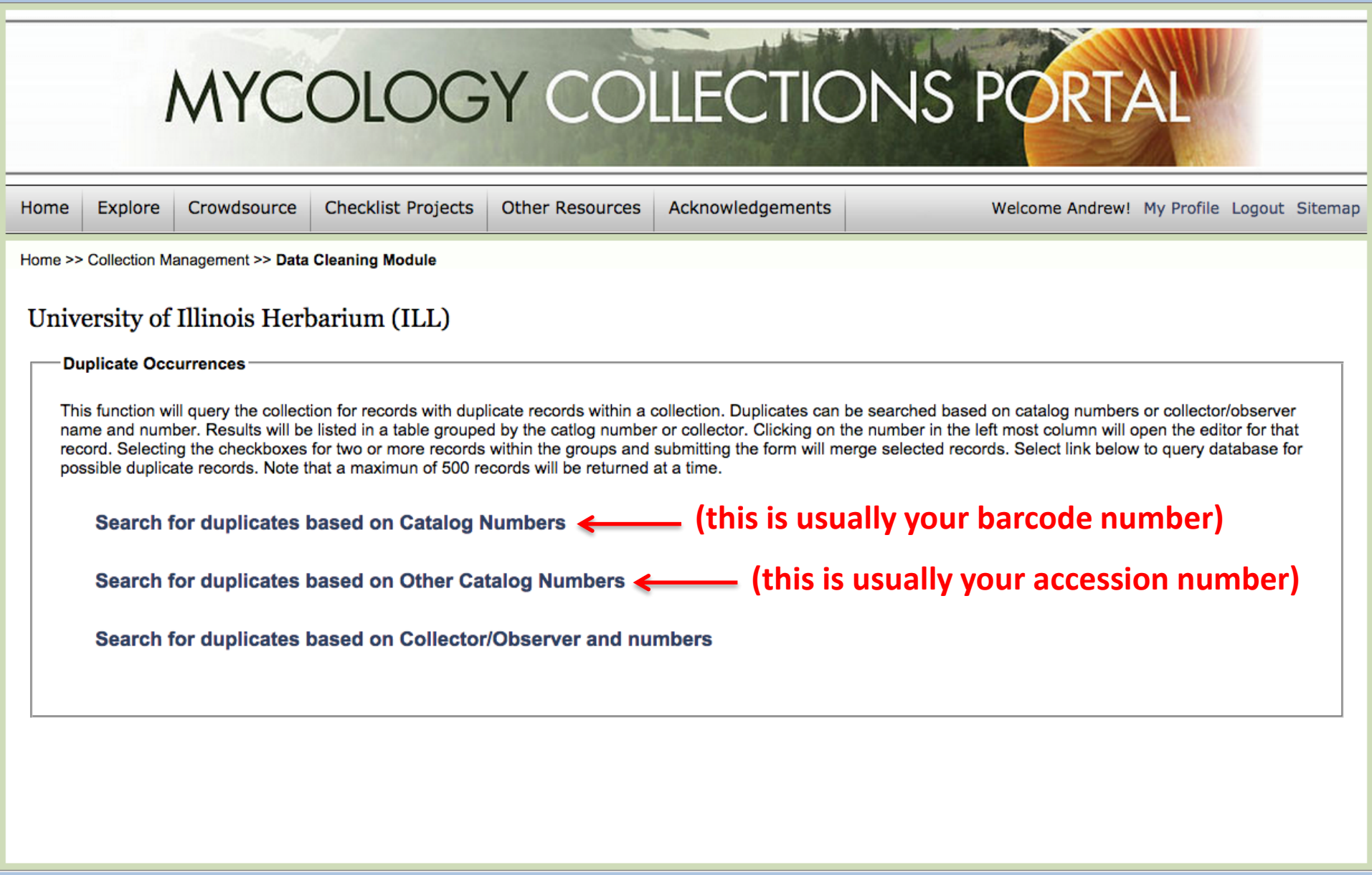
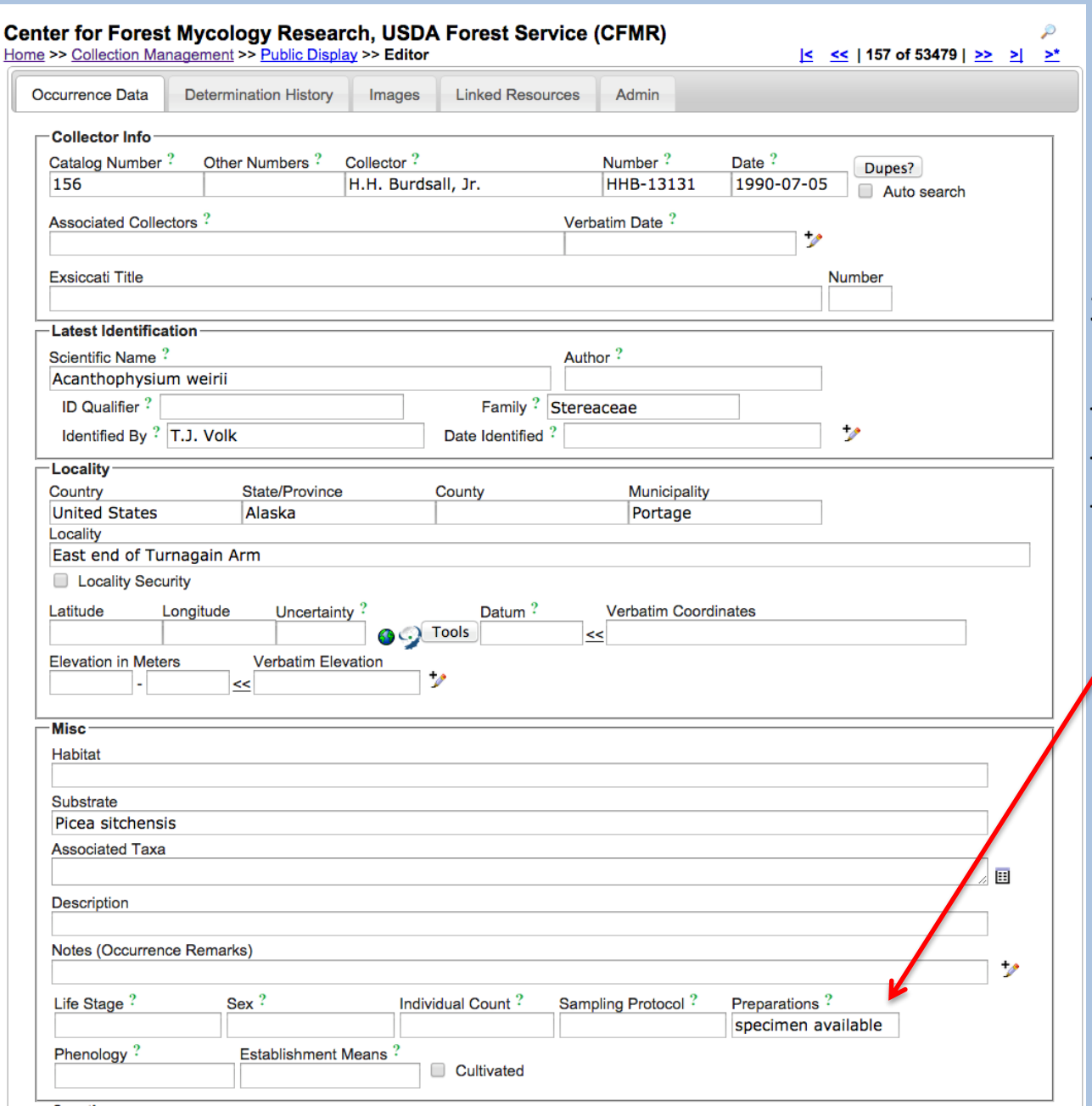
New features in MyCoPortal



