

2023

Georgia Academy of Science 2023 Annual Meeting Program

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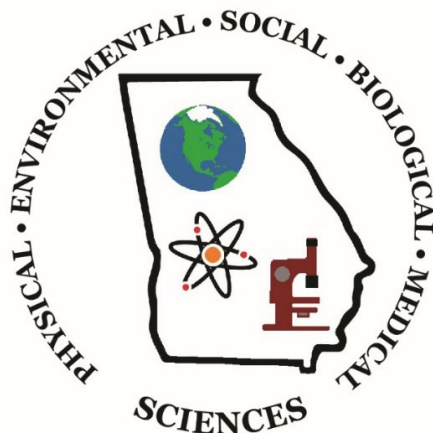
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Georgia Academy of Science 2023 Annual Meeting Program

Authors

Al Mead, Dominic DeSantis, Hasitha Mahabaduge, Samuel Mutiti, Kristine White, and Cason Kelley



2023

**Georgia Academy of Science Annual Meeting
March 3-4, 2023
Georgia College & State University**

Alfred J. Mead

Local Arrangements Committee Chair, Technical Program Chair, Department of Biological and Environmental Sciences, Georgia College & State University

Dominic DeSantis

Local Arrangements Committee Member, Department of Biological and Environmental Sciences, Georgia College & State University

Hasitha Mahabaduge

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Webpage design, Department of Chemistry, Physics and Astronomy, