BoilerBug: A networked science collaboration between the Purdue Entomological Research Collection and the Logansport Juvenile Correctional Facility

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Purdue Entomological Research Collection (PERC)

Outline

- Location
- Holdings
- Digitization
- BoilerBug
- Progress

Smith Hall, Purdue University
West Lafayette, IN, USA

Purdue Entomological Research Collection

- Smith Hall, East Basement PU
- 1,230 sq. ft.
- 95 cabinets, 24 drawers each
- 24 cabinets, wet collections
- Largest, most important collection of insects in Indiana
- World class mayfly collection
- Repository for IDNR, USDA, Indiana CAPS, other projects

PERC compactor system

Purdue Entomological Research Collection

Specimen Holdings

- ~.5 million pinned specimens
- ~70,000 vials
- ~3,700 types
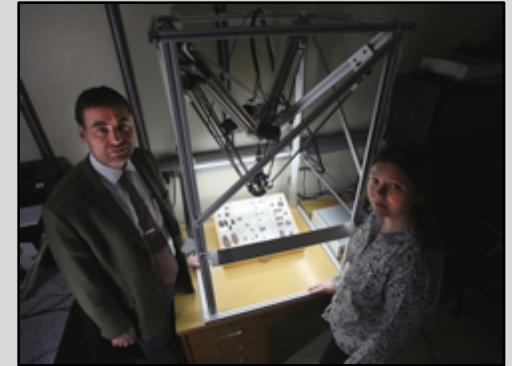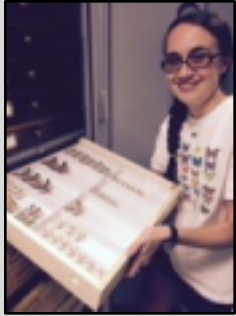- ~28,000 slide-mounted specimens
- ~11,000 papered specimens

Specimen Curation → Unique IDs → Slides Envelopes Wet Collections

or

Whole Drawer Digitization

SCAN — Symbiota Collections of Arthropods Network

Flatbed Scans

Inselect
An innovative tool for automating digitisation of natural history collections

Example #1
- In this example we do not know the genus or species. Enter what name is there.
- We also are not given the date the bug was caught.
- If the bug is not identified write "NA" in both Genus and Species fields
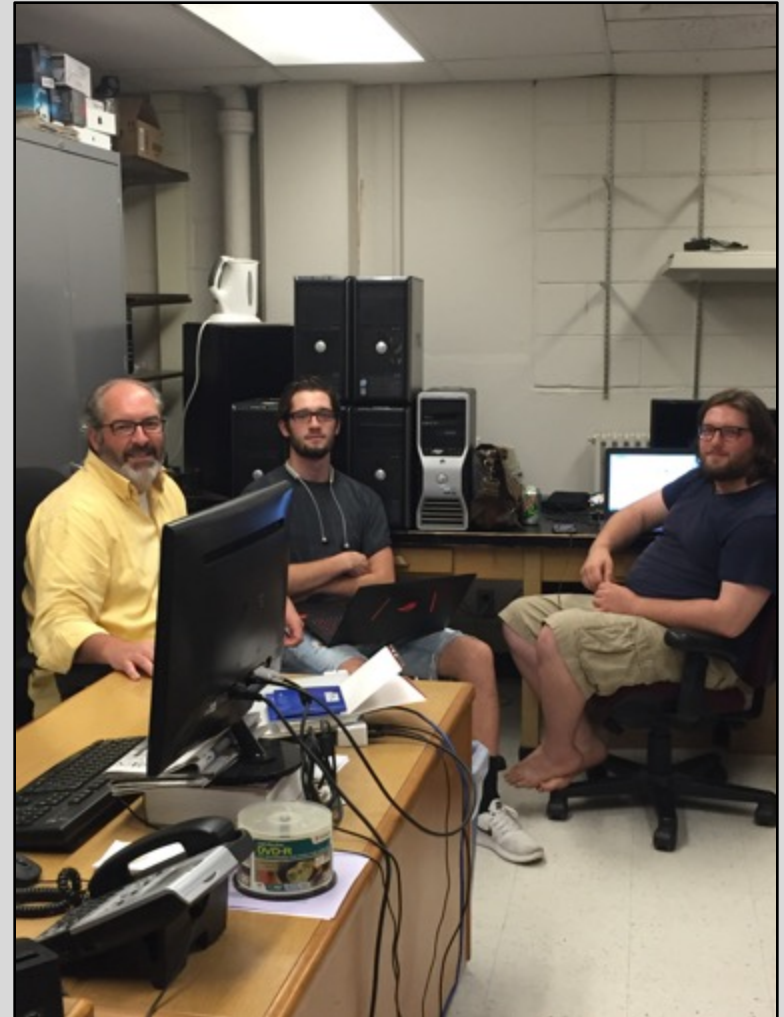
11
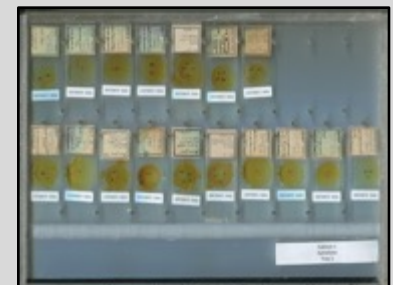
PERC Data Transcription Challenges

