

TEXAS SOCIETY OF MAMMALOLOGISTS



PROGRAM, ABSTRACTS, AND NEWSLETTER

30th Annual Meeting

17-19 February 2012

Texas Tech University Center at Junction

Texas Society of Mammalogists

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Cover illustration of a Pronghorn (*Antilocapra americana*), by Terry Maxwell.

Texas Society of Mammalogists
30th Annual Meeting
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2012 Program Schedule

Friday, 17 February

3:00-7:30pm	Registration	Dining Hall
6:00pm	Dinner (serving line open 6:00-6:30pm)	Dining Hall
7:00pm	Announcements/Welcome Address TSM President Russell Pfau	Dining Hall
7:30pm	Poster Presentations	Dining Hall
8:30pm	Meeting of the Executive Committee	Academic Building

Saturday, 18 February

7:00am	Breakfast and Registration (serving line open 7:00-7:30am)	Dining Hall
8:00am	Introduction and Announcements TSM President Russell Pfau	Packard Building

PAPER SESSION -- Packard Building

(Presenters' names are underlined)

Chair: Amy Baird, University of Houston - Downtown

Papers 1 – 4 are in competition for the William B. Davis Award.

- 8:05 Paper 1 – **ECOLOGICAL NICHE MODELING PREDICTS WHERE CATTLE COULD BE AT RISK FOR HARMFUL EFFECTS OF THE COMMON VAMPIRE BAT (*DESMODUS ROTUNDUS*)**. Dana N. Lee, Monica Papeş, and Ronald A. Van Den Bussche, Department of Zoology, Oklahoma State University.
- 8:20 Paper 2 – **BAT COMMUNITY STRUCTURE IN RELATION TO MANAGEMENT PRACTICES IN SOUTHEASTERN PINE FOREST**. Anica Debelica-Lee¹, Cory R. Hanks², Thomas W. Pettit³, and Kenneth T. Wilkins¹, ¹Department of Biology and Graduate School, Baylor University, ²School of Veterinary Medicine, Louisiana State University, ³Biology Department, Brigham Young University - Idaho.

8:35 Paper 3 – **REVIEW OF THE INTRODUCTION AND ESTABLISHMENT OF THE EASTERN GRAY SQUIRREL (*SCIURUS CAROLINENSIS*) IN NOVA SCOTIA, CANADA.** Howard M. Huynh^{1,2,3}, Geoffrey R. Williams^{2,4}, Donald F. McAlpine¹, and Richard W. Thorington, Jr.⁵, ¹Department of Natural Science, New Brunswick Museum, Canada, ²Department of Biology, Acadia University, Canada, ³Department of Biological Sciences, Texas Tech University, ⁴Department of Biology, Dalhousie University, Canada, ⁵Division of Mammals, Smithsonian Institution National Museum of Natural History.

8:50 Paper 4 – **MONITORING OCELOTS AND BOBCATS IN A FRAGMENTED LANDSCAPE USING REMOTE CAMERAS AND RADIO TELEMETRY.** Jennifer M. Korn¹, Michael E. Tewes¹, Arturo Caso¹, Lon Grassman¹, W. Chad Stasey¹, and Jesus Franco², ¹Feline Research Center, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, ²Texas Parks and Wildlife Department.

9:05 **20 Minute Break**

Chair: Diane Post, University of Texas - Permian Basin

Papers 5 - 11 are in competition for the TSM Award.

9:25 Paper 5 – **MORPHOLOGICAL AND MOLECULAR VARIATION IN TOWNSEND'S BIG-EARED BAT (*CORYNORHINUS TOWNSENDII*) IN WEST TEXAS.** T. Marie Tipps and Loren K. Ammerman, Department of Biology, Angelo State University.

9:40 Paper 6 – **RELATIONSHIPS AMONG BONNETED BATS (GENUS *EUMOPS*): A MOLECULAR TEST OF MORPHOLOGICAL HYPOTHESES.** Sarah N. Bartlett and Loren K. Ammerman, Department of Biology, Angelo State University.

9:55 Paper 7 – **COUPLING GENETICS AND ECOLOGICAL NICHE MODELING TO EXAMINE EVOLUTIONARY RELATIONSHIPS AMONG SUBSPECIES OF ORD'S KANGAROO RAT, *DIPODOMYS ORDII*.** Jeremy E. Wilkinson¹, Sean A. Neiswenter², Brett R. Riddle², Janet K. Braun³, Michael A. Mares³, and Ronald A. Van Den Bussche¹, ¹Department of Zoology, Oklahoma State University, ²School of Life Sciences, University of Nevada, Las Vegas, ³Sam Noble Oklahoma Museum of Natural History, University of Oklahoma.

10:10 Paper 8 – **COMPARATIVE PHYLOGEOGRAPHY OF TWO OF THE WORLD'S MOST COSTLY INVADERS, *RATTUS RATTUS* AND *RATTUS NORVEGICUS*.** Justin B. Lack¹, Meredith J. Hamilton¹, Janet K. Braun², Michael A. Mares^{2,3}, and Ronald A. Van Den Bussche¹, ¹Department of Zoology, Oklahoma State University, ²Sam Noble Museum of Natural History, ³Department of Zoology, University of Oklahoma.

10:25 **15 Minute Break**

Chair: Caleb Phillips, Texas Tech University

- 10:40 Paper 9 – **CHARACTERIZATION OF TWO MAJOR HISTOCOMPATIBILITY COMPLEX CLASS II LOCI OF *NEOTOMA ALBIGULA*: OPTIMIZATION OF SSCP ANALYSIS USING CAPILLARY ELECTROPHORESIS.** Sarah G. Hoss and Michelle L. Haynie, Department of Biology, University of Central Oklahoma.
- 10:55 Paper 10 – **SMALL MAMMALS AS A PHYLOGEOGRAPHICAL MODEL OF MESOAMERICAN HIGHLANDS: PATTERNS OF SPECIATION AND SIGNIFICANCE OF THE TEHUANTEPEC ISTHMUS.** Nicté Ordóñez-Garza¹ and Robert D. Bradley^{1,2}, ¹Department of Biological Sciences, Texas Tech University, ²Museum of Texas Tech University, Texas Tech University.
- 11:10 Paper 11 – **POTENTIAL ANCIENT HYBRIDIZATION AND MITOCHONDRIAL CAPTURE IN HYBRIDIZING GROUND SQUIRRELS (GENUS *SPERMOPHILUS*).** Cody W. Thompson¹, Frederick B. Stangl, Jr.², and Robert D. Bradley^{1,3}, ¹Department of Biological Sciences, Texas Tech University, ²Biology Department, Midwestern State University, ³Natural Science Research Laboratory, Museum of Texas Tech University.
- 12:00 **Lunch** (serving line open 12:00-12:30pm)
- 1:15 **Group Photo** behind the Packard Building.

PAPER SESSION – Packard Building

Chair: Michelle Haynie, University of Central Oklahoma

Papers 12 - 16 are in competition for the Rollin H. Baker Award.

- 1:45 Paper 12 – **INVASIVE RATTUS AS RESERVOIRS FOR ZOONOTIC HEPATITIS E VIRUS IN THE U.S.** Kylie J. Volk, Justin B. Lack, and Ronald A. Van Den Bussche, Department of Zoology, Oklahoma State University.
- 2:00 Paper 13 – **A COMPARATIVE SURVEY OF SMALL MAMMAL POPULATIONS IN FOUR DIFFERENT MICROHABITATS FROM 2002 TO 2011.** Erin Q. Boyd and Thomas E. Lee, Jr., Department of Biology, Abilene Christian University.
- 2:15 Paper 14 – **PHYLOGENETICS OF THE GENUS *NEACOMYS* (RODENTIA: CRICETIDAE), WITH EVIDENCE OF A NEW SPECIES FROM BOLIVIA.** Justin P. Williams¹, Adriana Rico-Cernohorska², Julieta Vargas³, Teresa Tarifa⁴, Eric Yensen⁵ and Jorge Salazar-Bravo¹, ¹Department of Biological Sciences, Texas Tech University, ²Institute of Ecology, University of San Andres, Bolivia, ³Colección Boliviana de Fauna, ⁴3407 Fair Oaks Circle, Caldwell, Idaho, ⁵Department of Biology, The College of Idaho.

2:30 Paper 15 – **THE IMPACT OF WIND TURBINES ON BAT DIVERSITY IN THE SOUTHERN ROLLING PLAINS.** Cassi M. Stapp¹, Patty Doyle², Thomas E. Lee, Jr.², and Joel G. Brant¹, ¹Department of Biology, McMurry University, ²Department of Biology, Abilene Christian University.

2:45 Paper 16 – **PATTERNS OF HABITAT USE AND COMPETITION BETWEEN NINE-BANDED ARMADILLOS (*DASYPUS NOVEDECINCTUS*) AND HOG-NOSED SKUNKS (*CONOPATIS LEUCONOTUS*).** Katelynn J. Frei and Robert C. Dowler, Department of Biology, Angelo State University.

3:00 **15 Minute Break**

3:15pm **Business Meeting** Packard Building
All members, including students, please attend!

5:30-9:00pm **Annual Banquet and Auction** Dining Hall

5:30-6:30 Dinner (serving line open 5:30-6:00pm)

5:30 Silent Auction opens for bidding

6:30-7:00 Award Presentations

7:00-8:00 Guest Speaker Address:

The Call of the Wild: Is Anyone Listening?

Carter Smith

Executive Director of Texas Parks & Wildlife
and former Director of The Nature Conservancy of Texas

8:00-9:00 Live Auction
Silent Auction ends 10 minutes after Live Auction

9:00pm-? Socializing and Dancing Dining Hall

Sunday, 19 February

7:30am Breakfast (serving line open 7:30-8:00am) Dining Hall

Oral Presentation Abstracts

Paper 1

ECOLOGICAL NICHE MODELING PREDICTS WHERE CATTLE COULD BE AT RISK FOR HARMFUL EFFECTS OF THE COMMON VAMPIRE BAT (*DESMODUS ROTUNDUS*). Dana N. Lee¹, Monica Papeş¹, and Ronald A. Van Den Bussche¹, ¹Department of Zoology, Oklahoma State University. (dana.lee10@okstate.edu)

Success of the cattle industry in Latin America has been, and is still negatively impacted by the effects of the common vampire bat, *Desmodus rotundus*. Nightly attacks by these bats decrease milk production and weight gain and increase the risk of secondary infections and rabies virus transmission. We used ecological niche modeling to predict the distribution of *D. rotundus* in Mexico, Central, and South America and combined our prediction with cattle density predictions to identify areas where cattle are at higher risk for the negative impacts of *D. rotundus*. We evaluated the accuracy of our risk prediction by plotting three documented cases of vampire transmitted cattle rabies. Temperature seasonality, mean temperature of the coldest quarter, precipitation seasonality, precipitation of the wettest month, slope and elevation contributed most to the model. Our results indicate highly suitable habitat for *D. rotundus* can be found in most of Mexico, Central America, portions of Venezuela, the Brazilian highlands, and along the eastern slope of the Andes Mountains. Areas predicted to be suitable for both cattle and *D. rotundus* include the Brazilian highlands, most of Central America, and most of Mexico with the exception of the Yucatan Peninsula. All three documented cattle rabies outbreaks were located in areas our model predicted the cattle would be at increased risk. Our cattle at risk prediction can be used to locate areas where cattle ranchers should be cognizant of cattle rabies because the area possesses suitable habitat for *D. rotundus* and to help authorities focus rabies prevention efforts on areas most at risk for outbreaks.

Paper 2

BAT COMMUNITY STRUCTURE IN RELATION TO MANAGEMENT PRACTICES IN SOUTHEASTERN PINE FOREST. Anica Debelica-Lee¹, Cory R. Hanks², Thomas W. Pettit³, and Kenneth T. Wilkins¹, ¹Department of Biology and Graduate School, Baylor University, ²School of Veterinary Medicine, Louisiana State University, ³Biology Department, Brigham Young University - Idaho. (Anica_Debelica@baylor.edu)

Sam Houston National Forest (SHNF), Texas, is a mixed-managed southeastern pine forest. The majority of the western part of SHNF has been managed by prescribed burning and clear-cutting, while the eastern side is mostly unmanaged. This study examines differences in the bat community of managed and unmanaged areas of SHNF. We hypothesized that the managed area would be dominated by clutter-intolerant bat species, whereas the non-managed habitat would be dominated by clutter-tolerant bat species. We netted bats in both managed (2009, 2010, and 2011) and unmanaged (2010 and 2011) habitats. Before releasing the bats, we determined their species, sex, reproductive stage, and age. We also took wing photographs and recorded echolocation calls of each bat so we could compute wing indices and thereby designate each species as clutter-tolerant or clutter-intolerant. We captured 380 bats: 197 bats (8 species) at the managed and 183 bats (6 species) at the unmanaged site. We found variation in capture numbers

for all species year-to-year for both managed and unmanaged sites (d.f = 5, $p < 0.0001$, and d.f. = 5, $p = 0.0081$, respectively). Both areas had the lowest capture numbers during 2010. We found a significant “site” effect for 2010 and 2011 (d.f. = 5, $p < 0.0001$ for both years). Even though *Lasiurus seminolus* were most abundant, and *Nycticeius humeralis* were 2nd most abundant bats at both sites, we captured majority of *L. borealis* and *Perimyotis subflavus* at managed, and majority of *Eptesicus fuscus* and *Myotis austroriparius* in unmanaged areas. We did not expect high abundance of *N. humeralis* and *E. fuscus* at unmanaged site as they were both designated as clutter-intolerant species. However, unmanaged site most likely contained suitable roost sites for these bats and bats may have used uncluttered corridors to approach foraging areas.

Paper 3

REVIEW OF THE INTRODUCTION AND ESTABLISHMENT OF THE EASTERN GRAY SQUIRREL (*SCIURUS CAROLINENSIS*) IN NOVA SCOTIA, CANADA. Howard M. Huynh^{1,2,3}, Geoffrey R. Williams^{2,4}, Donald F. McAlpine¹, and Richard W. Thorington, Jr.⁵,
¹Department of Natural Science, New Brunswick Museum, Canada, ²Department of Biology, Acadia University, Canada. ³Current address: Department of Biological Sciences, Texas Tech University, ⁴Department of Biology, Dalhousie University, Canada, ⁵Division of Mammals, Smithsonian Institution National Museum of Natural History. (howard.huynh@ttu.edu)

The eastern gray squirrel, *Sciurus carolinensis*, is one of the most recognized and abundant sciurids in North America. Historically restricted to eastern North America, eastern gray squirrels are continuing to expand their geographic range. Human-sponsored introductions have also greatly facilitated the range extension of eastern gray squirrels across North America, often resulting in significant negative impacts on the ecological integrity of native ecosystems. Since the 1930s, apparently isolated sightings of eastern gray squirrels in Nova Scotia, Canada, have been attributed to captive releases or escapes. Despite reports of multiple introduction events over the past decades, many scientists believed the species had not become established in the province. However, recent trapping efforts have demonstrated otherwise, and have resulted in the first (3) voucher specimens of this species recorded for Nova Scotia. These vouchers provide evidence that the eastern gray squirrel is now present as a wild breeding mammal in Nova Scotia. We discuss the biological impacts of this highly adaptable sciurid in non-native habitats. Although the future ecological impact of the eastern gray squirrel in Nova Scotia is uncertain, it seems likely that this species will continue to expand its range and increase in abundance.

