

THE MVZ BULLETIN



FROM THE DIRECTOR

Welcome to this first issue of the MVZ newsletter. As the MVZ has grown over the past few years, it has become clear that we need new ways to share information about our program and operations. One response has been to develop our website (mvz.berkeley.edu – check it out!); another is this newsletter, which we hope to issue once per semester. My thanks to Anna Ippolito and student volunteers, Janet Jin, and Christin Hong for making this happen!

The last few months have been exciting for the MVZ. Our wonderful Faculty Curator of Herpetology, Jim McGuire, was awarded tenure, clearing this substantial hurdle with room to spare. Jim's lab and program is featured in the following pages. There have been several events associated with our 2008 Centennial; a dinner in February with families of our founders, Joseph Grinnell and Annie Alexander, the Grinnell Medal and Alumni Symposium in March, and the associated production of "Voices of the MVZ", Alison Chubb's video masterpiece about the history of this extraordinary institution. Continuing our centennial program, we will host a show of art connected to the MVZ on the Homecoming weekend (Oct 4th), with public talks about the past and future of the museum. Later that month the newly opened Bancroft Library will feature the MVZ's program and archives.

(Continued on page 4)

INSIDE THIS ISSUE:

<i>Centennial</i>	1
<i>Cal Day 2008</i>	2
<i>EIA Award</i>	2
<i>McGuire Lab</i>	3
<i>Art Show and History Symposium</i>	3
<i>Bancroft Display</i>	5
<i>Featured Illustration</i>	5
<i>Volunteer Profile</i>	6
<i>BNHM Tips</i>	6

MVZ CELEBRATES 100 YEARS!

The year 2008 has marked an occasion 100 years in the making— the MVZ's centennial. To celebrate this special event, the museum has held two spectacular events: the Alumni Symposium and the Grinnell-Alexander Family dinner, and closes with the History Symposium to be held on October 4th.

The Alumni Symposium, running from March 14-15, attracted over 200 people from around the world. Kicking off the occasion was the reception and presentation of the Joseph Grinnell Medal to Dr. Michael Ryan. The medal is awarded only once or twice a decade to researchers who exhibit the same commitment and innovation to research and natural history as did Joseph Grinnell, the first director of the MVZ.



A group snapshot of attendees of the Alumni Symposium

Dr. Ryan's contributions in his work on animal behavior and evolutionary biology over the years have certainly merited him the award.

(Continued on page 9)

MVZ Centennial DVD:

Voices of the MVZ
The Echoes of a Legacy

For sale now!

For more information, see
newsletter page 7.

CAL DAY 2008

On April 12, 2008, as part of its centennial celebration, the MVZ launched one of its most impressive Cal Day displays to date. Cal Day is the only time of the year when the MVZ's specimens and research are open to the public. This year, a team of volunteers and undergraduates headed by Allison Shultz and Monica Albe unveiled a spectacular variety of displays, including "Interesting Specimens" which contained common, endangered, and extinct mammals, herps, and birds, and "100 Specimens from 100 Years" which showcased one specimen collected each year since the MVZ's creation.

Unlike previous Cal Days, this year's displays also included an entire area devoted to research the MVZ has conducted in both the past and present. Over 3,800 visitors visited the MVZ alone, and many more, especially kids, came to the very popular live animal room — which was designed and managed by Ann Trapaga.

In addition to looking over the amazing displays and patting the large snake draped around one man's shoulders,



Some of the fantastic displays visitors got to see.

visitors were able to partake in other exciting visual activities. These included viewing a video on the MVZ's history, taking a Google Earth tour of the South Sierra sites of the

(Continued on page 9)

"The MVZ Undergraduate Program has enabled me to experience the 'real world' of biological science and research, and has allowed me to become part of a great community of biologists."

~ Ryan Wilson, MVZ Undergraduate

MVZ UNDERGRADUATE APPRENTICE PROGRAM: EDUCATION INITIATIVE AWARD RECIPIENT

This year, the MVZ is very pleased to announce that the museum's Undergraduate Apprentice Program has received an Education Initiatives Award. This annual award recognizes a department on the Berkeley campus for its distinguished contributions to undergraduate education. UAP, founded in 2006 by Monica Albe, is one of the few university-programs in the U.S. that allows undergraduate students to work in a truly integrated and collaborative museum setting.

