



**Southwest Collections of Arthropods Network (SCAN)**  
**A Data Portal Built to Visualize, Manipulate, and Export**  
**Species Occurrences**  
July 2012 to July 2015



*Symbiota* Promoting  
Bio-Collaboration



This project made possible by National Science Foundation Award EF 1207371





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**A Data Portal Built to Visualize, Manipulate, and Export**  
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July 2012 to 2020



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SCAN Data Portal Home
<a href="#">SCAN Project Website</a> <a href="#">Search Collections</a> <a href="#">Map Search</a> <a href="#">Summary Statistics</a> <a href="#">Image Search</a> <a href="#">Image Browser</a>
Faunistic Projects
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Resources
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### Symbiota Collections of Arthropods Network (SCAN): A Data Portal Built to Visualize, Manipulate, and Export Species Occurrences

911,078 specimens in database  
 776 families  
 8,960 genera  
 21,619 species  
 21 Collections

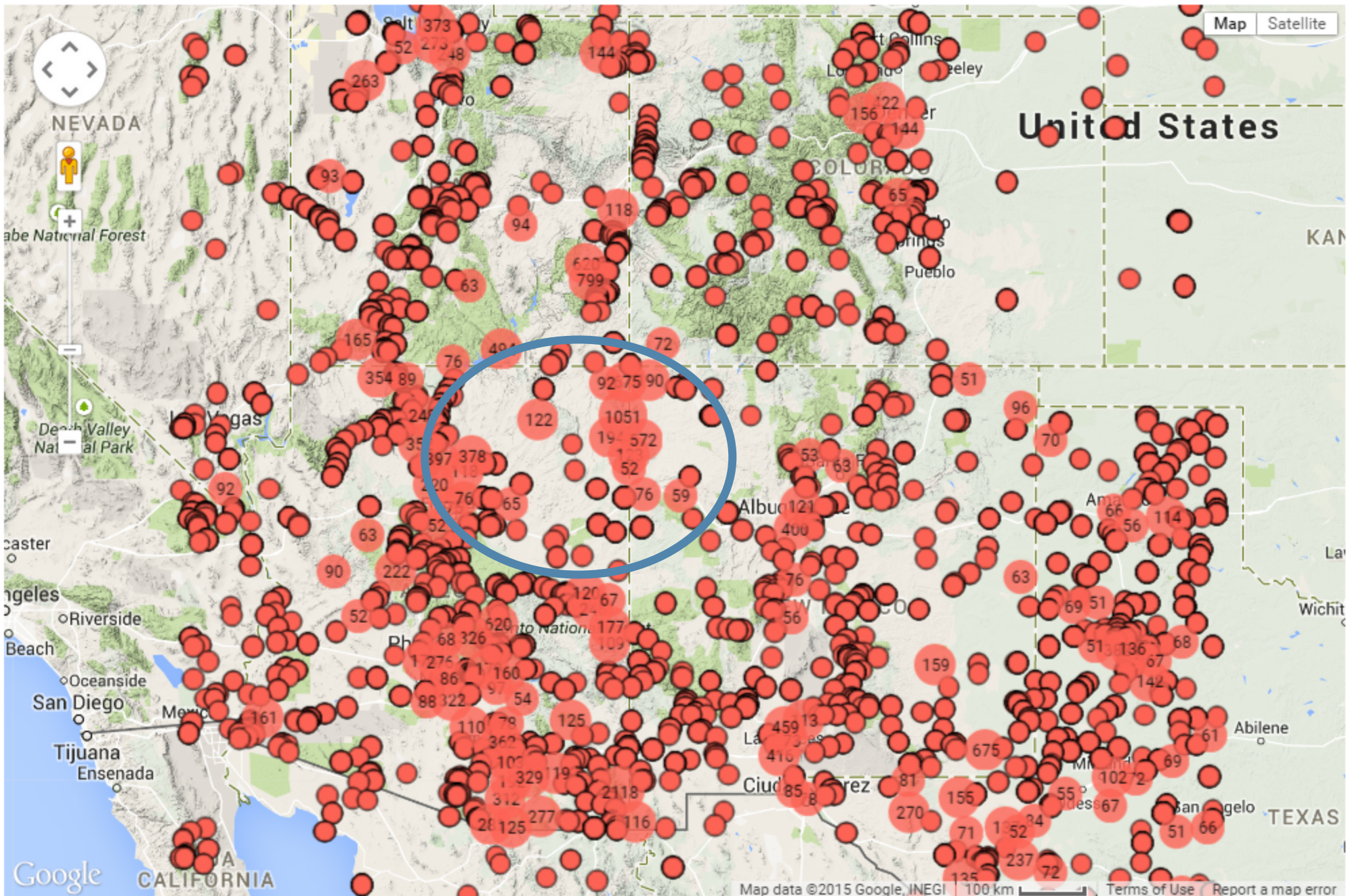
5,389,220 specimens in database  
 1,450 families  
 20,025 genera  
 58,741 species  
 > 50 collections