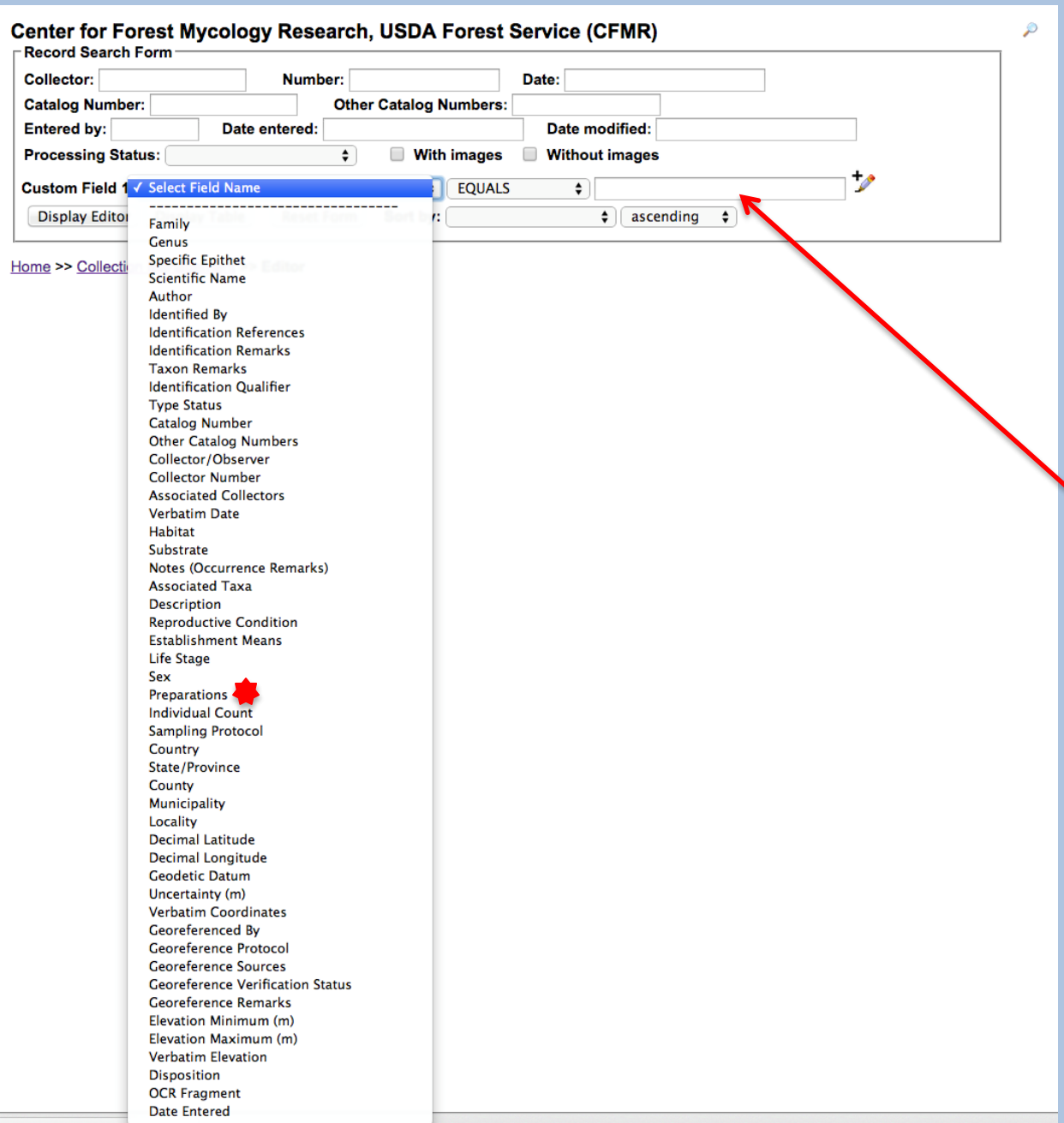
New features in MyCoPortal



3 options we should all use:

