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Dr. Kevin de Queiroz

Fig. 1. Dr. Kevin de Queiroz. Photo credit: Kevin de Queiroz.

CURRENT APPOINTMENT

Research Zoologist and Curator of Amphibians and Reptiles, National Museum of Natural History, Smithsonian Institution

EDUCATION & PREVIOUS APPOINTMENTS

B.S. Biology, University of California at Los Angeles (Mentor George Gorman)
M.S. Zoology, San Diego State University (Advisor Richard Etheridge)
Ph.D. Zoology, University of California at Berkeley (Advisor David Wake)
Tilton Postdoctoral Fellow, California Academy of Sciences (Advisors Robert Drewes, Jacques Gauthier, and Alan Leviton)
Rufus Putnam Visiting Professor, Ohio University
Investigador Visitante, Instituto de Ecología (INECOL), Mexico
Edward P. Bass Distinguished Visiting Environmental Scholar, Yale University

Tell us a little about your research.—My research involves the theory and practice of systematics. Most of my empirical research has been on iguanian lizards, including the true iguanas, the phrynosomatid sand lizards, hoplocercines, and anoles, and it most commonly involves phylogenetics, species delimitation, and studies of adaptive (esp. ecomorphological) evolution. My theoretical research has been devoted to developing a unified concept of species as well as a phylogenetic approach to biological nomenclature, and I've also analyzed how methods of phylogenetic inference relate to ideas in the philosophy of science.

How do you identify as a scientist?—I consider myself a herpetologist, a vertebrate zoologist (I've published not only on amphibians and reptiles, but also on fishes, birds, and the name "Mammalia"), a systematic biologist, and an evolutionary biologist.

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'm biracial and multiethnic. My mother is a second-generation Japanese American (Nisei), and my father was third-generation Japanese American (Sansei) on his mother's side and second-generation Mexican American on his father's side. It's hard to say how these identities enrich my relationship with my science. I can't trace anything about my science to specific cultural influences, but I think I have a unique perspective on certain scientific issues. It's possible that my scientific contributions, some of which have been controversial, have been influenced less by my specific racial and ethnic identities than with simply being biracial and multiethnic. I'm accustomed to being an outsider (see next question), so perhaps this circumstance has given me the freedom to make controversial proposals without worrying about further alienating myself.

Of your scientific experiences: What do you wish others of your identity knew? What do you wish ichthyologists/herpetologists not of your identity knew?—Are there others of my identity in ichthyology or herpetology? The only one I've known was my brother Alan, but he left the field. As for those not of my identity, I would say that being of mixed ancestry presents challenges that differ from simply being of a (single) group, underrepresented or otherwise. Because I'm only partly a member of each ethnic group to which I belong, I've often not been fully accepted (i.e., as one of them) by others whose identity I (partially) share. Recently, I've been thinking about the questions on various forms that ask about racial or ethnic identity—"Do you identify as (check one or more boxes)?" In the past, I interpreted that as a question about my geographic and/or cultural ancestry and checked the appropriate boxes. More recently, I've considered that it could be interpreted as a question about my personal feelings of belonging, and I realize that although my ancestry may place me in certain groups, I feel only a weak sense of truly belonging to any of them.

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What research (or other accomplishment) are you most proud of?—On the empirical side, I'm most proud of my work on the phylogeny and systematics of squamatan reptiles (e.g., de Queiroz, 1987a; Estes et al., 1988; Torres-Carvajal et al., 2011) and on the adaptive radiation of *Anolis* lizards (e.g., Losos and de Queiroz, 1997; Losos et al., 1998; Huie et al., 2021). On the theoretical side, I'm most proud of my work on how to achieve a unified concept of species (e.g., de Queiroz, 1998, 1999, 2007, 2011) and the development of a phylogenetic approach to biological nomenclature (e.g., de Queiroz and Gauthier, 1990, 1992, 1994; Cantino and de Queiroz, 2020; de Queiroz et al., 2020). However, I'm also proud of an obscure paper (de Queiroz, 2004) in which I figured out that *degree of corroboration* (*C*), a concept developed by the philosopher Karl Popper that figured prominently in criticisms of probabilistic methods of phylogenetic inference by advocates of parsimony methods, is in fact a probabilistic concept that is closely related in both formulation and purpose to the likelihood ratio of nested hypotheses.

