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National Biological Honor Society

South Central Region



South Central Regional Convention

March 31st - April 2nd, 2023

Mount Lebanon Retreat and Conference Center

Cedar Hill, TX

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Schedule of Events

Friday, March 31

3:00 – 10:00 PM	RegistrationDBU House
3:00 – 5:00 PM	Leave scrapbooks for judging.....DBU House
6:00 – 7:00 PM	DinnerDining Hall
7:30 – 8:30 PM	Chapter Introductions Texas Hall
Until 11:00 PM	Upload Oral Presentations to LaptopsDBU House
8:30 – 11PM	Free Time (we will have indoor games/movies available in Texas Hall)

Saturday, April 1

8:00 – 9:00 AM	BreakfastDining Hall
9:15 – 11:30AM	Oral Presentations..... Texas Hall & Lone Star
11:30 – 12:45 PM	Poster set up Texas Hall & Lone Star
12:00 – 1:00 PM	LunchDining Hall
12:45 – 1:30 PM	Pre-Judging of Posters Texas Hall & Lone Star
1:30 – 3:30 PM	Poster Presentations/Judging Texas Hall & Lone Star
3:45 – 4:30 PM	Regional Business Meeting Texas Hall
4:30 – 6:00 PM	Free Time
6:00 – 7:00 PM	DinnerDining Hall
7:30 – 9:00 PM	Award Presentations (w/ Guest Speaker) Texas Hall
9:30-11:00 PM	Free Time (we will have a group campfire available at Camp Chuala with s'mores and movies/games available in Texas Hall)

Sunday, April 2

8:00 AM – 9:00 AM	BreakfastDining Hall
7:30 – 10:30 AM	Departure.....DBU House

Participants MUST turn in room keys AND wait for a room check by a member of the Epsilon Sigma or Omicron Kappa Chapters BEFORE YOU CAN LEAVE.

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National and Regional Officers

National President: Dr. Julie Ballenger
Columbus State University (Columbus, GA)

South Central Vice President: Dr. Debra Hinson
Dallas Baptist University

South Central District 1 Director: Dr. Vijay Somalinga
Southwestern Oklahoma State University

South Central District 2 Director: Dr. Lisa Ellis
Houston Christian University

South Central Student Officers

President James Bautista, Epsilon Sigma
Angelo State University

Vice President..... Jordan Green, Omicron Kappa
Dallas Baptist University

Secretary Tommy Foster, Omicron Kappa
Dallas Baptist University

Dear Student Delegates and Faculty,

Greetings to all attending the 2023 South Central Regional Convention. “Convention” sounds like a painful experience to most students until they experience a TriBeta Convention. It’s such a great time to see the wonderful research conducted over the past year in the form of posters and presentations. TriBeta organizations coming together to present, compete and make business decisions regarding our region is very powerful.

The planning and execution of our regional convention requires many hours of work by the host chapter. I would like to thank the Epsilon Sigma Chapter at Angelo State University, for their leadership in the planning and organizing this convention. Ms. Hannah Jones and Ms. Carla Ebeling and the students at Angelo State University have put a considerable amount of time and energy into setting up the program and scheduling events that make a convention operate smoothly. It is through the efforts of these members of the host and co-host chapters that the convention will be a success. Please be sure to thank them for their hard work to provide us with a fantastic convention.

As always, we have a great lineup of oral and poster presentations, representing all areas of the biological sciences. To all the students that are presenting their research this weekend: thank you! I want to encourage you to consider presenting your research at the National Biennial Convention scheduled for June of 2024 in Georgia. The winners of the Brooks and Johnson Awards qualify for up to \$750 to support travel to this national convention. Students who want to attend the national convention may apply for travel grants to assist in the cost of the convention. The national convention is such a great experience and I want to encourage you to attend whether you present research or not.

One of the best things about attending the convention is hearing the research conducted by students just like you. Sometimes research appears to be out of reach to us because our university is not on the cusp of curing cancer. Making the discovery that you can do research as an undergraduate and that TriBeta will help to make it possible is exciting. I also want to encourage our student researchers to take advantage of the funding and publishing opportunities for TriBeta members. TriBeta awarded over \$65,000 in student research funding through the TriBeta Research Grant Program. Watch the website for information about grant applications starting in August. Another fabulous opportunity is for students to submit their work for publication in the TriBeta journal *BIOS*. Once again, check the TriBeta web page (www.tri-beta.org) for info. Our new Executive Director, Iris Daly has been working diligently to rework the website and make it more user friendly. Keep an eye out for sales on the new TriBeta merch too.

