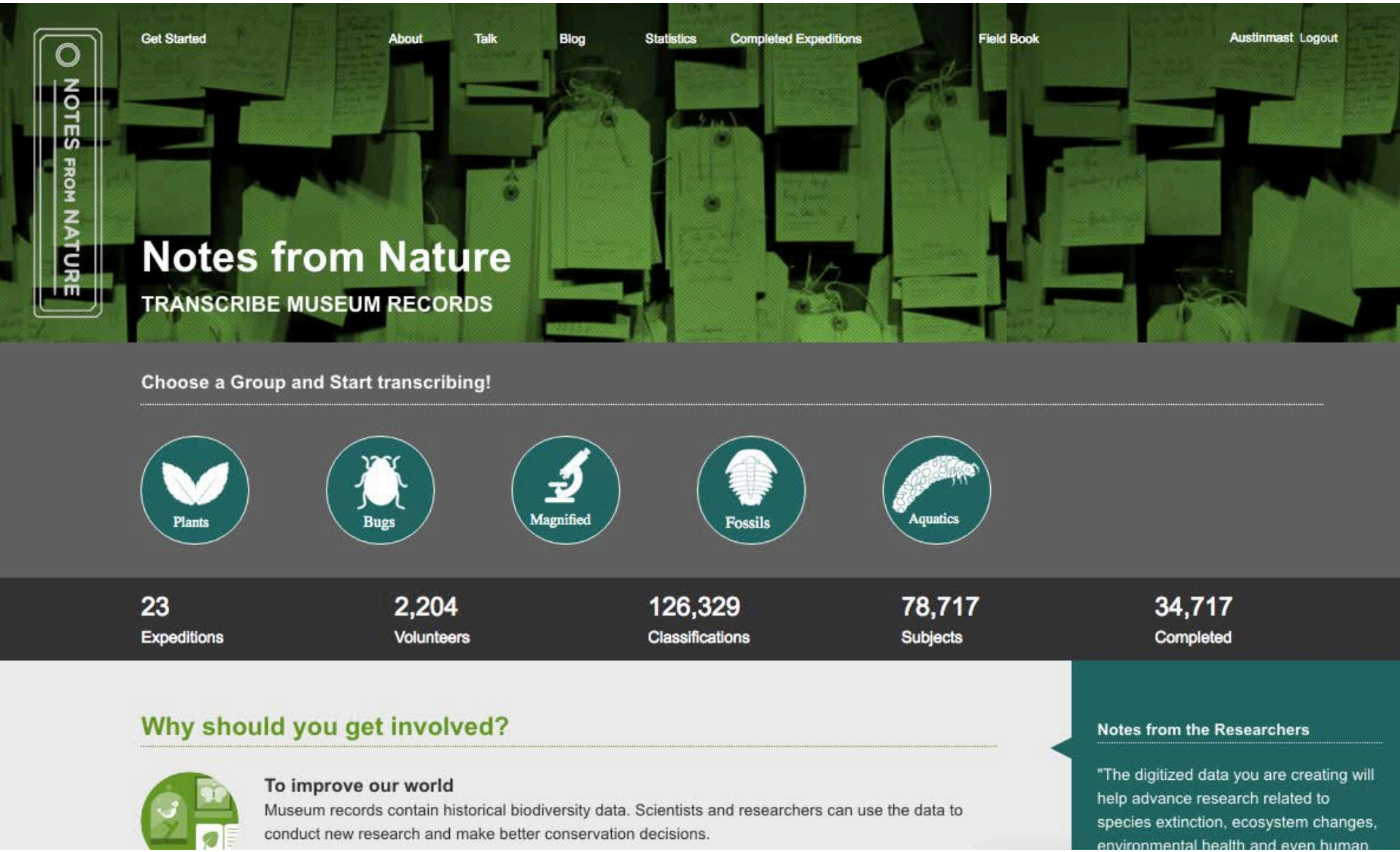
Making it Count—Classroom Citizen Science for Biocollections

Austin Mast, Florida State University



https://www.notesfromnature.org/

NOTES FROM NATURE

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Herbaria

EXPEDITIONS FOR HERBARIA

Arkansas Dendrology: Part 8: Hickories and Walnuts -- 5 December 2016

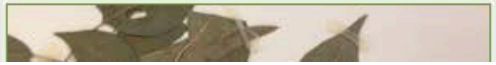
15.18% complete

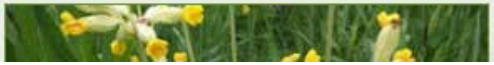
WeDigFLPlants' Legumes of Florida—Nitrogen-Fixers of the Peninsula

