ESC 358C
110 Sachem St. **Sarah Federman** **sarah.federman@yale.edu**
New Haven, CT 06511 **(203) 432-7168**

EDUCATION

Department of Ecology & Evolutionary Biology, Yale University
Degree: PhD, expected 2018
Adviser: Michael Donoghue
Yale School of Forestry & Environmental Studies, New Haven, CT
Degree: Master of Forest Science, May 2012
Adviser: Mark Ashton, Douglas Daly (New York Botanical Garden)
Barnard College at Columbia University, New York, NY
Degree: Bachelor of Arts, May 2009
Major: Biological Sciences **Honors:** Cum Laude

HONORS AND AWARDS

Strachan Donnelley Student Award, 2012: Awarded by the Yale School of Forestry & Environmental Studies for the caliber of the master's project: Gene flow and dispersal of *moriche* (*Mauritia flexuosa*) among palm swamps in western Amazonia: implications for biogeography and habitat fragmentation. *2012.*
NSF graduate research fellowship program: Five year fellowship accepted in 2011 and placed on reserve for use beginning in the academic year of 2012-2013. Fellowship awarded for the study: Gene flow and dispersal of *moriche* (*Mauritia flexuosa*) among palm swamps in western Amazonia: implications for biogeography and habitat fragmentation. *Spring 2011-present*
Tropical Resources Institute Fellowship: Funding through Yale University's Tropical Resources institute for fieldwork in Acre, Brazil on gene flow among populations of *Maurtia flexuosa*. *April 2011-present*
Carpenter-Sperry grant: A grant through the Yale School of Forestry & Environmental Studies, which provides matching funds for summer research. Grant awarded for the study: Genetic diversity of the *moriche* palm, *Mauritia flexuosa* (Arecaceae). *Summer 2011*
Cullman Fellowship: A fellowship through the New York Botanical Garden (NYBG), which provides two students with full tuition and some research funds at the Yale School of Forestry & Environmental Studies. *2010-Present*
Princeton in Latin America Fellowship (PiLA): A fellowship allowing select students to work with an NGO in Latin America for one year. Accepted for work with the Amazon Conservation Association at the Los Amigos Biological Research Station in Madre de Dios, Peru. Gained experience in community relations, coordinating research, running a field station, and myriad field skills including: mammals transects, setting camera traps, mistnetting, and vegetation transects. *Academic year of 2009-2010*
Centennial Scholar: Grant and scholarship program allowing fifteen students to do long term independent research in the field of their choice: ecology and natural history of *Canarium* spp. (Burseraceae) in Madagascar (see below). *January 2006-May 2009*
Summer Undergraduate Research Fellowship (SURF): Grant providing funds for select students' undergraduate research in university labs. *Summer 2008*

RELEVANT WORK & RESEARCH EXPERIENCE

Plant Diversity and Evolution: Teaching Fellow
Mentor: Professor Michael Donoghue, Yale University, New Haven, CT
Description: Help students with lecture material; grade exams; help plan and set-up laboratory exercises. *Fall 2012*
Revision of the Genus *Canarium* (Burseraceae)
Mentor: Dr. Douglas Daly, NYBG, New York, NY
Project: To describe 26 new species in the genus *Canarium* (Burseraceae) which emerged from collections of Madagascan individuals in 2007 and 2008. The revision will be submitted for publication to *Adansonia*, the journal of the Jardin des Plantes, Paris. *September 2011-present*
Gene flow and dispersal of *moriche* (*Mauritia flexuosa*) among palm swamps in Western Amazonia
Mentor: Dr. Gisella Caccone, Yale University, New Haven, CT
Project: To study gene flow and dispersal among swamp populations of *Mauritia flexuosa* (Arecaceae) in Acre, Brazil within the context of habitat fragmentation and landscape change. The study will use 13 microsatellite loci developed for *M. flexuosa* during the summer of 2011. *September 2011-2012*
Archetypes and the Environment: Teaching Fellow
Mentor: Dr. Paul Draghi, Yale University, New Haven, CT
Description: Assign readings, help to lead discussion, advise and aid students with their term papers, and organize class outings and activities. *September 2011-2012*
Development and Characterization of Microsatellites in *Mauritia flexuosa* L.f. (Arecaceae)
Mentor: Dr. Gisella Caccone, Yale University, New Haven, CT
Project: Developed 13 novel and highly polymorphic microsatellite loci for the Amazonian Palm *Mauritia flexuosa*. Gained experience in a variety of lab techniques, analytical tools, and research methods for troubleshooting wet-lab procedures. *May 2011-September 2011*

