



Featured Publication

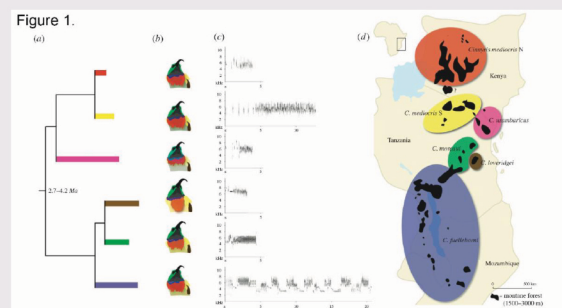
MVZ Professor and Curator of Birds Rauri Bowie, Former MVZ Graduate Student Jay McEntee and Former MVZ Volunteer Josh Peñalba

How do bird songs evolve over time?

Whether heard at dawn or during a daytime walk, the diversity and beauty of bird song is one of the great marvels of nature. Only three lineages -- about 40% of all bird species -- learn their song from parents and neighbors. Most of these belong to a single lineage, the oscine passerines. The complex musculature of their vocal organ and the large neurological centers in their brain are thought to have contributed to oscines' ability to learn song and to the complexity of the sounds they make. In a recent study, published in *Proceedings B*, Professor Bowie and former students Jay McEntee and Josh Peñalba report on the diversification of learned song in the double-collared sunbirds of East Africa, a species complex of oscine passerines whose members are geographically distributed across several sky islands along the eastern branch of the rift valley.



Eastern double-collared sunbird, photograph taken in Tanzania by Jackie Childers.



An overview of the eastern double-collared sunbird (EDCS) species complex.

Recent Publication by MVZ Researchers

Former MVZ Graduate Student Alexander Stubbs and Former MVZ Visiting Scholar Juliana Vianna

The Extreme Life Span of the Pacific Rockfish



Above: Yelloweye rockfish, *Sebastes ruberrimus*, dwells in deep waters along the California coast and lives upward of 140 years.

Below: Alexander Stubbs (left) and Brent Herb collecting Pacific rockfish for the study.



In a study published last month in *Science*, biologists at UC Berkeley, including former MVZ graduate student Alexander Stubbs and visiting scholar Juliana Vianna, compared the genomes of nearly two-thirds of the known species of rockfish that inhabit the coastal waters around the Pacific Ocean and uncovered some of the genetic differences that underlie their widely varying lifespans. Some rockfish, like the colorful calico rockfish (*Sebastes dallii*), live for little more than a decade, while the most long-lived of the genus, the rougheye rockfish (*Sebastes aleutianus*), can survive in the seabed of cold, deep coastal waters for more than 200 years. To uncover the genetic determinants of lifespan in rockfish, they obtained tissue samples from 88 species and sequenced their complete genomes. They found a variety of genes associated with longer lifespan, though some of these genes involve adaptations to living at greater depth and growing larger, both of which are associated with increased lifespan. The findings also highlight the trade-offs of a long lifespan, which include smaller populations.

MVZ Faculty News

MVZ Affiliated Professor Dr. Erica Rosenblum

Dr. Rosenblum Part of Team Awarded NSF Grant to Study Amphibian Resilience to Infectious Diseases

MVZ Affiliated Professor Erica Rosenblum is part of a team of researchers recently awarded a 12.5 million dollar grant from the National Science Foundation, to support a research partnership focused on amphibian resilience to infectious diseases. The grant was awarded to the Resilience Institute Bridging Biological Training and Research, or [RIBBiTR](#), a center based at the University of Pittsburgh. Dr. Rosenblum is the center's lead researcher. RIBBiTR includes biologists from different universities, and investigates the natural and human practices that have allowed some amphibian species to recover after catastrophic disease outbreaks. "We are in a biodiversity crisis around the world that a lot of scientists consider to be one of the biggest mass extinctions our planet has ever seen," said Dr. Rosenblum, "This project takes amphibians as a case study for trying to understand why these biodiversity declines are happening and what we can do about it." UC Berkeley will be leading the genomics portion of the project as well as educational and outreach components.



MVZ Community News

MVZ Assistant Professor Rebecca Tarvin, Staff Curators Michelle Koo and Carol Spencer, Researchers Vance Vrendenberg and Joyce Gross

Celebrating a Quarter Century of Reptile and Amphibian Databases



[AmphibiaWeb](#) recently celebrated its 20th anniversary and two decades later the mission remains the same; to connect people around the world by synthesizing and sharing information about amphibians and to enable better research, education and conservation. AmphibiaWeb was founded on the vision of the late David Wake, and continues his legacy of scientific relevancy and biodiversity data innovations. The team behind it has grown and now includes 13 committee members and 9 associates from universities and museums around the United States and Australia. AmphibiaWeb created and launched a repository for [Batrachochytrium](#) ([Bd and Bsal](#)) fungal data, produced primers on [amphibians](#) and on [phylogeny and taxonomy](#). It offers lesson plans for educators, activity sheets and Spanish language comics for younger children. The majority of the research and educational outreach is done by UC Berkeley staff, working with undergraduate apprentices. Each spring, college students in herpetology classes around the country write original species accounts as part of their curriculum and share these accounts on AmphibiaWeb. To date, 683 students, representing 45 different herpetology classes at 20 different universities have helped to contribute scientific data to AmphibiaWeb. AmphibiaWeb looks forward to many more years of service to the amphibian community and the public. *Ensatina eschscholtzii platensis*; Sierra Nevada Ensatina. Image by John Clare, 2012.