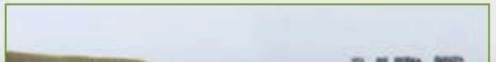
22.64% complete

Louisiana's goldenrods - the genus Solidago

4.96% complete







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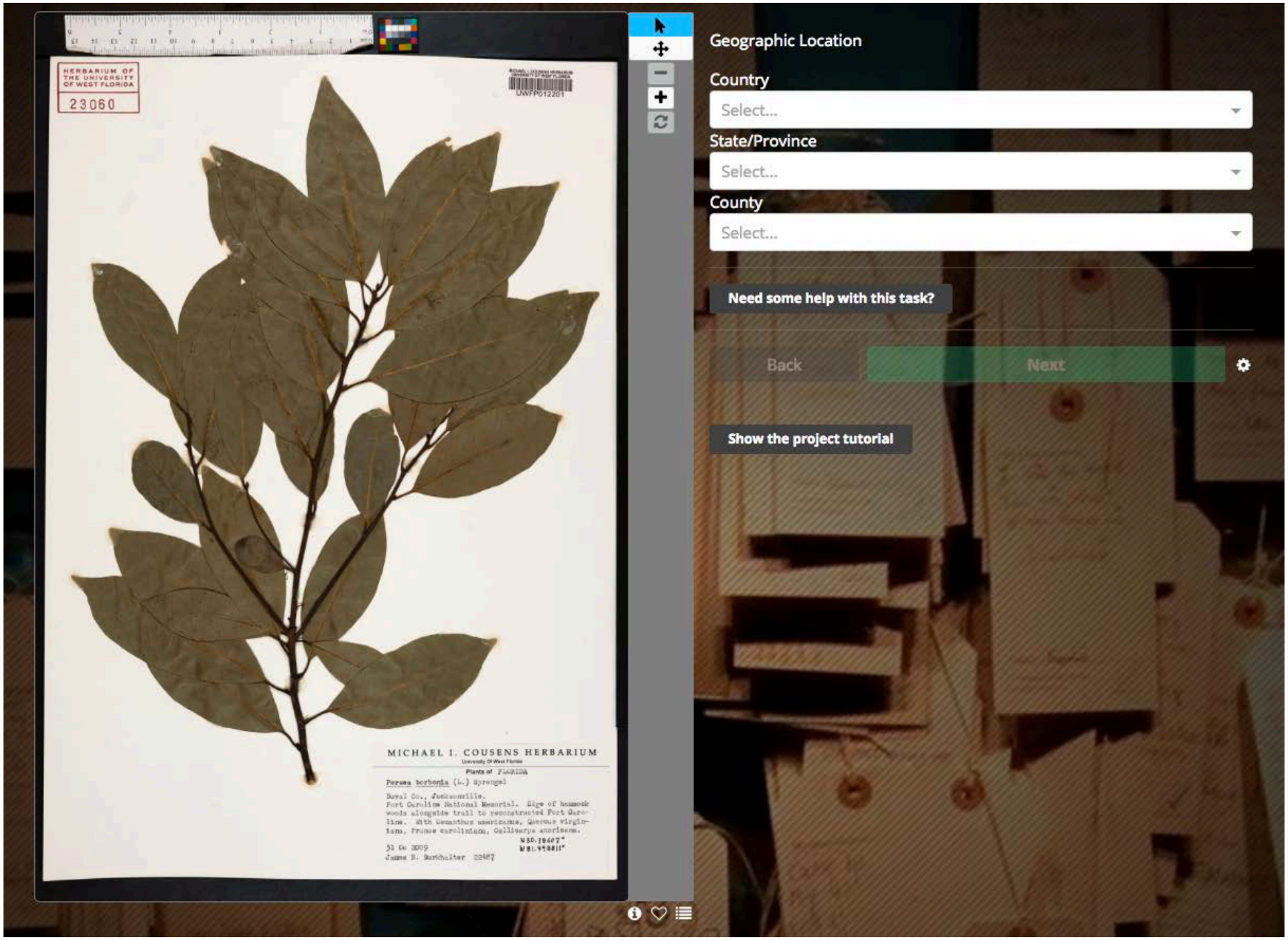

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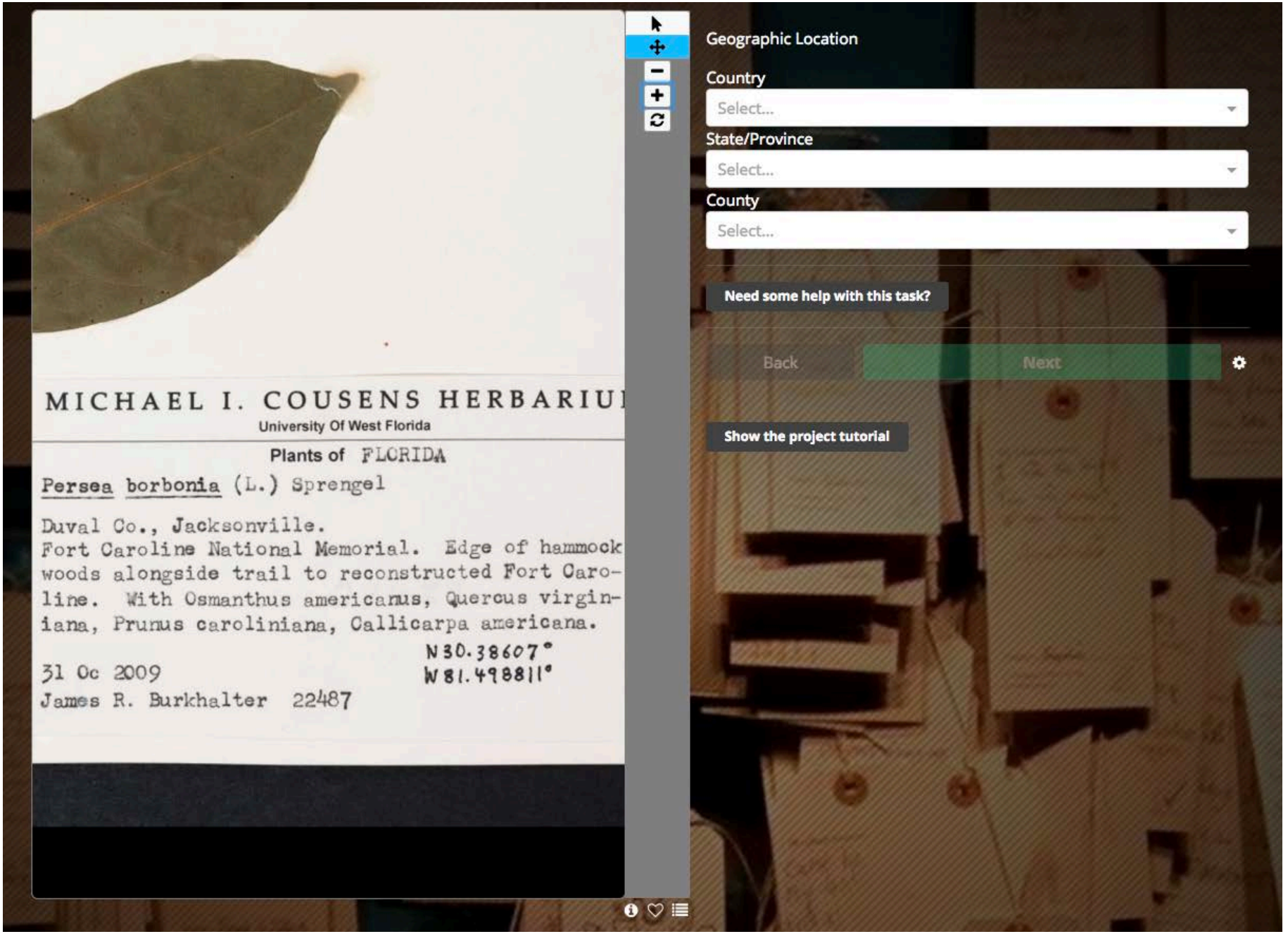