- Task analysis
- Operating costs
- Space constraints
- Equipment
- Time limitations

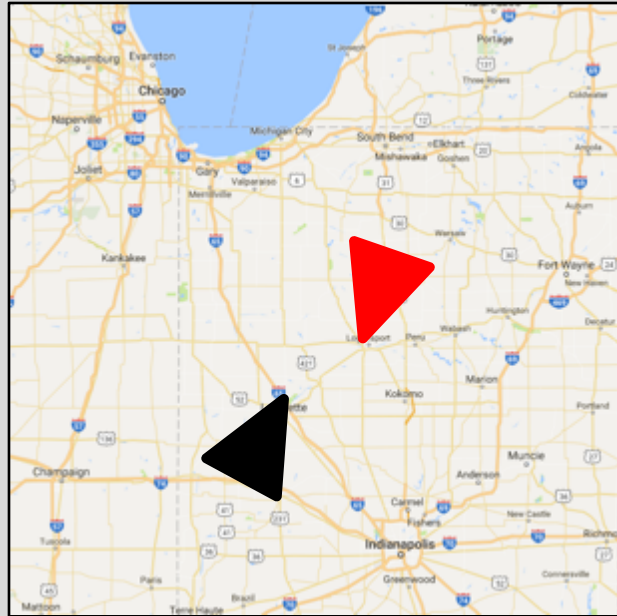PERC undergraduate curatorial assistants

Accelerating PERC Data Transcription

- Fund-raising
- Refurbished equipment
- Space requests
- Advanced HTP imaging
  + Citizen science = ???

Purdue Entomology IT Staff

Logansport Juvenile Correctional Facility

- Established in 1994
- Security level: low-high
- Average daily population: 147
- Students committed by Indiana courts
- All males, 12-18 years of age