- specimen available
- culture only
- specimen and culture available

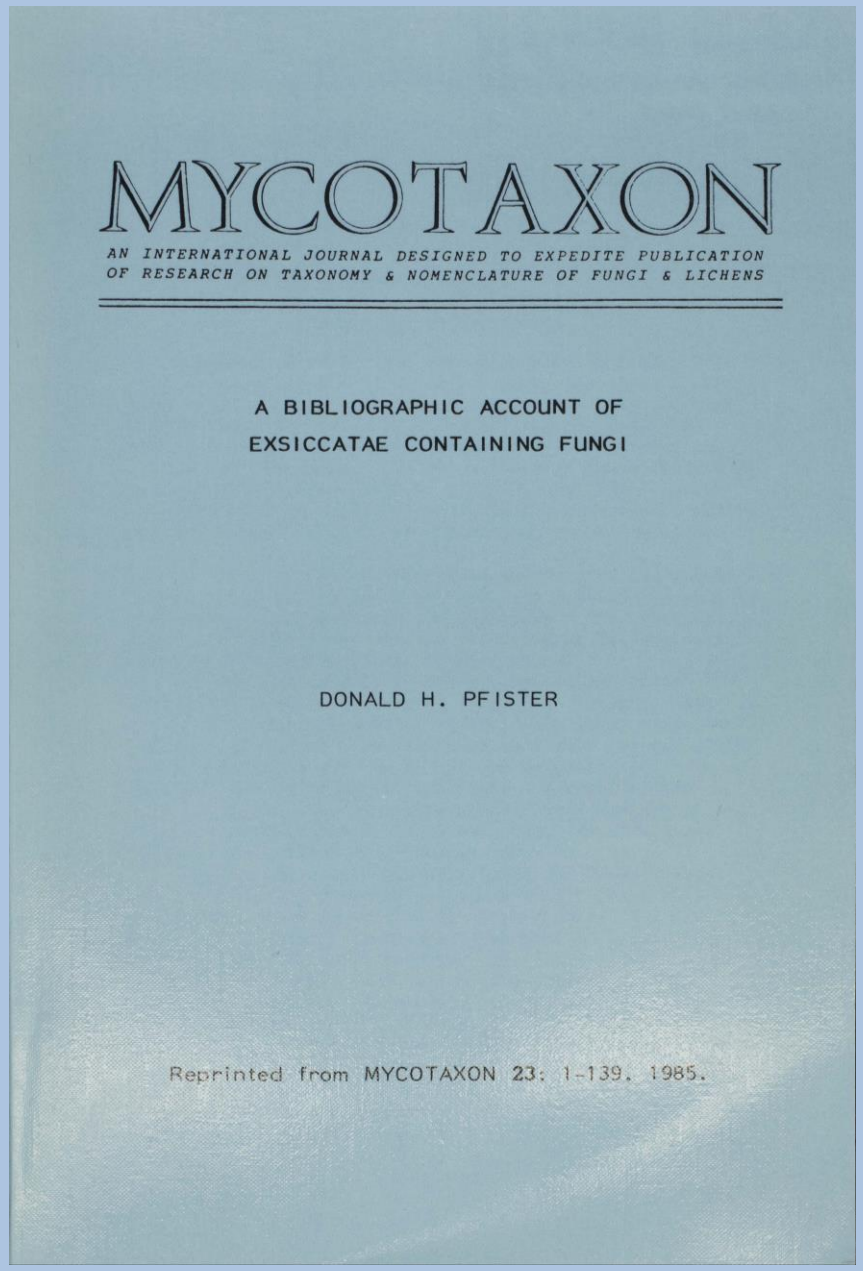
New features in MyCoPortal



- specimen available
- culture only
- specimen and culture available

Exsiccati

Exsiccati



MYCOTAXON

AN INTERNATIONAL JOURNAL DESIGNED TO EXPEDITE PUBLICATION OF RESEARCH ON TAXONOMY & NOMENCLATURE OF FUNGI & LICHENS

A BIBLIOGRAPHIC ACCOUNT OF
EXSICCATAE CONTAINING FUNGI

DONALD H. PFISTER

Reprinted from MYCOTAXON 23: 1-139. 1985.

Exsiccati

Options
Search:
Display only those w/ specimens
Display and sort by: Title Abbreviation

- 100 Specimens of British Leaf-Fungi, M.C. Cooke
- A Century of Illustrative Fungi with Generic Synopses of the Basidiomycetes and Myxomycetes, L.M. Underwood [1-100]
- A Collection of Dried Plants, Named on the Authority of the Linnaean Herbariumand Other Original Col..., J. Dickson [1-100]
- Ascomyceten, H. Rehm [1-2175, plus extras]
- Ascomycetes and Lower Fungi, G.W. Wilson and F.J. Seaver [1-100]
- Bermuda Fungi, H.H. Whetzel and J.McL Waterston [1-200]
- British Fungi, M.J. Berkeley [1-350]
- British Fungi, Mycologia Britannica, P.B. Ayres [1-100]
- California Fungi, Herbarium of the University of California [1-1225]
- Central American Fungi, C.L. Smith [1-150, plus extras]
- Cryptogamae Cechoslovenicae Exsiccatae, K. Kavina and A. Hilitzer [1-300]
- Cryptogamae Formationum Coloradensium, F.E. Clements and E.S. Clements [1-615]
- Cryptogamae Parasiticae in Insula Java Lecte Exsiccattae, M. Raciborski [1-150]
- Cryptogames de L'empire Colonial Francais, R. Heim [1-20]
- Cryptogames Recueillies dans la Provence de Namur par A. Bellynck, de la Compagnie de Jesus, A. Bellynck [1-200]
- Cryptogamische Gawachse des Fichtelgebirg's, H.C. Funck [1-125]
- Cryptogams Distributed by the Farlow Herbarium of Harvard University. Reliquiae Fawlowianae., R. Thaxter and D.H. Linder [1-1000]
- Cryptotheca Lusitana, F.M.J. Welwitsch [1-123]
- Crytogamen-Herbarium, H. Wagner and A. Wagner [1-10]
- Decades Fungorum Brasiliensium, F. Theissen [1-300]
- Decades Mycologicae Italicae, C. Spegazzini [1-120]
- Deutschlands Schwaemme in Getrockneten Exemplaren, C.F. Holl, J.C. Schmidt, and G. Kunze [1-225]
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- Erbario Crittogamico Italiano, F. Baglietto, V. de Cesati, G. de Notaris, and oth... [1-1500]
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- Exsiccata Hypodermearum Galliae Orientalis, R. Maire [1-50]
- Flora Bohemiae et Moraviae Exsiccata, F. Petrak [1-2575]
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- Fungi Austro-Americani Exsiccati, J. Rick [1-360]
- Fungi Bavarici, Allescher & Schnabl
- Fungi Bialowiezenses Exsiccati, W. Siemaszko [1-200]
- Fungi Brittanici Exsiccati a M.C. Cooke Collecti, M.C. Cooke [1-700]
- Fungi Brittannici, J.E. Vize [1-200]
- Fungi Caroliniani Exsiccati, H.W. Ravenel [1-100 (within each of 5 Fascicles)]
- Fungi Carpatici Lignicoli Exsiccati, A. Pilat [1-265]
- Fungi Columbiani, J.B. Ellis, B.M. Everhart, and E. Bartholomew [1501-5100, plus extras]
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- Fungi Europaei Exsiccati, G.L. Rabenhorst [1-2600]
- Fungi Exotici Exsiccati, H. Sydow [1-1250]
- Fungi Exsiccati Fennici, L.E. Karl [1-1000]
- Fungi Exsiccati Praesertim Scandinavici, L. Romell [1-200]
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- Fungi Latvici Exsiccati, J. Smarods [1-950]
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- Fungi Neerlandici Exsiccati, C.A.J.A. Oudemans [1-300]
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- Fungi of Florida, H.H. Hume [1-100]
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- Fungi Selecti Exsiccati (Torrend), C. Torrend [1-300, plus extras]
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- Fungi Utahensis, A.O. Garrett [1-250]
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- Herbarium Mycologicum Typicum, T. Bail [201]
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- Herbarium Normale. Nov. Ser. Herbier des Plantes Nouvelles Pue Connues et Rare d'Europe Principaleme..., F.W. Schultz-Bipontinus
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- Mycotheca Rossica Sive Fungorum Rossiae et Regionum Confinum Asiae Specimina Exsiccaa, W. A. Tranzschel and J. Serebrianikow
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- Parasitsvampar Finska Kulturvaxter, P.A. Karsten [1-49]
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Exsiccati Title: Fungi | Number

