

Welcome to SWAAG 2010,

the annual meeting of the Southwestern Division of the Association of American Geographers, held October 14-16, 2010 in beautiful Tahlequah, Oklahoma on the historic campus of Northeastern State University.

The Local Arrangements Committee extends a RiverHawk welcome on behalf of NSU to each participants to this first ever SWAAG meeting in Tahlequah. We're glad that you're here, and we certainly hope that you will enjoy your stay and benefit greatly from this opportunity to interact with geography professionals from our five-state area. If we can make your visit more enjoyable and successful, please call on us.

Christine Hallman, Assistant Professor of Geography

John Milbauer, Professor of Geography

Frances Rule, Secretary, Department of Social Sciences

Lallie Scott, Professor of Geography Emeritus

J. Mike Stevens, Instructor of Geography

Chuck Ziehr, Professor of Geography & Chair, Department of Social Sciences

Geography Program

Department of Social Sciences

Northeastern State University

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SWAAG 2010 PROGRAM

Thursday, October 14

3:00 – 7:00 p.m. University Center, 612 N. Grand Avenue

Registration, TV Lounge (2nd floor-at the top of the stairs or turn left as you exit the elevator)

Shuttle runs between hotels, University Center, and Iguana Café every 30 minutes

7:00 – 9:00 p.m.

Reception, Iguana Café, 500 N. Muskogee Avenue, about two blocks from NSU's University Center [sandwiches, wraps, potato salad, pasta salad, chips & salsa, cookies, soft drinks, and flavored iced; two tickets for beer, wine, coffee drinks, and/opr fruit smoothies –all included with your registration]

Enjoy the music of a three-piece jazz combo from the award-winning NSU Jazz Program from 7:00 – 8:00 p.m. Continue to eat, drink, and share the comraderie of fellow geographers until 9:00 p.m.

Shuttle runs between hotels, University Center, and Iguana Café every 30 minutes; **last shuttle returns to the hotels at 9:30**

Friday, October 15

7:30 – 10:30 a.m. University Center, 612 N. Grand Avenue

Registration, TV Lounge (2nd floor-at the top of the stairs or turn left as you exit the elevator)

Shuttle runs between hotels and University Center every 30 minutes **from 7:00 – 9:00 a.m.**

8:30 – 10:00 a.m. University Center, Room 222 (2nd floor) Paper Session #1

8:30 Andrew Klein, Texas A&M University
“Fifty-years of change at McMurdo Station, Antarctica: an International Polar Year retrospective”

- 9:00 Donald Lyons**, University of North Texas
 “Exploring non-hazardous wastes in Pennsylvania, 1992-2008”
- 9:30 Adriana Méndez-Jiménez**, Texas A&M University
 “Effect of oceanographic features on the synchronicity between fish spawning aggregations and whale shark (*Rhincodon typus*) feeding aggregations at Gladden Spit, Belize”

8:30 – 10:00 a.m. University Center, Room 225 (2nd floor) Paper Session #2

- 8:30 William C. Rowe**, Louisiana State University
 “Colonialism, Neo-Liberalism, and Local Culture: How Tajikistan Negotiates Its Post 9/11 Economic Space”
- 9:00 Dalynda Evans**, University of Oklahoma
 “Reconfiguring geopolitical labels from ‘refugee’ to ‘deportable alien’: Criminal Deportation of ‘Viet Kieu’ from Oklahoma City”
- 9:30 Aswin Subanthore**, Oklahoma State University
 “Asian Indian Spaces of Assimilation in Schaumburg, Illinois”

8:30 – 10:00 a.m. University Center, Room 226 (2nd floor) Paper Session #3

- 8:30 Andrew Evans**, University of New Orleans
 “Habitat Limitations of *Myocastor coypus* in urban waterways of Orleans Parish
- 8:52 Beeyoung Gun Lee**, Texas A&M University
 “Treeline Dynamics on Mount Washington, New Hampshire”
- 9:14 jenny hay and gENTRY hANKS**, Louisiana State University
 “Pivotal Places, Transformative Spaces: Ida, Louisiana”
- 9:36 Matthew Ryan McNair**, University of Oklahoma
 “Painting the world: ‘The Arkansas Traveler’ and the creation of the Arkansas landscape”

10:00 -10:30 a.m. University Center, Ballroom Lounge (2nd floor)

Refreshment Break -- assorted muffins, a little fruit, regular and decaffeinated coffee, hot tea and ice water

10:30 – Noon University Center, Room 222 (2nd floor) Paper Session #4

10:30 Jeff Allender, University of Central Arkansas
“Vernacular Rock & Brick Construction in the Southern Ozarks”

11:00 Alyson L. Greiner, Oklahoma State University
“Church under Fire: An Oklahoma Perspective on Geography, Priests, and Mobility”

11:30 David Dorrell, Nicholls State University
“Mapping Little Zion: Remote Sensing, GIS and an African-American Church”

10:30 – Noon University Center, Room 225 (2nd floor) Paper Session #5

10:30 Robert D. Lemon, The University of Texas at Austin
“My Father’s Oklahoma Landscapes”

11:00 Jim Norwine, Texas A&M University-Kingsville
“Toward 2100: Imagining a World after Climate Change and Culture-Shift”

11:30 Jennifer L. Alexander, The University of Texas at Austin
“Warming Favors the Spread of Disease: Global Warming and Its Effects on Vector-Borne Diseases”

10:30 – Noon University Center, Room 226 (2nd floor) Paper & Panel Session #6

10:30 Neng Wan, Texas State University-San Marcos
“A 3-step Floating Catchment Area (3SFCA) Method for Characterizing Spatial Access to Health Care Services”

11:00 Gregory A. Plumb, East Central University
“Distinguishing Units of the National Park System”

11:30 David Justice, Elizabeth Montgomery-Anderson, and Eric Dean, Cherokee Nation, GeoData Center
Frank Harjo, Rebecca Coleman, and Lyndsey Girod, Muscogee (Creek) Nation, Geospatial Department
Panel: “GIS Applications in the Cherokee and Muscogee Nations”

10:30 – Noon University Center, Ballroom Lounge (2nd floor) Poster Session #1

Candace Carollo, University of Central Oklahoma
“Landscape of a Chisholm Trail Ghost Town: Silver City, OK”

Jeremy Scott Johnson, Texas A&M University

“Changing Vegetation Dynamics of a Coastal Salt Marsh Due to Inundation Caused by Storm Event: Galveston Bay, Texas, USA

LaDonna Latterman, Texas A&M University

“Analysis of Glacier Recession in the Cordillera Apolobamba, Bolivia 1985-2010”

Falguni Mukherjee, Sam Houston State University

“Sam Houston State University Introduces Graduate Program in Applied Geographic Information Systems”

Adam Payne and Amy Graham, Oklahoma State University

“America’s Cobblestone Community: The Cultural and Historical Geography of Medicine Park, Oklahoma”

Kathleen Shafer, The University of Texas at Austin

“Military Airfields of Texas”