Spring in North Texas can be diverse, but I know we are all going to have an excellent time at Mt. Lebanon. Enjoy the research and enjoy the outdoors this weekend. Take advantage of your time away from the university to enjoy the beauty of nature and to make some valuable connections with other biology scholars. I look forward to this convention every year and this year is no exception. I hope you have a memorable time.

Dr. Debra Hinson
Southcentral Regional Vice President
debrah@dbu.edu

Saturday Evening Awards Ceremony Keynote Speaker

Krysta Demere

Wildlife Diversity Biologist, Trans-Pecos

Texas Parks and Wildlife Department

Email: Krysta.demere@tpwd.texas.gov



As a Diversity Biologist for Texas Parks and Wildlife, I supervise non- game research projects, provide technical guidance to private landowners regarding management and effective conservation actions for rare and threatened species, conduct outreach programs for landowners and the public, and conduct surveys for nongame species across the ~25 million acres that encompass the 16 counties of the Trans-Pecos Wildlife District. My efforts within the discipline of mammalogy for the past year have primarily focused on compiling a comprehensive database for historical and recent black bear observations, establishing a genetic tissue collection for black bear samples retrieved within west Texas, monitoring overwintering western bat species for the presence of Pd and potential development of white-nose syndrome, and investigating disease outbreaks in local lagomorphs. I have had the honor of serving as the official artist for TSM since 2018 and look forward to representing the society each year.

Host Chapters for 2023 βετα βετα βετα

South Central Regional Convention



Angelo State University, Epsilon Sigma – Host

The Epsilon Sigma Chapter of Angelo State University, in San Angelo, TX was established in 1970 by Dr. Gordon Creel, a former department head and professor for the biology department. Currently, Ms. Carla Ebeling and Ms. Hannah Jones are the current advisors for our chapter. Founded in 1928 as San Angelo Junior College, Angelo State University now houses six colleges with over 100 majors, minors, and concentrations and has over 10,000 students! Angelo State's Epsilon Sigma Chapter is very active both within the university as well as throughout the city of San Angelo, providing services such as STEM outreach events, city and highway clean ups, and recycling events. Our chapter also actively hosts fundraising events, not only for the chapter, but also for the community. Our chapter has been recognized nationally five times as an Outstanding Chapter and taken home the Lloyd M. Bertholf Award a total of nine times! We're also proud to call our own, James Bautista, the President of the South-Central Region. The Epsilon Sigma Chapter of ASU is excited to host, along with the Omicron Kappa Chapter of DBU, the 2023 South Central Regional Convention. We welcome every individual and chapter to an exciting weekend filled with research presentations, chapter discussions, and a wonderful time with others who share a love and passion for the biological sciences!



Dallas Baptist University, Omicron Kappa – Cohost

The Omicron Kappa Chapter of Dallas Baptist University, in Dallas, Texas, was founded in 2012. The current and original sponsor is Dr. Debra Hinson. DBU, founded in 1898 as Decatur Baptist College, moved to Dallas to become Dallas Baptist University in 1965. There are approximately 4300 students enrolled at the undergraduate and graduate levels. The Omicron Kappa chapter participates in the annual Back to School Bash to welcome new students to the Science and Math College and the Herb Robbins Science Symposium for undergraduate research presentations. There are many events Omicron Kappa hosts throughout the year such as suture clinics, freshman lab orientation, guest speakers, professor panel discussions, and more. Omicron Kappa is the home of the 2022-23 SC Region VP and Secretary.

Students from this chapter have presented research at the conventions each year and Omicron Kappa placed in Chapter History each year since and gained 3rd place at the 2022 National Convention. Omicron Kappa is looking forward to serving as a co-host at this year's convention!

Participating Chapters

District One	Arkansas, Louisiana, and Oklahoma	
Alpha	Oklahoma City University	Oklahoma City, OK
Delta Sigma	Southwestern OK State University	Weatherford, OK
Mu Kappa	Oral Roberts University	Tulsa, OK
Nu Delta	Centenary College of Louisiana	Shreveport, LA
Nu Eta	University of the Ozarks	Clarksville, AR
Omicron Phi	Southern Nazarene University	Bethany, OK
Psi Delta	East Central University	Ada, OK
District Two	Texas	
Alpha Tau Chi	St. Edward's University	Austin, TX
Delta Rho	Austin College	Sherman, TX
Epsilon Sigma	Angelo State University	San Angelo, TX
Iota Omicron	Houston Christian University	Houston, TX
Nu Beta	University of St. Thomas	Houston, TX
Nu Gamma Nu	University of Houston-Victoria	Victoria, TX
Omicron Kappa	Dallas Baptist University	Dallas, TX

Convention Instructions

Chapter Introductions

On Friday night, chapters get the chance to introduce their members and describe this past year's activities and accomplishments. Chapters are highly encouraged to use a PowerPoint presentation to supplement their introductions. Please keep introductions to 5-7 minutes in length.

