



***GEORGIA ACADEMY OF SCIENCE
101st ANNUAL MEETING***

***Kennesaw State University
March 1 – 2, 2024***

Georgia Academy of Science 101st Annual Meeting Local Arrangements Committee Members

Teresa Raczek, PhD. (Committee Chair)

Professor of Anthropology, Department of Geography and Anthropology, Kennesaw State University

Terry Powis, PhD. (Committee Member)

Associate Professor of Anthropology, Department of Geography and Anthropology, Kennesaw State University

Kisa Ranasinghe, PhD. (Committee Member)

Associate Professor of Physics & Assistant Chair, Department of Physics, Kennesaw State University

Yian Xu, PhD. (Committee Member)

Assistant Professor of Psychology, Department of Psychological Science, Kennesaw State University

Ordene Edwards, PhD. (Committee Member)

Associate Professor of Educational Psychology, Department of Psychological Science, Kennesaw State University



THE GEORGIA ACADEMY OF SCIENCE

Supporting the Physical, Environmental, Social,
Biological, and Medical Sciences

March 1, 2024

Dear Members of the Georgia Academy of Science and guests,

Welcome to the 2024 annual meeting of the Georgia Academy of Science at Kennesaw State University. I want to start by expressing my heartfelt gratitude to Dr. Teresa Raczek and other members of her Local Arrangements team and staff at KSU for putting together this meeting. It has some exciting highlight, including a reception at the nearby Tellus museum with a presentation by our dynamic Keynote speaker Dr. Ebony Glover. I hope that everyone takes advantage of all that this meeting has to offer.

I believe that this is an exciting time for the Academy as we continue to grow. This meeting is one of our largest in recent history, with 158+ presentations among our nine sections. Our online presence with the Georgia Journal of Science has also experienced growth. Many thanks to Drs. Evan Lampert and Adam Davis who have edited the submission guidelines for consistency to make it an even smoother process. Let's keep the momentum going and advance our commitment to science in the state of Georgia! Please share the activities and opportunities offered by the Georgia Academy of Science with your colleagues.

This upcoming year will be my last year as president. I hope to increase communication among Academy members so there is a seamless transition to President-elect Dr. Al Mead. I am looking forward to what promises to be a wonderful meeting and getting to talk to many of you.

Here's to a great meeting,

A handwritten signature in cursive script that reads "Meg Smith".

Margaret Smith

President, Georgia Academy of Science



Dear Georgia Academy of Science Colleagues,

Welcome to Kennesaw State University for the 101st annual meeting of the Georgia Academy of Sciences! We are honored to serve as your host this year.

You will find that KSU has grown since you were here last. In 2015, we joined with Southern Polytechnic State University and in 2018, we were designated a R-2 institution. A leader in innovative teaching and learning, we offer over 180 undergraduate, graduate, and doctoral degrees, and programs, all of which require some degree of training in science and technology.

We are pleased to see that Psychology is now in GAS. Our own Department of Psychological Sciences is the largest major in the university and the faculty demonstrate excellence in research. With our emphasis on interdisciplinary research, many of our faculty have been members and active participants of the Georgia Academy of Science for many years.

While you are here, we hope that you will take the time to visit some of our new state-of-the-art labs including the Social Science Lab Complex, Psychology Lab, Bioanthropology Lab, Archaeology Lab, and labs in our College of Science and Math. We also hope that you enjoy dining in our award-winning Commons Dining Hall.

Please accept my best wishes for an exciting conference full of thought-provoking exchange on the latest research in Georgia.

Sincerely,

A handwritten signature in black ink that reads 'Kathy S. Schwaig'.

Kathy S. Schwaig, Ph.D.
President

OFFICE OF THE PRESIDENT

Georgia Academy of Science
101st Annual Meeting
March 1 – 2, 2024
Kennesaw State University

Lab Tour
Friday, March 1, 2024
2:00 pm to 5:00 pm

- ❖ GAS 2024 attendees may join a guided tour or make self-guided visits to the research labs listed below.
- ❖ The guided tour begins at 2:00 pm, gathering at the registration table.
- ❖ Labs are open from 2:00 pm to 4:30 pm for self-guided visits.

Lab	Location
Biological Anthropology Lab	Social Sciences 3019
Archaeology Lab	Social Sciences 4080
Psychology Eye Tracking Lab	Social Sciences 2003
Psychology Wet Lab.....	Visual Arts 108
Social Science Lab Complex	1150 Big Shanty Road, Kennesaw, GA
Affective Neuroscience Lab	University Hall 226

The Georgia Academy of Science 101st Annual Meeting Local Arrangements Committee expresses our sincere gratitude to the following for their unwavering support of the GAS 2024 Annual Meeting

1. President, Katy Schwaig, Kennesaw State University
2. Dr. Karin Scarpinato, Vice President of Research, Kennesaw State University
3. Dr. Catherine Kaukinen, Dean, Radow College of Humanities & Social Sciences
Kennesaw State University
4. Dr. Amy Buddie, Director, Undergraduate Research, Kennesaw State University
5. Dr. Vishnu Suppiramaniam, Dean, College of Science and Mathematics,
Kennesaw State University
6. Dr. Corinne McNamara, Chair, Department of Psychological Science, Kennesaw
State University
7. Dr. Kevin Stokes, Chair, Department of Physics, Kennesaw State University
8. Dr. Brandon Lundy, Chair, Department of Geography and Anthropology,
Kennesaw State University
9. Susanne Rothery, Program Coordinator, Department of Geography and
Anthropology, Kennesaw State University
10. Clint Sowell, Web/Digital Strategist, Kennesaw State University

Georgia Academy of Science
101st Annual Meeting
March 1 – 2, 2024
Kennesaw State University