Paper 4

MONITORING OCELOTS AND BOBCATS IN A FRAGMENTED LANDSCAPE USING REMOTE CAMERAS AND RADIO TELEMETRY. Jennifer M. Korn¹, Michael E. Tewes¹, Arturo Caso¹, Lon Grassman¹, W. Chad Stasey¹, and Jesus Franco², ¹Feline Research Center, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville, ²Texas Parks and Wildlife Department. (jennifer.korn@students.tamuk.edu)

Conservation of federally endangered ocelots (*Leopardus pardalis*), a wild felid found in isolated populations in South Texas, has included monitoring using a combination of radio-telemetry and remote-sensing cameras. Our study site is a 109 ha Tamaulipan thornscrub habitat unit protected as two federal conservation easements. Ongoing studies of ocelot and bobcat (*Lynx rufus*) interactions reveal ocelots on this site primarily use easements (95% of locations). We

hypothesized that intensive camera surveys would capture all resident ocelots and that ocelots and bobcats would partition habitat for greatest avoidance. We placed remote cameras around the easements in a stratified random grid from 2003 to present and observed a plateau in number of unique individuals sighted from cameras after 2 months. We live-trapped 5 ocelots in 2010-11 and radio-collared 3 ocelots with VHF and GPS, in addition to 3 bobcats. Subsequent live-trapping resulted in capture of 3 unphotographed ocelots. The adult male ocelot had the largest home range (134 ha) using both easements. Two adult female ocelots resided in one easement at unequal proportions (69 and 18 ha), and shared it with 2 sub-adult ocelots. One adult female with young was not live-trapped and home range (82 ha) calculated from camera data. Sympatric bobcats had larger ranges (male=428 ha, female=292 ha, sub-adult male=276 ha), used thornscrub at lower intensity (21%, 20%, 1%, respectively), preferring mixed habitats around the easements (53%, 39%, 63%, respectively). Home ranges calculated from camera traps and radio telemetry did not differ for ocelots. Our results support the need for remote camera surveys in conjunction with live-trapping and radio-telemetry to monitor the population status of this endangered species.

Paper 5

MORPHOLOGICAL AND MOLECULAR VARIATION IN TOWNSEND'S BIG-EARED BAT (*CORYNORHINUS TOWNSENDII*) IN WEST TEXAS. T. Marie Tipps and Loren K. Ammerman, Department of Biology, Angelo State University. (ttipps@angelo.edu)

Several specimens of Townsend's big-eared bat (*Corynorhinus townsendii*) from Big Bend National Park (Brewster Co., Texas) were found to display morphological characteristics of both the Mexican big-eared bat (*C. mexicanus*) and Townsend's big-eared bat (*C. townsendii*), two species that live in sympatry in northern Mexico. Thus, the first goal of this study was to use molecular sequence data from the cytochrome *b* gene to determine the specific and subspecific identity of the specimens found in this region. Previous studies were limited and inconclusive regarding the expected identity of specimens from this region. One study based on molecular data suggested that *C. t. australis* occurred nearby, while an older study using morphological data documented a zone of morphological intergradation between *C. t. australis* and *C. t. pallescens*. Therefore, another goal of this study was to illuminate possible morphological variation within the molecular lineages recovered in west Texas specimens. Based on Bayesian and maximum likelihood analyses of cytochrome *b* data from 60 specimens, there was support for the presence of a single subspecies, *C. t. australis*, throughout west Texas. Evaluation of morphological data from these same specimens show that none of the discrete characteristics defined by the morphological key are always accurate in delineating *C. townsendii* from *C. mexicanus*. These results confirm that substantial morphological variation exists within *C. t. australis* specimens from west Texas.

Paper 6

RELATIONSHIPS AMONG BONNETED BATS (GENUS *EUMOPS*): A MOLECULAR TEST OF MORPHOLOGICAL HYPOTHESES. Sarah N. Bartlett and Loren K. Ammerman, Department of Biology, Angelo State University. (sbartlett@angelo.edu)

The genus *Eumops* (bonneted bats) consists of 15 species and is more variable (both morphologically and karyotypically) than other genera in the family Molossidae. *Eumops*

species range in forearm size from 37 to 83mm and the monophyly of the genus is supported by morphological data. The objective of my study was to use molecular data to test the relationships among *Eumops* species that have been proposed by cladistic analysis of morphological data. We included 12 species of *Eumops* and 4 outgroup genera (*Tadarida*, *Nyctinomops*, *Molossus*, and *Promops*) in our analysis. We analyzed DNA from the mitochondrial and nuclear genomes. A total of approximately 2224 base pairs from the ND1 gene (27 taxa), cytochrome b gene (29 taxa), and beta-fibrinogen intron 7 (23 taxa) was collected. Bayesian analyses partitioned by codon position were performed on both individual and combined mitochondrial data sets. Divergences (GTR + I + G) ranged from 0.6% to 20.6% among the species of *Eumops*. Significant phylogenetic groupings were evaluated by Bayesian posterior probabilities for each gene. Disagreements in branching pattern were observed between the molecular and morphological data sets and between the nuclear and mitochondrial data sets. Generally, the relationships supported by molecular data were not consistent with morphological hypotheses although some sister-groupings did agree with those previously proposed by morphological data. These analyses provided additional resolution to the phylogeny of bonneted bats.

Paper 7

COUPLING GENETICS AND ECOLOGICAL NICHE MODELING TO EXAMINE EVOLUTIONARY RELATIONSHIPS AMONG SUBSPECIES OF ORD'S KANGAROO RAT, *DIPODOMYS ORDII*. Jeremy E. Wilkinson¹, Sean A. Neiswenter², Brett R. Riddle², Janet K. Braun³, Michael A. Mares³ and Ronald A. Van Den Bussche¹, ¹Department of Zoology, Oklahoma State University, ²School of Life Sciences, University of Nevada, Las Vegas, ³Sam Noble Oklahoma Museum of Natural History, University of Oklahoma.
(jeremy.wilkinson@okstate.edu)

Dipodomys ordii has a broad distribution, ranging from southern Alberta and Saskatchewan, Canada to southern Hidalgo, Mexico and from central Oregon and eastern California to central Kansas and Oklahoma. Of the 19 species of *Dipodomys*, *D. ordii* is regarded as the most ecological generalist of the genus. Currently there are 32 recognized subspecies that have been established based on morphologic and ecologic data. The large number of morphologically defined subspecies, some separated by strong isolating barriers and others separated by weak filters, makes *D. ordii* an ideal taxon to study the process of geographic isolation, to evaluate subspecific boundaries, and to test for the possibility of cryptic species. In 1949, Setzer recognized 35 subspecies and arranged these subspecies into six subspecies groups based on geographical location or morphological characteristics. However, since Setzer's (1949) publication no independent study has been conducted to test this evolutionary hypothesis. By combining ecological niche modeling with genetics, we have found significance of the subspecies groupings made by Setzer. The digenomic phylogenetic analyses based on DNA sequence variation at the mitochondrial Cytochrome Oxidase III (COIII) gene and nuclear AFLPs reveal clades that match with the subspecific complexes. Also, through the use of ecological niche modeling we have discovered that significant zones of unsuitable habitat separate the predicted distributions of two of the subspecies complexes from the other complexes, thus these could be delimited as separate species.

Paper 8

COMPARATIVE PHYLOGEOGRAPHY OF TWO OF THE WORLD'S MOST COSTLY INVADERS, *RATTUS RATTUS* AND *RATTUS NORVEGICUS*. Justin B. Lack¹, Meredith J. Hamilton¹, Janet K. Braun², Michael A. Mares^{2,3}, and Ronald A. Van Den Bussche¹,

¹Department of Zoology, Oklahoma State University, ²Sam Noble Museum of Natural History,

³Department of Zoology, University of Oklahoma. (lackj@ostatemail.okstate.edu)

Rattus rattus and *Rattus norvegicus* are two of the most prolific and costly invasive species on the planet, spreading deadly pathogens, contaminating food supplies, damaging man-made structures, and threatening native ecosystems. In spite of their significance, almost nothing is known concerning their colonization history and dispersal in the U.S., and no study has examined their genetic structure at a large geographical scale. This information could be crucial in predicting and stopping future invasions, informing eradication and management plans, and stopping the spread of rat-borne infectious disease. We utilized both mitochondrial and nuclear DNA (mtDNA and nucDNA, respectively) markers to examine population genetic structure in both *R. rattus* and *R. norvegicus* in the U.S. Our analyses recovered distinct colonization histories for these two species, suggesting the major wave of *R. rattus* invasion originated from a single geographic locality and one primary mtDNA lineage, despite considerable global mtDNA diversity. In contrast, *R. norvegicus* exhibited significant mtDNA diversity in the U.S., suggesting at least four distinct source populations or lineages have invaded. In terms of dispersal, nucDNA analyses suggested *R. rattus* was exhibiting relatively lower rates of long-distance dispersal as compared to *R. norvegicus*. These results have implications for the potential of these species to spread disease, invade novel locations, and reinvade eradicated localities, as has occurred in other portions of the world.

Paper 9

CHARACTERIZATION OF TWO MAJOR HISTOCOMPATIBILITY COMPLEX CLASS II LOCI OF *NEOTOMA ALBIGULA*: OPTIMIZATION OF SSCP ANALYSIS USING CAPILLARY ELECTROPHORESIS. Sarah G. Hoss and Michelle L. Haynie, Department of Biology, University of Central Oklahoma. (shoss@uco.edu)

The major histocompatibility complex (*Mhc*) is an important component of vertebrate immune systems. Genetic analysis at *Mhc* loci can provide information on susceptibility to certain viral strains. *Neotoma albigula* (white-throated woodrat) has been associated with at least three distinct strains of arenaviruses, suggesting an interesting coevolutionary history between the host and virus. In this study, we have been screening two *Mhc* class II loci to detect genetic variation within *N. albigula* subpopulations in Arizona. Our method involves using capillary electrophoresis-based single strand conformational polymorphism (SSCP) analysis. We have optimized the protocol and our results indicate we have successfully screened the *Mhc* loci for genetic variation. The methods used in this research, as well as previous findings, will be applied to collaborative research project with Texas Tech University and the University of Texas Medical Branch involving the association between *N. albigula* and arenaviruses.

Paper 10

SMALL MAMMALS AS A PHYLOGEOGRAPHICAL MODEL OF MESOAMERICAN HIGHLANDS: PATTERNS OF SPECIATION AND SIGNIFICANCE OF THE TEHUANTEPEC ISTHMUS. Nicté Ordóñez-Garza¹ and Robert D. Bradley^{1,2}, ¹Department of Biological Sciences, Texas Tech University, ²Museum of Texas Tech University, Texas Tech University. (nicte.ordonez-garza@ttu.edu)

One of the hypotheses describing the diversification of small mammals in Mesoamerica infers that differentiation within the region may be attributable to separate mountain systems providing a disjunctive, cool-adapted, highland environment in an otherwise tropical ecosystem. This scenario suggests that different taxa adapted to changes in climate during the past resulting in a considerable impact on phylogeographic patterns within and among closely related species. The goal of this study is to use inferred phylogeographic relationships and divergence times for several lineages of small mammals to identify broad-scale historical events that have shaped the evolutionary history of Mesoamerican highland taxa. The species used to test this hypothesis are *Baiomys musculus*, *Nyctomys sumichrasti*, *Ototylomys phyllotis*, *Reithrodontomys mexicanus*, *Reithrodontomys sumichrasti*, *Reithrodontomys fulvescens*, *Peromyscus beatae*, *Peromyscus mexicanus*, *Peromyscus oaxacensis*, and *Neotoma isthmica*. Preliminary results show that these species exhibit geographical partition that suggests that Tehuantepec Isthmus is a barrier for the distribution and speciation patterns.

Paper 11

POTENTIAL ANCIENT HYBRIDIZATION AND MITOCHONDRIAL CAPTURE IN HYBRIDIZING GROUND SQUIRRELS (GENUS *SPERMOPHILUS*). Cody W. Thompson¹, Frederick B. Stangl, Jr.², and Robert D. Bradley^{1,3}, ¹Department of Biological Sciences, Texas Tech University, ²Biology Department, Midwestern State University, ³Natural Science Research Laboratory, Museum of Texas Tech University. (cody.thompson@ttu.edu)

Spermophilus mexicanus and *S. tridecemlineatus* are sister species that form a broad zone of sympatry across southeastern New Mexico and the southern portion north-central Texas. Previous allozymic, karyotypic, and morphologic studies suggest that the two species hybridize; however, no modern genetic analyses have been used to evaluate the system. Recently, Stangl et al. (in prep) documented several locations of possible hybridization in the southeastern portion of the Texas Panhandle. Initial morphological analyses confirmed the presence of hybrids; however, neither species were collected in sympatry and probably exist in parapatrically interdigitated populations. To further investigate hybridization between these 2 species, we have sequenced the mitochondrial cytochrome-*b* (*Cytb*) sequences and Y-linked structural maintenance of chromosomes gene (*SmcY*) to determine the maternal and paternal contributions, respectively. The *Cytb* data indicate a common mitochondrial genome for *S. mexicanus* and *S. tridecemlineatus* within the putative zone of sympatry, suggesting an ancient hybridization event and subsequent mitochondrial capture. Further support of this observation can be found in the data obtained from the *SmcY* gene. Though divergence is limited, diagnostic indels for each species delineate the monomorphic mitochondrial haplogroup found within the putative zone of sympatry and identify individuals with mixed ancestry. In addition, amplified fragment length polymorphisms (AFLPs) indicate that diagnostic loci exist between parental populations and

known hybrids. Efforts are in progress to complete the AFLP dataset, which will further resolve our knowledge of the extent of current hybridization.

Paper 12

INVASIVE *RATTUS* AS RESERVOIRS FOR ZOONOTIC HEPATITIS E VIRUS IN THE U.S. Kylie J. Volk, Justin B. Lack, and Ronald A. Van Den Bussche, Department of Zoology, Oklahoma State University. (kyliejv@ostateemail.okstate.edu)

Invasive *Rattus* are known to carry many zoonotic pathogens, including some of the most devastating diseases in human history (i.e. plague). The hepatitis E virus (HEV) is one pathogen where invasive *Rattus* have been suggested as potential reservoirs, but this has never been confirmed. Multiple strains of HEV exist globally, with four of these strains known to infect humans and causing potentially lethal infection. While the source of HEV infection in developing countries is well known (oral-fecal contamination of water supply), the high incidence of HEV antibody positive human blood samples in U.S. blood-banks remains a mystery, and zoonotic pathways have been suggested. To investigate the role of invasive *Rattus* in the spread of HEV, we utilized a nested RT-PCR approach to test liver samples from 446 individuals (both *R. rattus* and *R. norvegicus*) for the presence of viral RNA, and sequenced all positive amplicons. We recovered an infection rate of approximately 10%, with positive individuals from both species and multiple geographic locations. Our results confirm that both species of *Rattus* are potential carriers of a single strain of HEV shown previously to infect humans (i.e., zoonotic). Furthermore, the presence of nearly identical HEV sequences in both *R. rattus* and *R. norvegicus* suggests little limitation in terms of host specificity for this viral strain. Further work is needed to confirm invasive *Rattus* as the source of human HEV infection in the U.S.

