



The National Great Rivers
Research & Education Center



9th Annual St. Louis Ecology, Evolution, and Conservation (SLEEC) Retreat Lewis and Clark Community College / NGRREC September 21, 2019

Welcome to the 9th Annual SLEEC Retreat, hosted by Lewis and Clark Community College and the National Great Rivers Research Education Center (www.ngrrrec.org).

RETREAT (8am-530pm) – The retreat will be held in the Commons building at the Godfrey Campus of Lewis and Clark Community College, located at 5800 Godfrey Rd, Godfrey, IL 62035 (about 30-40 minutes north of St. Louis). Check-in is from 8-9 a.m., with the retreat running until 5:30 p.m. The full schedule (including speakers and posters) is detailed below. I have also attached a map to show where Lewis and Clark Community College is in relation to St Louis (**If you put “Lewis and Clark Community College Benjamin Godfrey Campus” into Google Maps then it will get you there**), and where to park once on campus (near the Commons building).



The Commons building at Lewis and Clark Community College, site of the 9th annual SLEEC retreat.

DINNER (6-9pm) – The dinner event will be held at the National Great Rivers Research and Education Center, located at One Confluence Way, East Alton, 62024 IL. NGRREC is on the return drive to St Louis from Lewis and Clark Community College, on the banks of the Mississippi River. If you put “NGRREC” into google maps it will get you there. The dinner event will start at 6pm, with dinner being served at 7pm. **Note that while registration to secure dinner has closed, you are still welcome to attend but not eat (there will be a cash bar).**



The NGRREC Field Station, where the family-friendly dinner event will be held.

9th SLEEC SCHEDULE

Registration and welcome

08:00 Bagels and coffee: registration; setting up posters, loading presentations

09:00 Welcome: Bob Marquis (UMSL); Dale Chapman (President, LCCC); Tony Dell (NGRREC)

Morning session (moderated by Sacha Heath, LEC)

09:15 Patricia Barbera (MOBOT) *"Conservation projects at the Africa and Madagascar Department of the Missouri Botanical Garden"*

09:30 Colin Donihue (WUSTL) *"Hurricane effects on anoles span geographic and phylogenetic scales"*

09:45 Amanda Wu (UMSL) *"Climate, herbivory, or soil microbes: What determines species range size in oaks (Quercus)?"*

10:00 Charlie Blake (NGRREC) *"Designing citizen science research to generate robust scientific findings: a case study on the impact of stream channelization"*

10:15 Stephen Murphy (MOBOT) *"Using probabilistic species pools to predict the identities of unsampled species: integrating species distribution and range models into studies of local communities"*

Morning break

10:30 Coffee and posters

2nd morning session (moderated by James Stroud, WUSTL)

11:00 Serena Acha (UMSL/MOBOT) *"Phylogenomics of Passiflora sect. Decaloba reveals strong biographic structuring of clades"*

11:15 Brigitte Williams (SLU/MOBOT) *"Rethinking molecular biodiversity: Exploring epigenomic variation within a clonal individual under contrasting environmental conditions"*

11:30 Michael Landis (WUSTL) *"Modeling phylogenetic biome shifts on a planet with a past"*

11:45 Zhaolin Lu (SLU) *"Evolutionary dynamics of transcription initiation landscapes in yeasts"*

12:00 John Grady (NGRREC) *"Biological power and the diversity of life"*

Lunch

12:15 Lunch break (including posters)

12:45 Optional tour of LCCC sculpture garden

Afternoon session (moderated by Brett Seymoure, LEC)

13:30 Robert Marquis (UMSL) *"Declines and resilience of communities of leaf chewing insects on Missouri oaks following spring frost and summer drought"*

13:45 John Crawford (NGRREC) *"Efficacy of wetland creation for amphibian conservation"*

14:00 Isabel Loza (UMSL/MOBOT) *"Spatial legacies of the Great American Biotic Interchange on Central American tree floras"*

