

Osmary A. Medina-Báez
Department of Biology
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EDUCATION

- 2020 – expected 2025 | Ph.D. in Biology, Case Western Reserve University, Cleveland, OH
Dissertation: Can butterfly thermal physiological traits predict their vulnerability to climate change?
Advisor: Dr. Karen C. Abbott
Co-advisor: Dr. Jean H. Burns
- 2018 – 2020 | M.Sc. in Biology, John Carroll University, University Heights, OH
Thesis: Are populations of the salamander *Bolitoglossa altamazonica* declining at low elevations due to rising temperatures?
Advisor: Dr. James I. Watling
- 2011 – 2016 | B.Sc. in Biology, University of Puerto Rico, Mayagüez, PR

PUBLICATIONS

* Undergraduate student

PUBLISHED

- Medina-Báez OA**, A Lenard, RA Muzychuk*, CRB da Silva, and SE Diamond. 2023. Life cycle complexity and body mass drive nonlinear climate vulnerabilities across ontogeny. *Conservation Physiology* 11 (1), coad058
- Veselka AJ, A Aponte-Gutiérrez, **OA Medina-Báez** and JI Watling. 2023. Upper Thermal Limits Predict Herpetofaunal Responses to Forest Edge and Cover in Tropical Forest. *Biotropica*, 55(2), pp.540-550.
- Prileson EG, J Clark*, SE Diamond, A Lenard, **OA Medina-Báez**, and RA Martin. 2023. Keeping your cool: No evidence for an evolutionary loss in overwintering physiology in response to urbanization in the Acorn Ant, *Temnothorax curvispinosus*. *Journal of Thermal Biology* 114, 103591

GRANTS AND AWARDS

- 2024 | **International Conservation Fund of Canada Research Fellowship** | \$10,000 | Co-PI | Manu Biological Station, Perú
- 2024 | **Ruth Barber Moon Graduate Student Award** | \$1,000 | Case Western Reserve University
- 2024 | **Oglebay Foundation Research Small Grants** | \$1,300 | PI | Case Western Reserve University
Department of Biology Oglebay Fund
- 2024 | **Oglebay Foundation Travel Small Grants** | \$1,500 | Case Western Reserve University
Department of Biology Oglebay Fund
- 2021 | **Oglebay Foundation Travel Small Grants** | \$1,071 | Case Western Reserve University
Department of Biology Oglebay Fund
- 2018 | **Segal AmeriCorps Education Award** | \$1,222.22

INVITED PRESENTATIONS

- Medina-Báez OA**, RA Muzychuk*, GG Deme, KC Abbott, JH Burns. ¿*Qué herramientas ayudan ante el cambio?* Physiological tolerances as a tool to assess butterfly vulnerability to climate change. Organized Special Session: Towards Equity in the Communication of Science: Harnessing the Power of AI for an Inclusive Tomorrow. August 7, 2024. Ecological Society of

America Annual Meeting, Long Beach, CA. (oral presentation, Spanish with English AI interpretation)

Medina-Báez OA. Can physiological traits predict butterfly vulnerability to climate change? April 30, 2024. Cuyahoga Valley National Park Pollinator Symposium, Peninsula, OH (oral presentation)

Medina-Báez OA. Using R Studio to create your personal website. Website design workshop & social. Women in Science and Humanities Earning Doctorates (WISHED) association, Case Western Reserve University, Cleveland, OH (oral presentation)

Medina-Báez OA. Efecto del cambio climático sobre organismos ectotermos [ENG *The effects of climate change in ectotherms*]. March 10, 2022. Women in Science Seminar Series. University of Puerto Rico, Arecibo, PR (oral presentation, remote, Spanish)

Medina-Báez OA. El efecto del cambio climático sobre la salamandra *Bolitoglossa altamazonica* en Villavicencio [ENG *The effects of climate change in the salamander Bolitoglossa altamazonica in Villavicencio*]. May 12, 2021. Talk series “Hablemos de Anfibios y su conservación”, Secretaría del Medio Ambiente, Villavicencio, Colombia (oral presentation, remote, Spanish)

ORGANIZED SYMPOSIA

2024 | H Fair, **Medina-Báez OA**, B Spiecker, HG Ortiz Cano. Towards Equity in the Communication of Science: Harnessing the Power of AI for an Inclusive Tomorrow. August 7. Ecological Society of America Annual Meeting, Long Beach, CA. (Organizer & speaker; Special Session)

2023 | **Medina-Báez OA**, HG Ortiz Cano, B Girdler. ¿Cómo haces Ecología? Como você faz Ecologia? How do you do Ecology? Latine Voices in Our Community of Ecologists. August 8. Ecological Society of America Annual Meeting, Portland, OR. (Organizer and moderator; Inspire Session)