Paper 13

A COMPARATIVE SURVEY OF SMALL MAMMAL POPULATIONS IN FOUR DIFFERENT MICROHABITATS FROM 2002 TO 2011 Erin Q. Boyd and Thomas E. Lee, Jr., Department of Biology, Abilene Christian University. (eqb07a@acu.edu)

A small mammal survey was conducted each year from 2002 to 2011 for five weeks during June and July at a research site in Kalkaska County, Michigan. The studies surveyed four microhabitats, a kettle bog, an old growth white pine (*Pinus strobus*) forest, a secondary growth pine forest, and an aspen forest. The study site is located 5.6 km SE of Big Twin Lake (N 44° 47.147', W 84° 55.659'). Sherman traps and pitfalls were the primary tools used to trap small mammals. An assessment and comparison of approximate population size, dominate species, and species richness were calculated each year. A Shannon-Weaver diversity index and Peterson-Lincoln index were used to estimate species richness and population size. Throughout the entirety of the surveys, *Sorex cinereus*, *Tamias striatus*, and *Microtus pennsylvanicus* were the most numerous species respectively. The highest species diversity was seen in 2004, whereas the highest number of individuals caught was observed in 2007.

Paper 14

PHYLOGENETICS OF THE GENUS *NEACOMYS* (RODENTIA: CRICETIDAE), WITH EVIDENCE OF A NEW SPECIES FROM BOLIVIA. Justin P. Williams¹, Adriana Rico-Cernohorska², Julieta Vargas³, Teresa Tarifa⁴, Eric Yensen⁵ and Jorge Salazar-Bravo¹,

¹Department of Biological Sciences, Texas Tech University, ²Institute of Ecology, University of San Andres, Bolivia, ³Colección Boliviana de Fauna, ⁴3407 Fair Oaks Circle, Caldwell, Idaho,

⁵Department of Biology, The College of Idaho. (jpw.williams@ttu.edu)

Rodents of the genus *Neacomys* are widespread in South America, ranging from Panama to eastern Bolivia and central Brazil, and from lowland forests up to 1500 meters in elevation. The last phylogenetic analysis of the genus reported 7 species and the presence of 2 undescribed clades; research conducted in Bolivia shows that at least one more undescribed clade that may be deserving of status. To test this hypothesis, we sequenced several individuals of this Bolivian population and compared them to samples and sequences obtained by us or available in genbank. Overall, our results suggest the presence of 11 clades (as opposed to the previously thought 9 clades) and with genetic distances between *N. spinosus*, the type species of the genus, to the remaining clades averaging 12.3% divergence (kimura-2 parameter, range 8.9%-18.2%) for those sequences with at least 801 base pairs. The Bolivian sample was genetically more similar to *N. spinosus* (ca. 9% divergent) yet these clades did not share a most recent common ancestor. Moreover, discrete morphological differences between *N. spinosus* and the Bolivian sample (e.g., the shape of the meso-pterygoid fossa and the size and shape of the braincase) were of similar magnitude to those used to diagnose other species in the genus. Further research is ongoing but our preliminary results based on morphological and genetic data, substantiate the presence of an undescribed species of *Neacomys* in western Bolivia.

Paper 15

THE IMPACT OF WIND TURBINES ON BAT DIVERSITY IN THE SOUTHERN ROLLING PLAINS. Cassi M. Stapp¹, Patty Doyle², Thomas E. Lee, Jr.², and Joel G. Brant¹,

¹Department of Biology, McMurry University, ²Department of Biology, Abilene Christian University. (stapp.cassi@students.mcm.edu)

During the last couple of decades, wind energy has increasingly gained popularity as a renewable and environmentally friendly source of energy. As wind farms have increased their geographical footprint, their interactions with birds and bats have increasingly been called into question. Many researchers have documented the impacts of wind turbines on bat populations, but few have delved into the significance of these impacts. Bats were collected from the Lone Star Wind Farm in Shackelford and Callahan counties, Texas, during 2008 and 2009. The specimens were identified to species and separated into populations based on county. These wind turbine populations were then compared to pre-turbine specimens obtained from museums and natural history collections in Texas. Diversity analyses were conducted using Shannon diversity, Margalef's richness, and Simpson's evenness to determine if the diversity of bats at the wind farm was different from the diversity of bats found in the Southern Rolling Plains. The wind farm populations had significantly fewer species than the pre-turbine population of the Southern Rolling Plains; however, there was no significant difference in diversity or evenness between the wind farm & pre-turbine populations. Wind farms do not appear to impact all species equally, nor do they significantly impact local chiropteran diversity.

PATTERNS OF HABITAT USE AND COMPETITION BETWEEN NINE-BANDED ARMADILLOS (*DASYPUS NOVEMCINCTUS*) AND HOG-NOSED SKUNKS

(*CONEPATUS LEUCONOTUS*). Katelynn J. Frei and Robert C. Dowler, Department of Biology, Angelo State University. (kfrei@angelo.edu)

Previous studies have used infrared camera trapping to document animal distribution, habitat associations, and behavior. The nine-banded armadillo, *Dasypus novemcinctus*, and the hog-nosed skunk, *Conepatus leuconotus*, share foraging strategies that may result in competition between the two species. The purpose of this study was to examine habitat segregation between the two species in a rocky upland habitat and a riparian zone in the semi-arid Edwards Plateau of Texas. This study utilized remote infrared camera traps to determine presence of the two species in each of the habitat types. Images of *D. novemcinctus* and *C. leuconotus* were collected between 9 October 2010 and 21 October 2011 using a 5 X 5 camera grid spanning both habitat types with cameras 500 m apart. Five cameras were located at riparian sites and 20 cameras were located at rocky upland sites. In 12 months of data collection, 2,096 images of medium-sized mammals were captured. Nine-banded armadillos were captured in 5.9% of the total images and hog-nosed skunks were captured in 1.1% of the images. Capture indices were calculated based on number of images of a species divided by total trap days in a given habitat. For hog-nosed skunks the capture index for riparian habitat was 0.0011 and that for upland was 0.0027. For nine-banded armadillos the capture index for riparian habitat was 0.0366 and that for upland was 0.0072. The disparity between the capture indices of each species in the two habitat types may suggest niche partitioning between *D. novemcinctus* and *C. leuconotus*.

POSTERS AT-A-GLANCE

1 - PHYLOGENETIC RELATIONSHIPS OF THREE MEMBERS OF THE FAMILY VESPERTILIONIDAE (CHIROPTERA) FROM MALAYSIAN BORNEO

Pablo R. Rodriguez Pacheco

2 - DNA BARCODING AND ITS APPLICATIONS IN PARASITIC LUNGWORMS (METASTRONGYLOIDEA) IN MARINE MAMMALS

Craig J. Koenigs

3 - SYSTEMATICS OF PERUVIAN *CALOMYS* (RODENTIA: CRICETIDAE)

Jose Olascoagal

4 - GENETIC VARIATION AND PHYLOGEOGRAPHY OF *NEOTOMA ALBIGULA* IN ARIZONA, ASSESSED USING MITOCHONDRIAL D-LOOP SEQUENCES

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5 - WIND TURBINE CAUSED BAT FATALITIES IN CENTRAL TEXAS

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6 - PREDATION OF MEXICAN FREE-TAILED BATS (*TADARIDA BRASILIENSIS*) BY MERLIN (*FALCO COLUMBARIUS*)

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7 - IS BOBCAT POINT-OCCURRENCE RELATED TO COYOTE PRESENCE AND ABUNDANCE IN SOUTH TEXAS?

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14 - SURVEY RESULTS FROM AN EXPEDITION TO GUATEMALA, WITH AN EMPHASIS ON CHIROPTERA

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15 – POPULATION STRUCTURE AND GENETIC VARIATION IN *NEOTOMA ALBIGULA* FROM ARIZONA AS DETERMINED USING MULTILOCUS MICROSATELLITE GENOTYPES

Amanda H. Eisemann

16 - HOW MANY OCELOTS SHOULD WE TRANSLOCATE FROM MEXICO TO TEXAS

William C. Stasey

Poster Presentation Abstracts

The following posters (1 - 4) are to be considered for the Clyde Jones Award.

Poster 1

PHYLOGENETIC RELATIONSHIPS OF THREE MEMBERS OF THE FAMILY VESPERTILIONIDAE (CHIROPTERA) FROM MALAYSIAN BORNEO. Pablo R. Rodriguez Pacheco and Loren K. Ammerman, Department of Biology. Angelo State University. (prodriguezpachec@angelo.edu)

Several studies have been conducted using molecular data to refine our understanding of the historically unclear phylogeny of chiropterans within the Family Vespertilionidae. To date, there is no published literature that documents the phylogenetic affinities of the following three taxa of vespertilionids: *Pipistrellus petersi*; *Glischropus tylopus*; and *Hesperoptenus tomesi*. In this study, our objective was to sequence and analyze the 12S rRNA mitochondrial gene of these 3 taxa (5 individuals). We performed phylogenetic analyses on these taxa together with 81 additional sequences acquired through GenBank. Preliminary Bayesian analysis of 86 taxa, utilizing 698 bp of 12S rRNA gene, confirmed the placement of *Glischropus* sister to *Pipistrellus* and *Scotoecus*, and *Hesperoptenus* sister to *Scotophilus*, both previously documented based on morphology. Moreover, *Pipistrellus petersi* unexpectedly did not cluster together with other pipistrelles. However, these relationships were not significantly supported in the Bayesian analysis. Additional nuclear data is required to further elucidate their taxonomic position, providing essential knowledge that can lead to a better understanding of the species' evolutionary history.

Poster 2

DNA BARCODING AND ITS APPLICATIONS IN PARASITIC LUNGWORMS (METASTRONGYLOIDEA) IN MARINE MAMMALS. Craig J. Koenigs and Wayne D. Lord, Department of Biology, University of Central Oklahoma. (ckoenigs@uco.edu)

DNA Barcoding is a rapidly developing research technology that has been evolving since 2003. DNA barcoding enables the sequencing of a specific gene within a group of organisms and facilitates determining the species based on the arrangement of nucleotides in that particular gene. Within animals, the cytochrome oxidase I (COI) gene of the mitochondrial genome (mtDNA) and the second intertranscribed spacer of (ITS-2) of the ribosomal DNA (rDNA) are the two most favorable genes to be used as barcodes for species identification. The ITS-2 gene was used for to identify specific species of parasitic lungworms (Metastrongyloidea) that were removed from deceased marine mammals recovered from the Gulf of Maine. Genomic DNA was extracted from the lungworms, amplified using the ITS-2 gene, and sequenced. Recovered sequences were then compared to the sequences in GenBank. The procedure produced positive results in a portion of the nematodes sampled. Other specimens were not successfully sequenced. While DNA barcoding is not 100% effective in producing parasitic nematode species identifications, the application of DNA barcoding has the strong potential to aid in the identification of specific organisms when morphological analyses are unfeasible due to morphological similarities between species or specimen degradation.

Poster 3

SYSTEMATICS OF PERUVIAN CALOMYS (RODENTIA: CRICETIDAE). Jose Olascoaga^{1,3}, Horacio Zeballos² and Jorge Salazar Bravo¹, ¹Department of Biological Sciences, Texas Tech University, ²Centro de Investigación para la Promoción de los Pueblos, Arequipa, Perú, ³ Center for Undergraduate Research, Texas Tech University. (jose.e.olascoaga@ttu.edu)

The Neotropical rodent *Calomys* is a speciose genus whose systematics remains problematic; importantly, several species have been implicated in the cycling of hemorrhagic fevers of arenaviral origin in South America. Previous work has shown that all rodent hosts (including three species of *Calomys*) of the Clade-B of South American arenavirus (human pathogens) share a unique set of amino acid residues in the N-terminal of the transferrin receptor 1 (TfR1), which are exploited by these viruses to gain cell entry. What is not known, is if all *Calomys* species share this set of amino acids; if so, theoretically all species could potentially serve as reservoirs to these pathogenic viruses. As a preliminary approximation we propose a phylogenetic hypothesis for the genus *Calomys* including for the first time, several individuals of the highland Peruvian taxa *Calomys sorellus*; our preliminary results indicate that this taxon, may need to be divided into two species. Further work is necessary to answer the questions regarding the structure of the TfR1 cell receptor and the structure of the radiation of *Calomys*.

Poster 4

GENETIC VARIATION AND PHYLOGEOGRAPHY OF *NEOTOMA ALBIGULA* IN ARIZONA, ASSESSED USING MITOCHONDRIAL D-LOOP SEQUENCES. Shey R. Ramsey¹, Francisca M. Mendez-Harclerode², Robert D. Bradley³, Charles F. Fulhorst⁴, and Michelle L. Haynie¹, ¹Department of Biology, University of Central Oklahoma, ²Department of Biology, Bethel College, ³Department of Biological Sciences, Texas Tech University, ⁴Department of Pathology, University of Texas Medical Branch, Galveston. (sheyramsey@gmail.com)

The preliminary data presented here is part of a larger, multi-marker project to assess levels of genetic variation among *Neotoma albigula* (white-throated woodrat) samples from Arizona. Many members of the genus *Neotoma* are natural hosts for Tacaribe serocomplex arenaviruses. These viruses typically share long evolutionary histories with a single rodent host. *Neotoma albigula* recently has been linked to three or more independent strains and appears to be the natural host of these strains. Recent work suggests that the evolution of the virus in this species is occurring more rapidly than is seen in other species or, conversely, cryptic genetic units may be present within *N. albigula*, with each strain being associated with a separate genetic unit. The purpose of this research is to assess the level of diversity within and among localities of *N. albigula* to determine if cryptic genetic units are present. Mitochondrial DNA D-loop sequence variation was assessed for 34 samples of *N. albigula*. An additional 106 samples currently are being sequenced. These samples were collected from 32 localities throughout the state. Preliminary data indicates 29 unique haplotypes are present among the localities. Four clades were detected, although there was little correlation between clades and collection localities. To date, there is no evidence that cryptic genetic units are present.

The following posters (5 - 14) are to be considered for the Vernon Bailey Award.

Poster 5

WIND TURBINE CAUSED BAT FATALITIES IN CENTRAL TEXAS. Patty Doyle¹, Thomas E. Lee, Jr.¹, Cassi Stapp², and Joel G. Brant², ¹Department of Biology, Abilene Christian University, ² Department of Biology, McMurry University. (dpd07a@acu.edu)

The recent development of wind turbine facilities across the United States has led to a rise in bat fatality rates. Over a period of two consecutive years, bat carcasses were collected from Lone Star wind turbine sites in Texas counties Callahan and Shackelford. The species and collection date of each were recorded. A total of 116 individuals were collected, consisting of *Lasiurus cinereus*, *Lasiurus borealis*, *Tadarida brasiliensis*, and *Perimyotis subflavus*. *L. cinereus* was the most common. Species collected in the Callahan-Shackelford area prior to the addition of the wind turbine sites include *Parastrellus hesperus* and *Myotis velifer*, suggesting that wind turbines are preferentially selecting certain species. The months of August and September showed the highest fatality rates for all species in this study. This is possibly due to migrants mistaking turbines for roosting and foraging areas along their migratory route in late summer and early fall, based on behavior exhibited by tree-roosting species.

