



54th Annual Meeting
Missouri University of
Science and Technology
Rolla, Missouri
April 27-28, 2018

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MAS Meeting Schedule

Friday, APR 27

7:00-8:30 PM	Registration (Havener Center)
7:00-8:30	MAS Social (Havener Center)
8:00-8:30	MAS Council Meeting (Havener Center)

Saturday, APR 28 All Events in the Butler-Carlton Civil Engineering Hall

7:30-9:00 AM	Registration (Butler-Carlton Foyer)
9:00-9:45	Welcome and Plenary – Dr. Delbert Day “Research – Pathway to the Future” (Butler-Carlton 125)
10:00-11:30	Poster Session (Butler-Carlton Atrium)
11:30-12:00	Business Meeting (Butler-Carlton 125)
12:00-1:00 PM	Lunch (on own)
1:00-4:00	Oral Presentations (Butler-Carlton – see rooms below)

Oral Presentation Rooms - All in Butler-Carlton

Agriculture	110
Atmospheric Sciences	101
Biochemistry/Biomedicine/Biotechnology	120
Biology	121
Chemistry	124
Computer Science & Math	317
Conservation	121
Geography	216
Geology and Geosciences	314
Physics & Engineering	315
Science Education	316
Social & Behavioral Science	318

A complete list of abstracts for all presentations (oral and poster) can be downloaded at:

<https://www.moacademysci.org/annual-meeting/>

(Scroll down to Meeting Information and Schedule)

MST-GUEST WIRELESS ACCESS

Guest services are provided for guests only. Individuals that have S&T login credentials or an S&T registered device will need to access the MST-WPA SSID. Persons that do not possess a cellular phone will need to contact the Help Desk at 341-4357 or visit the Walk-In center to access the guest wireless.

CONFIGURE MST-GUEST WIRELESS

WINDOWS

1. Connect to SSID named MST-GUEST.
2. Open a web browser and click "Request a Guest account" when prompted.
3. Enter your valid email address, full name, mobile phone number, and mobile provider in the provided boxes.
4. Once the request is approved, You will receive a message that reads "Your request has been approved." Click Continue.
5. Two text messages will be sent to the phone number listed in step 3. The first text message will give general information about the network. The second will provide login information.
6. Log in using the information provided in the second text message received. Browsing will then become available.

If you continue to have trouble accessing the network, a tutorial with corresponding screencaps is available. Click [Access Guest Wireless Tutorial](#).

IPHONE

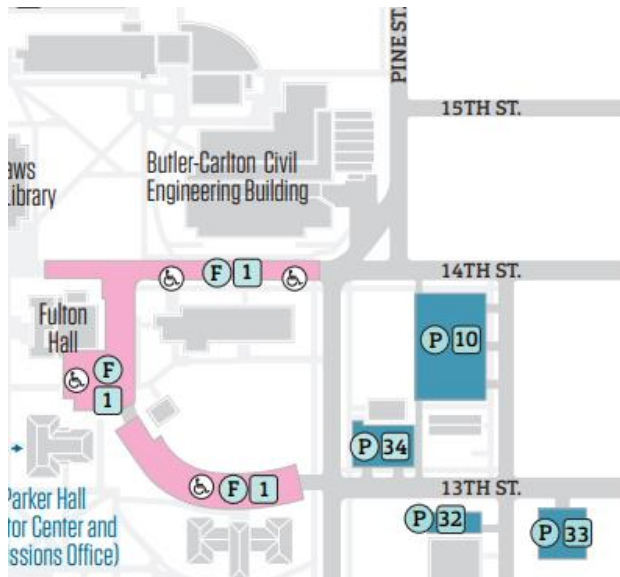
1. Connect to SSID named MST-GUEST.
2. Open Safari and click "Request a Guest account" when prompted.
3. Enter your valid email address, full name, mobile phone number, and mobile provider in the provided boxes.
4. Once the request is approved, you will receive a message that reads "Press Continue and you will be taken back to the login screen."
5. You will receive two text messages. The first text message will give general information about the network. The second will provide login information.

Missouri S&T Map



* **Building #2 – Butler Carlton Civil Engineering Hall**

* **Building #46 – Havener Center**



Parking is available in LOT P for Saturday.

Letter from the MAS President

I am pleased to welcome you to the 54th Annual Meeting of the Missouri Academy of Science (MAS) at Missouri University of Science and Technology (Missouri S&T) in Rolla. The purpose of the Academy, as stated in our constitution, “shall be to increase scientific knowledge and aid in its diffusion, to encourage and support the scientific spirit, to promote cooperation among the scientific interests of Missouri, and to foster the education of its citizenry concerning the constructive role of science and technology in the improvement of the general welfare of our society.” This Annual Meeting is an opportunity to participate and showcase many of the ideas and ideals of this purpose statement.

The Meeting begins on Friday, April 27, with activities in the Junior Division of the Academy. Both poster presentations and oral presentations will be occurring throughout the afternoon. Students in middle school and high school have completed science projects that they would like to share with you. You are welcome to attend these presentations to learn what science projects have been done and to give encouragement to students for their hard work. Awards will be handed out after all presentations have concluded. We also invite you to stay for the social scheduled for Friday evening. I am thankful to Dr. Keesoo Lee for her leadership of the Junior Division.

The Meeting continues on Saturday, April 28, with activities in the Senior Division of the Academy. First is a plenary session where Dr. Delbert Day from Missouri S&T will give a presentation on the importance of research in preparing us for and moving us toward the future. This session will be followed by poster presentations and oral presentations by undergraduate students, graduate students, college and university faculty, and professionals from all areas of the natural and social sciences. I am thankful to Dr. James “Tiger” Gordon for his leadership of the Senior Division.

The MAS Executive Council and Section Chairs are volunteers who are dedicated to making this organization run well, and I want to thank them all. We are always in need of others who would see MAS as an opportunity for service and be willing to volunteer in areas of need.

