

# MM

The Magazine of the Museum  
of Texas Tech University

Fall-Winter 2016



**MUSEUM**  
OF TEXAS TECH  
UNIVERSITY

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of Argentina: the  
World's Largest  
Flying Bird

Shoes that Saw  
the Founding of  
Brownfield and Texas  
Tech University

Cave Spiders  
of Texas

What Defines a  
Leading University  
Museum?

# M

*is for Museum*

$M=eC^2$

Stakeholder engagement for a university museum is a continuum between the university (Campus) and the Community. The Museum must engage with the Campus; it must engage with the Community; and it must facilitate engagement between Campus and Community.

Museum (M) equals engagement (e) by Campus (C) and by Community (C).

Read more about the Museum's new vision and strategic plan in this edition of M Magazine.



**M**

The Magazine of the Museum of Texas Tech University  
Fall/Winter 2016

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We are re-launching a magazine for the Museum of Texas Tech University after a four year hiatus. Some people say that the days of printed magazines are over, that e-zines, YouTube and online blogs are the only options for the future because they are cheaper, easier to produce, and can have a wider reach.

We don't agree. Having a great website and a strong digital presence is certainly vital for any organization today. But it isn't everything. There is something tangible about a high quality printed magazine, one that is crafted with care and that embodies the organization that crafts it. Yes it is traditional in a sense, but a tradition born of values and a commitment to communicate with as wide an audience as possible. Good museums are an exotic mix of the traditional and the cutting edge. That mix is what makes museums very special in a world of homogenized consumer goods and clone-like franchises.

Welcome to **M**, the Magazine of the Museum of Texas Tech University.

Gary Morgan  
Executive Editor

## Not just child's play

The Museum of Texas Tech University holds a significant collection of dolls from the 19th and first half of the 20th centuries with over 1250 doll related items. Of these, 119 dolls are described as having bisque porcelain heads and date from the 19th century through the 1930s. The early dolls are beautifully dressed in time appropriate garments. Some of these dolls represent historical figures such as Stephen F. Austin and General Stonewall Jackson. In addition to the fancy bisque head dolls that had to be



played with carefully and were too expensive for the average home, there are many homemade dolls. In the beginning of the 20th century the bisque head dolls were replaced by those made of other tougher and less expensive materials. We have 442 dolls representing international cultures and were likely used to teach children about those cultures. There are 548 paper dolls in the collection plus their dresses. Separate from the paper dresses, there are 168 doll dresses and 199 doll accessories. Among the doll accessories are six beautiful doll quilts which were exhibited as part of the recent exhibit, *Legacy of a Thousand Stitches: Quilts of the Museum of Texas Tech University* and are illustrated in the exhibition catalog. Some 20th century highlights include a Shirley Temple Doll, Kewpie dolls, five Madame Alexander dolls, a Dorothy from the Wizard of Oz doll and an Annie doll. The collection has a Wonder Woman doll, but as of yet no Barbie doll.

Although dolls remain a much cherished memory to many of us, and continue in their modern forms as popular childhood toys, contemporary culture has warped their naive playtime personas in horror films of the late 20th and 21st centuries. Chucky in the *Child's Play* series of films and Billy in the *Saw* horror movies have transformed dolls and puppets into things of nightmares. Several modern and monstrous dolls will feature in the exhibition, *In the Blood*, opening at the Museum in October.

Mysteriously, one of our dolls has disappeared from the collection. It is hiding somewhere in this edition of *M*. Can you find it? Before it finds you?



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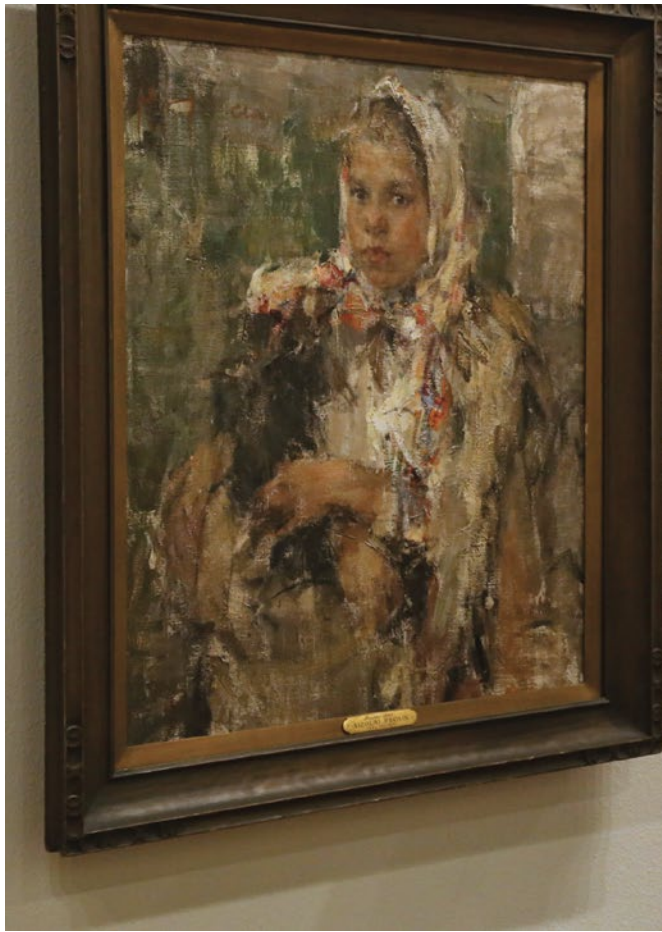
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## Medici's Treasures

It is nearly four years since the Museum of Texas Tech University last published a museum magazine. The last edition of the former MuseNews covered the Museum's activities of 2011 and 2012. So welcome everyone to the new M Magazine.

Museums are intriguing and very special places. There is a wonderful mix of rich material heritage in the collections, active research programs that can span the world, educational and exhibit offerings for audiences of all ages, and to this add a touch of quirkiness, a pinch of the bizarre, and a dose of serenity, and you have something that we call a museum.

University museums like ours are a bit different again. We have a particular role in connecting the university and the community. I discuss the roles of university museums in this edition of M.

You may wonder why I have called my column Medici's Treasures. The Medici were a wealthy and powerful banking family in Florence, Italy, during the period we know as the Italian Renaissance of the 15th and 16th centuries. One of them, Lorenzo de Medici (1449-92), was widely called The Magnificent, for his political and military influence and his patronage of the arts and sciences. In the Renaissance, Europe rediscovered critical thinking and the scientific method, skills substantially lost to it since the fall of the Roman Empire 1000 years earlier. The arts flourished and artists like Leonardo da Vinci, Michelangelo Buonarroti and Raphael painted and carved some of the most

recognizable artworks that we treasure today.

There are many impressions we have of the Medici, and of Lorenzo in particular. History records their excesses and their sometimes brutality. The writer Niccolo Machiavelli used the Medici as inspiration for his seminal exploration of political power, *The Prince* (1513). You would not have wanted to fall foul of the Medici wrath.

Yet their legacy is also one of celebration of the human condition and the immense capacity of humans to create, be that in the arts or the sciences. They were patrons of the flourishing of creativity and intellect that distinguishes the Renaissance.

The Museum of Texas Tech has recently developed a new strategic plan to guide its future. In it we embrace what it means to be a university museum, and the vital role that museums have in modern society. Museums too should be supporters of creativity and should celebrate the wonders of the world we live in and the achievements of humanity. It is in these things that the true legacies of the Medici reside. In many respects, this legacy is the inheritance of museums, and it is our role to nurture and grow the flame of human creativity and the exploration for new knowledge.

Great treasures indeed.

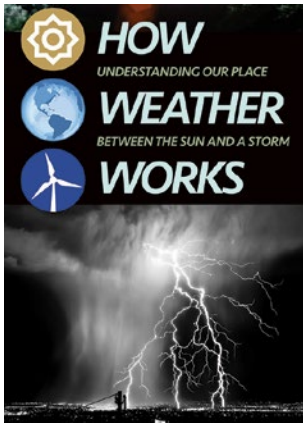
Gary Morgan Ph.D.  
Executive Director

## M | News

### Art on the Llano Estacado

For the past three years, the Museum of Texas Tech University Association has hosted the Annual Art on the Llano Estacado Gala Exhibition and Sale. Our vision is to bring together great artists and distinguished collectors from the Llano Estacado region. Each year the show features the works of approximately forty artists, displaying over 200 paintings and sculptures at the Museum of Texas Tech University. We also commemorate and honor the works and life of an individual distinguished artist with the annual Legacy Award. The 2016 event was held on April 30 and presented over 2000 works of 41 artists. Professor James C. Watkins, a Horn Professor at Texas Tech, was this year's recipient of the Legacy Award.

This event is the Museum Association's major fundraiser and helps to support and enhance the mission of the Museum of Texas Tech University. Everyone who attends or purchases a piece of art is contributing to the continued work of the Museum. After three successful galas, the Association looks forward to continuing this tradition for many years to come. Details of next year's gala will be in the next edition of M.



### How Weather Works: Our Place between the Sun and a Storm

The Museum opened its new interactive gallery on How Weather Works in July. The program began on Friday July 24 with a public panel session about weather presented by Dr. Brian Ancell, Assistant Professor in Texas Tech's Atmospheric Science Group, Matt Ernst, Chief Meteorologist at Fox 34 Lubbock, and Justin Weaver, Meteorologist-in-Charge for the National Weather Service in Lubbock. The opening reception on July 25 was attended by the Provost of Texas Tech University

(now President) Dr. Lawrence Schovanec

The exhibition explores how weather impacts on us, and how we can impact the weather. There are hands-on components and lots to learn and do.

*How Weather Works* will run through 2017.

### Museum in the Dream Team

Utilizing the art galleries in the Museum of Texas Tech University may not be the first thing you would think of in teaching young engineering students, but that is exactly what will happen. In May this year, the office of the Vice President of Research at Texas Tech University notified several research teams that they had been selected to receive funding from the Seed Grants for Interdisciplinary Research at Texas Tech University. The Museum and several TTU professors comprise one of the four teams (selected from 47 applications) to receive funding for this competitive opportunity.

The team proposal, *DREAM: Developing Reflective Engineers with Artful Methods*, has been awarded \$149,626 to help the team attain a large competitive grant in the future. The initial idea for this project was developed by TTU professors Jeong-Hee Kim, Professor of Curriculum Studies in the Department of Curriculum Instruction, along with Professors Danny Reible, the Donovan Maddox Distinguished Engineering Chair, and Chongzheng Na, both in Civil, Environmental, and Construction Engineering. The team also includes Professor Roman Taraban, Associate Chair in Psychology at TTU, and from the Museum, Dr. Gary Morgan, Executive Director, and Dr. Jill Hoffman, Curator of Education. The proposal will utilize exhibitions in the galleries at the Museum in the

galleries at the Museum as a means for helping young engineers develop their skills for reflective thinking and communication, in order to strengthen their contribution to society.

"This is an exciting opportunity for the Museum to work with university researchers in engineering and education to enhance our understanding of how museums contribute to the empowerment of individuals to be productive contributors to society," said Gary Morgan. "It is not just about training skilled engineers. It is about how we can enhance their engagement with community."



### Museum wins International Engagement Award

The Museum of Texas Tech University won the 2016 Global Engagement Community Award as part of the Global Vision Awards of the Office of International Affairs at Texas Tech. The award recognizes an individual or group who has made a significant contribution to international understanding and engagement in greater Lubbock.

On April 8, 2016, the Museum's Executive Director Dr. Gary Morgan accepted the award from the Interim President of Texas Tech, Dr. John Opperman, and the university's Provost (now President) Dr. Lawrence Schovanec.

"The Museum recognizes that it has local and international obligations and opportunities," said Gary Morgan. "The Museum can bring parts of the world to Lubbock ... and through international partnerships can help to extend Lubbock and Texas Tech around the world."

### Partnerships in Liberty

This year the Museum of Texas Tech University is partnering with the Institute for the Study of Western Civilization at Texas Tech in a series of changing exhibits using the extraordinary Remnant Trust collection.

The Remnant Trust Foundation is committed to making its collection of manuscripts and early edition publications on liberty and human dignity available to the widest of audiences. Now mostly located at Texas Tech University in the South West Collections/Special Collections of Texas Tech Libraries, the collection is a rare resource for students and the public to engage with some of the greatest literary works ever written.

Through 2016, the Museum has presented exhibits developed with the Institute for the Study of Western Civilization around the themes of economic, religious, constitutional, and individual freedoms. The exhibits have coincided with a series of public lectures on campus delivered by prominent thinkers and academics. This program is demonstrating the relevance of the Remnant Trust holdings to contemporary debate and issues, and has allowed a greater range of the collection to be on public display.



## 4th International Arts and Culture Symposium

The Symposium, co-sponsored by Sowoon Arts and Heritage and the Museum of TTU, brought scholars from South Korea and TTU to deepen the understanding of the cultural

heritage of both South Korea and America. Two TTU faculty members gave lectures on how eastern and western cultures affect their research areas differently. Dr. Carolyn Tate discussed jade of the east and west, and Dr. Robert Peaslee compared eastern and western films on the Vietnam War. A Panel Discussion with the speakers and the audience, moderated by Dr. Aliza Wong, also from TTU, followed. After the intermission, Prof. Alan Shinn from TTU spoke about percussion and performed with his jazz trio. Next, Dr. Eun Ha Park from South Korea lectured briefly and performed Korean dance and music, demonstrating how percussion and dance relate to media and culture. The final performance by Prof. Shinn and Dr. Park, improvised percussions together on the stage, showing the differences between Korean and western rhythms and how dissimilar rhythms can harmonize.



## Training Overseas Museum Professionals

The 2016 Lubbock International Council of Museums Committee on Museum Documentation (CIDOC) Summer School took place at the Museum of Texas Tech University from 1st – 8th June. Now in its sixth year, participants attended from Ethiopia, Egypt, Vietnam, Puerto Rico and the USA, and its growing international popularity clearly demonstrates the Summer School is meeting a genuine need for a comprehensive training program covering all aspects of museum documentation theory and practice. Taught in partnership between CIDOC and the Museum and by Museum Science faculty, the program is designed to appeal to a broad audience of both experienced museum personnel and newcomers to the field of museum documentation. Both basic and advanced topics are covered, by a series of interrelated modules, allowing participants to tailor the curriculum to their individual needs and interests.