Friday, March 1, 2024

11:00 am to 5:00 pm:	On-Site Registration.....	Social Sciences South Lobby
11:00 am to 1:00 pm:	GAS Board of Directors Business Meeting (Closed to Public)..... Social Sciences 2005
1:00 pm to 5:00 pm:	Friday On-Campus Sessions	
2:00 pm to 5:00 pm:	Lab Tours	
2:00 pm to 4:00 pm:	Refreshments	Social Sciences East Lobby
1:00 pm to 3:00 pm:	Oral Sessions	
Section I:	BIOLOGICAL SCIENCES	Social Sciences 3021
Section IV:	PHYSICS, MATHEMATICS, COMPUTER SCIENCE, ENGINEERING, AND TECHNOLOGY	Social Sciences 3023
3:00 pm to 3:30 pm:	Poster Session Setup	Social Sciences Third Floor
3:30 pm to 5:00 pm:	Poster Sessions.....	Social Sciences Third Floor
6:00 pm to 9:00 pm:	Tellus Science Museum (Open to GAS Members) <i>100 Tellus Drive, Cartersville, GA, 30120</i>
6:00 pm to 8:00 pm:	Welcome Reception and Keynote Speaker (All Sections)..... Tellus Science Museum Great Hall
6:30 pm to 7:30 pm:	Opening Remarks, Keynote Speaker Introduction, & Keynote Speaker Tellus Science Museum Great Hall
8:00 pm to 9:00 pm:	Tellus Science Museum Viewing	

Saturday, March 2, 2024

7:30 am to 8:30 am:	Continental Breakfast.....	Social Sciences East Lobby
7:30 am to 10:00 am:	On-Site Registration	Social Sciences South Lobby
8:00 am to 12:00 pm:	Oral Sessions and Section Business Meetings	
Section I:	BIOLOGICAL SCIENCES	Social Sciences 2034
Section II:	CHEMISTRY.....	Social Sciences 3021
Section III:	EARTH AND ATMOSPHERIC SCIENCES	Social Sciences 2030
Section IV:	PHYSICS, MATHEMATICS, COMPUTER SCIENCE, ENGINEERING AND TECHNOLOGY.....	Social Sciences 3030
Section V:	BIOMEDICAL SCIENCES	Social Sciences 3023
Section VI:	PHILOSOPHY AND HISTORY OF SCIENCE.....	Social Sciences 2021
Section VII:	SCIENCE EDUCATION.....	Social Sciences 3029
Section VIII:	ANTHROPOLOGY.....	Social Sciences 3028
Section IX:	PSYCHOLOGICAL SCIENCES.....	Social Sciences 3031
12:15 pm to 2:00 pm:	Luncheon, Plenary Session, Student Awards, Academy Business Meeting KSU Commons

Georgia Academy of Science
101st Annual Meeting
March 1 – 2, 2024
Kennesaw State University

Friday, March 1, 2024
Oral Presentations
1:00 pm – 3:00 pm

Section I: BIOLOGICAL SCIENCES
Social Sciences 3021

1:00 pm

ABOVE AND BELOW GROUND COMMUNITY STRUCTURES IN A LONGLEAF PINE RESTORATION SITE: DOMINANT HERBACEOUS SPECIES AND THEIR SOIL BACTERIAL MICROBIOMES
Isabella K. Vahle and Paula Jackson

1:15 pm

EXPLORING THE FREQUENCY OF *MYCOPLASMA GALLISEPTICUM* IN RESIDENT VERSUS MIGRATING AVIAN INDIVIDUALS**
Hasten J. Veal, Catherine M. Cook*, Gabriel J. Rodriguez*, Jenny Sanchez*, Linda B. Purvis, and Dawn Drumtra*

1:30 pm

DIVERSITY OF PANAMANIAN AMPHIPODS (CRUSTACEA) WITHIN THE PARVORDER HADZIIDIRA
*Kristine N. White and Sally J. Sir**

1:45 pm

SEQUENCING, MAPPING, AND ANALYSIS OF THE MITOGENOMES OF THE CHEROKIA *GEORGIANA* FOR PHYLOGENETIC REVIEW**
William Wittstock, Arnab Sengupta, Bruce Snyder, and Elena Cruz*

2:00 pm

UNRAVELING THE MYSTERIES OF PLANT DEFENSE HORMONES: METHYL JASMONATE SIGNALING
Morgan E. Wynn, Daniel F. Diaz*, Ansul Lokdarshi, and Teressa K. Akuoko*

2:15 pm

ANALYSIS OF ANTIBACTERIAL PROPERTIES IN ESSENTIAL OILS
Maxwell L. Shaughnessy and Julia M. Schmitz*

2:30 pm

UTILIZING A NEW COASTAL MARINE FIELD SAMPLING TECHNIQUE FOR MARK-RECAPTURE ON THE GULF PIPEFISH, *SYNGATHUS SCOVELLI***
Megan Sims, Heather D. Mason, and Emily Rose

2:45 pm

THE DEVELOPMENT OF MODERN HISTOLOGICAL PROCEDURES FOR *ERISTALIS TENAX*, INCLUDING MUSHROOM BODY IMMUNOFLUORESCENCE**
Elizabeth L. Taylor and Jason D. Lang*

Section IV: PHYSICS, MATHEMATICS, COMPUTER SCIENCE,
ENGINEERING AND TECHNOLOGY
Social Sciences 3023

1:00 pm

OBJECT-DETECTION SYSTEM FOR THE VISUALLY IMPAIRED
Kaeleib Patterson and Abiye Seifu*

1:15 pm

EXPLORING KEPLER 62F'S CLIMATE DYNAMICS THROUGH AN ENERGY BALANCE MODEL

Ian McLean, Jordan Hewins, Jasmine Freeman, and Billy Quarles

1:30 pm

CHARACTERIZATION OF FARADAY CAGES FOR HIGH FREQUENCY ELECTROMAGNETIC SHIELDING

Micah Holston and Kevin L. Stokes

1:45 pm

MODELING APOLLO ORBITS FROM FIRST PRINCIPLES**

Jacob Still and Julie L. Talbot

2:00 pm: BREAK

2:15 pm

BAND STOP BEHAVIOR OF METAMATERIAL

Ryan E. Kelley and Arun K. Saha

2:30 pm

UNRAVEL CHARGE TRANSFER MECHANISMS OF IONOGEL SOLID ELECTROLYTES FOR HIGH-POWER DENSITY ALL-SOLID-STATE LI METAL BATTERIES