Poster 6

PREDATION OF MEXICAN FREE-TAILED BATS (*TADARIDA BRASILIENSIS*) BY MERLIN (*FALCO COLUMBARIUS*). Stephanie G. Martinez and Thomas E. Lee, Jr., Department of Biology, Abilene Christian University. (sgm08a@acu.edu)

Observations of *Falco columbarius* (Merlin) attacking and feeding on *Tadarida brasiliensis* (Mexican Free-tailed bat) on numerous occasions were documented in downtown Abilene, Texas. The number and time of emergence of bat flights and the number of merlin attacks were recorded. This study also documents evasive techniques and predation avoidance used by bats. To our knowledge we are documenting the first known predation of Mexican free-tailed bat by merlin and one of the few repeated and sustained feeding on Mexican free-tailed bat by any bird of prey species.

Poster 7

IS BOBCAT POINT-OCCURRENCE RELATED TO COYOTE PRESENCE AND ABUNDANCE IN SOUTH TEXAS? Taylor O. Garrison, Paeton M. Phaup, Arturo Caso, Sasha Carvajal-Villarreal, Jennifer M. Korn, William C. Stacey, Michael E. Tewes, Feline Research Center, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville. (garrisonswim3401@aol.com)

The occurrence and abundance of bobcat (*Lynx rufus*) has been hypothesized to be influenced by coyote (*Canis latrans*) populations. The mechanism of this potential relationship is not clearly understood, although antagonistic and competitive factors may be important. We conducted a study on Escondido Ranch located in southeastern McMullen County, Texas, within the Tamaulipan Biotic Province. We used remote-sensing cameras to determine abundance and activity of syntopic bobcat and coyote. The camera grid covered 20 km² with 20 camera stations separated by a minimum of 0.5 km. We obtained 238 bobcat photographs over 3,980 camera-

nights. From these images, we identified 33 different bobcats (18 females, 15 males). Analysis of the location and timing of bobcat and coyote photographs will provide insight into the co-occurrence strategies used by these two carnivores.

Poster 8

GEOGRAPHIC DISTRIBUTION OF THE EASTERN MOLE, *SCALOPUS AQUATICUS*, THROUGHOUT THE SOUTHERN ROLLING PLAINS OF TEXAS. Chisum B. Cope and Joel G. Brant, Department of Biology, McMurry University. (cope.chisum@students.mcm.edu)

There are seven subspecies of the Eastern mole, *Scalopus aquaticus*, found in the state of Texas, none of which have been recorded in the nine counties that make up the Southern Rolling Plains of Texas. Over the course of 114 trap nights, using Victor harpoon traps, we successfully captured ten specimens and reported recent mole activity in new areas not previously documented. Potential trap sites were identified by locating sandy soils using county soil maps. Each potential trap site was visited to search for recent mole activity. This was done by locating feeding tunnels which are very close to the surface. Traps were set in areas with recent mole activity to obtain voucher specimens. Understanding the current distribution of *Scalopus aquaticus* will provide a baseline for future studies investigating the biogeographic history of the Southern Rolling Plains.

Poster 9

HABITAT FRAGMENTATION AND CORRIDORS IN LOWER RIO GRANDE VALLEY REFUGES: A LANDSCAPE PERSPECTIVE. Richard W. Dolman¹ and David M. Leslie, Jr.², ¹Oklahoma Cooperative Fish and Wildlife Research Unit, Department of Natural Resource Ecology and Management, Oklahoma State University, ²U.S. Geological Survey, Oklahoma Cooperative Fish and Wildlife Research Unit, Oklahoma State University. (richard.dolman@okstate.edu)

Few regions in the United States are as unique as Tamaulipan brushlands of the Lower Rio Grande Valley (LRGV) in southern Texas. Following the escalated conversion to agricultural and urban use beginning in the 1920s, native brushland in LRGV has been reduced by >95%. Despite significant anthropogenic impacts, >500 vertebrate and 170 woody species occur in LRGV, 75 of which are listed as threatened or endangered by federal or state agencies. Since its inception, the Lower Rio Grande Valley National Wildlife Refuge (LRGVNWR) has grown to over 138 individual tracts with a combined area of 31,697 ha. Although several habitat centric studies have been performed in LRGVNWR, further investigation is warranted to provide broad perspective habitat fragmentation and connectivity. The current study consists of 3 objectives: (1) determine the response of small mammals to habitat loss and fragmentation, (2) measure the degree of functional connectivity found within LRGV by measuring the extent that small mammals use and move through agricultural matrix surrounding refuge tracts, (3) use landscape genetic methods to determine the potential for long-term persistence of small mammal species in tracts of varying size and quality. Fifteen tracts of varying size within the geographic center of LRGVNWR will be sampled for small mammals and birds. Species diversity, density and demographic measurements will be determined from data collected using 8 by 8 trapping grids for small mammals and stationary point counts for birds. Multivariate statistics will be used to determine correlations between habitat characteristics (e.g., tree density, and canopy height),

landscape structures (e.g., tract size, and perimeter to area ratio), and species data. A pilot study including 350 trap nights at two locations averaged 76% trap success. Of the 266 individuals captured 24 were the Coues' Rice Rat (*Oryzomys couesi*), a species listed as threatened by the state of Texas.

Poster 10

HELMINTHS OF *MICAELAMYS NAMAQUENSIS* AND *AETHOMYS CHRYSOPHILUS* (RODENTIA: MURIDAE) FROM NORTHWESTERN BOTSWANA. Linden Reid, Tamara J. Cook, and Monte L. Thies, Department of Biological Sciences, Sam Houston State University. (ler026@shsu.edu)

Two species of Botswanan rodents, *Micaelamys namaquensis* (Namaqua rock rat) and *Aethomys chrysophilus* (veld rat), were collected from the Koanaka Hills region of Ngamiland Province in northwestern Botswana in July 2009. The gastrointestinal tracts of 40 specimens (20 *M. namaquensis* and 20 *A. chrysophilus*) collected from 3 microhabitats were examined for helminths. Prevalence and intensity were calculated to potentially reveal correlations between parasite prevalence and host sex, habitat range, and environmental factors. Gastrointestinal tracts were removed in the field, preserved in 95% ethanol, and returned to SHSU for subsequent analyses. Helminths were removed and stored in 70% ethanol for preservation. Cestodes were stained with hematoxylin and eosin and nematodes were viewed under wet mounts of glycerin and ethanol. Helminths were examined with an Olympus BX51 microscope and digital images of all specimens were captured with an Olympus DP 72 digital camera. Nematodes had the highest prevalence of infection in *A. chrysophilus* at 70%, with a lower prevalence in *M. namaquensis* at 65%. Prevalence of cestodes in *A. chrysophilus* was 10%, while the prevalence of cestode infection in *M. namaquensis* was 5%.

Poster 11

HABITAT ASSOCIATION IN *SIGMODON HISPIDUS*: A COMPROMISE BETWEEN NUTRITION AND COVER. Nicholas S. Green and Kenneth T. Wilkins, Department of Biology, Baylor University. (nick_green@baylor.edu)

Habitat selection, or the nonrandom association of organisms with environmental variables, is foundational to ecology and the mechanism by which organisms associate with habitat can vary. Populations can be limited by many different resources (e.g., food, space, refugia, climate) and determining how different aspects of the environment influence abundance can be difficult. We tested a model of habitat selection by hispid cotton rats (*Sigmodon hispidus*) incorporating plant cover and food availability. Generalized additive mixed models (GAMM) found that cover by grasses and bare ground best explained *S. hispidus* abundance. When we measured serum leptin concentration (SLC), a hormonal indicator of adiposity and energy availability, we found that dicot forbs, not grass cover, most affected the energy balance of *S. hispidus*. This finding—that abundance and energy balance have different drivers—suggests two conclusions. First, that *S. hispidus* association with grassland habitat is not primarily driven by nutrient availability. Second, cotton rats should choose a mixed grass-forbs habitat to meet all of their resource needs. To our knowledge this is the first report of leptin levels in *S. hispidus*.

Poster 12

PELAGE PATTERNS IN BOBCATS – PHENOTYPIC VARIATION AND POTENTIAL ADAPTIVE VALUE. Paeton M. Phaup, Taylor O. Garrison, Arturo Caso, Sasha Carvajal-Villarreal, Jennifer M. Korn, William C. Stacey, and Michael E. Tewes, Feline Research Center, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville. (comodoreholliday@gmail.com)

Felids have acquired numerous adaptations to successfully function as a hypercarnivore. Cryptic pelage patterns are important for most feline species, and enable cats to ambush prey and hide from antagonists. Bobcats (*Lynx rufus*) exhibit considerable variation in coat patterns and color throughout their range. Considerable variation can occur within the same population. Our objective is to quantify the type and amount of variation within a localized area. We examined the pelage variation in bobcat photographs obtained during a study on the Escondido Ranch of McMullen County, Texas. The survey from late October 2010 to late June 2011 yielded 3,980 camera-nights and 238 photographs. Coat patterns varied from brown and rufus pelages void of spots to coats with considerable number, clarity, and variation of spots and rosettes. This variation may contribute to the ability of bobcats to exploit a variety of habitats, including grasslands, thornshrub communities, and forests.

Poster 13

MORPHOLOGICAL VARIATION IN DOMESTIC RABBIT (*ORYCTOLAGUS CUNICULUS*) HAIR. Katy Estill and Monte L. Thies, Department of Biological Sciences, Sam Houston State University. (katy.estill@shsu.edu)

Selective breeding of the European wild rabbit (*Oryctolagus cuniculus*) over the past 400 years has resulted in the creation of approximately 250 different breeds, all of which exhibit a high degree of variability in external morphology and pelage. As a result, six distinct primary hair types occur in domestic rabbits: flyback, rollback, standing, satin, rex, and wool. In a preliminary analysis, hair samples representing each of these hair types exhibit differences in scales using scanning electron microscopy and were highly variable in medullar structure using light microscopy.

Poster 14

SURVEY RESULTS FROM AN EXPEDITION TO GUATEMALA, WITH AN EMPHASIS ON CHIROPTERA. Lizette Siles, Adam W. Ferguson, and Nicté Ordóñez-Garza, Department of Biological Sciences, Texas Tech University. (liz_siles@yahoo.com)

Biodiversity surveys are essential in the tropical areas where only a few assessments have been carried out in the past. In the case of the Central American country of Guatemala, very few mammal surveys have been performed and limited information is available on the mammalian fauna. During the wet season in 2010 (July and August), we conducted a biological inventory of small to medium-sized mammals in this country. Trapping occurred among 4 states (Departments: Chiquimula, Izabal, Petén, and Santa Rosa) and 6 counties (Chiquimulilla, Esquipulas, Livingston, Menchor de Mencos, San Andrés, and Santa Elena). Using a variety of standard trapping techniques, we collected a total of 459 voucher specimens representing 5 mammalian orders: Carnivora, Chiroptera, Didelphimorphia, Lipotyphla, and Rodentia. The

majority of voucher specimens belonged to the order Chiroptera (282, 61%) followed by Rodentia (152, 33%). The remaining orders constituted less than 5% of the overall vouchers. We documented a total of 51 species of mammals, with the highest species richness found within the order Chiroptera (34, 67%). Bats were identified to species level using morphological descriptions and keys. However, specimens that could not be identified with this method, as well as representatives of each state, were sequenced (~400 bp of Cytochrome-*b*). These sequences were then compared with published records to aid in the species identification. This survey constitutes a very important contribution to the knowledge of the Guatemalan chiropterology. We collected specimens of *Molossus coibensis*, a species known from surrounding countries, but not officially reported in Guatemala. Furthermore, all the states surveyed in our study presented new species distributional records. The highest among these was from the highlands (Chiquimula Department) with four new species records. Our study demonstrates the need for future biological inventories to adequately describe this country's diversity.

The following posters (15-16) are not competing for an award.

Poster 15

POPULATION STRUCTURE AND GENETIC VARIATION IN *NEOTOMA ALBIGULA* FROM ARIZONA AS DETERMINED USING MULTILOCUS MICROSATELLITE GENOTYPES. Amanda H. Eisemann¹, Francisca M. Mendez-Harclerode², Robert D. Bradley³, Charles F. Fulhorst³, and Michelle L. Haynie¹, ¹Department of Biology, University of Central Oklahoma, ²Department of Biology, Bethel College, Kansas, ³Department of Biological Sciences, Texas Tech University, ⁴Department of Pathology, University of Texas Medical Branch, Galveston. (aeisemann@uco.edu)

The preliminary data presented here is part of a larger, multi-marker project to assess levels of genetic variation among *Neotoma albigula* (white-throated woodrat) samples from Arizona. Many members of the genus *Neotoma* are natural hosts for Tacaribe serocomplex arenaviruses. These viruses typically share long evolutionary histories with a single rodent host. *Neotoma albigula* recently has been linked to three or more independent strains and appears to be the natural host of these strains. Recent work suggests that the evolution of the virus in this species is occurring more rapidly than is seen in other species or, conversely, cryptic genetic units may be present within *N. albigula*, with each strain being associated with a separate genetic unit. The purpose of this research is to assess the level of diversity within and among localities of *N. albigula* to determine if cryptic genetic units are present. Multilocus microsatellite genotypes are being generated using seven microsatellite loci. To date, 364 samples have been genotyped and an additional 90 samples currently are being genotyped. These samples were collected from 32 localities throughout the state. Preliminary analyses using the program STRUCTURE have detected five population clusters. However, these clusters do not have distinct ties with geographic collection localities. To date, there is no evidence that cryptic genetic units are present.

Poster 16

HOW MANY OCELOTS SHOULD WE TRANSLOCATE FROM MEXICO TO TEXAS.

William C. Stasey, Michael E. Tewes, and Eric Redeker, Feline Research Center, Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville.
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Extant ocelot (*Leopardus pardalis*) populations in the United States of America (U.S.) are vulnerable to extinction. Currently, there are only two known geographically isolated populations in the U.S., both occurring in extreme southern Texas located at Laguna Atascosa National Wildlife Refuge (LANWR) and a private ranch in Willacy County (WCP). We evaluated the southern coastal counties of Texas at a landscape scale with remote sensing techniques to identify potential ocelot distribution and estimate population sizes. This analysis included a new use of light detection and ranging data which provided information about vertical vegetation structure of potential ocelot habitat at a landscape scale. We identified 2 separate metapopulations comprised of 12 patches of habitat that are potential occupied by ocelot. Results from this analysis were incorporated into a population viability analysis for ocelots in Texas.