In addition to the introductory modules of museum documentation, inventory, marking, photography, and other intermediate modules, 3D Scanning and 3D printing modules were taught for the first time and were very well received. Based on evaluations and conversations, participants said they learned things that will be of great use in their professional work and had a great time doing it. They also enjoyed and appreciated the opportunity to study and work in a wonderful Museum with such excellent facilities. One international participant commented, "everything in Lubbock is BIG - big cars, big campus, big ideas, big museums.... and big hearts too. Love to be back [hope soon]." Plans are already underway for the 2017 Lubbock Summer School!

## NSF Grant Extends Life of Genetic Tissue Samples at Texas Tech's NSRL

Officials at the Natural Science Research Laboratory (NSRL) at the Museum of Texas Tech University recently unveiled five new liquid nitrogen freezers thanks to a \$412,000 grant from the National Science Foundation.

The upgrade ensures the long-term preservation of more than 340,000 current tissue samples in its Genetic Resources Collection, allows for expansion to increase the tissue catalog and prolongs the availability of these samples for scientific research.

"With this upgrade, this facility is able to compete on a global scientific level and provide services for years into the future," said Gary Morgan, Executive Director of the museum. "We are well on our way now to becoming the premier genetic sample resource center in the world."

Robert D. Bradley, Director of the NSRL, said work began on the project in June 2015, and freezer installation began this January. The freezers can reach temperatures of – 190 degrees Celsius, and have the ability to increase the size and scope of the collection.

Also, they are more reliable than the mechanical freezers used before, which cost upward of \$15,000, only reached -80 degrees Celsius, were prone to mechanical failure and lasted an average of only four years.

"When we started our collection in the old freezers, that was better than any other form of preservation at the time," Bradley said. "But, DNA will degrade even at -80 degrees Celsius. It's slow, but it does break down. RNA and viruses break down even faster. It was the best we could do for a long time. We're moving into freezers -190 degrees Celsius. Much colder temperatures will keep this genetic material viable for research purposes for much longer."

Four new nitrogen freezers will absorb the bulk of the regular tissue collection formerly stored in 17 mechanical freezers, he said. They also increase current capacity by 30 or 40 percent. A smaller fifth freezer holds tissue samples collected from Chernobyl's radiation zone. For future growth, the museum has room for 5 more nitrogen freezers.

Bradley said tissue collections such as Texas Tech's can serve as major information sources to scientists. For example, during the 1993 hantavirus outbreak in the Four Corners region of New Mexico, mouse tissue samples collected years prior and stored at the NSRL helped scientists understand that the mystery virus had actually been in the region longer than humans had realized, and that different strains of the virus (most far less virulent) existed all over the world.

"In some samples collected not far from Lubbock, we found a different arenavirus that no one had known about 10 years ago, and that was here in our own back yard," Bradley said. "We have a new faculty member starting a whole new series of experiments on the tissue samples collected from Chernobyl 25 years ago. Tissue collections like ours allow scientists to answer new questions over time. As new techniques and technology become available, they can use older samples already archived."

"New methods always spark new questions. Twenty years ago, people didn't know about genomics. Today that's the big thing that everyone's talking about. So who knows what we'll be doing 50 years from now."



**MUSEUM**  
OF TEXAS TECH  
UNIVERSITY







## **A new vision, mission, and strategic plan for the Museum of Texas Tech University**

After nearly two years of planning, involving staff and many stakeholders of the Museum, we have a new strategic plan to lead us through to 2020.

We think it is an exciting vision of what a university museum can be. University museums are not just museums sited on a university campus. They have particular roles and opportunities that avail of their unique capacity to be a point of engagement between the university and the community. In our case, that community is Lubbock, West Texas, the South Plains, and right across America and around the world.

To achieve this future we will need the help of many people. Luckily the Museum has a strong network across West Texas, including our great partners, the Museum Association. With 150,000 people coming to our sites each year, we serve people from all backgrounds and with very wide-ranging interests. We want to build on these support networks to make the Museum even more special than it currently is and to become something that makes everyone in Lubbock and West Texas proud. We want to be known and respected around the country and the world, and to bring the world to Lubbock through our exhibitions and educational programs.

We call our new strategic plan, Engaging Campus and Community  $M=eC^2$ . Presented here are the Highlights of that plan. You can read a more detailed version on our website, at [museum.ttu.edu](http://museum.ttu.edu).

We hope you will want to join us in this future.

Gary Morgan, Executive Director

# A New Vision, Mission and Strategic Plan

## Preamble

The Museum of Texas Tech University has its origins as the West Texas Museum, established in 1929. Today the Museum serves both the University and the diverse community of greater Lubbock and West Texas, and has connections that span the world. To be a great museum, the Museum of Texas Tech University must embody the best in museum practice as recognized for 21st century museums and as is proper for an American Alliance of Museums accredited museum. To be a great university museum, the Museum must recognize its role – a unique role - in advancing on the strategic priorities of Texas Tech University and in linking the University to its diverse community. **The University ('Campus') and the Community are the key stakeholders of the Museum of Texas Tech University.**

Stakeholder engagement for a great university museum should be seen as a continuum between Campus and Community. The Museum must engage **with** Campus; it must engage **with** Community; and it must facilitate engagement **between** Campus and Community.

***Museum (M) equals engagement (e) by Campus (C) and by Community (C).***

$$M=eC^2$$

# Museum of Texas Tech University

## Vision Statement

To be a premier destination for exploration and discovery in the arts, humanities, and sciences and the leading university museum in the country.

## Mission Statement

Through its collections and programs, the Museum of Texas Tech University engages campus and community to enhance understanding of self- and community identity, society, and the world; to empower people to be informed citizens of the 21st century; and to enrich lives.

## Values Statement

The Museum of Texas Tech University values are:

- Public and professional service
- Stewardship of cultural and natural heritage
- Educational and research excellence
- Innovation and experimentation
- Academic and intellectual freedom
- Diversity of collections and communities
- Sustainability and viability

## Strategic Priorities

The following areas are identified as deserving particular attention in order to empower the Museum to deliver on its true potential to be the leading university museum in the country. The 'leading university museum' should be defined not only by the quality of a museum's facilities and collections, but more importantly by the range and relevance of its programs, the active links between student and public education, research/scholarship and audience experiences, and the seamless connection between Campus and Community.

### In the 2016-2020 period the Museum will ...

Maintain and improve on its core strengths including collection care, object-based research and the Museum Science and Heritage Management (MSHM) graduate program

#### Grow its lifelong learning capacities including:

- Enhanced educational programming and resources
- Better evaluation of its audiences and impacts
- Research into informal, self-directed, and object-based learning
- More programs for under-served and special needs groups, and in early childhood learning

#### Grow its engagement with communities and campus including:

- Establishing an exhibit program that serves as a portal to Texas Tech University's research, creativity and community engagement
- Supporting a wider range of community events
- More outreach into community and campus through products delivered outside of the Museum's walls
- Making the museum more welcoming and responsive to community and campus

#### Grow its role as a societal and campus forum exploring topical issues of importance to contemporary society

#### Grow its programs for students (the 18-28 year old demographic) outside of the MSHM program by better providing things that students want to see and do

#### Grow its cross-disciplinary programming including:

- Multi-disciplinary STEM (Science, Technology, Engineering, Math) products and the humanities meet science)
- STEAM (Science, Technology, Engineering, Art, Math) fusion products (where art and the humanities meet science)
- Injecting an element of 'surprise' into the galleries and museum experience

#### Grow its capacity and professionalism in development/fundraising via professional development staff, links with TTU Institutional Advancement, and in partnership with the Museum of TTU Association

#### Plan for future needs via:

- A Strategic Asset Management Plan for the Museum
- Advancing Master Planning for the Museum building
- Advancing Master Planning for the Lubbock Lake Landmark facilities

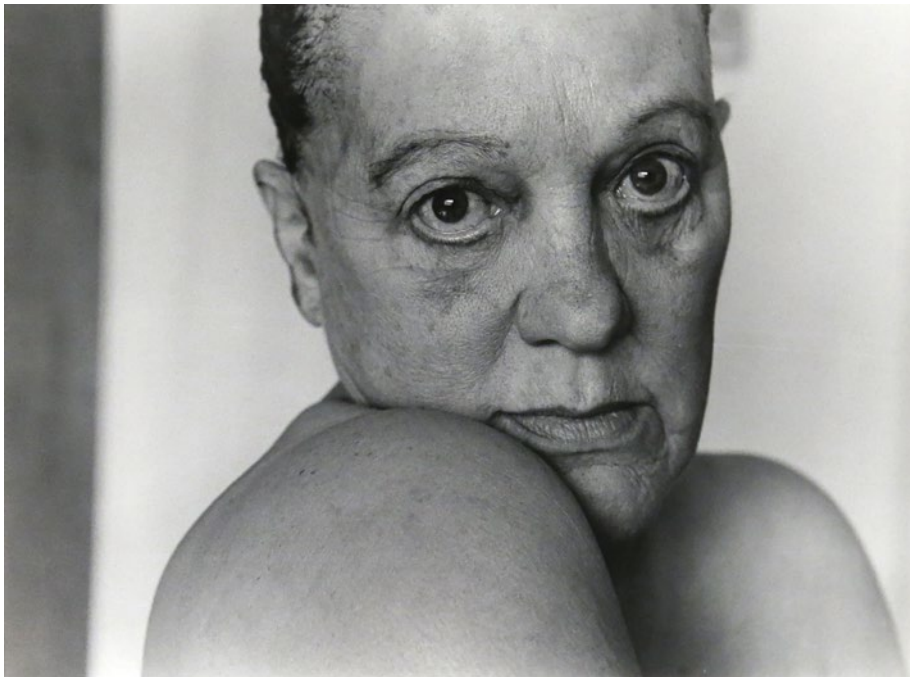
#### More effectively communicate the value of its collections, research and public programs to all stakeholders across Campus and Community

We have great confidence that this strategic platform will build on the Museum's strengths and make it ever more relevant to the Community of Lubbock and West Texas, and to the University (Campus) that it dually serves.

$$M=eC^2$$

# Collection highlights

The Museum was able to upgrade its internationally significant facilities for storage of faunal tissue specimens in the Natural Science Research Laboratory. With National Science Foundation funding and support from the university's Provost and President, liquid Nitrogen freezers were installed to replace the older freezers allowing the collection to be held at a much lower temperature (-190 degrees Fahrenheit). In addition, with funding support from The CH Foundation, the NSRL was able to install additional compactor storage for its alcohol-stored collections and library.



Donation by the Anne Noggle Foundation of 43 photographs (1969-1989) by Anne Noggle (1922-2005), whose work is especially strong in portraits of aging women

Phytosaur (ancient aquatic reptiles) fossil materials collected by Museum researchers from private lands in Crosby County





Donation by Bill Davies for the William and Evelyn Davies Collection of a Robert Tenorio (2001) Santa Domingo storage jar, a polychrome Zufii canteen (~1920s), and polychrome Cochiti (~1890s) wedding vase



Donation by Ricardo V. Ruiz, a printmaker out of Corpus Christi, Texas, of 150 original prints for the Museum's Artist Printmaker Research Collection



Donation by quilt historian Pat Nickols of about 6,000 items made of printed cotton sacks, a research collection providing great depth on a very Texan subject

# Meet the staff

The Museum employs people whose expertise spans collection management, research, conservation, registration, photography, teaching and education, exhibition design and fabrication, visitor services, security, and administration. In each edition of *M*, we will introduce some of our staff ... in their own words.



**Caleb Phillips Ph.D.**

*Curator of Genomics,  
Natural Science  
Research Laboratory*

As Curator of Genetic Resources my goal is to continually build our repository of biological samples representing the earth's biodiversity. Our biobanking efforts focus specifically on developing

the magnitude and diversity of genomic and metagenomic samples in our collection. We view this work as critically important to society, as these collections are part of the foundation for understanding life on earth. We devote a considerable amount of time to field work, and the places we travel for this work are selected in part based on the biodiversity of the region, as well as the biological questions that we perceive as important to pursue. For example, these motivations have led us to the Neotropical rainforests, deserts of the Southwestern United States, into caves in search of unique bat and invertebrate species, and numerous other ecosystems and environments around the globe. This work incorporates student mentorship, and the opportunity to train young scientists on how to study the natural world is very rewarding. One of the additionally exciting components of my role as Curator is the concept that the tissues we collect and archive today will be available to pursue unanticipated scientific questions in the future. Because the Genetic Resources Collection has developed over several decades I have had the opportunity to observe this synergistic phenomenon through the scientific studies which my colleagues and I are involved. The development of novel biological questions using Genetic Resources Collection archives is fueled in part by the rapid development of biotechnology, and the ability to apply increasingly powerful genomic approaches to the collection is fun and motivating. The Genetic Resources Collection is recognized by the university as a long-term societal investment. My objective for the future development of the collection is identification of growth opportunities that enhance uniqueness and value. An existing example is our Radioactive Collection, in which we maintain a large repository of samples taken from in and around the Chernobyl nuclear reactor. This collection is globally unique, and has enabled Texas Tech University researchers to address equally unique and important questions. Similarly exciting additions to the collection should be anticipated.



**Jill Hoffman Ph.D.**

*Helen DeVitt Jones  
Curator of Education and Assistant  
Director for Visitor  
Experience*

Museum education is the link between visitors and the objects and ideas of the institution. It is an honor, then, to have the responsibility of helping people make connections. The learning that occurs at the museum is informal; no one is

forced to learn at the museum, visitors can choose in what order they move through the galleries, and there is no test given to visitors before they exit.

One of the best aspects of my work is experiencing the informal measures of impact. A smile during an activity; a hug from a visitor who thanks us for what we provide; a family who returns year after year, bringing their children to participate in familiar events; a thank you note from a teacher who greatly enjoyed a tour with their class. These are all expressions of enjoyment, ways of saying that the museum matters in their lives. In my 30+ years of museum work, I have most enjoyed creating museum connections with people who are from all kinds of experiences and backgrounds. My work-days are rarely the same from week to week. I have, for example, created bed-side art activities with children in the hospital; presented a special summer activity for a rural library; and have helped to create family guides for use in the galleries. I teach about museum education in the Museum Science graduate program; have hosted fascinating artists, scholars, and lecturers, and, most recently, I am participating in research grants with campus partners that include learning in a museum setting. Museum education has a great deal of variety and as many opportunities for interacting with diverse individuals.