Yan Chen, Tara Joshi, Evelyn Sanders, and Mason Snyder

2:45 pm

DETECTION OF SOLAR SYSTEMS WITH LAPLACE RESONANCES USING HUBBLE SPACE TELESCOPE DATA**

Andrew J. Behrend and Matt Bonvissuto**

3:00 pm

DESIGN OF A HIGH VACUUM CHAMBER AND MICROWAVE FABRY-PEROT CAVITY USING COMPUTER AIDED DESIGN SOFTWARE**

Adam B. Horn and Lu Kang

Friday, March 1, 2024
Poster Presentations
3:30 pm – 5:00 pm

Section I: BIOLOGICAL SCIENCES
Social Sciences 3031

1. LARVAE UNDER PRESSURE: EXPLORING GROUP DYNAMICS AND REGURGITATIVE RESPONSES OF *TRICHOPLUSIA NI* LARVAE**
Maria F. S. Acosta, Erin Barding, Ryan Shanks, and Margaret Smith*
2. INVESTIGATING THE ECOSYSTEM ECOLOGY OF SEAGRASS BEDS IN TAMPA BAY, FLORIDA USING BAITED REMOTE UNDERWATER VIDEO (BRUV)**
Georgia K. Ambrose, William D. Love, Emily Rose, and Heather D. Mason
3. PRELIMINARY ANALYSIS OF TEMPORAL TRENDS IN MAMMALIAN ROADKILL ABUNDANCE IN CENTRAL GEORGIA**
Lucy A. Beck, Alfred J. Mead, Heidi F. Mead*
4. INVESTIGATING THE EFFECT OF SEASONAL VARIATION ON CIRRI APPENDAGES IN DWARF SEAHORSES**
Paige Bland, Dalila Sanchez, and Emily Rose*
5. IDENTIFICATION OF NOVEL INTERACTOR OF SEC6 PROTEIN VIA YEAST GENETIC SCREEN**
Kun Yuan Chu, Sophia McNeill*, Molly Bullington, Mary Munson, and Ellen France*
6. BEHAVIORAL RESPONSES OF CAPTIVE RED FOXES (*VULPES VULPES*) TO ENVIRONMENTAL ENRICHMENT
Abbey Crossman and C. Tate Hollbrook*
7. RISK FACTORS FOR FLEA INFECTION FOR A CANINE POPULATION IN COMMERCE, GA**
Clare A. Garcia and Evan C. Lampert*
8. COLONY DENSITY AND DISTRIBUTION OF *ANTRODIAETUS* BURROWS
Jadon C. Gonzales and Rebecca L. Godwin*
9. THE ACCLIMATION TIMES OF JORO SPIDERS IN HIGH TRAFFIC VERSUS LOW TRAFFIC AREAS
Rindy A. Grubb and Rebecca L. Godwin
10. A COMPARISON OF SAMPLING METHODS OF INTERTIDAL CRUSTACEANS ON SAPELO ISLAND, GA
Kali M. Holierhoek, Elise c. Miabella*, and Kristine N. White*
11. EVALUATION OF THE EFFECT OF ELEVATED HYDROSTATIC PRESSURE FOR INACTIVATION OF *LISTERIA MONOCYTOGENES*
Md N. Kabir, Collin Phillips, Ajah Tolbert, Shohana Huq, and Olabisi O. Ojo
12. CHARACTERIZATION OF SUBAERIAL ALGAE IN SOUTHERN GEORGIA**
Daniel Kwawuwi, John D. Griner, and James A. Nienom
13. ASSESSING CHATTAHOOCHEE RIVER WATER QUALITY BY MONITORING *E. COLI* LEVELS
Annie J. Lin, Lee Kurtz, and Mike Meyer
14. DOES SALINITY AFFECT THE GROWTH OF TOXIC DINOFLAGELLATE BLOOMS?
Julia R. Ludwick and Rebecca L. Godwin*
15. INVESTIGATING THE CYTOTOXICITY OF BACTERIOPHAGE CEPENS GENES IN HOST *MYOBACTERIUM SMEGMATIS***
Alexis McCarty and Alison Kanak*

16. ANTIMICROBIAL PROPERTIES OF *STEVIA REBAUDIANA BERTONI*, 1899
*Jake McCarthy** and *Helene Peters*
17. IDENTIFICATION OF CELL LOCALIZATION OF ADE13 IN *SACCHAROMYCES CEREVISIAE* VI GREEN FLUORESCENT PROTEIN TAGGING
*Sophia A. McNeil**, *Lewis Barr*, and *Ellen France*
18. THE EFFECT OF ENVIRONMENTAL CONDITIONS ON *GORDONIA TERRAE* – SPECIFIC BACTERIOPHAGE DISTRIBUTION AND DIVERSITY**
GT M. Moore, *Uqueen C. Wheeler*, and *Indiren Pillay*
19. ISOLATION AND CHARACTERIZATION OF *MYOBACTERIUM SMEGMATIS* PHAGE LANDOR**
*Audrey E. Nesbit** and *Alison E. Kanak*
20. EXPANDING THE AVIAN NATURAL HISTORY COLLECTION AT THE UNIVERSITY OF NORTH GEORGIA
*Ozzy Price**, *Dawn Drumtra*, *David Patterson*, and *Erin E. Barding*
21. FACTORS INFLUENCING MINNOW TRAP CAPTURES
*Stormy Ramey**, *Michael Bender*, and *Mike Saunders*
22. INVESTIGATING THE EFFECT OF LIGHT CYCLE ALTERATION OF REACTIVE OXYGEN SPECIES PRODUCTION IN ZEBRAFISH BRAIN**
*Talia Sanders**, *Haley Parker**, and *Keri A. Barksdale*
23. THE EFFICACY OF CLOVE OIL AGAINST *ASPERGILLUS FLAVUS* AND AFLATOXINS B₁ (AFB₁) PRODUCTION IN GEORGIA PEANUTS
Ari J. Schwartz, *Alison Md*, *Mohammad A. Halim*, and *Primila N. Achar*
24. MYOGLOBIN CONCENTRATION IN FLORIDA MANATEE MUSCLE TISSUE**
Andru Scray, *Kiara Mitchell*, *Kara Hendrix**, and *Cori N. Newton*
25. THE EFFECT OF ELECTRICAL STIMULATION (E-STIM) ON MUSCLE STRENGTH AND MASS OF THE QUADRICEP MUSCLE IN THE DOMINANT LEG OF COLLEGIATE ATHLETES
*Josalin K. Whitten**, *Justine Hardy**, and *Helene Peters*
26. USING BODY MASS INDEX, BODY ROUNDNESS INDEX AND A BODY SHAPE INDEX Z SCORES IN ANTHROPOMETRIC PREDIABETES RISK ANALYSIS
*Yesenia Zamudio** and *Helene Peters*

