



Featured Publication

Science Magazine Publishes MVZ Research

New Study Shows Burrowers Fare Better than Birds in the Desert

A recent publication by former MVZ postdoc Eric Riddle and MVZ faculty James L. Patton and Steve Beissinger uses data from Joseph Grinnell's original surveys to measure climate related changes in bird and small mammal communities in the Mojave desert.

MVZ Lunch on Zoom

Wednesday's 12-1 p.m. PDT

March 10, 2021

Mark W. Westneat

Department of Organismal Biology and
Anatomy, Director of Graduate Studies,
Integrative Biology, University of
Chicago

March 31, 2021

Dr. Talisin Hammond

Researcher in Recovery Ecology, San
Diego Zoo Global

April 7, 2021

Suzanne McGaugh

Associate Professor Ecology, Evolution,
and Behavior, University of Minnesota

April 21, 2021

Dr. Katie Peichel

Head of Division, Evolutionary Ecology,
Institute of Ecology and Evolution,
University of Bern

MVZ Seminars are recorded and
available to watch on our [YouTube
Channel](#).

Recent Publication by MVZ Researchers

Visiting Professor Juliana Vianna and MVZ Professor and Curator of Birds Rauri Bowie
Pinning Down Penguin Diversity Using Genomes



The full paper **"Genome-wide analyses reveal drivers of penguin diversification,"** is available to read online in PNAS.

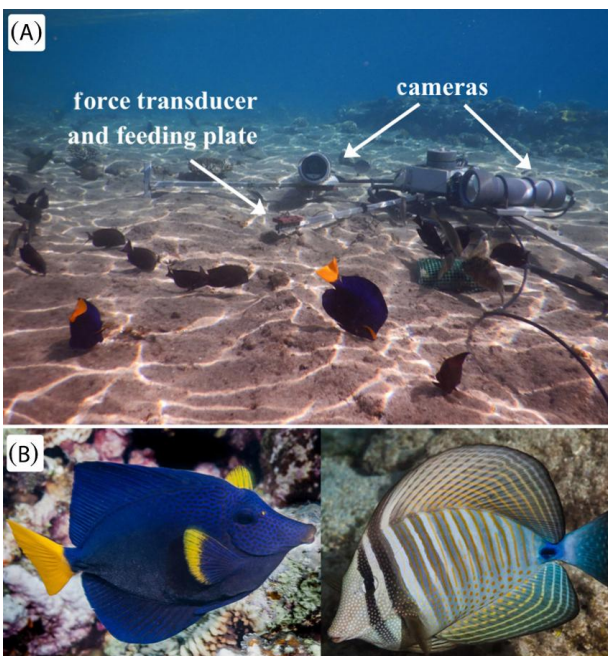


Despite the recognizable, well-known public image of penguins, their evolutionary history has not been resolved until now. MVZ Curator Rauri Bowie and Visiting Professor Juliana Vianna (Pontifical Catholic University, Santiago, Chile) led an international team, including MVZ graduate student Cynthia Wang-Claypool and former MVZ postdoc Ke Bi, to gather samples of 18 penguin species from museum specimens and live animals around the world to sequence their genomes. Their analysis reveals that the origins of the modern groups of penguins diversified about 22 million years ago on the coasts of Australia and New Zealand, not in Antarctica as previously thought (Vianna et al 2020). The study lays the foundation for future penguin work into their unique adaptations, identification of putative new species and improved understanding of their diversification for conservation. Want to learn more? Listen to an **NPR story on the penguin study** or check out the **PNAS Podcast on Origin and Diversification of Penguins**.

Recent Publication by MVZ Faculty

MVZ Assistant Professor and Curator of Fishes Chris Martin

Fin and body movements determine herbivore fish feeding



MVZ's Curator of Fishes Chris Martin recently published an article in *Proceedings of the Royal Society* on the feeding performance of herbivore fishes in reef ecosystems. The study used a three-dimensional high-speed video system to track the mouth and body kinematics during in situ feeding strikes of fishes in the genus *Zebbrasoma*, while synchronously recording the forces exerted on the substrate. This new framework for measuring biting performance in situ demonstrates that coordinated movements of the body and fins play a crucial role in herbivore foraging performance and may explain major axes of body and fin shape diversification across reef herbivore guilds.