- 14:15 Peter Minchin** (SIUE) *“Effects of climate change on the alpine and subalpine vegetation of the Mt. Field National Park, Australia”*
- 14:30 Rachel Becknell** (WUSTL) *“Determining the Role of Soil Microbes in Rare Plant Reintroduction & Ecosystem Restoration”*
- 14:45 Tom Valone** (SLU) *“Invasion intensity influences scale-dependent effects of an exotic species on native plant diversity”*

Poster session

15:00 Coffee and posters (Cash bar: beer and wine)

Keynote address

16:30 Jason Rohr (University of Notre Dame) *“Dispelling the controversy surrounding biodiversity-infectious disease relationships”*

Concluding remarks

17:30 Tony Dell (NGRREC)

Dinner event

18:00 NGRREC (Buffet dinner, cash bar, tour of the field station and facilities, kids activities, etc.)

21:00 End of festivities!

POSTERS

1. **Katie Mazanec**, Carla Campbell, Dev Niyogi, Mark Fitch (Biological Sciences Department at Missouri University of Science and Technology)
Mitigating Urban Runoff with Floating Treatment Wetlands
2. **Matthew W. Austin** & Aimee S. Dunlap (University of Missouri - St. Louis, Department of Biology)
"Implications of intraspecific variation for bumble bee (Apidae: Bombus) ecology and conservation"
3. **Maris Brenn-White** (Saint Louis Zoo / Institute for Conservation Medicine), Ainoa Nieto-Claudin (Complutense University of Madrid, Spain & Charles Darwin Foundation, Ecuador); Fernando Espern (Complutense University of Madrid, Spain & INIA-CISA, Spain); Sharon L. Deem (Charles Darwin Foundation, Ecuador & Saint Louis Zoo Institute for Conservation Medicine)
First Detection of Antimicrobial Resistance Genes by qPCR in Free-Living Galapagos Tortoises
4. **Raia Hasan**, Ashley Buchanan, Kyra N. Krakos (Maryville University)
From Peru to Florence, Italy: an ethnobotanical study of Dorstenia contrajerva found in a fever water recipe of the Medici
5. **Marsha Kassa**, Emily Vago, Patrick Glass, Kyra Krakos (Maryville University)
Comparative study of the reproductive biology of Tradescantia ohiensis in an urban and rural population
6. **Jessica Newburry** and David Duvernell (Missouri University of Science and Technology)
An Environmental DNA Biodiversity Survey of the Big Piney River
7. **Alexis Acoff** and Danielle N. Lee (Southern Illinois University Edwardsville, Department of Biological Sciences)
Assessment of Field Mice Habitat on Southern Illinois University Edwardsville campus
8. **Uchechukwu Agali** (Harris-Stowe University), Daniel Sasson (Saint Louis University), Kasey Fowler-Finn (Saint Louis University)
A comparison of thermal effects on male signals and female preferences across populations of the treehopper Enchenopa binotata
9. Christine E. Edwards (MBG), **Burgund Bassuner** (MBG), Chris Birkinshaw (MBG Madagascar Research and Conservation Program, Antananarivo), Christian Camara (MBG Madagascar Research and Conservation Program, Antananarivo), Adolphe Lehavana (MBG Madagascar Research and Conservation Program, Antananarivo), Porter P. Lowry II (MBG, Museum National Histoire Naturelle,

Sorbonne University, Paris), James S. Miller (MBG), Andrew Wyatt (MBG), and Peter Wyse Jackson (MBG).

The rediscovery of the presumed-extinct Dracaena umbraculifera

10. **Morgan Bertolino**, Emily Vago, and Kyra N. Krakos (Missouri Botanical Garden, Shaw Nature Reserve, Litzsinger Road Ecology Center, Maryville University)

The impact of variation in habitat location on the reproductive ecology of prairie species Veronicastrum virginicum

11. Maryam Noroozi (Kharazmi University, Tehran, Iran), **David Bogler** (Missouri Botanical Garden), James Miller (Missouri Botanical Garden), Mehrshid Riahi (Kharazmi University, Tehran, Iran), Farrokh Ghahremaninejad (Kharazmi University, Tehran, Iran)