People visit a museum for many reasons, and among those is to learn something new about the world. Yet, the most exciting result is when people learn something new about themselves—and I hope we can do more of that in the future. As our new director has stated, the education division is really the place for life-long learning.



### **Nicky Ladkin**

#### *Assistant Director for Academic Engagement*

I am originally from Leicester, England, and received my BA (Honors) in English Literature and English History from the University of East Anglia in Norwich. After working and volunteering in museums and on

archaeological projects in England, I came first to Lubbock Lake Landmark in the summer of 1989 after reading about the summer field season program in a book of working holidays that I borrowed from a local library. I enjoyed it so much that I returned the following year and stayed to enroll in the Museum Science program at the Museum of Texas Tech University. While a graduate student with Dr. Eileen Johnson I conducted fieldwork at Lubbock Lake Landmark during the summers, eventually becoming Crew Chief and Lab Supervisor, and worked in the Anthropology collections during the academic year. I also served as Secretary and then President of the Museum Science Students Association (now Museum and Heritage Students Association).

After graduating, I became Collections Manager for Anthropology and then Registrar at the Museum of TTU. As a Senior Research Associate I implemented the Curatorial Facility Certification Program of the Texas Historical Commission. I joined the Graduate Faculty of TTU, teaching the Preventive Conservation course in the Museum Science program, and serving as Graduate Advisor. Previously Assistant Director for Operations, then Community Engagement, and now Academic Engagement, I have been honored to also serve as the Museum's Liaison to the TTU Military and Veterans Programs. I was proud to become a naturalized US citizen in 2012 and recently reached another milestone achieving my 25 Years of Service Award from TTU.

I have a particular interest in international museum issues and training and this has given me opportunities to work in some wonderful places around the world including Egypt, Brazil, the Cayman Islands, and Mongolia - twice! It is exciting to bring museum professionals from different countries each year to Lubbock to participate in the ICOM-CIDOC Museum Documentation Summer School.

I am delighted that King Richard III's remains were relocated and reinterred in Leicester, and that Leicester City Football Club (go Foxes) are Premier League Champions! Outside of my museum life, I support animal rescue organizations and I love sharing life with family and friends of the human, feline, canine, and equine kind.

## **Museum Association**

The Museum of Texas Tech University Association began over 85 years ago when a group of visionary people came together to discuss the need to collect and preserve the art, culture, and history of Lubbock and the region. The Association is one of the oldest continuously functioning organizations in Lubbock and serves as a group of community volunteers offering unique and broad support of the Museum and staff. The Association promotes and supports the Museum and assists in securing monies, members, collections and general good will for the educational and building programs of the Museum. With current membership of over 400, the Association has assisted with various projects and programs that have enhanced, updated, and expanded the collections, services, programs and construction of the Museum. The Association is also active in supporting the educational programming at the Museum through volunteerism and financial contributions.

If you are interested in helping to support the Museum, please consider joining the Museum Association. Your membership will allow us to support valuable programs for all ages and to help preserve the Museum's collections for future generations. For membership information please contact the Association office at 806 742 2443. There is an Association membership form in this edition of M.

## **The Art History Series**

Rabbi Alexander Stanley Kline began the Museum of Texas Tech Art Lectures in 1960, over fifty years ago. During this time, a small group of avid followers in the community had been wonderfully enthralled by this program, educated in the arts of world civilizations.

Not only was Rabbi Kline a professional authority in art, he had a seemingly intuitive reverence for the subject. Religion and art had been entwined in his Hungarian upbringing. As he grew older and began to make decisions about his life's work, he chose to become a rabbi, while keeping a keen interest in art. In 1959, at the age of fifty-eight, he made the decision to move his family to Lubbock, a city of 128,000, after serving as a Rabbi in many locations across the country.

By coincidence, at the very time the Klines were moving to the city, the Women's Council of the Museum was planning its first extensive art exhibit. The Lubbock Avalanche-Journal just happened to print an article about the new rabbi in town, and the vast artistic knowledge that Rabbi Kline brought to the community helped with their art exhibit. As the saying goes, the rest is history.

The lecture series did not end with Rabbi Kline's death. The lectures have continued until now with many Texas Tech professors, Community artists and historians behind the lectern, thrilling their audiences with a passion for art. The Fall and Spring Lecture series are held in the Helen DeVitt Jones Sculpture Court Auditorium on Friday mornings with coffee at 10:30 am, followed by a presentation by the lecturer at 11:00 am. Semester dues are \$45 or \$7 for an individual session. For more information contact the Museum Association office 806 742 2443.

# M IS FOR MUSEUM

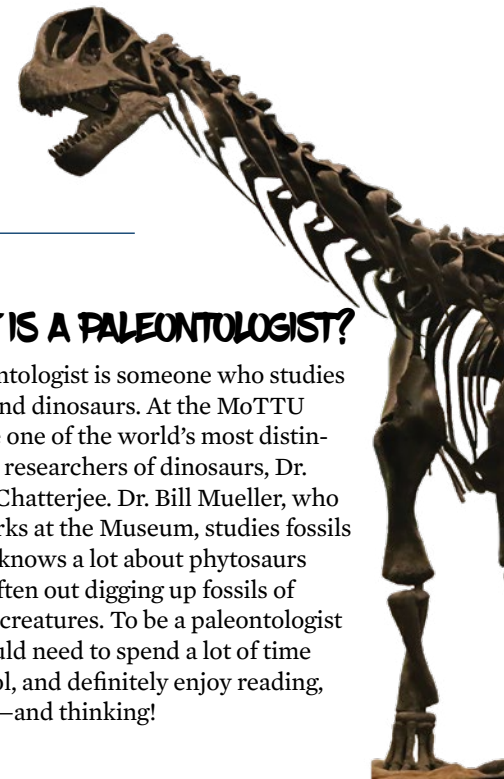
## WHAT DO YOU COLLECT?

A museum is usually full of objects, and so we call those things a collection. Museums decide what they want to collect, and they usually have a very specific idea of what objects they want, and what they don't. The people who take care of the objects, and know which objects to include in the collection, are called curators, or caretakers. Are you a "curator" of anything special? Maybe you collect rocks, Legos, stamps, buttons? Let us know what you collect, and why. Send us a picture, too, if you want. You can email us at: [museum.education@ttu.edu](mailto:museum.education@ttu.edu).

## HOW TO START YOUR OWN COLLECTION...

So, you want to start a collection. Well, that's easy! Decide what it is that you would like to collect and you are on your way! Even one of something can be a collection. The number of things in your collection doesn't matter, what is important is that you are really interested in whatever it is that you want to collect and you add to the collection when you can. Here are some things that some of the museum staff like to collect at home, (but not for the museum):

Jim collects vinyl records; Terri collects elephants (not real ones though!) and masks; and Jill collects anything in the form of a donkey/burro (---she wants a real one someday, so 'til then the small ones will do).



## WHAT IS A PALEONTOLOGIST?

A paleontologist is someone who studies fossils and dinosaurs. At the MoTTU we have one of the world's most distinguished researchers of dinosaurs, Dr. Sankar Chatterjee. Dr. Bill Mueller, who also works at the Museum, studies fossils too. He knows a lot about phytosaurs and is often out digging up fossils of ancient creatures. To be a paleontologist you would need to spend a lot of time in school, and definitely enjoy reading, digging—and thinking!



## DINOS AT MOTTU!

Here is a picture of a Tyrannosaurus rex. Where can you find the answers to the questions below? (Or, do you already know the answers?) Have you seen a T-Rex at the museum?

WHAT WAS THEIR HEIGHT? \_\_\_\_\_

WHAT DID THEY WEIGH? \_\_\_\_\_

WHAT DID THEY LIKE TO EAT \_\_\_\_\_

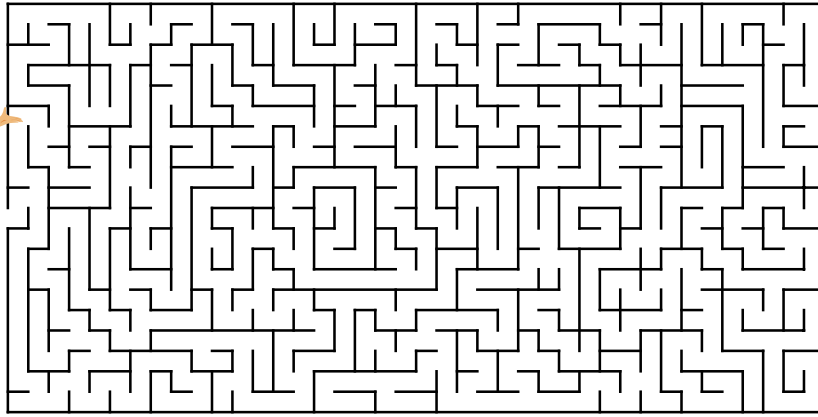
WHERE DID THEY LIVE? \_\_\_\_\_

WHEN DID THEY LIVE? \_\_\_\_\_



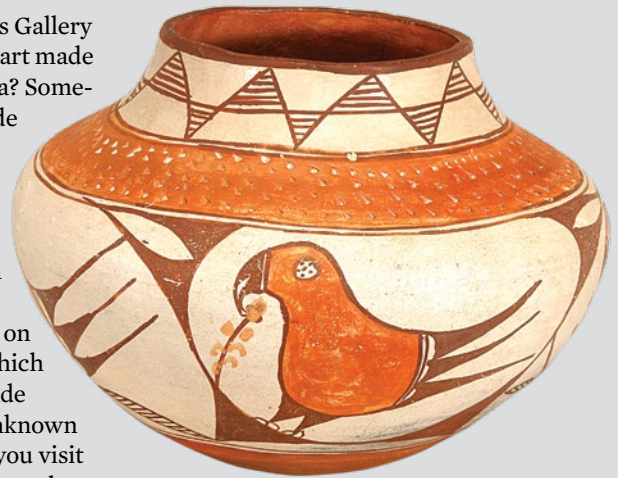
## MAZE

Oh, no! The curator got lost in the storage area. Help her find her way back to her desk.



## DID YOU KNOW?

Did you know that the William C. and Evelyn M. Davies Gallery of Southwest Indian Art has new and ancient works of art made by Native American people of New Mexico and Arizona? Sometimes we do not know the name of the person who made a particular piece, and sometimes we don't know the exact date for when a piece was made. An object label in the museum can fill in some information for you. For example, this pottery bowl is from Acoma Pueblo (we know that from the design on the surface and from the way it was painted, colors used, type of clay). Since we don't know the exact date of the object we have put on the label this letter: "c". The letter stands for "circa", which means 'about the time of'. So, this Acoma piece was made about the time of the 1930s, and we state the artist is unknown because we truly do not know who made it. Next time you visit the museum, look at the labels and see what you can learn about the objects.



## WORD SEARCH!

See how many words you can find in the word search below. All of the animals listed are connected in some way to MoTTU, the NSRL (Natural Science Research Lab), and/or the Lubbock Lake Landmark.

M	T	Z	U	Q	Z	U	V	Q	M	R	U	Y	S	R
Z	Q	F	D	W	R	S	F	S	I	W	B	Q	N	Y
R	C	U	S	S	U	M	M	R	E	E	D	U	N	W
M	T	K	L	E	R	R	I	U	Q	S	P	H	J	D
E	C	I	Y	R	T	R	E	X	B	V	E	K	B	S
M	F	Z	B	J	C	Y	L	F	R	E	T	T	U	B
W	Y	N	L	B	T	R	S	E	D	F	O	O	G	N
N	L	O	P	I	A	Z	S	L	N	O	Y	L	H	N
U	Y	C	K	W	C	R	Z	N	U	L	O	G	T	O
H	A	T	T	L	O	T	U	X	O	G	C	K	L	K
L	M	R	B	H	M	A	N	W	R	S	P	U	T	D
D	L	U	R	I	R	L	E	P	G	K	I	N	E	H
S	D	M	J	A	R	S	H	C	Q	T	A	B	F	Y
X	U	L	P	G	E	D	O	W	L	L	P	A	M	T
D	O	Z	O	L	O	B	W	D	E	Y	H	D	U	U

RABBIT  
COYOTE  
BISON  
BIRD  
TREX  
BEAR  
HORSE  
OWL  
DEER  
SQUIRREL  
BAT  
BUTTERFLY

## HEM KIDS...!



Send us your questions about the museum and we will answer as many as we can in

our Kid's page. Send your questions, and comments to: Education Division, MoTTU, PO Box 43191, Lubbock, TX79409-3191. Or email us at: [museum.education@ttu.edu](mailto:museum.education@ttu.edu).

# Meet the Students and Volunteers

One of the Museum's most important functions is training students in museum and heritage management. Our Museum Science and Heritage Management graduate program introduces students to the complex world of museums and heritage and historic sites, and all aspects of managing their cultural assets for the enrichment of humanity. We emphasize a hands-on approach in our program, so students get to have real experience of working in a museum and develop practical as well as theoretical skills.

The Museum also depends heavily on the support of volunteers. They assist in many areas of the Museum's operations, from education to research. One way that volunteers can help us is by serving as docents. We hear from one of our docents in this edition of M.

## Jane Nagy

*Museum docent*

"Are you a teacher, or are you a learner?" This was the most meaningful question I was asked during my interview to become a docent at Texas Tech University Museum. After only an instant's thought, I answered, "Both!"



Being a docent allows me to both learn more about the worlds portrayed in the various permanent galleries and temporary exhibits and to have the opportunity to share that excitement with our visitors. For many of our guests, this is their visit to this museum. For many more, it may be their first time ever in that mysterious building known as a museum. I want each visit, each experience to fuel excitement

One of my greatest joys as a docent is seeing a group of students look at a piece of sculpture, make a decision about their reaction to that art and artist, and then be able to assure them that their personal opinion about that piece, or any piece, is a valid expression of their own artistic taste, unlike any other. Or to take a group of adults through an exhibition and be able to give them some insider information that will give them a great appreciation

of the talent being displayed. Or to have a group of teens leave the museum looking at their world through the eyes of a camera lens. Or to be able to show a group of kindergarteners the techniques they can use to show motion in their own art, by having them closely observe how other artists have made their pieces come alive.

Being a docent is a wonderful way to keep my brain active, my interests expanding, and my curiosity keen. Every day, every tour, every experience – I teach, I learn, and then I learn some more.