Oral Presentations

Two concurrent sessions will run in the morning (9:15-11:45) in Texas Hall and Lone Star Room. Presenters should bring presentations on a memory stick/thumb drive. Please ensure your presentations have been uploaded to the laptops Friday evening or early Saturday morning before presentations begin. Remote clickers will be available in order for presenters to advance slides. Moderators will be available to introduce your talk. The time allotted for oral presentations is 15 minutes; 13 minutes for your talk with 2 minutes of time available for questions. Moderators will not allow you to go beyond 15 minutes.

Poster Sessions

One poster session will take place in Texas Hall (TXH) and Lone Star Room (LSR) from 1:30-3:30 on Saturday. Easels, poster boards, and clips/tacks will be available for Poster Presenters. Posters need to be put up between 11:30am – 12:30pm on Saturday. Early judging (without presenters) will begin at 12:45 PM. Easels, poster boards, and tacks are available for Poster Presenters.

Scrapbook Competition

All scrapbooks must be deposited at in the DBU House by 5:00 pm on Friday, to be eligible for judging. They may be picked up Saturday after the business meeting.

E-Book Competition

All E-Books should be uploaded via the google form on the South-Central Convention website by 5:00 pm on Friday to be eligible for judging.

Cleaning Your Rooms & Checking Out

All chapters **MUST** check out with the host chapters. Members of Iota Omicron or Delta Sigma Chapters will inspect your room before you are cleared to leave. Rooms **MUST** be clean and **ALL TRASH** taken out and put into the proper trash receptacle prior to departure.

Oral Presentations Schedule

Balanos Session – Texas Hall (TXH)

- 9:15 – 9:30 Katherine Dempsey, Oral Roberts University – The effects of 6-gingerol on cell viability in HT-29 colorectal cancer cell line
- 9:30 – 9:45 Stephen Daniels, Oral Roberts University – Aryl Hydrocarbon Inhibition in Pancreatic Stellate Cells
- 9:45 – 10:00 Natalia Ramirez, Oral Roberts University – Testing the Cytotoxicity of Hericium erinaceus Mushroom Secretions Against U-87 MG Glioblastomas
- 10:00 – 10:15 Tommy Foster, Dallas Baptist University – Synthetic mechanical loading of Autophagy-deficient osteocytes in vitro
- 10:15 – 10:30 – Break
- 10:30 – 10:45 Shaina Banh, Austin College – Examining the effect of PA28 γ levels on the expression of E2F3B and its transcriptional partners.
- 10:45 – 11:00 Jose Ramirez, University of Houston-Victoria – Exploring the role of the human microbiome byproducts as a potential new therapeutic treatment for Primary Open-Angle Glaucoma
- 11:00 – 11:15 Danielle Taylor, Oral Roberts University – Full Spectrum CBD Oil-Induced Changes in Gene Expression in Tumorigenic Mammary Epithelial Cells
- 11:15 – 11:30 Lexi Brown, Oral Roberts University – Analysis of Expression of Pro-angiogenic Factors Following the Epigenetic Downregulation of Angiomotin

See next page for concurrent sessions occurring in the Lone Star Room

Boax Session – Lone Star Room (LSR)

9:15 – 9:30 Sydney Versen, Austin College – The Identification and Characterization of Tango6 in Early Zebrafish Development

9:30 – 9:45 Joseph Chrisman, University of the Ozarks - The study of the effect of Bacillus expressing plant elicitor peptides on germination and growth parameters in soybean plants.

9:45 – 10:00 Francisco Fuentes, Angelo State University – The Effects of Winter Storm Uri on Texas Birds

10:00 – 10:15 Saraya Roshelle Hunt, Southwestern Oklahoma State University – M.A.R.S. on Mars: Microbial Analysis of Regolith-Grown Species

10:15 – 10:30 – Break

10:30 – 10:45 Maggie Hollenbeck, Oral Roberts University – Preliminary survey of native bee species in Tulsa Co., Oklahoma

10:45 – 11:00 Triztan Thompson, Oral Roberts University – The Comparative Genomics of the RBCL gene of Cannabis sativa and other Medicinal Plants

11:00 – 11:15 Molly Wingard, Southwestern Oklahoma State University – Seasonal Patterns in Reproductive Output in a Self-Fertilizing, Hermaphroditic Fish