Systematic Significance of Pollen Morphological Variation in Tribe Lithospermeae

12. **Jessica Brooks** (Missouri University of Science and Technology), David Duvernell (Missouri University of Science and Technology), Jessica Brooks (Missouri University of Science and Technology), Leah Berkman (Missouri Department of Conservation)

*Genetic Assessment of Restored Alligator Gar Populations (*Atractosteus spatula*) in Missouri*

13. **Carla A Campbell** (Missouri University of Science and Technology, Civil, Architectural and Environmental Engineering), Katherine M Mazanec (Missouri University of Science and Technology, Biological Sciences), Dev K Niyogi (Missouri University of Science and Technology, Biological Sciences), Mark W Fitch (Missouri University of Science and Technology, Civil, Arch. and Environmental Engineering)

Mitigating Urban Runoff with Floating Treatment

14. **Eva M. Colberg** (Department of Biology & Harris World Ecology Center, University of Missouri-St. Louis), Lauren Jenkins (Department of Biology, Wheaton College), Robert J. Marquis (Department of Biology & Harris World Ecology Center, University of Missouri-St. Louis)

A Natural History of Seed Dispersal by Ants in Missouri Woodlands

15. **Deanna Deterding** (Southern Illinois University Edwardsville), Laura Kreher, Kyra N. Krakos (Maryville University School of Arts and Sciences, Missouri Botanical Garden)

Bringing a little Middle Earth to Maryville University: Creating an educational native plant garden on campus.

16. **Nina S. Fogel**, Trey Hull and Gerardo R. Camilo (Saint Louis University Department of Biology and Department of Integrated and Applied Sciences)

What is there there? Quantifying urban residential land use via remote sensing: preliminary findings