Inaugural Berkeley Bird Festival

In October the MVZ participated in the first annual Berkeley Bird Festival in conjunction with the Golden Gate Audubon Society. MVZ's Faculty Curator of Birds Rauri Bowie and Staff Curator of Birds Carla Cicero organized the public display which featured information about restoration, conservation, wing adaptation and current research in the MVZ. Over 100 people stopped by to view an exciting collection of museum specimens and helped create some larger than life chalk drawings of birds.



MVZ Graduate Student News

MVZ Graduate Student Kwasi Wrensford

Studies of Escape Behavior and the Race for Life Model

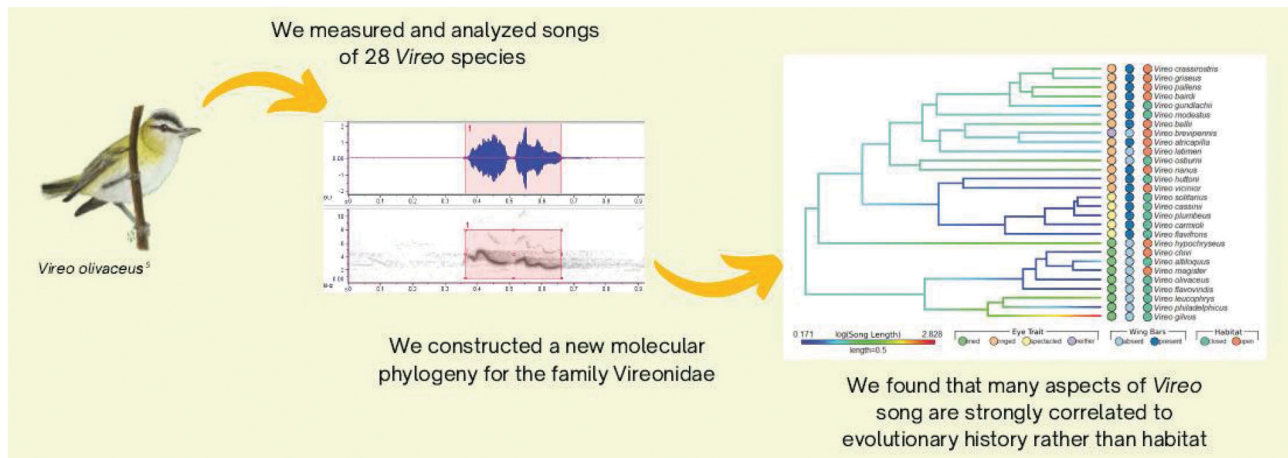
Escape theory has been exceptionally successful in conceptualizing and accurately predicting effects of factors that affect predation risk and explaining variation in flight initiation distance of FID. FID is the distance from predator to prey when escape begins. MVZ Graduate Student Kwasi Wrensford's recent paper in *Current Zoology* examines the relative orientation of an approaching predator, prey, and its eventual refuge. The "interpath angle" expresses the degree to which prey must run toward an approaching predator to seek refuge. The "race for life" model makes formal predictions about how the interpath angle should affect FID. Wrensford's paper evaluates the model by studying escape decisions in yellow-bellied marmots *Marmota flaviventer*, a species which flees to burrows.



MVZ Undergraduate Student News

MVZ Volunteer Linnea N. Schaefer, Staff Curator Carla Cicero, Postdoc Phred M. Benham and Professor & Curator of Birds Rauri C. K. Bowie

Undergraduate Volunteer Heard Her Calling in Bird Songs



In the spring of 2019 undergraduate Linnea Schaefer began her MVZ career as a volunteer in the bird curatorial department with Staff Curator Carla Cicero. Schaefer continued to work in the MVZ for next few years with mentors Postdoc Phred Benham and Professor Rauri Bowie. She completed her honors thesis on song evolution in the genus *Vireo* in relation to morphology, ecology, and phylogeny and received an award from the Integrative Biology Department for her “exceptional research performance.” She graduated in 2021 and presented her research at the American Ornithological Society and the Ecological Society of American annual meetings this past summer. Schaefer is currently a field research course assistant at the University of California-Santa Cruz. Congratulations Linnea!



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 Emma Steigerwald.

A bobcat (*Lynx rufus*) resting close to the trail in the evening sunshine in the Gerbode Valley, Golden Gate National Recreation Area.