Through UAP, hundreds of students have had the opportunity to participate in research and collection management activities. Students perform duties ranging from collection maintenance, specimen preparation, field work, and lab research, all of which provide them with valuable experience and insight on working in a research museum. Students can also take

a number of classes led by the staff and curators (some of whom are also Berkeley faculty members) including the Prep Lab Class and IB104, Museum and Field Techniques in Vertebrate Natural History. The opportunities UAP provides for undergraduates enables students to gain a head

start in their careers — some are even published in journals before graduation— and to explore the once mysterious realm of a natural science museum. ♦



MVZ Undergraduates and Staff with copies of the EIA Award

RESEARCH PROFILE: THE MCGUIRE LAB

The members of our lab are primarily interested in understanding the evolution and maintenance of biological diversity, with a special emphasis on processes that pertain to reptiles and amphibians. Members of the lab study reptiles and amphibians from around the globe, including species occurring in SE Asia, China, Japan, Central Africa, Australia, Mexico, and, of course, the United States. We use a diversity of methodologies in our research, but most of our work is based on phylogenetic and population genetic analyses, bioclimatic modeling, and field-based measures of physiological performance and reproductive ecology.

Principle Investigator

The PI of our lab is Jim McGuire, MVZ Curator of Herpetology and Associate Professor in the Department of Integrative Biology. Jim's primary research interests are in phylogenetics, biogeography, and comparative biology of reptiles, amphibians, and hummingbirds. His current research has three primary foci. The first involves application of phylogenetic and coalescent-based population genetic methods to Sulawesi biogeography. The second is a phylogenetic study of crotaphytid lizards, with an emphasis on the roles of introgressive hybridization and incomplete lineage sorting. Finally, he is investigating the history of high-altitude adaptation in hummingbirds, which



involves species-level phylogenetics, analysis of the molecular evolution of hummingbird globin genes, and respiratory physiological studies across altitudinal gradients in the Andes and North America.

These projects afford Jim the opportunity to undertake exciting fieldwork in the Indonesian tropics, the desert southwest, and the Peruvian Andes.

Postdoctoral Fellow, Bryan Stuart, is interested in the biodiversity, phylogenetic systematics, and conservation of amphibians and reptiles of Southeast Asia. Consequently, he has very active field programs in Laos, Cambodia, Thailand, and Vietnam. Bryan uses molecular data and tools from the fields of systematics and

(Continued on page 4)



ART SHOW & HISTORY SYMPOSIUM: "DRAWING THE LINES"

OCTOBER 4, 2008

9AM-4PM



SPOTLIGHT: MCGUIRE LAB (CONT.)

phylogeography to study patterns and processes of diversification among populations, lineages, and closely related species. Most of his current work focuses on evolution of Southeast Asian frogs, in particular a group of frogs that exhibits substantial cryptic species variation (the frogs evidently have no trouble distinguishing conspecifics, but herpetologists have been confused for a century or more!). Bryan also has published extensively on the conservation genetics of the highly endangered turtles of East and SE Asia. Bryan is our resident guru in the recovery of usable DNA from preserved museum specimens. He has developed successful protocols for recovery of DNA from type specimens, as well as old museum specimens collected several decades ago (many of which have not been seen since their initial collection).

Bryan recently accepted the position of Curator of Herpetology in the North Carolina Museum of Natural Sciences and will assume that position in late August of 2008.

Graduate Students

Matt Brandley

Matt's two main research interests are in (1) methods and theory of phylogenetic reconstruction, and (2) application of these methods to questions of phylogeny, phylogeography, and evolution. Matt's empirical work is focused primarily on scincid lizards, especially those of the genus *Plestiodon*. Matt is studying phylogenetics, biogeography, and the evolution of limb reduction and body elongation within this amazingly diverse group of lizards. Matt's fieldwork in recent years has been concentrated in China and Japan.

Matt was recently awarded a prestigious Gaylord Donnelley Environmental Postdoctoral Fellowship from Yale University to join Tom Near's laboratory, and plans to finish his Ph.D. by the end of the summer of 2008.

Tom Devitt

Tom is primarily interested in processes of speciation and the evolution of reproductive isolation among closely related species. For his dissertation work, Tom is studying divergence population genetics and reproductive isolating barriers in *Ensatina* salamanders. Tom's field research during the past few years has been focused on several *Ensatina* hybrid zones in southern California, as well as in northern Baja California, Mexico.