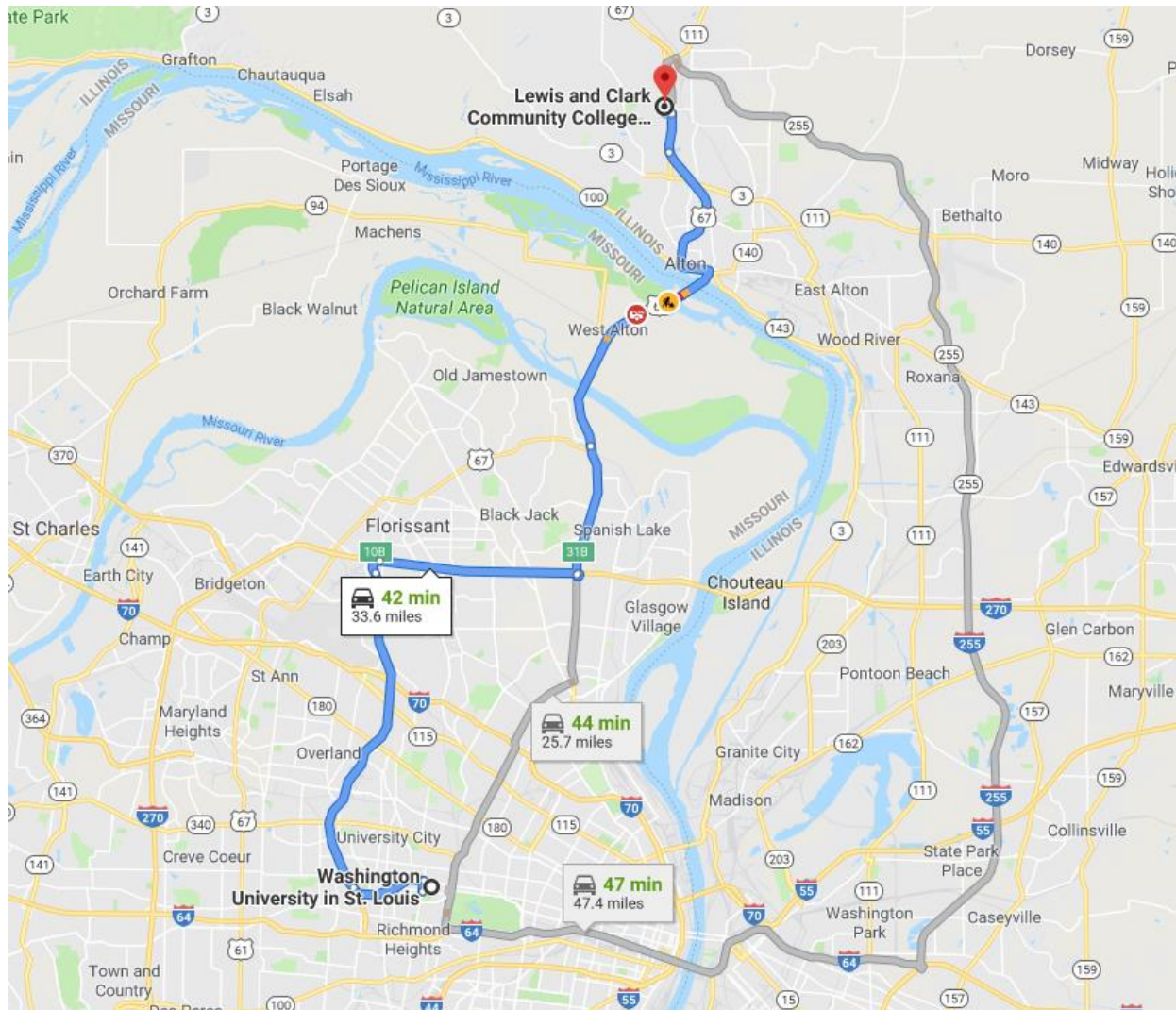
17. **Lillian Germeroth**, Theodore Sumnicht, Robin Verble (Missouri University of Science and Technology)
Leaf litter ant community diversity of Crocker Range, Sabah, Malaysia
18. **Hannah-Beth Griffis** and Danielle Lee (Department of Biological Sciences, Southern Illinois University Edwardsville)
*Differences in microhabitat preferences and behaviors in white-footed mice (*Peromyscus leucopus*)*
19. **Jared Harrison**, Joseph Stumbo, Kyra N. Krakos (Maryville University, Missouri Botanical Garden)
*The floral traits and seed morphology of a potentially new species of *Oenothera* sect. *Gaura* in the Trans-Pecos region*
20. Yam M. Pineda (Departamento de Ciencias Biologicas, Universidad de los Andes, Bogota, Colombia), Andres J. Cortes (Department of Biological and Environmental Sciences, University of Gothenburg, Gothenburg, Sweden), Santiago Madrin (Departamento de Ciencias Biologicas, Universidad de los Andes, Bogota, Colombia; Jarden Botanico de Cartagena Guillermo Pieres, Turbaco, Colombia) and **Ivan Jimenez** (Center for Conservation and Sustainable Development, Missouri Botanical Garden)
*The nature of *Espeletia* species*
21. **Wen-Hsi Kuo**, Linda Small, Kenneth Olsen (Washington University in St. Louis)
Cyanide metabolic pathway in cyanogenic plants
22. **Anthony Macchiano**, Kasey Fowler-Finn (Department of Biology, Saint Louis University)
Long term effects of temperature on vibrational courtship signaling in *Enchenopa binotata* (Hemiptera: Membracidae)
23. **James Medina**, Justine Garcia, Joan Strassmann, David Queller (Washington University in St. Louis / Biology)
*Can *Dictyostelium* rescue free-living *Burkholderia* from interspecific competition?*
24. **Emily Miller**, Noah Leith, Kasey Fowler-Finn (Department of Biology, Saint Louis University)
*Thermal sensitivity in walking performance of *Enchonopa binoatata* (Hemiptera: Membracidae)"*
25. Lisa Danback (Webster University), Gerardo Camilo (St. Louis University), **Nicole Miller-Struttman** (Webster University)
Spotting bee diversity: Testing the accuracy of citizen science data
26. **Grace Mortimer**, LeAnn Sweeney, Emily Vago, Marsha Kassa, Kyra N. Krakos (Maryville University)

Evaluating Baptisia alba as a pollinator resource in an urban versus rural habitat."

