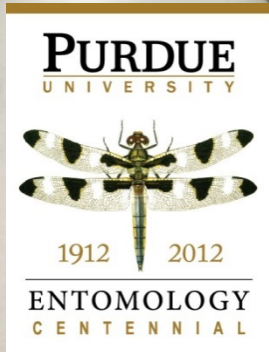


Rehabilitation and Revitalization of the Purdue Entomological Research Collection (PERC)



Eugenio H. Nearn
Gareth S. Powell
Jennifer M. Zaspel

Revitalization of the PERC

- Outline
 - Introduction
 - History, holdings, personnel
 - Current Progress
 - Replacement, database, digitization, integration
 - Future Goals
 - Expansion, collaboration, research community, engagement





Revitalization of the PERC

- Purdue University
 - West Lafayette, IN
 - Land-grant university
 - Founded 1869
 - >38,000 students



PURDUE
UNIVERSITY

Indiana



Revitalization of the PERC

- PERC info
 - Smith Hall, east basement
 - 1,230 sq. ft.
 - 119 steel cabinets, most on compactors
 - 95 cabinets, 24 drawers each
 - 24 cabinets, EtOH collection



Smith Hall

Revitalization of the PERC

- PERC info
 - Largest, most important collection of Indiana insects
 - Integral part of Purdue Ent.
 - Basis for systematic ent. research at Purdue and specialists globally
 - Repository for IDNR, USDA, Indiana CAPS, other voucher specimens



PERC compactors



Warning
Do not touch
the equipment

ATTENTION
Do not touch
the equipment
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Warning
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Revitalization of the PERC

- PERC history
 - Frank Troop, Purdue's first entomologist
 - Purchase of T.B. Ashton beetle collection 1896
 - W.S. Blatchley collection
 - Coleoptera, Orthoptera, Hemiptera
 - Vast majority of PERC types
 - Most important historical coll.



W.S. Blatchley

Revitalization of the PERC

■ PERC historical collections

- T.B. Ashton (beetles)
- W.S. Blatchley (beetles, orthops...)
- Leland Chandler (bees)
- J.J. Davis (aphids)
- Norville Downie (beetles)
- George Edmunds (mayflies)
- R. Tom Everly (carabids)
- Robert Meyers (flies)
- B. Elwood Montgomery (odonates)
- Frank Young (aquatic beetles)



Montgomery odonate specimens

Revitalization of the PERC

- PERC holdings
 - Howard Deay (1955)
“Entomology at Purdue”
 - >500,000 specimens
 - ~15,000 species; ~500 types



Montgomery odonate collection

Revitalization of the PERC

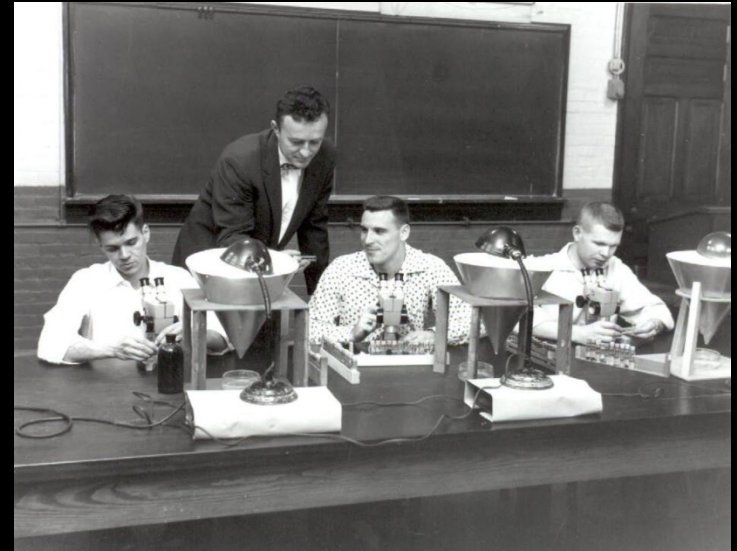
- PERC holdings
 - Howard Deay (1955)
“Entomology at Purdue”
 - >500,000 specimens
 - ~15,000 species; ~500 types
 - Today
 - ~2 million specimens, half EtOH
 - ?? species; ~3,700 types
 - ~28,000 slides; ~11,000 odonates
 - Among largest coll. of mayflies
 - Mayfly Central website