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- Fungi Bavarici
- North American Fungi. Series I.
- California Fungi
- Fungi Wisconsinenses Exsiccati
- Fungi Nova-Caesareenses
- North American Fungi. Series II.
- Fungi Columbiani
- Fungi Utahensis
- West American Fungi
- Fungi Washingtonae
- Fungi of Florida
- Fungi Exotici Exsiccati
- Fungi Imperfecti Exsiccati
- Ohio Fungi
- Fungi Selecti Guatemalenses Exsiccati
- Kansas Fungi [Kellerman & Swingle]
- Mexican Fungi
- Fungi Europaei Exsiccati
- Rabenhorst-Winter, Fungi Europaei
- Rabenhorst-Pazschke, Fungi Europaei Et Extraeuropaei
- Fungi Caroliniani Exsiccati
- Fungi Americani Exsiccati
- Kansas Fungi [Roberts]
- Fungi Selecti Gallici Exsiccati
- North Dakota Fungi
- Economic Fungi
- Reliquiae Suksdorfiana. Fungi Collected by Wilhelm N. Suksdorf, 1882-1927.
- New York Fungi
- Central American Fungi
- Fungi Selecti Exsiccati (Torrend)
- Indiana Flora, Parasitic Fungi
- Ascomycetes and Lower Fungi
- Fungi Austriaci exsiccati [Thümen, Fungi Austr. Exs.]
- Bermuda Fungi
- British Fungi
- British Fungi, Mycologia Britannica
- A Century of Illusrative Fungi with Generic Synopses of the Basidiomycetes and Myxomycetes

KRYPTOGAMAE EXSICCATAE
EDITAE A MUSEO PALATINO VINDOBORENSI

Fungi.

Cent. 17, Decas: 63-65, No. 1601-1630. 1909.

1617 - 1630

Kryptogamae exsiccatae.

1617. Lachnum calyculaeformis.

Rehm, Mycol. Journ., vol. I (1895), p. 198; Rehm apud Rabenh., Krypto. v. Deutschl. u. Aust., Abt I, Abt. 3 (1896), p. 897. — Peziza calyculaeformis Schum., Enum. plant. Saell., vol. II (1803), p. 443. — Lachnea calyculaeformis Gill., Champ. franç., Discom. (1879), p. 64. — Erinella calyculaeformis Gill., Fascic. fung. (1886), p. 301. — Lachnella calyculaeformis Phill., Man. brit. Discom. (1887), p. 237. — Dasyscypha calyculaeformis Sacc., Syll. fung., vol. VIII (1889), p. 154; Boud., Hist. et class. Discom. Europ. (1907), p. 191. — Trichopeziza calyculaeformis Rehm in Ber. naturh. Ver. Augsb. XXVI (1882), p. 93.

Carniolia: ad ramulos Betulae albae L. in monte Veronec (Veronec) prope Kronau, m. Jul.

leg. C. de Keissler

Kryptogamae exsiccatae.

1618. Humaria leucoloma.

Boud. in Bull. soc. mycol., vol. I (1885), p. 108; et Hist. et class. Discom. Europ. (1907), p. 67; Sacc., Syll. fung., vol. VIII (1889), p. 146; Rehm apud Rabenh., Krypto. v. Deutschl., u. Aust., Abt. 3, Abt. 3 (1894), p. 925. — Peziza leucoloma Fries, Syst. mycol., vol. II (1821), p. 71. — Leucoloma Hedwigii Fuck., Symb. mycol. (1869), p. 317. — Humaria leucoloma Gill., Champ. franç., Discom. (1879), p. 56. — Icon.: Boud., Icon. mycol., T. II, Pl. 95.

— Austria inferior: in carbonariis in silva »Herzogbergwald« montis Sonntagberg prope Rosenau, m. Oct.

leg. P. P. Strasser.

Exsiccati

Mycotheca Universalis, F.K.A.E.J. De Thuemen [1-2300, plus extras] Centuries I-XXIII

Herbarium Mycologicum Oeconomicum, F.K.A.E.J. De Thuemen [1-750, plus extras] Fascicles I-XV

Kryptogamae Exsiccatae Editae A Museo Palatino Vindobonensi #2209, G. Beck and A. Zahlbruckner [1-400, plus extras] Centuries I-IV

Fungi Austriaci exsiccati, Thümen, F.K.A.E.J. de [1-1200] Centuries I-XII

Fungi Selecti Gallici Exsiccati, C. Roumeguere [1-7400] Centuries I-LXXIV

North American Fungi. Series I., J.B. Ellis [1-1500, plus extras] *(in progress)*

North American Fungi. Series II., J.B. Ellis and B.M. Everhart [1501-3600, plus extras] *(in progress)*

MiCC
Microfungi Collections Consortium

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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 (Illinois Natural History Survey) serves as the lead PI.

