

## Osmary A. Medina-Báez

Department of Biology  
Case Western Reserve University  
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### EDUCATION

Ph.D. in Biology, Case Western Reserve University, 2020 – present (expected Spring 2025)

Dissertation: Can butterfly thermal physiological traits predict their vulnerability to climate change?

Advisor: Dr. Karen C. Abbott

Co-advisor: Dr. Jean H. Burns

M.Sc. in Biology, John Carroll University, 2018 – 2020

Thesis: Are populations of the salamander *Bolitoglossa altamazonica* declining at low elevations due to rising temperatures?

Advisor: Dr. James I. Watling

B.Sc. in Biology, University of Puerto Rico, Mayagüez, 2011 – 2016.

### PUBLICATIONS

#### 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

#### IN REVIEW

Diamond SE, CRB da Silva and **OA Medina-Báez**. PapilioTherm, a dataset of thermal physiological traits of butterflies. (submitted July 2024)

### GRANTS AND AWARDS

**International Conservation Fund of Canada Research Fellowship** | \$10,000 | Co-PI | Manu Biological Station, Perú | July 2024 – February 2025

**Ruth Barber Moon Graduate Student Award** | \$1,000 | Case Western Reserve University | May 1, 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 | 2024.

**Oglebay Foundation Travel Small Grants** | \$1,071 | Case Western Reserve University Department of Biology Oglebay Fund | 2021

**Segal AmeriCorps Education Award** | \$1,222.22 | 2018

### INVITED PRESENTATIONS

**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 (remote)

**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 (remote)

#### ORGANIZED SYMPOSIA

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, 2024. Ecological Society of America Annual Meeting, Long Beach, CA. (Organizer & speaker; Special Session)

**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, 2023. Ecological Society of America Annual Meeting, Portland, OR. (Organizer and moderator; Inspire Session)

#### PRESENTATIONS

\* Undergraduate student

† High school student

**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. 41<sup>st</sup> 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

**Case Western Reserve University**, Biology Department, Cleveland, OH

*Graduate Research*, Abbott Lab, Spring 2023 – present

*Research Assistant*, Diamond Lab, Spring 2021, Fall 2021, Fall 2022 and Fall 2023

*Graduate Research*, Diamond Lab, Fall 2020 – Summer 2023

Research topic: Butterfly thermal physiology and conservation

**John Carroll University**, Biology Department, University Heights, OH

*Graduate Research*, Watling Lab, Fall 2018 - Spring 2020

Research topic: Tropical salamander thermal physiology and population decline

**United States Geological Survey (USGS)**, St. Marks National Wildlife Refuge, St. Marks, FL

*Environmental Steward*, Conservation Legacy (AmeriCorps affiliate) and USGS

October 2017 – May 2018

Research topic: Conservation of the threatened frosted flatwood's salamander *Ambystoma cingulatum*

### **Biomarine Professional Services**

*Manatee Observer*, San Juan Harbor Maintenance Dredge, San Juan, Puerto Rico, April 12 – July 4, 2017

Job: Ensure that dredging operations did not harm or endanger manatees

**Mountain Lake Biological Station**, University of Virginia, Pembroke, VA

*Undergraduate Researcher*, NSF Research experience for Undergraduates (REU) Program, May – July 2016

Research topic: Thermal limits across elevation in two widely distributed salamanders

**University of Puerto Rico**, Biology Department, Mayagüez, PR

*Undergraduate Field Assistant*, Data and specimen collection for master's student's thesis (R Smith), January 2016 – January 2017

Research topic: Niche partitioning strategies of two endemic *Sphaerodactylus* species found at Salt Flats Refuge in Cabo Rojo, P. R.

**University of Puerto Rico**, Aguadilla, PR

*Technician for the West Coast Sea Turtle Project*, February 2015 – November 2016

Job: Monitoring sea turtle's nests, hatchings, species management. Outreach for schools and the general public offering talks about sea turtle conservation.

**University of Puerto Rico**, Biology Department, Mayagüez, PR

*Undergraduate Field and Research Assistant*, Telemetry Data and specimen collection for M Vega master's thesis at UPRM. Specimen dissections for *Boa constrictor*. Outreach for general audiences, offering talks about Herpetofauna in Puerto Rico, January 2015 – December 2016

Research topic: Movement and habitat distribution of an invasive species (*Boa constrictor*) in Puerto Rico

**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 2015

**Miami University**, Oxford, OH

*Undergraduate Researcher*, NSF Research experience for Undergraduates (REU) Program, Summer 2013 (10 weeks)

Research topic: Effect of light and fish predation on benthic invertebrates

## TEACHING EXPERIENCE

**LeMoyné-Owen College**, Division of Natural and Mathematical Sciences, Memphis, TN

*Guest Lecturer*, Methods in Biological Sciences, April 10, 2024

Topic: Ecophysiology of butterflies: which groups are most vulnerable to climate change?

**Case Western Reserve University**, Biology Department, Cleveland, OH

*Guest Lecturer*, Taming the tree of Life: Phylogenetic Comparative Methods, February 19, 2024

Topic: Introduction to Phylogenetic Generalized Least Squares Analysis

*Teaching Assistant*, Taming the tree of Life: Phylogenetic Comparative Methods, Spring 2024

*Teaching Assistant*, Genes, Ecology and Evolution Laboratory, Fall 2020, Spring 2022 and Spring 2023

**University of Puerto Rico**, Biology Department, Arecibo, PR

*Guest Lecturer*, General Biology course, Spring 2021

Topic: Applying to NSF REU programs, and thesis seminar: Are populations of the salamander

*Bolitoglossa altamazonica* declining at low elevations due to rising temperatures?

**John Carroll University**, Biology Department, University Heights, OH.

*Graduate Assistant*, Principles of Biology Laboratory I, Fall 2018

*Graduate Assistant*, Principles of Biology Laboratory II, Spring 2019, and Spring 2020

*Graduate Assistant*, Principles of Biology Laboratory III, Fall 2019

*Graduate Assistant*, Environmental Earth Science Laboratory, Fall 2019

*Graduate Assistant*, Geographic Information Systems Laboratory, Spring 2020

## MENTORSHIP

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

## SERVICE AND OUTREACH

**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

**Abstract Reviewer**, Ecological Society of America Great Lakes Chapter Regional Conference, March 14, 2024, conference dates: Apr 5-7, 2024

**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

**Introduction to Innovations Workshop**, Butterfly metabolic rate. Diamond SE, OA Medina-Báez and Deme GG. Case Western Reserve University, Cleveland, OH. July 2023

**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, 2022

**Moderator and Judge** for Virtual Intersections SORCE Symposium, Case Western Reserve University, Cleveland, OH. December 2021

**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, 2020.

#### **LEADERSHIP ROLES**

**Program Director**, Ecological Society of America Great Lakes Chapter Regional Conference 2024, Planning committee, Spring 2024

**Student Representative**, Ecological Society of America Great Lakes Chapter, 2024

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

#### **PROFESSIONAL DEVELOPMENT**

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

**Powerful Presentations - Speaking with impact**, Weatherhead Executive Education, May 23, 2023, 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  
American Society of Naturalists

#### **LANGUAGES**

English proficient level

Spanish proficient level (Native)