(Continued on page 8)

FROM THE DIRECTOR (CONT.)

(Continued from page 1)

The academic capstone to the Centennial celebrations is a National Academy of Science Sackler Symposium based around Grinnell's concept of the ecological niche: "Biogeography, Changing Climates and Niche Evolution." For more information on these events, see mvz.berkeley.edu/Centennial/Website/events.html

In the midst of this frenzy of celebration, we have not ignored our core academic mission. MVZ Faculty and students continue to be successful with highly competitive federal grants and to publish in leading journals – some examples appear below. One particularly pleasing aspect is the high success rate of our grad students when applying for NSF Dissertation Improvement Grants. In the most recent (Fall 07) competition, MVZ/IB grads received 4 such awards, bringing to 9 the total over the past 4 years. This high rate of success reflects the quality and independence of our students. It also demonstrates the benefits of the using MVZ endowments to support the students' research to the point where they can apply successfully for extramural funding. We have recently established new endowments to support student research – notably the David & Marvalee Wake Fund and the Ned Johnson Fund. I encourage you to help ensure the future success of the MVZ's students by giving to these or other MVZ funds (please contact me, or see mvz.berkeley.edu/Giving_Opportunities.html)

I hope that you find this newsletter useful and informative. We would welcome news from our alumni to feature in subsequent issues – please contact Anna at (asophia@berkeley.edu).

Craig Moritz

[craigm@berkeley.edu]

Opening at the Bancroft Library at the end of October, 2008

The Museum of Vertebrate Zoology: A Century of Innovative Research and Teaching

A collaborative exhibit prepared by the staff of the Museum and the University Archives. The materials for this display come from the University's rich holdings of publications, personal papers, photographs, historical artifacts, and artwork.

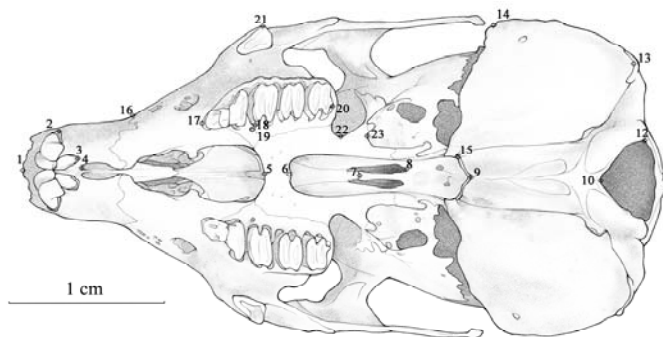
Showing at the Bancroft Library from October, 2008 through June, 2009.



Come explore the past and present of the MVZ

FEATURE ILLUSTRATION

ARTIST LILY LI



VENTRAL VIEW OF AN AMERICAN PIKA SKULL, DRAWN BY LILY LI WITH MVZ SPECIMENS AS A REFERENCE RELATING TO A PROJECT ON CORRELATION BETWEEN ENVIRONMENT AND PIKA SKULL SHAPES .

VOLUNTEER PROFILE: MARESSA TAKAHASHI

How long have you volunteered here?

I've been volunteering in the Lacey lab since June 2006. Julie Woodruff was my GSI for IB 104 and she brought in a couple of tucos during one of the classes. She was such an amazing GSI and the tucos were so adorable, I was smitten with the Lacey lab. I've been "wrangling" tucos ever since.

Please describe your involvement with the MVZ

As I've mentioned, I do basic husbandry work in the lab: feeding, cleaning, data collection, informal health checks. I work with a great team of undergraduates and I've met some awesome people over the past two years.

And recently, I've taken a more involved role in the Lacey lab. I'm currently finishing an IB honors thesis project on the tucos. I'm studying the role of olfactory cues in urine as a form of chemical communication between female tucos. Also, I'm helping Julie Woodruff this summer with one of her projects. She is trying to track the estrus cycles of the females and I am part of her research team.

Besides my direct involvement in the Lacey lab, I have gotten a lot of exposure to the museum collection through IB 104L and IB 173L. It continually impresses me how much access we students have to the collection. I'll also be starting to volunteer in the prep lab this summer and learning more about the curatorial side of the Museum. Say hi if you see me in the museum!

What makes volunteering in the MVZ rewarding?

