

## SCIENTIST SPOTLIGHTS

### Dr. Itzue W. Caviedes-Solis

#### CURRENT APPOINTMENT

Incoming Assistant Professor in Conservation Biology, Swarthmore College (2022)

#### EDUCATION & OTHER APPOINTMENTS

B.S. Biology, Universidad Nacional Autónoma de México, México (Advisor Oscar A. Flores-Villela)

M.S. Biological Sciences, Universidad Nacional Autónoma de México, México (Advisor Adrián Nieto Montes de Oca)

Ph.D. Biology, University of Washington, USA (Advisor Adam D. Leaché)

Postdoctoral Fellow, Lingnan University and Museum Curator, Lingnan Natural History Collection Hong Kong (Advisor Jonathan J. Fong)

**Tell us a little about your research.**—My research focuses on the ecology, evolution, and conservation of tropical frogs. I am interested in understanding what has driven diversification in frogs at the molecular, organismal, and ecological levels. I like to answer my research questions using a multidisciplinary approach. I combine fieldwork, molecular laboratory work, museum specimen measurements, and comparative phylogenetic approaches. My favorite part of my research is to get to know cool frogs and see them in the wild in their own environments!

**How do you identify as a scientist?**—I am a herpetologist who loves frogs, an evolutionary and conservation biologist fascinated by nature, and an educator passionate about teaching and outreach.

**What personal identity/ies do you hold that are underrepresented/marginalized in ichthyology or herpetology? How do these identities and experiences enrich your relationship with your science?**—I am a woman, Hispanic/Latin, immigrant, and non-native English speaker. I was fortunate to attend college at UNAM, one of the largest public universities in Latin America. Mexico is an amazing country to grow up in, and it is also among the top ten countries with respect to amphibian species richness. So, during my undergraduate studies I got a lot of exposure to both nature and research with a lot of fieldwork in remote places. These experiences made me realize the value and importance of fieldwork in science and pushed me to work harder to get a job where I could still do fieldwork and teach others about the importance of nature. My family and friends in Mexico have a strong sense of community that I carry with me wherever I move to. I also had the opportunity from early on during my undergraduate studies to interact with other undergraduates, graduate students, and researchers doing science. I learned



**Fig. 1.** Dr. Itzue W. Caviedes-Solis. Photo credit: Brian M. Katona.

from them the importance of teamwork and the difference that a strong community makes on a scientist's happiness and sense of belonging.

**Of your scientific experiences: What do you wish others of your identity knew? What do you wish ichthyologists/herpetologists not of your identity knew?**—To people sharing all or some of my identities: I want you to know that you are amazing, every bit that makes you you. You are not alone, and you deserve to be here. During my career in academia I have experienced discrimination, culture shock, and an unnecessary level of bureaucracy. In academia bad things have happened or will happen because of your identity and it is not your fault. If you are an immigrant, it does not matter what people say or do about the extra work you “cause.” You are not a burden; it is their job and the system is just too broken. Try to speak up against injustice for you and for others when you can. Your voice deserves to be heard. Something that helped me to stay strong was asking for help when needed, from someone I trusted that was willing to truly listen. I try to promote empathy by speaking up about

how different situations and the actions from people around me impact me and how they make me feel. And I also try to ask a lot of questions about how my actions and different situations impact the people around me. I know that might not work for everyone, but it made a huge difference for me and helped me build a strong and supportive community. To people not sharing my identities: Being a woman/Latin/immigrant/non-native English speaker in herpetology and in general is challenging. Take a second and look around you. How many people that have one (or more) of my identities are in your lab, and in which positions (PI, postdocs, grads, RAs)? How many are coauthors on your papers? How many are colleagues you regularly go to the field with? And ask yourself why and what you can do to create a more equitable space around you. To non-immigrants/native English speakers: Bureaucracy is painful, so help an expatriate whenever you can. Having an ally that is local makes a huge difference. Living and working in a different country and speaking in a different language is HARD. Take a second and try to make a sentence about your life or your research in a second language. How long did that take you? If it was fast, how long has it taken for you to get to that point? If you can't, why do you think you made it to this point in life without needing to speak a second language? Now think about your sentence in detail. Did you know all the words you wanted to say? Are you sure the grammar was correct? Can people understand what you say because of the way you pronounce the words? Now imagine doing that for every aspect of your life, every second and being constantly judged for not doing it perfectly. It is exhausting. So before judging us, please acknowledge your own privileges, whatever those might be.