#### Important features of all Symbiota databases include:

1. Easy web-based data entry.
2. Download entire datasets in two clicks.
3. Map georeferenced records in two clicks.
4. Upload high-resolution images & create species profile pages.
5. Design custom species lists for any locality at multiple scales.
6. Develop educational games with data.
7. Create taxonomic keys.

The key organizational feature is that each museum or project is listed as a separate collection, so that one database group does not interfere with another. End users can select all "collections", or just a subset. We are incorporating [Filtered Push](#) to enhance the capacity of far-flung experts to contribute identifications and annotations of data that may be shared across the network.





Legend  
● = Formicidae

Add Point of Reference

Latitude decimal:  Longitude:  Marker Name:

# SCAN “Formal” Education Program

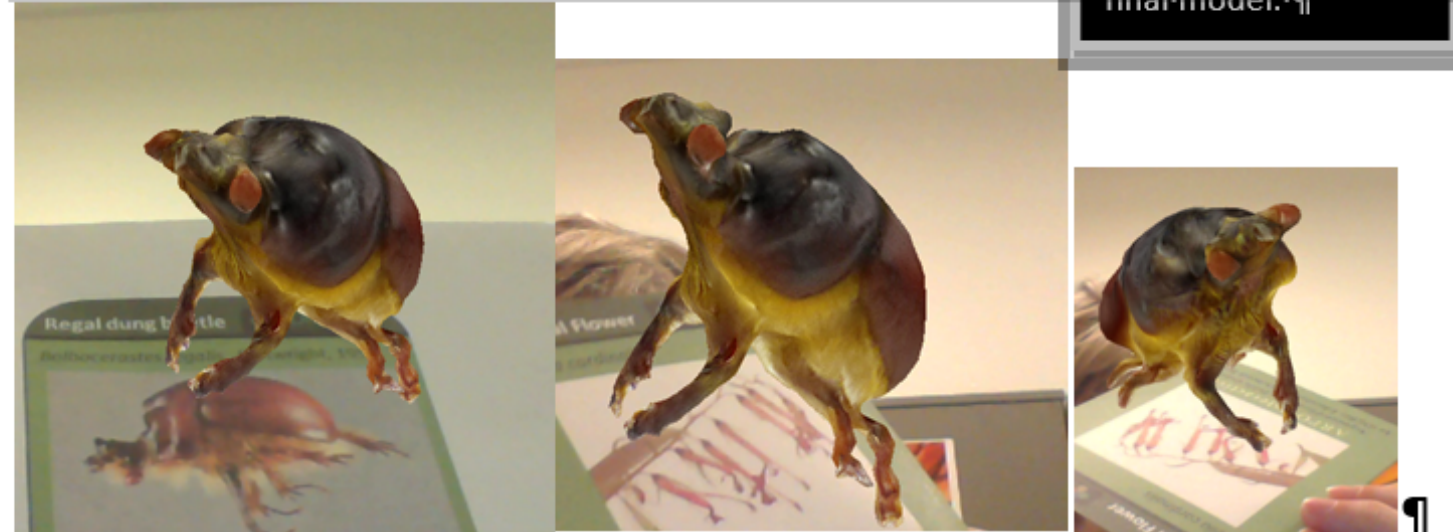
Blue-Death-feigning-Beetle¶  
*Asbolus- verrucosus*¶

Melody Basham – Arizona State University

Collaborative initiative in the 3D digitization and development of specimen-based learning tools integrating augmented reality technology



Can now get ventral view of specimens in final model.¶



Regal-dung-beetle-*Bolbocerastes-regalis*¶




# Invert · E · Base

### InvertEBase Data Portal Homepage


- Search Collections
- Map Search
- Dynamic Checklist
- Image Library
- Search Images