## Rebecca Knight

*Graduate student, Museum Studies and Heritage Management*

Getting to Know Conservators: My Experience at the Joint AIC/CAC Annual Conference

The American Institute for Conservation (AIC) and the Canadian Association for Conservation of Cultural Property (CAC) recently held a joint annual conference this May in Montreal, Canada. I attended this conference as part of my internship in the Art Division of the Museum of Texas Tech University. This year was the first year that AIC and CAC partnered for their annual conference. The theme for the conference was Emergency Preparedness. I was enthusiastic about



attending as emergency preparedness and collections care are active parts of my position as a collection intern for the Art Division's Diamond M Collection.

Conference sessions not only emphasized emergency preparedness and collections care, but also featured conservation and collections care topics relating to paintings, objects, textiles, wooden objects, architecture, photographs, and electronic media. The sessions that I attended focused on Risk Assessment, salvaging damaged collections, painting conservation, and objects. Risk Assessment is discussed extensively in the Museum Science Program in both Collections Man-

agement and Preventative Conservation courses. It is used when preparing Disaster Preparedness Plans and Collections Care Policies. It was interesting to see the practical applications of Risk Assessment in various institutions across the world and how conservators are better preparing to protect the collections with which they are responsible.

I chose to focus most of my time on objects because it seemed the most useful information that I might bring back to my internship at the Museum. The objects sessions I attended focused on salvage of photographs and archives, treatments and installation of a cedar wood sculpture, x-raying duck decoys, and treating Asian decorative arts and bronze sculpture. The session on conservation of large bronze sculptures gave me the most practical information for my internship. During the first few months of my internship in the Diamond M Collection, I rehoused and did condition reports on the bronze sculptures. I am hoping that the knowledge I gained in this session will help me in assisting with our general conservation survey on our bronze objects this fall.

When not in sessions, conservators and museum professionals networked and talked over lunch and in receptions about current and upcoming projects and problems. I participated in several of these networking opportunities, including a luncheon and reception for emerging professionals, and a reception for conservators who specialize in working with paintings. I also attended the

closing reception where I sat next to two conservators from Australia and two archivists from New York. These networking opportunities gave me, in a more casual environment, a chance to talk to conservators about their projects and careers, as well as share some interesting stories from the field. They were

also very intrigued about what museum professionals do, and the curriculum in museum science programs. Conservators attend very different graduate programs and receive different training than a museum professional might.

Though this was my first conference and I only mingled with a few dozen conservators from around the world, I observed that most conservators were surprised and excited that a collections intern took an interest in their work. Most of those with whom I spoke, expressed that their greatest concern about museum professionals was that they do not make more of an effort to expand their education on conservation, and do not seek a conservator's advice or expertise until it is too late. While most museum professionals take great care in preventative maintenance, there are many museum professionals that would rather make repairs to objects that, to the untrained eye, may seem like an easy, convenient, and cheap fix. These "easy fixes" could range from gluing objects back together, or cleaning objects that appear dirty. But to a conservator, these practices could be detrimental to the long-term preservation of the object.

While the Museum Science Program does not have a class dedicated to conservation, being an intern in the Diamond M gives a unique experience with working in 3-d objects of various materials so that a wide array of conditions and conservation concerns can be put into practice, or investigated further, to enhance my learning. However, my greatest take away from this conference is that it is important to bridge the gap in working relationships and increase the dialogue between museum professionals and conservators. Additional education in conservation can only help museum professionals care for the objects with which we are responsible.

## The Museum of Texas Tech University needs you!

If you think you might enjoy contributing to people's lives through expanding their knowledge and appreciation of art, history and science, then you could become a docent for the Museum.

If you are interested, we would love to hear from you.

Just ring us on 806.742.2490 or drop us an email at [museum.education@ttu.edu](mailto:museum.education@ttu.edu)

## Alumni Profile: *Jerome Thompson*

The Museum of Texas Tech University has been training the next generations of museum and heritage professionals for more than 40 years. Our Museum Science and Heritage Management graduate program is one of the oldest in the country, and today our former students are working all around the country and around the world in preserving and interpreting our shared global heritage.

Jerome Thompson worked on the field crew at Lubbock Lake Landmark and with the archaeology collections during his time as a graduate student in the Museum Science Program. He graduated May of 1977, and prior to his retirement in 2015 he reflected on the value of what he learned during the course of his studies. “When I graduated from Tech, I was given a museum tool kit not unlike the Swiss Army Knife I carry and use every day. Every tool has been used and some more than others. Sometimes I had to find other things to get the job done, but my course work and experiences got me going and served me well.” He goes on to say that he has new colleagues at the historical society who are graduates from various museum studies programs and that “they bring great stuff to the museum, but I doubt they had as much fun as I did in Lubbock.”

Jerome joined the State Historical Society of Iowa (SHSI) in 1982 as Historic Sites Coordinator, overseeing the growth and development of SHSI’s historic sites across the state. Under his management, SHSI added the Matthew Edel Blacksmith Shop, the American Gothic House, the Western Historic Trails Center interpretive center, and the Blood Run National Historic Landmark to its collection of historic sites. In his role as State Curator, Jerome oversaw SHSI’s eight historic sites and worked with historical museums, organizations and associations throughout Iowa, offering technical assistance and consultation service for best practices of historic preservation, education and outreach.

In 1987, Jerome also became Museum Bureau Chief when the new State Historical Building opened in 1987. Under his supervision, the State Historical Museum of Iowa’s entire collection of nearly 100,000 artifacts and documents was moved into the new building. In addition, he served as SHSI Interim Administrator, Interim State Historic Preservation Officer and the Interim State Archivist from 2008 to 2012, when he returned to his regular duties as State Curator.

Nominated by a colleague, the American Association for State and Local History (AASLH) in 2014 presented Jerome with a Leadership in History Award, its most prestigious recognition for achievement in the preservation and interpretation of state and local history. Jerome received the Leadership in History “Award of Merit” for his lifetime commitment to preserving the history of the state of Iowa, and excellence in history programs, projects and people. Described by his colleagues as a humble individual rarely taking credit for accomplishments, Jerome described the award as a “big surprise.”



Jerome Thompson (Museum Science '77), State Curator, State Historical Society of Iowa and Administrator, State Historical Sites



Jerome Thompson (standing center leaning on wheel), Lubbock Lake Landmark field crew. 1977.



## Donor Profile: *Bill and Evelyn Davies*

After their marriage, Bill and Evelyn Davies made Lubbock their permanent home and they have given much to Texas Tech, the Museum of Texas Tech University, and the Lubbock community. Through various gifts to diverse organizations, Bill & Evelyn have demonstrated how much they care for the community, demonstrating their desire to help make Lubbock a special place for all of us who live, work, and study here.

The William and Evelyn Davies Gallery of Southwest Indian Art at the Museum of Texas Tech University is an example of what the couple has shared with the Texas Tech and Lubbock communities. What has emerged from their combined passion for collecting Native American art (folk art, pottery, textiles) has resulted in a wonderful gift to those who wish to learn more about Indian art and culture.

The items in the collection are rotated on a regular basis, allowing visitors to see the entire collection, as not all of the pieces in the generous gift can be viewed at a single time. The collection is representative of the Indians who live—and have lived—in the New Mexico and Arizona lands. A distinctive feature of the gallery is the number of blue ribbon winners that are included in the collection. While at Indian Market in Santa Fe—the largest and oldest

exposition and sale of Indian-made art and objects—Bill and Evelyn have purchased items directly from the award-winning artists at the annual event. And, not only are Bill and Evelyn collectors, they have cultivated friendships with many of the artists who have created the works in their collection.

If a visitor to the gallery walked in knowing very little about the art of Pueblo, Navajo, Apache, and Hopi cultures, the Davies Gallery would be a perfect way to begin to learn more about the rich heritage, processes, materials, and influences that have helped to form the objects on exhibit. In just one example, the Navajo textiles in the collection are exemplary pieces providing an insight to some of the most beautiful and intriguing aspects of Navajo weaving. As collectors, the Davies have provided a wonderful collection that can be studied and explored in depth. As generous individuals they have given a wonderful gift to delight others and to inspire a shared appreciation for the art, culture, and people of Southwestern Indian cultures.





# Interview with Robert D. Bradley, Ph.D.

## Professor

Department of Biological Sciences  
College of Arts & Sciences

## Director

Natural Science Research  
Laboratory, Museum of Texas  
Tech University

### *What are your research objectives and interests?*

To better understand the factors involved in the generation of biodiversity - in particular, what are the processes and patterns that contribute to diversification and speciation in mammals. Most of my efforts have been focused on examining the phylogenetic relationships of New World rodents. More recently, my research has turned to using genomic methodology to understand how the genome differs between mammal species and how it contributes to speciation events. Because of my research program's expertise on rodent systematics, we also collaborate with other researchers on projects pertaining to the origin and evolution of rodent-borne viruses. Finally, I have a strong interest in improving and growing natural history collections. Since my research involves biodiversity questions, it is important to archive biological specimens and samples for future generations of researchers.

### *How do you feel your research impacts the globe?*

By understanding the mechanisms associated with speciation, we can better predict the boundaries that define different species. As the world's biodiversity becomes more threatened, it is paramount to identify, record and catalogue the species that currently occupy the planet. Our rodent-borne virus research has led to the description of several new arena- and hantaviruses, which is important to human health considerations. My role as Director of the Natural Science Research Laboratory allows me to oversee a research collection that is utilized by scientists and students across the world. By enhancing and growing the

natural history collections at Texas Tech University, we have an opportunity to impact research on a global basis through the access of research material. Finally, I would like to think that my former graduate students will have a positive impact at the global level.

### *What types of service projects have you been involved with?*

As a research scientist, I have been a member of several professional committees, served in editorial and reviewer capacities, and served in administrative roles. As an academic, I have served on several departmental and campus committees. Although perhaps not technically considered "service," I have been intensely involved in providing research and training opportunities to undergraduate students. Since arriving at Texas Tech University, I have mentored 77 undergraduate students participating in research in my program. Several have gone on to obtain graduate degrees. I am extremely proud of these undergraduates and believe that the opportunities and successes afforded them through undergraduate research have had a positive impact on the reputation of Texas Tech University; consequently, I believe it is a form of "service."

### *What are you currently working on?*

I think the answer has to be in the form of "what are we working on"? All of my research includes my graduate and undergraduate students. Consequently, we have several projects in the mill. Most are centered on questions surrounding the phylogenetic relationships of rodents in the genus *Peromyscus*. We are constructing phylogenies using DNA sequence data from multiple genes to sort out the evolutionary relationships of

several species. As a result of these data, we are describing two new species of *Peromyscus* that occur in southern Mexico. An extension of this research now involves using genomic methods to identify DNA sequences that are under natural selection. Further, we are examining genetic variation in proteins associated with the egg/sperm fusion process in hopes of determining their role in species specificity. Through these research projects, our goal is to determine the basis for speciation through the processes and patterns of genetic variation. Other projects include identifying levels of genetic variation in elk, camels, pocket gophers, and several other species of rodents occurring in the southwestern U.S. and Mexico. In addition, I am finishing up one book project (*The Mammals of Texas*) and shortly should be beginning a second (*The Deer mice, Genus Peromyscus, of North America*).

At the Natural Science Research Laboratory of the Museum of Texas Tech University, we currently are transferring our Genetic Resource Collection from -80°C freezers to a liquid nitrogen storage system. This project, funded by NSF with support from Texas Tech University, will take approximately three years to complete. Also, we are working with the Museum to develop several exhibits that would feature specimens archived in and research activities of the Natural Science Research Laboratory.

### *Where do you find your inspiration?*

I have been very fortunate over the years to have had outstanding role models and mentors who have significantly contributed to my professional career. Any successes or accomplishments I have received have been a product of their teachings, personas, and encouragement.

Early on, my mom pushed me to succeed in academics and my dad (hardest working man on the planet) taught me that effort makes up for a lot of inadequacies. Two basketball coaches (Switzer and Presley) taught me about competition, determination, and achieving your goals. At the professional level, Drs. David J. Schmidly (MS mentor) and Robert J. Baker (PhD mentor) believed in me and gave me an opportunity to attend graduate school. Both, in their own way, have served as models for my professional endeavors. Last, I would be remiss not to mention the role that my graduate and undergraduate students play in my professional career. It is extremely rewarding to see them grow and mature, see their excitement about learning new things, and to see how far they have come since their first week at Texas Tech University.

So, I guess, my inspiration is a result of the attributes of this group of people. All have played a valuable role in my life and together they have molded, tweaked, and in some cases, hammered me into the scientist and teacher I have become today; my motivation comes from working to make them proud.

### *What advice do you have for new faculty members about balancing the components of Integrated Scholarship—teaching, research, and service—in their careers?*

As a new faculty member, you will be evaluated, to some degree, in all three of these areas. Very quickly, you must figure out what is the most important of the three for your department and college. Each academic unit varies a little as to how these are related in importance. If you were hired primarily as a teacher, then most likely you will be evaluated more stringently in that respect. Keep your bosses happy and fulfill their expectations. For many of us, all of these components are part of our daily jobs; therefore, we are expected to wear three different hats. As a result, you will be constantly shifting gears and running in several directions; consequently, time management is extremely important. The best advice I can give is to efficiently plan each day and each week, be focused, and don't be distracted by the bright shiny objects!



### More about Robert Bradley

Robert D. Bradley is a professor in the Department of Biological Sciences and serves as Director of the Natural Science Research Laboratory, Museum of Texas Tech University. He grew up on a family farm and ranch near Diamond, Missouri, and received his B.S. and M.S. degrees in wildlife and fisheries sciences at Texas A&M University (1983 and 1986). He received his Ph.D. in zoology from Texas

Tech University in 1991. He completed two postdoctoral stints (University of Texas, 1991-1992 and Texas A&M University, 1992-1994) before joining the faculty at Texas Tech University in 1994.

Bradley has a dual appointment with the faculties in the Departments of Biological Sciences and Museum Sciences. He teaches graduate and undergraduate courses in mammalogy, natural history of the vertebrates, systematics, field methods, and molecular systematics. Recently, he began teaching a freshman level seminar entitled "So You Are a Biology Major - Now What?", a course designed to start undergraduates on an early path to undergraduate research, preparation for professional degrees, and employment. Bradley has served as the advisor or co-advisor of 29 graduate students, has served on 76 graduate committees, and has six graduate students in progress. He has authored or co-authored 157 journal articles, one book, and he and his students have given 224 presentations at professional meetings.