11:15 – 11:30 Halle Summers, Angelo State University – DNA Barcoding of Peromyscus from the Davis Mountains in Texas

*Abstracts are available by scanning the QR code on the back of your name tag, or by going to the regional TriBeta website (tribetasrc.com) to view. *

Poster Presentations (1:30 - 3:30pm)

Acorn Session – Texas Hall (TXH)

- Poster 1 – Diego De La Torre: Anti-Cancer Compounds Secreted by *Ganoderma lucidum*
- Poster 2 – Emily Holechek: *C. elegans* axonal anchoring complex plays a role in transporting cellular waste for degradation
- Poster 3 – Uzziah Sebastian Urquiza Exploring the Metabolic Plasticity of Pancreatic Cancer
- Poster 4 – Natalie Le: Expanding The Need To Study Endophytes And Plants Interactions
- Poster 5 – Jue Wang: Effects of *Trametes versicolor* Secretions on Lung Cancer Cells
- Poster 6 – Raymond Venice C. Cagumbay: Using DNA Barcoding to Identify Plant/Endophyte Relationships
- Poster 7 – Evelyn Alexia Carrion: The effects of toluene exposure on the fecundity levels and developmental growth of *Drosophila melanogaster*
- Poster 8 – Karter Morris: Developing a Functional Breeding Environment to Study Caudal Regression Syndrome in Early Embryonic *Danio rerio*
- Poster 9 – Emily Spillers: Calcium Regulation in Armadillos
- Poster 10 – Josue Maldonado: The Armadillo as an Animal Model for Investigating Human Mineralization Pathologies (Preliminary Study)
- Poster 11 – Oscar Cardenas: Are the dauers formed by *unc-33;daf-7* double mutants actually dauers?

Bird Session – Texas Hall (TXH)

- Poster 12 – Eve Dean: Comparing arthropod communities across seasonal temperature variation
- Poster 13 – Andrea Burt: Road fatalities of butterflies in Crockett County, Texas
- Poster 14 – Davis Stellman: How Mammal Presence Shapes the Soil, Plant, and Invertebrate Ecology of the Blackland Prairie
- Poster 15 – Matthew Godino: The Effect of Apiculture Stressors on the Immunological Response of Italian Honeybees
- Poster 16 – Gerard Sandate: The Effect of Energy Expenditure on Immunological Response Between Drones and Worker Honeybees
- Poster 17 – Rachel Uhlig: Female Amphipods Adjust Brood Sex Ratios Based on Mate Choice
- Poster 18 – Mariana Orozco: A germination study of nSiO₂ on the assessment of different priming conditions for optimal plant-nanoparticle interaction
- Poster 19 – Lindsey Wells: The Influence of Age on Experience-Induced Behavioral Changes
- Poster 20 – Michael Knabe: Foraging Behavior of Fruit Flies (*Drosophila melanogaster*) in a 3D Arena
- Poster 21 – Tyler Arnwine: Survey of Parasite Component Community in Snails from Sunset Pond
- Poster 22 – Victoria Lopez: Macrophage Inflammasome Trap *Shigella Flexneri*

Serpent Session – Lone Star Room (LSR)

- Poster 23 – Megan Lewis, Cale Eaton, and Christian Siegle,: Annotation of Novel contig22 of *Drosophila kikkawai*
- Poster 24 – Kaylyn Rowsey and Jillian Brassfield: Annotation of Two Genes Within Contig6 of *Drosophila kikkawai*
- Poster 25 – Regan Griffin and Mali Simmons: Raspberry Pi-based Automated Phenotyping of *Arabidopsis thaliana* during early development
- Poster 26 – Katherine McBroom: Exploring the Diversity of Soil Microbiota in Cadaver Decay Islands (CDI) located in Central Texas
- Poster 27 – Christof Rosler: Open-Ended Sequence Alignment Queries between Bonobo and Human Genomes: A Preliminary Study
- Poster 28 – Angelina Le: Metagenomics Analysis of Viral Families Carried by *Aedes* and *Culex* Mosquitos in the Greater Houston Area
- Poster 29 – Jhonathan Guerrero: Phylogenetic Analysis of West Nile Virus in Oklahoma
- Poster 30 – Evonn Annor: NCBI Blast: An Approachable Bioinformatics Tool for Genetic Analysis of *Pan paniscus* and *Homo sapiens* Genomes
- Poster 31 – Jayden Glover: The Antimicrobial Effects of Essential Oils From Brewer’s Spent Grain and Spent Hops
- Poster 32 – Ashley Nguyen: Exploring the Potential of Aqueous Dandelion Extract: A Comparative Study of Antimicrobial and Anticancer Properties
- Poster 33 – James C. Bautista: The Effect of Fructose-1,6-bisphosphatases on Autophagy Upregulation
- Poster 34 – Caitlin Wayland: In-Silico Analysis and Over-expression of an α -Carbonic Anhydrase Homolog from the “Brain-Eating Amoeba”, *Naegleria fowleri*