Section II: CHEMISTRY

Social Sciences 3029

27. THE ROLE OF METAL PHOSPHITES: ABIOTIC SYNTHESIS, CHARACTERIZATION, AND REACTIVITY UNDER EARLY EARTH CONDITIONS**
*Eleanor Boyle**, *Tyler Davis**, *Heather Abbott-Lyon*
28. SURFACE CHEMISTRY FROM ELECTRON IRRADIATION OF SCHREIBERSITE (Fe₂NIP)**
*Tyler Davis**, *Mason Hipp**, *Kayla G. Roper**, and *Heather Abbott-Lyon*
29. CHARACTERIZATION OF RUST TO FORM RECYCLED IRON(III) OXIDE NANOPARTICULATE SOLUTIONS**
Linda de la Garza, *Saul Torres**, *James A. Nienow*
30. PURIFICATION OF A RECOMBINANT GFP-PREPTIN FUSION PROTEIN**

Apoorva Kollaram, Chayce C. Schuler*, and Jonathan M. Meyers*

31. FATTY ACIDS IN COFFEE: BEANS VERSUS GROUNDS**
*Janiah Rakestraw**
32. THE IMPACT OF DIVERSE GEOGRAPHIC LOCATIONS ON FATTY ACID CONTENT OF COFFEE GROUNDS**
*Emily Rankin**
33. EXTRACTION OF FATTY ACIDS FROM SPENT COFFEE GROUNDS: DARK VERSUS MEDIUM ROAST**
*Hannah Simmons**

Section III: EARTH AND ATMOSPHERIC SCIENCES Social Sciences 3029

34. CARBON SEQUESTRATION IN PHYTOREMEDIATION**
Tori L. Morgan, Shannon Northen, Samuel Mutiti, and Rennie Kaunda*
35. EVALUATING THE CHRONOLOGICAL DISTRIBUTION OF LATE PLEISTOCENE FOSSIL-BEARING LOCALITIES IN SOUTHEASTERN NORTH AMERICA
Mary G. Dickens, Christopher Seminack, Al Mead, and David B. Patterson
36. EFFECT OF COVID-19 POLICY DISCREPANCIES IN HIGH-MINORITY LONG-TERM CARE FACILITIES**
*Alma V. Diaz**
37. EFFECTS OF AMENDMENTS ON THE TRANSPORT AND LEACHING OF LEAD IN POLLUTED SOILS**
Wiley Bundy, Macey Carson, Ashley Clark, and Nchimunya Muzila*
38. USING ELECTRICAL RESISTIVITY TO MAP A SALTWATER INTRUSION AND INVESTIGATE THE RELATIONSHIP OF TREE MORTALITY IN SAPELO ISLAND**
Lauren G. Ballenger, Marisa Lopata*, Jaiden Stidston*, and Samuel-Christine Mutiti*
39. THE EFFECTS OF AIR QUALITY ON SOIL COMPOSITION IN GEORGIA, U.S.A. **
Stephanie M. Collazo and Jason D. Lang*
40. A PRELIMINARY ANALYSIS OF BOVID MESOWEAR DATA FROM EAST TURKANA (NORTHERN KENYA) FROM 2.0-1.4 MILLION YEARS AGO: IMPLICATIONS FOR PLEISTOCENE HOMININ ENVIRONMENTS
Jake Gardner and David B. Patterson*
41. THE IMPACTS OF ANTHROPOGENIC PROCESS ON THE NITROGEN BUDGET OF A POND**
Erick L. Wolstenholme and Allison R. VandeVoort
42. A COMMON INVASIVE SPECIES, CHINESE PRIVET, MAY BE EXACERBATING GLOBAL CLIMATE CHANGE**
Mary Evelyn C. Pritchett, Tori L. Morgan*, and Christine M. Mutiti*
43. DECOMPOSITION FOR ASSESSING SIMULTANEOUS USE OF PLANTS FOR PHYTOREMEDIATION AND CARBON SEQUESTRATION**
Shannon Northen, Tori Morgan*, Samuel Mutiti, and Rennie Kaunda*
44. GENERATING CHANNEL MORPHOLOGY DATA USING ArcGIS**
Ethan Manigbas and Ranbir Kang*

**Section IV: PHYSICS, MATHEMATICS, COMPUTER SCIENCE,
ENGINEERING AND TECHNOLOGY
Social Sciences 3030**

45. DAISYWORLD REVISITED: APPLICATIONS TO KEPLER-62F
Jasmine Freeman, Ian McLean, Jordan Hewins, and Billy Quarles
46. THE CLASSIFICATION OF INTERNET MEMES THROUGH SUPERVISED AND UNSUPERVISED MACHINE LEARNING ALGORITHMS**
William H. Little and Pengcheng Xiao
47. CRYSTALLIZATION OF NANOCERIA WITHIN A BORATE GLASSES
Emily Manqueros, Kamal Patel, and Kisa S. Ranasinghe
48. DESIGN AND APPLICATIONS OF MICROWAVE CIRCUITS IN 5G COMMUNICATION
Opeyemi M. Oladejo and Hector Prieto**
49. TROJAN PLANET PACKING WITHIN THE HABITABLE ZONE OF ALPHA CENTAURI
Hector Prieto and Billy Quarles
50. A TIME STUDY ANALYSIS OF FLUORIDE VARNISH APPLICATION DURING PEDIATRIC WELL VISITS IN GEORGIA
Emily Rodriguez-Jacobo, Robert S. Keyser, and Christina Sherrer
51. ZENITH SKY BRIGHTNESS MEASUREMENTS DURING THE DAYTIME AND TWILIGHT
Richard Schmude