## Symposium held in name of Lubbock Lake Landmark Director

Texas Tech University's Director of the Lubbock Lake Landmark recently was honored with a symposium held in her name by the 81st Annual Meeting of the Society of American Archaeology this April in Orlando, Florida.

Eileen Johnson, Horn Professor in Museum Science and senior curator of anthropology at the Museum of Texas Tech University, was chosen to be honored by the society because of her contributions to Quaternary science and archaeology of the past 2.6 million years and her approach to her work at Texas Tech.

"I was and still am truly amazed, honored, and humbled," Johnson said. "It was very kind of Drs. María Gutierrez and Joaquín Arroyo-Cabrales to organize the symposium and invite people working in the Americas and on the Russian plains to participate. I was rather astonished about what people had to say. I had no idea that my research efforts have had such influence and I was greatly appreciative of this honor."

Organizers for the event said they chose to honor Johnson because they believed her to be a "complete scientist."

"We use this term because she represents a complete scientific career, going beyond pragmatic training and theoretical issues to include public awareness and issues of ethics," said Gutierrez, event organizer, society member and a professor of the Universidad Nacional del Centro de la Provincia de Buenos Aires. "More broadly, during the course of her career Dr. Johnson has integrated some diverse, disparate disciplines including archaeology, zoology, taphonomy, geology and museum science. Her 45-year career has primarily been devoted to interdisciplinary research on human-environment interactions on the U.S. Great Plains, emphasizing human subsistence, vertebrate taphonomy, and the reconstruction of Quaternary paleoenvironments."

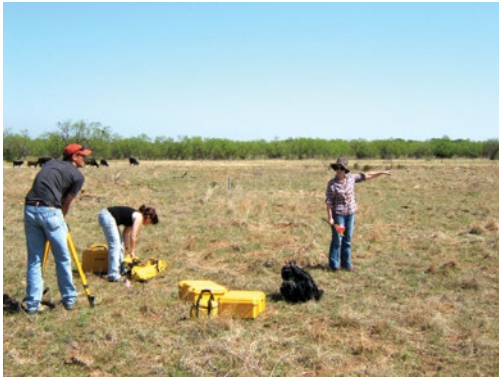
Gutierrez also said Johnson has applied these perspectives across the country and across the Americas in places such as Mexico and Argentina. In addition to

her research, Johnson has been involved with the care of the anthropology collection at the museum, working with students and peers, and eager to share what she learns with the public. She was the driving force in developing the Lubbock Lake Landmark interpretive center and outreach program.

"There are also strong personal reasons for us for organizing it," Gutierrez said. "Joaquín Arroyo-Cabrales also helped organize this event. He and I were both international students of Eileen. She was my mentor on what I am working on now. I am extremely grateful for the opportunities she gave me. She gave me not only academic support and generosity but also much love and sympathy, important issues when you are young and far from home."

Johnson has spent her professional career at the Museum of Texas Tech University, where she has worked as a research scientist, curator, professor, and as museum director. She built a regional interdisciplinary Quaternary research





program based around the Lubbock Lake Landmark. The Landmark is an internationally known archaeological site containing evidence of almost 12,000 years of continuous occupation by ancient people on the Southern High Plains. It is one of the oldest continuously inhabited sites discovered in the New World.

She has more than 47 years of experience with the cultural and natural history record of the Great Plains, 28 years of which have been spent researching that record on the Southern High Plains. She has conducted archaeological surveys and excavations of sites associated with playa lakes as well as the draw systems on the Southern High Plains and produced resource management plans for these sensitive sites. Her global field and research experience includes work throughout the western US, Mexico, South America and China.

Her research efforts have resulted in almost 200 peer-reviewed publications, 60 governmental reports, and resource management plans for sensitive sites. Recently, she served as coeditor and coauthor for "Plainview. The Enigmatic Paleoindian Artifact Style of the Great Plains" published by Utah University Press.

The Landmark's regional research program, while focusing on the Southern High Plains, stretches throughout the grasslands of the Americas, currently including her research in the Northeastern prairie, valley of Mexico, and the pampas of Argentina.

In 1999, she received an appointment by then Gov. George W. Bush to the Texas Historical Commission as a Commissioner (1999-2007), one of 17 board members governing the state agency for historic preservation with a variety of programs

to preserve archaeological, historical, and cultural resources of Texas.

She was distinguished with a Paul Whitfield Horn Professor in 2007 by the university's Board of Regents. Horn Professorships are the highest honor the university can bestow upon faculty.

Johnson currently serves on the Editorial Board of the international journal *Paleo-America – A Journal of Early Human Migration and Dispersal*, and just completed her tenure on the Editorial Board of the journal *Quaternary International*.

Currently, Johnson serves as chair of the Collections Management Committee for the Texas Association of Museums and on the Programs Committee for the Mountain-Plains Museum Association overseeing the Poster Session for the annual conference.



# The Thunderbird of Argentina: The World's Largest Flying Bird

By Dr. Sankar Chatterjee, Horn Professor and Curator of Paleontology, Museum of Texas Tech University



Figure 1. Life restoration of *Argentavis magnificens*, the world's largest known flying bird with a wingspan of 21 feet, about the size of a Cessna 152 aircraft, soaring across the Miocene skies of the Argentinean Pampas six million years ago much as condors fly today.

## Introduction

The thunderbird in Native American lore is considered a supernatural bird of power and strength. Its name originated from the belief that the beating of its enormous wings causes thunder and stirs the wind. Discovery of a fossil bird *Argentavis magnificens* (meaning 'magnificent Argentina's bird'), the largest known flying bird from the Miocene deposits (about six million years old) of Argentina, nearly matches the size and inferred lifestyle of the thunderbird. This is not surprising. Throughout most history and almost all cultures there has been tales, stories, mythologies, legends and folklores of giant birds like thunderbird. We know spectacular super birds in Hindu mythology such as Jatayu and Garuda that carried gods. The gigantic Roc bird depicted in the Tales from the Arabian Nights was so big that it could carry off Sinbad the sailor. Anka in Arctic mythology was equally giant and powerful who flew with an elephant on its talons. Other mythical giant birds include Sun bird Bennu and chimera-like Griffin from Egypt, falcon-like Karshipta from Iran, Pheng in Japan, Shang-Yang in China, and Ziz in

Bible. The image of giant birds darkening the sky with their enormous wings must have stored in the collective psyche of humanity. If not, why in different parts of world, the portrait of giant mythical birds would emerge recurrently?

The enormous size and predatory lifestyle of *Argentavis* captures our imagination and carries it aloft on flights of fancy. It is the stuff of dreams...and of nightmares. With an estimated weight of 140 pounds in life, and a wingspan of twenty-one feet, *Argentavis* was the world's largest known flying bird, about the size of a Cessna aircraft (Fig. 1). Buried beneath the dry, dusty plains of central Argentina, Nature had hidden a most spectacular surprise of this magnificent bird and kept it safe for millions of years until recently. *Argentavis* fossils are now known from four localities, stretching from the foothills of the Andes to the extensive plains of northern Argentina, called pampas, indicating its wide home range or territory. *Argentavis* is a member of the extinct avian family, Teratornithidae, a large predatory group of flying bird known from Miocene to Pleistocene de-

posits of North and South America that was related to storks and New World vultures. The most prolific fossil remains of teratorns include hundreds of specimens of *Teratornis* entrapped in the Pleistocene Tar Pits in Los Angeles, California, during the last Ice Age, about 25,000 years ago. If you ever go to Los Angeles, visit the Los Angeles County Museum or Page Museum to see some of these spectacular teratorn fossils recovered from the Tar Pits, which are beautifully mounted in the exhibit hall. *Teratornis* is by the best-known species of the family. It stood about 30 inches tall with estimated wingspan of 11 feet and weighed about 30 pounds. Teratorns have been traditionally regarded as scavengers like living vultures such as California Condors. More recent study suggests that teratorns probably flew like condors, but they were predatory carnivores, not scavengers, and that they caught and consumed their own prey whole.

Although *Argentavis* was close to the theoretical upper size limit for safe gliding, and 16 times heavier than the Bald Eagle, the fact that it flew is evident from a

suite of anatomical characters. Its bones were light, hollow, and air-filled; wing elements were robust and elongated, and arm bones show a series of quill nodes for attachments of flight feathers—all collectively indicate its flying capability. The primary feathers of *Argentavis* would be enormous, 56 inches long and 5 inches wide, like the blade of a ceiling fan. In contrast, flightless birds such as emus or ostriches show heavy bones, powerful legs for running, small wing elements that lack quill nodes, and soft and fluffy feathers for insulation, not for flight. It appears that *Argentavis*, the all time biggest bird, couldn't just hop into the air and fly away like a sparrow or dove. It must have used some tricks to taxi down a runway, lift off, and stay in the air. The question is: how did it take off and fly?

### A Flying Lesson

Flying animals are heavier than air and require a lift force to keep them airborne and a thrust force to propel them forward. The movable wings powered by muscles provide these forces through the air. Among vertebrates, only three groups of animals—birds, bats, and pterosaurs—evolved independently powered flight by flapping their wings. Each group has acquired different styles of flight because of different body plans. Birds are the best flyers among vertebrates because of their streamlined body and feathered wings.

More than anything else, the feather is responsible for the flight capability of birds. The feather is a masterpiece of engineering. It is light and structurally strong, airy, renewable, and flexible. The stiff shaft of the quill provides rigidity where support is needed, yet it is supple toward the tip, where flexibility is re-

quired for aerial maneuvering. Feathers make up the entire wing surface supporting the bird in the air. Long feathers of the wing, called flight feathers, make the wing bigger and give it streamlined shape.

Birds, like airplanes, must be lightweight as well as powerful. Lightweight is one important characteristic of any flying creature. The less a weight a bird has to lift, the more easily it can fly. On the other hand, it must be built strongly enough to withstand the heavy strains of flight and the power of the wind. Birds can only fly because evolution slimmed down their entire anatomy from their arboreal dinosaur ancestors. Over time, the bones of birds have become thin, hollow, air-filled, and lightweight. Another thing that makes a bird's body light is a series of air sacs that fill spaces between other organs and even lead to air spaces in some of the hollow bones. The air sacs are connected to the lungs and help a bird to use more of the air it takes with each breath.

Birds fly in a variety of ways, ranging from hovering to flapping flight to gliding to soaring, depending on their size. Modern flying birds are very light for swift flying; the mean weight ranges from 0.35 ounces to 2 pounds, dwindling sharply above and below these limits. Smaller birds like hummingbirds can hover, medium-size birds can flap their wings, but larger birds can only glide or soar. Beyond a certain size, sustained flight becomes prohibitive because of energy requirements and the physical limitations of bone and muscle. The largest bird capable of flapping flight would be close to 25 pounds, about the size of a Mute Swan. Larger birds (20-30 pounds) like Vultures, Storks, Swans, Cranes, Bus-

tards, and Albatrosses, spend most of their time soaring that extracts energy from the air with very little muscular effort.

How do birds fly so gracefully? Birds fly in air by flapping their wings, steering mainly with their tails. Moving air, like water, has weight and exerts pressure. By taking advantage of these properties, both birds and airplanes can maintain themselves in the air. To analyze bird flight, researchers have traditionally relied on aerodynamic theory derived from studying fixed-wing aircraft. However, birds are more complicated and more accomplished than even the most exotic aircraft. Airplanes get lift from their wings to support their weight and get thrust from propellers of jet engines to overcome the drag. Where is the propeller for bird? This question has puzzled both scientists and aeronautical engineers for more than a century. Recent study reveals that the propeller lies at the wingtips of long primary feathers. Bird's wing provides both propulsion and lift. Not only it is streamlined to cut through the air with little drag, but it is also curved to produce lift, the force that keeps bird aloft. A bird's wing, like that of an aircraft, has an airfoil—a particular cross-sectional shape (top surface convex, bottom surface concave or flat) that enables them to generate lift when moved through the air. Flapping gives a bird the power to fly. As the tips of the wings move down through the air, they pull the bird forward. When an airplane or bird is in level flight in still air, four forces are in balance. Lift and weight, and thrust and drag, are equal and opposite (Fig. 2A).

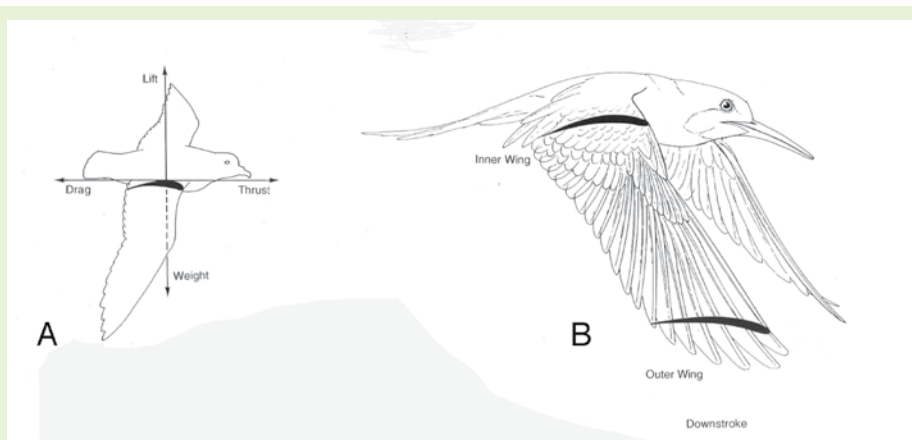


Figure 2. The biomechanics of flight. A, when a bird is in level flight, four forces, lift (upward), weight (downward), thrust (forward), and drag (backward) are equal and opposite. B, airfoil cross-sections of the inner and outer wings of a bird during the downstroke in relation to the direction of the airflow. The inner wing provides the lift; the out-

ward wing is twisted and tilted downward in relation to the direction of the airflow, so that the airfoil creates a forward thrust or propulsion. In birds, the tips of the primary feathers of the outer wing act as a propeller.

Flapping (or powered) flight and gliding are the two basic types of avian flight. Flapping flight requires much more energy than gliding as it is done by active beats of wings, powered by the flight muscles. Propulsion comes from the downstroke when the wings are fully extended and move down and forward. As the wing is pulled down against the resisting air, the tips of the outer wing are bent upward and twisted at an angle in relation to the direction of the airflow that creates a forward thrust or propulsion. The tips of the primary feathers of the outer wing are the propellers of birds (Fig. 2B). The upstroke is largely a recovery stroke to position the wing for the next downstroke.