I hope that you enjoy your time at Missouri S&T for this Annual Meeting. May what we see, learn, and experience help us to be better students, educators, professionals, parents, and citizens as we move toward the future.

All the Best,

Richard McCall, PhD

President, Missouri Academy of Science, 2017-18

About the Academy

Scientists of the State of Missouri organized in 1934 to form the Missouri Academy of Science. By April 16, 1934, a Constitution and By-Laws were prepared and on August 14, 1934, the organization was incorporated.

The purposes of this Academy were presented in the fourth "article of agreement" as follows:

"This corporation is organized, not for profit but for the purposes of promoting the increase and the diffusion of scientific spirit, and of promoting cooperation between the scientific interests of Missouri. It proposes to accomplish these purposes:

- a. By holding meetings for the presentation of scientific papers embodying the results of original research, teaching experience, or other information of scientific interest.
- b. By fostering public interest in scientific matters, through open meetings, press releases and in such other ways as seem feasible.
- c. By encouraging local scientific organizations in every possible way.
- d. By promoting acquaintance in harmonious relationships between scientists in Missouri and among all who are interested in science.
- e. By supplying, so far as finances permit, a medium for the publication of results of original work, particularly those of special interest in this state.
- f. By concerning itself with legislation on scientific matters and providing opportunity for discussion of such legislation.
- g. By working in any and all other ways which may prove feasible, for the advancement of science in Missouri."

The Academy held its organizational meeting on April 13-14, 1934, with 250 people attending. At the December 1934, meeting, more than 400 people registered and by May 1935, there were approximately 750 members of the Academy. Statewide interest at a high level continued until activities made necessary by World War II caused disruption of Academy affairs except for some activity in the College Section.

Post-war revival of Academy activities started at a meeting on April 20, 1963, at Drury College. From the group of twelve persons who initiated the reactivation of the Academy in 1963, the membership has grown steadily to more than 800. Activities of the Academy have expanded to include the awarding of modest grants for projects proposed by high school and college students, and to sponsor the establishment of a Junior Academy of Science.

Since its reactivation in 1963, the Missouri Academy of Science has regularly held annual meetings at 16 different sites around the state. Presently, 49 colleges and universities around the State of Missouri hold an Institutional Membership status. Many industries and other private businesses are supporting the Academy with Corporate Memberships.

The Missouri Academy of Science is a non-profit organization and is supported solely by membership dues and donations. That is why we appreciate each new member and the current members who renew so faithfully each year. And it is because of their interest that the Academy continues its success as a fine scientific organization.

2018 AGRICULTURE SECTION

Butler-Carlton 110

Section Chair: Sven E. Svenson

TIME

ORAL PRESENTATIONS

- 1:00 S. Funk, A. Rogers and A. Giri, Department of Biology and Agriculture, University of Central Missouri. **REVISITING THE DUST BOWL.**
- 1:20 M. Bashyal, C. Ferguson, N. Hoilett, and O. Hernandez, Northwest Missouri State University. **IS CEREAL RYE AND HAIRY VETCH A FEASIBLE COVER CROP OPTION FOR CORN GROWERS IN NORTHWEST MISSOURI?**
- 1:40 C. Henderson and S. Nikaido, Department of Biology and Agriculture, University of Central Missouri, and O. Pérez-Hernández, School of Agricultural Sciences, Northwest Missouri State University. **IDENTIFYING AND CONTROLLING A SYMBIOTIC FUNGUS ASSOCIATED WITH TALL FESCUE.**

2018 AGRICULTURE SECTION

Butler-Carlton - Atrium

Section Chair: Sven E. Svenson

POSTER PRESENTATIONS

1. W. Doggett, F. Eivazi and M. Dolan-Timpe, Department of Agriculture and Environmental Sciences, Lincoln University in Missouri. **MEASUREMENT OF HEAVY METALS AND ENZYME ACTIVITIES IN THE WETLANDS OF THE MOREAU RIVER.**
2. M. Hill, A. Giri and K.W. Lovercamp, Department of Biology and Agriculture, Agriculture program, University of Central Missouri. **EFFECT OF ROTATING BOAR SEMEN POST-COLLECTION ON SPERM QUALITY.**
3. K.W. Lovercamp, M. Hill and A. Giri, Department of Biology and Agriculture, Agriculture program, University of Central Missouri. **DETERMINATION OF OPTIMUM TIME FOR SPERM MOTILITY ANALYSIS FOLLOWING SEMEN EXTENSION POST-COLLECTION AND SEMEN STORAGE.**
4. M. Adreon, N. Hoilett, A. Coy, O. Perez-Hernandez, and K. Mallikarjunrao, Northwest Missouri State University. **INFLUENCE OF OAK AND CORN BIOCHAR ON SOIL HEALTH: AN INCUBATION STUDY.**
5. A. Coy, N. Hoilett, O. Perez-Hernandez, M. Adreon. Northwest Missouri State University. **CAN THE INCLUSION OF LIVESTOCK GRAZING INCREASE THE ADAPTATION OF COVER CROPS IN FARMING SYSTEMS?**
6. I.S. Braden, E. Smothers, R. Lepski, R. Millburg, and B. Tremain. Department of Agriculture, Southeast Missouri State University. **EVALUATION OF AN ESTABLISHED RIPARIAN MANAGEMENT ZONE.**
7. C. Olewunne, O. Pérez-Hernández, and N. Hoilett, Northwest Missouri State University. **BEHAVIOR AND MORTALITY OF JUVENILES OF *Heterodera glycines* AT DIFFERENT pH *IN VITRO*.**
8. S.E. Svenson, Charles Nemanick Alternative Agriculture Garden, Department of Agriculture, Southeast Missouri State University. **NATIVE PERENNIALS FOR BUTTERFLY AND POLLINATOR GARDENS: THIRD YEAR PERFORMANCE IN SOUTHEAST MISSOURI.**