**Welcome to InvertEBase:** *reaching back to see the future: special causes and consequences of biodiversity shifts*

The rapid biodiversity change in North America has significant effects on ecosystem health and nutrient cycling, to agriculture, forestry and water quality. Effective easy electronic access to historical specimen baseline information for temperate regions which can facilitate informed land management decisions. Vast amounts of natural history collections, but most of these data are not yet readily accessible. This is a 4-year collaborative effort to digitize specimen records from ten arthropod museums in six states, three of them ranking among the top 10 collections in the world: Natural History (CMNH), Cleveland Museum of Natural History (CMNH), Delaware State University (DSU), University of Michigan Museum of Zoology (MI), Delaware State University (DSU), and University of Michigan Museum of Zoology (MI), Delaware State University (DSU).

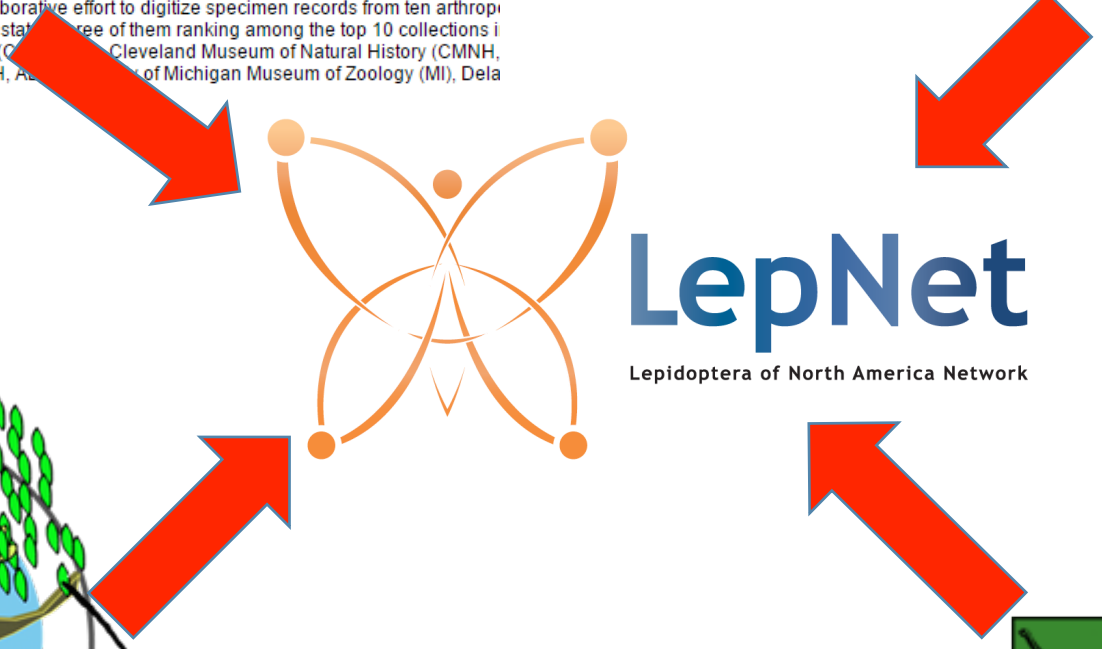


ILLINOIS NATURAL HISTORY SURVEY  
PRAIRIE RESEARCH INSTITUTE



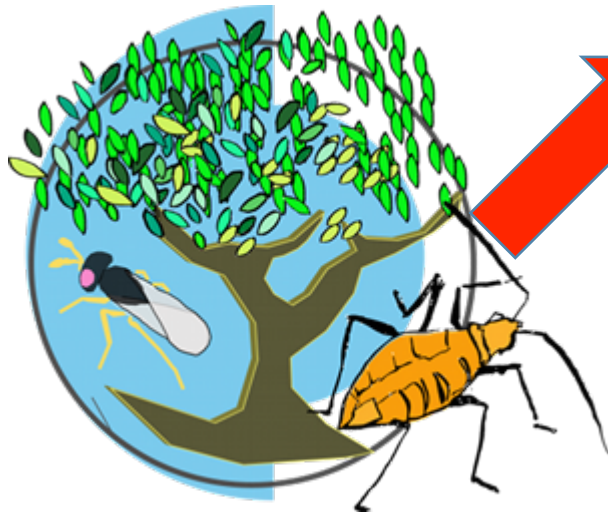
# invertnet

Digitized Collections

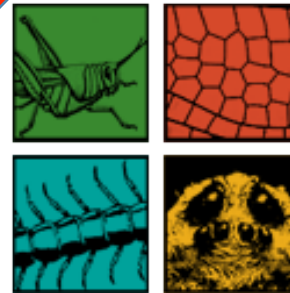