Large birds generally have difficulty to achieve forward thrust by flapping their wings. Instead they glide by extracting energy from the environment, specifically from moving air masses.

Once a bird is in the air, gliding is a passive mechanism, in which height is continuously lost. The wings still provide the lift while gliding, but without flapping, the bird will gradually sink to the ground. Gliders stretch their motionless wings to form one lifting surface and passively descend through the air by the aid of gravity. They can glide a great distance without flapping their wings. The best gliders are birds with big wings such as gulls, eagles, vultures, and albatrosses. Soaring flight is a type of gliding, where the height is gained or maintained. In soaring, a large bird obtains energy from the upward currents of air in which flies, such as thermals, or when wind blows against the side of the mountain or across the uneven surface of ocean waves.

### Flight Performance

Flying is an arduous way of life. Flapping flight, although more versatile than glid-

ing, requires a constant supply of power derived from the flight muscles. This is why several species of birds have discovered how to stay airborne without flapping their wings. Instead of using muscle

horizontal line is the maximum steady power available (Fig. 3A). Because the two curves do not coincide, we conclude that *Argentavis* was too large to sustain powered flight. For *Argentavis*, the esti-

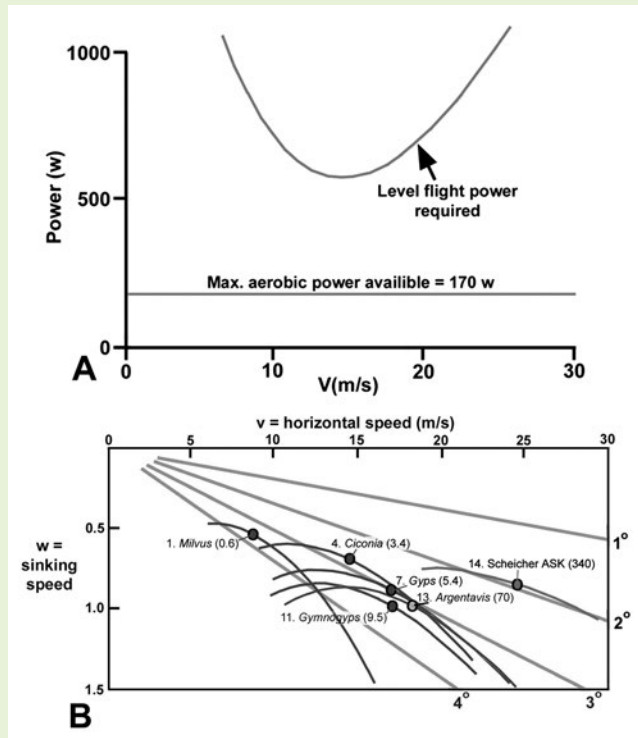


Figure 3. Flight performance of *Argentavis*. A, power curve (steady level flight) for *Argentavis*. The horizontal line at the bottom represents the estimated continuous power available, about 170 watts. The U-shaped curve at the top represents the power required for steady powered flight, about 600 watts. Because these two curves do not intersect, continuous flapping flight was not possible for *Argentavis*. B, Glide polar of *Argentavis* compared with four species of extant soaring raptors: Black Kite, White Stork, White-backed Vulture, and California Condor, as well as a motor glider ASK-34. For most gliding birds including *Argentavis*, the minimum glide slope is 3°, indicating excellent gliding capability.

energy for flying, they glide, which is powered by gravity. The trick is to find upward air movements of sufficient strength. It is obvious from observation of the flight styles of recent birds that *Argentavis* was too big to flap its wings and stay airborne but could possibly soar by riding updraft winds.

To analyze the flight performance of *Argentavis* and to determine whether it was a flapper or a glider, as well as its takeoff and landing capabilities, we used two computer algorithms, ANFLTPWR (animal flight power) and ANFLTSIM (animal flight simulation) using several flight parameters. For any flying animal or fixed wing aircraft or helicopter, the plot of power required for level flight against airspeed is a U-shaped curve, higher at both ends than at the middle. Using the ANFLTPWR program, we generated the power curve of *Argentavis*, where the U-shaped curve is the power required for the steady level (flapping) flight, and the

estimated mechanical power available was 170 watts of metabolic energy, whereas a minimum power required for sustained flight was 600 watts. *Argentavis* did not have enough muscle power to remain aloft simply by flapping its wings. In contrast, using ANFLTSIM program, we found that *Argentavis* was an excellent glider with a cruising speed of 40 miles per hour and a glide slope close to 3°. In gliding performance, *Argentavis* matches the skill of some of the high-performance gliders such as Kites, Storks, Vultures, and Condors (Fig. 3B).

Because of its enormous size, *Argentavis* learned the art of soaring by taking advantage of updrafts from wind currents to remain in the air. It used two kinds of techniques pursued by some of largest flying landbirds: slope soaring and thermal soaring. *Argentavis* could have reached high altitudes by riding winds deflected upward over the eastern slopes of the Andes. Using ANFLTSIM, we have

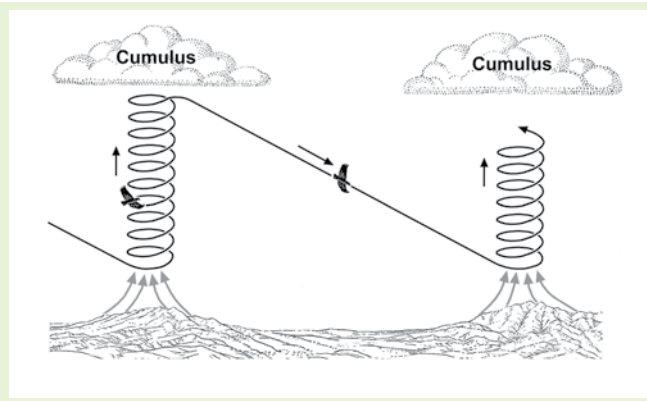


Figure 4. Many landbirds soar by circling in thermals that require climbing in successive thermals and gliding in the desired direction. It is likely that *Argentavis* also exploited thermals for cross-country flight in Argentinean pampas.

calculated the sinking speed of *Argentavis*, which is about 3 feet/second. As long as the upward velocity of the steady source of rising air over the Andean slope is greater than 3 feet/second, which should be fairly common, *Argentavis* could exploit the slope soaring for a long time along the ridge of the mountain.

More commonly, particularly in the open terrain of pampas, *Argentavis* probably used thermal soaring to remain airborne while searching for prey on the ground like modern large predatory birds. If you see a bird soaring upward in circles, it is riding a thermal. A thermal is a column of warm air created by uneven heating of the ground. The air spins as it rises. A thermal can quickly carry a bird up a mile or so in the sky. It is like an invisible elevator but can often be easily determined from a distance because cumulus clouds develop above it when the

moisture in that air cools and condenses. Soon after takeoff, once *Argentavis* entered into a thermal, which should have been plenty in the pampas, it would circle and climb vertically within the rising column, like modern Eagles and Vultures, as long as the upward speed of the thermal is greater than the sinking speed of the bird. To stay within a thermal, a bird must be capable of turning fairly tight circles as close as possible around the center where the air velocity is the strongest. *Argentavis* could circle by holding a turn of 90-foot-radius as long as the upward velocity is 3 feet/second or more. Large broad-winged landbirds, such as Eagles, Buzzards, Storks, and Vultures are masters of thermals and

travel cross-country. *Argentavis* may have traveled hundreds of miles by repeatedly riding thermal ‘elevators’ and then gliding gradually back to earth (Fig.4).

### Takeoff and Landing

Takeoffs and landings are, in fact, the most taxing parts of any flight, so many larger birds perform them as seldom as possible. During takeoff, a bird must flap its wings so fast that they will create enough airspeed to lift the bird in the air. This uses a great deal of energy. Whenever possible a bird takes off facing the

enough muscle power to get airborne simply by flapping its wings and running on a flat ground. However, it probably used the same technique to get into air as that employed by modern albatrosses or hang-glider pilots, by running downhill (with a slope of 10°) and a headwind of 15 feet/second (Fig. 5A) to pick up the speed and lift necessary for takeoff. Another possibility for *Argentavis* is to launch from a perch. Using this trick it could takeoff, but after that it didn’t need to do much flapping of the wings, but simply glide in updrafts. Similarly, during

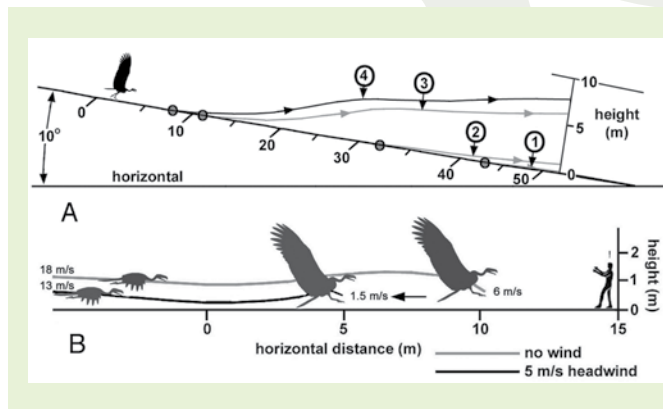


Figure 5. Takeoff and landing strategies of *Argentavis*. A, Figure shows four simulated take-off runs on a 10° sloping surface. *Argentavis* could takeoff from grounds by

running downhill with a light headwind of 15 feet/second. B, Headwind of 15 feet/second would help *Argentavis* for safe landing without injury.

wind. The air blowing over the surface of the wings gives the bird a head start. Heavy birds have a harder time taking off than small birds. A Dove can fly right up into the air from a standing start. Takeoff for larger birds involves a long, flapping run with great difficulty. Their exertions require the additional power of anaerobic muscle fibers, but they cannot keep up anaerobic metabolism for long because it incurs an oxygen debt. The Great Kori Bustard, the largest modern flying bird (weighing about 36 pounds), has to run along the ground considerably to gain enough speed for takeoff. Could *Argentavis*, about 3.5 times heavier than the Great Kori Bustard, take off from the ground? Our computer simulation suggests that *Argentavis* did not have

landing, headwind would have helped *Argentavis* considerably to retard the fall (Fig. 5B).

### Lifestyle

*Argentavis* would be generally confined to areas where appropriate winds are available for soaring such as slopes of the Andes or the open countries of pampas. It must have preferred open areas, because its large wings would have made maneuvering around trees and tall shrubs hazardous. With a skull of 20 inches long equipped with a powerful beak and big clawed feet, *Argentavis* would have made a fearsome predator, snatching unsuspecting mammals from the ground.



# Shoes that Saw the Founding of Brownfield and Texas Tech University



Garments worn in West Texas form an essential part of the Clothing and Textiles Collection of the Museum of Texas Tech University. Three of the 119 accessories in the exhibit *Hats and Purses and Shoes . . . Oh My!* were worn by the women of the Brownfield and Wilson families who were influential in the development of Brownfield and Texas Tech University. These shoes survive as documents of what was worn at the time. ***What tales they could tell!***

The story begins in Missouri, as many stories of Texas settlement do. Angeline Anderson married Robert Hornbeck who was born in Prairie Home, Cooper County Missouri on May 21, 1846 at the age of 24. While still in Missouri they had three daughters: Ann Elizabeth, Rebecca and Willie Ann. By 1870 the family had moved to Texas and before 1876 settled in Tarrant County.

Their oldest daughter, Ann Elizabeth married Marion Virgil (MV) Brownfield on January 6, 1876 in Tarrant County. MV's family had moved to Tarrant County, Texas by 1866, from Iowa by way of Missouri and Dallas County, settling near Smithfield, north of Fort Worth. By the age of 14, MV became a wagon driver hauling freight from Sedlia, Missouri (the county seat of Pettis County, the next county west of Cooper County) to Dallas. By 1871 he had changed jobs becoming a trail driver taking cattle herds from Texas to the railroad at Dodge City or Abilene, Kansas. He soon acquired land and stock of his own. By the time he married Ann Elizabeth Hornbeck in 1876, his trail driving days were over and they began life together ranching.

In 1884 Mr. Brownfield sold his ranch and with his brothers acquired a large

Newman of Sweetwater became good friends, as they were both horse racing people. They had a falling out as a result of breeding racehorses. The disagreement escalated to a feud after MV campaigned against Newman in an election for sheriff. A truce was negotiated wherein they drew cards and the one who drew the low card would agree to move away. MV lost and sold his ranch and moved his cattle west to pastures near Colorado City.

About this time Ann Elizabeth died at the young age of 39, when their youngest child, Effie Alice, was not quite two years old. Ann Elizabeth's sister, Willie Ann had married MV's brother Willie Brownfield. They had moved with Willie Ann's Father and unmarried sister to Sterling County, east of Midland, and so took the two youngest children, Alva Dee and Alice Effie to live with them. The boys at ages 9, 16 and 18 could be helpful to their father on the ranch, but the younger children needed more care. In moving to Sterling County they were able to be near both of their mother's sisters.

By 1900 MV Brownfield had title to 52 sections in southeastern Terry County, on which he ran his cattle bearing the Saucer Block brand, a half-circle over



These high button shoes are typical of the type worn in West Texas in 1890. They provided protection from the elements and covered a woman's ankle so it didn't show, enabling West Texas women to wear their skirts a little higher so as not to drag in the dust and mud. Ann Elizabeth Hornbeck Brownfield (Mrs. Marion Virgil) likely wore these shoes. Gift of Alice Effie Brownfield Wilson (Mrs. Roscoe), TTU-H1955-114-001.

ranch, to which they moved their herds, known as The Turkey Track Ranch, near the settlement of Hylton in Nolan County. By that time MV and Ann Elizabeth had two boys. Their third son arrived a year later. All together, they had five children.

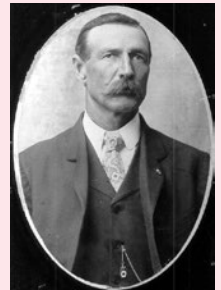
The Brownfields trained horses and raced them. They also trained horses for other people. MV and Sheriff Jim

a square. In 1901 he was joined by his oldest son, Dick, who purchased from his father the western part of the ranch holdings. When W. G. Hardin and A. F. Small, Ft. Worth developers, bought a section of Dick's land for a town site in 1904 they named it for Dick Brownfield. There already was a town named "Hardin" in Texas and no one thought "Small" was a good name for a town so they named it for the man from which they bought

Angeline Anderson Hornbeck (Mrs. Robert) b. Sept 15, 1822, m. May 21, 1846, d. Jan. 16, 1893.