POSTER PRESENTATIONS

9. O. Babalola, Department of Agriculture and Environmental Science, Lincoln University. **PURIFICATION OF NUTRIENT POLLUTANTS IN DRINKING WATER (NITRATES AND PHOSPHATES) FOR SUSTAINABLE CLEAN WATER PROVISION USING NANOFILTRATION.**
10. N. Al-Awwal, M. El-Dweik, M. Dolan-Timpe and M. Alalem, Cooperative Research, Center of Nanotechnology, Lincoln University. **COMPARATIVE EFFICIENCY OF COLORIMETRY AND ION CHROMATOGRAPHY IN DETECTION AND DETERMINATION OF OTHROPHOSPHATE IN RUNOFF WATER.**
11. H. Johnson and R. Loesch, Department of Agriculture and Environmental Sciences, Lincoln University. **A CUSTOM-MADE AERATED STATIC PILE COMPOSTING SYSTEM WITH 3-E (ECONOMY, EASE OF ASSEMBLY AND EXPANDABILITY) FEATURES.**

2018 ATMOSPHERIC SCIENCE SECTION

Butler-Carlton 101

Section Chair: Patrick Market

TIME

ORAL PRESENTATIONS

- 1:00 W. Gilmore. National Weather Service Office, Little Rock, AR. **A DETAILED OBSERVATIONAL ANALYSIS OF A RAIN-WRAPPED EF-2 QLCS TORNADO**
- 1:20 J. Bongard, S. Marlow, and N. Fox, Atmospheric Science Program, University of Missouri. **MIZZOU'S NEWEST WEATHER RESEARCH INSTRUMENT: THE MICRO RAIN RADAR.**
- 1:40 K. Grempler, P. Market, and S. Ritter, Atmospheric Science Program, University of Missouri. **ANALYSIS OF SEVERE ELEVATED CONVECTION IN THE CENTRAL UNITED STATES.**
- 2:00 C. Henson and P. Market, Atmospheric Science Program, University of Missouri. **EVALUATING THE FRONTAL INFLUENCE ON CONVECTION USING PARCEL TRAJECTORIES.**
- 2:20 G. Ruhbeck, C. Brown, J.S. Renken, and A.R. Lupo, Atmospheric Science Program, School of Natural Resources, University of Missouri. **INTERANNUAL VARIABILITY OF SEVERE WEATHER OVER THE USA SINCE 1991.**
- 2:40 C. Brown, G. Ruhbeck, J.S. Renken, and A.R. Lupo, Atmospheric Science Program, School of Natural Resources, University of Missouri. **UTILIZING THE DAILY SOUTHERN OSCILLATION INDEX CHANGES TO DETERMINE SEVERE WEATHER POTENTIAL ON A SUBSEASONAL SCALE.**
- 3:00 A.P. Korner, K. Rojas, M. Garcia, A.R. Lupo, and J. Gilles. Atmospheric Science Program, School of Natural Resources, University of Missouri. **ENSO AND PDO-RELATED VARIABILITY IN SOUTH PACIFIC CIRCULATION PATTERNS AND SEASONAL RANGE PREDICTION FOR BOLIVIA IN SOUTH AMERICA.**
- 3:20 T. Eichler, School of Education, Saint Louis University. **IMPACT OF GLOBAL WARMING ON CYCLONE TRACKS IN THE NARCCAP MODEL SUITE.**
- 3:40 B. Efe, İ. Sezen, A. R. Lupo, A. Deniz, Department of Meteorology, İstanbul Technical University & Atmospheric Science Program, University of Missouri. **THE EFFECTS OF ATMOSPHERIC BLOCKING ON TEMPERATURE OBSERVATIONS IN TURKEY.**
- 4:00 A.R. Lupo and P.S. Market, Atmospheric Science Program, School of Natural Resources, University of Missouri. **CLIMATE CHANGE AND THE BUTTERFLY.**

2018 ATMOSPHERIC SCIENCE SECTION

Butler-Carlton Atrium

Section Chair: Patrick Market

POSTER PRESENTATION

1. M. Alkhaldi, Department of Agriculture and Environmental Science, Lincoln University of Missouri. **THE PRODUCTION OF AMMONIUM SULFATE FROM SULFUR DIOXIDE BY THE DESULFURIZATION OF A FLUE GAS USING AQUEOUS HYDROGEN PEROXIDE AND AMMONIUM SOLUTION.**

2018 BIOCHEMISTRY, BIOMEDICINE, & BIOTECHNOLOGY SECTION

Butler-Carlton 120

Section Chair: Joshua Smith

TIME

ORAL PRESENTATIONS

- 1:00 M. Moreno Imery, R. Knoerdel, J. Li, T. Hidvegi, D.H. Perlmutter, C.J. Luke, G.A. Silverman and S.C. Pak. Department of Pediatrics, Washington University School of Medicine. **HIGH-THROUGHPUT SCREENING FOR DRUGS TO TREAT ALPHA-1 ANTITRYPSIN DEFICIENCY.**
- 1:20 S. Yang, W. Liu, R. Nixon, and R. Wang. **Chemistry Department, Missouri University of Science and Technology. METAL-ION RESPONSIVE REVERSIBLE ASSEMBLY OF DNA ORIGAMI DIMERS: G-QUADRUPLEX INDUCED INTERMOLECULAR INTERACTION.**
- 1:40 A. Cristea, R. Bliss, J. Liu, W. Stoecker, H. Shi, J. Parks, and C. Burton, **Department of Chemistry, Missouri University of Science and Technology. ADVANCED BIOASSAY TECHNIQUES FOR BROWN RECLUSE SPIDER SEX PHEROMONE IDENTIFICATION.**
- 2:00 H. Marino, R. Ulbricht, R. Morris, and J Wang. Department of Biomedical Sciences, Missouri State University. **THE ROLE OF THE P2Y₂ RECEPTOR IN GLUCOSE TOLERANCE.**
- 2:20 P. Ballhorn, J. Smothers, V. Nguyen, and K. Kim, Department of Biology, Missouri State University. **YEAST MYOSIN 2 FOR THE TRAFFIC BOUND TO THE *TRANS*-GOLGI NETWORK (TGN).**
- 2:40 C. Horstmann and K. Kim. Department of Biology, Missouri State University. **SILVER NANOPARTICLES ON YEAST VIABILITY WITH BIOINFORMATICS ANALYSIS.**
- 3:00 Z. Ingram, R. Martin, and *A. Hulme. Department of Biomedical Sciences, Missouri State University. **HIV-1 UNCOATING IN A HUMAN MICROGLIAL CELL LINE.**
- 3:20 R. Mullner and J.J. Smith, Department of Biomedical Sciences, Missouri State University. **CHARACTERIZATION OF NUCLEOTIDE EXCISION REPAIR DAMAGE SENSOR RAD4 IN *TETRAHYMENA THERMOPHILA*.**
- 3:40 B. Abraham, T. Bross, J. Teagarden, S. Thomas and J. Ory, Department of Basic Sciences, St. Louis College of Pharmacy. **INDUCED EVOLUTION OF COPPER TOLERANCE IN *CRYPTOCOCCUS NEOFORMANS*.**