**Section V: BIOMEDICAL SCIENCES
Social Sciences 3030**

52. COMPARISON OF VISUAL ACUITY IN COLLEGE ATHLETES AND THE GREATER COLLEGE POPULATION**
Magdalene O. Adebajo, Kamryn D. Bates*, Aniba A. Reddick*, and Jennifer C. Schroeder*
53. KOMBUCHA'S EFFECTS ON THE GUT MICROBIOTA IN HUMANS
Emily K. Birnbaum and Andrea L. Kwiatkowski*
54. THE IMPACT OF GENETICS UPON COVID-19 SEVERITY IN YOUNG ADULTS**
Emily L. Flynt and Andrea L. Kwiatkowski*
55. AN INVESTIGATION INTO SPLICING VARIATION AND EXPRESSION PATTERNS OF INSULIN-LIKE PEPTIDE 4 (ILP4) WITHIN THE *DROSOPHILA* GENUS**
Zachary C. Griffith and Brian W. Schwartz*
56. THE EFFECT OF CANNABINOIDS ON THE DEVELOPMENTAL MORPHOLOGY OF ZEBRAFISH**
Linda G. Jones, Haylee Lloyd, Cathren Whitley*, and Isabella Zamora**
57. DETERMINING THE PATHOGENICITY OF THE P393H VARIANT OF HUMAN *SERPINA1* USING IN SILICO APPROACHES

Alexis N. Pashkovets and Shane Webb*

58. THE EFFECTS OF VAPING LIQUID ON INTEGRITY OF TOOTH ENAMEL

*Brook Patton**

59. CELLULAR AND MOLECULAR BASES OF TRAUMA-RELATED ROOT RESORPTION

William A. Said

Section IX: PSYCHOLOGICAL SCIENCES Social Sciences 3028

60. EFFECTS OF POST-ENCODING AROUSING STIMULI OF DIFFERENT VALENCES ON PHYSIOLOGY AND MEMORY PERFORMANCE

Monica Cai and Stephan Hamann*

61. RECRUITMENT AND ENROLLMENT OF PREGNANT WOMEN WITH SUBSTANCE ABUSE AND THE NEWBORN**

Fei Xu and Julie A. Kable*

62. EVALUATING THE ASSOCIATION BETWEEN PSYCHOTROPIC MEDICATION USE AND SYMPTOM TRAJECTORIES IN CLINICAL HIGH-RISK YOUTH FOR PSYCHOSIS**

Dolores. Zhou, Katrina Aberizk, Jean M. Addington, Carrie E. Bearden, Kristen S. Cadenhead, and Elaine F. Walker*

63. MENTAL HEALTH PROMOTION BY RELIGIOUS LEADERS AND THE EFFECT ON CONGREGATIONS

Ayanna R. Farmer, Cheyenne Ponder*, Sahara Trask*, and Katherine Wiegand*

64. THE COMPLEX INTERPLAY OF RELIGIOUS BELIEFS AND SCIENTIFIC PERSPECTIVES WITH MENTAL HEALTH SERVICES WITHIN CONGREGATIONAL SETTINGS

Sahara Trask, Cheyenne Ponder*, Ayanna Farmer*, and Katherine Wiegand*

65. EFFECTS OF RELIGIOUS LEADERS' EDUCATIONAL ATTAINMENT ON ENCOURAGEMENT OF MENTAL HEALTH SERVICES

Cheyenne R. Ponder, Ayanna R. Farmer*, Sahara Trask, and Katherine Wiegand*

66. THE RELATIONSHIP BETWEEN WHITE ETHNICITY AND PSYCHOLOGICAL WELL-BEING

E. Dawn Redd, Taylor Jaczko, and C. Peeper McDonald*

67. EFFECTS OF PERINATAL CARBARYL EXPOSURE ON NICOTINE-MEDIATED LOCOMOTOR BEHAVIOR IN ADULT MICE

Lauren R. Gately, Abby E. Meyer, and Wei-Lun Sun*

68. THWARTED BELONGINGNESS IMPACTS CAREER DISTRESS AMIDST COVID-19: MALADAPTIVE COPING AS A MODERATOR**

Rebecca N. Egan, Lauren R. Gately *, Emma C. Perron*, Amanda E. Halliburton, and Michele B. Hill*

