Including students in herbarium digitization efforts

Valdosta State University
27 January 2015
Emily Gillespie
Sources of student help

• For credit
  • Independent study
  • Capstone/senior projects
• Volunteerism
• Federal Work Study
• ‘Job training’ opportunities!

U.S. Department of Education

PROGRAMS
FEDERAL WORK STUDY (FWS) PROGRAM

- Purpose
- Eligibility
- Applicant Info
- Awards
- Performance
- Funding Status
- Laws, Regs, & Guidance
- Resources
- FAQs
- Contacts

Office of Federal Student Aid Home ➔

9 Federal Work Study students

1 Master’s independent study

2 undergraduate Capstone/senior projects

1 undergraduate independent study

2 paid students on ADBC grant

• 1 MS student and 1 FWS student
Challenges with students

• Lack of botanical/taxonomic knowledge
  • No intro botany course, little botany instruction
  • Plant blindness

• Continuity/predictability

• Boredom
  • Including in ‘actual’ research activities
  • Prep for digitization

Biology of Plants
Raven et al.
Circumventing lack of botanical training

- Explicit workflows
  - Mounting/repairing specimens
  - Sorting specimens into major plant groups
  - Filing specimens
  - Photography
  - Databasing/georeferencing
  - Data-mining
Sorting specimens by major plant group

- Start with randomly-ordered, newly mounted specimens
- Sort into cubbies based on major plant group
- Problems
  - oddballs: *Ophioglossum*
  - Non-reproductive specimens

Image: M. Barkworth
Filing specimens

• Recent ‘linear’ classifications

• Problems
  • New families
  • Merged families
  • Old/new names (Compositae/Asteraceae)

The Linear Angiosperm Phylogeny Group (LAPG) III: a linear sequence of the families in APG III

ELSPETH HASTON*, JAMES E. RICHARDSON¹, PETER F. STEVENS*, MARK W. CHASE¹ and DAVID J. HARRIS¹

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⁴Jedrell Laboratory, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3DS, UK

A new classification and linear sequence of extant gymnosperms

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A classification for extant ferns

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⁵ Department of Biology, Utah State University, Logan, Utah 84322-3305, U.S.A.
Solutions

• Step-by-step workflows
  • Flowchart or steps
• Picture references on cabinets
• Classification lists
• Allow students to edit protocols
• Training of ‘middle manager’ students
• Cross-training by seniority
• Scheduling flexibility
• Contact: email, text, call!
• ‘real’ inclusion in research
# Training status as of Jan. 2015

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Specimen

Fern?

Gymno-sperm?

Angio-sperm?

Search family on Wikipedia

Did you find the family?

Sort → Fern Cubby

Sort → Gymnosperm Cubby

Determine Family Name

Sort → Binned by starting letter of family

Sort → Need Help Cubby
Choose a family cubby that needs filing

Sort contents by family name

Which family is biggest?

Return the smaller families.

Sort the biggest family by genus name

Which genus is biggest?

Return the smaller genera.

Sort the biggest genus by species name

Find the family on the numerical family list

Find the proper cabinet

File species alphabetically within genus