TIME**ORAL PRESENTATIONS**

- 4:00 R. Islam, H. Du, J. Park, H. Shim, and S.J. Kim, Natural Sciences, Northwest Missouri State University. **DNA BINDING MOTIFS OF MAP/ERK KINASE KINASE 1 (MEKK1).**
- 4:20 K. Kim, P. Makaraci, U. Saimani, and J. Smothers, Department of Biology, Missouri State University. **YEAST DYNAMIN FOR MEMBRANE FUSION.**

2018 BIOCHEMISTRY, BIOMEDICINE, & BIOTECHNOLOGY SECTION

Butler-Carlton Atrium

Section Chair: Joshua Smith

POSTER PRESENTATIONS

1. E. Nischwitz, and J.J. Smith, Department of Biomedical Sciences, Missouri State University. **ROLE OF RAD4 IN DNA REPAIR AND ITS INTERPLAY WITH *TETRAHYMENA THERMOPHILA*'S TELOMERES.**
2. J. Mooney, D. Morrone, and N. Sanguantrakun, Department of Basic Sciences, St. Louis College of Pharmacy. **O-CONJUGATION OF C5-CURCUMIN WITH VARIOUS CARBOHYDRATES TO EXAMINE PHARMACOTHERAPEUTIC EFFECTS.**
3. J. Stubbs, K. Wiele, C. Lemmons, and A. Barry, Biology Department, Missouri Southern University. **FIBROUS METAPLASIA OF SMOOTH MUSCLE TISSUE OF THE TUNICA MEDIA IN TORTUOUS ARTERIES.**
4. R. Nixon, S. Yang, W. Liu, and R. Wang. Department of Chemistry, Missouri University of Science and Technology. **DNA DECORATED MULTIFUNCTIONAL GOLD NANOPARTICLES.**
5. N. Thyparambil, S. Greaney, L. Gutgesell, and J. Semon. Department of Biological Sciences, Missouri University of Science & Technology. **BORATE BASED BIOACTIVE GLASS EFFECTS ON HUMAN ADIPOSE DERIVED STEM CELLS.**
6. J. Stenberg and J. Wang, Department of Biomedical Sciences, Missouri State University. **EFFECT OF LOSS OF P2Y₂ RECEPTOR ON PURINERGIC P2Y RECEPTOR FAMILY EXPRESSION.**
7. R. Schafer, C. Wilke, E. Csiki-Fejer, and J. Bashkin, Chemistry Department, University of Missouri-St. Louis. **TIME-DEPENDENT EFFECTS OF POLYAMIDES DECREASING HUMAN PAPILLOMAVIRUS DNA IN CELLS.**
8. J. Tee and J.J. Smith. Department of Biomedical Sciences, Missouri State University. **INTEGRATION OF THE NOURSEOTHRICIN ACETYLTRANSFERASE (NAT) CASSETTE AS A NOVEL SELECTABLE MARKER IN *TETRAHYMENA THERMOPHILA*.**

POSTER PRESENTATIONS

9. T.M. Walker, *L. Daniels, and J.J. Smith. Department of Biomedical Sciences, Missouri State University. **CLONING OF VARIOUS GENES IN THE MODEL ORGANISM TETRAHYMENA THERMOPHILA IN AN INTRODUCTORY BIOMEDICAL SCIENCES LAB.**
10. S. Thomas, H. Montejo, A. Baker, and J. Wang. Department of Biomedical Sciences, Missouri State University. **A SEMI-AUTOMATIC LEUKOCYTE TRACKING (SALT) METHOD FOR ANALYSIS OF LEUKOCYTE ROLLING AND ADHESION IN VIVO.**
11. A. Jin, *G. Jang, E. Nash, and D. Morrone, Department of Basic Sciences, St. Louis College of Pharmacy. **AN EFFICIENT SPLINTED SSRNA LIGATION ASSAY FOR RNA LIGASE ENGINEERING.**
12. R. Ulbricht, H. Brecount, Department of Biomedical Sciences, Missouri State University. **TISSUE SPECIFIC *CAPS1* RNA EDITING IN P2Y₂ RECEPTOR KNOCKOUT MICE.**
13. G. Scheidemantle and M. Keithly, Department of Chemical and Physical Sciences, Missouri Southern State University. **GLCNAC-MAL INHIBITION OF FOSB.**
14. Z. Ingram and A. Hulme, Department of Biomedical Sciences, Missouri State University. **CYCLOPHILIN A ENHANCES EARLY HIV-1 REPLICATION STEPS IN MICROGLIAL CELLS.**
15. R. Ulbricht and B. Mitchell, Department of Biomedical Sciences, Missouri State University. **RNA EDITING MEDIATES OLIGOMERIZATION STATE OF CALCIUM-DEPENDENT ACTIVATOR PROTEIN FOR SECRETION 1 (CAPS1).**
16. M. Alalem and M. El-Dweik, Cooperative Research Programs, Department of Life and Physical Sciences, Lincoln University. **A HIGHLY SPECIFIC METHOD FOR RAPID CAPTURE AND DETECTION OF ESCHERICHIA COLI O157:H7 FROM GROUND BEEF SAMPLES.**