Marion Virgil Brownfield b. Jan. 25, 1854 in Dubuque County, Iowa, m. Ann Elizabeth Hornbeck on Jan. 6, 1876, married Augusta Angelina Youngblood [b. Dec. 30, 1883, d. March 21, 1964] on Oct. 12, 1912, d. Feb. 11, 1929 in Brownfield, Terry County, Texas.



Ann Elizabeth Hornbeck Brownfield (Mrs. Marion Virgil), b. April 14, 1855, m. Jan. 6, 1876, d. May 25, 1894.



Alice Effie Brownfield Wilson (Mrs. Roscoe) b. August 18, 1892, m. June 22, 1912, d. Dec. 13, 1979.





This beautiful pair of 1940s black suede platform sandals are embellished with colored glass "jewels." Fenwyn made the shoes for Neiman Marcus. It was not unusual for West Texans to travel to Dallas to shop at Neiman Marcus, which in the 1940s only had its downtown Dallas store. Despite the challenges of the War years between 1942 and 1944 sales at Neiman Marcus grew from \$6 million to \$11 million, a strong indication of the role of the store in the lives of Texans. Gift of Alice Dianne Christmann Garland (Mrs. Dennis), TTU-H1980-069-005.

the land. Although MV was originally skeptical about his son's sale of land for the town, once it was named for the family he was a leading booster of the town, establishing the Brownfield State Bank in 1905, financing the first mercantile store and donating land for the community cemetery and Masonic lodge.



M.V. Brownfield with sons "Dick" and Almer

The Brownfields became promoters of the town leading the successful effort to designate it the county seat when Terry County was organized in 1904 and working to secure the Santa Fe railroad line. The fall after his youngest daughter, Alice Effie, married Roscoe Wilson, MV married for the second time.

M.V. Brownfield was a colorful character and the family story is that he enjoyed a morning toddy of whisky, sugar and water every day of his life until the last. On that day he had loaned his bottle to a friend with diphtheria and didn't have his usual toddy. He suffered a heart attach while

driving, and although he was able to guide his car to a filling station, he died before medical aid could be rendered.

When MV and Ann Elizabeth Brownfield's youngest daughter, Alice Effie Brownfield married Roscoe Wilson in 1912 he had already opened his own law office in Lubbock. Roscoe, born in 1881, was eleven years older than his bride. Their wedding announcement in the June 30, 1912 issue of the Dallas Morning News reported that they were both residents of Lubbock; he had arrived from Houston and had been an attorney for the past three years. She was a graduate of Southwestern University and was accomplished in music and art and "has a host of friends because of her elegance of manners and her beauty."

In 1925 Roscoe Wilson established the firm of Wilson, Randal and Kilpatrick in Lubbock. He was also a director of the First National Bank of Lubbock and one of the founders of the Lubbock Building and Loan Association. He was active in civic affairs in Lubbock and worked to secure a Federal Court in Lubbock in 1928. He became a member of the committee that secured the site for Texas Technological College. In 1929 he was appointed to the college's board of directors and served until his death on February 13, 1936. After only 24 years of marriage and at the age of only 44 Alice Effie Brownfield Wilson found herself a widow. She continued to lead an active life as evidenced by two wonderful pair of shoes that came to the collection





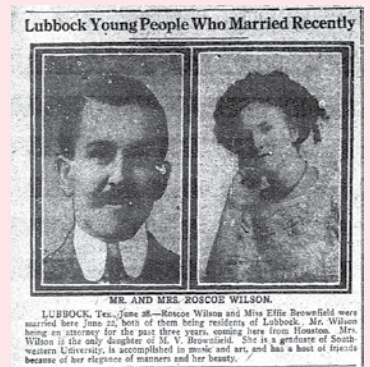
This pair of sling back open toed sandals was worn by Alice Effie Brownfield Wilson in the early 1950s. They are of pink satin with rhinestone studs along the upper edge and were made by Gino Dalsini, a line of shoes that is still popular in vintage resale stores today. Gift of Alice Dianne Christmann Garland (Mrs. Dennis), 1980-069-008.

through the generosity of her father's granddaughter Alice Dianne Christmann Garland (Mrs. Dennis) of Lubbock, Texas. Mrs. Wilson was an elegant lady who was party to the discussions about the founding of Brownfield and Texas Technological College. Her shoes went to some of the best events in West Texas. Both of the shoes that survive in the Museum's collection are beautiful examples of footwear to inspire today's designers. They were stylish for their time and comfortable, as were the high button shoes worn by her mother.

All three pair of shoes worn by the Brownfield/Wilson women are included in the Museum's exhibition *Hats and Purses and Shoes . . . Oh My!* from June 15, 2016 until January 15, 2017.




Dallas Morning News, June 30, 1912 announcement of the wedding of Alice Effie Brownfield and Roscoe Wilson.



Mrs. Wilson pictured with her two brothers Albert Ray and Dee Brownfield.



A top-down view of a dark wooden desk. In the bottom left, a silver laptop is open, showing a keyboard with Cyrillic characters and a trackpad. To its right is a white coffee cup filled with black coffee on a matching saucer. Above the coffee, a stack of white papers is held together by several colorful paper clips (red, green, yellow, white). A single yellow pencil lies vertically to the right of the papers. The background is the dark, textured wood of the desk.

# My Life as a Registrar

By Terri Carnes,  
Registrar, Museum of Texas Tech University

# Registration

what's it all about? I get this question from family and friends on a weekly basis. The original role of the Registrar was to "register" acquisitions as they came into the museum and as a documentation specialist and record-keeper. Each object is assigned an accession number and it is entered into a ledger so its movement can be tracked throughout the Museum as it is acquired, housed, loaned, packed, shipped, and exhibited. The Registrar also implements policies and procedures and must be familiar with all aspects of the Collections Management Policy, while determining all the risk factors to the objects or collections of objects.

I spent the last several months teaching my student assistant, Kayci Rush, how to work with FileMaker Pro 13, fill out condition reports, process loans, input data records and make corrections, completely reorganize and refile all paperwork concerned with donations, create an electronic notification systems for loans, and make spread sheets of loans for all divisions. Kayci got a crash course in "How to Be a Registrar" and she has been an extraordinary student.

Over the last twelve months we filled out 897 condition reports, processed 144 loans and 212 accessions, and inputted 998 backlogged accession records into an electronic database that will make basic research easier and faster. Kayci and I generate a condition report for incoming accessions that we process, objects going on exhibit, objects coming down from exhibit, and objects coming back from an outgoing loan. The Museum loans objects to other institutions for various reasons including using

some of our objects for an exhibition at their Museum, for research, or for identification.

We crosschecked our accession records with signed Deeds of Gift and compiled a list of Deeds of Gift that are not signed and/or missing. Most of these elusive Deeds of Gift were generated (or not) many years ago before record keeping was as advanced as it is now and the field of Museum Science was in its infancy. With the Museum Science program that the Museum of Texas Tech University has in place now, faculty and staff can teach upcoming professionals best practices and new methods of running a museum, taking care of and exhibiting objects and collections. Registration processed 11 image requests and also scanned about 900 documents for electronic files and placed them in a database. The Museum receives many requests for our images that other institutions want for publications or advertising for example.

I redesigned three of our databases so they are more streamlined and efficient to work with for processing our files (Donor Assessment File, Held-in-Trust file, Accession File). I worked with the head of the NSRL Entomology Division to get over 30 overdue loans back into compliance. This led to the incorporation of new and efficient courses of action to make our loan system work much better. Kayci and I also worked with many Museum friends who lent works for major exhibits we hosted, packing and delivering over 150 objects to and from their home destinations.

In Photography, our photographer, Bill Mueller, spent many hours sorting and storing images. He

also updated the policies and procedures for Photography. Over the past 12 months he has responded to 25 In-house image requests, attended 17 events as the photographer, and taken 16,500 images! Bill is one of the busiest people I know and a great ambassador for the Museum.

Registration worked with the Museum insurance agent and the Director of Operations, Cameron Saffell, to revamp and update our insurance coverage, which required working with all Divisions to estimate the number of objects per Division and their value. This was a monumental task, but everyone pulled together and got it done. Registration keeps weekly records on the environmental factors in the Museum galleries and collections storage rooms with the help of our collections managers. I spent months revamping and updating policies and procedures in Registration so that we can step up our game and improve our methods. I hosted a session at the Association of Registrars and Collections Specialists (ARCS) conference in New Orleans this year to prepare other Registrars on how to approach an audit on policies and procedures.

Last, but not least, I participated in the summer school for CIDOC hosted at our institution as a teacher to international professionals of methods and techniques in Registration. The summer school is one of the highlights of every year. It is a joyful experience each year to meet and exchange ideas with the international professionals who come to Lubbock and the Museum.

Each day in Registration is different and we wear many hats.



# Cave Spiders of Texas

By James Cokendolpher, Assistant Curator of Invertebrate Zoology, Museum of Texas Tech University

In addition to archiving biological samples and providing a valuable record of biodiversity, the collections of the Natural Science Research Laboratory (NSRL) enable researchers to address important scientific questions. The specimens and material cared for in these collections document the geographic distributions, physical characteristics, and genetic data of organisms. Researchers can use this information to better understand organisms' biology and diversity. For example, these collections can be used to characterize the genetic diversity of a species, which is an important indicator of long-term species health status. Also, by studying specimens and tissues housed in the collections we can develop a better understanding of species distributions and patterns of morphological diversity, which helps society to understand where unique species are distributed and how they occur in relation to humans.

A recent collaborative project emphasizes how the collections of the NSRL can be used for scientific studies. Using the Invertebrate Zoology Collection and the Genetic Resources Collection of the NSRL, morphologic, genetic, and phylogenetic approaches were integrated to better understand the biology of a number of endangered and potentially endangered spider species. Bexar County, Texas, in which San Antonio is centrally located, is home to a diverse fauna of endemic species found in and around the Edwards Aquifer region and associated springs. Karst formations, which are characteristic of this region, consist of porous underground drainage systems and caves formed in water-eroded rock. In the Bexar County karst faunal regions, scientists have identified many unique species living in these environments. Such species often have evolved unique morphological characteristics supporting their survival in these unusual and

remote places. Among this fauna are species of the genus *Cicurina*. This genus includes some troglotic (cave dwelling) spiders, which are eyeless and are able to survive in food-poor environments.

Many species of *Cicurina* are listed as endangered by the United States Fish and Wildlife Service, the government entity charged with oversight of the conservation of American wildlife species. Due to suburban development and increasing local human population size, the fauna of Bexar County is experiencing increased human pressures including the destruction of habitat. For example, during a relatively recent excavation for a highway project, an unknown karst was unearthed, and following a biological survey of this karst, a *Cicurina* species which had not been observed in a number of decades (actually thought to be extinct) was documented. Following this discovery, and to better understand karst *Cicurina*

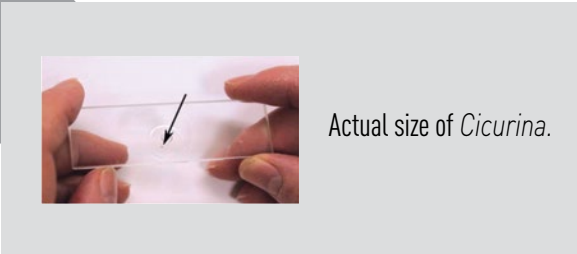
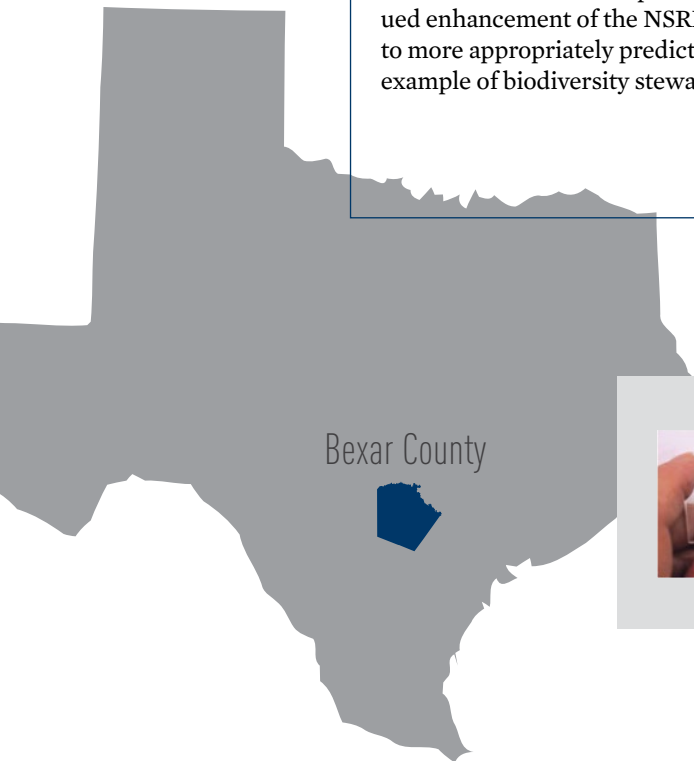
spider distributions, the Texas Department of Transportation (TxDOT) awarded funding to staff members of the NSRL and Department of Biological Sciences for a collaborative project to investigate the genetics and morphology of *Cicurina* cave spiders. Those involved in the study included Robert J. Baker, former Horn Professor of Biological Sciences and former Director of the NSRL; James C. Cokendolpher, Assistant Curator of Invertebrate Zoology, NSRL; Julie A. Parlos, former Ph.D. student in Biological Sciences; Caleb D. Phillips, Assistant Professor of Biology and Curator of Genetic Resources, NSRL; Stirling Robertson of TxDOT; and Jean Krejca of Zara Environmental, LLC.

Although nearly a dozen different species of *Cicurina* are thought to exist in this region, it is very difficult to identify specimens to the species level. This is due to the fact that most *Cicurina* species are distinguishable only by morphological differences in the reproductive anatomy of adults, which are observable only under microscopic examination. Further, adult *Cicurina* rarely are encountered; immature spiders are more commonly observed, but immature specimens cannot be identified to species based on reproductive anatomy. To resolve these issues, the research team began sequencing the genes of adult specimens that had been morphologically identified to species, and using these genetic data to identify other *Cicurina* specimens (including immatures). The specimens considered in this study included specimens previously deposited in the NSRL, and new specimens collected as part of this project.