# LepNet

Lepidoptera of North America Network



Tri-Trophic Thematic Collection Network

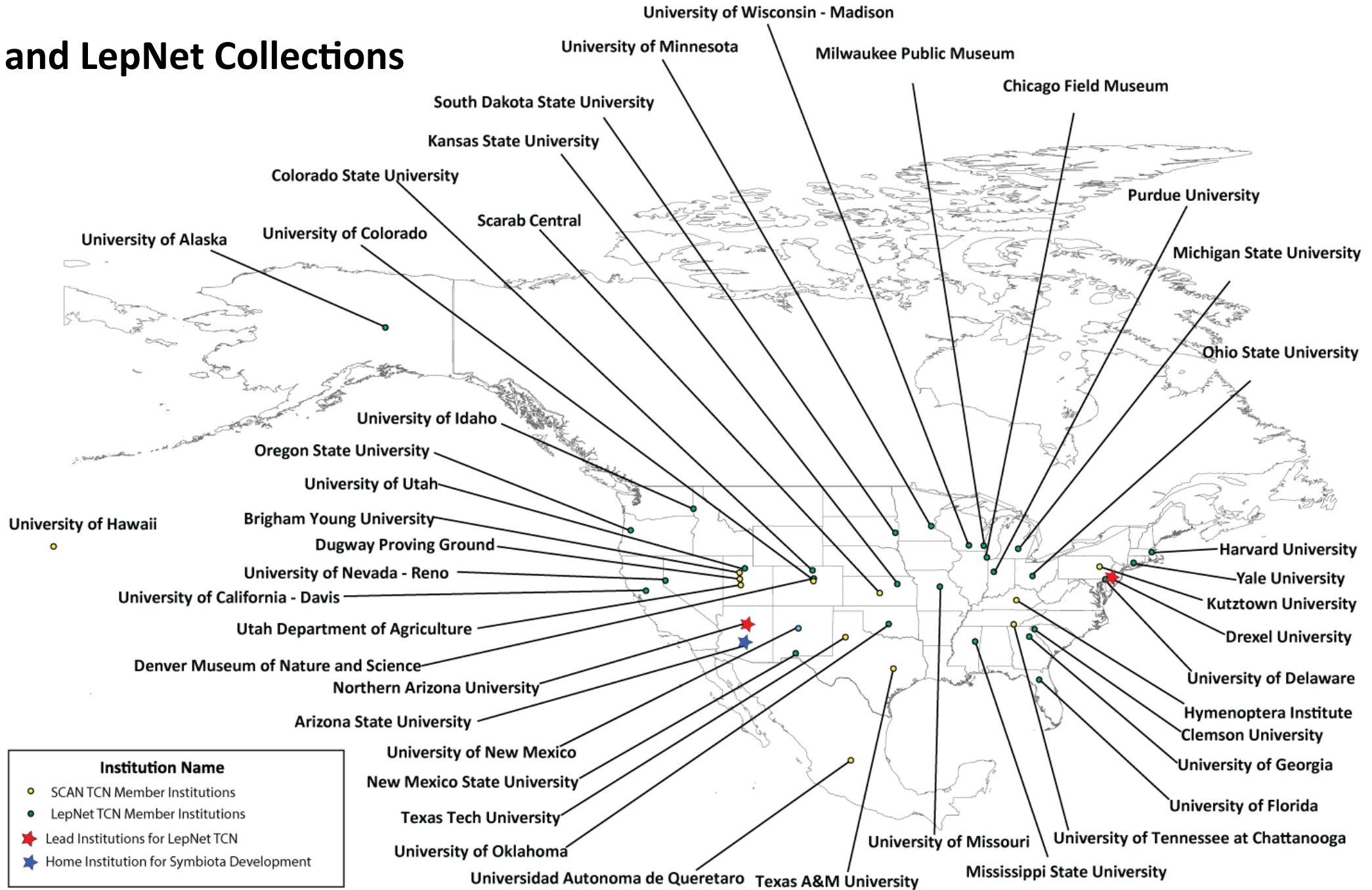


# SCAN

Southwest Collections of Arthropods Network



# SCAN and LepNet Collections

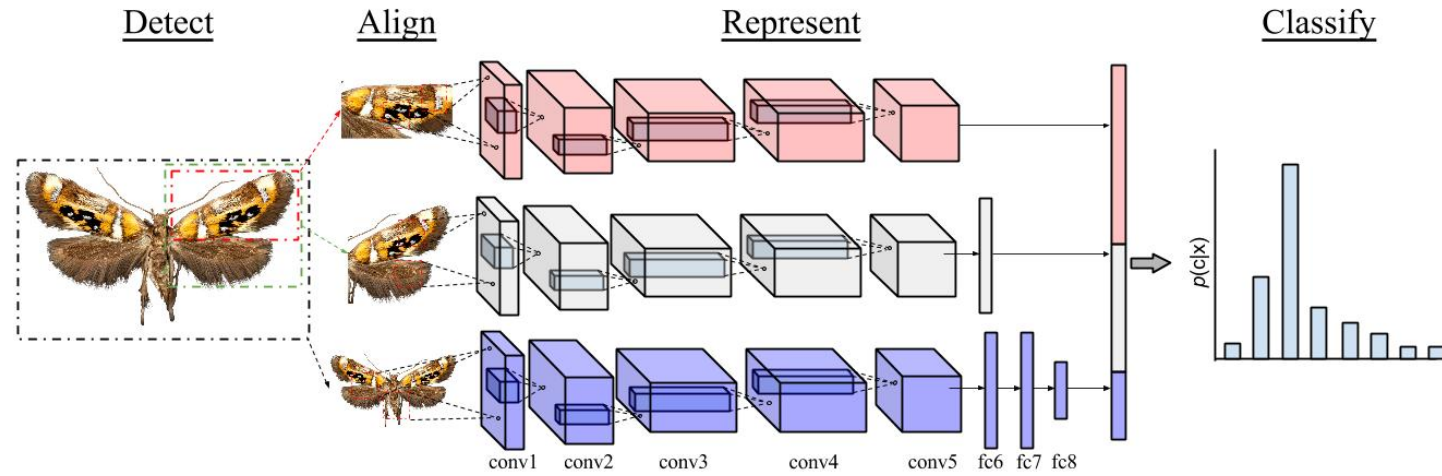


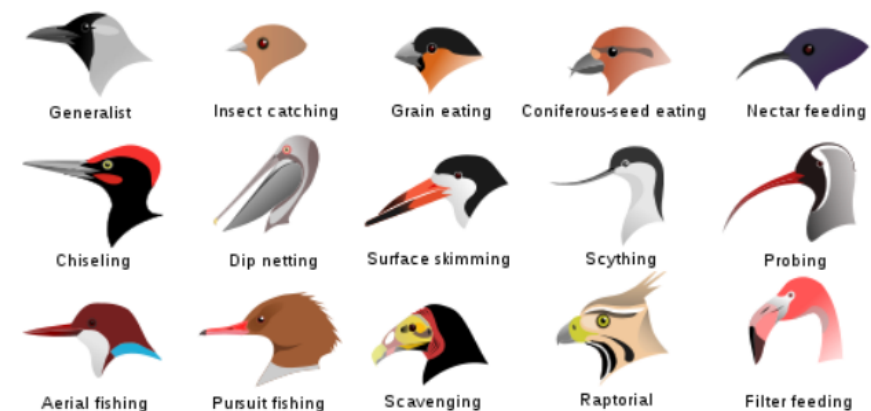


# LepSnap- Develop computer vision capacity to identify specimens from images. Museum specimens > Field images

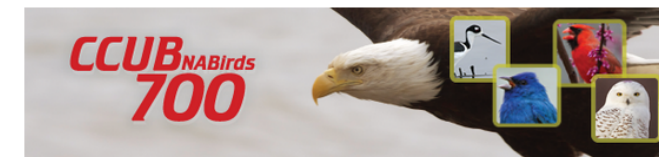
Of the ~10,000 Lepidopteran species in US & Canada ~6,800 can be identified by museum/field images by humans (Visipedia, Serge Belongie)