2018 BIOLOGY SECTION
Butler-Carlton 121
Section Chair: James Campbell

TIME

ORAL PRESENTATIONS

1:00

1:20 D. Penning. Department of Biology and Environmental Health, Missouri Southern State University. **TUBE WRESTLING: USING INTEGRATIVE APPROACHES TO UNDERSTAND HOW SNAKES EAT SNAKES.**

1:40 C. Neff and D. Penning. Department of Biology and Environmental Health, Missouri Southern State University. **AN ANALYSIS OF THE INTRACRANIAL PRESSURE OF MICE DURING CONSTRICTION.**

2:00 T. Pashia and D. Penning. Department of Biology and Environmental Health, Missouri Southern State University. **PUTTING THE SNAP IN SNAPPING TURTLE: PROXIMATE DETERMINANTS OF BITE FORCE IN *CHELYDRA SERPENTINA*.**

2:20 J. White and T. Boman. Department of Biology and Environmental Health, Missouri Southern State University. **THIRD YEAR ASSESSMENT OF CLEAR CREEK, SPRING RIVER WATERSHED, MO, FOLLOWING FISH KILL MAY 2014.**

2:40 B. Thomas, R. Little and S. Lankford. Department of Biology and Agriculture, University of Central Missouri. **DEVELOPMENT OF PREDICTIVE EGG QUALITY INDICATORS IN PADDLEFISH: EGG MORPHOLOGY, TISSUE CULTURE, AND HORMONAL INDICATORS.**

3:00 B. Chikuru, R. Mori-Kreiner, and S. Lankford, Department of Biology and Agriculture, University of Central Missouri. **DOSE-DEPENDENT EFFECTS OF E2 AND EE2 ON VITELLOGENIN GENE EXPRESSION IN MALE RAINBOW TROUT (*ONCORHYNCHUS MYKISS*).**

3:20 N. Saali and M. Penumetcha. Department of Nutrition and Kinesiology, University of Central Missouri. **REGULATION OF GENE EXPRESSION BY DIETARY OXIDIZED LIPIDS: IMPLICATIONS FOR GLUCOSE HOMEOSTASIS.**

2018 BIOLOGY SECTION
Butler-Carlton Atrium
Section Chair: James Campbell

POSTER PRESENTATIONS

1. N. Remex¹, J. Schaefer² and D. Duvernell¹. ¹Biological Sciences, Missouri University of Science and Technology. ²Biological Sciences, University of Southern Mississippi. **CONTRASTING THE PATTERN OF HYBRIDIZATION AND INTROGRESSION AMONG REPLICATED HYBRID ZONES BETWEEN TWO BROADLY DISTRIBUTED TOPMINNOW SPECIES.**
2. C. Neff and D. Penning. Department of Biology and Environmental Health, Missouri Southern State University. **A MULTI-SPECIES COMPARISON EVALUATING THE CONSTRICTION PERFORMANCE OF THE BORNEO PYTHON (*PYTHON BREITENSTEINI*).**
3. H. Counts and A. Bossert. Department of Biology, Rockhurst University. **USING SOCIAL MEDIA AND CITIZEN SCIENCE TO CATALOGUE ANNUAL TRENDS IN OCCURRENCE OF MISSOURI REPTILES AND AMPHIBIANS.**
4. E. Kern, N. Mahinda and C. Espinoza. Department of Science, Technology and Mathematics, Lincoln University. **FUNCTION OF CHITIN RECEPTORS *CERK1* AND *LYK4* IN THE SALT STRESS RESPONSE PATHWAY IN *ARABIDOPSIS* PLANTS.**
5. V. Moser. Department of Biology and Environmental Science, Westminster College. **THE EFFECTS OF BISPHENOL-A (BPA) ON SEA URCHIN EMBRYOGENESIS.**
6. V. Brown, M. Barrett, L. Mihindukulasooriya and A. Campbell. Department of Natural Sciences, Northwest Missouri State University. **QUANTIFYING ALGAE AND PROKARYOTES IN OLD WOMAN CREEK NATIONAL ESTUARY.**
7. E. Burns, G. Gomes and J. Escudero. Department of Basic Sciences, St. Louis College of Pharmacy. **NOT ALL OXACILLIN RESISTANT GRAM POSITIVE COCCI ARE *STAPHYLOCOCCUS AUREUS*.**
8. T. Lay Guterres and M. Taban. Department of Biology and Environmental Science, Westminster College. **SOIL MICROORGANISMS AND THE CARBON CYCLE.**