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Microfungi comprise a loosely defined artificial group including bread molds, plant pathogens, powdery mildews, rusts, slime molds, and water molds.

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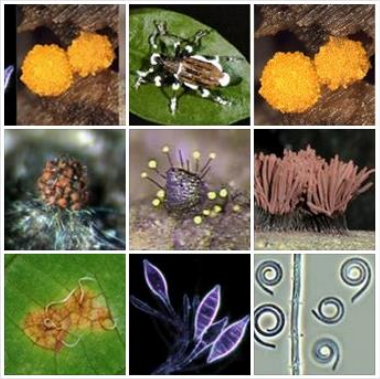
PHOTOS



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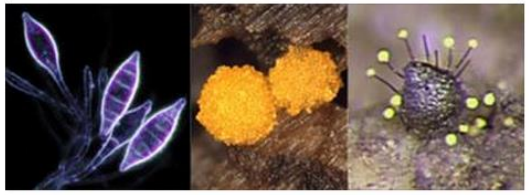

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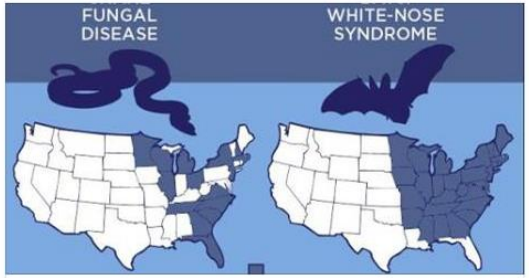

Snake fungal disease parallels white-nose syndrome in bats

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THIS WEEK

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microfungi_inhs

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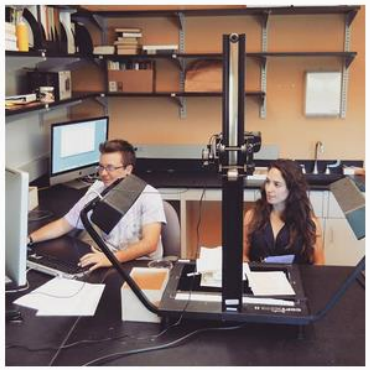
Microfungi MiCC is a collaboration among 38 institutions to digitize data from 2.3 million North American microfungi specimens. **www.microfungi.org/**

8 posts **9** followers **36** following





http://instagram.com/microfungi_inhs/

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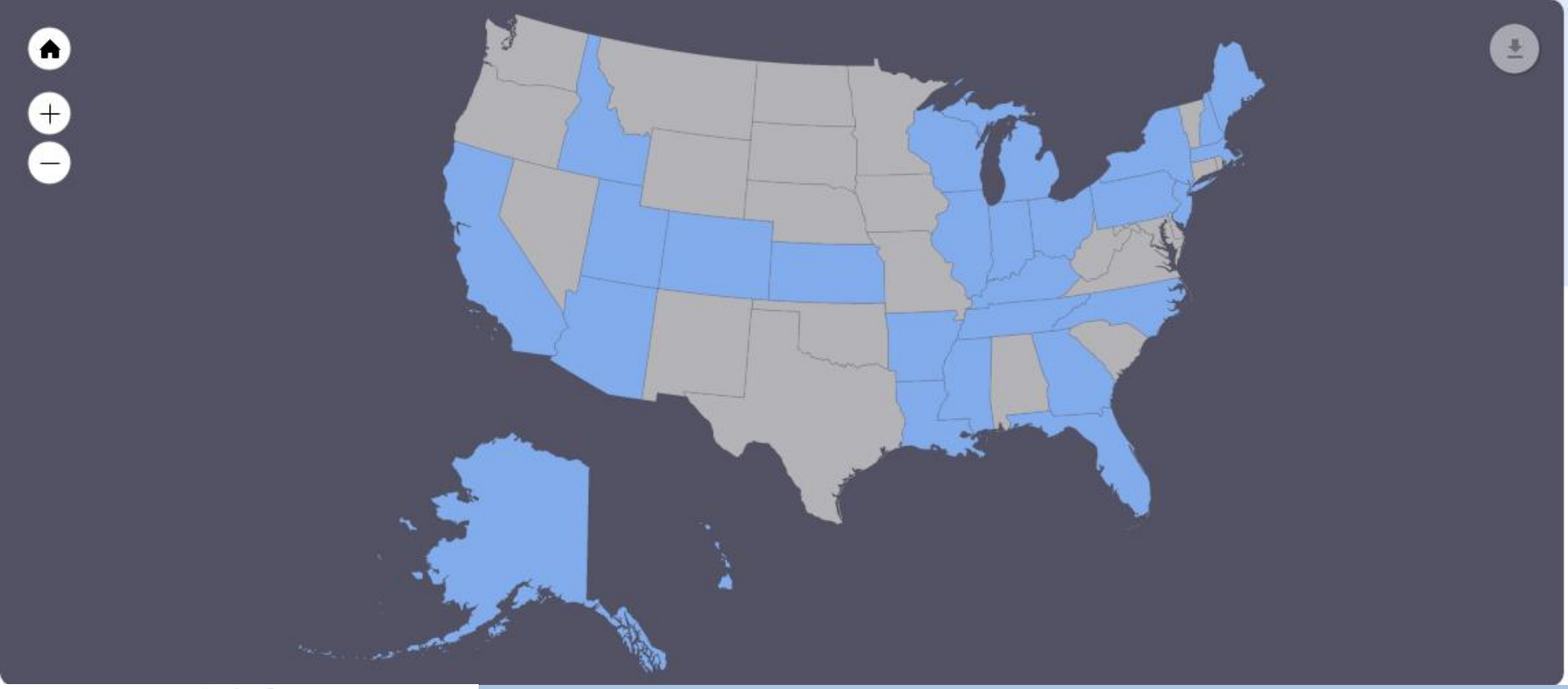
Worldwide Engagement for Digitizing Biocollections | Log in

Start Transcribing Now

WeDigBio, Worldwide Engagement for Digitizing Biocollections, is a four-day global event, from October 22-25, 2015, that will engage participants in transcribing biodiversity research collections. We need your help in this massive digitization project! Join WeDigBio and scientists around the world to transform biodiversity collections data into a worldwide resource that will enhance the span of biodiversity research across time, taxa, and geographies. If you'd like to get involved go to our Find a Project page and select the transcription center of your choice and enjoy making a difference in this global effort.