PRESENTATIONS

* Undergraduate student

† High school student

Chen W*, A Pandian†, **OA Medina-Báez**, JH Burns. Analysis of Butterfly Wing Area and Coloration Using the Specialized Computer Program WinFolia. August 9, 2024. Symposium for Ecological Research, Cleveland Botanical Garden, OH. (poster)

Medina-Báez OA, RA Muzychuk*, GG Deme, SE Diamond. Assessing vulnerability of butterflies to climate change in Ohio using their physiological tolerances. April 6, 2024. Ecological Society of America Great Lakes Regional Conference, Kalamazoo, MI (oral)

Medina-Báez OA, RA Muzychuk*, SE Diamond. Can butterfly thermal physiological traits predict their vulnerability to climate change? December 12, 2023. Cleveland Metroparks Natural Resources Research Symposium, Parma, OH. (poster)

Medina-Báez OA, RA Muzychuk*, SE Diamond. Can butterfly thermal physiological traits predict their vulnerability to climate change? August 10, 2023. Ecological Society of America Annual Meeting, Portland, OR. (poster)

Diamond SE, **OA Medina-Báez**, CRB da Silva. May 16, 2023. Thermal physiological traits mediate butterfly range shifts under recent climate change. Species on the Move Conference, Bonita Springs, FL. (oral)

Medina-Báez OA, A Lenard, RA Muzychuk*, CRB da Silva, and SE Diamond. Life cycle complexity drives nonlinear, size-decoupled climate vulnerabilities across ontogeny. August 18, 2022. Ecological Society of America Annual Meeting, Montréal, Canada. (poster)

Diamond SE, CRB da Silva and **OA Medina-Báez**. Can species trait-based models of contemporary range shifts be rescued? June 28, 2022. Society for the Study of Evolution Annual Meeting, Cleveland, Ohio. (oral)

- Medina-Báez OA** and SE Diamond. Do thermal physiological traits explain variation in contemporary, climate-driven range shifts in North American butterflies? January 3-7, 2022. Society for Integrative and Comparative Biology Annual Meeting, Phoenix, AZ. (oral, remote)
- Muzychuk RA*, **OA Medina-Báez**, and SE Diamond. Interspecific variation in butterfly warming tolerances and consequences for population size under recent climate change. January 3-7, 2022. Society for Integrative and Comparative Biology Annual Meeting, Phoenix, AZ. (poster)
- Muzychuk RA*, **OA Medina-Báez**, and SE Diamond. Interspecific variation in butterfly warming tolerances and consequences for population size under recent climate change. Dec 3 – Dec 10, 2021. Case Western Reserve University. Intersections: SOUCRE symposium. (poster)
- Pu X*, A Lenard, **OA Medina-Báez**, and SE Diamond. Thermal limits across ontogeny in the butterfly *Vanessa cardui*. Dec 3 – Dec 10, 2021. Case Western Reserve University. Intersections: SOUCRE symposium. (poster)
- Medina-Báez OA**, AF Aponte-Gutiérrez, AJ Veselka, and JI Watling. Are populations of the salamander *Bolitoglossa altamazonica* declining at low elevations due to rising temperatures? January 5, 2021. Society for Integrative and Comparative Biology Annual Meeting, Virtual Conference. (oral, remote)
- Medina-Báez OA** and JI Watling. October 26, 2019. Thermal safety margins of *Bolitoglossa altamazonica* across an altitudinal gradient. OU/JCU Symposium, Ohio University, Athens, Ohio. (oral)
- Medina-Báez OA** and JI Watling. October 20, 2018. Critical Thermal limits in *Bolitoglossa altamazonica* across an elevational gradient. OU/JCU Symposium, John Carroll University, University Heights, Ohio. (oral)
- Medina-Báez OA**, KJ Hovey and KM O'Donnell. Breeding season phenology and demography of Frosted Flatwoods Salamanders (*Ambystoma cingulatum*) at St. Marks National Wildlife Refuge. March 24-25, 2018. 41st Annual Herpetology Conference, Gainesville, Florida. (poster)
- Hovey KJ, **OA Medina-Báez**, KM O'Donnell, W Barichivich and S Walls. Breeding season phenology and demography of Frosted Flatwoods Salamanders (*Ambystoma cingulatum*) at St. Marks National Wildlife Refuge. February 22-25, 2018. Southeast Partners in Amphibian and Reptile Conservation Meeting, Helen, Georgia. (poster)
- Medina-Báez OA** and AJ Novarro. Which species is better equipped for climate change? Thermal limits in two widely distributed salamanders. January 5, 2017. Society for Integrative and Comparative Biology Annual Meeting, New Orleans, Louisiana. (poster)
- Medina-Báez OA*** and AJ Novarro. Which species is better equipped for climate change? Thermal limits in two widely distributed salamanders. July 29, 2016. Mountain Lake Biological Station REU Seminar, Pembroke, Virginia. (oral)
- Medina-Báez OA*** and M Vega. General information about the invasive snake *Boa constrictor* in Puerto Rico. April 22, 2015. ARMY Earth Day Expo. Fort Buchanan, Guaynabo, Puerto Rico. (poster)
- Medina-Báez OA*** and MJ González. Effects of light and fish predation on benthic invertebrates. February 13, 2014. 7th NEA Science Day, University of Puerto Rico, Mayagüez, Puerto Rico. (poster)
- Medina-Báez OA*** and MJ González. Effects of light and fish predation on benthic invertebrates. August 2, 2013. Miami University REU Symposium, Oxford, Ohio. (oral)