Garrett Wolf, Louisiana State University

“Economic and Environmental Geography of Butte, Montana”

Noon - 1:30 p.m. University Center, Senator Herb Rozell Ballroom (2nd floor)

Luncheon Buffet -- Fresh fruit salad, Red-skin potato salad, Chicken salad croissant, Turkey bacon croissant, Ham and cheddar croissant, (Vegetarian plates available for those who requested them on their registration form), Assorted freshly baked cookies, Double fudge brownies, Iced tea and ice water, Regular and decaffeinated coffee

Welcome – Dr. Martin Tadlock, Provost and Vice President of Academic Affairs, Northeastern State University

Keynote Address -- Mr. Mike Miller, Communications Officer for Cherokee Nation and Vice President of Corporate Communications for Cherokee Nation Businesses

1:30 – 3:00 p.m. University Center, Room 222 (2nd floor) Paper Session #7

1:30 Christine Hallman, Northeastern State University

“Morphological and Physiological Phenology of Ancient *Pinus Longaeva* in the White Mountains of California”

2:00 Anthony L. Layzell, The University of Texas at Austin
“Soil development over time in a sub-alpine environment: San Juan Mountains, Southern Colorado”

2:30 Melissa Hinten, University of Oklahoma
“Assessing the Change in Tallgrass Prairie Vegetation Within the Cherokee Prairie from 1898 to 2008”

1:30 – 3:00 p.m. University Center, Room 225 (2nd floor) Paper Session #8

1:30 Annemarie Galeucia, Louisiana State University
“Rusty Pickups and Natty Light: The Resilience of Trailer Park Stereotypes in Public Perception”

2:00 Jonathan C. Comer and Thomas A. Wikle, Oklahoma State University
“Eyesore or Lifeline? A Study of Cell Tower Conflicts in the U.S.”

2:30 William E. Doolittle, The University of Texas at Austin
“Mapping Humanized Landscapes of the Americas, 1491”

1:30 – 3:00 p.m. University Center, Room 226 (2nd floor) Paper Session #9

1:30 Olen Paul Matthews, University of New Mexico
“The Commerce Clause—The Constitution’s Geographic Solution”

2:00 Amie Dickinson, Advance Auto Parts, Roanoke, VA and
Murray D. Rice, University of North Texas
“Retail Development and Downtown Change: Shopping Mall Impacts on Port Huron, Michigan”

2:30 Michael S. Yoder, University of Central Arkansas
“Entrepreneurial Governance and Economic Development in Micropolitan Cities of Arkansas”

1:30 – 3:00 p.m. University Center, Ballroom Lounge (2nd floor) Poster Session #2

Joshua D. Castleman, Muscogee (Creek) Nation
“Muscogee (Creek) Nation and the IRMP”

Kent M. McGregor, University of North Texas
“Reducing Carbon Dioxide Emissions: A Global Perspective”

David Justice, Elizabeth Montgomery-Anderson, and Eric Dean,
Cherokee Nation GeoData Center
“Cherokee Nation GeoData Center”

Sarah Ildiko Nyikos, Texas A&M University
“Meander migration and tree establishment on the Trinity River,
southeast Texas”

Jess C. Porter, University of Arkansas, Little Rock
“Great Plains Paleoenvironments: Fire, Large Herbivore, and Climatic
Impacts on Vegetation”

Hongbo Yu and G. Allen Finchum, Oklahoma State University
“Visualizing a Bedlam Game in a Space-Time GIS”

Panshu Zhao, Texas A&M University
“In situ validation and relevant analysis of snow albedo derived from
ETM+ and MODIS images”

3:00 - 3:30 p.m. University Center, Ballroom Lounge (2nd floor)

Refreshment Break -- assorted freshly baked cookies, regular and
decaffeinated coffee, ice water

3:30 - 5:00 p.m. University Center, Room 225 (2nd floor)

SWAAG Business Meeting – Sarah Witham Bednarz, SWAAG Chair, Texas A&M
University

5:00 - 7:00 p.m. Free Time

You might want to take a stroll along the Tahlequah History Trail (see map in
program), or amble through our quaint and historic downtown (just six blocks
south of NSU along Muskogee Avenue). Or perhaps you’d like to go back to your
hotel to relax.

Shuttle runs between the University Center and the hotels every 30 minutes.

7:00 - 8:30 p.m. University Center, Senator Herb Rozell Ballroom (2nd floor)

Banquet – buffet dinner (Tossed garden salad, Cucumber and sweet onion salad,
Hickory smoked chicken breast, BBQ beef brisket, (Vegetarian plates available
for those who requested them on their registration form), Brown sugar baked

beans, Seasoned sweet corn, Sweet and jalapeno corn bread, Chef's assorted desserts, Iced tea and ice water, Regular and decaffeinated coffee

Keynote Address – Dr. Kenneth E. Foote, President of the Association of American Geographer and Professor of Geography, University of Colorado

Awards – Student Paper and Poster Competition, Murray Rice, SWAAG Treasurer

Shuttle runs every 30 minutes from 5:00-7:00 p.m between the hotels and the University Center. Shuttles will return to the hotels following the banquet with the last shuttle departing at 9:00 p.m.

Saturday, October 16

- 10:00 a.m.** **Shuttle to Tulsa International Airport** (it takes one hour and 15 minutes) --
departs from Holiday Inn Express
- 8:00 - Noon** **Field Trip --*The Cultural Landscape of Northeastern Oklahoma***
Led by John Milbauer, Professor of Geography, Northeastern State University
[advanced reservations required]
- 1:00 p.m.** **Shuttle to Tulsa International Airport** (it takes one hour and 15 minutes) --
departs from Holiday Inn Express. This is the final shuttle.

SWAAG 2010 Abstracts

Jennifer L. Alexander, Dept. of Geography and the Environment, The University of Texas at Austin; Email: jalexander@austin.utexas.edu

Paper: **“Warming Favors the Spread of Disease: Global Warming and Its Effects on Vector-Borne Diseases “**

Key words: vector-borne diseases, global warming, malaria, dengue

With global warming, humans potentially will have increased exposure to vector-borne diseases, especially in the tropics. Can we reduce exposure? This paper explores malaria and dengue in this context: health and economic impacts; transmission paths of the diseases; drug and pesticide resistance; effects of increased temperatures on the pathogens and disease vectors (*Aedes* and *Anopheles* mosquitoes); and the subsequent effects climate change could have on increasing spread and propagation of the diseases. Although findings presently are inconclusive, the study highlights recent research, reviews opponents’ criticisms, and concludes by exploring current methods aiding control of the diseases.

Jeff Allender, Department of Geography, University of Central Arkansas; Email: jeffa@uca.edu

Paper: **“Vernacular Rock & Brick Construction in the Southern Ozarks”**

Key words: Mixed Masonry; Vernacular Architecture; Diffusion; Silas Owens

Building with irregular rock and using brick or cut rock for the trim, corners, and doors dates to Roman times, and spread throughout the British Empire in the past centuries. This style of cladding became popular in the Ozark Mountains during the 1930s and early 40s. Although not used today, several dozen of the surviving structures are on the National Register of Historic Places and are considered unique. This paper will trace their diffusion and evolution, emphasizing their culmination with the structures of Silas Owens Sr., who is recognized as producing the most solid and beautiful of these structures.