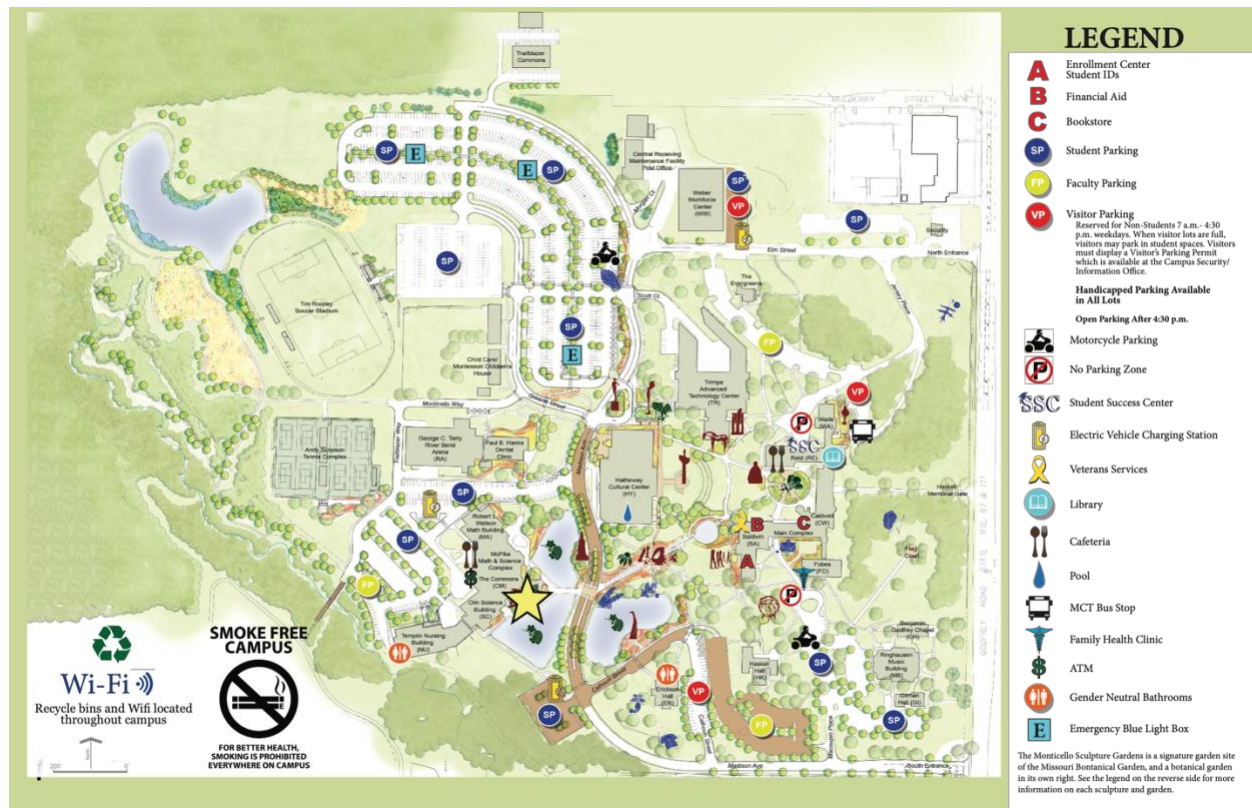
27. **Alan Moss** (Saint Louis University), Zong-Xin Ren (Kunming Institute of Botany), Peter Bernhardt (Saint Louis University)
Bumblebees in the Himalayas
28. **Jennifer C Mullikin**, Retha M. Edens-Meier, Gerardo R. Camilo (Saint Louis University)
*Behavioral variation and pollen choice in specialist bee *Ptilothrix bombiformis* across an urban to rural gradient*
29. **Joseph Stumbo**, Tauna Bollinger, Caleb Dovak, Emily Petruccelli, Elizabeth Esselman (Southern Illinois University Edwardsville, Missouri Botanical Garden)
*The breeding system of a rare terrestrial orchid *Spiranthes vernalis**
30. **LeAnn Sweeney**, Marsha Kassa, Emily Vago, Grace Mortimer, Kyra N. Krakos (Maryville University)
*A comparative study of the reproductive biology of *Monarda fistulosa* in urban vs. rural population*
31. **Joel F. Swift** (Saint Louis University, Donald Danforth Plant Science Center), Megan Hall (Division of Plant Sciences, University of Missouri), Misha T. Kwasniewski (Department of Food Science, University of Missouri), and Allison J. Miller (Saint Louis University, Donald Danforth Plant Science Center)
*The root of it all: Factors influencing plant-associated microorganism communities in *Vitis**
32. **Yongjun Tan** and Dapeng Zhang (Department of Biology in Saint Louis University)
A New CR-Effector Family Underlying Fungal Meiotic Drive
33. **Emily Vago**, P. Xavier Glass & Kyra N. Krakos (Maryville University)
How to Teach Ecology in a Missouri Winter: Using Ecological Data in a Virtual Reality Environment as a Teaching Tool
34. **Wedger, J. Marshall** (Washington University in St. Louis, Biology Department); Burgos, R. Nilda (University of Arkansas in Fayetteville, Department of Crop, Soil, and Environmental Sciences); Olsen, M. Kenneth (Washington University in St. Louis, Biology Department)
Genomic consequences of changing agricultural practices on weedy rice
35. **Nick Wells**, Richard Essner (SIUE/Biology)
Changes in bird community structure due to anthropogenic noise in an old growth forest