69. COMPUTER-MEDIATED VERSUS FACE-TO-FACE DYNAMICS OF SELF-DISCLOSURE**

David M. Hicks and Susann M. Doyle-Portillo*

70. EFFECTS OF RETRIEVAL PRACTICE ON COGNITIVE EFFORT AS MEASURED BY PUPILLOMETRY
Krystal Moser and Scott R. Hinze*
71. CELEBRITY ADMIRATION AND RELIGIOSITY IN THE CONTEXT OF SOCIAL MEDIA AND CONSERVATISM**
Alexis C. Johson and Joshua L. Williams*
72. COLLEGE SPECIFIC DEPRESSION: ANALYZING THE DIFFERENCES BETWEEN CLASS YEAR AND RACIAL/ETHNIC BACKGROUNDS
Pamela A. Kplivi, Jaden DeLuke*, Shariece Butler*, Caroline O'Connell*, and Virginia Wickline**
73. PERFORMANCE IMPROVEMENTS IN UFOV 'BRAIN TRAINING' STUDIES ARE CONFOUNDED BY STIMULUS LEARNING
Maugan R. Lloyd and Christopher K. Hertzog*
74. SEXUALLY VIOLENT PEERS STRENGTHEN THE LINK BETWEEN AGRESSION-RELATED PERSONALITY TRAITS AND SEXUAL PERPETRATION
Citlalli Sandoval, Olivia R. Westemeier*, and Kevin M. Swartout*
75. USING COGNITIVE PSYCHOLOGY TO PROBE AI SOCIAL BIAS IN GPT-4**
Yian Xu, Nancy Manasreh, and Yingzhao Zhou*
76. THE STRESS TOLERANCE MODERATES THE LINK BETWEEN CSA AND THE ABILITY TO RELATE TO OTHERS
Neissah C. Leandre, Saniah L. Williams, Olivia R. Westemeier, and Cynthia A. Stappenbeck*
77. PHYSIOLOGICAL AND FAMILIAL PREDICTORS OF SLEEP QUALITY IN AUTISTIC ADOLESCENTS
Kate E. Lindig, Naomi Ekas, Sarah Madison, and Chrystyna Kouros*
78. THE IMPACT OF CONVERSATIONAL TURN-TAKING ON VOCABULARY SIZE IN CHILDREN WITH DEVELOPMENTAL DISABILITIES USING AUGMENTATIVE AND ALTERNATIVE COMMUNICATION
Syrina J. Merilan, Rose A. Sevcik, and MaryAnn Ronski*

Friday, March 1, 2024
Reception at Tellus Science Museum and Keynote Speaker
6:00 pm – 9:00 pm

Keynote Address:

Representation Matters: Examining Social and Biological Differences in Biomedical Research

Ebony Glover, Ph.D.
Associate Professor of Neuroscience
Department of Psychological Science, Kennesaw State University

Dr. Ebony Glover is a behavioral neuroscientist and Associate Professor of Neuroscience in the Department of Psychological Science at Kennesaw State University. She directs the Affective Neuroscience Lab, which investigates the impact of biological sex, stress, and trauma exposure on the brain with a focus on mental health outcomes that disproportionately impact women. Dr. Glover's research program is funded by several federally funded grants from the National Institutes of Health. She is a graduate of Spelman College where she majored in Psychology and conducted undergraduate research in behavioral neuroscience. Dr. Glover went on to earn a Ph.D. in Neuroscience and Animal Behavior from Emory University where she also completed postdoctoral training in the Department of Psychiatry in the School of Medicine

Saturday, March 2, 2024
Oral Presentations
8:00 am – 12:00 pm

Section I: BIOLOGICAL SCIENCES
Social Sciences 2034

8:15 am

BROAD SCALE PHYLOGEOGRAPHY OF THE BANDED WATER SNAKE, *NERODIA FASCIATA***
Ali J. Ashraf

8:30 am

THE EVOLUTION OF GENOME SIZE IN *ARTHROBACTER* BACTERIOPHAGES
*Jakob S. Beatty** and *Shane A. Webb*

8:45 am

SEASONAL POPULATION AND ONGOING MORPHOMETRIC ANALYSES OF WILD DWARF SEAHORSES (*HIPPOCAMPUS ZOSTERAE*)**
*Diah Brown**, *Paige Bland**, *Megan Sims*, and *Emily Rose*

9:00 am

SPATIAL AND ABIOTIC EFFECTS OF URBANIZATION ON SMALL MAMMAL COMMUNITIES
Brianna Casement, *Leslie Lopez*, and *Nicholas S. Green*

9:15 am: BREAK

9:30 am

THE EFFECTS OF SIZE AND MIGRATORY STATUS ON AVIAN SPECIMEN PRESERVATION VIA LYOPHILIZATION
*Catherine M. Cook**, *Madison M. Miller**, *Gabriel J. Rodriguez**, *Hasten J. Veal**, and *Dawn E. Drumtra*

9:45 am

LEUCOTHOIDAE (CRUSTACEA: AMPHIPODA) OF BOCAS DEL TORO, PANAMA**
*Abigail Dugger** and *Kristine N. White*

10:00 am

DROUGHT EFFECTS ON SOIL CARBON OF NORTH GEORGIA**
*Katie Forrester** and *Keven Geyer*

10:15 am

DROUGHT EFFECTS ON SOIL PHOSPHORUS OF NORTH GEORGIA**
*Liam D. Meyer** and *Kevin Geyer*

10:30 am

SECTION BUSINESS MEETING

11:00 am

TURBID WATERS VS. CLEAR CHOICES: EXPLORING THE WORLD OF DWARF SEAHORSE MATE SELECTION**
Darshi N. Patel, *Dalila A. Sanchez*, and *Emily Rose*

11:15 am

CORRELATION OF AVIAN MYCOPLASMA INFECTIONS BASED ON DIET AND FORAGING STYLE**

*Gabriel J. Rodriguez**, *Catherine M. Cook**, *Jenny Sanchez**, *Hasten J. Veal**, *Linda B. Purvis* and *Dawn Drumtra*

11:30 am

SPECIES DISCRIMINATION OF *VIBRIO HARVEY* CLADE PRIMERS, AND THE FIRST REPORT ON *V. HARVEYI* AND *V. CAMPBELLII* IN SOUTHEASTERN U.S.A. WATERS**

Karagan X. Royer, *Cameron E. Brown*, and *Andrei L. Barkovskii*

11:45 am

ANALYZING DWARF SEAHORSE (*HIPPOCAMPUS ZOSTERAE*) REPRODUCTIVE PARAMETERS THROUGH JUVENILE GROWTH AND SURVIVORSHIP RATES**

Dalila A. Sanchez, *Darshi Patel*, and *Emily Rose*

Section II: CHEMISTRY Social Sciences 3021

8:30 am

OSMOPHOBIC AND OSMOPHILIC EFFECTS**

Jonathan G. Cannon and *Landon Derr**

8:45 am

SYNTHESIS OF IRON (III) OXIDE COLLOIDAL SOLUTIONS FOR NANOPARTICULATE PHOTOELECTRODES

Linda de la Garza and *Jason Phillips**

9:00 am

SYSTEMATIC ANALYSIS OF TEMPERATURE SWING SOLVENT EXTRACTION USING VARYING OPERATION AND ANALYSIS BASES**

*Christopher Gamboa**, *Joanlis C. Martinez**, *James Lagunas**, and *Seungjin Lee*