Montgomery odonate collection

Revitalization of the PERC

- PERC personnel
 - 1951-1975
 - Norville Downie
 - Donated beetle specimens, IDs
 - Prof. Psychology Dept.
 - 1959-1966
 - Leland Chandler, bees, 1st curator

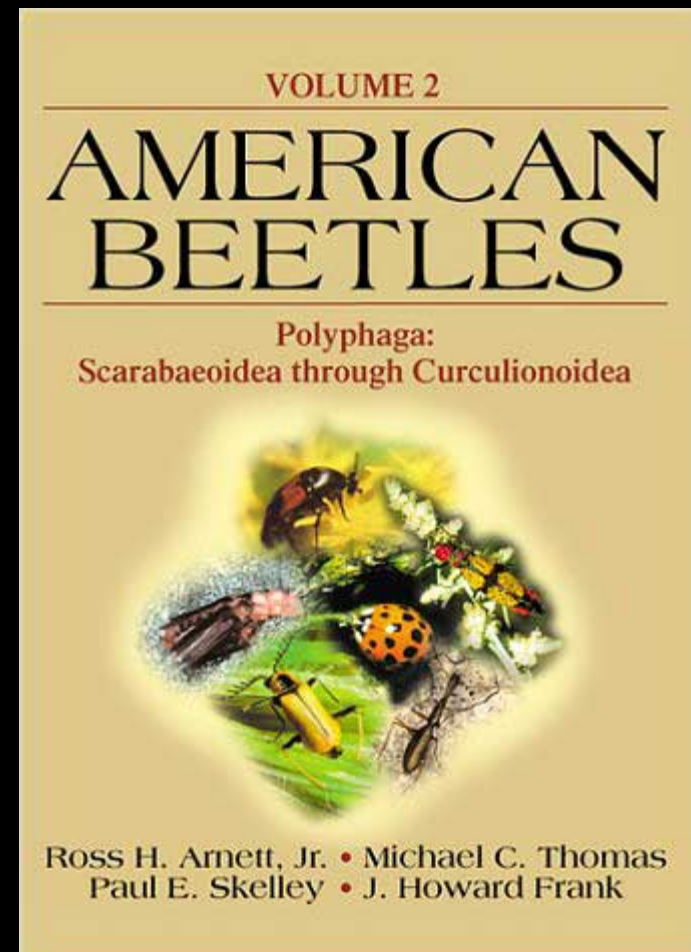


Leland Chandler class 1956

Revitalization of the PERC

■ PERC personnel

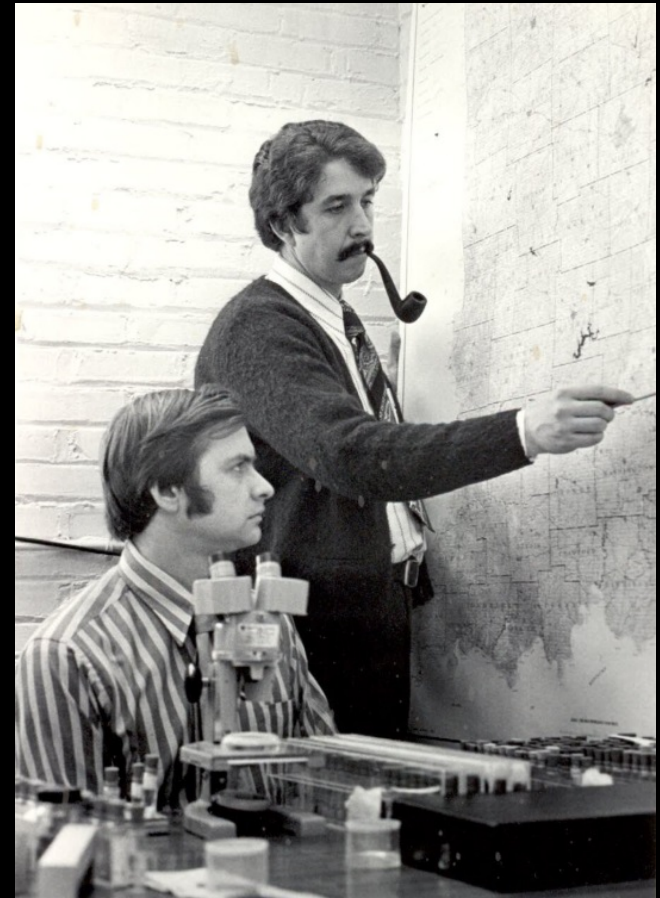
- 1951-1975
 - Norville Downie
 - Donated beetle specimens, IDs
 - Prof. Psychology Dept.
- 1959-1966
 - Leland Chandler, bees, 1st curator
- 1966-1970
 - Ross Arnett, curator
 - "Beetles of the US," "How to know the beetles," "American Beetles," et al.
 - Founded Coleopterists Society



American Beetles, Vol. 2

Revitalization of the PERC

- PERC personnel
 - 1971-2012
 - Pat McCafferty, director
 - Arwin Provonsha, curator
 - Both students of George Edmunds
 - Most of Edmunds collection (120,000) specimens at PERC

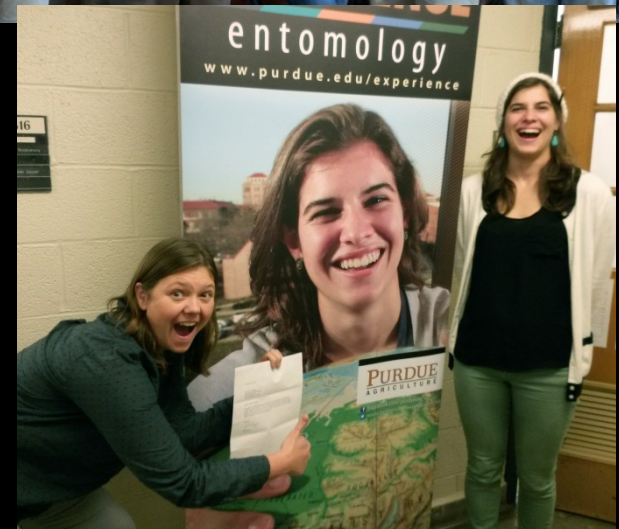


Arwin Provonsha & Pat McCafferty

Revitalization of the PERC

■ PERC personnel

- Dr. Jen Zaspel, director, asst. prof.
- Dr. Gino Nearn, collections manager
- Dr. Jeff Holland, associate prof.
- Bobby Brown, USDA/APHIS
- Tim Anderson, PhD student
- Julie Speelman, PhD student
- Julia Snyder, MS student
- Megan McCarty, undergrad student
- Gareth Powell, curatorial technician



Revitalization of the PERC

■ PERC research associates

- Wesley C. Bicha
- R. Michael Brattain
- Dr. Gregory R. Curler
- Dr. Edward DeWalt
- Alicia M. Hodson
- Dr. Luke M. Jacobus
- Dr. Nathan P. Lord
- Kyle Schnepf
- Ian Swift



FSCA, Gainesville, FL

Revitalization of the PERC

- Current progress
 - Top priority: replacement of substandard storage
 - Drawers with loose or missing lids
 - Hard bottom unit trays (25%)
 - Papered odonates transferred to archival envelopes (11,000)
 - Old stoppers & discolored EtOH
 - Of 920,000 vials, ~80% of vials (~736,000) need new stoppers/EtOH



Historical material

Revitalization of the PERC

- Current progress
 - Development of specimen-level database
 - Specify 6.5
 - 80% type specimens done



