

K Alice Wood (Bulkeley) Fox
Laboratory Technician II, Fridley and Frank Laboratories
Department of Biology, 413 Life Sciences Complex
Syracuse University, Syracuse NY 13244
607-280-8032 ✦ kafox01@syr.edu ✦ <http://althofflab.syr.edu/kawfox/kawfox.html>

EDUCATION

*August 2001–
May 2011* **Cornell University, Ithaca, New York**
Master of Science (M.Sc.) conferred May 2011
Major: Horticultural Biology: Greenhouse Management,
Plant Propagation
Thesis: Examining Bud Origin in *Saintpaulia* Floral Chimeras
Cumulative GPA: 4.01

*August 1997–
June 2001* **Hood College, Frederick, Maryland**
Bachelor of the Arts (B.A.) conferred June 2001
Major: Communication Arts: Journalism, Spanish Literature
Cumulative GPA: 3.7

EMPLOYMENT

*February 2016–
present* **Laboratory Technician II**
Frank Laboratory, Department of Biology
Syracuse University, Syracuse, NY
Eight-week appointment investigating nutrient content of grassland samples taken from Yellowstone National Park. This project was set up in 1988 to study the effect of grazers on the coevolved plant-grazer-soil-microbe system found in Yellowstone.

*May 2015–
present* **Laboratory Technician II**
Fridley Laboratory, Department of Biology
Syracuse University, Syracuse, NY
Conduct research in Succession across Latitudinal Gradients Network (SLaGNET) project; provide research support for plant ecology laboratory projects.

*October 2012–
May 2015* **Laboratory Technician II**
Althoff/Segraves Laboratories, Department of Biology
Syracuse University, Syracuse, NY
Conduct independent research; assist lab members in areas of molecular systematics, population genetics, and evolutionary ecology using molecular techniques such as DNA sequencing, DNA fingerprinting, PCR, and electrophoresis; assist in lab management; manage ordering and bookkeeping of laboratory supplies; perform routine equipment maintenance and lab cleanup; maintain greenhouse and common garden experimental plants; assist with insect rearings; conduct field studies; lead field crews for ecological experiments; maintain laboratory website; collect, enter and proof data; curate specimen inventory.

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EMPLOYMENT (continued)

- May 2012–
October 2012 **Temporary Consultant I,
The McKnight Foundation Collaborative Crop Research Program;
Cornell University, Ithaca, NY**
Trained new administrative assistant (former position); maintained existing program website; assisted in development of new program website.
- October 2001–
May 2012 **Administrative Assistant,
The McKnight Foundation Collaborative Crop Research Program;
Department of Plant Pathology and Plant Microbe-Biology; Cornell
University, Ithaca, NY**
Designed and maintained program website; arranged travel and event logistics; maintained Microsoft Access databases; created media outputs (website, newsletter); provided administrative support to over 40 projects in 17 countries; provided minor text translation (Spanish, French). Provided administrative support to the Department of Plant Pathology and Plant Microbe-Biology.

LABORATORY SKILLS

- Optimized and executed PCR protocols for:
 - Microsatellites (MSATs)
 - AFLPs
 - Bacterial cloning
 - Cycle sequencing
- Conducted gel electrophoresis.
- Optimized and executed DNA extraction protocols for plant and insect material
- Generated sterile media (liquid and plates) for yeast growth experiments.
- Generated laboratory stock solutions.
- Performed regular pipette calibration and other equipment maintenance.
- Cleaned and sterilized laboratory wares (autoclaving).

MOLECULAR RESEARCH PROJECTS

- Optimized primers for eight loci; generated and analyzed MSATs for 400+ *P. decipiens* from 23 Eastern US populations for a study on host-associated differentiation (HAD) (see publication 3).
- Optimized five primers for graduate student research on *A. ervi*.
- Initiated a study on clonal vs. insect pollination of *Y. aloifolia* using AFLP markers.
- Assisted in *T. corruptrix* sequencing project. Ran cycle sequencing on mtDNA of 100+ samples; analyzed and edited sequences in Sequencher.



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GREENHOUSE RESEARCH

- Maintained and grew 400+ African violets to flowering stage for Master's project.
- Currently maintain 250+ *Yucca* plants in research and teaching greenhouses.
- Diagnosed and corrected issues related to environmental (light, temperature) regulation; nutrient uptake and pests.
- Maintained clover, alfalfa, oat and stinging nettle populations for aphid rearings.
- Instructed graduate student in seed scheduling for maintaining continuous plant populations.
- Conducted *Yucca* hybrid phenotype study to examine trait inheritance.

FIELD/EXPERIMENTAL GARDEN RESEARCH

- Recorded seedling mortality, growth, light, and soil moisture; collected soil, root and herbaceous samples from SLaGNET project pools in three different sites from 2015-2016.
- Took monthly chlorophyll readings for invasive shrub project from 2015-2016.
- Performed titrations to assess carbon consumption from soil samples taken from a 20-year study in the UK.
- Maintained 150+ plants of six *Yucca* species at the Experimental Research Garden.
- Over two seasons, counted flowers, *P. decipiens*, *T. yuccasella*, and herbivorous insects daily for a host-plant use study (see publication 2).
- Collected and preserved flowers from all six *Yucca* species for future morphology study.
- Performed reciprocal crosses of three *Yucca* species for hybridization study.
- Conducted a portion of a scent study for the Raguso Laboratory at Cornell University.