2018 CHEMISTRY SECTION

Butler-Carlton 124

Section Chair: Shayna Burchett

TIME

ORAL PRESENTATIONS

- 1:00 H. Shrestha, M. Shaw, B. Adhikari, A. Patel, M. J. Meziani, J. H. Campbell, Department of Natural Sciences, Center for Innovation and Entrepreneurship, Northwest Missouri State University. **SYNTHESIS AND CHARACTERIZATION OF COMPOSITE RESIN INCORPORATING METAL AND MAGNETIC NANOPARTICLES WITH ENHANCED ANTIBACTERIAL PROPERTIES.**
- 1:20 J. Miranda, T. Shrum, Division of Science, Chemistry, State Fair Community College, **CHEMISTRY IS A BREWING**
- 1:40 Ibrahim M. Abdullahi^a, Vadym Mochalin^{a,b} and William Fahrenholtz^{b,c}. ^aDepartment of Chemistry, Missouri University of Science and Technology, ^bDepartment of Materials Science and Engineering (MSE), Missouri University of Science and Technology, ^cMaterials Research Center, Missouri University of Science and Technology. **COLD SINTERING PROCESS FOR SALT ASSISTED ULTASONIC DEAGGREGATED CERAMIC-NANODIAMOND COMPOSITES FOR IMPROVED MECHANICAL PROPERTIES AND DENSIFICATION IN ALUMINA.**
- 2:00 B. Carman, Division of Science, Chemistry, State Fair Community College. **SYNTHESIS OF ZINC OXIDE NANOPARTICLES USING TRADITIONAL LABORATORY EQUIPMENT**
- 2:20 E. Larson, A. Kryshchendyuk, Division of science, Biochem, State Fair Community College. **JUST KEEP SWIMMING**
- 2:40 A. Asaduzzaman^{1,2}, K. Muralidharan² and G. Ganguly³, ¹Department of Science, Technology, and Mathematics, Lincoln University, ²Department of Materials Science and Engineering, University of Arizona, ³Department of Geosciences, University of Arizona. **DELIVERY OF WATER INTO THE EARTH AND ELEVATED D/H RATIO.**
- 3:00 Ming Huang, Kaysi M. Lee, and Klaus Woelk. Department of Chemistry, Missouri University of Science and Technology. **NMR-SPECTROSCOPIC PH DETERMINATION USING 19F CHEMICAL-SHIFT DATA.**

TIME**ORAL PRESENTATIONS**

- 3:20 M. R. Van De Mark, A. Ashish, P. Geng and A. M. Braden, Missouri S&T Coatings Institute, Department of Chemistry, Missouri University of Science and Technology. **COLLOIDAL UNIMOLECULAR POLYMER PARTICLES THEORY AND APPLICATION.**
- 3:40 **Jay D. Steinkruger^{†*}, Gail J. Bartlett[§], Derek N. Woolfson^{§‡}, and Samuel H. Gellman[†].** [†]Department of Chemistry, University of Wisconsin–Madison, Madison, Wisconsin 53706, USA [§]School of Chemistry and [‡]School of Biochemistry, University of Bristol, Bristol BS8 1TS, UK. **SIDE-CHAIN PAIRING PREFERENCES IN THE PARALLEL COILED-COIL DIMER MOTIF.**

2018 CHEMISTRY SECTION

Butler-Carlton Atrium

Section Chair: Shayna Burchett

POSTER PRESENTATIONS

1. R. Ibarra. Department of Chemistry Drury University and City Utilities, Springfield, E Robertson, City Utilities, Springfield. **A COMPREHENSIVE REVIEW OF MAJOR WATER QUALITY PARAMETERS AND APPLICATION.**
2. E. Siech, V. Thurman, and Dr. A. Vummenthala. College of Arts and Sciences, Maryville University of St. Louis. **ANTIOXIDANT ACTIVITY OF EUGENOL DERIVATIVES.**
3. **Lingyu Chi¹**, Ming Huang¹, Annalise Pfaff¹, Rex E. Gerald II³, Jie Huang², and Klaus Woelk¹. ¹ Department of Chemistry, Missouri University of Science and Technology, ² Department of Electrical and Computer Engineering, Missouri University of Science and Technology, ³ American Inventor Institute. **OPTIMIZING NMR HARDWARE AND PULSE SEQUENCES WITH CAPPACK™ DEVICES.**
4. N. Sanguantrakun. Department of Basic Sciences, St. Louis College of Pharmacy **ALTERNATIVE MILLISECOND-TIME SCALE PROTEIN HYDROGEN DEUTERIUM EXCHANGE METHODOLOGY VIA ONLINE TOP DOWN ANALYSIS**
5. J. Mooney and D. Morrone. Department of Basic Sciences, St. Louis College of Pharmacy. **SYNTHESIS OF GLYCOSYLATED DERIVATIVES OF C5-CURCUMIN.**

2018 COMPUTER SCIENCE AND MATH

Butler-Carlton 317

Section Chair: Chip Gubera

TIME

ORAL PRESENTATIONS

- 1:00 C. McIlvaine, D. Hengel, R. Backus, M. Ward, and F. Wang, Division of Information Technology, Computer Science and Math, University of Missouri-Columbia. **THE DESIGN AND DEVELOPMENT OF A 3D VIRTUAL REALITY LAB TRAINING ENVIRONMENT.**
- 1:20 K. Nilsson, E. Edens and Y. Liu Department of Actuarial Science, Data Science and Mathematics, Maryville University of St. Louis. **RUIN PROBABILITY IN THE PRESENCE OF RISK INVESTMENT AND INFLATION.**

2018 CONSERVATION SECTION

Butler-Carlton 121

Section Chair: Jason Willand

TIME

ORAL PRESENTATION

- 1:00 S. Nikaido, S. Salah and J. Raveill. Department of Biology and Agriculture, Central Missouri University. **DETERMINING RED, WHITE AND HYBRID MULBERRY (MORUS SPP.) USING RESTRICTION FRAGMENT LENGTH POLYMORPHISM (RFLP).**

2018 CONSERVATION SECTION

Butler-Carlton Atrium

Section Chair: Jason Willand

POSTER PRESENTATION

1. S. Lanning ¹, W. Mabey ¹ and M. Combes ². ¹ Missouri Department of Conservation, Central Region Office and Conservation Research Center, ² Missouri Department of Conservation, Agriculture Systems Field Station. ***PROCAMBARUS ACUTUS* (DECAPODA: CAMBARIDAE) INVASION OF A HEADWATER STREAM IN NORTH FORK OF THE SPRING RIVER DRAINAGE IN THE OSAGE PLAINS OF SOUTHWESTERN MISSOURI.**