RESEARCH AND WORK EXPERIENCE

2020 – 2024 | **Case Western Reserve University**, Biology Department, Cleveland, OH
 Graduate Research, Abbott Lab, Burns Lab & Diamond Lab
 Research Assistant, Diamond Lab
 Research topic: Butterfly thermal physiology and conservation

- 2018 – 2020 | **John Carroll University**, Biology Department, University Heights, OH
Graduate Research, Watling Lab
 Research topic: Tropical salamander thermal physiology and population decline
- 2017 – 2018 | **United States Geological Survey (USGS)**, St. Marks Natl. Wildlife Refuge, St. Marks, FL
Environmental Steward, Conservation Legacy (AmeriCorps) and USGS, October – May
 Research topic: Conservation of the threatened frosted flatwood's salamander
Ambystoma cingulatum
- 2017 | **Biomarine Professional Services**
Manatee Observer, San Juan Harbor Maintenance Dredge, San Juan, Puerto Rico, April – July
 Job: Ensure that dredging operations did not harm or endanger manatees
- 2016 | **Mountain Lake Biological Station**, University of Virginia, Pembroke, VA
Undergraduate Researcher, NSF Research experience for Undergraduates (REU) Program, May – July
 Research topic: Thermal limits across elevation in two widely distributed salamanders
- 2015 – 2016 | **University of Puerto Rico**, Aguadilla, PR
Technician for the West Coast Sea Turtle Project
 Job: Monitoring sea turtle's nests, hatchings, species management. Outreach for schools and the general public offering talks about sea turtle conservation.
- 2015 – 2017 | **University of Puerto Rico**, Biology Department, Mayagüez, PR
Undergraduate Field Assistant, Data and specimen collection
 Research topic: Niche partitioning strategies of two endemic *Sphaerodactylus* species found at Salt Flats Refuge in Cabo Rojo, P. R.
Undergraduate Field and Research Assistant, Telemetry data and specimen collection and dissections of *Boa constrictor*. Outreach for general audiences, offering talks about Herpetofauna in Puerto Rico
 Research topic: Movement and habitat distribution of an invasive species (*Boa constrictor*) in Puerto Rico
- 2015 | **Field stations in Guánica, Cabo Rojo and Vieques, PR**
Volunteer Field and Research Assistant, Data and specimen collection for PhD dissertation of N Angeli at Texas A&M. Practiced specimen preservation and tissue sample collection of *Pholidoscelis wetmorei* and *P. exsul*. Summer
- 2013 | **Miami University**, Oxford, OH
Undergraduate Researcher, NSF Research experience for Undergraduates (REU) Program, Summer (10 weeks)
 Research topic: Effect of light and fish predation on benthic invertebrates

TEACHING EXPERIENCE

- 2020 – 2024 | **Case Western Reserve University**, Biology Department, Cleveland, OH
 2024 | *Guest Lecturer*, Ecology course, September
 Topic: Adaptations to variable environments
 2024 | *Guest Lecturer*, Taming the tree of Life: Phylogenetic Comparative Methods, February
 Topic: Introduction to Phylogenetic Generalized Least Squares Analysis
 2024 | *Teaching Assistant*, Taming the tree of Life: Phylogenetic Comparative Methods, Spring
 2020-2024 | *Teaching Assistant*, Genes, Ecology and Evolution Laboratory, 4 semesters
- 2024 | **LeMoyne-Owen College**, Division of Natural and Mathematical Sciences, Memphis, TN
Guest Lecturer, Methods in Biological Sciences, April 10
 Topic: Ecophysiology of butterflies: which groups are most vulnerable to climate change?
- 2021 | **University of Puerto Rico**, Biology Department, Arecibo, PR

Guest Lecturer, General Biology course, Spring

Topic: Applying to NSF REU programs, and thesis seminar: Are populations of the salamander *Bolitoglossa altamazonica* declining at low elevations due to rising temperatures?