**Texas Society of Mammalogists
30th Annual Business Meeting
Texas Tech University Center
18 February 2012**

AGENDA

1. Approval of the Minutes of the 2011 Business Meeting
2. Report of Secretary-Treasurer, Loren Ammerman
3. Report of Permanent Secretary, Lisa Bradley
4. Report of Editor, Russell Pfau
5. Reports of Committees
 - a. Committee for Honorary Members, Phil Sudman
 - b. Committee on Conservation, Cathy Early
 - c. Student Honoraria, Joel Brant
 - d. Auction Committee, Marcia Revelez
6. Election of President-Elect
7. New Business
 - a. Selection of site for 2013 Annual Meeting
 - b. Other New Business
8. Closing Remarks of TSM President, Russell Pfau
9. Adjourn

**Texas Society of Mammalogists
Treasurer's Report for Calendar Year 2011
Submitted by Loren K. Ammerman, Secretary-Treasurer**

Income and expenses of TSM for the 2011 calendar year are shown below. The checking account for TSM is held at Citibank. Our investments are held by Rydex/SGI. The checking account balance as of the first of the year was \$3,980.52. Total income in 2011 was \$17,294.37 and total expenses were \$12,761.15. The checking account had \$8,513.74 at the end of 2011. Our investment fund with Rydex/SGI decreased in value by \$2492.86 in 2011. Funds from contributions and patron membership donations were not transferred to the investment account this year. They will be invested in 2012. Total TSM assets at the end of 2011 were \$63,895.43.

Checking Account Balance as of 25 December 2010	\$3,980.52
Rydex/SGI Account Balance 1 January 2011	\$57,874.55
Total TSM assets as of 1 January 2011	\$61,855.07

2011 Income

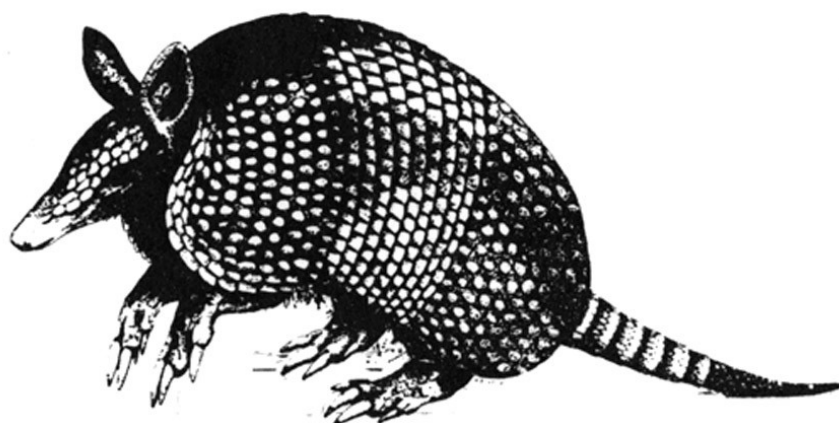
2011 Annual Meeting income (registration, meals and lodging fees)	\$9,110.00
Membership Dues	\$278.00
T-shirts	\$960.00
Auction Income	\$3,215.50
Contributions	\$2,545.50
Patron membership donations	\$1,169.00
Meeting photos	\$12.00
PayPal test deposit	\$0.21
Checking account interest	\$4.16
Total income	\$17,294.37

2011 Expenses

2011 Annual Meeting Expenses to TTU Center	\$7,581.00
Program copy charges (ASU print shop)	\$190.77
Student Awards	\$1,600.00
T-shirt charges (Gandy Ink)	\$824.50
Hearing assist equipment	\$870.00
Entertainment - DJ	\$550.00
Refreshments/Beverages	\$430.71
Speaker Honorarium	\$500.00
Supplies (badges, certificates, framing)	\$139.96
PayPal fees	\$27.02
GKG.net charges for domain name and hosting web page (1 year)	\$46.63
Bank fees	\$0.56
Total expenses	\$12,761.15

Checking Account Balance 25 December 2011	\$8,513.74
Rydex/SGI Account Balance 31 December 2011	\$55,381.69
Total TSM assets as of 31 December 2011	\$63,895.43

Texas Society of Mammalogists



Newsletter

2012

The 30th Annual Meeting

2012 Banquet Speaker

Carter Smith is our banquet speaker this year and will be presenting “The Call of the Wild: Is Anyone Listening?”

Carter Smith serves as Executive Director of the Texas Parks and Wildlife Department (since 2007). Before taking that position, he had worked for the Nature Conservancy of Texas since 1998, serving as the State Director and the Director of Conservation Programs. Carter received a wildlife management degree from Texas Tech and a master’s degree in conservation biology from Yale University.



Abilene Christian University

Abilene Christian University, 1600 Campus Court, Abilene, TX 79699



Tom Lee

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Research Interests, Projects, and Grants:

Abilene Christian University Grant from the dean of Arts and Sciences for the summer of 2012. I will conduct research on the western slope of the Andes this summer (2012).

Undergraduate Students and Their Research:

- Erin Boyd is analyzing data on comparative surveys of small mammal populations in four different microhabitats from 2002 to 2011.
- Stephanie G. Martinez: Is conducting a study on predation of Mexican free-tailed bats (*Tadaridabrasiliensis*) by Merlin (*Falco columbarius*).

Additional Information:

Tyler Cochran and Emily Wilkinson have graduated and are now working for Dr. Bob Dowler at Angelo State on their masters degrees.

Angelo State University

Department of Biology, Angelo State University, San Angelo, TX 76909



Loren K. Ammerman

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Research Interests, Projects, and Grants:

I am interested in working with students to use molecular data to reconstruct evolutionary relationships of organisms and to investigate species boundaries.

I am also interested in community structure and the ecology of bats, especially in Big Bend National Park and the Lower Canyons of the Rio Grande. This summer will be the sixth year to monitor the colony size of *Leptonycteris nivalis* in Emory Cave using thermal infrared imaging techniques. Additionally, the revision of “Bats of Texas” coauthored with David Schmidly and Chris Hice is due out in May 2012.

Current Graduate Students and Their Research:

- Sarah Bartlett – Molecular systematics of bonneted bats (Molossidae: *Eumops*) based on mitochondrial and nuclear DNA sequences, (MS thesis project, Fall 2010-present)
- Marie Tipps — Molecular and morphological variation in *Corynorhinus townsendii* from the west Texas region, (MS thesis project, Fall 2010-present)
- Pablo Rodriguez Pacheco — Phylogenetic relationships of six rare members of the family Vespertilionidae (Chiroptera) from Malaysian Borneo, (MS thesis project, Spring 2011-present)
- Wes Brashear — Genetic structure of a striped skunk population in an urban environment, (MS thesis project, Fall 2011-present), co-advised with Dr. Robert Dowler.

Current Undergraduate Students and Their Research:

- Candace Frerich — Investigation of *hAT* and *PiggyBac* transposable elements in mouse eared bats (genus *Myotis*), (undergraduate research project, Fall 2011-present)
- Brittany Ricker — Using diagnostic AFLP markers as a tool for species identification in *Myotis ciliolabrum* and *M. californicus*, (undergraduate research project, Spring 2012)
- Krysta Demere — Species identification and noteworthy county records of bats submitted to the Texas Department of State Health Services, (undergraduate research project, Spring 2012)

Additional Information:

The Angelo State Natural History Collection has almost 14,500 mammal specimens and tissues from approximately 9000. Contact Loren Ammerman or Robert Dowler if you have any questions about the collection.



Robert C. Dowler

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Research Interests, Projects, and Grants:

My current research in Texas continues on the ecology of medium-sized carnivores. I am working on a book entitled the Skunks of Texas with coauthors Jerry Dragoo and Adam Ferguson. For that project we are seeking any records of specimens of skunks from Texas, as well as visual or photo records, especially of the less common species of spotted skunks, hog-nosed skunks, or hooded skunks. I am also interested in the conservation biology and systematics of Galapagos rodents, collaborating with a colleague at the Brookfield Zoo in Chicago and with Cody Edwards at George Mason University.

This summer I will be co-leading (with Dr. Michael Dixon) a study abroad course to Costa Rica and Panama focusing on tropical ecology and assessing biodiversity.

Graduate Students and Their Research:

I currently have one M.S. student completing his thesis. Tyler Cochran is defending his thesis this semester on Circadian and Seasonal Activity Pattern in Hog-nosed and Striped Skunks. I have four other graduate students who are finalizing their thesis research this year. Eric Pomposelli is studying maternal den site selection and use for hog-nosed skunks. Emily Wilkinson is comparing population densities and use of habitat by striped skunks and hog-nosed skunks using remote camera trapping. Wesley Brashear, is co-chaired by Loren Ammerman and will be addressing population structure of an urban population of striped skunks. Wes is also completing manuscripts for his undergraduate projects studying home range and den site selection in hog-nosed skunks. Robert Heischman is using camera trapping to estimate habitat use of the gray fox.

Undergraduate Students and Their Research:

Katelynn Frei is finishing a study of habitat selection of medium-sized mammals using remote camera trapping, focusing on competition between armadillos and hog-nosed skunks. She is also studying the incidence and distribution of the nematode parasite, *Skryabingylus*, in Texas skunks. Malorri Hughes is continuing a project begun by Emily Wilkinson to determine quill counts and distribution on the porcupine, *Erethizon dorsatum*.

Additional Information:

Recent publication: Brashear, W. A., R. A. Maxwell, T. C. Maxwell, and R. C. Dowler. 2011. Museum specimen records contributing to the known distribution of mammals in Texas. Occasional Paper, Museum of Texas Tech University 302:1-7.

Baylor University

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Kenneth T. Wilkins

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Research Interests, Projects, and Grants:

Our projects generally relate to ecology and distribution of small mammals (primarily, rodents and bats) at the population and community levels in natural and urban settings.

Graduate Students and Their Research:

Our big news is that *Tommy Pettit* has successfully defended his dissertation, entitled “Bat Activity in Forest Margins: Canopies, Edges, Seasonality, and Competition” and graduated in December 2011. Tommy has taken a teaching position with Brigham Young University-Idaho in Rexburg.

With Tommy’s departure, the BU mammalogy group now includes 3 doctoral students. *Anica Debelica* completed the 3rd (and final) field season for her dissertation research which is related to community structure and foraging ecology in the bat fauna of eastern Texas pineywoods. In January, Anica began a part-time teaching job at St. Edwards University in Austin.

Nick Green concluded the final summer field season for his dissertation research into the effects of habitat edges on the small-mammal community in Grand Prairie of north-central Texas; he’ll eagerly be entering the academic job market soon! *Han Li* has embarked on his dissertation study of urban ecology of bats; the field work is being conducted in Waco and vicinity. Both Nick and Anica anticipate graduation during 2012.

Undergraduate Students and Their Research:

Two undergraduate Honors students, *Robin vander Pol* and *Kristine Williams*, are conducting their Honors thesis projects on urban bat ecology in connection with Han’s dissertation research.

Additional Information:

Recent publications:

B.K. Kirchner (M.S.-Environmental Biology graduate), N.S. Green (current Ph.D. candidate), D.A. Sergeant (undergraduate Honors program graduate, UT Pharmacy resident), J.N. Mink (current Ph.D. candidate) & K.T. Wilkins. 2011. Responses of small mammals and vegetation to a prescribed burn in a tallgrass blackland prairie. *The American Midland Naturalist*, 166:112-125.

N.S. Green (current Ph.D. candidate), C.E. Early (Ph.D. graduate, UMHB professor), L.K. Beard (Biology graduate, Mayborn Museum staff) & K.T. Wilkins. In press. Multiple captures of *Reithrodontomys fulvescens* and *Baiomys taylori*: evidence for short-term co-travelling. *Canadian Journal of Zoology*.

California Baptist University

California Baptist University, Riverside, CA 92504



Art Cleveland

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Projects and Grants:

Currently in the process of acquiring a mountain camp which will afford our environmental science majors a field site; establishing cooperative relations with a Chinese university near Beijing and a university in Singapore; writing two

Mammalian Species accounts of Chinese species.

Additional Information:

In addition to my role as Dean of Research, last year the university asked me to take an additional responsibility as Vice President for Advancement. A staff of fourteen makes the job easier. I continue to provide congressional liaison for the university. Vicki and I recently returned from China and have bought a home in Riverside with a spectacular view of the mountains...and only ninety minutes from the coast. In addition to three children and six grandchildren, we expect our first great grandchild in early summer. Life at 71 is exciting. Plan to be at the ASM meeting in Reno in June.

Centenary College of Louisiana

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Scott Chirhart

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Email: schirhar@centenary.edu

Research Interests, Projects, and Grants:

Evolutionary Biology, including: Evolutionary/Population Genetics, Vertebrate Speciation and Systematics, Molecular Variation Undergraduate.

Houston Museum of Natural Science

Houston Museum of Natural Science, Dept. of Vertebrate Zoology, 5555 Herman Park Dr, Houston, Tx 77030-1799



Dan Brooks

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Web page URL:

www.hmns.org/index.php?option=com_content&view=article&id=301&Itemid=71

Research Interests, Projects, and Grants:

HMNS is currently expanding significantly. Among other exhibits, we will have new halls depicting various scenes of wildlife ecology and conservation throughout Texas and Africa. Significant time is currently devoted to this project as Project Manager for both the Farish Hall of Texas Wildlife and Frensley/Graham Hall of African Wildlife Conservation. If you have any specimens you would like to see in the hall, please contact me directly.

Although I do quite a bit of work with birds, research interests in mammalogy span a variety of topics including community and behavioral ecology, biogeography and taxonomy, harvest patterns, natural history and conservation. I am particularly interested in Neotropical species in lowland regions east of the South American Andes (especially the Peruvian Amazon, Paraguayan Chaco and eastern Bolivia). Additional regions of coverage include Texas, Middle America, Africa and the Philippines.

Current mammalogy projects I'm involved in include:

- Description of new species of *Scotophilus* (Chiroptera) from Africa (with J. Bickham)
- Description of new species of *Micronycteris* (Chiroptera) from Bolivia (with L. Siles and R.J. Baker)
- Genetic and morphological variation of *Nycticeius humeralis* and *Tadarida brasiliensis* in SE Tx (with A. Bickham Baird)
- Size constraints of avian prey consumed by the Black Rat (*Rattus rattus*) (with G. Witmer)
- Rodent responses to drought (with A. Castellanos and J. Light)
- Biodiversity and habitat association of large mammals on a private reserve in the Tanzanian Serengeti (with R. Madewell)
- Documentation of a potential population of albino raccoons in SE Tx (with A. Castellanos)

Lab Associates:

Amy Bickham Baird completed her Post-Doctoral stint and experienced two major stepping stones in 2011: 1) the birth of her son Charley last spring, and 2) accepting a faculty position at University of

Houston – Downtown that began last fall! Once her lab at UH-D is up and running we will commence our research on evolutionary aspects of bat species occurring in Tx.

Other current Associates include Preparators Janelle Case (M.Sc. 2007 TAMU-G) and Eleanor Stoddart (M.Sc. 2000 Memorial University of Newfoundland). Adrian Castellanos (TAMU - WFSC undergrad.) completed a Mammalogy Curatorial Internship last summer and we're still working on projects together.