2018 GEOGRAPHY SECTION

Butler-Carlton 216

Section Chair: David Fox

TIME

ORAL PRESENTATIONS

- 1:00 D. Quintanilla. Department of Geography, University of Missouri – Columbia.
**CONTENT ANALYSIS OF AL QAEDA OF THE ARABIAN PENINSULA’S
INSPIRE MAGAZINE.**
- 1:20 D. Fox¹, S. Hageman¹, K. Seramur², and B. Hoffman.¹ ¹Department of Natural and
Physical Science, Park University. ²Seramur and Associates, PC. **USE OF
GEOSPATIAL TECHNOLOGIES TO STUDY THE NECROGEOGRAPHY OF
THE OLD PARKVILLE, MISSOURI, CEMETERY.**

2018 GEOGRAPHY SECTION

Butler-Carlton Atrium

Section Chair: David Fox

POSTER PRESENTATION

1. K. Leach and D.M. Drake. Department of History and Geography, Missouri Western State University. **IMPLEMENTING TACTICAL URBANISM THROUGH GOVERNMENT-COMMUNITY PARTNERSHIPS.**

2018 GEOLOGY & GEOSCIENCES SECTION

Butler-Carlton 314

Section Chair: Damon Bassett

TIME

ORAL PRESENTATIONS

- 1:00 B. Benz, G. Michelfelder, J. Quick, and T. Sundell, Geography, Geology, and Planning, Missouri State University. **U-Pb ZIRCON GEOCHRONOLOGY OF RHYOLITE TUFFS FROM THE BELL TOP FORMATION, SOUTHWEST NEW MEXICO.**
- 1:20 C. O'Dowd and G. Michelfelder, Geography, Geology, and Planning, Missouri State University. **PETROLOGY AND GEOCHEMISTRY OF THE BEARWALLOW MOUNTAIN ANDESITE, MOGOLLON –DATIL VOLCANIC FIELD, NEW MEXICO.**
- 1:40 S. K. Nandi, K. Mickus and M. McKay, Department of Geography, Geology, and Planning, Missouri State University, Springfield. **CRUSTAL ARCHITECTURE OF ACCRETED TERRANE BOUNDARY IN WESTERN IDAHO, EASTERNMOST BLUE MOUNTAINS.**
- 2:00 A. McClanahan and M. Gutierrez, Geospatial Science in Geography, Geology, and Planning, Missouri State University. **EFFECTS OF HISTORIC MINING ACTIVITIES IN THE TRI-STATE MINING DISTRICT.**
- 2:20 D. Jones, Division of Physical and Life Sciences, Geoscience, Chadron State College. **APPLICATIONS OF OPEN-SOURCE PHOTOGRAMMETRY TOOLS TOWARD GEOLOGIC ANALYSIS OF SOUTHWESTERN MISSOURI – OZARK OUTCROPS.**
- 2:40 C. Dunham, Division of Environmental Science and Geology, Westminster College. **THE “THUNDER BEASTS” OF THE EOCENE: ESTIMATING AGE-AT-DEATH, SEX, DIET, AND DEFORMITIES OF TWO FOSSILIZED BRONTOTHERE MANDIBLES.**
- 3:20 K. Hirst and D. Schmidt, Department of Environmental Science, Geology, Westminster College. **TWO EOCENE ENTELODONT MANDIBLES: LIFE HISTORIES AND PRELIMINARY ISOTOPIC ANALYSIS.**
- 3:40 S. Young, R. Roth, D. Schmidt, and C. Halsey, Department of Environmental Science, Geology, Westminster College. **GROUND AND AERIAL SURVEY OF FOSSIL EOCENE BONE BED IN OGLALA NATIONAL GRASSLANDS, NEBRASKA.**

2018 GEOLOGY & GEOSCIENCES SECTION

Butler-Carlton Atrium

Section Chair: Damon Bassett

POSTER PRESENTATION

1. K. Wu, L. Ferreira, D. Schmidt, and C. Halsey, Division of Environmental Science and Geology, Westminster College. **STABLE ISOTOPIC ANALYSIS OF FOSSIL ENAMEL: PRELIMINARY INVESTIGATION OF EOCENE TAXA.**

2018 PHYSICS AND ENGINEERING SECTION

Butler-Carlton 315

Section Chair: Daniel Marsh

TIME

ORAL PRESENTATIONS

- 1:00 M. Trueblood and A. Miller, Ctr of Excellence for Aerospace Particulate Emission Reduction Research, Missouri University of Science & Technology. **PERFORMANCE OF AN ELECTROSPRAY AEROSOL GENERATOR.**
- 1:20 M. Trueblood, Center of Excellence for Aerospace Particulate Emission Reduction Research, Missouri University of Science & Technology. **HYBRID AEROSOLS OF INSOLUBLE POLYSTYRENE LATEX AND AMMONIUM SULFATE.**
- 1:40 M. Trueblood, Center of Excellence for Aerospace Particulate Matter Reduction Research, Missouri University of Science & Technology. **CALIBRATION OF A CONDENSATION PARTICLE COUNTER USING AN ALTERNATING GRADIENT CLOUD CHAMBER AND LABVIEW.**
- 2:00 G. Nail, Department of Engineering, The University of Tennessee at Martin, and R. Kopsky, Jr., St. Louis District, U.S. Army Corps of Engineers. **WAPPAPELLO DAM SPILLWAY OVERTOPPING EVENT OF 2011.**
- 2:20 K. K. Gonzalez and J. P. Sundararajan, Department of Chemical and Physical Sciences, Missouri Southern State University, **EXPERIMENTAL INVESTIGATION OF DIRT FILLED PLASTIC BOTTLES VS SAND FILLED PLASTIC BOTTLES AS SUSTAINABLE MATERIAL FOR BUILDING CONSTRUCTION.**
- 2:40 J. P. Sundararajan, Department of Chemical and Physical Sciences, Missouri Southern State University. **EXPERIMENTAL AND SIMULATIONS STUDIES ON TRANSIENT PHOTOCONDUCTIVITY IN GALLIUM NITRIDE NANOWIRES.**
- 3:00 Physics Session Business Meeting