9:15 am

SYNTHESIS AND PERFORMANCE TESTS OF MESH-INTEGRATED HYDROGELS**

*Jasdine B. Shelmon**, *Litzzy Martinez-Macias**, *Liam Rasler**, and *Seungjin Lee*

9:30 am

ISOLATION, CHARACTERIZATION, AND BIOACTIVITY OF SECONDARY METABOLITES IN *E. SEROTINUM***

*Elise R. Snow**, *Holley Wade**, and *Jonathan Meyers**

9:45 am

SECTION BUSINESS MEETING

Section III: EARTH AND ATMOSPHERIC SCIENCES Social Sciences 2030

10:15 am

APPLICATION OF TERRESTRIAL LiDAR IN ANALYZING THE RESTORATION OF AN URBAN STREAM

Ranbir S Kang

10:30 am

SECTION BUSINESS MEETING

**Section IV: PHYSICS, MATHEMATICS, COMPUTER SCIENCE,
ENGINEERING AND TECHNOLOGY
Social Sciences 3030**

8:00 am

EVALUATION OF SPLIT-RING RESONATOR FABRICATED USING LASER CUTTING AND CNC METHODS**

Rhode O. Peters, Xavier S. Wellons*, Xavier S. Lee*, Shantanu Chakraborty, and Qingsong Cui*

8:15 am

MODELING THE ORBITAL DYNAMICS OF SUPER EARTH KEPLER-62F

Jordan M. Hewins, Ian Mclean*, and Jasmine Freeman**

8:30 am

MODIFIED MICROSTRIP LINE BASED NONINVASIVE BIOSENSORS IN MICROWAVE SPECTRUM**

*Shantanu Chakraborty, Romeo D. Montague, and W. Logan Spooner**

8:45 am

INVESTIGATING THE RELATIONSHIP BETWEEN THE GLOBAL COVERING FRACTION AND LUMINOSITY OF ACTIVE GALACTIC NUCLEI

Shanice Mack, Alton V. Patrick, and Jay Dunn

9:00 am

LIGHT RAYS PASSING THROUGH LIQUID CRYSTALS**

Elizabeth Ehme

9:15 am

TECHNIQUES FOR ANALYZING ATR-FTIR SPECTRA APPLIED TO MOUSE MODEL SERA**

Michael R. Nelson, Mehmood Pirzada, Amous Toure, and Mathes Dayananda

9:30 am

TRANSIENT NUCLEATION RATE IN OXIDE GLASSES

Emily Manqueros and Kisa S. Ranasinghe

9:45 am

CONCOMITANTLY COMPUTING LATTICE PROPERTIES OF DIAMOND ANVIL CELL DESIGNED X-RAY DIFFRACTION**

Mason A. Caron, Neal Chestnut, and Julie Talbot*

10:00 am

COMPUTATIONAL ANALYSIS AND EVALUATION OF BINARIZATION METHODS IN AFM IMAGES FOR INVESTIGATING POROSITY OF FLUORINE-DOPED TIN OXIDE THIN FILMS**

Mason Ari Caron, Ajith DeSilva, Julien D. H. Wiley, and Javier E. Hasbun*

10:15 am

TRYING TO UNDERSTAND 30-PLUS YEARS OF URANUS BRIGHTNESS MEASUREMENTS

Richard Schmude

10:30 – 11:00 am:
SECTION BUSINESS MEETING

11:15 am
PEER REVIEW ON STUDENTS' PROJECTS IN LARGE CLASSROOM INTRODUCTION PHYSICS TEACHING**
Yao Yao

11:30 am
MASS DERIVATION OF PLANETS K2-21B AND K2-21C FROM TRANSIT TIMING VARIATIONS
Billy Quarles

11:45 am
STRUCTURAL AND MAGNETIC PROPERTIES OF CHIRAL MAGNETIC OXIDE MNTEM006**
Ananta R. Acharya, Brady Wilson, and Chetan Dhital

Section V: BIOMEDICAL SCIENCES Social Sciences 3023

8:30 am
ROLE OF *FGF2* MRNA 5' UTR IN CAP-INDEPENDENT TRANSLATION INITIATION**
Brittany Benner and Arnab Sengupta*

8:45 am
EFFECTS OF HYPOXIA ON THE STRUCTURE OF *HIF1A* 5' UNTRANSLATED REGION**
Alexandra Furney and Arnab Sengupta*

9:00 am
STRESS-INDUCED CHANGES IN THE 5' END REGULATORY STRUCTURES OF THE TP53 MRNA
Jin Yeong Kim and Arnab Sengupta*

9:15 am
EFFECTS OF EGCG ON CYP1A1 PROMOTER ACTIVITY IN MOUSE LIVER CELLS
Sophia C. Shook and Jennifer C. Schroeder*

9:30 am
BMAL2 IN ENDOTHELIAL CIRCADIAN RHYTHM AND REMODELING
Jordan A Moratin and Daniel Rudic*

9:45 am
EXPLORING NOVEL SPLICE VARIANTS OF CHICO IN *DROSOPHILA*: EXISTENCE AND PHYLOGENETIC ANALYSIS**
Cason T. Roberson and Brian W. Schwartz*

10:00 am
POTENTIAL ROLE OF ADENOVIRUS E4 11K PROTEIN TOWARD THE INHIBITION OF INTERFERON-BETA EXPRESSION
Elizabeth C. Seidita, Camille Browning*, Madison Germain*, and Kasey A. Karen*

10:15 am
THE ROLE OF ADENOVIRUS PROTEIN E4 11K IN P BODY PROTEIN RELOCALIZATION

Heather Vincent, Sarah West*, Danny Robinson*, and Kasey A. Karen*

10:30 am-11:00 am

SECTION BUSINESS MEETING

Section VI: PHILOSOPHY AND HISTORY OF SCIENCE Social Sciences 2021

9:00 am - 9:25 am

ZERO IS BETTER THAN "ONE": AN ANALYSIS OF BEING "FIRST"

Ronald E. Mickens

9:30 am - 9:55 am

AFRICAN-AMERICAN LEADERSHIP AND RECOGNITION IN THE AMERICAN CHEMICAL SOCIETY

Albert N. Thompson, Jr.