36. **Amanda (Yingtong) Wu**, Ivan Jimenez, Robert E. Ricklefs (UMSL, Missouri Botanical Garden)
The morphometric analysis of a rare oak species -- Maple-Leaf Oak
37. Alison Mullis (Saint Louis University), Zhaolian Lu (Saint Louis University), **Yu Zhan** (Saint Louis University), Tzi-Yuan Wang (Biodiversity Research Center, Academia Sinica, Nankang, Taipei, Taiwan), Judith Rodriguez (Saint Louis University), Ahmad Rajeh (Saint Louis University), Ajay Chatrath (Saint Louis University), Zhenguo Lin (Saint Louis University)
Parallel Concerted Evolution of Ribosomal Protein Genes in Fungi and Its Adaptive Significance

How do I get to Lewis and Clark Community College? The retreat will take place at Lewis and Clark Community College from 8am to 530pm. The retreat is located about 30-40 minutes north of St. Louis, at 5800 Godfrey Rd, Godfrey, IL 62035. Just put “Lewis and Clark Community College Benjamin Godfrey Campus” into Google Maps and it will get you there. If you get lost, then call Tony Dell’s cell (314-709-6098).



Once on campus, where do I park and how do I get to the right building? – If you are coming from St Louis, then you will be heading north up Godfrey Road. Enter Lewis and Clark Community College at the south entrance, and follow the road straight for a while until it veers right. On your left will be the Commons building, with a small pond in front of it (**yellow star in the bottom center of the map below**). There will be signs for parking, but space is available on both sides of the building. People will be around to orientate you towards the Commons building, and the retreat room inside the Commons.



Where is the dinner event? – The dinner will take place at the National Great Rivers Research and Education Center (NGRREC), from 6:00-9:00 p.m. NGRREC is located at 1 Confluence Way, East Alton, IL 62024 (see map below). **Just put “NGRREC” into google maps and it will get you there.**

Dinner will be served at 7pm, and there will be a cash bar open all night. **Note that while registration to secure dinner has closed, you are still welcome to attend but not eat.** The dinner event will be family friendly. We will have tours available of the unique NGRREC building (see image to the right), including the river-view room, laboratory facilities, mesocosms, and the green roof which is amazing at sunset!



The NGRREC Field Station, where the family-friendly dinner event will be held.