## Tiger Moths (Arctiinae)






## CCUB NABirds 700 Dataset: Backyard Bird Edition



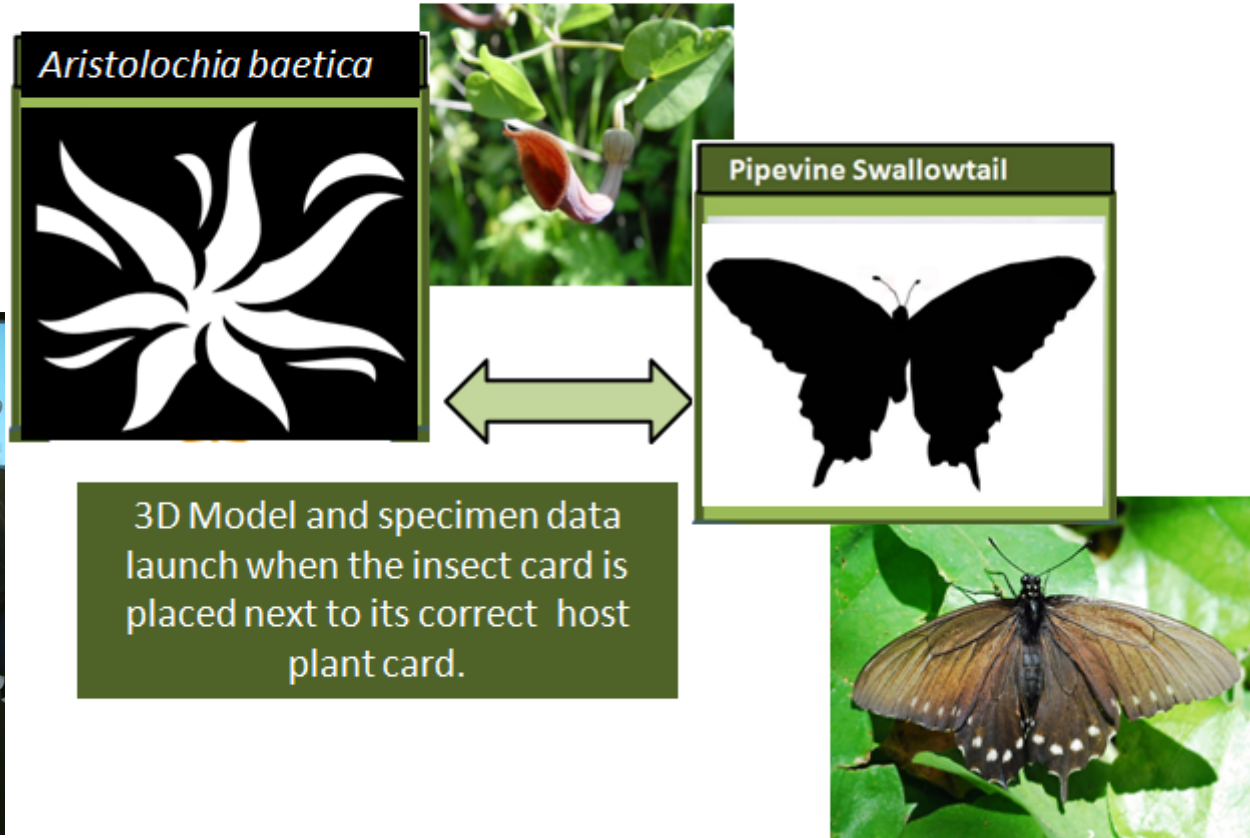
Try out a new dataset for fine-grained recognition, featuring 550 of North America's most common birds. The complete dataset will be available in the fall. Join in today by downloading the backyard bird edition, which includes full annotations for 80 visual categories!

**CCUB NABirds 700** is a collection of 70,000 annotated photographs of the 550 species of birds that are commonly observed in North America. More than 900 photographs are available for each species, including separate annotations for males, females and juveniles that comprise 700 visual categories. This dataset is to be used for fine-grained visual categorization experiments.