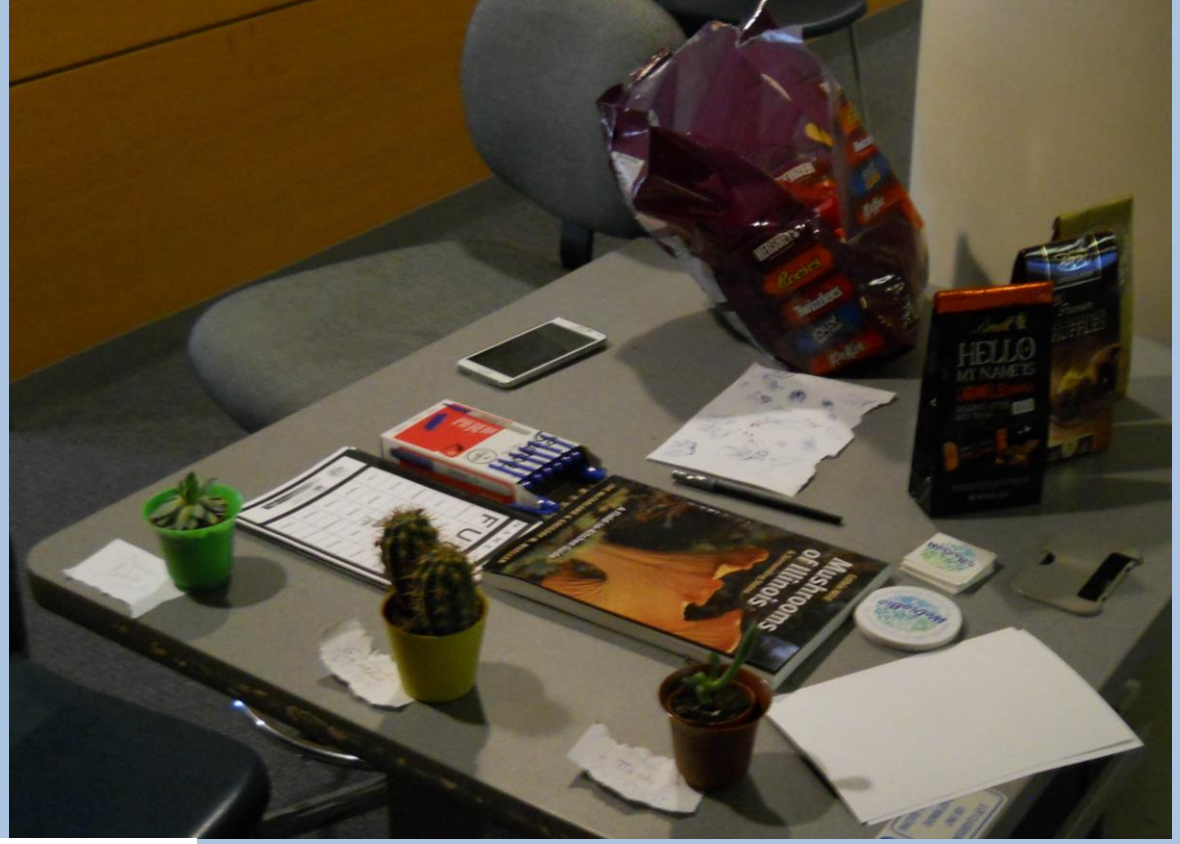
Check back often as we update this page with relevant details and updates from participating transcription centers such as the Smithsonian Institution, Notes from Nature, Les herbonautes, Symbiota, and Digivol.



Worldwide Engagement for Digitizing Biocollections

WeDigBio

transcribe the states game



Worldwide Engagement for Digitizing Biocollections

WeDigBio

over 700 records transcribed

Cornell University professor speaks about the might of mold

TOPICS: Fungi Ithaca Kathie Hodge Mold Science Science Cabaret

Cornell University Associate Professor Kathie Hodge presents about mold and fungi found in food for a Science Cabaret gathering Sept. 15.

Using Biodiversity Specimen-Based Data to Study Global Change

Missouri Botanical Garden

December 2-3, 2015

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How we will get there

By doing the work

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Dream Big
Get Stuff Done
Know How to Have Fun
People I Most Enjoy Working With