Candace Carollo, University of Central Oklahoma; Email: ccarollo@uco.edu

Poster: **“Landscape of a Chisholm Trail Ghost Town: Silver City, OK”**

Key words: Oklahoma, Historical, Land Use Changes

From 1871 to 1890, the heavily-traveled Chisholm Trail gave rise to several pre-statehood towns and villages in Oklahoma. Silver City, on the south bank of the Canadian River in the Chickasaw Nation, thrived during the Chisholm Trail’s operational years. Cowboys and Chickasaw ranching families occupied the vicinity until the fencing of land, construction of railroads, and out-movement of residents led to the dissolution of Silver City. After conducting field research of Silver City’s environs, interviewing local farmers, and consulting primary sources, I pieced together the landscape use changes and historical impacts of this Oklahoma ghost town with the goal of preserving its colorful historical geography.

Joshua D. Castleman, Muscogee (Creek) Nation; Email: jcastleman@muscogeenation-nsn.gov
Poster: “**Muscogee (Creek) Nation and the IRMP**”
Key words: tribal, medicinal, data dictionary

In the past the Muscogee (Creek) Nation has largely operated without any set guidelines or management plans for the tribe’s natural resources. The development of the IRMP seeks to change this management style by providing tribal leaders with reliable and relevant information, which will allow informed decisions to be made, which will aid the tribe in preserving our resources while promoting economic development. Three different management alternatives were developed for each resource listed in the IRMP as were goals, which have both short and long term objectives. Multiple management alternatives for each resource allows the plan to be flexible and adaptable to the tribe’s changing needs. If adopted by the MCN National Council and properly utilized the IRMP will continue to prove itself to be a valuable and useful management tool as it has already done by providing staff members with driving directions and maps of tribal property as well as the location of culturally important plants on tribal property.

Jonathan C. Comer and Thomas A. Wikle, Department of Geography, Oklahoma State University; Email: jon.comer@okstate.edu and t.wikle@okstate.edu
Paper: “**Eyesore or Lifeline? A Study of Cell Tower Conflicts in the U.S.**”
Key words: cell towers, visual blight, federal policy, NIMBY

The 1996 Telecommunications Act (TCA) attempted to balance the rights of communities in regulating the location and appearance of cell phone towers against the desire of cellular providers to expand services and provide adequate coverage. Instead, the TCA has become a tool wielded by both sides of a growing conflict over health concerns, aesthetics, and property values. In this paper we characterize the nature of recent conflicts, examine socioeconomic and environmental traits of locations where these conflicts occur, and assess whether geographic disparities in this phenomenon exist.

Amie Dickinson, Advance Auto Parts, Roanoke, VA; and
Murray D. Rice (presenting), Department of Geography, University of North Texas; Email: rice@unt.edu
Paper: “**Retail Development and Downtown Change: Shopping Mall Impacts on Port Huron, Michigan**”
Key words: retail geography, central business districts, shopping malls, small cities

Mall openings initiate a period of tremendous change in local and regional retail landscapes. What is not necessarily obvious in such situations is the particular types of retail and service activities that are most affected by new mall introduction. In small cities in particular, the introduction of a new regional mall can have important impacts. To study these impacts, we focus on Port Huron, Michigan and the changes associated with the 1987 opening of Birchwood Mall. The study results provide a profile of mall impacts, and suggest business types best suited to revitalization programs for downtowns facing new mall competition.

William E. Doolittle, Department of Geography and the Environment, University of Texas; Email: dolitl@austin.utexas.edu

Paper: **“Mapping Humanized Landscapes of the Americas, 1491”**

Key words: Native Americans, environmental impacts, landscapes, cartography

In his best-selling book, *1491: New Revelations of the Americas Before Columbus*, Charles C. Mann presents 16 maps, 15 of which are above reproach. Arguably the most important one, “Humanized Landscapes, 1491, A.D. (*sic*)” on page 322, is terribly flawed, factually and cartographically. When criticized on this point, Mann responded “Can you do better?” To which I said, “Yes.” This paper discusses the collaborative remaking of this map by Mann, Peter Dana, and myself.

David Dorrell, Department of Geography and History, Nicholls State University; Email: david.w.dorrell@gmail.com

Paper: **“Mapping Little Zion: Remote Sensing, GIS and an African-American Church”**

Key words: Aerial Photography, African-American Church, African-American Cemetery

Little Zion Church is a physical structure that represents an entire community. Initially, the congregation of the church lived in the direct proximity of the structure, but over time the people of the community migrated to the cities and towns in the immediate vicinity, leaving little in terms of “roots”. The notable characteristic of this particular migration is that much of the identity of those who migrated is an association with this church and cemetery as objects in the landscape, and not the community in which it once resided. What is the extent of this historic property, and what remains?

Andrew Evans, Department of Geography, University of New Orleans; Email: Amevans1@uno.edu

Paper: **“Habitat Limitations of *Myocastor coypus* in urban waterways of Orleans Parish”**

Key words: Nutria, Urban Wildlife, Habitat, Invasive species

A study was conducted to determine if there were any habitat limitations of nutria in urban waterways throughout Orleans Parish. The author wanted to see if the same correlations could be made for nutria in urban areas as had been for studies conducted in their natural range. The study was conducted in Orleans Parish and surveys conducted divided the waterway bank into three zones then estimating herbaceous cover, human disturbance, and presence of predators. The exploratory study revealed a possible correlation between nutria and herbaceous growth, and no correlation between nutria and human disturbance, presence of predators, or existing eradication measures.

Dalynda Evans, University of Oklahoma; Email: Dalynda@ou.edu

Paper: **“Reconfiguring geopolitical labels from ‘refugee’ to ‘deportable alien’: Criminal Deportation of ‘Viet Kieu’ from Oklahoma City”**

Key words: geopolitics, deportation, urban geography, refugee, Vietnamese

Today in the U.S., legally present immigrants face forcible deportation. Since 2001, the government deported over 1.5 million residents, 75% for non-violent felonies or misdemeanors. Not limited to undocumented 'aliens', deportation initiatives also target 'permanent residents'. I examine policies shaping deportation experiences of Vietnamese Americans. I argue there are historical antecedents of the inner-city landscape which are significant factors of contemporary deportation geographies and observe scalar strategies of resistance including a growing bilingual media presence and emerging state policy recognizing the "Freedom Flag". I explore and illustrate the centrality of identity to the practices which frame experiences of criminal deportation.

