Elsa Magnolia Quicazán-Rubio

BIOLOGIST-BIOMECHANICIST, ARTIST, SCIENTIFIC COMMUNICATOR.

elsaquica@gmail.com
emquicazanr@unal.edu.co
Cra. 54A #58-34. Apto 406
Bogotá/Colombia
LinkedIn
Instagram
Website
+57 305 8171691

ABOUT ME

Bilingual Lecturer and Blogger about Biomimicry, Artist inspired by nature, and Biomechanicist with more than 15 years of experience in interdisciplinary groups.
Creator of Bioinspirada.com.

I broadcast projects that use Solutions Based on Nature to respond to human or environmental challenges. And accompany them with Art that sparks your imagination. My medium-term vision is to foster curiosity on Biomimicry from childhood, promoting the care and research of nature in future generations.

SKILLS

- 9/10 English
- 7/10 Adobe Illustrator and InDesign
- 5/10 Matlab
- 10 / 10 Microsoft Office
- 7/10 WordPress

EDUCATION

PhD/Animal Sciences

Wageningen University and Research, Netherlands
2011-2019. Topic: Fish swimming biomechanics.

MSc/Evol., Ecol. and Org. Biology

University of California Riverside, USA
2007- 2010. Topic: Bird flight biomechanics.

BSc/Biology

Universidad Nacional de Colombia, Colombia
1999-2005. Topic: Bird flight biomechanics.

EXPERIENCE

Lecturer about Biomimicry

Universidad EAN /Bogotá, Colombia/2021 -
Lecturer about Biomimicry in the Diploma *Sustainable Thinking.*

Project Developer

Atarraya Universidad de los Andes/Bogotá, Colombia/2021 -
Developer of educational activities in Biomimicry for children and youth

Entrepreneur

Bioinspirada.com/Bogotá, Colombia/2020 -
Creator, Content developer, WordPress developer, and Webmaster of Bioinspirada.com. I broadcast technology and art inspired by nature.

Project evaluator and advisor

Universidad Nacional de Colombia/Bogotá, Colombia/2019
Innovative projects evaluator at TPI + Expoideas and Advisor of Project ChimbilApp in the course *Interdisciplinary Project Design* (lecturer Mateo Pradilla).

PhD researcher in Animal Sciences

Wageningen University and Research/The Netherlands/2011-2019
Formulation, direction, execution, and analysis of biomechanical experiments. Work management in teams with diverse participants.

TEACHING

EAN University, Bogotá/Colombia/
Lecturer of Biomimicry in Diploma Sustainable Thinking. 2021

Pontificia Universidad Javeriana, Cali/Colombia/
Syllabi for subjects: Animal Biomechanics and Principles of Biomimetic Design. Mechanical Engineering. 2018

Wageningen University/Holanda/ Conferenciante (lecturer)
Developmental Biology of Animals EZO30306. 2014-2015

University of California Riverside/USA/Teacher Assistant. Intro. to Organismal Biol. BIOL 5B; Functional Anatomy of Vertebrates. BIOL 161B; Human Anatomy and Physiology Lab. BIOL 171L. 2008-2010

Compensar/Colombia/Teacher. Amusing Sciences for kids. 2005 – 2006

Universidad Nacional de Colombia/Colombia/Academic Guide Natural History Museuml. 2005

Universidad Nacional de Colombia/Colombia/Teacher Assistant at the Biology Department. 2003-2005

Corporación Colombia en Hechos/ Isla Grande, PNN Corales del Rosario y San Bernardo/Colombia.
Voluntary Illustration Teacher for the craftsmen. 2003

RECOGNITIONS

2019 – PhD booklet cover among best 10 in Wageningen University and Research for 2019.

2015 – Research Fellowship. Wageningen Institute of Animal Sciences (WIAS).

2014 – Fellowship to participate in the IV Colombian Congress of Zoology.

2011-2016 – Colciencias Fellowship to pursue my PhD.

