

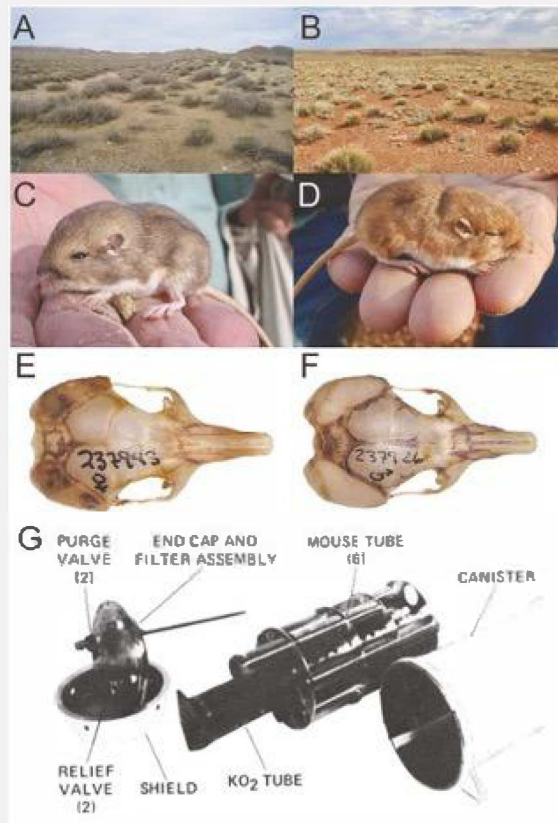


## Featured Publication

MVZ Researcher Krzysztof M. Kozak, MVZ Staff Curator of Mammals Chris Conroy, MVZ Emeritus Professor James L. Patton, Professor and Curator of Birds Rauri C.K. Bowie, Professor and Curator of Mammals Michael W. Nachman

### [Pocket Mouse Genome Assembly](#)

The little pocket mouse, *Perognathus longimembris*, is a rodent found in arid and seasonally arid regions of Western North America. The genus is characterized by behavioral and physiological adaptations to dry and often harsh environments. In a recent issue of the [Journal of Heredity](#) MVZ Researcher Krzysztof M. Kozak, MVZ Staff Curator of Mammals Chris Conroy, MVZ Emeritus Professor James L. Patton, Professor and Curator of Birds Rauri C.K. Bowie, Professor and Curator of Mammals Michael W. Nachman presented a genome assembly of *Perognathus longimembris longimembris* as part of the [California Conservation Genomics Project](#). This new resource will enable studies of local adaptation, genetic diversity, and conservation of threatened taxa.



*Perognathus longimembris*, the little pocket mouse. Arid habitats of *P. longimembris*: A) Harrisburg Flat, Death Valley National Park, Inyo County, California, United States; B) Bullrush Canyon, Mohave County, Arizona, USA. C) *P. l. panamintinus* and (D) *torpid* *P. l. arizonensis*. Pelage of pocket mice matches the color of the local soil. Pronounced intraspecific differences in cranial morphology can be seen between the topotypes of (E) *P. l. panamintinus* and (F) *P. l. arizonensis* from the collection of the Museum of Vertebrate Zoology, UC Berkeley. G) The rodent orbiting module of the Apollo 17 mission. A pocket mouse was on board of the last Apollo mission and orbited the moon Image credits: Peggy Moore (C), Carol Patton (D), James Patton (A, B, E, and F), NASA (G).

# Recent Publication by MVZ Researchers

MVZ Affiliated Faculty Professor Steven Beissinger

## Competition Drives Extreme Behaviors in Green-Rumped Parrotlets



Infanticide and adoption in the animal kingdom have long puzzled scientists. While both males and females of many species are known to kill the babies of their rivals to secure sexual or social advantage, other animals have been observed caring for the young of dead or missing comrades.

In a new study in the journal *[Proceedings of the National Academy of Sciences](#)*,

Steven Beissinger, Professor of Environmental Science, Policy and Management presents nearly 30 years of observations revealing what drives green-rumped parrotlets, a small South American parrot to either care for — or kill — one another's babies.

“In parrotlets, infanticide and adoption revolve around real estate and love,” said Beissinger. “Most of the infanticide attacks happened when a breeding pair was attacked by another pair that was trying to take over a coveted nest site. It also occurred when males wanted to breed with a widow who already had offspring — but we were surprised to find that these new males were just as likely to adopt the offspring as attack them.”

A green-rumped parrotlet widow and her nestlings. The behavior of the nestlings — spilling out of the cavity begging for food — indicates that they aren't getting enough food. Photo by Karl Berg.