Annemarie Galeucia, Louisiana State University; Email: agaleu1@tigers.lsu.edu

Paper: **"Rusty Pickups and Natty Light: The Resilience of Trailer Park Stereotypes in Public Perception"**

Key words: American Civil Religion, Mobile Home Communities

Despite popular arguments to the contrary, American Civil Religion remains an implicitly influential component of American life. This paper explores the persistence of capitalist protestant perspectives (derived from the Protestant Work Ethic and Calvinism) in American Civil Religion to address questions pertaining to the role of wealth in measuring public value. Further, it contends that these perspectives are manifested in public, mediated perceptions of white people in mobile home communities, and lays the groundwork for a larger comparative study between said perceptions and ethnographic data compiled from individuals living in mobile home communities.

Alyson L. Greiner, Department of Geography, Oklahoma State University; Email: alyson.greiner@okstate.edu

Paper: **"Church under Fire: An Oklahoma Perspective on Geography, Priests, and Mobility"**

Key words: Catholicism, mobility, Oklahoma

It would be an understatement to say that the geography of Catholic clergy and their mobility has become a sensitive subject. Indeed, what began as a naively geographical study has become bound up with more scandalous issues pertaining to abuse, pedophilia, and corruption. Without dismissing the magnitude of these issues, it is clear that there is still a great deal we can learn about the geographical operations of the Catholic Church. This paper uses a cultural-historical approach to examine the geographical and social networks that have supplied priests to Oklahoma since the days of the first Catholic mission in Indian Territory.

Christine Hallman, Department of Social Sciences, Northeastern State University; Email: hallman@nsuok.edu

Paper: **"Morphological and physiological phenology of Ancient *Pinus Longaeva* in the White Mountains of California"**

Key words: phenology, bristlecone pine, climate

By monitoring growing season events, natural variations and responses to climate change can be identified within climatically sensitive ecosystems. Morphological and physiological

phenophases, dendrometer traces, and environmental data were collected throughout the summers of 2007 and 2008 in the White Mountains, CA to better understand variability in *Pinus longaeva* phenology. Duration and timing of cambial activity were similar to that recorded by H.C. Fritts 45 years ago despite a median summer temperature increase of at least 2° C. Bud opening and pollination onset were slightly earlier than in 1962-64. Weather variability led to phenological differences observed in 2007 and 2008.

jenny hay and gENTRY hANKS, Department of Geography and Anthropology, Louisiana State University; Email: Jhay3@tigers.lsu.edu and ghanks3@tigers.lsu.edu

Paper: “Pivotal Places, Transformative Spaces: Ida, Louisiana”

Key words: Built Environment, Geographic Imagination, Identity Performance, Representation

The dynamic identity of Ida, Louisiana is performed through and affected by the built environment. Located in the heart of ArkLaTex, communities of Ida celebrate and represent selective histories through specific spaces. With the advent of Interstate 49 on the village’s western edge, Ida’s communities stand to undergo substantial cultural and material transitions. Our research, using qualitative methods, seeks to show how the built environment and the geographic imagination combine to assist in naturalizing a main stream culture. We find this combination affects representations and perceptions while (re)creating segregated histories and present realities of marginalized community members in Ida.

Melissa Hinten, Department of Geography, University of Oklahoma; Email: mtalley@ou.edu

Paper: “Assessing the Change in the Tallgrass Prairie vegetation within the Cherokee Prairie from 1898 to 2008”

Key words: tallgrass prairie, land use change, Geographic Information System

The Cherokee Prairie - located in northeastern Oklahoma - was historically comprised of tallgrass prairie vegetation in upland areas. The objective of this study was to determine the change tallgrass prairie vegetation from 1898 to 2008. Tallgrass prairie vegetation from 1898 was identified using The United States Geologic Survey Township Plats. The 2008 tallgrass prairie vegetation was identified using County Mosaic images, the Oklahoma GAP Analysis vegetation layer, and The Nature Conservancy’s Untilled Landscapes layer. For the time period studied, results indicate a decrease in total area of tallgrass prairie vegetation, and an increase in number of tallgrass prairie patches.

Jeremy Scott Johnson, Department of Geography, Texas A&M University; Email:

jsjohnson@tamu.edu

Poster: “Changing Vegetation Dynamics of a Coastal Salt Marsh Due to Inundation Caused by Storm Event: Galveston Bay, Texas: USA”

Key words: Salt Marsh, Vegetation Change, Storm Disturbance

The structure and function of coastal salt marshes develop from a complex interaction of biologic, geomorphic, and climatic variables that influence the characteristics of marsh vegetation. Few studies have investigated the effects of increased inundation of salt marsh vegetation due to storm events to investigate how the marshes have changed. This research

investigates the changing biogeography of the Galveston Bay salt marshes by collecting floristic data, modeling inundation, and performing change detection on Landsat 5 images to tease out how the composition and distribution of vegetation may be changing as a result of climatic influences over a 30 year period.

David Justice, Elizabeth Montgomery-Anderson, and Eric Dean, Cherokee Nation GeoData Center; Email: david-justice@cherokee.org, elizabeth-montogery-anderson@cherokee.org, and eric-dean@cherokee.org

Poster: **“Cherokee Nation GeoData Center”**

Key words: community service, tribal applications, cadastral, environmental, government

The Cherokee Nation GeoData Center creates and maintains spatial data to aid in planning and decision making across a number of tribal departments. A number of government functions are associated with managing geographic information: the GeoData Center supports applications such as address checking, community planning, Census analysis, economic development, health analysis, and tribal resource allotment. Recent projects include spatial analysis for a proposed greenway using a modified GRASP process, recreational trail GPS collection for Cherokee Nation Health, mapping of historical allotments, and work on the Cherokee Nation Emergency Management master plan. We also offer mapping services to Cherokee Nation citizens.

Andrew Klein, Department of Geography, Texas A&M University; Email: klein@geog.tamu.edu

Paper: **“Fifty-years of change at McMurdo Station, Antarctica: an International Polar Year retrospective”**

Key words: Antarctica, Human Impact, Geographic Information Systems, Polar Geography

In the austral summer of 1955-1956, McMurdo Station was constructed on the southern tip of the Hut Point Peninsula on Ross Island, Antarctica and has remained continuously occupied since its construction. With a population expected to peak at nearly 1300 this austral summer, this United States Antarctic Program (USAP) base is the most populated location on continent. The station’s location is also of historical significance being situated at the overwintering site occupied by Robert Falcon Scott’s first Antarctic expedition in 1902 and serving as an important key base for other British expeditions during the heroic age of Antarctic exploration. Since the International Geophysical Year, thousands of USAP participants have lived and worked at the station, to many it has been home for months or years. Drawing on historical photography, the published works of historic and recent Antarctic explorers, geographic information systems and remote sensing, this research documents the growth of the station and the accompanying anthropogenic changes to its local environment. The widely varied perceptions of McMurdo from historic and modern “Antarcticans” are also explored.