- More than 700 visual categories, organized taxonomically
- Photos curated in collaboration with domain experts
- Dataset available in two researcher-friendly formats: 1) widely-used PASCAL VOC and 2) CUB-200 format

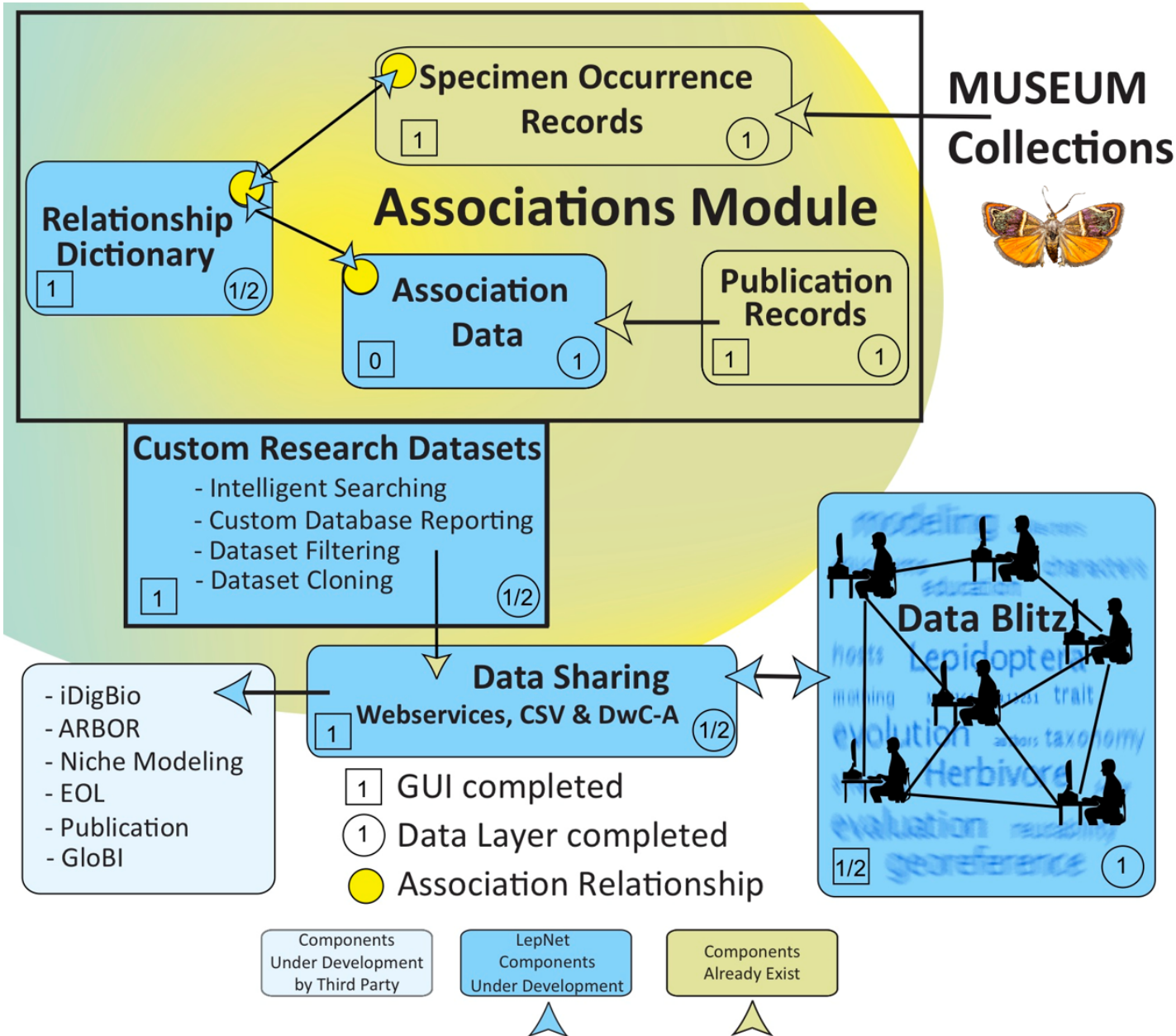
	# species in NA	# Species imaged in MPG	# of "observable" Species
<b>MacroLeps</b>	6,000	5,355	3,749
<b>MicroLeps</b>	7,500	4,322	2,377
<b>Butterflies</b>	800	NA	680
<b>TOTAL</b>	14,300	9,677	6,806

# Communicating Association Data via the Linking of AR Flashcards



Arizona State University The Museum School of Biodiversity program serves adult learners who are either studying for their GED, obtaining basic literacy skills, or are learning English.

# Lepidoptera of North America Network – Associations Database



1. Databases do not connect diverse taxa
2. LepNet focus on lepidopteran host plants
3. Herbivore-Parasitoid associations
4. Vertebrate parasites
5. Insect-Macrofungi host relationships

# Connecting preserved collections with live collections and more



# Summer Bug Camp

## Build a Bug



## Eat a Bug



## Catch a Bug