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2023 Regional Business Meeting Agenda

1. Call to order – President, James Bautista, Epsilon Sigma
2. Officer Introductions
 - A. President, James Bautista, Epsilon Sigma
 - B. Vice President, Jordan Green, Omicron Kappa
 - C. Secretary, Tommy Foster, Omicron Kappa
3. Roll Call of Chapters – Secretary, Tommy Foster, Omicron Kappa
 - A. One Vote Per Chapter
4. Report from Regional Vice President: Dr. Debra Hinson, Omicron Kappa
5. New Business
 - A. Selection of host chapter for 2024 South Central Regional Convention
(see Regional Bylaws)
 - B. Selection of co-host chapter for 2024 South Central Regional Convention
(see Regional Bylaws)
 - C. Election of Regional Student Officers to Serve at 2024 Regional Convention
(see Regional Bylaws)
 1. President
 2. Vice President
 3. Secretary
6. Other new business
7. Announcements
8. Closing Remarks
9. Adjournment

FAQs (Frequently Asked Questions)

- 1. Where do we take our scrapbooks?** We will have tables for scrapbook judging in the DBU House. Have your scrapbook there by midnight on Friday. Please remove it by Saturday night.
- 2. Is alcohol permitted on site?** *Absolutely not!* It is a privilege for us to have these facilities available for our conference and it is our obligation to adhere to the rules and regulations of Mount Lebanon. Violators will be reported to their respective university administrators.
- 3. Is the awards ceremony "dressy"?** We prefer that it be so, but you are not required to do so.
- 4. Are refunds available?** No. It is the obligation of your chapter to deal with inevitable cancellations or changes of plans of its members.
- 5. How do we check out?** You must report to DBU House to do so. We will check your facilities to ensure that you have thoroughly cleaned the premises, taken all trash out, and removed any personal belongings that can be identified as originating from your chapter.
- 6. How do we get the materials for displaying our posters?** On Saturday morning, you will find display easels and other mounting materials in Texas Hall. Your poster is assigned a unique and specific number and will be tagged. (See program schedule).
- 7. What are the rules for oral presentations?** You will get no more than 15 minutes including questions to make your presentation. Session moderators have been instructed to cut off presentations at the 15-minute mark.
- 8. What is the chapter introduction program scheduled for Friday night?** It is your chance to introduce your chapter to everyone. Please do not exceed 7 minutes in your presentation. We will have a computer available for you to show a power point presentation if you like.



Campus Map

1701 Texas Plume Road
Cedar Hill, Texas 75104
972-291-7156
www.mtlebanoncamp.com

FACILITIES

- CO** Camp Office
- DBU** DBU Hospitality House
- DGL** Dean Grande Lodge
- DH** Dining Hall
- HC** Health Center (summer)
- LSR** Lone Star Room
- M** Motel
- PC** Patton Chapel
- P** Pavilion
- TXH** Texas Hall
- WC** Worship Center

GROUP FIRE SITES

- GFS-1** Pecan Grove
- GFS-2** Camp Chuala
- GFS-3** Inspiration Point
- GFS-4** Revelation Point
- GFS-5** RV Park

ACTIVITIES

- Recreation Field
- Chuala Recreation Field
- Beach Volleyball
- Basketball/Volleyball (1,2,3)
- Volleyball (4,5)

MAP KEY

- paved roads
- gravel roads

LODGES

- C** Cedar - L3
- CB** Chinaberry - L11
- CW** Cottonwood - L14
- E** Evergreen - L9
- GM** Gladys Moore - L4
- HB** Hackberry - L1
- H** Hickory - L12
- L** Live Oak - L8
- M** Maple - L7
- MK** Millie Kohn - L5
- O** Oakwood - L15
- P** Pecan - L2
- R** Redwood - L13
- S** Sycamore - L10
- W** Walnut - L6

CABIN & BUNKHOUSES

- Bunkhouses (1-9)
- Camp Cabin (CC)

AMENITIES

- 1 Low Ropes Course
- 2 Group Camping Site A
- 3 RV Park
- 4 The Towers - High Ropes Course
- 5 Pools (summer only)