By successfully creating a genetic library for identification of these species, researchers at the NSRL have been able to characterize the distributions of many different *Cicurina* species across the various karst faunal regions of Bexar County. These efforts have led not only to an improved understanding of species distributions in the Bexar County region, but in many cases included the extension of species distributions into previously unknown areas. This project also resulted in a genetic database that will serve to improve the

future identification of species obtained during similar excavation projects. These results, and the continued enhancement of the NSRL's collections, make it possible for state and federal officials and researchers to more appropriately predict and respond to future *Cicurina* habitat disturbances, which is an important example of biodiversity stewardship necessary for sustainable human development.





## What Defines a Leading University Museum?

By Gary Morgan, Executive Director, Museum of Texas Tech University

There are no ‘industry standards’ that define, or against which can be gauged, the intrinsic properties of university museums. The role of university museums, in so far as their overlap with and distinction from public and private museums, is much discussed in the literature and at conferences without any resultant distillation of agreed criteria.

The museum community of the United States has an industry umbrella organization in the American Alliance of Museums (AAM). AAM has an accreditation process that assesses museum programs and policies against best practices in this country and internationally. All museums – university and other – can opt to be part of the accreditation process of AAM, but there is no separate, or devolving, assessment of university museums per se. That is, university museums are assessed against exactly the same set of criteria as all other museums.

However, there are clear and definable roles of university museums, and these can inform the identification of at least areas of activity that can be considered as defining best ‘all-round’ practices in the university museum sector. University museums should not be seen just as museums set on a complex university campus. They can have a unique role that combines the best in museological practices, the best in academic (teaching) practices, and the best in engagement between campus and community.

There are three broad areas that can be the foundation – the three pillars – of university museum practice. Assessment against all three is warranted in identifying the extent to which a university museum is fulfilling its potential, a potential that both conjoins university museums with the broader museum community (one pillar) and recognizes the particular role that they can serve in society (two pillars).

## Pillar 1: Museological practices and resources

These practices and resources are defined as those that apply across the entire spectrum of museums, regardless of their governance or specialization. This pillar can include consideration of things such as:

- Industry standard policies and procedures
- Appropriate staffing (skills, placement) and other resourcing levels
- Collections, in terms of their significance and standard of care, documentation and public access
- Research programs, in terms of their significance
- Educational programs (including exhibitions, K-12 and life-long educational activities, and virtual/digital products), in terms of their reach and impact
- Standards of facilities including achievement of appropriate and secure conditions for collections, staff and visitors

In the USA, AAM accreditation – a robust and thorough evaluation of all areas of museum operations - is the only recognized measure that sets standardized criteria for assessment of museum practice. To be a leading university museum, a museum should be achieving – and be recognized as achieving – best practices in museum management. Only 5% of US museums are accredited under AAM, and only 1% of those are university museums.

## Pillar 2: Academic tuition and student support

Universities have many societal functions but their core role remains that of equipping their students to be well prepared contributors to society, through both their vocational skills and their capacity to function as global citizens.

University museums should be active participants in this process. The academic role of the university museum, if not distinguishing it from other museums, certainly sits as a vital core to what defines the particularity of the university museum.

University museums can support university students in many ways. This support can include:

- Dedicated training in museum management (the profession of museums and heritage management), with consideration to the degree level of training, the number of students being taught, and the reputation of the course including through success in employment
- Supporting other courses using collections and galleries including course-related talks and events, with consideration of the range of courses and the numbers of students supported
- Being a venue and partner for student groups and associations
- Addressing the personal interests of students through a student-engaged public program

- Providing student employment as interns, student assistants, graduate assistants, research assistants
- Being a venue for student volunteer hours and other community-focused activities

A leading university museum should be active in all the above areas of student support.

## Pillar 3: Campus-Community engagement

All museums serve a range of communities and stakeholders. In the case of the university museum, there is a unique potential to be a primary portal – arguably the most user-friendly portal – between the university and the many communities that the museum and the university serve.

This is more than just an incidental role, something that happens on occasion when opportunity presents itself. This should be a strategic intent of the university museum and a key way in which it provides a unique service to both the university and the community.

The university museum can, through its public programs and understanding of how people learn in self-directed settings, deliver products that enhance public understanding of the research and creative activities of the university. For a large, research-intensive university, this is an extraordinary range of activities and the museum can only provide a snapshot of that research. Nonetheless, if done well, these programs can demonstrate the variety and the impact of research, and how universities are society's most valuable agents of creative endeavor across the arts, humanities, and sciences.

This pillar can include consideration of:

- The number of museum products that link campus and community
- The range of disciplines and the number of campus partners covered by these products
- The diversity of the audiences of the products (if the university serves an international audience, so should the museum)
- The measured impact (in terms of public recognition and understanding) of the products.

A leading university museum should be proactively partnering with faculty and students of the university to enhance community awareness of the nature and impact of research and creativity, and breaking down perceptions that STEM and STEAM are arcane or elitist endeavors. A leading university museum should be an open gateway to the best of the university, a gateway through which all audiences feel comfortable stepping.

# WHAT MAKES THE MUSEUM OF TEXAS TECH UNIVERSITY SPECIAL?



## DIVERSITY

The Museum has one of the broadest disciplinary coverages of any museum in the USA, spanning fine and decorative arts, history, clothing and textiles, anthropology and archaeology, technology, and the natural sciences.



## SIZE

The Museum is one of the larger university museums in the USA, and is equivalent to several museums at other universities.



## FACILITIES

With facilities including the main Museum, Moody Planetarium, Natural Science Research Laboratory, and Lubbock Lake Landmark, the Museum operates a very diverse range of facilities.



## COLLECTIONS

Numbering over 7 million objects, the collection is one of largest university collections in the country.



## COMMUNITY SERVICE

Almost 150,000 visitors pass through our sites each year (meaning that the Museum attracts a higher % of its population catchment than the Metropolitan Museum of Art in New York City); plus there are over 300,000 online visitors.



## SCHOOLS

Each year 10,000-15,000 K-12 students from 56 school districts use Museum programs.



## RESEARCH

The Museum has an international reputation in its research, and is especially strong in archaeology, paleontology (dinosaurs), and biodiversity/genomics (DNA) research.



## ACADEMICS

The Museum runs one of the oldest and largest Museum Science graduate programs in the country and today its alumni are employed in some of the finest museums around the world.



## PROFESSIONAL RECOGNITION

This is one of the few university museums accredited with the American Alliance of Museums (less than 5% of all museums are accredited), and we are very active with the International Council of Museums (ICOM) including delivering ICOM training programs for international museum workers.





## The Museum as Your Venue

Hold your next event at the Museum of Texas Tech University.

The Museum is not only a place to come to learn about art, history, science, and the natural world. It is also a great place to hold your special event.

There are several spaces in the Museum suitable for events large and small. The centerpiece is the magnificent Helen DeVitt Jones Sculpture Court with its attached Auditorium. We also have rooms suitable for business gatherings, workshops, and parties.

We can package up your event with unique add-ons like a tour of the galleries with a Museum docent, or a talk about the collections or exhibits by one of the Museum's curators.

Think about us for your next reception or corporate event.

For bookings, ring or email

**Tobin Brannan**

Events & Operations

Coordinator

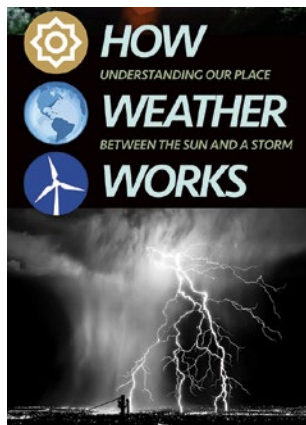
806-834-8691

[tobin.brannan@ttu.edu](mailto:tobin.brannan@ttu.edu)



# Upcoming Calendar

Fall is a busy time at Texas Tech University as we welcome the new intake of freshmen students as well as those who are returning to continue their studies. Some highlights of the Museum's calendar are listed here.



## How Weather Works: Our Place between the Sun and a Storm

This exhibition was developed by the Museum of Texas Tech University with funding support from the National Science Foundation. We learn what causes the weather that influences every part of our lives, and how human activity can influence weather. Active research at Texas Tech University by Dr. Brian Ancell and his

team in the Atmospheric Science Group is revealing how the actions of people in one part of the world can have impacts that are felt long distances away. See how the sun affects weather, how the Coriolis force twists the winds, and stand under a storm ... How Weather Works makes science fun.

## GREEN REVOLUTION

The Smithsonian Institution Traveling Exhibition Service (SITES) is partnering with the Museum of Science and Industry to

present Green Revolution, an innovative, temporary museum exhibit that provides kids and their families with easy lifestyle changes they can make to be more environmentally responsible. The exhibition content is organized around the major themes of Energy, Carbon Footprint, Composting and Gardening, Hybrid House, and Waste and Recycling. Unlike most traveling exhibitions, Green Revolution isn't packed in a crate, and it doesn't travel by truck, so it has virtually no carbon footprint. Instead, participating museums receive all of the necessary design files and instructions digitally, allowing them to construct their very own home grown "eco-zibit" from re-used, recycled materials found within their local community.

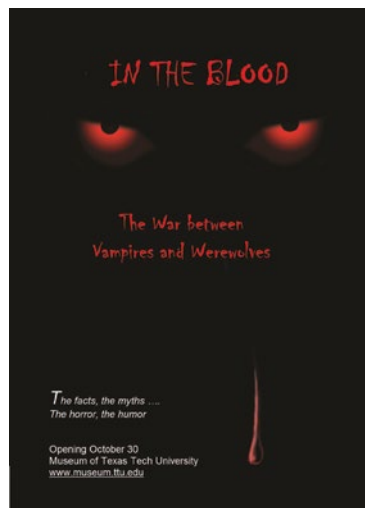
## Hats and Purses and Shoes ... Oh My!

This exhibition of more than 115 accessories, selected from over 2000 examples in the Clothing and Textiles Collection of the Museum of



Rose Crepe Velvet Hat worn by Mrs. E. D. Criddle of Denton, Texas, 1918, Gift of Mrs. Tom Masterson

Texas Tech University, demonstrates the evolution of utilitarian objects into beautiful works of wearable art. Intended as protection for the head and feet as well as a way to carry things, hats, shoes and purses have changed with fashion. While maintaining their function they have become fashion statements. On exhibit through January 15, 2017.



## In the Blood: the War between Vampires and Werewolves Through April 2017

In the Blood: the War between Vampires and Werewolves opens on October 30, 2016. This is an exhibition developed by the Museum of Texas Tech University and explores the lives of real vampire bats and wolves, as well as the mythologies and folk tales about vampires and werewolves. What are the

connections between the real animals and the monsters? How have popular fiction, film, and television evolved our perceptions of vampires and werewolves? The link between fact and fiction is 'in the blood', so we also look at how blood works, real blood-suckers of the animal world, and blood borne diseases like Zika. We introduce you to researchers at Texas Tech University who are studying vampire bats, mythology, popular culture, and infectious diseases. See how much you know about the animals and the monsters in our Monster Quiz ... and you might win a Lego Vampire Castle. An exhibition for the whole family – but wear some garlic!

# You can support the Museum

The Museum of Texas Tech University runs a wonderfully diverse program. We cover an extraordinary range of disciplines and collection areas, from the fine arts to the sciences. We carry out research on the collections and in the field, we develop exhibitions about all of the areas of our collections, and we present a wide range of events and educational activities for audiences spanning the entire community.

You can help us to do these things in two ways.

You can become a member of the Museum of Texas Tech University Association. This membership group has been a partner of the Museum since the Museum's beginnings. You and your family can enjoy events and activities and know that your membership fees help the Museum in many different ways. You can find details on the Association on page 15 and a membership form is enclosed in this magazine.

The other way to support us is through cash donations, bequests, and endowments. We happily accept donations of any amount as every bit helps. Cash donations can be addressed to:

**The Development Officer**  
**Museum of Texas Tech University**  
**Box 43191**  
**Lubbock Texas 79409-3191.**

Or you can ring us on **806.834.2833.**

If you would like to discuss larger gifts and endowments, please contact either the Development Officer or the Museum's Executive Director, Dr. Gary Morgan on 806.834.2792 or [gary.morgan@ttu.edu](mailto:gary.morgan@ttu.edu).

If you have works of art or artifacts that you would like to see held safely in a publicly accessible collection, then we also welcome your contacting us. One of our curators will assess whether or not the objects align with the collection development priorities of the Museum. Collection donations can attract tax benefits.

## Yes! I want to become a member in the Museum Association at the following level:

- |   |  |
|---|--|
| <input type="checkbox"/> Directors Circle \$1,000 | <input type="checkbox"/> Patron \$150          |
| <input type="checkbox"/> Curator \$500            | <input type="checkbox"/> Museum League \$75    |
| <input type="checkbox"/> Benefactor \$250         | <input type="checkbox"/> Friends & Family \$50 |

Mr.  Mrs.  Dr.  Other \_\_\_\_\_

Name(s) as they should appear on MoTTUA cards:

\_\_\_\_\_

Spouse (if applicable)

Address

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone

E-mail

This is a gift membership from:

\_\_\_\_\_

### Method of Payment

Check Enclosed  
(please make checks payable to Museum of TTU Association)

Mastercard  Visa

Card Number

CVV Code \_\_\_\_\_ Expiration Date \_\_\_\_\_

Signature

### Detach and mail to:

The Museum of Texas Tech University Association  
3301 4th Street Box 43191  
Lubbock, Texas 79409-3191

You may also join online at [www.mottu.org](http://www.mottu.org)  
or over the telephone  
Please call the Association Office at 806.742.2443



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Lubbock, TX 79409-3191

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## IN THE BLOOD

*The War between  
Vampires and Werewolves*

*The facts, the myths ....  
The horror, the humor*

Opening October 30  
Museum of Texas Tech University  
[www.museum.ttu.edu](http://www.museum.ttu.edu)

# Opens October 30

What are the connections between the real animals and the monsters?

How has popular fiction, film, and television evolved our perceptions of vampires and werewolves?



**MUSEUM**  
OF TEXAS TECH  
UNIVERSITY