



## In Memoriam - **David Wake 1936-2021**

UC Berkeley Emeritus Professor, MVZ Curator of Amphibians and Reptiles

It is with sadness that I share the news that our beloved colleague and friend, David Wake, passed away April 29, 2021, surrounded by his family. A native of South Dakota, Dave earned his Ph.D. at the University of Southern California where he met his wife, Marvalee. He began his career at the University of Chicago, and then joined the faculty of UC Berkeley in 1968. He was the Director of the Museum of Vertebrate Zoology for 27 years (1971-1998). He served as the President of the Society for the Study of Evolution, the American Society of Naturalists, and the American Society of Zoologists. Dave was a towering figure in evolutionary biology and herpetology and trained generations of students, including many leaders in the field today. Dave was a member of the US National Academy of Sciences and was recognized with many awards. His deep wisdom, gentle demeanor, and friendship were an inspiration to all. We will miss him deeply. A perspective on Dave's life and numerous contributions, written in 2017 for [\*\*Copia\*\*](#) is available online. Donations in Dave's memory can be made to the [\*\*David and Marvalee Wake Fund\*\*](#) for student research or to the [\*\*Friends of AmphibiaWeb Fund\*\*](#).



# Featured Publication

*PLOS Genetics* Publishes MVZ Research

## Eastern and Western House Mice took Parallel Evolutionary Paths

Former MVZ graduate student Taichi Suzuki, and former MVZ postdocs Katie Ferris, Andreas Chavez, Megan Phifer-Rixey, and Ke Bi, current MVZ postdoc Libby Beckman, and MVZ Professor Michael Nachman have published a paper in *PLOS Genetics* on the [“Genomics of Rapid Climatic Adaptation and Parallel Evolution of the North American Mouse.”](#)

The European house mouse has invaded nearly every corner of the Americas since it was introduced by colonizers a few hundred years ago, and now lives practically everywhere humans store their food. Yet in that relatively short time span — 400 to 600 mouse generations — populations on the East and West Coasts have changed their body size and nest building behavior in nearly identical ways to adapt to similar environmental conditions.

“The big take-home message from this paper is that there is some predictability to evolution, both at the organismal level and at the genetic level,” said Professor Nachman, “We have shown that the same genes have been recruited independently in two different areas, all over very short evolutionary time. This is a good example of rapid evolutionary change over short times for a complex adaptive trait.”

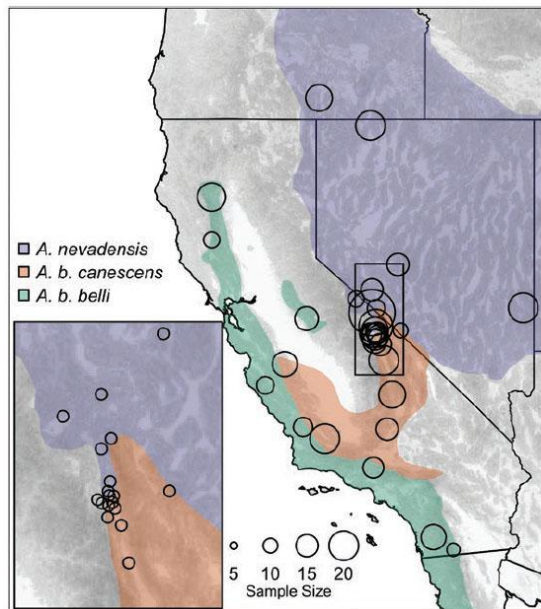


The house mouse from a southern population (top) is much smaller than a house mouse from a northern population (bottom), even when raised in the same environment, showing that the body size difference is the result of genetic variation caused by adaptation, presumably to cold temperatures.



# Recent Publication by MVZ Researchers

## Integrative Taxonomy & Geographic Sampling Equal Success in Species Delimitation



In the April issue of the *The Auk* MVZ Staff Curator of Birds Carla Cicero, MVZ graduate students Nicholas Mason, Rosa Alicia Jiménez, Daniel R. Wait, Cynthia Y. Wang-Claypool and MVZ Faculty Curator of Birds Rauri Bowie discuss the impact genomic data has had on species delimitation and the importance of analyzing these data, not in isolation, but instead alongside phenotypic, behavioral and ecological traits. They make the case for thorough sampling across geographic and environmental space and surmise that the integration of all of the traits promotes taxonomic stability.