Former Curatorial Interns include Tim McSweeney who is completing his first year of graduate school in the Museum Sciences program at TTU, and currently interning in the mammal range at NSRL under Heath Garner. Rael Sheikh who attended last year's meeting is now working in the HMNS Exhibits Dept.

Graduate Students and Their Research:

Working at a museum, I don't have my own grad students but currently serve as an external committee member for several students. In terms of Mammalogy, there are currently three committees I serve on, all Ph.D. candidates:

- Liz Siles (Texas Tech Univ., R.J. Baker – Major Prof.) - Ecology, biogeography and systematics of Bolivian bats (Chiroptera)
- Juan Carlos Diaz (Rice University, Michael Kohn – Major Prof.) - Testing models of adaptive trait evolution: a case study on rodenticide-resistant rats and mice
- Kim Dingess (Indiana Univ., K. Hunt – Major Prof.) - Vocal communication of the Dusky Titi Monkey (*Callicebus donacophilus*)

Additional Information:

The primary driver of the Houston Museum of Natural Science is Education, including outreach. We educate every 4th and 7th grader in Houston Independent School District annually (approx. 700,000 students/yr), have nearly 2.5 million individuals come through the doors per annum, and are the 4th highest attended museum in the country; surpassed only by Smithsonian, AMNH and the MOMA, we are the highest attended US museum west of the Mississippi. Every year I tour college-level classes through our collections, African and Texas Wildlife Halls. If you have any interest in coming for a visit just touch base directly!

McMurry University

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Joel G. Brant

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Research Interests, Projects, and Grants:

My research interests are primarily concerned with the natural history of mammals, particularly in Texas and the Chihuahuan Desert. I am currently setting up a research program for myself and selected undergraduates that will focus on the natural history & ecology of mammals in the southern Rolling Plains, northern Edwards Plateau, and northeastern Chihuahuan Desert. My current projects include a survey of the mammals of the Southern Rolling Plains, specifically Taylor County & surrounding areas (with Tom Lee); an examination of the ecological distribution and population genetics of *Scalopusaquaticus* in Texas; assessing the ecological impacts of wind farms on bat diversity (with Tom Lee); & a survey of the geographic distribution of *Geomys* on the Southern Rolling Plains.

Current Students:

- Chisum Cope – Chisum is interested in wildlife management. Currently Chisum is investigating the distribution of eastern moles (*Scalopusaquaticus*) on the Southern Rolling Plains. Chisum will graduate with a BS in Biology in May 2012.
- Erika Mitchell – Erika is interested in large mammal conservation & management. Erika conducted a survey of medium to large mammals on the Southern Rolling Plains. Erika graduated with a BS in Biology in May 2011.
- Cassi Stapp – Cassi is interested in anthropogenic impacts on wildlife populations. Currently she is investigating the impact of wind farms on bat diversity in central Texas. Cassi will graduate with a BS in Life Science in May 2012.

Tarleton State University

Department of Biological Sciences, Tarleton State University, Stephenville, TX 76402



Allan D. Nelson

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Research Interests, Projects, and Grants:

My research interests are in the areas of floristics of the West Cross Timbers and Coastal Plain of Texas as well as the Ouachita Mountains of Oklahoma. I am interested in rare and endangered plants of Texas and Oklahoma. I am also interested in using vegetative ecology to examine habitat of rare animals and Dr. Jim Goetze and I are working on a status survey for the Texas kangaroo rat (*Dipodomys elator*).

Graduate Students and Their Research:

- Paige Cowley- Flora of Hunewell Ranch (Erath County, Texas)
- Steven Henderson- Survey of Texas kangaroo rat habitat at Buffalo Creek Reservoir, Wichita County, Texas



Russell S. Pfau

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Research Interests, Projects, and Grants:

My main research focus is population and evolutionary genetics. Small mammals have historically been the primary subject of my (and my students' research); but recently, students have had projects involving bacteria, amoeba, crabs, and fish. I have several ongoing projects in addition to those of my students, including:

- Characterization of the hybrid zone between eastern and western lineages of the cotton rat (*Sigmodon hispidus*) in Arkansas, Oklahoma, and Texas (using nuclear, mtDNA, and Y-chromosome markers).
- Occurrence and distribution of the shrew *Blarina brevicauda* in Arkansas, Missouri, Oklahoma, and Kansas in collaboration with Matthew Connior (South Arkansas Community College), Blake Sasse (Arkansas Game and Fish Commission), and Janet Braun (Sam Noble Oklahoma Museum of Natural History). This project largely relies on DNA extracted from museum specimens.
- Design and testing of PCR primers to amplify a gene involved in sperm-egg recognition in the cotton rat.
- Population genetics of the Texas mouse (*Peromyscus attwateri*) across its geographic distribution in collaboration with Gregory Wilson (University of Central Oklahoma), Justin Lack (Oklahoma State University), Terry Johnson (Tarleton), Vagan Mushegyan, and Alex Trott.
- Population genetics of the pocket gopher (*Geomys breviceps*) across its geographic distribution in collaboration with Sam Kieschnick (BRIT) and Phil Sudman.
- Population genetics of *Dipodomys elator* (the state threatened Texas kangaroo rat) using DNA extracted from museum specimens.

Undergraduate Students and Their Research:

- Sarah Zeisler is sequencing mtDNA to map the location of the hybrid zone between eastern and western lineages of *Sigmodon hispidus* in Arkansas, Oklahoma, and Texas in collaboration with Lee Richardson (grad student).
- Alex Trott performed AFLP on the Texas mouse and will begin a new project this semester.
- Wesley Wiegrefe is using mtDNA sequencing to investigate hybridization in black-tailed and red shiners in collaboration with Allison Love (grad student).
- Two former undergraduate students recently received their PhD. Lin Winton Huffman graduated from University of Texas Austin and Calvin Henard graduated from University of Colorado Denver.

Graduate Students and Their Research:

- Lee Richardson is using a DNA fingerprinting technique, AFLP, to characterize the hybrid zone of the hispid cotton rat *Sigmodon hispidus*.
- Ben Stevens is using DNA sequencing to identify genetic lineages of the bacterium *Bartonella* isolated from several species of cotton rat (*Sigmodon*).
- Tim Huebner is using mitochondrial DNA sequencing to determine population structure of the mud crab (*Rhithropanopeus harrisii*) which has recently become established in Texas reservoirs.

- Allison Love is studying hybridization between black-tailed shiners and red shiners in the Paluxy and Bosque River using AFLP.
- Robert Walls is a new graduate student.
- Stephanie Painter used RT-PCR to investigate the correlation between abundance of the bacterium *E. coli* and the pathogenic amoeba *Naegleria fowleri* in Lake Granbury, TX. Stephanie has recently graduated.



Philip D. Sudman

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Research Interests, Projects, and Grants:

I continue to work on pocket gopher genetics/phylogenetics/population genetics. Since Dr. Jessica Light and her students at TAMU-College Station recently developed microsatellite primers for *Geomys*, this might be a great time for an interested MS student to get in touch with me to discuss potential projects. Recent field work in and around White Sands National Monument in New Mexico has opened up some opportunities to examine isolated populations of *Geomys arenarius*.

Texas A&M University-College Station

Department of Wildlife and Fisheries Sciences Texas Cooperative Wildlife Collection Texas A&M,
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Jessica Light

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Research Interests, Projects, and Grants:

My research program is focused broadly in evolutionary biology. I am especially interested in studying systematics, phylogeography, population genetics, and coevolutionary associations between distantly related organisms, particularly mammals and their parasites.

Graduate Students and Their Research:

- Sarah Welborn is a third year Master's student studying population genetics of the Baird's pocket gopher (*Geomys breviceps*). Sarah's study is using a combination of microsatellites and mitochondrial data to examine gene flow among gopher populations. Sarah will defend her thesis this spring and will graduate May 2012.
- John Andersen is a second year Master's student. For his thesis, John is examining the population genetics of kangaroo mice (Heteromyidae: *Microdipodops*). Prior to joining the lab as a graduate student, John completed an undergraduate research project investigating geographic

variation in the hispid pocket mouse, *Chaetodipus hispidus* (in press at *Journal of Mammalogy*). John will defend his thesis this spring and will graduate May 2012.

- Caitlin Nessner is a first year Master's student using microsatellites to examine population genetics of chewing lice parasitizing the Baird's pocket gopher (*Geomys breviceps*).

Undergraduate Students and Their Research:

- We have 2-3 manuscripts in preparation based on past undergraduate research.
- There are currently 2 undergraduate students in the Light lab investigating population genetics of pocket gophers.

Additional Information:

The Texas Cooperative Wildlife Collection Mammal and Bird divisions received an NSF Collection Improvement Grant in 2010. We have purchased new cases with the awarded funds and we are currently moving specimens, reorganizing, and working to improve the collections. The TCWC Web page URL is: <http://www.wfsc.tamu.edu/TCWC/tcwc.htm>.

Texas Tech University

Department of Biological Sciences, and Museum of Texas Tech University, Lubbock, TX 79409



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Research Interests, Projects and Grants:

Robert J. Baker is in his 45th year as a faculty member at Texas Tech University.

Plans to retire are still on hold, although 2 heart attacks in 2010 put some bumps in the road, 2011 was a good year with no heart problems. Interests include: the Genetic Species Concept, Phyllostomid bats, the effects of the Chernobyl environment on mammals, and transcriptomes of submandibular glands that are being studied to provide insights into the genetic mechanisms that have facilitated diversification of Phyllostomid bats under the constraints of natural selection. Baker spent 3 weeks in the field in Chernobyl in August 2011. Roxy Larsen graduated with her PhD in December. She was the 43rd PhD directed by RJB.

Graduate Students, Post Docs, and their Research:

- Faisal Ali Anwarali Khan is a fourth year PhD student and is all but dissertation. He is interested in the systematic and phylogeography studies that contribute towards the conservation effort in Southeast Asian mammals. Current projects include the systematic of the genus *Hipposideros*. He is also in the process of submitting a manuscript on the phylogenetics of the genus *Noctilio* from South America. faisal.anwarali@ttu.edu
- Cibeles Sotero-Caio is a fourth year PhD student. She obtained her Master's degree in March 2008 from Universidade Federal de Pernambuco, Recife – Brazil, where she developed a comparative chromosomal study among vampire bat species using chromosome painting. Her research interests include karyotypic evolution, as well as the use of cytogenetic approaches to the understanding of evolution, biogeography and systematics of mammals, with emphasis on bat

species. Her current projects are the investigation of distributional patterns of repetitive sequences and single copy genes in bat chromosomes, as well as the use of chromosome paintings to assess karyotypic evolution of phyllostomid and vespertilionid bats. She is also working on the description of karyotypes of mammals from Kyrgyzstan, Ecuador, Panama, and Malaysia. For her dissertation, she will be focusing on the chromosomal evolution of Phyllostomid bats. cibele.caio@ttu.edu

- Matias Feijoo, Ph.D. Universidad de la República Montevideo, Uruguay, Co-chair Enrique Lessa. Matias is working on speciation in *Urodermabilobatum* complex.
- Howie Huynh is a 2nd-year Ph.D. student co-supervised with Dr. Bradley (see below). Hailing from Toronto, Canada, Howie pursued his undergraduate biology degree at the University of Toronto and Royal Ontario Museum (under the tutelage of Dr. Mark Engstrom), and obtained a Master's of Science in mammalian systematics and biogeography (i.e., bats, shrews, sciurids, and felids) at Acadia University and the New Brunswick Museum where he holds the position of Research Associate in mammalogy. In the Baker lab, he is currently studying patterns of genomic divergence between polar bears (*Ursus martimensis*) and brown bears (*U. arctos*), systematics of *Rhinolophus pearsonii* in Southeast Asia (in collaboration with curators at the ROM), and other small projects related to mammalian systematics, natural history, and conservation. howard.huynh@ttu.edu
- M. Raquel Marchán-Rivadeneira (PhD student, Co-chaired with Dr. Richard E. Strauss) started her PhD program in January 2009. Her work is focused on evaluating how environmental pressures influence species' morphology and ecology. Specifically, her project seeks to assess the effects of environmental stress on the morphological configuration of individuals and populations of small mammals, and relate how these effects influence their relationship with the environment. Raquel's most recent publications evaluate the level of differentiation among species of *Artibeus* bats, explore the association between morphological variation and environment in *Artibeus lituratus*, and characterize new species of *Rhogeessa*. Currently, she is a Research Assistant at the University of Michigan working for Dr. Lacey Knowles. raquel.marchan@ttu.edu
- Molly McDonough is a third-year Ph.D. student. She is interested in the evolutionary relationships of African small mammals. For her dissertation she working on systematics and phylogeography of *Gerbilliscus* in southern Africa. This summer Molly spent 4 weeks collecting rodents for the Smithsonian Institution at Mpala Research Centre in Kenya and 5 weeks in Botswana collecting rodents and bats for her dissertation. molly.mcdonough@ttu.edu
- Julie Parlos is a third year Ph.D. student and is all but dissertation. Her projects include evaluating multiple markers for congruence among species of *Lonchophylla* and *Dermanura*. Another project involves investigating intraspecific variation among *Artibeus jamaicensis* collected from the Caribbean Islands. During her third year, she received the Michelle Knapp Memorial Endowed Scholarship and the TTU/HHMI Graduate Doctoral Scholars Fellowship. julie.parlos@ttu.edu
- Lizette Siles is a fourth year Ph.D. candidate from Bolivia. Her interests focus on the conservation, systematics and distribution of Neotropical bats, especially those that occur in Bolivia. Her current research is on the systematics of the genus *Micronycteris* and she co-authored the description of a new species of this genus. liz.siles-mendoza@ttu.edu
- Caleb Phillips is a postdoc—recently publishing and submitting manuscripts or grant proposals on demographics of marine mammals (2 pubs), genetics of cranial morphology (1 submission, 1 proposal), and metagenomics (1 submission, 1 proposal). He spent 3 weeks in the field in Chernobyl in August 2011.



Robert D. Bradley

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Email: robert.bradley@ttu.edu

Web page: www.biol.ttu.edu, www.nsrl.ttu.edu

Research Interests, Projects, and Grants:

My research interests include systematic relationships, molecular evolution, genomics, and natural history of mammals, particularly in the cricetid and geomyoid rodents; examination of hybrid zones between genetically distinct taxa; including isolating mechanisms and the dynamics of genetic introgression; exploring the utility and application of the Genetic Species Concept; examination of the origin and evolution of rodent-borne viruses, especially in the use of rodent phylogenies and genetic structure to predict the transmission and evolution of viruses; modeling predictions associated with epidemiology; and growth and utilization of natural history collections, especially those pertaining to mammals.

Current Projects:

- Systematics of the genus *Peromyscus*.
- Systematic and phylogenetic studies of *Peromyscus boylii* species group.
- Phylogenetic relationships of Neotomine and Reithrodontomyine rodents.
- Systematic and phylogenetic studies of the genus *Neotoma*.
- Systematic and phylogenetic studies of the genus *Geomys*.
- Hybridization between *Neotoma floridana* and *N. micropus*.
- Hybridization between *Spermophilus mexicanus* and *S. tridecemlineatus*.
- Ecology of hanta- and arenaviruses in the southwestern U.S. and Mexico.
- Impacts of wind turbines on bats.