PERC + LJCF = BoilerBug Project

Purdue Pete, Boiler Maker

- Classrooms (science, English, math, art, social studies, college prep, telecom, intro to construction, interpersonal relationships)
- 5 data transcription workstations
- 5 students
- 1 class period 5 days/week
- 3 training session/year
- Data transfer (HD)
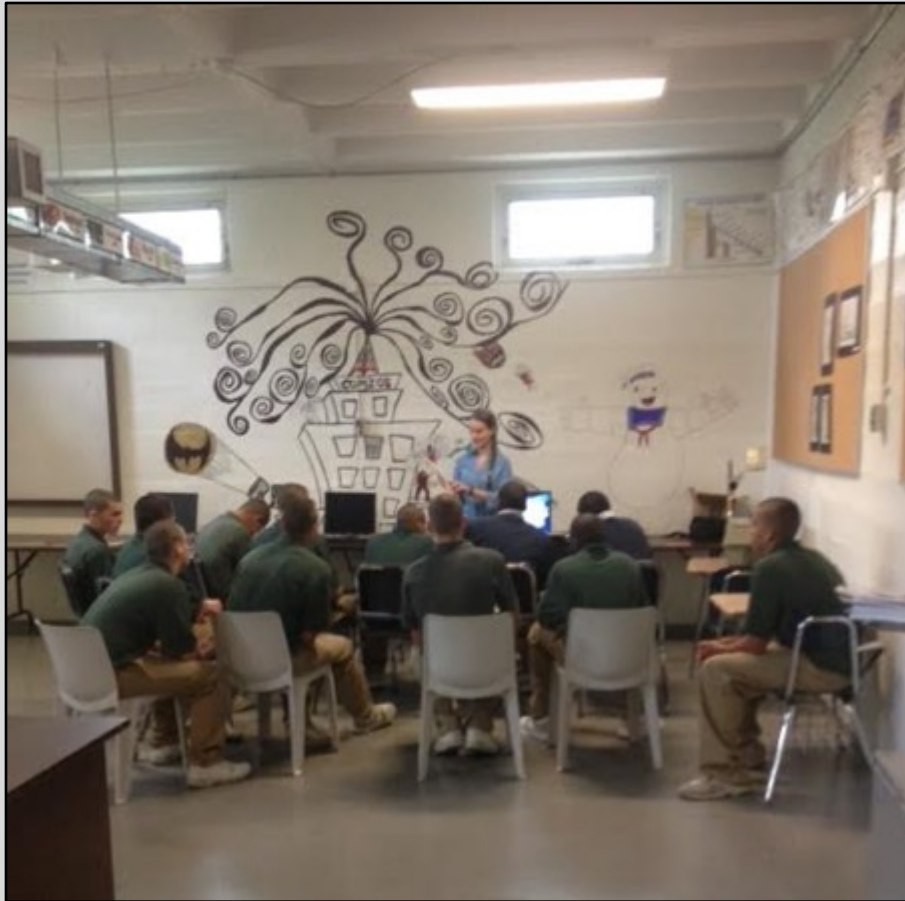- Quality check
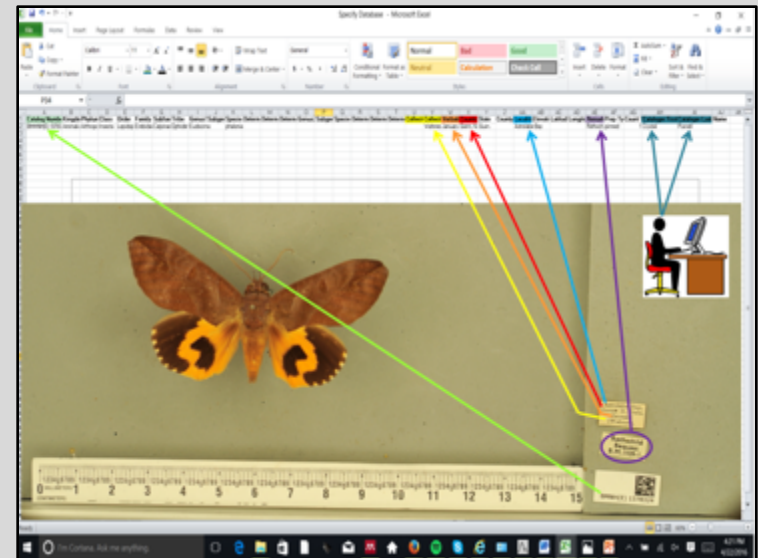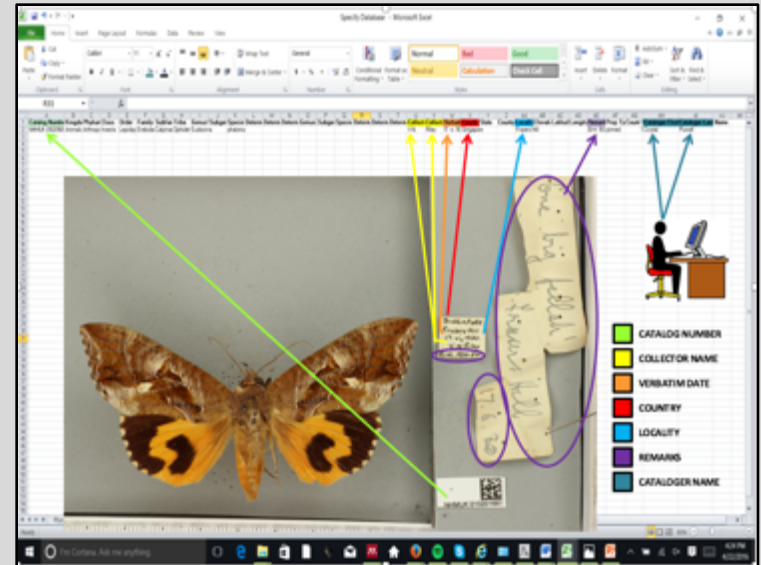- Upload to PERC database
- Certificate