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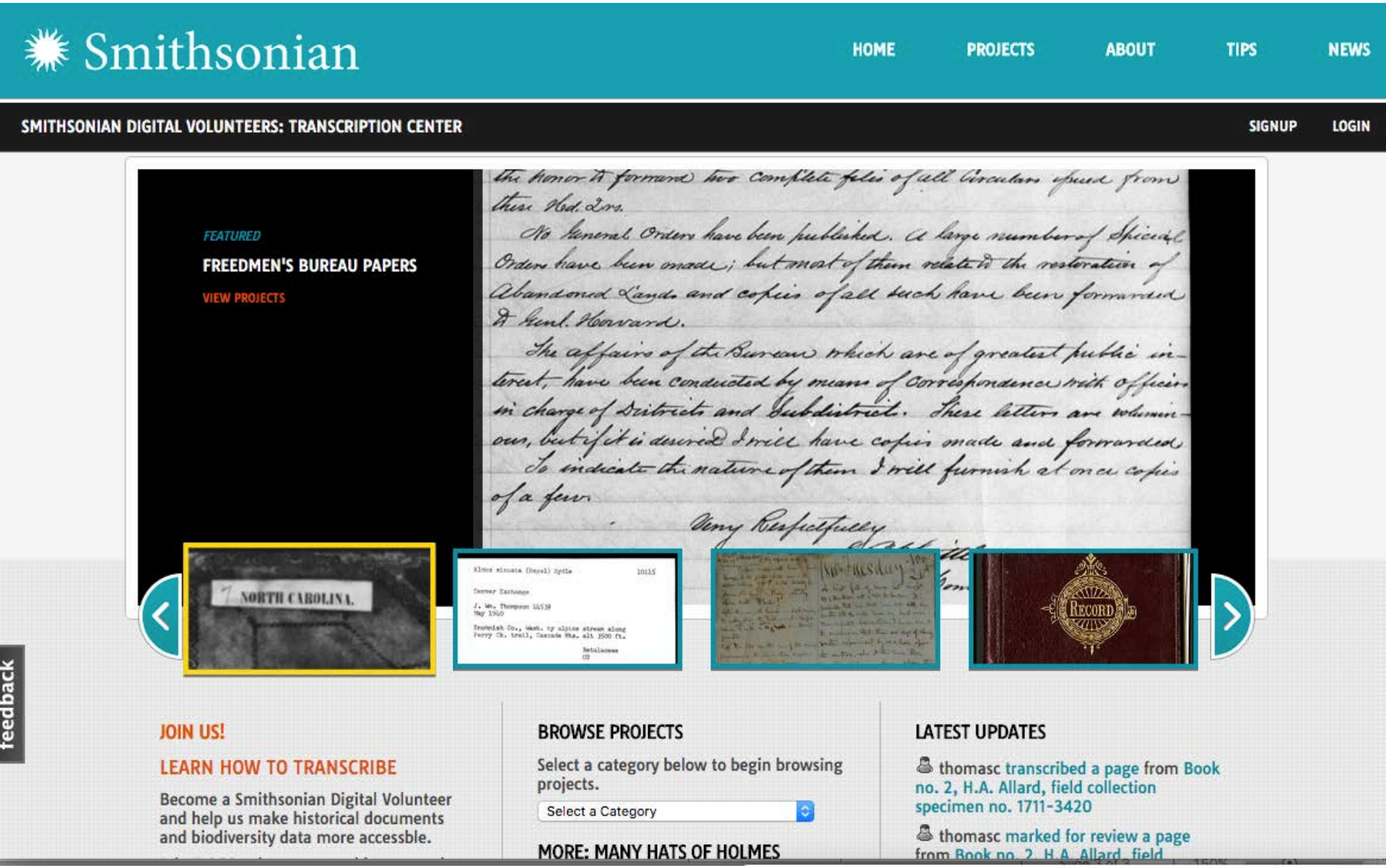