- 2018 – 2020 | **John Carroll University**, Biology Department, University Heights, OH.
2020 | *Graduate Assistant*, Geographic Information Systems Laboratory, Spring
2019 – 2020 | *Graduate Assistant*, Principles of Biology Laboratory II, Spring
2019 | *Graduate Assistant*, Principles of Biology Laboratory III, Fall
2019 | *Graduate Assistant*, Environmental Earth Science Laboratory, Fall
2018 | *Graduate Assistant*, Principles of Biology Laboratory I, Fall

MENTORSHIP

- 2020 – 2024 | **Research mentor**, Case Western Reserve University, Cleveland, OH
Wei Chen, Case Western Reserve University, Summer 2024
Ahalya Pandian, Solon High School, Summer 2024
Rut A. Muzychuk, Case Western Reserve University Spring 2021-Fall 2023
Jessica Furlough, Case Western Reserve University, Summer 2022
Melina Gabele, Case Western Reserve University, Fall 2021 and Summer 2022
Xuan Pu, Case Western Reserve University, Fall 2021
2023 – 2024 | **Mentor**, YES/SEO Near Peer Mentoring Program, Working with High School students navigating research and academia. Case Western Reserve University, Cleveland, OH. June 7 – July 28, 2023 & June 5 – July 24, 2024

SERVICE AND OUTREACH

- 2024 | **Abstract Reviewer**, Ecological Society of America Great Lakes Chapter Regional Conference, Kalamazoo, MI. Reviews: March 14, conference dates: Apr 5-7
2023 | **Thesis Defense Committee Member** for undergraduate student Yeni T. Molina Moreno. Thesis topic: “Calidad y sensibilidad térmica de *allobates juanii* (Morales, 1994) en diferentes coberturas de la vereda La Cuncia, (Villavicencio, Meta)”. Universidad de los Llanos, Villavicencio, Meta, Colombia. October 26
2023 | **Co-organizer**, Introduction to Innovations Workshop, Butterfly metabolic rate. Diamond SE, **OA Medina-Báez** and Deme GG. Case Western Reserve University, Cleveland, OH. July 21
2022 | **Co-organizer**, Introduction to Innovations Workshop, Butterfly life cycle. Diamond SE, **OA Medina-Báez** and E Prileson. Case Western Reserve University, Cleveland, OH. July 22
2022 | **Thesis Proposal Committee Member** for undergraduate student Yeni T. Molina Moreno. Thesis topic: “Calidad y sensibilidad térmica de *allobates juanii* (Morales, 1994) en diferentes coberturas de la vereda La Cuncia, (Villavicencio, Meta)”. Universidad de los Llanos, Villavicencio, Meta, Colombia. March 17
2021 | **Moderator and Judge** for Virtual Intersections SORCE Symposium, Case Western Reserve University, Cleveland, OH. December 3
2020 | **Thesis Defense Committee Member** for undergraduate student Sandra C. Valderrama. Thesis topic: "Ecología del comportamiento térmico de *Hyloxalus aff. subpunctatus* (anura: dendrobatidae), en el páramo de Ocetá, Boyacá-Colombia" Universidad Pedagógica y Tecnológica de Colombia, Tunja, Boyacá, Colombia. December 14

LEADERSHIP ROLES

- 2024 | **Program Director**, Planning committee, Ecological Society of America Great Lakes Chapter Regional Conference 2024
2024 | **Student Representative**, Ecological Society of America Great Lakes Chapter

2024 | **Executive board member**, Women in Science and Humanities Earning Doctorates (WISHED)

PROFESSIONAL DEVELOPMENT

2024 | **Entering mentoring** – An interactive short course on evidence-based practices for mentorship, August 4, Ecological Society of America Annual Meeting, Long Beach, CA.

2024 | **Generalized Linear Mixed Modeling Deep Dive**: Selecting conditional distributions, checking assumptions, and drawing inference for ecological data, August 9. Ecological Society of America Annual Meeting, Long Beach, CA.

2024 | **Ecological Society of America SEEDS GIS Workshop**, May 20-25, Florida A&M University, Tallahassee, FL

2023 | **Powerful Presentations - Speaking with impact**, Weatherhead Executive Education, May 23, Case Western Reserve University, Cleveland, OH

PROFESSIONAL SOCIETIES

Ecological Society of America | SEEDS Alumni | Latin America and Caribbean Chapter | Great Lakes Chapter

Society for Integrative and Comparative Biology

LANGUAGES

English proficient level

Spanish proficient level (Native)