A. Underwater video system comprised of two high speed cameras and a synchronized force transducer. B. Study focused on two species of Acanthuridae, *Zebbrasoma xanthurum* (left) and *Zebbrasoma desjardini* (right).



MVZ Faculty in the News

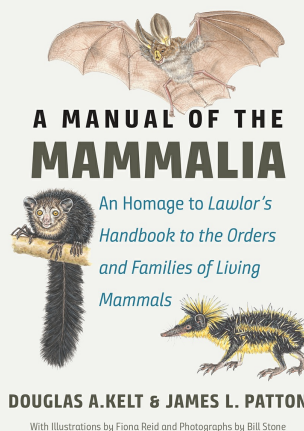
MVZ Professor Emeritus and Curator of Mammals
Jim L. Patton

Newly Described Genus of Rodents Named after MVZ Legend Jim Patton

Discovered in the Choco region of Ecuador, *Pattonimus ecominga* and *Pattonimus musseri* were determined through morphology and molecular evidence to be a previously unknown genus. The generic name (a noun in the nominative singular) is derived from the surname Patton and the Latin noun mus (mouse, rat). The name honors the figure and legacy of Jim L. Patton, Emeritus Curator of Mammals and Professor of Integrative Biology, at the Museum of Vertebrate Zoology, UC Berkeley. The paper's authors cite Patton as an inspiration to "generations of mammalogists, through his adventurous field-trips and not so memorable shipwrecks, outstanding scientific contributions and supervision and mentoring of numerous students around the world."

Recent Publication by MVZ Faculty Mammal Mania!

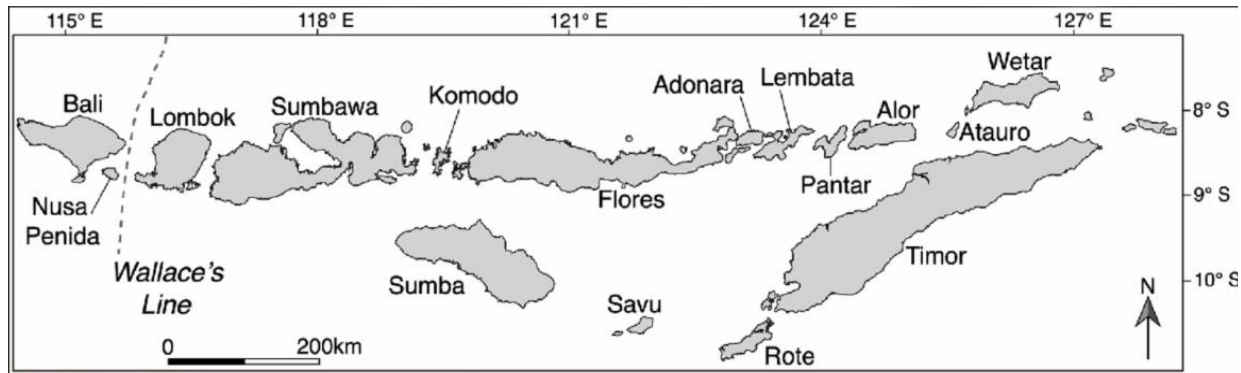
MVZ Curator and Professor Emeritus Jim L. Patton and UC Davis Professor Douglas A. Kelt recently published, *A Manual of the Mammalia*, a user-friendly lab manual for students learning to identify higher mammal taxa and a uniquely comprehensive, up-to-date reference for mammalogists and mammal-lovers from across the globe. The book contains beautiful photographs of MVZ specimens.



Recent Publication by MVZ Graduate Students, PostDocs, and Faculty

New Island Records for Anurans and Squamates from the Lesser Sunda Archipelago

Professor Jim McGuire, PostDoc Umilaela Arifin and Graduate Students Luke Bloch, Kristopher Harmon, Sarah Hykin, Ben Karin, Sean B. Reilly and Alexander Stubbs recently published a paper in *Herpetological Review* on herpetofaunal biodiversity surveys they conducted between 2010-2013 in the Lesser Sunda islands. The paper presents 26 new island records for 18 species of frogs, lizards and snakes.