https://transcription.si.edu/

https://www.idigbio.org/content/sitch-stitch%E2%80%94-citstitch-hackathon

science

Evolved Science: Crowds Can Catalog Bugs Faster

MARCH 11, 2014 4:00 PM ET

STAN JASTRZEBSKI

from 88.9 wfsu

Listen to the Story
All Things Considered
4 min 25 sec

+ Playlist
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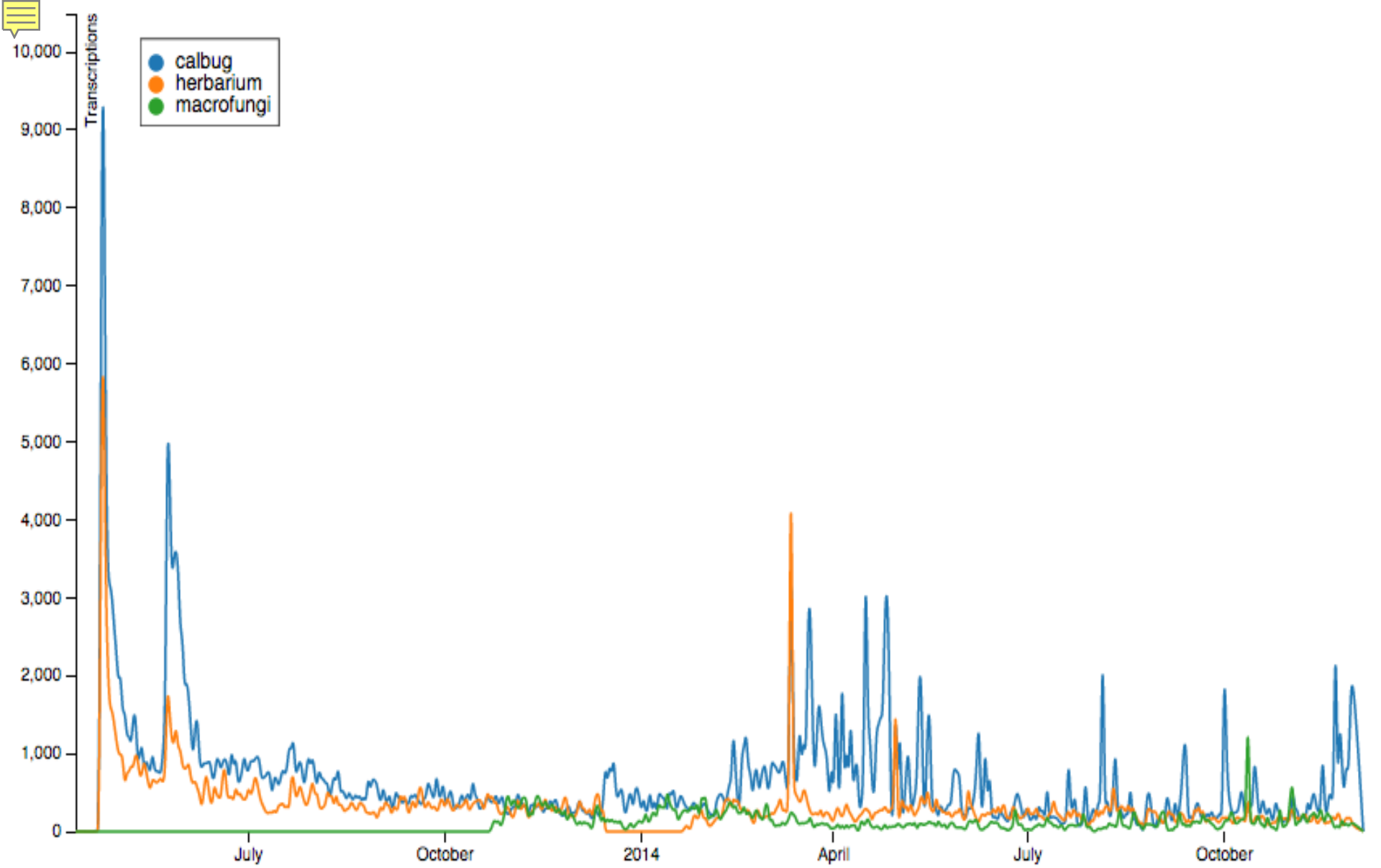
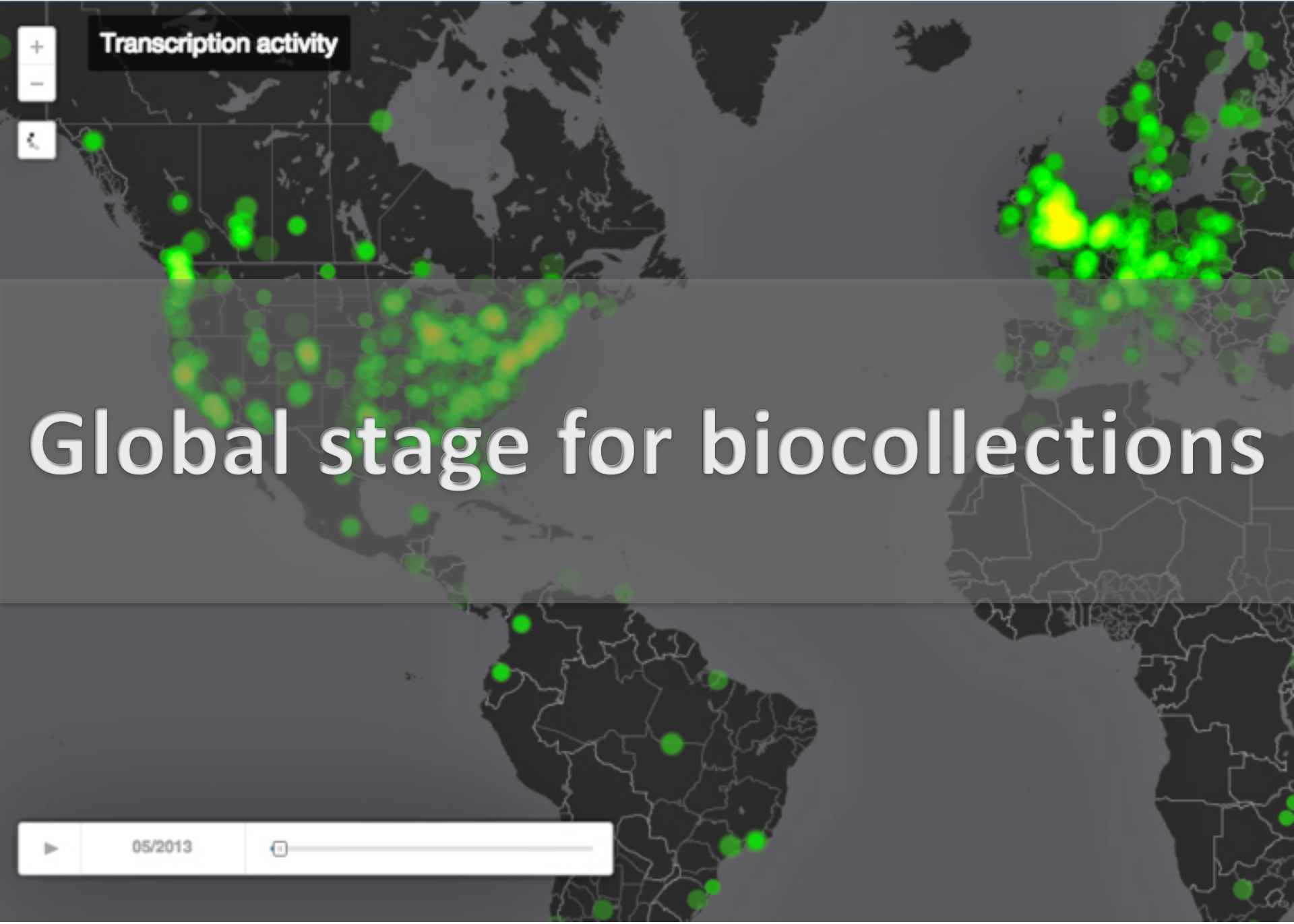
http://www.npr.org/blogs/alltechconsidered/2014/03/11/289064040/evolved-science-crowdsourcing-makes-cataloging-bugs-faster