INSECT RESEARCH

- Reared *P. decipiens*, *A. ervi*, *T. yuccasella* and several different species of oat and pea aphid.
- Conducted mating and behavioral trials with *P. decipiens*; behavioral trials with *A. ervi*.
- Dissected and measured structures of 150+ male and female *P. decipiens* for morphology study. Dissected and observed structures of *T. yuccasella*.
- Photographed moth structures for standardization of dissection procedure.
- Generated a dissection guide for students.
- Counted oviposition scars on Experimental Garden inflorescence stalks. Counted, extracted and preserved *P. decipiens* larvae for future studies.
- Participated in night observations of *P. decipiens* and *T. yuccasella*.

STUDENT TRAINING/SUPERVISION EXPERIENCE

- Trained five students (one graduate, three undergraduate, one high school) to successfully perform DNA extractions and generate MSATs through PCR.

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SITE VISITS

- September/October 2015 Traveled to SLAGNET sites in the Millbrook, NY (September) and Somerset, NJ (October) for project wrap-up: harvest of all seedlings; soil, root and herbaceous samples.
- June 2-3, 2015 Traveled to SLAGNET sites in the Millbrook, NY and Somerset, NJ to collect height and mortality data on tree seedlings.
- March 9-15, 2014 Traveled to several established sites in the Outer Banks, NC with Althoff/Segraves laboratory members to collect *Yucca* morphological data and tissue samples.

SOFTWARE/COMPUTER EXPERIENCE

- Familiar with Windows, Macintosh, and Linux (UNIX---based) operating systems.
- Genetic analysis software: Sequencher, Structure, GenAlEx, GeneMapper, GeneMarker, Jump, GenoDive.
- Productivity software: MS Office Suite, Dreamweaver, Endnote, iLife Suite
- Content Management Systems: Drupal, Cascade Server
- Learning: R (statistical software), FastStructure, Ruby (object---oriented programming language).

LANGUAGE SKILLS

- Fluent in English and Spanish.

SCIENTIFIC PUBLICATIONS

1. **Bulkeley, K. Alice Wood.** 2011. Examining Bud Origin In *Saintpaulia* Floral Chimeras: Increasing Axillary Bud Production Using Exogenous Cytokinins, and Examining Histogenic Layer Separation Through Adventitious Bud Generation to Establish Periclinal Chimerism. <http://newcatalog.library.cornell.edu/catalog/8270185>
2. Althoff, D. M., **Fox, K. A.** and Frieden, T. (2014), The role of ecological availability and host plant characteristics in determining host use by the bogus yucca moth *Prodoxus decipiens*. *Ecological Entomology*, 39: 620–626. doi: 10.1111/een.12141. <http://onlinelibrary.wiley.com/doi/10.1111/een.12141/abstract>
3. Darwell, C. T., **Fox, K. A.** and Althoff, D. M. (2014), The roles of geography and founder effects in promoting host---associated differentiation in the generalist bogus yucca moth *Prodoxus decipiens*. *Journal of Evolutionary Biology*, 27: 2706–2718. doi: 10.1111/jeb.12529. <http://onlinelibrary.wiley.com/doi/10.1111/jeb.12529/abstract>

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RELEVANT COURSEWORK

1. **BIO326: Genetics.** Spring 2015 (Belote); Syracuse University. Principles of inheritance, structure and synthesis of nucleic acids and proteins, basic enzymology, microbial genetics, recombinant DNA technology and introduction to genomics.
2. **BIO345: Ecology and Evolution.** Fall 2014 (Althoff/Fridley); Syracuse University. Survey of modern topics in ecology and evolutionary biology. Evolution, phylogenetics, animal behavior, population ecology, community ecology and ecosystems. Final grade: 95 (A)
3. **Independent Study: The Analysis of Biological Data (2008; Whitlock and Schluter).** Fall 2014. Weekly review and exercises with D. Althoff.

REFERENCES

- **Dr. Jason Fridley (current supervisor)**, Associate Professor, Syracuse University, Department of Biology, 448 Life Sciences Complex. Tel: 315-443-3098. Email: fridley@syr.edu. <https://sites.google.com/site/fridleylab/home>
- **Dr. David Althoff (former supervisor)**, Assistant Professor, Syracuse University, Department of Biology, 440 Life Sciences Complex. Tel: 315-443-1096. Email: dmalthof@syr.edu. <http://althofflab.syr.edu>
- **Dr. Kari Segraves (former supervisor)**, Associate Professor, Syracuse University, Department of Biology, 438 Life Sciences Complex. Tel: 315-443-4899. Email: ksegrave@syr.edu. <http://segraveslab.syr.edu>
- **Dr. Kenneth Mudge (M.Sc. committee chair)**, Associate Professor, Cornell University, Department of Horticulture. Tel: 607-255-1794. Email: kwm2@cornell.edu. <http://hort.cals.cornell.edu/people/kenneth-mudge>
- **Dr. William Miller (M.Sc. committee member)**, Professor, Cornell University, Department of Horticulture. Tel: 607-255-1799. Email: wbm8@cornell.edu. <http://hort.cals.cornell.edu/people/bill-miller>
- **Dr. Rebecca Nelson (former supervisor)**, Professor, Cornell University, Department of Plant Pathology and Plant-Microbe Biology. Tel: 607-254-7475. Email: rjn7@cornell.edu. <http://pppmb.cals.cornell.edu/people/rebecca-nelson>