2010 – Fellowship for the III Colombian Congress of Zoology and III Colombian Congress of Ornithology.

2007-2008 – Research Fellowship. Wageningen Institute of Animal Sciences (WIAS).

2007-2007 – Grad. Fellowship. Univ. of Calif. Riverside. USA.

2007 – Travel Fellowship. Journal of Experimental Biology.

1999-2005 – Distinction and exemption from tuition for good academic performance. Universidad Nacional de Colombia.

2000 – 3rd place at the II Scientific Conference of Biology Students.

PUBLICATIONS

Coasting in live-bearing fish: the drag penalty of being pregnant. J. R. Soc. Interface. 16. (151), 20180714. Quicazan-Rubio EM, van Leeuwen JL, van Manen K, Fleuren M, Pollux BJA, and Stamhuis EJ.
https://royalsocietypublishing.org/doi/abs/10.1098/rsif.2018.0714

Three-Dimensional Analysis of the Fast-Start Escape Response of the Least Killifish, *Heterandria formosa*. *J. Exp. Biol*. 221 (7), jeb168609. Fleuren, M., van Leeuwen, J. L., Quicazán-Rubio, E. M., Pieters, R. P. M., Pollux, B. J. A., and Voesenek, C. J.
http://jeb.biologists.org/content/early/2018/02/14/jeb.168609

Why do placentas evolve? Evidence for a morphological advantage during pregnancy in live-bearing fish. *PLoS ONE*, pp. 1–15. Fleuren, M., Quicazán-Rubio, E. M., van Leeuwen, J. L., and Pollux, B. J. A.
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0195976

Hummingbird wing efficacy depends on aspect ratio and compares with helicopter rotors. *J. R. Soc. Interface* 11: 20140585. Kruyt, J.W., Quicazan-Rubio, EM., van Heijst, G.J.F., Altshuler, D.L., Lentink, D.
http://rsif.royalsocietypublishing.org/content/11/99/20140585.short

Wingbeat kinematics and motor control of yaw turns in Anna's hummingbirds (Calypte anna). *J. Exp. Biol*. 215, 4070–4084. Altshuler, D. L., Quicazan-Rubio, E. M., Segre, P. S., Middleton, K. M.
http://jeb.biologists.org/content/215/23/4070.short

IN THE MEDIA

Interview in *The Node, The Company of Biologists*. 2021
Title: SciArt Profile: Elsa Quicazán-Rubio
https://thenode.biologists.com/sciart-profile-elsa-quicazan-rubio/science-art/

Interview in the Podcast *Las Fulgurantes,* 2021
Title: The success of an unfinished conquest (in Spanish).
https://soundcloud.com/las-fulgurantes/episodio-2-mixdown

Talk in *Diálogos con Egresados*, Universidad Nacional de Colombia. 2020
Title: An image is worth a thousand words: biological images for the study of living beings (in Spanish).
https://www.youtube.com/watch?v=NY1K88VCiqY

Interview in *Somos Planeta* de UN Radio. 2020
Subject: Biomechanics (in Spanish)
http://unradio.unal.edu.co/nc/detalle/article/biomecanica.html

Note in *Science Magazine*. 2019
https://www.sciencemag.org/news/2019/02/even-fish-it-can-be-drag-swim-while-pregnant

Note in *Mail Online*. 2014
https://www.dailymail.co.uk/sciencetech/article-2721906/Secret-hummingbirds-hover-revealed-help-improve-helicopter-technology.html

Note in *BBC News*. 2014
https://www.bbc.com/news/28563737

COURSES

2021 Course: How to communicate Science in Social Media. Taught by Lydia Gil. Documentalist in Social Media in Research.
Course: Using comics to broadcast science. Taught by Miriam Rivera, MSc. https://miriamriig.com/
Organized by Ciencias del Sur https://cienciasdelsur.com/

2012 Locomorph Summer School on Morphology and Morphosis in Animals and Robots. University of Southern Denmark Odense. Denmark.