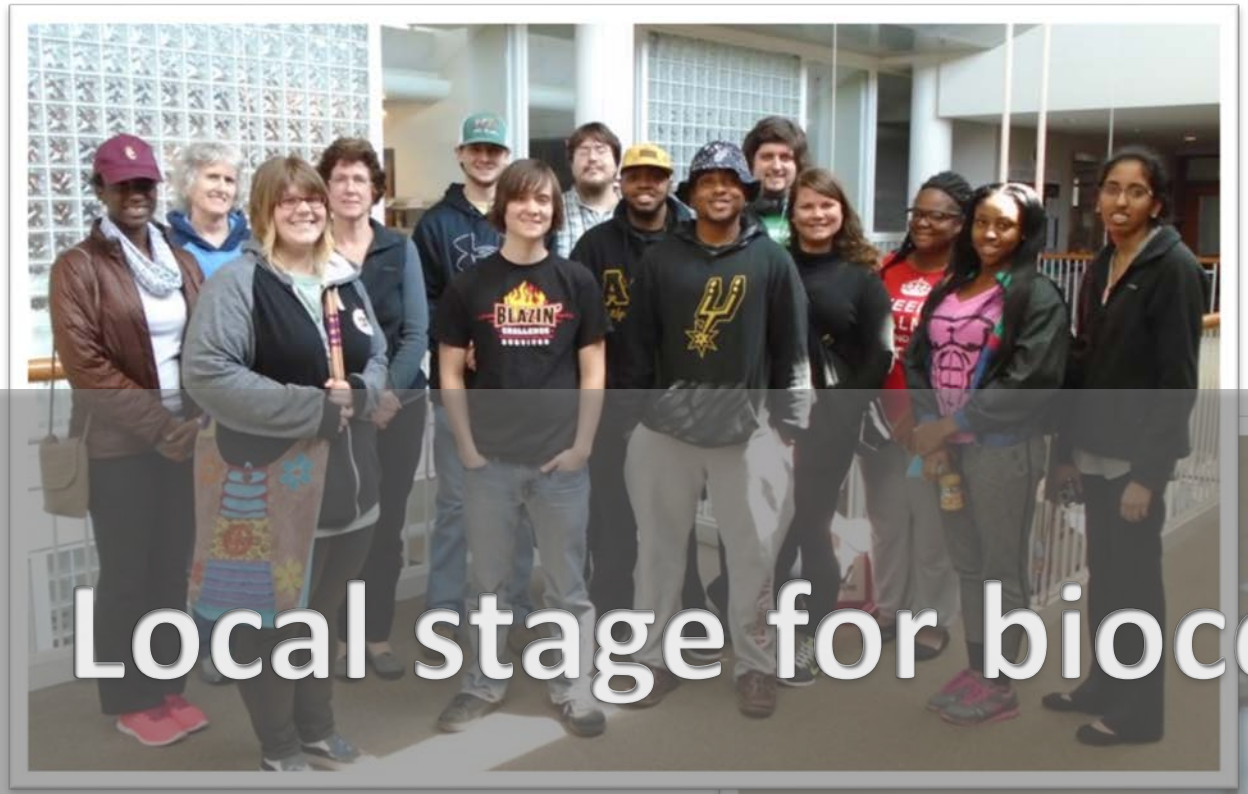
http://www.notesfromnature.org/


Worldwide Engagement for
WeDigBio
Digitizing Biocollections



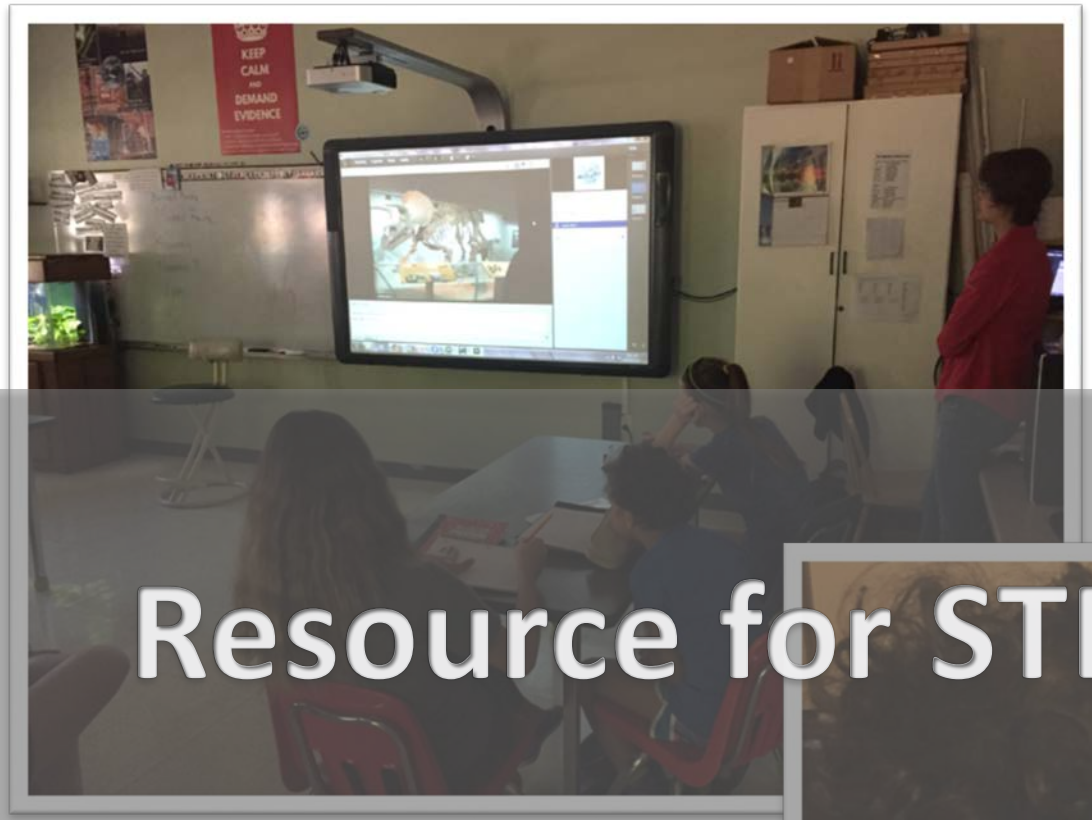
Global stage for biocollections

http://www.notesfromnature.org/

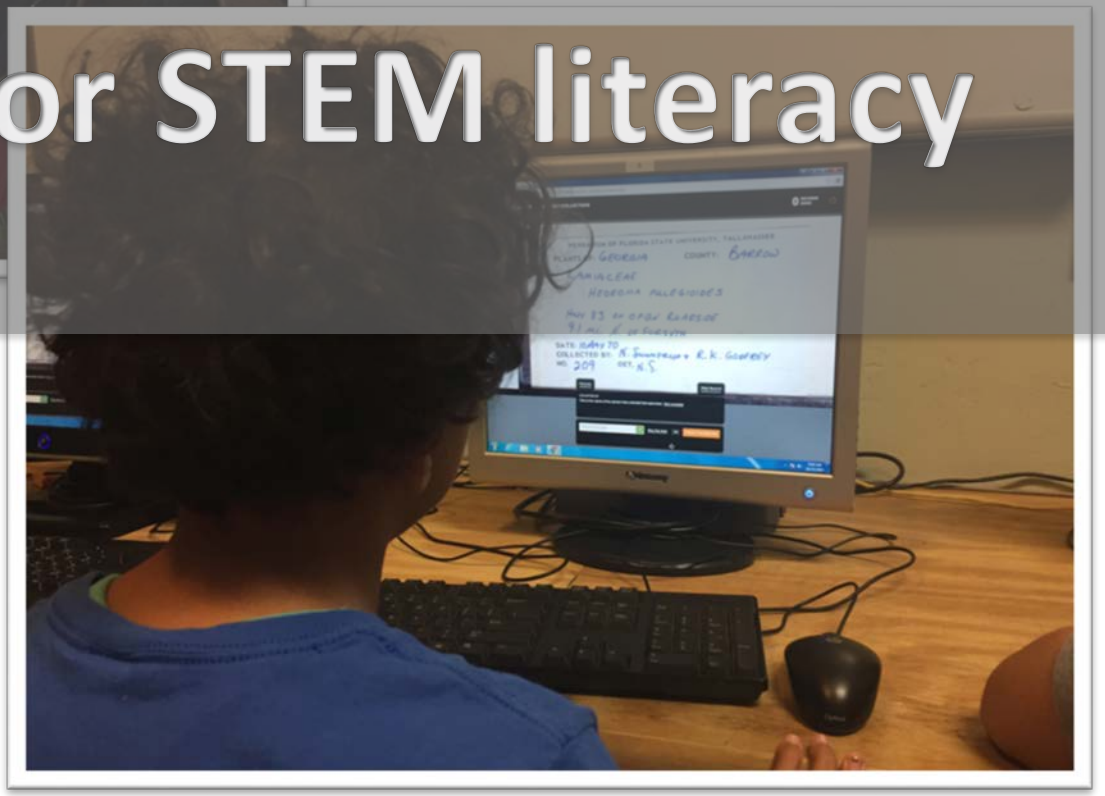


Local stage for biocollections

https://www.idigbio.org/content/simultaneous-transcription-blitzes-success



Resource for STEM literacy



https://www.wedigbio.org/

2. For the topics below, please rate your level of awareness now compared to prior to participating in the Blitz.

Question	Lower (1)	About the same (2)	Higher (3)	Much higher (4)	Total Responses	Mean
the number of biodiversity specimens held in collections	1	45	61	32	139	2.89
the kinds of biodiversity specimens held in collections	1	52	56	30	139	2.83
the process of transcribing specimen labels	1	35	47	56	139	3.14
the value of biodiversity specimens held in collections	1	41	53	44	139	3.01