Graduate Students and Their Research:

- Cody W. Thompson (PhD student) is in his 5th year. Dissertation involves investigating hybridization between *Spermophilus mexicanus* and *S. tridecemlineatus*.
- Nicté Ordóñez-Garza (PhD student) is in her 3rd year. Dissertation involves exploring the impacts of the Isthmus of Tehuantepec on rodent fauna.
- Matt Mauldin (PhD student) is in his 2nd year. Dissertation involves investigating hybridization between *Neotoma floridana* and *N. micropus*.
- Hai Minh Howard Michael Huynh (Co-chaired with Robert J. Baker). Howie is in his 2nd year (received his MS at Acadia University in Nova Scotia). Dissertation to be determined.
- Kathy MacDonald (PhD student, Co-chaired with Dr. Richard Strauss) is in her 5th year. Dissertation involves modeling biological and genetic parameters of the Catarina arenavirus in *Neotoma micropus*.
- Megan Corley (MS student) is in her 3rd year. Thesis involves determining phylogenetic relationships within the Neotominae.
- Emma Roberts (MS student) is in her 1st year. Thesis involves interaction of egg and sperm fusion proteins in hybridization events.

Graduated Students:

- Amanda Lawrence (MS student 2011). Thesis involved a Museum Science Project - "Evaluation, Maintenance, and Care of Mounted Taxidermy Collections in Natural History Museums".

Undergraduate Students and Their Research:

- Several undergraduate students are involved in various research projects in the Laboratory.

Additional Information:

My teaching responsibilities include: Mammalogy, Natural History of the Vertebrates, Molecular Systematics and Evolution, and Mammalogy for Advanced Students. In addition, I teach Mammalogy at the Texas Tech University Center at Junction each May (referred to as the Intersession Semester). This is an excellent opportunity to receive credit at the Graduate or Undergraduate level. I also teach "Field Methods" for the Museum of TTU each summer.



Jorge Salazar-Bravo

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Research Interests, Projects, and Grants:

My research gravitates around two basic themes, (i) developing and testing phylogenetic hypotheses for mammalian taxa at various hierarchical levels and (ii) using first principles in ecology and systematics to understand what makes a species a good reservoir for disease. Research topics that I have pursued include: Systematics, biogeography, and evolution of Neotropical mammals, the Ecology and Evolution of virus/host co-evolution, and the interplay between ecology and disease. Along these lines, I have projects that involve long-term monitoring of rodent populations in Brazil [2007-2011, NIH]. In addition, studies of the systematics of various mammalian Neotropical taxa (e.g., *Sylvilagus*, *Proechimys*, *Microcavia*, *Galea*, *Neacomys*, the *Phyllotini*) using a multi-loci approach are under way.

Graduate Students and Their Research:

- Tyla Holsomback, PhD. Behavioral ecology of the marsh rice rat (*Oryzomys palustris*) in a Texas coastal prairie: Implications for the life-history strategy of Bayou virus (Bunyaviridae: Hantavirus) [expected graduation date: Spring 2012]
- Narayan Kandel, PhD. The effect of host species and geography on the genetic structure and emergence and rodent-borne viruses

Undergraduate Students and Their Research:

- Justin Williams. Systematics of *Neacomys* with the description of a new species from the Yungas regions the country.
- Jose Olascoaga. The systematics of Peruvian *Calomys sorellus* group.

Additional Information:

I am always looking for motivated, independent students with strong interest on small Neotropical mammals (e.g., rodents, shrews, marsupials).

Trinity University

Department of Biology, One Trinity Place, Trinity University, San Antonio, TX 78212



David O. Ribble

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Email: dribble@trinity.edu

Web page: www.trinity.edu/dribble

Research Interests, Projects, and Grants:

I am interested in the evolutionary ecology of small mammals, primarily *Peromyscus* and elephant-shrews. My research in recent years has ranged from studies of social organization to mating behavior to thermal ecology. We have started some new research with mathematics funded through a Math-Biology NSF grant, and a biodiversity study of the Bamberger Ranch Preserve in Blanco County.

Undergraduate Students and Their Research:

- Dava Greenberg-Spindler – Paternity in Round-eared Elephant-shrews (*Macroscelides proboscideus*).
- Richard Simpson and Samuel Keller – Modeling Mammal Distributions in Texas.

University of Central Oklahoma

Department of Biology, Edmond, OK 73034



Michelle L. Haynie

Phone: 405-974-5774

Email: mhaynie@uco.edu

Research Interests, Projects, and Grants:

My research interests lie in population genetics and molecular systematics.

Currently, I have students examining genetic diversity in *Neotoma* populations in Arizona and Oklahoma, and *Geomys* populations in Oklahoma. Additionally, I co-advise students examining genetic diversity in collared lizards and mud turtles.

Funding for this research has been provided by the Office of Research and Grants at UCO. A NSF-MRI grant was obtained for acquisition of an automated DNA sequencer for the Department of Biology at UCO.

Graduate Students and Their Research:

- Sarah Hoss – Genetic variation at Major Histocompatibility Complex loci in *Neotoma albigula*: potential clues to the evolution of North America Arenaviruses

Undergraduate Students and Their Research:

- Danielle Howard – Genetic identification of gophers (*Geomys*) in Oklahoma: the search for cryptic species and hybridization events; Molecular evaluation of hybridization between *Neotoma floridana* and *N. micropus* along a contact zone in Oklahoma; freshman
- Abby Ferguson – Genetic identification of gophers (*Geomys*) in Oklahoma: the search for cryptic species and hybridization events; freshman
- Lindsay Stone – Genetic variation at Major Histocompatibility Complex loci in *Neotoma albigula*; freshman
- Shey Ramsey – mtDNA d-loop variation in *Neotoma albigula* populations in Arizona; sophomore
- Amanda Eisemann – Microsatellite variation in *Neotoma albigula* populations in Arizona; sophomore
- Samantha Peno – Phylogeography of Sonoran Mud Turtles in a fragmented landscape; senior

Additional Information:

I am still in the process of writing the “Mammals of Oklahoma” with Bill Caire and Lynda Loucks. Any information you have regarding Oklahoma mammals would be greatly appreciated.

University of Mary Hardin-Baylor

Department of Biology, University of Mary Hardin-Baylor, Belton, TX 76513



Cathleen N. Early

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Research Interests, Projects, and Grants:

Current focus outside of the classroom is helping equip and manage UMHB's Science Education Resource Center (SERC), which serves to assistant Bell Co. K-12 educators in teaching science. This fall we had our 3rd annual Science Saturday which provides hands-on activities and demonstrations in Biology, Chemistry, Math, Physics, Psychology, and Robotics for elementary aged children. All proceeds go to the SERC to purchase materials that teachers can borrow.

I am also the faculty sponsor for our local biological honor society, which became an official chapter of Beta Beta Beta in March 2011.

Additional Information:

University service: Undergraduate representative for the College of Sciences on our academic assessment team and chairperson of the Core Curriculum committee.

Professional service: Current President Elect of the Texas Academy of Science 2011-12; will be President for 2012-13. Also serving as Program Chair for the 115th meeting of TAS to be held at Sul Ross Univ. in Alpine, Tx.

University of New Mexico



Christine L. Hice

Department of Biology, 167 Castetter Hall, University of New Mexico, Albuquerque, NM 87131

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Fax: 505-277-5965

Email: clhice@unm.edu

Research Interests, Projects, and Grants:

Conservation and natural history of mammals in the southwest, particularly Texas, New Mexico, and Mexico. Natural history and ecology of neotropical mammals.

Current projects include:

Second edition of The Bats of Texas, with Loren Ammerman and David Schmidly as co-authors.
Small mammal trapping on Galveston Island to assess the impact of Hurricane Ike on the mammal community, with David Schmidly

Revised edition of The Mammals of Texas, with David Schmidly as co-author

Archival natural history of New Mexico: project uses national archives, particularly from the US Biological Survey, to assess changes in land use, habitat, etc. over the past 100 years in New Mexico, with David Schmidly



David J. Schmidly

Office of the President, Schole's Hall, Rm 160, University of New Mexico, Albuquerque, NM 87131

Phone: 505-277-2626

Fax: 505-277-5965

Email: unmpres@unm.edu

Research Interests, Projects, and Grants:

Conservation and natural history of mammals in the southwest, particularly Texas, New Mexico, and Mexico.

Current projects include:

Second edition of The Bats of Texas, with Loren Ammerman and Chris Hice as co-authors.

Small mammal trapping on Galveston Island to assess the impact of Hurricane Ike on the mammal community, with Chris Hice

Revised edition of The Mammals of Texas, with Chris Hice as co-author

Archival natural history of New Mexico: project uses national archives, particularly from the US Biological Survey, to assess changes in land use, habitat, etc. over the past 100 years in New Mexico, with Chris Hice

The University of Oklahoma

Sam Noble Oklahoma Museum of Natural History, 2401 Chautauqua Ave. Norman, OK 73072-7029



Marcia A. Revelez

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Web page URL: <http://www.snomnh.ou.edu/collections-research/mammalogy.htm>

Research Interests, Projects, and Grants:

Collection Management, Integrated Pest Management, Best Practices in Museums, Museum Safety, OK Mammalogy.

NSF Grant: \$445,303 grant from the National Science Foundation for the "Curation, digitization, and integration of the orphaned University of Memphis Mammal Collection" Co-Pi with Janet Braun and Michael Mares (2.5 yr project)

University of Science and Arts of Oklahoma

University of Science and Arts of Oklahoma, 1727 West Alabama, Chickasha, Oklahoma USA 73018



Ray E. Willis

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Web page URL: <http://usao.edu/faculty/ray-willis>

Research Interests, Projects, and Grants:

My research pertains to characterizing Na,K-pump isoform expression in various tissues to elucidate phylogenetic relationships of under-represented lineages that live in environmentally diverse habitats. Additionally, I use crocodylian systematics to explore newly identified gene sequences to determine systematic utility for other evolutionary relationships.

Undergraduate Students and Their Research:

I currently have six undergraduate researchers working on baseline mammal and herpetological surveys. We are also determining fish diversity and health in the two ponds at the USAO Habitat Area.

The University of Texas at Austin

Texas Natural Science Center, 2400 Trinity St. Austin, TX 78705



Pamela R. Owen

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Email: p.owen@austin.utexas.edu

Web pages:

Texas Natural Science Center: www.utexas.edu/tmm/

Paleo Lab: www.utexas.edu/tmm/paleo/index.html

DigiMorph: www.digimorph.org/about/pamelaowen.phtml

Research Interests, Projects, and Grants:

- Natural science education and outreach
- Evolutionary history of American badgers (Taxidiinae)
- Morphology, evolution, and systematics of Carnivora
- Late Cenozoic mammalian faunas

Additional Information:

Public education and outreach are my focus with TNSC. I have been a co-leader of TNSC's. *Evolution Professional Development* programs and held workshops for secondary science teachers on mammalian skeletal and dental anatomy. I am a workshop facilitator and lead scientific consultant for an integrated life and earth sciences teacher training program funded by IMLS through 2012. Last year close to 1,000 K-8th grade students learned to identify mammal skulls in my *Bones, Teeth, Horns & Antlers* classroom program. On the community front, I continue to provide annual training in mammalogy for three local chapters of the Texas Master Naturalists and serve as an ASM Associate Editor (Fossil Record section) for *Mammalian Species*.

The University of Texas-Permian Basin

Biology Department, 4901 E. University. Odessa, Texas 79762



Diane Post

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Email: post_d@utpb.edu

Web page: cas.utpb.edu/academic-departments/biology/faculty/diane-post/

Research Interests, Projects, and Grants:

- Effects of humans on small mammal populations across the wildland-urban interface.
- The development of *Neotoma micropus* as a model for the study of type 2 diabetes in human populations.

Graduate Students and Their Research:

- Niray Bhakta: A comparison of alpha and beta cell structure and function of *Neotoma micropus* field populations and captive animals on a "western" diet.
- JoAnna Hernandez: A comparison of hematological values of *Neotoma micropus* field populations and captive animals on a "western" diet.

Undergraduate Students and Their Research:

Brittany Pitrucha: The effect of high fructose and high sucrose diet on the presence/absence of podocytes in kidney tissue of *Neotoma micropus*.

Ross Vale: the effect of high fructose and high sucrose diets on serum cortisol levels in *Neotoma micropus*.

Additional Information:

I am always looking for qualified Master's level graduate students. Some competitive graduate assistantships are available.

West Texas A&M University

West Texas A&M University, 2403 Russell Long Blvd, Canyon, Texas



Rocky Ward

Phone: 806-651-2283

Email: rward@wtamu.edu

Research Interests, Projects, and Grants:

Conservation genetics. Current mammal work includes use of microsatellites to examine introgression of white-tailed deer alleles into the mule deer of the Texas High Plains. The work is funded by a grant from the US Fish & Wildlife Service.

Undergraduate Students and Their Research:

Serina England - deer hybridization

Patron Membership

Members are encouraged to consider becoming Patrons of the Society by donating \$100 (or more) to support the Society's student paper awards. A list of Patron members is published on the website and in the program. Regular Patron membership is achieved with a donation of \$100. Members who exceed \$100 in donations to the Society's student awards fund will receive a certificate recognizing their total donation level as follows: \$125, Ocelot Level; \$250, Bobcat Level; \$500, Puma Level; \$1000, Jaguar Level. Members can upgrade at any time, and all donations are cumulative. There is no time limit or minimum contribution requirement as a member works toward the next level. Donation levels are confidential.

Minutes of the 2011 Business Meeting

**Texas Society of Mammalogists
29th Annual Business Meeting
Texas Tech University Center
Junction, Texas
26 February 2011**

The meeting was called to order by President Terry Maxwell at 3:20 p.m. in the Packard Building of the Texas Tech University Center at Junction. The minutes of the 2010 Annual Business Meeting as written in the 2011 annual meeting program for the Texas Society of Mammalogists (TSM) were approved.

Officers' Reports

Secretary-Treasurer, Loren K. Ammerman, reported on income and expenses for the 2010 calendar year as printed in the 2011 meeting program for the Texas Society of Mammalogists (TSM). She noted that the meeting income and T-shirt income covered expenses last year.

Total assets at the end of 2010 were \$61,855.07. In 2010, total income was \$14,588.22 and total expenses were \$9,555.30. The checking account balance as of 1 January 2010 was \$2,820.60. The checking account ended the year with a balance of \$3,980.52. We invested income from the auction (\$3,362.00) and patron memberships (\$511.00) in July 2010 with Rydex/SGL. These investments grew by \$7,007.29 giving us a balance of \$57,874.55 at the end of 2010.

It was moved and seconded to approve the treasurer's report. Motion passed.

Ammerman reported that there were 139 people attending this year's meeting. She also reported to the membership that there was one new patron member and four individuals upgraded their patron membership to the next higher "cat level". Membership thanked the patron members with applause.