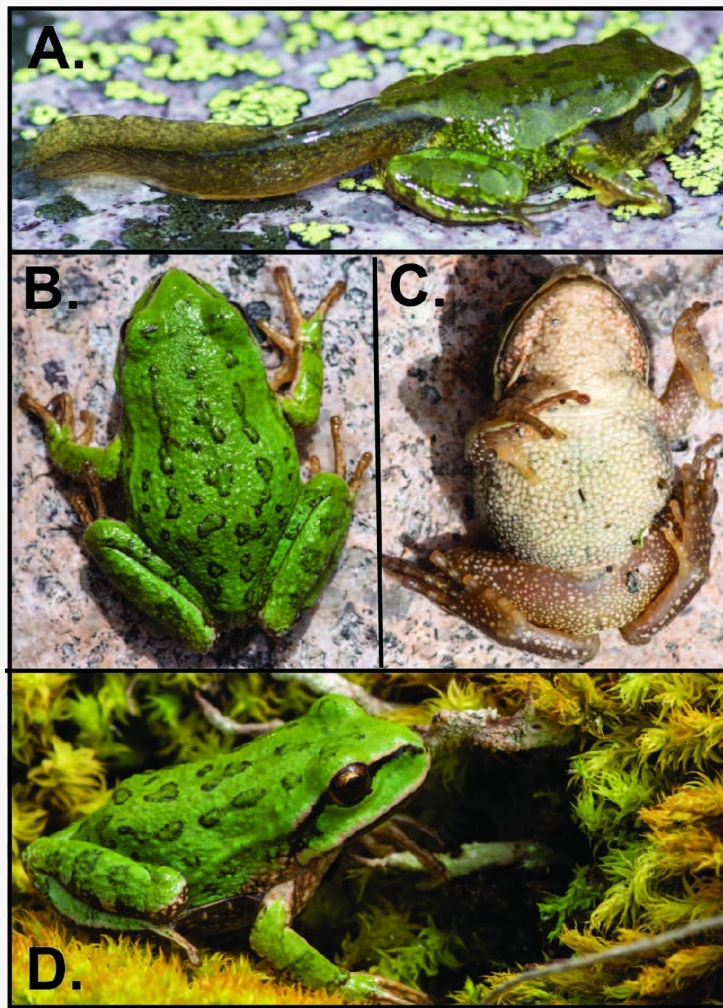


Map of the Lesser Sunda Islands and Bali. Bali becomes periodically land-bridged with Java and Southeast Asia while the Lesser Sundas are oceanic islands that remain isolated by deep water channels. Within the Lesser Sunda's notable island mergers during glacial maxima include Lombok + Sumbawa, and what is known as "Greater Flores" that includes Komodo + Flores + Adonara + Lembata. A number of smaller islands are not shown to simplify the figure.

Recent Publication by MVZ Graduate Student

Graduate Student Emma Steigerwald

Elevational range extension of marsupial frog, *Gastrotheca marsupiata*



MVZ Graduate Student Emma Steigerwald's recent paper on the marsupial frog, *Gastrotheca marsupiata* extends its habitat by 300m to 4,660 m a.s.l. This record makes *Gastrotheca marsupiata* the highest occurring frog in its genus, which is already characterized by high-elevation distributions. The paper suggests that this record may represent a case of climate-induced range shifting and discusses the record in the context of how amphibian distributions are being affected by climate change.

Tadpole and voucher individual of *Gastrotheca marsupiata*. A. Tadpole. B–D. Voucher individual: (B) dorsal, (C) ventral, and (D) lateral views. Photographs by Emma Steigerwald

MVZ Graduate Student News



MVZ Students Join Inaugural Class of SciComm Fellows

MVZ Graduate Students Kwasi Wrensford and Lawrence Wang have been selected as part of the inaugural class of Berkeley SciComm Fellows. Individuals were selected for their passion for science communication, their commitment to help build a community of practitioners at UC Berkeley, and their desire to apply science communication skills to their future careers, spanning academia, policy, outreach, and more. As a Berkeley SciComm Fellow, they will learn facilitation skills, take a deep dive into science communication practice, and receive training to lead two different science communication workshops, Science Storytelling and Public Speaking. They will then have opportunities to run these workshops for the UC Berkeley community.