 Specify 6

Revitalization of the PERC

- Current progress
 - Integration of material
 - Historic collections
 - New donations
 - Frozen tissues collection
 - Zaspel Lab field work
 - Costa Rica projects



Megan McCarty

Revitalization of the PERC

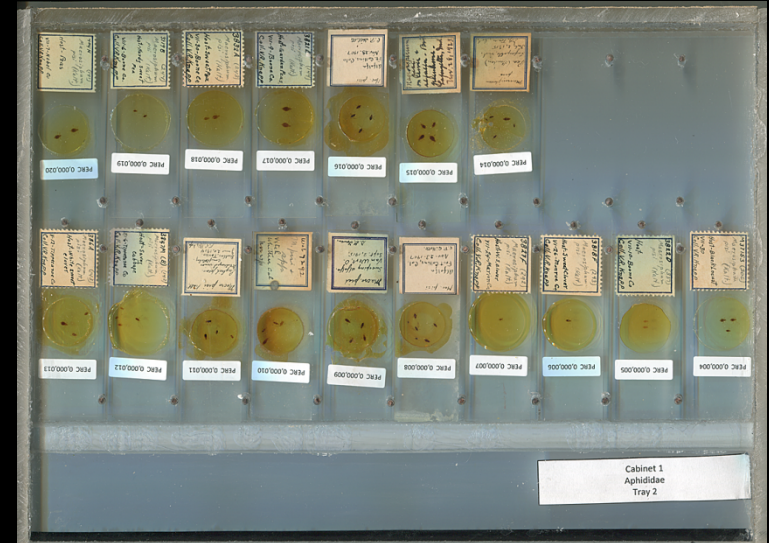
- Current progress
 - Digitization
 - InvertNet imaging robot
 - Whole drawer imaging



InvertNet Imaging Robot

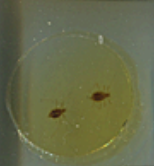
Revitalization of the PERC

- Current progress
 - Digitization
 - InvertNet imaging robot
 - Whole drawer imaging
 - 28,000 microscope slides
 - 1,000 mayfly holotypes



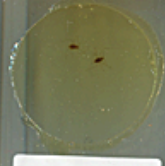
High resolution scan of aphid slides

3778 (292)
Macrosiphum
pisi (Kalt)
Host: Peas
V-7-Boone Co
Call VA Knapp



PERC 0,000,020

3778 (292)
Macrosiphum
pisi (Kalt)
Host: Peas
V-7-Boone Co
Call VA Knapp



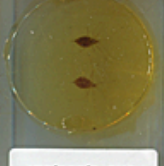
PERC 0,000,019

3827A (292)
Macrosiphum
pisi (Kalt)
Host: Sweet Pea
V-10-Boone Co
Call VA Knapp



PERC 0,000,018

3827E (292)
Macrosiphum
pisi (Kalt)
Host: Garden Pea
V-9-Boone Co
Call VA Knapp



PERC 0,000,017

C. P. Miller
Sept
F. Collins, Colo
Nov 23, 1907
Mac. pisi



PERC 0,000,016

Sept 19 2, 1907
on clover - Pea
apicalia - Pea
apicalia - Pea
apicalia - Pea
apicalia - Pea
apicalia - Pea



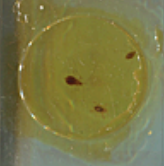
PERC 0,000,015

Macrosiphum
pisi (Kalt)
Host: Peas
V-7-Boone Co
Call VA Knapp



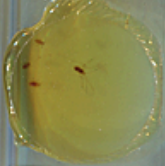
PERC 0,000,014

3824 (292)
Macrosiphum
pisi (Kalt)
Host: White clover
V-7-Boone Co
Call VA Knapp



PERC 0,000,013

3827M (292)
Macrosiphum
pisi (Kalt)
Host: Savoy
Cabbage
V-7-Boone Co
Call VA Knapp