Please rate the importance of each of the possible Blitz activities listed below to your overall experience.

Activity	Lecture	Collection Tour	GeoLocator or Timeline Games	Take-Home Item	Bingo Game
Very unimportant (1)	2 (1.9%)	7 (7.9%)	4 (5.8%)	8 (7.4%)	6 (6.5%)
Unimportant (2)	0 (0%)	0 (0%)	0 (0%)	9 (8.3%)	6 (6.5%)
Neither important nor unimportant (3)	10 (9.4%)	8 (9.0%)	18 (26.1%)	35 (32.4%)	35 (38%)
Important (4)	42 (39.6%)	22 (24.7%)	32 (46.4%)	32 (29.6%)	30 (32.6%)
Very Important (5)	52 (49.1%)	52 (58.4%)	15 (21.75%)	24 (22.2%)	15 (16.3%)
Average Response	4.34	4.26	3.78	3.51	3.46
Total # participants offered this activity	106	89	69	108	92

10. How likely is that you would participate in a Transcription Blitz in the future if given the opportunity?

#	Answer		Response	%
1	Very unlikely		2	1%
2	Unlikely		1	1%
3	Neither likely nor unlikely		14	10%
4	Likely		50	36%
5	Very likely		71	51%
	Total		138	100%

https://www.wedigbio.org/

Your Name

MORPHOLOGY BINGO

Mark the word as you see it in the specimens you transcribe.