LaDonna Latterman, Texas A&M University; Email: ladlat1@neo.tamu.edu

Poster: **“Analysis of Glacier Recession in the Cordillera Apolobamba, Bolivia 1985-2010”**

Key words: glacier, recession, Bolivia, Apolobamba

Monitoring the changes that are taking place in Andean glaciers is becoming increasingly important as these glaciers are rapidly disappearing. However, field work is difficult and often

too expensive to undertake in order to assess the state of the glaciers in this region. Remotely sensed satellite imagery and advancements in remote sensing technologies provide the means to monitor and study these tropical glaciers in great detail. This research study focuses on the Cordillera Apolobamba range located on the Peruvian-Bolivian border just north of Lake Titicaca. It utilizes Landsat Thematic Mapper images from 1985 to present and is a prime example of the methodology that is being applied to assess the state of glacier ranges in this region. The glaciers of the Cordillera Apolobamba range lost approximately 60 km² of their total surface ice from 1985-2010. The spatial distributions of these glaciers are compared to air temperature, solar radiation and precipitation trends as well as other climate variables that have been derived from downscaling NCEP/NCAR reanalysis data as well as monthly temperature measurements concerning the Oceanic Niño Index (ONI) in order to determine the glacier-climate relationships of these tropical glaciers.

Anthony L. Layzell, Department of Geography and the Environment, University of Texas at Austin; Email: alayzell@mail.utexas.edu

Paper: **“Soil development over time in a sub-alpine environment: San Juan Mountains, Southern Colorado”**

Key words: Soil, chronosequence, Rocky Mountains

Relatively few studies have examined soil development in post-Last Glacial Maximum deposits in the Rocky Mountains. This study utilizes soil morphological investigations and a radiocarbon chronology to interpret the nature of landscape evolution in a sub-alpine environment. The surficial geology of the area was mapped in detail and a soil chronosequence developed from a variety of deposits (glacial, fluvial, alluvial, and colluvial) of different ages (~1,000-15,000 years). Results highlight significant spatial variability in soils of similar ages. This variation is attributed to heterogeneity in the nature of the inherited parent material including differences in aeolian dust contributions.

Beeyoung Gun Lee, Department of Geography, Texas A&M University; Email: gitanoblue@tamu.edu

Paper: **“Treeline Dynamics on Mount Washington, New Hampshire”**

Key words: treeline, climatic factors, tree growth

Modern treelines are moving upslope although their dynamics vary by location. Treeline on Mt. Washington, New Hampshire appears to be shifting upslope in some areas based on a comparison of treeline elevations measured in 1974, the 1980s, and the summer of 2009. The main climatic factors controlling the treeline of Mt. Washington are temperature, precipitation and snowfall. Growth of the primary treeline species Black Spruce (*Picea mariana*) and Balsam Fir (*Abies balsamea*) may be related to summer and winter temperatures and water availability from precipitation and snowfall.

Robert D. Lemon, Department of Geography and the Environment, The University of Texas at Austin; Email: rdlemon@gmail.com

Paper: **“My Father’s Oklahoma Landscapes”**

Key words:

This paper examines the transformations of the cultural landscapes my father grew up within from 1944-1958. It is primarily a story told through my father's personal history of living throughout different cultural environments of Oklahoma. It examines how capitalism and advancing technologies affected the landscape order of two distinct cultural regions of Oklahoma. It compares rural life of sustenance and harsh winters to modern innovations of the telephone as well as advances in oil production. It explores the stark cultural differences between ethnicities and how Indians were treated based on their personal wealth. Through these comparisons, economic disparities and racial segregation from town to town and region to region are brought to light. Moreover, the paper is about what Oklahoma came to signify to my dad.

Donald Lyons, Department of Geography, University of North Texas; Email: Dlyons@unt.edu

Paper: **"Exploring non-hazardous wastes in Pennsylvania, 1992-2008"**

Key words:

While the geography of municipal solid and hazardous industrial waste is relatively well documented and understood, there are no federal requirements for firms to report details on the 10 billions of tons of nonhazardous industrial waste (NHIW) generated each year. Similarly, most states do not require firms to report NHIW generation. An exception is Pennsylvania which began requiring firms generating NHIW waste to report both the quantity and type of waste generated and how and where the waste was managed in 1992. As such, this dataset provides a unique insight into the structure and geography of non-hazardous industrial wastes in a major industrial state. The purpose of this paper is to present some very preliminary results from this dataset to determine if industrial production in Pennsylvania has become more ecologically benign over the last 20 years. The results are significant because they allow us to evaluate the utility of the concept of ecological modernization which suggests that soft environmental regulation along with market forces are enough to reduce the ecological footprint of industrial production.

Olen Paul Matthews, Department of Geography, University of New Mexico; Email: opmatt@unm.edu

Paper: **"The Commerce Clause—The Constitution's Geographic Solution"**

Key words: Federalism, Constitution, Supreme Court

The constitution's commerce clause grants the federal government power to regulate commerce and limits a state's ability interfere with commerce. It was used as the justification for Roosevelt's "New Deal" policies during the 1930s depression, it was the constitutional foundation for the Civil Rights Act of 1964, and the clause was used to justify federal environmental statutes in the 1970s and 1980s. These were transformative periods in American history with the relationships between federal and state powers being redefined in fundamental ways. The US Supreme Court is the ultimate arbitrator of whether federal or state exercise of power exceeds constitutional limitations. For most of the 20th century the Court generally expanded federal power while limiting state power. Recent Court decisions, based perhaps on "political expedience disguised as structural analysis" has created a sense of confusion as to the

standard the lower courts should apply. My paper examines this confusion and speculates on what it means for the future of federalism.

Kent M. McGregor, Department of Geography, University of North Texas; Email: mcgregor@unt.edu

Paper: **“Reducing Carbon Dioxide Emissions: A Global Perspective”**

Key words: global warming, carbon dioxide emissions, CO₂ reduction

The current debate about global warming is usually focused on the increasing amounts of carbon dioxide accumulating in the atmosphere. Many different schemes have been proposed to reduce CO₂ emissions. The climatology class project focused on the various reduction proposals and why different countries favor one over the other. The class was divided into groups of 4-5 students, 10 groups in all. Each group investigated attitudes and proposals concerning CO₂ reduction in their assigned region of the world. Each group surveyed the information available on government and NGO web sites and prepared a report on attitudes in their region.

Matthew Ryan McNair, Department of Geography, University of Oklahoma; Email: mrm_mcnair@yahoo.com

Paper: **“Painting the world: ‘The Arkansas Traveler’ and the creation of the Arkansas landscape”**

Key words: Landscape, Arkansas, deconstruction, cultural geography

In 1856, Edward Washburn painted “The Arkansas Traveler,” the visual text of a (possibly apocryphal) encounter between a well-heeled horseman and an Arkansas squatter. Regardless of its historicity, the legend inspired, for good or ill, an enduring image of Arkansas. I will explore the origins of the Traveler legend, discuss implications of its pervasiveness, and examine the painting itself as an artifact of the Euro-American landscape idea(I). In dissecting “The Arkansas Traveler”, I hope to highlight the importance of the landscape idea(I) in the creation of territory and cultural dominance in Arkansas in particular, and American society more generally.

