

## Cleverson Lima

Graduate Research Assistant

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### Education

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2. University of Kentucky. PhD. Lexington, KY. United States.  
Animal Physiology and Genomics (2021 – Current).

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

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### Research experience

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3. Adaptations to extreme environmental conditions in Antarctic midges (08/2021 – Current).

Department of Entomology, College of Agriculture, Food and Environment. University of Kentucky.

Department of Biology, College of Arts & Sciences. 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](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1850988)).

*Expeditions to Antarctica: Feb-Apr 2023; Dec 2023-Apr 2024*

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.

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### Peer-reviewed publications

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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>

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### Presentations

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#### Talks

4. Long-term consequences of 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 activity: 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.

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### Grants

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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).

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### Awards and Honors

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7. US-SCAR early scientist career travel award. Awarded by University of San Francisco (US\$ 2,500.00, *nationally competitive*). 2023
  6. US-SCAR early scientist career travel award. Awarded by University of San Francisco (US\$ 2,500.00, *nationally competitive*). 2023.
  5. UK Entomology Departmental Award. Awarded by University of Kentucky (US\$400). 2022.
  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 University of São Paulo on 27<sup>th</sup> SIICUSP's student presentations. 2019.
  1. Student and Young Scientist Award. Awarded by Sable Systems International. 2019.
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