2018 PHYSICS AND ENGINEERING SECTION

Butler-Carlton Atrium

Section Chair: Daniel Marsh

POSTER PRESENTATIONS

1. L. Meyer, Webster University, **MAGNETORECEPTION IN WESTERN HARVESTER ANTS.**
2. J. McDonald and D. Marsh, Department of Chemical and Physical Sciences, Missouri Southern State University. **ASTRONOMICAL OBSERVATIONS USING A LOW COST, RADIO TELESCOPE.**
3. A. Roberts¹, Gaston Dana², and A. Sithole³. ¹Indiana Craniofacial Center, USA; Indiana University School of Dentistry, USA; College of Medicine and Veterinary Medicine, University of Edinburgh, UK. ²Johnson Memorial Hospital, Indiana, USA. ³Missouri Western State University. **TCD MEASUREMENTS OF BLOOD VELOCITIES IN CEREBRAL ARTERIES UNDER NSS VAGAL NERVE STIMULATION.**

2018 SCIENCE EDUCATION SECTION

Butler-Carlton 316

Section Chair: Gouranga Saha

TIME

ORAL PRESENTATIONS

- 1:00 E. Hobbs and A. Cherry, Global PRiSE, Curriculum and Instruction, Texas Tech University – **USE OF ADVANCED PLACEMENT SCORE SUBMISSIONS TO DETERMINE INTEREST IN HISTORICALLY BLACK COLLEGES AND UNDERGRADUATE UNIVERSITIES PRE AND POST MICHAEL BROWN.**
- 1:20 E. Schmoll, E. Nischwitz, T. Walker, and J. Smith, Department of Biomedical Sciences – **FROM STUDENT TO TEACHER – FULL CIRCLE LEARNING.**
- 1:40 G. Saha, Lincoln University of Missouri, Science Education -- Faculty/Professional. **IDENTIFYING AND OVERCOMING PRE-SERVICE TEACHERS' MISCONCEPTIONS OF SCIENCE.**

2018 SCIENCE EDUCATION SECTION

Butler-Carlton Atrium

Section Chair: Gouranga Saha

POSTER PRESENTATIONS

1. J. Kaiser & A. Barry, Division of Science Education, Missouri Southern State University. **ACADEMIC AND PSYCHOLOGICAL IMPACT OF CADAVER BASED LEARNING IN UNDERGRADUATE PROGRAMS.**
2. N. D. Groves and D. P. Waters, Department of Basic Sciences, St. Louis College of Pharmacy. **STUDY METHOD COMPARISON FOR INTRODUCTORY PHYSICS EXAMS.**
3. S. Boschert, C. L. Brown, and R. J. Ulbricht. Department of Biomedical Sciences, Missouri State University. **CRISPR/Cas9 IN YEAST AS A TOOL FOR TEACHING AND REINFORCING MOLECULAR BIOLOGY CONCEPTS TO UNDERGRADUATES.**
4. M. G. Tang and D. P. Waters, Department of Basic Sciences, St. Louis College of Pharmacy. **HOW PERCEPTIONS OF ACTIVE LEARNING STRATEGIES AFFECTS CLASS PERFORMANCE.**
5. J. Kibirige, A. Sithole, and K. Harris. Missouri Western state University, Faculty/Professional, Economics, Political Science, Sociology. **HOW SMART ARE NEXT GENERATION SCIENCE STANDARDS?**

2018 SOCIAL AND BEHAVIORAL SCIENCES

Butler-Carlton 318

Section Chair: Mara Aruguete

TIME

ORAL PRESENTATIONS

- 1:00 J. Martin, T. Spencer, and M. Aruguete, Department of Social and Behavioral Sciences, Lincoln University. **ATTITUDES TOWARDS TRANSGENDER PEOPLE.**
- 1:20 A.A. Allen, T.A Creer, and V.R. Jackson. Department of Social and Behavioral Sciences, Lincoln University. **HOW JEZEBEL AND SAPPHIRE STEREOTYPES OF BLACK WOMEN AFFECT COLLEGE STUDENTS.**
- 1:40 M. J. Brewer, S.A. Tackett, and E. C. Waller. Department of Social and Behavioral Sciences, Lincoln University. **YOUR SHOULDERS OFFEND ME: PERCEPTIONS OF WOMEN BASED ON THEIR CLOTHING.**
- 2:00 C. Kerr, E. Williams, and S. Carroll. Department of Social and Behavioral Sciences, Lincoln University. **ONLINE DATING: THE ULTIMATE PICK AMONG COLLEGE STUDENTS.**
- 2:20 W. J. Wollo. Cooperative Research, Lincoln University. **ENTREPRENEURSHIP EDUCATION PROGRAMS: THE CASE OF MISSOURI COLLEGES AND UNIVERSITIES.**
- 2:40 R. Amezcua, H. Foulks, T. Griffin and A. Johnson, Department of Psychology & Sociology, Park University. **THE FAST AND FURIOUS: RANKING VERSUS RATING PICTURES FOR CREATIVITY.**
- 3:00 J. Slayton & R. Ghinescu. Lincoln University. **ADHERENCE TO FLUID RESTRICTIONS IN DIALYSIS PATIENTS.**
- 3:20 K. Graves, J. Perry, & T. Thomas. Department of Social and Behavioral Sciences, Lincoln University. **COLLEGE STUDENTS' ATTITUDES ABOUT CONTACT SPORTS.**

2018 SOCIAL AND BEHAVIORAL SCIENCES SECTION

Butler-Carlton Atrium

Section Chair: Mara Aruguete

POSTER PRESENTATION

1. E. Bucy and C. Yadon, Psychology Department, Missouri State University. **SENSORY PROCESSING AND BEHAVIORAL TRAITS IN RELATIVES OF INDIVIDUALS DIAGNOSED WITH AUTISM SPECTRUM DISORDERS.**