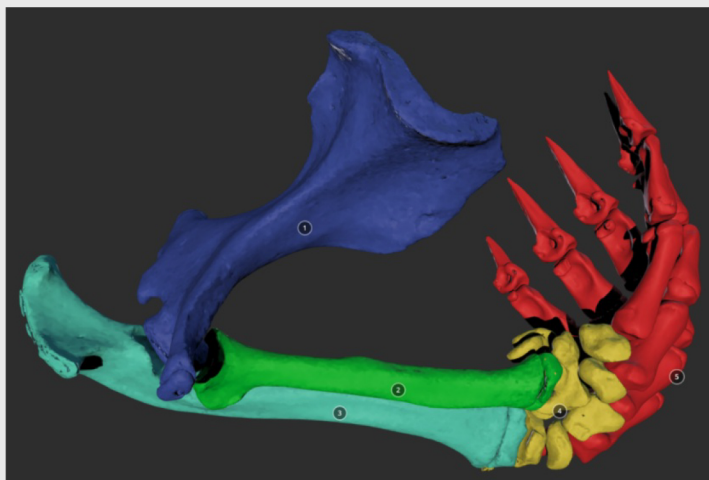
MVZ Staff Curator of Informatics and GIS Michelle Koo, MVZ Staff Curator of Reptiles and Amphibians Carol Spencer

## CT Scans of Animal Skeletons from the MVZ Now Online

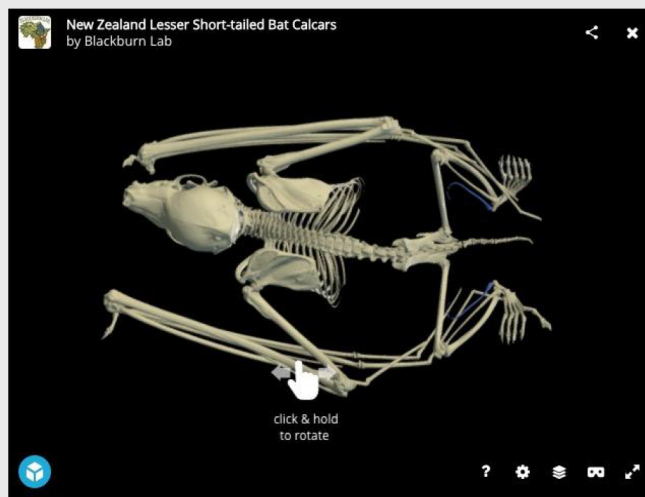
Specimens from the Museum of Vertebrate Zoology (MVZ) are part of an effort by 25 museums across the U.S. to obtain 3D scans of as many vertebrate groups as possible and make them available free to the general public in a searchable database. A summary of the six-year project, called openVertebrate (oVert), was published in the journal

*[BioScience](#)*. Artists have used the

3D models to create realistic animal replicas, photographs of specimens have been displayed as museum exhibits, and specimens have been incorporated into virtual reality headsets that give users the chance to interact with and manipulate them.



Carol Spencer, MVZ staff curator of herpetology, says anyone can access the 3D scans online at [MorphoSource](#), download the data and send them to a 3D printer to produce their own skeletal models. “You can actually print them and then use them in a classroom. We have lots of people using them for teaching in colleges or high schools,” Spencer said. “We’ve had this platypus in ethanol in a big tank, but it’s never been loaned out. The only people who have ever gone to look at this are people that come here to our collection; it’s maybe been looked at twice in its entire history here at MVZ. But in six years, it’s been downloaded 320 times,” Spencer said. “That’s a huge expansion of use.” Michelle Koo, MVZ’s staff curator of biodiversity informatics said, “All of these specimens are gaining sort of a new digital life. It’s part of our responsibility as curators to seek out...these new uses and ways of accessing specimens to make sure that they stay relevant and useful for these new cutting-edge tools.”



oVert was funded with an initial sum of \$2.5 million from the National Science Foundation (NSF), along with eight additional partnering grants totaling \$1.1 million that were used to expand the project’s scope. Koo and Spencer were principle investigators on the project’s NSF grant.

Top: The 3D models in MorphoSource and an app called Sketchfab can be used for teaching purposes. This colored model of the right forearm of a platypus (MVZ:Mamm:32885) identifies the various bones: humerus (1), radius (2), ulna (3), carpals (4) and metacarpals and phalanges (5). Courtesy of Sketchfab and MVZ

Bottom: New Zealand Lesser Short-tailed Bat Calcars from the [MVZ collection by Blackburn Lab on Sketchfab](#)

## 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.

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**Banner Image by Erin Voss, 2023.**

Emperor Penguin Colony in Tierra del Fuego, Argentina.

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