State	Institution Name and (Herbarium Code)	Specimens in MyCoPortal	Specimens Databased	Specimens to Digitize
Alabama	University of Alabama (UNA)	0	500	0
Arizona	Rocky Mountain Research Station (FPF)	0	4,622	0
Arizona	**University of Arizona (ARIZ)**	**8,474**	**11,526**	**20,000**
Arkansas	**University of Arkansas (UARK)**	**0**	**40,000**	**10,000**
California	San Francisco State University (SFSU)	0	500	0
California	**University of California (UC)**	**297**	**0**	**56,500**
Colorado	Denver Botanical Garden (DBG)	2,774	0	0
Florida	**University of Florida (FLAS)**	**104**	**0**	**40,000**
Georgia	**University of Georgia (GAM)**	**0**	**0**	**40,000**
Hawaii	Bishop Museum (BISH)	0	7,973	0
Illinois	**The Field Museum (F)**	**3,898**	**6,102**	**70,000**
Illinois	**University of Illinois (ILL/ILLS)**	**37,929**	**10,177**	**55,000**
Indiana	**Purdue University (PUR/PUL)**	**0**	**96,480**	**55,570**
Iowa	**Iowa State University (ISC)**	**9,000**	**1,000**	**35,800**
Kansas	University of Kansas (KANU)	0	2,971	0
Louisiana	**Louisiana State University (LSUM)**	**945**	**0**	**10,000**
Maryland	U.S. National Fungus Collections (BPI)	518,290	0	0
Massachusetts	**Harvard University (FH)**	**7,719**	**5000**	**54,000**
Michigan	**Michigan State University (MSC)**	**0**	**0**	**31,500**
Michigan	**University of Michigan (MICH)**	**8,856**	**0**	**65,000**
Minnesota	**University of Minnesota (MIN)**	**5,569**	**931**	**50,000**
Nebraska	University of Nebraska (NEB); specimens digitized by University of Illinois	0	2000	50,000
New Jersey	**Rutgers University (CHRB)**	**0**	**0**	**40,000**
New York	**Cornell University (CUP)**	**26,590**	**60,000**	**18,000**
New York	**New York Botanical Garden (NY)**	**65,511**	**25,000**	**248,000**
New York	**State University of New York (SYRF)**	**0**	**0**	**18,000**
North Carolina	**North Carolina State University (NCSLG)**	**518**	**1,892**	**0**
North Carolina	University of North Carolina (NCU); specimens digitized by University of Florida	318	0	18,000
Ohio	**Miami University (MU)**	**0**	**0**	**50,000**
Oregon	Oregon State University	10,624	19,376	0
Pennsylvania	**Academy of Natural Sciences (PH)**	**0**	**9,335**	**32,000**
South Carolina	Clemson University (CLEMS); specimens digitized by University of Florida	0	0	4,800
Tennessee	University of Tennessee (TENN)	11,170	5,000	0
Utah	Utah State University (UTC)	1,481	0	0
Virginia	University of Richmond (URV); specimens digitized by NYBG	0	0	3,000
Washington	Washington State University (WSP)	0	70,156	0
Wisconsin	**University of Wisconsin (WIS)**	**0**	**0**	**120,000**
Wyoming	**University of Wyoming (RM/RMS)**	**0**	**0**	**28,200**
	Totals:	720,067	380,541	1,223,370
			GRAND TOTAL:	2,323,978

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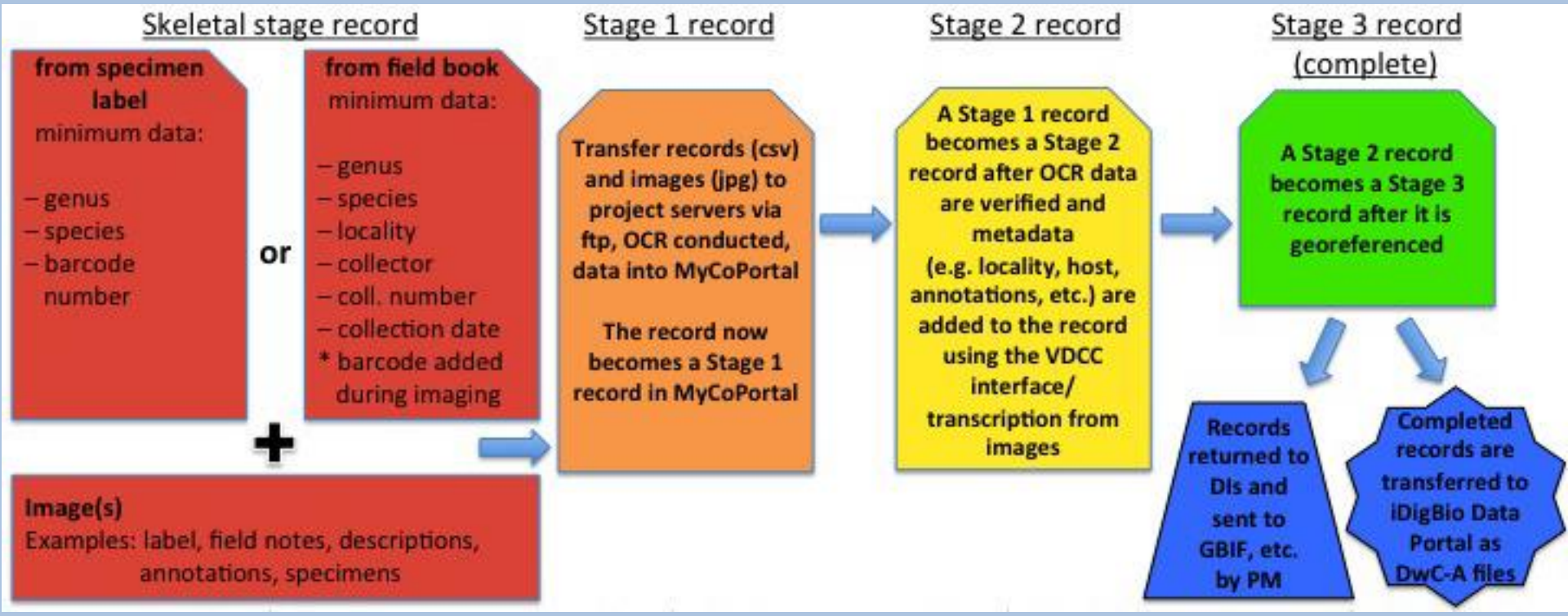
Table III. Project timeline showing tasks/deliverables and estimated period(s) of completion (S=Summer, F=Fall, W=Winter, Sp=Spring). **Red=INHS Team**, **Green=DIs**, **Blue=Outreach**. INHS Team member responsible for each task is abbreviated as above. Project website and MyCoPortal are already established and, thus, are not shown.

Project Timetable	Team Member (or DIs)	S	F	W	Sp	S	F	W	Sp	S	F	W	Sp
		2015				2016				2017			2018
Take Project Management Workshops	PL												
VDCC implementation	BI												
Complete list of exsiccati on portal	PM												
Annual project meetings	PL/PM/GM												
Digitization training (INHS)	GM/Digitizer												
Georeferencing training (online)	GM												
Advisory Committee updates/meetings	INHS team												
Enhance project website	PL/BI												
Transfer existing records to portal	PM												
Georeference existing records	GM												
Annual project reports	PL												
Add sequence tracking to portal	PM												
Data transfer to other portals	PM												
Develop data migrators	BI												
Transfer specimen images to portal	PM												
Update fungal thesaurus in portal	PM, DIs												
Digitize 521,452 records (CUP, F, FLAS, GAM, ILL, ISC, LSUM, MICH, NY, PUR, RM, SYRF, WIS)	DIs												
Digitize 489,002 records (ARIZ, CHRB, FH, FLAS, ILL, ISC, MSC, MU, NY,PH, PUR, UARK, UC, WIS)	DIs												
Digitize 212,916 records (FH, MINN, MU, NY, UC)	DIs												
Present results at national meetings	DIs												
Outreach activity – teacher training	NCSLG, CHRB												
Outreach activities – K-12/general pub	DIs												
Crowdsourcing project	PM/BI												

Digitization Workflow



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Who's doing the digitizing?