Map showing the distribution and sample sizes for a species delimitation study of *Artemisiospiza nevadensis*, *A. b. canescens* and *A. belli*.



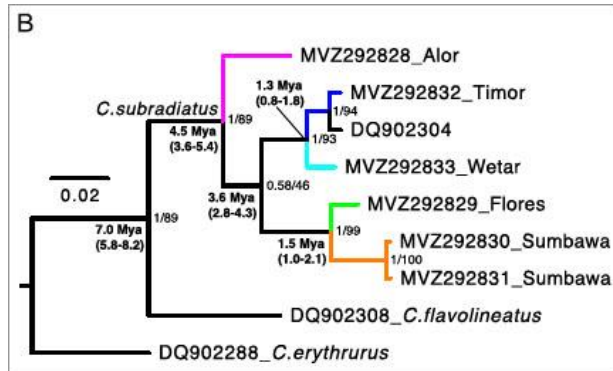
# Recent Publication by MVZ Faculty

MVZ Professor and Curator of Amphibians and Reptiles Jimmy McGuire

## Tracing the Genetic Divergence of the Sunda Ratsnake



A. *Coelognathus subradiatus* from Alor Island.



B. Bayesian phylogeny of the ND4 gene. Numbers to the right of nodes represent posterior probability/bootstrap support, and bold numbers below nodes represent estimated divergence times in millions of years (Mya) with 95% posterior density values in parentheses.

MVZ Professor Jim McGuire, postdoc Umilaela Arifin and graduate students Ben Karin and Alexander Stubbs recent publication in *Amphibia-Reptilia* traces the Sunda ratsnake, *Coelognathus subradiatus*, population in the Lesser Sunda Islands. Mitochondrial DNA was sequenced from snakes representing five of the major islands revealing that *C. subradiatus* entered the archipelago after the Sunda Arc islands became emergent but before the Banda Arc Islands existed. The data suggests at least three divergent populations exist that have been isolated for a substantial amount of time. This evidence, along with the relationships of island lineages, suggests that early reptile and amphibian colonizers of the Lesser Sundas have experienced a complex biogeographical history and that oceanic barriers between islands have resulted in insular species formation.

# MVZ Faculty in the News

MVZ Affiliated Faculty Dr. Bree Rosenblum

## Dr. Rosenblum featured in new BBC film “Endangered”

MVZ Affiliated Faculty Dr. Bree Rosenblum’s work on amphibian conservation is one of the seven segments featured in the new BBC film “Endangered,” streaming on Discovery+. "It was incredibly heartening to see the deep caring and commitment that went into making this film. Everyone—from film directors to the research staff to the camera crew—are all ecologists and conservationists at heart," said Rosenblum. "This film is about more than a global network of scientists. It's about the possibility of transformation in our collective relationship to planet Earth."



# In Memoriam

## Barry Sinervo, Professor of Ecology & Evolutionary Biology, UC Santa Cruz

Barry Sinervo, Professor of Ecology and Evolutionary biology at UC Santa Cruz known for groundbreaking research in evolutionary biology and on the impacts of climate change, passed away on March 15, 2021.

Barry had been battling cancer for six years, but remained active in teaching and research.

Barry was a Miller postdoctoral fellow at UC Berkeley from 1988-1990 and a member of the MVZ community. "Barry was a larger than life, exuberant research scientist whose herpetological research

impacted many of us in the MVZ community," said Jim McGuire, MVZ Curator of Reptiles and Amphibians. "His influential research - much of which is now showcased in textbooks - figures prominently in both of the courses that I teach."



Barry's research in evolutionary biology spanned population genetics, game theory, behavior, and physiology. His decades-long field studies on social systems and mating behavior in lizards led to a series of influential publications on the evolutionary dynamics and behavioral ecology of their mating strategies. Recently, Barry worked in collaboration with MVZ Affiliated Professor Rasmus Nielsen, and MVZ postdoc student Ammon Corl on studying the genetics of coloration and mating types in the side-blotched lizard.

In the latter part of Barry's career, he led an international team of scientists to document that climate change had resulted in widespread extinctions of lizard populations. This study led Barry to focus his efforts on further documenting the impacts of climate change, training researchers around the world in his methods, and informing the public on the urgency of combating climate change.