2011 Sustainable Innovation Inspired by Natural Technology. Introduction to Biomimicry Workshop. Teacher: Melina Ángel (Biomimicry Professional). Bogotá and Chicaque, Colombia.

2005 II Course – Workshop in Scientific Writing. Colombian Asociation of Ornithology. Bogotá, Colombia.

2005 Practical Course in Techniques for the Study of Wild Fauna. Fundación Araguatos and Fundación Nativa. Zoológico Parque Jaime Duque, Colombia.

PRESENTATIONS

2021 Talk "Circular Economy: The great opportunity!". Global Shapers Manizales.

2021 Talk "Entomology Careers in Academia & Beyond: Science Communication Panel". University of California Riverside. Department of Enthomology.

2021 Talk "The girls at the conversation table!". III Colombian Meeting of Women and Girls in Science.

2021 Talk "The girls at the conversation table! International Day of Women and Girls in Science". Organized by STEM Without Borders.

2019 Seminars for the courses "Ornithology" and "Ichthyology", Natural Sciences Institute, Universidad Nacional de Colombia, Bogotá.

2019 Seminar for the course "Introduction to the Mechanical Engineering", Mechanical Engineering, Pontificia Universidad Javeriana, Cali, Colombia. Title: "Increased drag and fluid behavior change around pregnant fish"

2018 Seminar, Mechanical Engineering School, Univ. del Valle, Cali, Col. "Increased drag and fluid behavior change around pregnant fish"

2016 III International Congress on Advanced Mechatronics Technologies, Design and Manufacturing (AMDM 2016). Cali, Colombia. "Drag forces and PIV measurements on model fish".

2014 Seminar for the Biol. Dept. of the Univ. de Antioquia, Colombia. "Biomechanics of hummingbird flight and viviparous fish swimming".

2014 IV Colombian Congress of Zoology. Cartagena, Colombia. "3D analysis of the escape response to study the evolution of placentation in poecilid fish" and "Hummingbird wing efficacy depends on aspect ratio and compares with helicopter propellers".

2014 SICB (Society for Integrative and Comparative Biology. Austin, Texas, USA. "The use of 3D recording of fast-start escape response to study the evolution of placentation in Poeciliid fish".

2011 Seminar for the Research Group in Biomechanics GIBM-UNCB and Research Group in Robotic Platforms UN-ROBOT from the Department of Mechanical Engineering. Universidad Nacional de Colombia. Bogotá, Colombia. "Biomechanics of Hummingbird Upright Flight".

2011 Informative Simposium of Physics. Universidad de los Andes. Bogotá, Colombia. "Biomechanics of Hummingbird Upright Flight".

2011 Biology Seminar. Universidad Nacional de Colombia. Bogotá, Colombia. "Biomechanics of Hummingbird Upright Flight".

2010 III Col. Congress of Zoology and III Col. Congress of Ornithology. Medellín, Col. "Biomechanics of Hummingbird Upright Flight".

2009 EEOB Gradfest. University of California, Riverside. USA. "Neuromuscular Control of Maneuvering Flight in Hummingbirds".

2007 VII Congress of the Colombian Automatic Association (ACA). ISBN 9789584408051. Pontificia Universidad Javeriana. Cali, Colombia. "Measuring instrument for the aerodynamic forces of hummingbirds' wings".

2005 XVIII National Conf. of Ornithology. Colombia. "Hummingbird wings aerodynamics: Study method and comparison of lift and drag forces".

2003 III Scientific Conf. of Biol. Students, Universidad Nacional de Colombia. Col. "The physics of bird flight", and "Germination and growth of a foreign plant *Satureja* sp. (Labiaceae) on three organic substrates under controlled conditions in the Sabana de Bogotá, Colombia".

2001 II Scientific Conf. of Biol. Students, Universidad Nacional de Colombia "Evaluation of two *Trichoderma* treatments in the control of pathogenic fungi".