Collection Managers*

Full-time or part-time Project Managers*

Full-time Digitizers*

Interns

Graduate Students on RAs*

Undergraduate students

*with or without additional undergraduate support

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workflow senario #1 vs. workflow senario #2

1-hour of work time (undergrad)

- setup of camera (5 minutes)
- obtains specimens (5 minutes)
- opens computer programs (5 minutes)
- assigns barcodes, starts entering skeletal records and taking images of labels (35 minutes)
- closes computer programs, shuts down camera, puts away barcodes, put away specimens (10 minutes)

assuming a rate of 40 specimens/hour, then
# of specimens completed = 23

2-hours of work time (undergrad)

- setup of camera (5 minutes)
- obtains specimens (5 minutes)
- opens computer programs (5 minutes)
- assigns barcodes, starts entering skeletal records and taking images of labels (95 minutes)
- closes computer programs, shuts down camera, puts away barcodes, put away specimens (10 minutes)

assuming a rate of 40 specimens/hour, then
# of specimens completed = 63

workflow senario #3

8-hour workday (full-time digitizer)

- setup of camera (5 minutes)

- obtains specimens (5 minutes)

- opens computer programs (5 minutes)

- assigns barcodes, starts entering skeletal records and taking images of labels (95 minutes)

- closes computer programs, shuts down camera, puts away barcodes, put away specimens (10 minutes)

assuming a rate of 50 specimens/hour, then
# of specimens completed = 380

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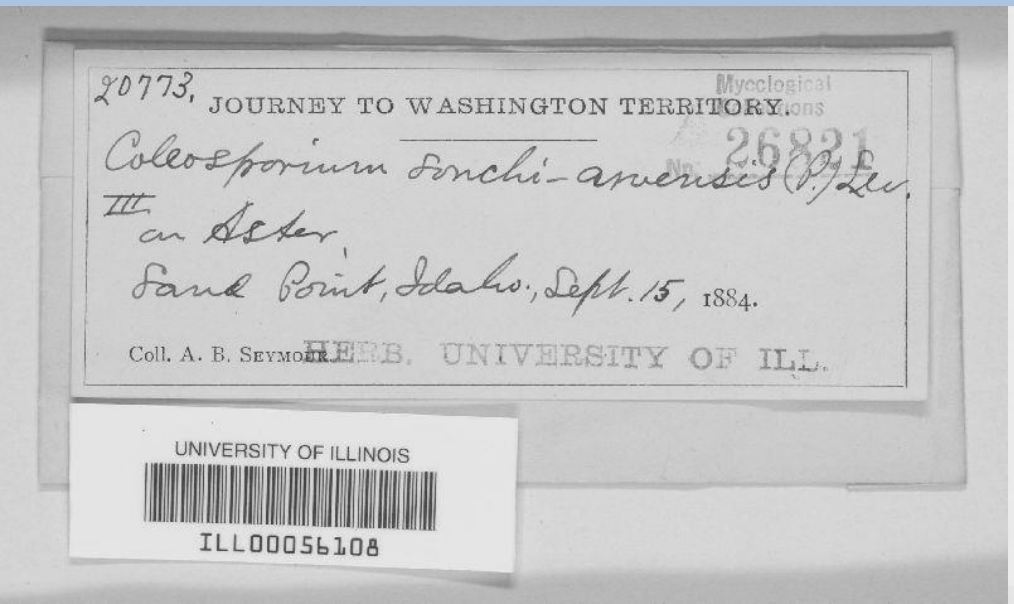
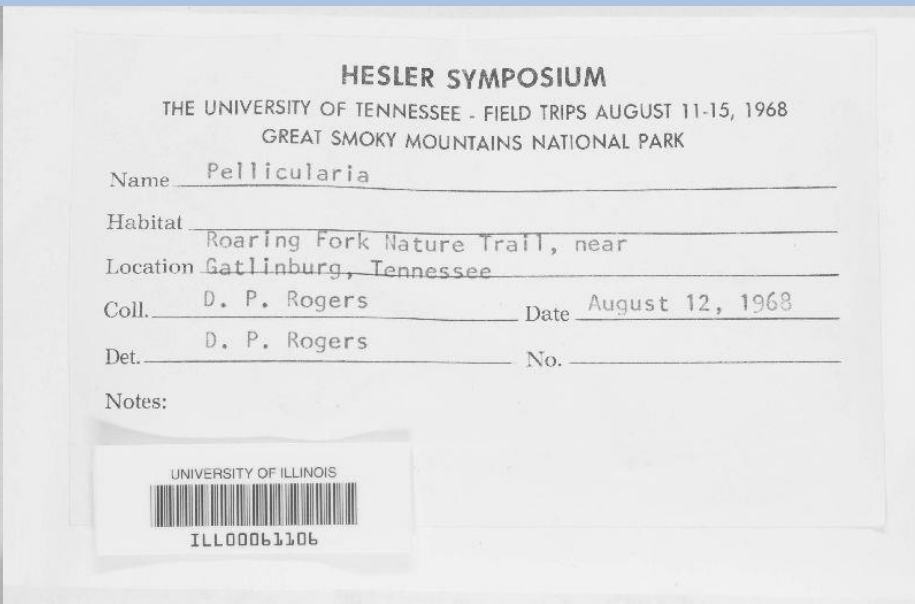
Stage 1 vs. Stage 2 records

Stage 1 is faster (~50 per hour vs. ~30 per hour)
- genus, species, barcode

Stage 2 is sometimes easier if the specimen labels are typed (the packet *is* already in front of you)
- complete record transcription except for geocoordinates





Type specimens

Mellon Foundation grant

All data currently residing in JSTOR

- records (csv file)
- images (color)

ILL (4040)
ILLS (1001)
NEB (2135)

86,515 types

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The End