Vegetative regeneration of an abandoned mining site in Madre de Dios, Peru
Mentor: Dr. Adrian Tejedor, CICRA field station, Madre de Dios, Peru.
Project (funded by PiLA): Performed research for the CICRA field station on the successional regeneration of pristine and anthropogenically modified riverbanks. Gained experience in designing field-sampling methodology, vegetation transects, plant identification, collecting field samples, making herbarium specimens. *August 2009-June 2010*
Fibroblast growth factor function in the development of chicken ribs.
Mentor: Dr. Jennifer Mansfield, Barnard College, New York, NY
Project: Explored the genetic mechanisms regulating the development of the axial skeleton in chick embryos. The study focused on the directional growth of ribs, and proposed a positive feedback loop between the cell-to-cell signaling molecules Fgf8 and Fgf10 and their receptors as a mediator in rib directional development. Understanding these mechanisms of control will help to explain the origins of the varied axial body plans found in vertebrates as divergent as birds, snakes, turtles, and mammals. *January 2007- May 2009*
The natural history and dispersal of *Canarium* spp. (Burseraceae) in Betampona, Madagascar.
Mentor: Dr. Douglas Daly, NYBG, New York, NY
Project: *Feb-May 2008:* Field research in Betampona Reserve, Madagascar on density and distribution of *Canarium* spp. (Burseraceae), community composition analysis, feeding experiments on specific lemur species. Gained experience in designing field-sampling methodology, working with captive populations of lemurs, performing vegetative transects, making floristic collections, preparing herbarium specimens. *January 2008-August 2009* worked in the NYBG to compile data into a larger database. Gained experience in herbaria, making summary maps in GIS, and statistical analyses of field data.
Introduction to Molecular and Cellular Biology Lecture: Teaching Assistant
Mentor: Dr. Matthew Wallenfang, Barnard College, New York, NY
Description: Graded exams and wrote quiz questions. Held office hours and review sessions, developed teaching skills. *Spring 2007*

PUBLICATION

Federman S, Hyseni C, Clement W, Caccone A. (2011) Isolation of 13 novel highly polymorphic microsatellite loci for the Amazonian Palm *Mauritia flexuosa* L.f. (Arecaceae). *Conservation Genetics Resources.* Published online: 10.13.2011

MEMBERSHIP AND SERVICE

Women in Science at Yale: Mentor undergraduate women in at Yale University who are interested in pursuing a career in the sciences. *September 2010-present*
Joint Yale-UNEP Program: Online Access to Resources in the Environment program, **Student Assistant**: a project providing members in developing countries affordable access to scientific literature on the environment. *August 2010-2012*
Chair of Student Ethnobotany Group (STIGMA): organize workshops, skill-shares, and talks regarding ethonobotany and food politics. Examples include: mycology tours, 'dinner with an ethnobotanist', and grafting workshops. *September 2011-2012*
Columbia Food Sustainability Project, Grant Houses Community Garden: Helped Grant Houses community members gain permission from the New York City Housing Authority to implement their own community garden. Participated in community board meetings and the after-school program to promote the garden as a community building exercise between Columbia University and West Harlem. Organized afterschool educational field trips and community events. *2008-May 2009*
Columbia Food Sustainability Project: Helped to maintain and coordinate Columbia University's on- campus garden and raised community awareness about food justice issues. Worked on campus to create more opportunities for the consumption of locally grown and organic foods. *2007-May 2009*

RELEVANT SKILLS

Languages
Fluent Spanish, basic conversational Portuguese
Software
GIS, statistical programming in 'R', basic remote sensing in ENVI, fragment analysis in GeneMarker, Adobe Illustrator, photographic image processing in Lightroom