Adriana Méndez-Jiménez, Department of Geography, Texas A&M; Email: adrianamendezj@tamu.edu

Paper: **“Effect of oceanographic features on the synchronicity between fish spawning aggregations and whale shark (*Rhincodon typus*) feeding aggregations at Gladden Spit, Belize”**

Key words: fish spawning aggregations, currents, whale sharks

Whale sharks aggregate to feed on plankton blooms caused by seasonal upwellings and mass spawning events from invertebrates and fish. However the dynamics of the interaction between coastal currents, water temperature, biomass concentrations and whale shark presence are still unclear. The purpose of this study is to examine how oceanographic conditions influence the simultaneous presence of fish spawning aggregations and whale sharks at Gladden Spit, Belize. This research contributes to general understanding of how abiotic factors trigger biological activity and relationships among species in marine environments and will support better ecosystem-based conservation and management strategies.

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Poster: **“Sam Houston State University introduces Graduate Program in Applied Geographic Information Systems”**

Key words:

This poster presentation is regarding the degrees offered in the department of Geography and Geology at Sam Houston State University. The department offers bachelor’s degrees in Geography, Geology and Social Science. This year the department also introduced a new Graduate Program in Applied Geographic Information Systems. The graduate program provides students the critical knowledge to succeed in the challenging world of geospatial technologies. This includes courses on global positioning system, remote sensing, GIS and web-based mapping and spatial analysis. In particular, applications of these technologies in the oil and gas industry, local government, national security and market research are featured.

Jim Norwine, Department of Physics/Geosciences, Texas A&M University-Kingsville; Email:
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Paper: **“Toward 2100: Imagining a World after Climate Change and Culture-Shift”**

Key words: Climate change; culture-shift; geosophy; postmodernity; world in 2100

It is my intuition that a “double whammy” driven by a pair of change-agents is beginning to occur: first-order environmental change in the form of *global warming*, and a shift to a *postmodern “social imaginary”* (Taylor 2004) as dominant and determinative of the normative or “default” cultural condition. We thus have two trends moving in opposite directions: climate change, which is constricting the limits of possible behaviors, and postmodern culture, which is enlarging them to infinity. This, in a civilization which some would say already shows signs of suffering systemic weakness. Can a world *after* climate change and culture-shift be imagined and, if so, what will it look like? I have assembled an international team of geographers and other scholars in order to address those questions in a book to be published by Springer in 2012.

Sarah Ildiko Nyikos, Department of Geography, Texas A&M University; Email:
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Poster: **“Meander migration and tree establishment on the Trinity River, southeast Texas”**

Key words: Meander migration, vegetation establishment, fluvial geomorphology

Dynamics of meandering rivers both affect and are affected by landscape and vegetation evolution processes. The purpose of this research is to determine the influence of river meandering processes on tree establishment and species diversity on a meander bend of the lower Trinity River, Texas. I hypothesize that tree establishment and diversity are influenced by the spatio-temporal evolution of the channel morphology. To test this hypothesis, detailed field data collected on vegetation and soil characteristics will be analyzed in relation to the patterns of meander migration. GIS-based multi-temporal aerial photography analysis will be performed to determine meander migration patterns.

Adam Payne and Amy Graham, Department of Geography, Oklahoma State University; Email: paynea@okstate.edu and amy.graham@okstate.edu

Poster: **“America’s Cobblestone Community: The Cultural and Historical Geography of Medicine Park, Oklahoma”**

Key words: Medicine Park, cultural geography, historical geography, repeat photography

Medicine Park was founded in 1908 as Oklahoma’s first tourist resort. The reported healing powers of Medicine Creek, flowing through the center of town, coupled with its prime location led to the creation of this tourist-focused town. However, during the Great Depression, Medicine Park suffered an economic downturn that would not end until the 1990s when a renewed interest took root in the town. Accompanying the town’s revitalization efforts was a desire to restore Medicine Park’s unique historical and cultural milieu. Using repeat photography, this poster illustrates the importance of preserving and restoring the unique cultural and historical geography of Medicine Park.

Gregory A. Plumb, Department of Cartography and Geography, East Central University; Email: gplumb@ecok.edu

Paper: **“Distinguishing Units of the National Park System”**

Key words: national parks

There are currently 392 park units administered by the National Park Service. Compiling a definitive list is a daunting task, as errors of omission and commission are prevalent. NPS publications are frequently misleading. Agencies outside of the NPS use some of the same surnames, such as National Recreation Area. A stamp program initiated by the non-profit group, Eastern National, has ballooned to include park subunits and its popularity has spawned copycats. Park names and designations can change and units added or removed from the system. Through perseverance, a definitive list of the units has been derived with a comprehensive history encoded.

Jess C. Porter, Department of History, University of Arkansas, Little Rock; Email: jcporter@ualr.edu; co-authors: Carlos Cordova, Department of Geography, Oklahoma State University; Jianjun Ge, Department of Geography, Oklahoma State University; William Johnson, Department of Geography, University of Kansas; Rolfe Mandel, Kansas Geological Survey, University of Kansas; Michael Palmer, Department of Botany, Oklahoma State University

Poster: **“Great Plains Paleoenvironments: Fire, Large Herbivore, and Climatic Impacts on Vegetation”**

Key words: Paleoecology, Great Plains, Bison

Paleobiomes, Paleopastures and Paleofires (PPP) is a research initiative that will test a number of hypotheses regarding the role of climate, fire and large herbivores in the evolution of grasslands. This integrative study includes components of physical geography, Quaternary paleoecology, ecology, paleontology, archaeology, and history. Our main objective is to create a spatial database of multi-proxy records for reconstructing paleograsland conditions in the Great Plains. This poster illustrates the methodological scheme for the paleo-reconstruction of

the grassland-fire-grazing relationship that is based on the principle that soils and paleosols are archives containing the record of vegetation structure, fire and herbivore influence.

William C. Rowe, Department of Geography and Anthropology, Louisiana State University;
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Paper: “Colonialism, Neo-Liberalism, and Local Culture: How Tajikistan Negotiates Its Post 9/11 Economic Space”

Key words: Tajikistan, colonialism, economic space

When the focus of the world turned to Central Asia in the wake of 9/11, many academics felt the countries in the region were given a second chance to break from their Soviet past and forge new economic and political realities for themselves. Tajikistan, easily the poorest in the region, has had a considerably more difficult time accomplishing this. This paper will address their path from debilitating demodernization in the 1990s, to their present economic situation in the region between Russia, China, and the United States and the results and repercussions of 8% growth each year of the past decade.

Aswin Subanthore, Department of Geography, Oklahoma State University; Email:
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Paper: “Asian Indian spaces of assimilation in Schaumburg, Illinois”

Key words: Immigration, Transnationalism, Urban Geography

Cultural and urban geographers have advanced studies related to immigrant identities while looking at socio-spatial process of identity. As a result, geographers have brought notions of place into the broader discussion of immigrant place-making. Further, immigration into the United States has witnessed increased suburban trends and recent literature juxtapositions suburbanization with immigrant visibilities. However, as the nation’s urban population expands the urban frontier; there is a dearth within studies that identifies the constructions behind immigrant visibilities. This paper is in part a larger dissertation study aimed at identifying visible and invisible spaces of assimilation as it relates to Asian Indians in Schaumburg.