# MVZ Staff Curators in the News

## MVZ Staff Curator of Birds Carla Cicero Cal Falcons in the Final 4

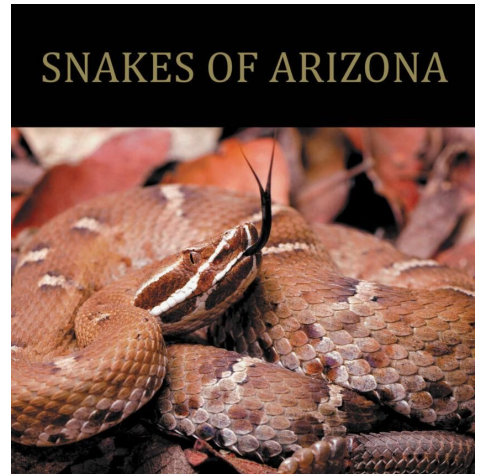


UC Berkeley's resident peregrine falcons, Annie and Grinnell, got a special shout out from ESPN commentators on March 11 during the NCAA tournament game between UC Berkeley and the University of Colorado. The birds live on the university's historic Campanile. In January 2019 two webcams were installed to enable scientists and the public to watch the birds. MVZ's Carla Cicero has been involved with the project from the start. The birds have a large following on social media.

---

## MVZ Staff Curator of Herps Carol Spencer Snakes of Arizona

ECO Publishing has released the definitive, scholarly reference on every species of snake found in Arizona. MVZ Staff Curator Carol Spencer contributed a chapter to the book, "Crotalus atrox, Western Diamond-backed Rattlesnake." The book was written for naturalists and professional biologists, resource managers, teachers and students alike.





## 150 Years of Women at Berkeley



### ANNIE ALEXANDER 1867-1950

Born in Honolulu, Hawaii

- 1889 Lasell Seminary for Young Women, Massachusetts

- ★ Raised on Hawaii as daughter of C&H owner Samuel Alexander, she shared her father's passion of wildlife and the outdoors. On 1904 safari trip in Africa, he died in an accident, which motivated Annie to dedicate her life to scientific endeavors in natural history her life to the preservation of native California animals.
- ★ 1907: she appealed to the UC President with funds to establish a new "Museum of Vertebrate Zoology", and continued to be its benefactress for years to come.
- ★ 1937: Louise Kellogg and Annie were trapped by snow and falling rocks on a collecting trip in Saline Valley. They survived weeks of bitter cold and fierce winds on a diet of beans and cornmeal. Help finally arrived on January 26, rescuing Annie, Louise and the 95 gopher specimens they had collected.



## 150 Years of Women at Berkeley

MVZ Staff Curator Michelle Koo, Office Manager Carlie Magill, URAP Volunteers Cheyenne Bridge and Mahathi Kandimalla

### MVZ Celebrates Historic Anniversary with Trading Cards

October 3, 2020 marked the [150th Anniversary](#) of the UC Regents' unanimous decision to allow women to be admitted to UC Berkeley. As part of the commemoration for this historic anniversary, the Museum of Vertebrate Zoology created a set of trading cards, and accompanying website, featuring UC Berkeley women whose contributions to natural history shaped the MVZ. The initial set of four cards features MVZ benefactress Annie Alexander, her partner Louise Kellogg, the museum's first female curator Margaret Wythe and pioneering ornithologist Barbara Blanchard DeWolfe. The MVZ's W150 project is ongoing, so please check back in for updates.



# MVZ Graduate Student News

## Where have all the vultures gone?

### MVZ's Mackenzie Kirchner-Smith Investigates



Today, 14 of the world's 23 vulture species are threatened with extinction, particularly in Africa and Asia. In California, the California condor, categorized as "extinct in the wild" in 1987, remains critically endangered. MVZ graduate student Mackenzie Kirchner-Smith says, "In recent California history, for a time we were down to a single scavenger — the turkey vulture. And that's a huge shift from having five different scavenging birds at one time." Mackenzie is investigating how vultures differ from other raptors by focusing on their overall skull morphology.



Top: Mackenzie photographs the skull of a condor. Bottom: Skull of a turkey vulture excavated from the La Brea Tar Pits (right) and the skull of a modern turkey vulture (left).

## 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](mailto:mvz@berkeley.edu) | [Newsletter Archives](#)

Banner Image by John Clare, 2013.

*Ensatina eschscholtzii platensis*; Sierra Nevada *Ensatina*