Straight from the cute-and-fuzzies aspect, there are tuco pups in the fall. Of course, there are the usual perks of developing relationships with professors and graduate students. I've taken every possible class, I think, taught by Eileen Lacey and have greatly benefited from her mentorship. And I appreciate the opportunities to talk to graduate students. Since I will be applying for graduate school in a year or so, it's helpful to ask them for advice, tips, or just learn more about the variety of disciplines you can study in graduate school.

And in a general sense, I think volunteering for the MVZ is all about the exposure! By exposure I mean exposure to the collection, to the amazing faculty, to seminars, to research, to lab and field opportunities. I've learned so much by just hanging around the museum. I love it here! In fact, I love it so much I want to stay in the Bay Area while I apply to graduate school. If anyone needs to hire a lab/field assistant...
grin



BERKELEY NATURAL HISTORY MUSEUMS ADMINISTRATIVE NOTES

- The BNHM Website and Intranet is online at <http://bnhm.berkeley.edu/>
- We have updated the BNHM contact list (who to contact for what) and the expense reimbursement form. Both of these items can be found on the BNHM Website.
- The mileage reimbursement rate has increased from \$.505 to \$.585/mile effective 7-1-08 and the updated reimbursement form reflects this change.
- We are currently recruiting to fill the position of Financial Specialist.

Museum of Vertebrate Zoology, Centennial Celebration

History DVD

Voices of the MVZ: The Echoes of a Legacy

- ◆ \$10 per DVD (plus \$2 shipping and handling, per DVD)
- ◆ To order, please print and complete this page, and mail with check (payable to UC Regents) to the address below.

* Make checks payable to UC Regents.

	Price	X'	Quantity	= TOTAL
Voices of the MVZ: The Echoes of a Legacy	\$ 12 (includes S&H)			

Ship to:

Telephone (_____) _____ E-mail _____

Mail order form and check to:

Museum of Vertebrate Zoology - DVD
3101 Valley Life Sciences Building
University of California
Berkeley, CA 94720-3160

Questions? Please contact Anna Ippolito at (510) 642-3567
or asophia@berkeley.edu

SPOTLIGHT: MCGUIRE LAB (CONT.)

Jon Fong

Jon is interested in the evolution, phylogeny, and conservation genetics of turtles, especially the highly endangered faunas of China and neighboring countries. He uses molecular methods to identify cryptic species and phylogeographic patterns. A major objective of this work is to facilitate the conservation of these organisms, and to determine the impact of natural/artificial hybridization and human activity (i.e. pet and food trade). Jon conducts extensive fieldwork in China in support of his studies.

Jon recently was awarded a Fulbright Fellowship to continue his research in China. He will be departing in late August of 2008 for a duration of approximately 15 months.

Matt Fujita

Matt is broadly interested in the evolutionary genetics of reptiles and amphibians. His dissertation focuses on the *Heteronotia binoei* complex of geckos, which includes parthenogenetic (all female, clonally-reproducing) lineages. A significant portion of his research involves a detailed analysis of large, tandem duplications in the mitochondrial genomes of these parthenogens. These duplications are interesting because they include pseudogenes, which are quite rare in vertebrate mitochondrial genomes. Matt also is delineating species boundaries in the *H. binoei* complex. There are several chromosomal forms scattered across the arid region of Australia, and he is using a multi-locus approach to infer their systematic relationships. Matt undertakes fieldwork in Australia in support of his dissertation work, but also joined Adam Leaché (see below) on one of his collecting adventures in Ghana (Africa).

Matt was recently awarded a highly competitive NSF Doctoral Dissertation Improvement Grant (DDIG) in support of his research.

Shobi Lawalata

Shobi's research interests are primarily in the realm of molecular systematics, evolutionary biogeography, population genetics, and conservation genetics. She employs these tools to identify the underlying processes affecting faunal assemblage in Indonesia, with an eye toward using that information to guide conservation policies. For her dissertation work, Shobi is using phylogenetic and coalescent-based population genetic methods to study the biogeography and history of connectivity among several species of Indonesian flying lizards (genus *Draco*) that occur on the Mentawai Archipelago and adjacent mega-island of Sumatra. Shobi undertakes fieldwork on Sumatra and the Mentawai Islands in support of her research.

Shobi was recently awarded a highly competitive NSF Doctoral Dissertation Improvement Grant (DDIG) in support of her dissertation studies.