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Paper: “A 3-step Floating Catchment Area (3SFCA) Method for Characterizing Spatial Access to Health Care Services”

Key words: Spatial Access, Floating Catchment Area Method, Gravity Model, Primary Care Physician

This paper proposes a 3-step floating catchment area (3SFCA) method to minimize the overestimated-demand for health care, a common problem in previous spatial access models. A population-division process is incorporated into the method to account for a reasonable scheme of health care demand and supply. A case study was conducted to determine spatial access to primary care physicians in the Austin-San Antonio corridor in Central Texas. The results suggest that the proposed method can effectively minimize the overestimation of health care demand and provide a more balanced geographic pattern of spatial access than the enhanced 2-step

floating catchment area (E2SFCA) method. This study also indicates that the relative spatial access was more stable to varying degrees of distance impedance than absolute spatial access.

Garrett Wolf, Department of Geography and Anthropology, Louisiana State University; Email: Gwolf1@lsu.edu

Poster: **“Economic and Environmental Geography of Butte, Montana”**

Key words: Butte, mining, degradation, environmental perception

Butte has historically relied economically on mining and it has been the largest single employer in Butte, until it was recently surpassed by the local Wal-Mart. My research explores how mining has degraded the environment and influenced citizens' perception of the environment as well as the purpose of land and natural resources. Economically, I looked at how Butte compares with other cities in Montana and how it could potentially position itself to find new economic stimuli in the future. In addition, I explored how Butte deals with its own environmental history and how it is attempting to alter the perception of the environment of Butte.

Michael S. Yoder, Department of Geography, University of Central Arkansas; Email: myoder@uca.edu

Paper: **“Entrepreneurial Governance and Economic Development in Micropolitan Cities of Arkansas”**

Key words: Entrepreneurial governance, micropolitan cities, Arkansas, economic development

An important theme in contemporary urban geography is "entrepreneurial governance," the emphasis by the local state on attracting business investment in cities. The bulk of the literature has emphasized metropolitan areas, including "global cities," owing to the large scale of property development typical in such places. The phenomenon has not been adequately addressed in the case of small cities, including the micropolitan category. Micropolitan cities vary widely in terms of success at attracting and retaining manufacturing, logistics, and related companies. This paper examines entrepreneurial governance in micropolitan cities of Arkansas, and highlights the relatively narrow array of employment-generating activities that comprise their economic landscapes. Non-profit economic development corporations and provision of inexpensive land in suburban industrial parks typically are the cornerstones of economic development strategies in these cities.

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Poster: **“Visualizing a Bedlam Game in a Space-Time GIS”**

Key words: time geography, space-time GIS, 3D visualization, spatiotemporal pattern

In this study, we attempt to apply the time geography concepts to the study of the movement patterns of individual players in a team sport. A basketball game played by Oklahoma State University and the University of Oklahoma in the 2009 NCAA Big 12 Tournament is selected in this study. The movements of each player in the game are digitized into GIS and represented as space-time paths. A 3D space-time GIS environment is created to visualize the players' paths and explore their spatio-temporal movement patterns. Such an analytical environment can be

useful to analyze/recognize players' movement patterns and evaluate how well a player has executed the game plan in a team sport game.

Panshu Zhao, Geography Department, Texas A&M University; Email: rochesterzhao@tamu.edu

Poster: "In situ validation and relevant analysis of snow albedos derived from ETM+/MODIS images"

Key words: Snow albedo, ETM+, MODIS, Kriging

Several remote sensing methods exist for imaging snow albedo, however, there is significant debate on the best method for inverting satellite observations into albedo and for validating the retrieved albedo for low resolution sensors. Here we examine spatial variations in snow albedo observed in the field under three different conditions in order to assess how representativeness an individual in situ observation of snow albedo is when comparing to the 250 -1000 m resolution of the Moderate Resolution Imaging Spectroradiometer (MODIS) and its relationship with land surface types. In addition to the field observation, albedos estimated from Landsat Enhanced Thematic Mapper Plus (ETM+) are also examined. In order to examine the spatial variability of albedo from in situ observations and ETM+, and to compare the snow albedo retrieved from MODIS, Kriging, a geostatistical techniques is used. The semivariance fits well for the Kriging model derived from ETM+ images, but the semivariance from in situ data is on the contrast.

City of Tahlequah, Oklahoma

"Tahlequah is located in the "Lakes Country" of Northeastern Oklahoma in Cherokee County, with a population of 14,458 according to the 2000 census. The City of Tahlequah is the oldest municipality in Oklahoma by virtue of an incorporation act by the Cherokee National Council of 1843, more than half a century before Oklahoma gained statehood.

Tahlequah has the distinction of being the capital of both The Cherokee Nation and The United Keetoowah Band of Cherokee Indians.

Tahlequah is unique in its location, centered in the midst of the Illinois River Valley, with Lake Tenkiller and Lake Fort Gibson close by to provide unlimited recreation and beautiful scenery for the enjoyment of our citizens as well as the many tourists and travelers who pass our way.

The name, according to legend, derives from the Cherokee word "Ta'ligwu" meaning "just two," or "two is enough." The "two" refers to a meeting between elders that presumably took place shortly after the Trail of Tears. Three tribal elders had planned to meet to determine the location of the Cherokee Nation's permanent capital. Two elders arrived and waited for the third. As dusk approached, they decided that "two is enough."

A more likely origin for the name is that it is named for an ancient eastern Cherokee town of Great Tellico, the English spelling of Cherokee *Talikwa*, the meaning of which is lost, according to James Mooney, although some trace it to the word tel-i-quah which is interpreted as "plains".

Northeastern State University and the Headquarters of the Cherokee Nation are also located here and are great assets to our area, providing many job opportunities. The natural beauty and rich heritage of this part of the country are unsurpassed."

Quoted from General Information, City of Tahlequah.
http://cityoftahlequah.com/community/general_info.htm
Obtained October 11, 2010.

The Cherokee Nation's Capital, Tahlequah

"In 1839, the Cherokee people began to settle into their new land in Indian Territory after the forced removal from their homelands in the southeastern United States. They developed and rebuilt a sophisticated government, which included the writing of a national constitution.

There are several stories about what the name Tahlequah means and how it was the chosen name for the Cherokee capital city. More than likely, the name was transplanted from an old town back in the Cherokee's original homeland.

In 1844, the first brick structure in Tahlequah was erected on the southwest corner of Capitol Square to house the Cherokee National Supreme Court. By 1850, the town had its first doctor, D.L. Thompson, as well as a dentist and an attorney. The post office was relocated from neighboring Park Hill to Tahlequah around this time as well.

