Eduardo A. Navarro-Valencia

Entomologists interested in insect conservation, population dynamics, ecological restoration, and science communication.

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Education.

04/2020-Present - Bachelor's in biology at the University of Panama. Expected to finish in 2024. GPA of 2.4 out of 3 (1 is pass).

Relevant Courses: Agroecology, population ecology, conservation ecology, quantitative biology.

04/2023 – Physalia's Eukaryotic metabarcoding course 2023 cohort.

09/2022 – Cambridge Tropical Field Course 2022.

09/2018-09/2019 – Partial course work toward a degree of Applied Ecology at ČZU (University of Life Sciences in Prague).

Research and work experience.

06/2023-12/2024. Research Fellow, Smithsonian Tropical Research Institute's Arthropod Program.

- Data collection for the insect monitoring protocols.
- Data analysis for metabarcoding projects, bioacoustics, computer vision and LIDAR data.
- Field work using diverse types of insect collection methods (Butterfly transect, light-trapping, Berlese, etc) and sample processing.
- DNA Barcoding Plates preparation.
- Coordination of scientific visits to the laboratory.
- Use and maintenance of Automated Insect Monitoring Systems (AMI Traps).
- Use, maintenance, processing and curating of Bioacoustics data using the SwiftOne Equipment from Cornell University, and a protocol for Orthoptera rearing and calls recording.

04/2022- 05/2023 Research Intern, ForestGEO Arthropod Initiative. Sponsored by the SENACYT's "Programa de Pasantías STRI-SENACYT".

- Design, conceptualization, and recording of functional trait studies for the Geometridae moths of BCI. (Under the supervision of Daniel Souto-Vilaros, Greg Lamarre and Yves Basset)
- Elaboration of a phylogeny for the Geometridae of BCI.

02/2022-04/2022. Research Intern, Laboratory of Neurobiology, Smithsonian Tropical Research Institute

- Dissected bees for chemical ecology analysis.
- Maintenance, rearing and recording of the Neurobiology Lab Experiments on Megalopta bees.
- Use of Gas chromatography equipment.

08/2019-01/2022. Volunteer in the laboratory ForestGEO Arthropod Initiative

- General updates for the Arthropod Initiative database and corresponding BOLD database
- Conceptualization, design, and development of interactive identification keys for certain groups of insects.
- Field work assistance for experiments related to butterfly thermal tolerance.

Relevant Leadership Positions

01/2023-12/2024. Social Media Manager (Twitter) for The Coleopterist Society (@Coleopsoc), The Coleopterist Society. USA

- Public dissemination of Beetle-related research.
- Literature scanning for Beetle-related research.

07/2022-06/2024. Student Association of the School of Biology, Student and Academic Opportunities Coordinator. University of Panama. Panama**.**

- Coordination of voluntary, internship and thesis opportunities between research centres and the School of Biology.
- Logistic management of the Student Association library.
- General fund-raising activities to cover cost for students in need.

03/2011- 01/2017. Ecoclub Friends of the Earth. Atalaya, Panama

- Speaker for community talks on sustainable development and nature conservation.
- Activities and logistic coordinator of the Ecoclub national camps from 2012-2017.

Personal achievements and awards

- Research award for an Internship by the SENACYT Panama under the program "Programas de pasantias STRI-SENACYT" for 3000$
- Scholarship holder of the "SCHOLARSHIPS OF THE GOVERNMENT OF THE CZECH REPUBLIC" for the year 2016 in the Czech Republic (https://www.msmt.cz/eu-and-international-affairs/government-scholarships-developing-countries)

Skills

- **Languages**; Spanish: Native, English: Fluent, Czech: Advanced, Portuguese: basic
- **Technical skills**; MS Office environment, ArcGIS, C++, Python, Java, R and RStudio
- **Interests**: Long distance running, hiking, insect collection.

Publications (*), talks and posters

*A. Jain, F. Cunha, M.J. Bunsen, J.S. Cañas, L. Pasi, N. Pinoy, F. Helsing, J. Russo, M. Botham, M. Sabourin, J. Fréchette, A. Anctil, Y. Lopez, **E. Navarro**, F. Perez Pimentel, A.C. Zamora, J.A. Ramirez Silva, J. Gagnon, T. August, K. Bjerge, A. Gomez Segura, M. Bélisle, Y. Basset, K.P. McFarland, D. Roy, T.T. Høye, M. Larrivée, D. Rolnick, Insect identification in the wild: The AMI dataset, Proceedings of the European Conference on Computer Vision (ECCV), 2024.

Laurel B Symes, Shyam Madhusudhana, Sharon J Martinson, Inga Geipel, Greg Lamarre, Yves Basset, Andrés Hernandez, Valentina Buitrago Leon, Carlos Manuel Gonzalez Michel, **Eduardo Navarro**, Adolfo Alba Polanzo, Zuleima Sanchez, Ana Cecilia Zamora, And Hannah M. Ter Hofstede. Artificial intelligence for natural environments: Automated detection and classification of insects in the rainforest canopy, BCI 100 Symposium, 2024

Adolfo Alba Polanco, **Eduardo Navarro-Valencia**, Ana Cecilia Zamora, David Roy, Jenna Lawson, Greg A. P. Lamarre, Maxim Larrivée, Tom August , David Rolnick, Chris Schmidt , And Yves Basset. Next-Gen Insect Monitoring: Ami Systems And Insect Monitoring On Barro Colorado Island, BCI100 Symposium, 2024

Eduardo Navarro-Valencia, Daniel Souto-Vilarós, Ana Cecilia Zamora, Yahir Campusano, Jeremy Dewaard, Greg P. A. Lamarre, And Yves Basset, Next Steps In Insect Monitoring: The Prospects Of Metabarcoding, BCI 100 Symposium, 2024

*Souto-Vilarós, D., Basset, Y., Blažek, P., Laird-Hopkins, B., Segar, S. T., **Navarro-Valencia, E.**, Zamora, A. C., Campusano, Y., Čtvrtečka, R., Savage, A. F., Perez, F., Lopez, Y., Bobadilla, R., Ramírez Silva, J. A., & Lamarre, G. P. A. (2024). Illuminating arthropod diversity in a tropical forest: Assessing biodiversity by automatic light trapping and DNA metabarcoding. Environmental DNA, 6, e540. https://doi.org/10.1002/edn3.540

E. Navarro-Valencia et al.: Geometridae from Barro Colorado Island: wing luminosity and phylogenetic signals. XXXI CONGRESO CIENTÍFICO NACIONAL, 11 October 2023

E. Navarro-Valencia et al.: Insect population dynamics in Panama: improvement of monitoring protocols using DNA metabarcoding. XXXI CONGRESO CIENTÍFICO NACIONAL, 11 October 2023.

Eduardo Navarro-Valencia et al.: Geometridae of Barro Colorado Island: Can phylogenetic signal reveal responses to climate change? Youth Systematic Forum 2022, 11 November 2022, https://systass.org/events/future-events/ysf2022/