Adam Leaché

Adam's research is focused on phylogenetics and population genetics of reptiles and amphibians. For his dissertation research, he is using multilocus nuclear data to study the evolution of *Sceloporus* lizards. Adam maintains several active research projects, including studies focused on the phylogeny and evolution of phrynosomatid lizards, comparative phylogeography of West African herpetofauna, and comparative biogeography of Baja California.

Adam was recently offered a faculty position at the University of Washington where he will serve as Curator of Genetic Resources in the Burke Museum and Assistant Professor in the Department of Biology.

Guin Wogan

Guin is interested in (a) how spatial and temporal environmental heterogeneity act to maintain genetic and phenotypic variation in natural systems, (b) estimating historical and contemporary demographics, and (c) detecting variable/cyclic selection. She currently is investigating an Asian frog species complex (*Fejervarya limnocharis*) using a multi-locus approach to understand patterns of gene flow and dispersal. Further, as there are thousands of preserved museum specimens in collections, she is examining phenotypic changes through time and across space to gain insight into the evolutionary processes maintaining polymorphism and promoting diversification. Guin has undertaken extensive fieldwork in Burma in support of her studies over the past several years, and hopes to conduct more work there this summer.

Undergraduate and Postgraduate Researchers

Becky Chong

Becky has been working with Jim for nearly three years on a diversity of research projects. She received her B.A. from UC Berkeley in 2007, and has since served as Jim's lab technician. Becky is leading a project investigating molecular phylogenetics and cryptic species boundaries in SE Asian *Cyrtodactylus* geckos. She spent 10 weeks in the field in Sulawesi, Indonesia with Jim and his field team collecting amphibians and reptiles in support of her *Cyrtodactylus* project (and others).

Becky will be entering the Ph.D. program at Colorado State University in August of 2008 where she will work in the laboratory of Dr. Rachel Mueller (another MVZ alum). Becky will present a research seminar at the Evolution meetings this summer – her first presentation at an international meeting!

Brian Lavin

Brian is a postgraduate researcher who collects massive amounts of DNA sequence data and leads and independent project researching the phylogeography of *Elgaria coerulea*. ♦

CAL DAY 2008 (CONT.)

Grinnell Resurvey Project, and watching a video from Hastings which showed a thermal image of a Mountain Lion. Furthermore, seven members of the museum's staff, faculty, and graduate students presented half hour seminars in the Grinnell-Miller library, with topics ranging from "DNA in Action: A Hands-On Demonstration" to "Blood, Guts, Bones, and Flesh-Eating Beetles." All in all, Cal Day proved very successful, allowing the public to gain a personal feel and understanding for one of the University's most remarkable establishments. One testament to the quality of the MVZ Cal Day program is that it now features as #7 on Berkeley's own Zachary's Pizza's top ten list of things to do in Berkeley. ♦

CENTENNIAL (CONT.)

The next morning, symposium attendees had the opportunity to hear 15 talks from a number of notable speakers, including Dr. Ryan, that together covered all lines of research in the MVZ from the past, present, and future. During lunchtime, the film "Voices of the MVZ: The Echoes of a Legacy," produced by Alison Chubb, was screened for attendees.

At the end of the day, the celebration continued at Pyramid Brewery, which 160 people went for a general good time.

In addition to the Symposium, the descendants of the two main founders of the museum, Grinnell and Alexander, met for a special dinner with museum staff. 29 Grinnell family members and 3 Alexander members attended the event. ♦

MAKE A GIFT TO THE MUSEUM OF VERTEBRATE ZOOLOGY!

Your gift helps ensure the museum's continued excellence as one of the top research museums for evolutionary biology and conservation. The museum has the largest collection of vertebrates of any university museum with concentration on western North America, Central, and South America. Your gift may support a greatly needed laboratory upgrade one year, while the next it may help fund a graduate student's field research

To give online to the Museum of Vertebrate Zoology:
http://givetocal.berkeley.edu/makeagift/vertebrate_zoology

For more information on giving to the MVZ, please complete the form below and mail to:

Museum of Vertebrate Zoology - Gifts
University of California, Berkeley
3101 Valley Life Science Building #3160
Berkeley, CA 94720-3160

(or call (510) 642-3567 to speak with an MVZ representative.)

Name: _____

Mailing Address:

Telephone: _____ Email: _____