Ammerman thanked the following individuals for their help with meeting logistics. Marie Tipps, Katelynn Frei, Candace Frerich, Crystal Watson, Sarah Bartlett, Emily Wilkinson, and Andi Lewis assisted with the registration table. Pablo Rodriguez-Pacheco and Faisal Anwarali Khan kept the audiovisual equipment running very smoothly. Jason Strickland and Robby Heischman transported the kegs and Mike Dixon and Amanda Hicks handled T-shirt sales. Lastly, Ammerman thanked the Texas Tech Center staff for their help in making sure that everything ran smoothly. They were recognized with a round of applause.

Permanent Secretary Lisa Bradley told the membership that she receives items for the TSM archives to be deposited at Southwest Collection at Texas Tech University and she has been taking photos throughout the meeting for historical purposes. She welcomes any TSM documents, correspondence, or photos to be archived.

Newsletter Editor Russell Pfau reported that the newsletter should contain all the information that was sent to him, and President Terry Maxwell thanked him for agreeing to continue in this job for another year even though he will be serving as President this next year.

Reports of Committees

Phil Sudman, for the Committee for Honorary Members, presented his report at the banquet. Sudman announced that Ron Pine had been nominated and approved by the Executive Committee as an Honorary Member of TSM. He received a standing ovation. Ron will receive his award for contributions to the science of mammalogy at the banquet next year.

Cathy Early, Chair of the Committee on Conservation, reported that they would welcome hearing from the membership regarding any conservation issues.

President-Elect Russell Pfau thanked the members of the Committee for Student Honoraria for their assistance with the judging process. Pfau announced winners of the presentation awards after the banquet dinner. Each award winner received a certificate signed by TSM President Maxwell and a cash prize that was increased this year (\$350 for the Packard Award and \$250 for all others).

The award winners for oral presentations were:

1. Rollin H. Baker Award — **Amy M. Scott** (Abilene Christian University)
2. TSM Award — **Joseph D. Holbrook** (Texas A&M University-Kingsville)
3. William B. Davis Award — **Wesley A. Brashear** (Angelo State University)
4. Robert L. Packard Award — **Dallas Krentzel** (Centenary College of Louisiana)

Poster presentation award winners were:

1. Clyde Jones Award — **Cibele Sotero-Caio** (Texas Tech University)
2. Vernon Bailey Award — **Katelynn Frei** (Angelo State University)

John Young (TPWD) reported for the *ad hoc* Government Liaison Committee. He asked that anyone working with bats be aware of White-nose syndrome. It has been reported in a bat from Oklahoma and there is concern about WNS in Texas. He requested that any suspicious mortality of bats with signs of white-nose be reported to his office where he serves as the point-of-contact for the state.

Joel Brant, on behalf of the *ad hoc* Auction Committee, thanked the membership for their support over the years and reported that over the last 6 years we have raised over \$20,000 for TSM. He put out a plea for members to consider helping to acquire jewelry and artistic items for the auction next year. He then thanked the members of the committee Marcy Revelez, Adam Ferguson, Mandy Husak, Robert Bradley, and Scott Chirhart. Lastly he announced that TSM will be able to take credit card payments via PayPal this year at the auction.

Election of Officers

President Maxwell announced that the Executive Committee had nominated two individuals for President-Elect – Michelle Haynie and Joel Brant. There was a ballot vote and Joel Brant was elected by majority of the votes.

President Maxwell announced that the Executive Committee had nominated Loren Ammerman from Angelo State University to continue as Secretary-Treasurer. The floor was opened for additional nominations. There were none. Ammerman was elected by acclamation.

New Business

The first item of New Business was the selection of a site for the 2012 meeting. It was moved and seconded to hold the meeting at TTU Center. Motion was approved and the dates of the meeting were set for 17-19 February 2012.

The next item of New Business was Revision of By-laws. Ira Greenbaum, for the *ad hoc* Governance Committee (Ira Greenbaum, Robert Baker, and Russell Pfau), presented three changes to the membership for consideration, with the technical assistance of Faisal Anwarali Khan.

1) The following changes (in italics) to ARTICLE IV of the TSM By-laws require all standing and active committees to submit written annual reports to the President of the Society and for the President to forward these to the Executive Committee no later than two weeks prior to the annual meeting. The changes were approved by majority vote.

ARTICLE IV. – Officers: Roles & Responsibilities

PRESIDENT

1. Serves as first officer and spokesman for the Society.
2. Is responsible for organizing, establishing the agenda, and conducting the annual Executive Committee meeting and the annual Members Business Meeting. The President also selects and makes appropriate arrangements for a speaker for the annual banquet.
3. Serves as Chair of the Executive Committee.
4. Appoints (as appropriate) and charges Society committees including:
 - A. Executive Committee
 - B. Conservation Committee
 - C. Committee for Honorary Members
 - D. Other committees as necessary*Provides written reports of the Committee for Honorary Members, Committee on Conservation and active ad hoc committees to the Executive Committee two weeks in advance of the annual meeting of the Society.*
5. Assumes a proactive role in assuring that each Texas educational institution and appropriate State and Federal agencies are invited and represented at each annual meeting.
6. Conducts (with the President-Elect) an annual audit of all society expenses and financial records. Reports the results of the audit to the membership at the annual business meeting.

At the end of his-her term, provides the society's records to the incoming president.

ARTICLE V. – Standing Committees: Roles & Functions

1. Committee for Honorary Members – The function of this Committee is to evaluate candidates for honorary membership in the Texas Society of Mammalogists. Honorary membership in the Texas

Society of Mammalogists is granted in recognition of distinguished service to the science of mammalogy in Texas. The Committee solicits and receives nominations both from outside and within the Committee, assembles supporting documentation and evaluates the qualifications of the candidates. *The Committee shall make its recommendation(s) in a written report submitted to the President no later than three weeks prior to the annual meeting of the Society.* Pending majority approval of the Executive committee, the recommendation(s) of the Committee for Honorary Membership is/are presented to the Membership by the President at the Annual Meeting.

2. Committee on Conservation – The role of this Committee is (a) to monitor governmental and other activities (at state, national and international levels) that relate to conservation of mammals in Texas; (b) to advise officers and membership of the Texas Society of Mammalogists on issues of concern; and (c) to respond to the issues via formal resolutions to the membership, by sending letters to responsible individuals or agencies, and by other appropriate means. This Committee is intended to serve as a clearinghouse for information on all aspects of conservation of Texas mammals and to maintain the capacity to respond promptly and effectively in crises. *The Committee shall submit a written report to the President no later than three weeks prior to the annual meeting of the Society.*

3. Committee for Student Honoraria – This Committee selects the outstanding paper(s) presented by a graduate or undergraduate student at the annual Texas Society of Mammalogists meeting. The President-Elect of the Society will serve as Chair of this Committee and will select the Committee members annually.

4. Executive Committee – This Committee will consist of the President, Past Presidents and elected officers. The Committee serves as the executive board of the Society and will receive and consider items that might affect the functioning of the Texas Society of Mammalogists and make recommendations to the membership. The Committee will also serve as the Nominating Committee and will prepare a slate of nominations for election to the offices of the Texas Society of Mammalogists.

2) The following changes (in italics) to ARTICLE V of the TSM By-laws to require 3-person minimums for the Committee for Honorary Members and the Committee for Conservation. The following changes were approved by majority vote.

ARTICLE V. – Standing Committees: Roles & Functions

1. Committee for Honorary Members – The function of this Committee is to evaluate candidates for honorary membership in the Texas Society of Mammalogists. *The Committee is to be constituted of a Chairperson and a minimum of two additional members.* Honorary membership in the Texas Society of Mammalogists is granted in recognition of distinguished service to the science of mammalogy in Texas. The Committee solicits and receives nominations both from outside and within the Committee, assembles supporting documentation and evaluates the qualifications of the candidates. The Committee shall make its recommendation(s) to the Executive committee at or before the beginning of the annual meeting of the Society. Pending majority approval of the Executive committee, the recommendation(s) of the Committee for Honorary Membership is/are presented to the Membership by the President at the Annual Meeting.

2. Committee on Conservation – The role of this Committee is (a) to monitor governmental and other activities (at state, national and international levels) that relate to conservation of mammals in Texas; (b) to advise officers and membership of the Texas Society of Mammalogists on issues of concern; and (c) to respond to the issues via formal resolutions to the membership, by sending letters to responsible individuals or agencies, and by other appropriate means. *The Committee is to be constituted of a*

Chairperson and a minimum of two additional members. This Committee is intended to serve as a clearinghouse for information on all aspects of conservation of Texas mammals and to maintain the capacity to respond promptly and effectively in crises.

3. Committee for Student Honoraria – This Committee selects the outstanding paper(s) presented by a graduate or undergraduate student at the annual Texas Society of Mammalogists meeting. The President-Elect of the Society will serve as Chair of this Committee and will select the Committee members annually.

4. Executive Committee – This Committee will consist of the President, Past Presidents and elected officers. The Committee serves as the executive board of the Society and will receive and consider items that might affect the functioning of the Texas Society of Mammalogists and make recommendations to the membership. The Committee will also serve as the Nominating Committee and will prepare a slate of nominations for election to the offices of the Texas Society of Mammalogists.

3) The following addition of ARTICLE VI to the current By-Laws of TSM formally establishes the annual-meeting student awards and establishes eligibility criteria for each award. The following wording was approved by majority vote.

ARTICLE VI. – STUDENT AWARDS

At its annual meeting, The Texas Society of Mammalogists recognizes student presenters for excellence in research and presentation by granting the following awards. These awards are made possible by the generous donations of the Society's members and by fundraising activities. The monetary amount of the honorarium for each award is established by majority vote of the Executive Committee.

Robert L. Packard Award – The Robert L. Packard Award is presented for the Best Overall oral presentation. Eligibility is open to any student who has not previously received the Packard Award. The Robert L. Packard Award was first awarded in 1985 for the best student presentation. In 1990, when the TSM Award was established, the Packard Award was designated for the best presentation in classical mammalogy. Since 1998, the Packard Award has been designated for the Best Overall oral presentation. The award is named in honor of Robert L. Packard (1928-1979), the founder of the Texas Society of Mammalogists.

TSM Award – The TSM Award is presented for the best oral presentation in mammalian cytology, evolution, and systematics. Eligibility is open to any student who has not previously received this award.

The TSM award was established in 1990.

William B. Davis Award – The William B. Davis Award is presented for the best oral presentation in classical mammalogy at the organismal level. Eligibility is open to any student who has not previously received this award.

The William B. Davis award was established in 1998 in honor of William B. Davis (1902-1995), a leading mammalogist in Texas and the first Head of the Department of Wildlife and Fisheries Sciences at Texas A&M University. Davis authored or co-authored five editions of "Mammals of Texas" (1947, 1960, 1966, 1974, 1994).

Rollin H. Baker Award – The Rollin H. Baker Award is presented for the best overall oral presentation by an undergraduate student. Eligibility is open to any undergraduate student who has not previously received this award.

The Rollin H. Baker Award was established in 2002 in honor of Rollin H. Baker (1916-2007), president of the Society in 1984-85 and an active member of TSM from 1984 until his death in 2007.

Vernon Bailey Award – The Vernon Bailey Award is presented for the best poster presentation in classical mammalogy at the organismal level. Eligibility is open to any student who has not previously received this award.

The Vernon Bailey Award was established in 2004 in honor of Vernon Bailey (1864-1942), Chief Field Naturalist and Senior Biologist for the Department of Agriculture's Bureau of Biological Survey from 1897 to 1933. Bailey conducted the first and most complete biological survey of Texas, from 1889 to 1905.

Clyde Jones Award – The Clyde Jones Award is presented for the best poster presentation in mammalian cytology, evolution, and systematics. Eligibility is open to any student who has not previously received this award.

The Clyde Jones Award was established in 2004 and is named in honor of Clyde Jones, a founding member of The Texas Society of Mammalogists and president of the Society in 1987-88.

Other new business -

Joel Brant announced that Jane Goodall would be speaking in Abilene on March 8th.

Hugo Mantilla thanked the society for all that it taught him and announced that it has helped him to establish a mammal society in Colombia.

Duane Schlitter thanked Ammerman for the remarkable success of TSM investments.

President Maxwell closed the meeting by reminding us that although he is an ornithologist, in 1967 he had the opportunity to catch bats in Central America with Dick Laval and had the ethereal experience of looking into the face of *Centurio senex*. He knew after that he would never be far from a mammalogist again. The meeting was adjourned at 4:15 p.m.

Respectfully submitted,
Loren K. Ammerman
Secretary-Treasurer

Newsletter Editor: Russell Pfau

STUDENT AWARDS

The Texas Society of Mammalogists annually recognizes student presenters for excellence in research and presentation abilities by granting the following awards. These awards are made possible by the generous donations of the Society's members and by fundraising activities.

Robert L. Packard Award – The Robert L. Packard Award was first awarded in 1985 for the best student presentation. In 1990, when the TSM Award was established, the Packard Award was designated for the best presentation in classical mammalogy. Since 1998, the Packard Award has been designated for the Best Overall oral presentation. Currently, this award includes an honorarium of \$300. The award was named in honor of Robert L. Packard (1928-1979), the founder of the Texas Society of Mammalogists.

TSM Award – This award was established in 1990 and is awarded to the student with the best oral presentation in studies pertaining to mammalian cytology, evolution, and systematics. This award includes an honorarium of \$200.

William B. Davis Award – This award was established in 1998 and is granted to the student with the best oral presentation in classical mammalogy at the organismal level. This award includes an honorarium of \$200. The award is named in honor of William B. Davis (1902-1995), a leading mammalogist in Texas and the first Head of the Department of Wildlife and Fisheries Sciences at Texas A&M University. Davis authored or co-authored five editions of "Mammals of Texas" (1947, 1960, 1966, 1974, 1994).

Rollin H. Baker Award – This award was established in 2002 for the best overall oral presentation by an undergraduate student. This award includes an honorarium of \$200. The award was established in honor of Rollin H. Baker (1916-2007), president of the Society in 1984-85 and an active member of TSM from 1984 until his death in 2007.

Vernon Bailey Award – This award was established in 2004 for best poster presentation in classical mammalogy at the organismal level. This award includes an honorarium of \$200. The award was named for Vernon Bailey (1864-1942), Chief Field Naturalist and Senior Biologist for the Department of Agriculture's Bureau of Biological Survey from 1897 to 1933. Bailey conducted the first and most complete biological survey of Texas, from 1889 to 1905.

Clyde Jones Award – This award was established in 2004 for best poster presentation in studies pertaining to mammalian cytology, evolution, and systematics. This award includes an honorarium of \$200. The award was named in honor of Clyde Jones, who is currently Horn Professor Emeritus at Texas Tech University. Jones has been an active member of TSM since its inception in 1983 and was President of the Society in 1987-88.

TEXAS SOCIETY OF MAMMALOGISTS

Honorary Members

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William B. Davis (D)
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Class of 1986
Rollin H. Baker (D)
Class of 1991
Howard McCarley (D)
Class of 1992
J. Knox Jones, Jr. (D)

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Clyde Jones
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Robert J. Baker
Class of 1998
James Scudday (D)
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Jim Goetze
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