Meet the MVZ

In October 2020, as part of MVZ's ongoing DEI initiatives, a group of MVZ graduate students launched the "Meet the MVZ" a newsletter which features interviews and stories highlighting members of the MVZ community. In the second issue you can learn about second-year PhD student Valeria Ramírez-Castañeda's research and her efforts to promote diversity and inclusion in the sciences.

INTRODUCING VALERIA RAMÍREZ-CASTAÑEDA

TELL US ABOUT YOURSELF!

I am Colombian biologist interested in interactions between snakes and frogs and how this shapes evolutionary changes in both groups. I also enjoy participating in science communication projects (particularly in Spanish), as well as in research on science-society relationships.

HOW DID YOU GET INTERESTED IN EVOLUTIONARY BIOLOGY?

Even though I grew up in Bogotá, I went to school outside of the city, exposing me and enthralling me with life in one of the hotspots of biodiversity in the world.

THE BIGGEST CHALLENGE AS AN ACADEMIC SO FAR?

A lot! Living far from my family, moving every couple of years, speaking and writing in a second language, being tired and unmotivated but close to a deadline, feeling limited by funding or time, among others.

THE BIGGEST SURPRISE ABOUT BEING AN ACADEMIC?

Traveling to so many amazing places! Being close to nature and learning from the local community. Getting to know great people (my colleagues, I really admire them), learning new and very interesting things. Also, not having strict working times (I really love that).

FAVORITE DEI INITIATIVES YOU ARE CURRENTLY FOLLOWING?

@thenaomistry @oyciguapa Ciencia café pa' sumercé, Sumercesauro kids

Valeria's favorite vertebrates are snakes, frogs and opossums!

Museum of Vertebrate Zoology



University of California at Berkeley

Message from the Director

Greetings from the Museum of Vertebrate Zoology! I hope that everyone is staying safe and healthy during this challenging time. As we approach the one year anniversary of our shelter-in-place order I wanted to reach out and give our community an update.

The MVZ has continued to function during the past year, albeit on a more limited basis. We have continued our weekly MVZ lunch seminar remotely by zoom, and attendance has been great. All of the seminars are recorded and available on our YouTube channel. We hope you will continue to join us.

Research has also continued throughout this time, and we have made important progress. For example, the MVZ faculty were recently awarded a large grant as part of the California Conservation Genomics Project to sequence the complete genomes of over 2000 individual birds, mammals, and reptiles from our collections. This will provide an unprecedented picture of genetic diversity for terrestrial vertebrates across the State of California and will help inform conservation and management decisions.

I am heartened by the resilience of our graduate students. They have adapted quickly to the new situation. Many have had to modify their research plans, and they have been impressively nimble at responding to the current state of affairs. Similarly, the staff have continued their work, often from home, and have a lot to show for it. For example, we launched a new MVZ website which enhances our ability to connect with researchers, faculty and prospective students. I encourage you to look at it: mvz.berkeley.edu.

I am also impressed by the kindness and resourcefulness of our students and staff in meeting the challenges of the pandemic. Many have become involved in campus groups donating homemade masks to underserved communities in the Bay Area. This spring our Evolutionary Genetics Lab was transformed into a factory, producing small batches of hand sanitizer for the university.

I hope that we will once again be able to host in person MVZ coffee and seminars in the fall of 2021. Until then, we remain dedicated to our core mission of addressing fundamental questions in vertebrate biology and training the next generation of museum scientists.

Michael Nachman
MVZ Director

Support the MVZ

To sustain our leadership in discovery and understanding of vertebrate diversity, and to protect the collection for future generations, we depend on donations. Any gifts, large or small, make a difference.

MAKE A GIFT

[Museum of Vertebrate Zoology](#) | mvz@berkeley.edu

[Newsletter Archives](#) | Banner Image by Jackie Childers