Leaf longer than broad	Red fruit	Grass-like leaf	Tendrils	Tiny flower
Egg-shaped leaf	Red petals	White petals	Lobed leaf	Opposite leaves
Leaf broader than long	Tiny leaf		Yellow petals	Bark
Triangular leaf	Tiny plant	Huge leaf	Huge flower	Roots
Toothed leaf margin	White fruit	Alternate leaves	T	

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Your Name

HABITAT BINGO

Mark the word as you see it in the specimens you transcribe.

sandy	swamp	creek	hammock	mesic
scrub	open	peaty	floodplain	woods
pond	lake		roadside	shaded
flatwoods	disturbed	wet	bog	river
ditch	forest	edge	loamy	dry

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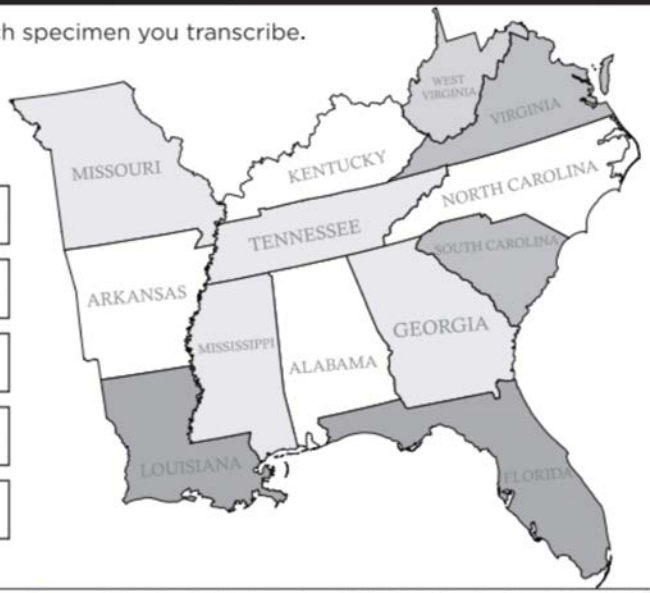
Your Name

GEO LOCATOR

Mark the collection location for each specimen you transcribe.

Other Locations



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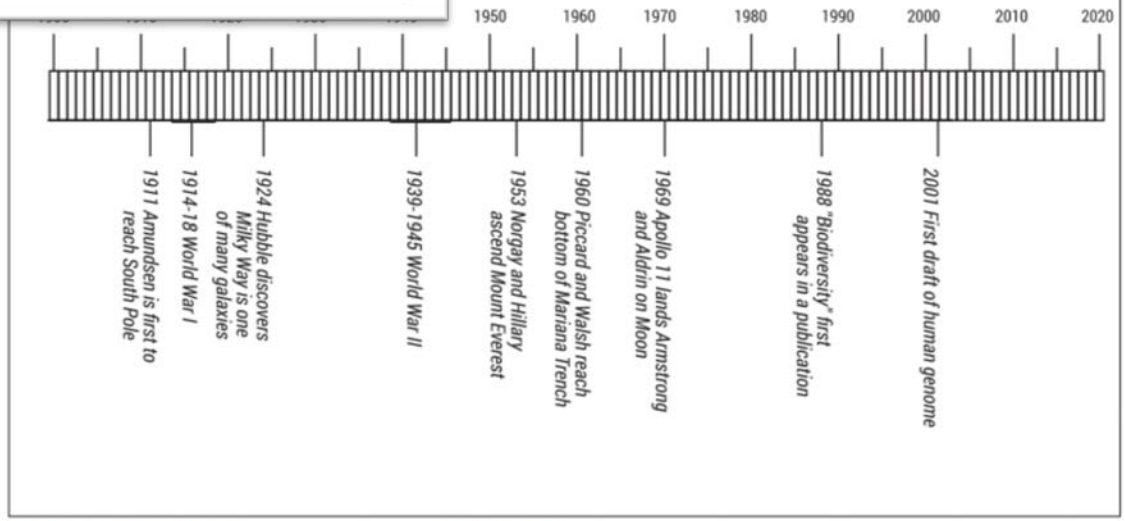
TIMELINE TRACKER

ecimen you transcribe.



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https://www.wedigbio.org/

Liberating Data for Biodiversity Research—the WeDigBio Event
An Undergraduate-level Classroom Exercise in Citizen Science

Learning Objective
The world's 3 billion biodiversity research specimens—bugs on pins, fish in jars, plants on sheets, fossils in trays, etc.—document the what, when, and where of the perhaps 9 million species on Earth. Each is a time capsule, a window to the morphological and genomic diversity for a species at a location at a particular moment in time stretching back several centuries for extant organisms and hundreds of millions of years for fossil organisms. By aggregating data from these specimens we bring into sharper focus historical changes to life on Earth with which to better predict future change. The objectives of this exercise are to familiarize you with the information content of biodiversity specimens and their labels, the breadth of that information across geographic space and/or time, a useful resource for finding biodiversity specimen information, and the value of citizen science contributions. Upon completion of this exercise, students will be able to interpret biodiversity specimen labels, differentiate among categories of label information, relate information on individual specimen labels to information collected by the nationwide community, and construct an aggregate picture of the temporal and spatial extents of specimens based on label data.

Timeframe
We will be contributing to a global event entitled Worldwide Engagement for Digitizing Biocollections (WeDigBio) that runs from October 22 to 25, 2015. During those four days there will be many others contributing biodiversity specimen label transcriptions along with us, some in classroom settings, some at parties onsite at museums, and some at their home computers.