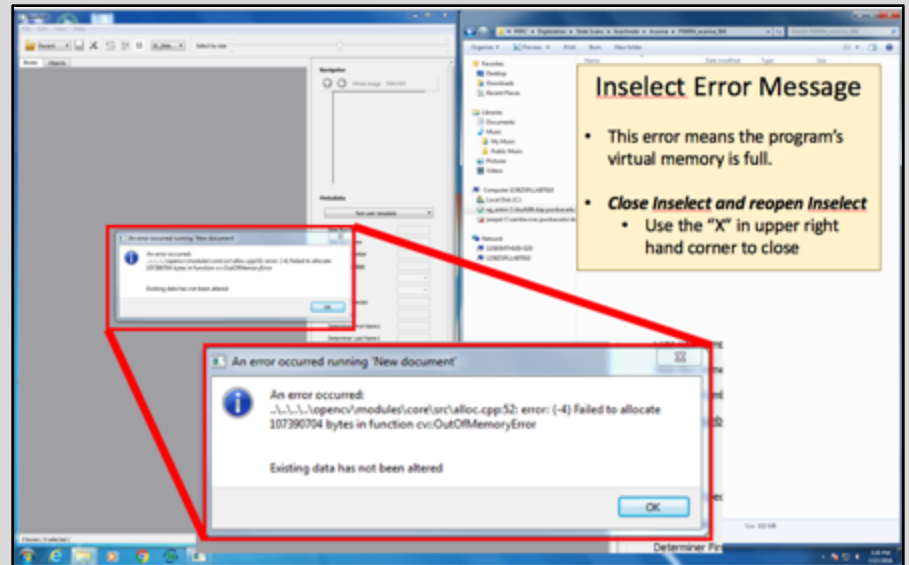

LJCF BoilerBug Training

BoilerBug Phase I: Training

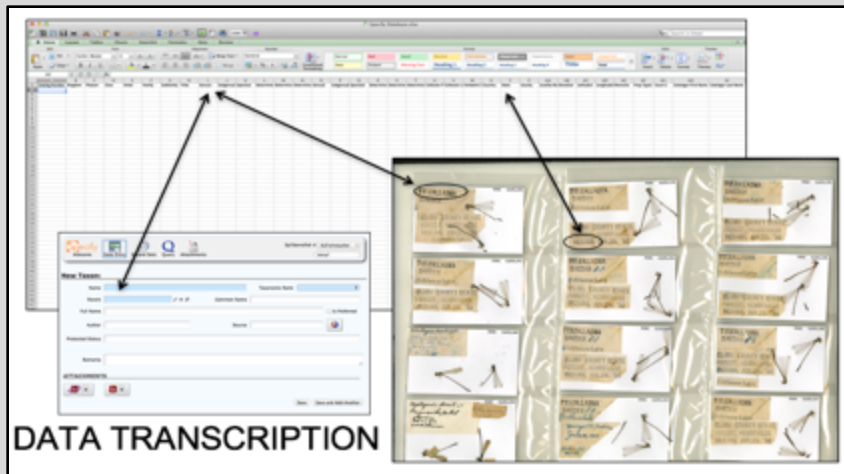PhD. student Crystal Klem training LJCF students; 30 youth participants trained thus far.
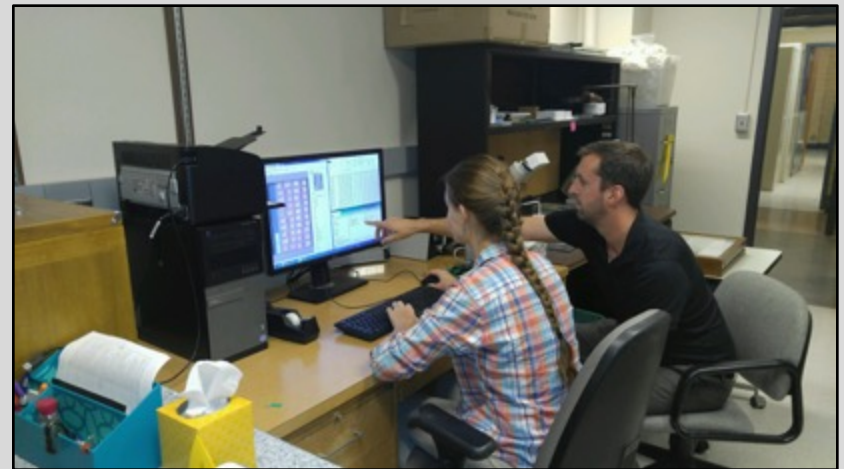
BoilerBug Phase II: Implementation

BoilerBug Phase III: Quality Control

- "Click and drag" errors, deleting images

- Entering the same label data in multiple fields

- Incomplete data entry

Data transcription spreadsheet

PERC students checking transcription data

Broader Impacts

- Research indicates that there is a human benefit to being exposed or connected to nature

- LJCF students receive IT training from Purdue faculty, staff and students

- LJCF students gain a better understanding of insects and their impact on our world

- Team building, problem solving skills development

- Responsible for documenting important data

- A model that can be applied to other facilities

LJCF Student and Instructor Feedback!!!

"I think the BoilerBug Project helps occupy time and really keeps people's focus compared to getting in trouble. I personally enjoyed it. (It's difficult at first but when you get the hang of it it's kind of fun!)" – Student

"I've found the Boiler Bug Project to be an interesting challenge for many students. Those selected participate in a Purdue project, contribute to a worldwide data resource, and earn a certificate of participation from the university. A great source of enthusiasm and a rare experience!" – Jeff Merrell, Teacher, LJCF

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- LJCF Staff and Teachers

- Purdue Entomology & Research Associates

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