What sparked your interest in fishes and/or herps? When was this in your life?—I've been interested in organisms in general, and in amphibians and reptiles in particular, literally as long as I can remember. I wanted to see organisms up close and hold them in my hands, and that was more easily accomplished with amphibians and reptiles than with fishes, birds, or mammals—at least for a kid with no special connections or resources. Many of my earliest memories are of experiences with herps: the pet Painted Turtle and Red-eared Slider that disappeared and were later found buried in the garden (hibernating), the Southern Alligator Lizard that bit my father when he caught it, the Western Toads that were common where my cousins lived. These memories are from when I was three and four years old.

What is your favorite publication in an ASIH journal or memorable JMIH presentation/interaction?—If you mean my own publication, my favorite would have to be the one in which I distinguished and named *Ctenosaura oedirhina* (de Queiroz, 1987b)—the first new species that I discovered and the first paper that I published in an ASIH journal. I should also mention a paper on the phylogeny of the northern swordtails (Morris et al., 2001), which was the first paper that I published on fishes and the first that I co-authored with my wife, Dr. Molly R. Morris.

Who has had the most impactful influence on you?—It takes a village to train a scientist. My mother enrolled me in science classes at the Los Angeles County Museum when I was in junior high school and drove me to a herpetology class at UCLA (extension) when I was in high school. My father took my brothers and me on numerous hikes in the San Gabriel Mountains and a few excursions to the Mojave Desert, imparting to us a surprising amount of natural history knowledge for someone with no formal training in biology. He also honed my logic and arguing skills. My brothers, Sean and Alan, shared in many of my early natural history adventures. My undergraduate mentor, George Gorman, gave me early opportunities to participate in herpetological research, including field work in Mexico and the Lesser Antilles, and to interact with him and his graduate students, particularly Bob Drewes, Jeff Wyles, and Gary Adest. My Master's advisors Richard Etheridge and Richard Estes helped me to get started on both independent and collaborative research, and both were kind and generous mentors. That was a critical period in my intellectual development, and some other people who influenced my thinking during that time were Mike Novacek, Mike Donoghue, Eric Gold, Jim Melli, Eric Lichtwardt, Teri Peterson, Mark Norell, and Andy Wyss. My Ph.D. advisor, David Wake, was a particularly wise mentor and excellent role model as an integrative biologist. Several others who influenced my development at this stage of my career were Marvalee Wake, Harry Greene, Jacques Gauthier, Tim Rowe, Kevin Padian, Allan Larson, David Good, Aaron Bauer, Kurt Schwenk, Claudia Luke, Nancy Staub, John Carothers, Jonathan Losos, and David Cannatella. Jacques Gauthier was also my main postdoc advisor and helped me to develop the theory of phylogenetic nomenclature. During my early days at the NMNH, Dave Swofford had a strong influence on my thinking about phylogenetic methods, and I benefitted from numerous discussions with Ken Warheit and Bob O'Hara. My fellow NMNH herpetology curators, George Zug, Ron Heyer, Roy McDiarmid, and Rayna Bell influenced my thinking about both science and natural history collections. I've had the good fortune of mentoring many outstanding younger scientists as pre- and postdoctoral fellows and interns, and I've learned a lot from several of them (in this case, I prefer not to mention names—a list is available at academictree.org). Several of my long-time collaborators, particularly Jacques Gauthier, Jonathan Losos, and Phil Cantino have also influenced my science in important ways. I want to note that the people I've mentioned here are those who most influenced my thinking as a scientist; there are many others, particularly among my undergraduate and graduate school classmates, who were (and are) important to me as friends.

How do you balance personal life and work? What is (are) the major challenge(s) for balancing personal and professional life?—Early in my career, I worked long hours and my main pastime outside of work was running, which was very efficient (a lot of exercise per unit time). Later, I went through a period during which I was dissatisfied with my job (not the science but the way I was treated by my employers) at around the same time that running was becoming more difficult (because of decreasing heat tolerance and minor injuries), so I switched first to road cycling and then to mountain biking, which was more appealing to me for several reasons. Because of my work situation, I was willing to spend more time mountain biking than I had done previously with running, and that also turned out to be good for my mental health. Through mountain biking, I also got involved in trail maintenance. More recently, I've been learning to play the guitar. I think the big challenge for a professional biologist is making sure that you take some time off. No matter how much you do, some people (among both your peers and your employers) will always expect you to do more, and one can always work a little harder. However, sometimes it's better to take some time off, not only because it's good for your health, but because a rested and healthy mind is more efficient and productive.

TO LEARN MORE

https://naturalhistory.si.edu/staff/kevin-de-queiroz
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The questions were developed by the 2020 Diversity, Equity, Inclusion, and Belonging Committee of ASIH.