10:00 am - 10:25 am

INFLUENCE OF CHALKBOARD AESTHETICS ON TEACHING AND RESEARCH

Ronald E. Mickens & Charmayne Patterson

10:30 am -11:00 am

SECTION VI BUSINESS MEETING

11:00 am - 11:25 am

FLOW OF ENERGY AND MATTER IN ECOSYSTEMS: THE ROOTS OF A MISCONCEPTION

William A. Said

Section VII: SCIENCE EDUCATION Social Sciences 3029

9:00 am

SET UP FOR PRESENTERS

9:15 am

DIGITAL TEXTBOOK FOR PRINCIPLES OF CHEMISTRY II

Antara Dutta, Maher Atteya, Shalini Jain Kumar, Ahmed A. Baosman, and Michael R. Nelson

9:30 am

BREAKING BARRIERS: INVESTIGATING GENDER DYNAMICS IN INTRODUCTORY PHYSICS LAB CLASSES

Bilas Paul, Shantanu Chakraborty, Ganga Sharma

9:45 am

DO LARGE ENDOWMENTS AND NOBEL PRIZE LAUREATE FACULTY PRODUCE BETTER TEACHING AND LEARNING OUTCOMES?

William A. Said

10:00 am

FROM SCIENCE TO SCIENCE PRACTICE: QUESTIONING AND SCIENCE PRACTICE IN THE K-12 CLASSROOM

Vanessa Browning, Taylor Kate Guerrero, and Alex T. St. Louis

10:15 am

LEARNING BY TEACHING: A QUALITATIVE ANALYSIS OF UNDERGRADUATE MENTOR EXPERIENCES IN THE IBEARS PROGRAM

Melvin Hilson and Alex T. St. Louis

10:30 am–11:00 am
SECTION BUSINESS MEETING

Section VIII: ANTHROPOLOGY Social Sciences 3028

9:15 am
THE IMPACT OF LOW-BODY WEIGHT ON ESTIMATING AGE-AT-DEATH AND SENESCENCE OF FEATURES ON THE AURICULAR SURFACE OF THE PELVIC SACROILIAC ARTICULATION**
Dawson W. Lamb and Frank L'Engle Williams*

9:30 am
DEVELOPING A DECISION TREE MODEL AND PROTOCOLS FOR THE ETHICAL ACCESSION AND CURATION OF HUMAN REMAINS IN TEACHING COLLECTIONS
Andy Kellos and Alice F. Gooding*

9:45 am
ANALYZING THE PROCESS OF ARCHEOLOGICAL CURATION: A CASE STUDY FROM THE CIVIL WAR SITE AT PICKETT'S MILL**
*Reagan D. Earnhart**

10:00 am
ARCHAEOLOGICAL SITE FORMATION PROCESSES ON A TERRACE OF THE LITTLE TALLAPOOSA RIVER, CARROLL COUNTY, GEORGIA**
Joel D. Edmonson and Andrew H. Ivester*

10:15 am
FROM STONE BOWLS TO POTTERY VESSELS: EARLY WOODLAND LIFE AT THE CUMMINGS SITE IN NORTH GEORGIA**
Ellie Sutherland, James R. Tadin*, and Ian Foster*

10:30 am
SECTION BUSINESS MEETING

11:15 am
COMMUNITY AND INDUSTRY IN THE GEORGIA FRONTIER**
M. Jared Wood

11:30 am
BURIED BENEATH OUR FEET: EARLY MAYA ARCHITECTURE UNDER THE MAIN PLAZAS AT THE ANCIENT MAYA SITE OF PACBITUN, BELIZE
Terry G. Powis

11:45 am
CONTESTED VALUES AND SUSTAINABLE LIVELIHOODS OF ARTISANAL ALCOHOL IN CABO VERDE**
Brandon D. Lundy, Monical H. Swahn, Mark W. Patterson, and Nancy H. Pullen

Section IX: PSYCHOLOGICAL SCIENCES Social Sciences 3031

9:00 am
INTRODUCTION AND PRESENTER SET-UP

9:15 am

EXPLORING VETERAN IDENTITY THROUGH LYRIC ANALYSIS**

Dawson Robinson, Paige Russo*, Meredith Robertson*, Lauren Gibson*, Ella Swartz*, Shay Silvia*, Laurie Peebles, and Stephanie Jett*

9:30 am

EXPLORING VETERAN IDENTITY USING THE PHOTOVOICE TECHNIQUE**

Emma Whitener, Haley Blackwell*, Trenholm Fahy*, Hadley Quigg, Lilla Gillen, Laurie Peebles, and Stephanie Jett*

9:45 am

SOCIAL NETWORK ANALYSIS: AN EVALUATION TOOL FOR ORGANIZATIONAL COLLABORATION

Yamini Patel, DeAndre Cain, Megan Passineau, and Kevin Swartout*

10:00 am

CURIOSITY, MEMORY, AND THE PLACE

Simin Nasiri and Thackery I. Brown*

10:15 am

FLASHBULB MEMORIES AS NARRATIVE TALES

Nicole M. Harsch and Robyn Fivush

10:30 am

THE IMPACT OF ADAPTIVE VERSUS MALADAPTIVE STRATEGIES FOR COPING WITH COVID-19 RELATED STRESS ON MENTAL WELL-BEING IN COLLEGE STUDENTS**

*Stephanie Jett and Lauren Ernst-Fortin**

10:45 am

SECTION BUSINESS MEETING