PERC 0,000,012

Mac. pisi
Host: Peas
V-7-Boone Co
Call VA Knapp



PERC 0,000,011

Host: Peas
V-7-Boone Co
Call VA Knapp



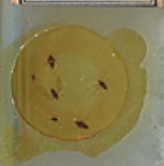
PERC 0,000,010

Mac. pisi
Sweeping alfalfa
Van Wert, O
Sept 2, 1905



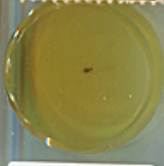
PERC 0,000,009

Mac. pisi
F. Collins, Col
Nov 23, 1907



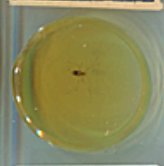
PERC 0,000,008

3827F (292)
Macrosiphum
pisi (Kalt)
Host: Sweetener
V-7-Boone Co
Call VA Knapp



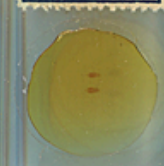
PERC 0,000,007

3818F (292)
Macrosiphum
pisi (Kalt)
Host: Sweet Clover
V-25-Marys Co
Call VA Knapp



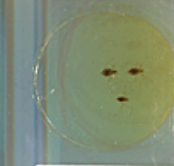
PERC 0,000,006

3822D (292)
Macrosiphum
pisi (Kalt)
Host: Peas
V-10-Boone Co
Call VA Knapp



PERC 0,000,005

3822S (292)
Macrosiphum
pisi (Kalt)
Host: Sweet Clover
V-10-Boone Co
Call VA Knapp



PERC 0,000,004

Cabinet 1
Aphididae
Tray 2

Revitalization of the PERC

- Current progress
 - Digitization
 - InvertNet imaging robot
 - Whole drawer imaging
 - 28,000 microscope slides
 - 1,000 mayfly holotypes
 - HerbScan imaging
 - GPI scanning system, dev. Kew
 - 11,000 odonates scanned
 - Dr. Cathie Aime, Purdue Botany & Plant Pathology



TELEALLAGMA
DAECKII

PERC 0,033,242

CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 25, '50
Schlamm Lake



TELEALLAGMA
DAECKII

PERC 0,033,241

Schlamm Lake
CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 24, '50



Teleallagma daeckii ♂
Schlamm Lake, Clark
County State Forest,
Henryville,
Indiana
June 26, 1950

PERC 0,033,240



Septagrion dorsale ♂
Paramaribo, Dutch
Guiana
Feb. 23, 1917
E. O. Williamson

PERC 0,033,239

Septag. dorsale
♂



TELEALLAGMA
DAECKII

PERC 0,033,246

CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 25, '50



TELEALLAGMA
DAECKII ♂♂

PERC 0,033,245

Schlamm Lake
CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 24, '50



TELEALLAGMA
DAECKII ♂♂

PERC 0,033,244

Schlamm Lake
CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 24, '50



TELEALLAGMA
DAECKII ♂♂

PERC 0,033,243

Schlamm Lake
Henryville, Indiana
June 24, 1950

Clark Co., Ind.
North



TELEALLAGMA
DAECKII

PERC 0,033,250

Schlamm Lake

CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 25, '50



TELEALLAGMA
DAECKII

PERC 0,033,249

Schlamm Lake

CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 25, '50



TELEALLAGMA
DAECKII ♂♀

PERC 0,033,248

CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 24, '50



Schlamm Lake

TELEALLAGMA
DAECKII

PERC 0,033,247

Schlamm Lake

CLARK COUNTY STATE
FOREST, HENRYVILLE
INDIANA, JUN. 25, '50



Revitalization of the PERC

- Future goals
 - Expansion
 - Field work, donations



Santa Cruz, Bolivia



PN Santa Rosa, Costa Rica

Revitalization of the PERC

- Future goals
 - Expansion
 - Field work, donations
 - Collaborations
 - e.g., Costa Rica projects



Monteverde Malaise trapping project

Revitalization of the PERC

- Future goals
 - Expansion
 - Field work, donations
 - Collaborations
 - e.g., Costa Rica projects
 - Research community
 - Loans, exchanges, visits