Exercise 1—transcribe label data from ten specimens and reflect on what you saw

https://www.wedigbio.org/

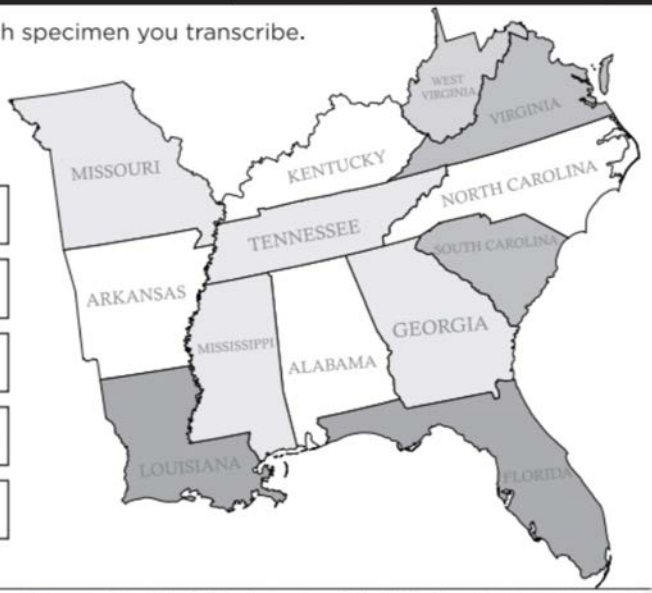
Species ID of Specimen	State/Province (or Country) in which Specimen Collected	Does iDigBio already have a specimen of that species from that location? (Y/N)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Your Name

GEO LOCATOR

Mark the collection location for each specimen you transcribe.

Other Locations



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https://www.wedigbio.org/

https://www.wedigbio.org/

Austin Mast @austin_mast · Oct 14

What else works w/ @ExplorMorLabs Libraries of Life #AugmentedReality Mobile App? #WeDigBio tattoos! Share your best pics during @WeDigBio

2 1

http://www.libraries-of-life.org/

Austin Mast @austin_mast · Oct 21

Monster mantis photo booth at @wedigbio Monarch Festival booth tomorrow--butterfly-eye view of this predator!

1 4

http://www.libraries-of-life.org/

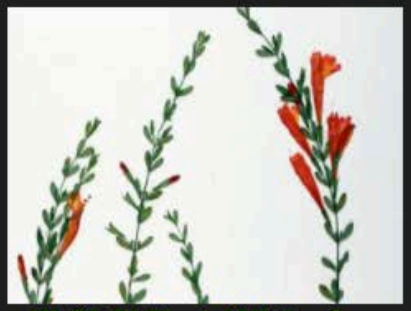
WeDigFLPlants' Milkweeds of Florida - Monarch Butterfly Food Plants

16.91% complete

http://www.notesfromnature.org/

Notes from Nature

Completed Expeditions



WeDigFLPlants' Mints of Florida—More than Mojitos

Completed: June 21 2016

WeDigFLPlants' Laurels of Florida—Fight Laurel Wilt

Completed: June 21 2016

CalBug Bee Flies

Completed: June 19 2016

New World Swallowtail Butterflies

Completed: June 28 2016

CalBug Bee Flies 2

Completed: June 26 2016

WeDigFLPlants' St. John's Worts of Florida—Diversity to Lift your Spirits

Completed: July 20 2016

WeDigFLPlants' Rose Gentians of Florida—Beauty from the Center of its Diversity

Completed: July 20 2016

CalBug Bee Flies 3

Completed: July 6 2016

http://www.notesfromnature.org/

Place-based ed opportunity

WeDigFLPlants

Build the his[illegible] baseline for plant diversity and distribution in Florida

WeDigFLPlants is a collaboration between professional research botanists, amateur naturalists, gardeners, educators, and citizen scientists to build the most complete picture possible of plant distribution and diversity in Florida over the past 200 years. The data for this historical baseline come from archived plant specimens curated by the world's 3,000 herbaria. Each of these specimens includes a label that answers the who, what, when, and where of the collecting event that produced it. Transcribing that label data into digital form and providing that data online at aggregators like idigbio.org and gbif.org makes it available to scientists, educators, natural resource managers, and policymakers addressing societal challenges today and in the future. Today, there are >4,700 species of plants native or naturalized in Florida. WeDigFLPlants is an inaugural interest group associated with the annual Worldwide Engagement for Digitizing Biocollections (WeDigBio) Event.

How to Participate

This project has the following active expeditions:

Expedition	% Complete *	Join In
WeDigFLPlants' Mints of Florida—More than Mojitos	100.00%	Notes From Nature V2

Organization
WeDigBio
Contact
Austin Mast
Contact Title
Chief Mobilizer
Organization Website
wedigbio.org
Project Partners
Florida Native Plant Society, The Southeastern Regional Network of Expertise and Collections, The Worldwide Engagement for Digitizing Biocollections (WeDigBio) Event, and iDigBio, the US National Resource for Advancing Digitization of Biodiversity Collections.
Funding Source
National Science Foundation under Cooperative Agreement EF-111520 and awards 1458550 and 1410288. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
Incentives
Local WeDigFLPlants event organizers might provide incentive gifts, such as stickers and temporary tattoos.
Geographic Scope

http://biospex.org/project/wedigflplants

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Educator Toolkits

A toolkit of information, resources, and tools organized by grade level.

- Grade K Educator Toolkit
- Grade 1 Educator Toolkit
- Grade 2 Educator Toolkit
- Grade 3 Educator Toolkit
- Grade 4 Educator Toolkit
- Grade 5 Educator Toolkit
- Grade 6 Educator Toolkit
- Grade 7 Educator Toolkit
- Grade 8 Educator Toolkit
- Grades 9-12 Educator Toolkit

FloridaStudents.org

A new CPALMS website with learning resources for students

New to CPALMS?

CPALMS is an online toolbox of information, vetted resources, and interactive tools that helps educators effectively implement teaching standards. It is the State of Florida's official source for standards information and course descriptions.

http://www.cpalms.org/Public/


Worldwide Engagement for
WeDigBio
Digitizing Biocollections
Please join in!

Acknowledgements

I thank my collaborators Libby Ellwood, Rob Guralnick, Paul Kimberly, Paul Flemons, Michael Denslow, Kevin Love, Shari Ellis, Greg Riccardi, and Robert Bruhn, as well as participants in the CITStitch Hackathon, Smithsonian's WeDigBio 2015 Planning Workshop, iDigBio's WeDigBio 2016 Planning Workshop, onsite hosts, and the thousands of WeDigBio participants.

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