**What research (or other accomplishment) are you most proud of?**—I am so proud of being able to study frogs for a living and getting a job at Swarthmore College as a conservation biologist. Swarthmore is an institution that, like me, values research, teaching, and outreach equally. I am also proud of being one of the organizers of the *Global Women in Herpetology* book project. Getting to know women who are working on amphibians and reptiles in different corners of the world against all odds gives me hope. Learning about their amazing life stories and backgrounds and sharing their perspectives with others makes me feel empowered. It makes me hopeful for a future where women can thrive in herpetology in an equitable environment.

**What sparked your interest in fishes and/or herps? When was this in your life?**—I got interested in amphibians and reptiles as an undergraduate. I took a couple of electives, and I joined a lab focusing on herpetology. When I saw my first tree frog at night in the wild, I was hooked. *Sarcohyla pentheter* was the first tree frog I ever saw alive, and I thought (still think) it was the coolest thing I have ever seen and touched. Fourteen years later, I am thrilled to still be dedicating my life to studying frogs.

**What is your favorite publication in an ASIH journal or memorable JMIH presentation/interaction?**—I still think about

the lessons I learned in the “Women in Herpetology” symposium at JMIH 2019. Quotes by Alison Davis Rabosky, Erica Bree Rosenblum, Sara Ruane, and Rayna Bell still get me through hard times. My favorite JMIH interaction by far though is meeting Jessica Tingle. Jess is a postdoctoral researcher at the University of Akron at Henry Astley’s lab and co-chair of the SSAR DEI committee. Joe Mendelson introduced us at a happy hour at JMIH 2018 in Rochester. Since then, Jess has become one of my best friends and my favorite partner in crime for DEI initiatives. Seeing her in person is one of the things I look forward to most at JMIH. To me she represents the spirit of what meetings are supposed to be: places to inspire collaboration, friendship, and professional growth in a welcoming environment. My friendship with Jess reminds me of when small kids are put in pairs and told to hold hands to avoid getting lost. I feel like Jess and I have been holding hands since JMIH 2018 trying to navigate the world of academia without getting lost. I look forward to cheering with her at JMIH during a poster session when we are 80 looking back at our careers.

**Who has had the most impactful influence on you?**—I believe that every person we interact with touches our life in some way, and those interactions make us who we are as a whole (even the ones that are examples of who we don’t want to be). But some of my bigger influencers include: 1) My mom. She is a strong independent woman, who engraved in my brain that I could do anything. She always motivated me, even when I said I wanted to study frogs for a living, to leave the country, and to be in school forever. 2) My Ph.D. advisor Adam Leaché. He always believed in me and in my frogs. He encourages me to dream big and keep going forward. He made me a better scientist. He taught me to have a good work ethic, the importance of leading my own work, how to write a paper and make pretty figures, to deal with reviewers politely, and to review papers fairly. And 3) my husband Brian, he fills my life with joy, laughs, and love. His kindness and high degree of empathy for others is contagious and he makes me a better and happier human.

#### TO LEARN MORE

<https://www.itzuecs.com>

Global Women in Herpetology: <https://www.womeninherpetology.com>

Lingnan Natural History Collection Bulletin: <https://lingnancollection.wixsite.com/naturalhistory/blog>

Caviedes-Solis, I. W., N. Kim, A. D. Leaché. 2020. Species IUCN threat status level increases with elevation: a phylogenetic approach for Neotropical tree frog conservation. *Biodiversity and Conservation* 29:2515–2537.

Caviedes-Solis, I. W., and A. D. Leaché. 2018. Leap frogging the Mexican highlands: influence of biogeographical and ecological factors on highland species diversification. *Biological Journal of the Linnean Society* 123:767–781.

*The questions were developed by the 2020 Diversity, Equity, Inclusion, and Belonging Committee of ASIH.*