Cleverson de Sousa Lima
Research Assistant
clevslima@uky.edu +1 (859) 691-3499
334 Thomas Hunt Morgan Building. Lexington, KY 40508

Education

2. University of Kentucky. Doctorate in Biology (PhD). Lexington, KY. United States (2024 – current).

1. University Cidade de São Paulo. Bachelor of Science. São Paulo, SP. Brazil.
Major: Biological Sciences (2016 - 2019).

Research experience

3. Adaptations to extreme environmental conditions in Antarctic midges (08/2021 – Current).
Department of Entomology, College of Agriculture, Food and Environment, University of Kentucky.

> Investigating the relative importance of the genes responsible for regulating recovery from freezing in Antarctic midges; Investigating how midges cope with different stressors posed by Antarctica's extreme climate.

Funded by National Science Foundation – NSF (grant number 1850988 - https://www.nsf.gov/awardsearch/showAward?AWD_ID=1850988*).*

2. Regulation of Thermal Tolerance in Leaf-cutting Ants (11/2018 – 11/2019).
Department of Physiology, Institute of Biosciences, University of São Paulo.

> Physiological and environmental factors (body size, dehydration, time of exposure) influencing leaf-cutting ants' tolerance to high temperatures were investigated to understand how these animals integrate physiological and behavioral cues to cope with challenges posed by Climate Change.

Funded by Fundação de Amparo à Pesquisa do Estado de São Paulo – FAPESP (grant number 2018/15664-5 - https://bv.fapesp.br/en/bolsas/181979/regulation-of-thermal-tolerance-in-leafcutter-ants/*).*

1. A Method to Evaluate Leaf-Cutting Ants' Thermal Tolerance (08/2017 – 08/2019).

Department of Physiology, Institute of Biosciences, University of São Paulo.

> Designing and assembling a device and a method to measure small arthropods' tolerance to high temperatures.

Peer-reviewed publications

1. **Lima, C.**, Helene, A. F., & Camacho, A. (2022). Leaf-cutting ants' critical and voluntary thermal limits show complex responses to size, heating rates, hydration level, and humidity. *J Comp Physiol B* **192,** 235–245. https://doi.org/10.1007/s00360-021-01413-6

Presentations

Talks

6. Recovery from freezing in the Antarctic midge, *Belgica antarctica* (invited speaker, bioenergetics symposium). 2024. XXVII International Congress of Entomology. Kyoto, Japan.

5. The importance of cross-tolerance in a polyextremophile: the Antarctic midge, *Belgica antarctica* (award winner, low temperature biology symposium). 2024. XXVII International Congress of Entomology. Kyoto, Japan.

4. Long-term recovery from freezing in the Antarctic midge *Belgica antarctica*. 2023. XIII Scar Biology Symposium. Christchurch, New Zealand.

3. Changes in energy reserves and genetic activity levels during recovery from freezing in the Antarctic midge *Belgica antarctica*. 2022. 9th International Symposium on the Environmental Physiology of Ectotherms and Plants (ISEPEP). Rennes, France.

2. Thermal tolerance in leaf-cutting ants: a story about the importance of methodology. 2022. Society for Integrative and Comparative Biology Annual Meeting (SICB). Phoenix, AZ. United States.

1. From undergrad to grad school: what is my place in science? (Outreach talk: 90 attendees). 2019. UNICID's biology thematic week. University of Cidade de São Paulo. São Paulo, SP. Brazil.

Posters

3. How leaf cutting ants cope with climate changes? Behavioral and physiological evidence. 2019. 27° USP International Symposium of Undergraduate Research (SIICUSP). São Paulo, Brazil.

2. Factors Affecting Heat Tolerance in Leaf Cutting Ants. 2019.
8th International Symposium on the Environmental Physiology of Ectotherms and Plants (ISEPEP). Buenos Aires, Argentina.

1. A method to evaluate how small arthropods behaviorally adjust their physiological constraints to temperature rises. 2018.
Organism-Environment Interactions: Timing, Plasticity and Metabolic Adjustments. University of São Paulo, São Paulo, Brazil.

Grants

2. IQC Assistantship • Instituto Questão de Ciência (R$ 10,000.00, one-time travel assistantship).

1. FAPESP Undergrad Research Grant • Fundação de Amparo à Pesquisa do Estado de São Paulo (#2018/15664-5, R$ 9,200.00 over one year).

Awards and Honors

6. Presentation Award for Young Scientists (PAYS). Awarded by the XXVII International Congress of Entomology. Kyoto, Japan. 2024.

5. US-SCAR early scientist career travel award. Awarded by University of San Francisco (US$ 2,500.00, *nationally competitive*). 2023.

4. US-SCAR early scientist career travel award. Awarded by University of San Francisco (US$ 2,500.00, *nationally competitive*). 2022.

3. Graduate Student Travel Award. Awarded by University of Kentucky + National Science Foundation (US$ 2,000.00). 2021.

2. Honorable Mention granted by the Universidade de São Paulo on the 27th International Symposium on Scientific and Technological Initiation. Student presentations. 2019.

1. Student and Young Scientist Award. Awarded by Sable Systems International. International Symposium on the Environmental Physiology of Ectotherms and Plants. Buenos Aires, Argentina. 2019.

Mentored students

1. Sam Cecconi (2023). Energetics of recovery from freezing in the Antarctic Midge, *Belgica antarctica*. Project developed as a requirement for ABT 395 Independent Study in Biotechnology. Martin-Gatton College of Agriculture, Food and Environment, Department of Entomology.

Teaching appointments

2. BIO 350 Animal Physiology (2024). Supervisors: Dr. Julie Pendergast, Dr. Melody Danley.

1. ENT 300 General Entomology (2023). Supervisor: Dr. Jen White.