Ines Gonçalves, UFRJ
Visiting PERC mayfly collection

Revitalization of the PERC

- Future goals
 - Expansion
 - Field work, donations
 - Collaborations
 - e.g., Costa Rica projects
 - Research community
 - Loans, exchanges, visits
 - Engagement
 - Teaching, outreach, recruitment



Advanced Insect Taxonomy Course

PURDUE ENTOMOLOGICAL RESEARCH COLLECTION

[HOME](#)[NEWS](#)[HISTORY](#)[PROJECTS](#)[PERSONNEL](#)[SCHEDULE A VISIT](#)[REQUEST A LOAN](#)[LINKS](#)

News and Press

December 5, 2014. The Purdue Entomological Research Collection (PERC) needs your help! We will be hosting a volunteer event on **Friday December 5th from 9:00 am to 9:00 pm**. Feel free to stop by anytime during that period and stay as little or as long as you can. Our objective is to place unique database identifiers (labels) on as many pinned specimens as we can. This will facilitate digitization and imaging of the PERC pinned collection. Our goal is to complete 60 drawers of aquatic insects during this 12 hour "blitz." **Free Pizza** will be provided by the PERC around 12 noon! There will also be a demonstration of the new InvertNet Imaging Robot and imaging equipment for scanning complete drawers. If you are interested in helping please let [Gareth Powell](#) know so we have an estimate for food/drinks.

November 14-19, 2014. [Jennifer Zaspel](#), [Gino Nearn](#)s, [Tim Anderson](#), and [Gareth Powell](#), will travel to Portland, OR, to present at the annual meetings of the Entomological Collections Network (ECN) and Entomological Society of America (ESA).

November 11, 2014. Several members of the PERC and Zaspel Lab participated in the 2014 Purdue University Research Roundtable.

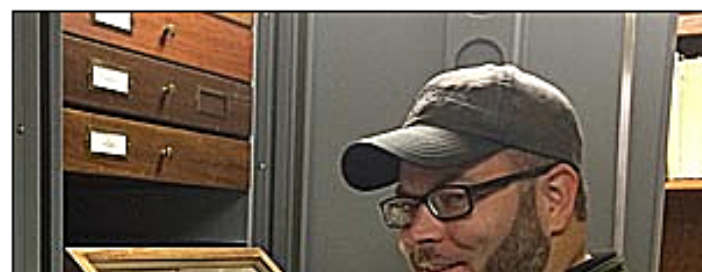
November 10, 2014. Greg Curler visited the PERC Diptera collection.

November 6, 2014. [Julia Snyder](#) officially joined [Jennifer Zaspel's](#) Lab as a Master of Science student.

October 22-30, 2014. [Gino Nearn](#)s travelled to Costa Rica to participate in a long-term collaborative project with the [Monteverde Cloud Forest Biological Reserve](#)



Nov 11, 2014, Zaspel Lab graduate students [Julia Snyder](#) and [Tim Anderson](#) at the 2014 Purdue University Research Roundtable.



Revitalization of the PERC

- Acknowledgments
 - Co-authors
 - Dr. Jennifer Zaspel
 - Gareth Powell
 - Purdue Entomology
 - Dr. Steve Yaninek
 - Dr. Jeff Holland
 - Julie Speelman
 - Tim Anderson
 - NSF funding
 - NSF EF 1339379



Jen Zaspel



Gareth Powell

See you in West Lafayette next summer!!!



Kevin Bao



Julia Snyder



Gareth Powell



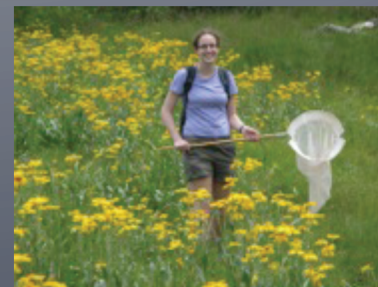
Gino Nearn



Tim Anderson



Jen Zaspel



Clare Scott



Megan McCarty

LepSoc 2015!



Thank you!