In 1852, the town of Tahlequah became incorporated. The Cherokee Nation prospered along with its capital city, with two schools of higher education, a functioning government and a working judicial system. This would all come to an end during the dark era of the Civil War. The city of Tahlequah was the site of several war-related incidents, including the night Confederate Brigadier General Stand Watie burned down the council houses in Capitol Square.

After the Civil War, citizens of Tahlequah and the Cherokee Nation began rebuilding. A new brick building was placed in the center of Capitol Square in 1870 to replace the council houses that had been burned. A new penitentiary was built in 1875 to house prisoners from across the territory. In 1889, the new Cherokee Female Seminary was built to the northwest of town, joining the Male Seminary which had been in Tahlequah since 1851. Banks, churches, mercantile stores and restaurants continued to develop along the main street of Tahlequah, making it a hub of commerce.

In 1898, the U.S. Government passed the Curtis Act, which stripped Cherokee tribal courts of their authority. By 1902, the Dawes Commission, in charge of assigning allotment lands to the tribes, was well established in the Cherokee Nation. In April 1906, Congress passed the Five Tribes Act, which allowed tribes to continue their governments, but addressed the liquidation, or selling off, of assets of the Indian nations in Indian Territory. By the time Oklahoma became a state in 1907, tribal governments across the former Indian Territory had been crippled to the point of dysfunction.

Although the Cherokee Nation was officially disabled, the citizens still supported and helped care for each other. Tahlequah became the seat of Cherokee County and a thriving city of commerce. The area's population continued to grow with the influx of settlers into the new state.

Many Cherokees could not survive in this new economy. Malnutrition and starvation were widespread, but the Cherokee people stuck together, sharing their meager food, clothing, and shelter. The miseries of the Cherokee people deepened with the Great Depression during the 1920s and 1930s. With a lack of food and a worsening economic situation, many Cherokees began to leave the region and seek work elsewhere. Thousands eventually traveled to California

to work as migrant farmers while others sought employment in Texas. These migrations are called the “Economic Trail of Tears” by many people.

During the 1960s, civil rights legislation began to slowly restore tribal sovereignty and helped to re-establish Cherokee leadership in northeastern Oklahoma. In 1970, Public Law 91-495 was enacted to “authorize each of the Five Civilized Tribes of Oklahoma to properly select their principal officer” and in 1971, W.W. Keeler became the first Principal Chief of the Cherokees in 64 years. The Cherokee Nation was again unified, and Tahlequah was once again the capital city of the Nation.

In 1975, Principal Chief Ross Swimmer was elected, and a new constitution was adopted. In 1990, Principal Chief Wilma Mankiller signed the Tribal Self-Governance agreement with the United States, which brought Cherokee tribal sovereignty full circle. Tribal administration was now able to design programs and plan services for the betterment of tribal citizens. Health care, family services and education, among other services, are now available to citizens through programs designed and managed by the tribe.

Today, the Cherokee Nation continues to thrive both culturally and financially. The Cherokee people have survived decades of adversity through determination and resilience. Now culturally diverse, Tahlequah remains the capital city of the Cherokee people and a monument to Cherokee history.”

Quoted from **Tahlequah History Trail** by the City of Tahlequah.

<http://cityoftahlequah.com/city/departments/parks/Tahlequah%20History%20Trail/pdf/History%20Sign%20-%20Cherokee%20Settlement.pdf>

Obtained October 11, 2010.

History of the Cherokee Female Seminaries

In 1839, the majority of the Cherokee people arrived in Indian Territory after the forced removal from their ancestral homeland in the southeastern United States. They quickly settled into their new surroundings and began to reunite as a nation. The Cherokee people understood the value of educating their children and quickly formed a public school system.

In 1847, the Cherokee Nation, led by Principal Chief John Ross, began building two institutions of higher learning in and around their new capital city of Tahlequah. Both the Male and Female Seminaries opened May 7, 1851, and taught the equivalent of a college preparatory level of education. The curricula were modeled after schools in the eastern United States, with Mount Holyoke Female Seminary in South Hadley, Massachusetts, being the model for the Cherokee Female Seminary.

The first Female Seminary was located in Park Hill, Indian Territory, just south of Tahlequah. It was the first institution of higher learning for women west of the Mississippi River. The seminary included classrooms, dormitories, a chapel, and an infirmary. Students followed a stringent daily schedule, which left them with little free time. Church attendance was mandatory for all students. For entertainment, they held music recitals, staged dramatic plays and even published their own magazine, *Cherokee Rose Buds*. The graduation rate was low as many of the students either married or returned home to help their families.

The Female Seminary operated until financial difficulty forced it to close in 1856 and it remained closed during the Civil War. It was reopened to students in 1871, but on Easter Sunday 1887, the Female Seminary burned to the ground. The disaster is documented as unintentional, and today only three columns remain and may be viewed on the grounds of the Cherokee Heritage Center in Park Hill. Two reconstructed columns made from bricks gathered from the rubble of the Male and Female Seminaries can be found on the southwest lawn of Seminary Hall on the Northeastern State University campus.

The Cherokees were determined to rebuild and to offer the same high-level education for their women. In 1889, the Female Seminary was rebuilt in Tahlequah at a cost of over \$60,000, which came from the lease money for grazing rights to the Cherokee Outlet. Building materials were acquired locally, and bricks were fired on site. At the time, it was the largest building erected by an Indian Nation.

After the building was complete, over 200 female students moved in to begin their studies. They studied many subjects including mathematics, philosophy, Latin, grammar, composition, Bible studies, geography, literature and science. Each student was expected to clean her own room, which was inspected daily by the teaching staff. They were also assigned chores around the building, such as sweeping, making fires, cleaning lamps, washing dishes, and waiting tables in the dining hall.

In 1875, Miss Ann Florence Wilson became the principal of the Female Seminary and remained in that position for 26 years. She believed in the power of physical fitness and led the students on three mile walks every day. Other physical activities such as tennis, basketball, physical fitness drills and various other clubs and organizations were available to Seminary students. Receptions were regularly held with the Male Seminary students, as were dramatic plays.

The Cherokee Female Seminary remained in operation until 1909, when the new State of Oklahoma purchased the building from the federal government. The government had seized the school as part of the dissolution of the Cherokee Nation that started with the Curtis Act of 1898 and continued with various acts through the years until statehood. The state paid \$45,000 for the building and property. After the purchase, it became the Northeastern State Normal School. The school changed names over the years, and in 1974, it was named Northeastern State University, the name by which it is known today. What once was the Cherokee Female Seminary is now Seminary Hall and is still in use as offices and classrooms.

For fifty years, more than 3,000 young women attended the Female Seminary. The education they received there helped enrich their identities as Cherokee women. Seminary Hall, a shining monument to Cherokee history and culture, continues to be revered as the original building and the nucleus around which the Northeastern State University campus was built.

Quoted from **Tahlequah History Trail** by the City of Tahlequah.

<http://cityoftahlequah.com/city/departments/parks/Tahlequah%20History%20Trail/pdf/History%20Sign%20-%20Seminary%20Hall.pdf>

Obtained October 11, 2010.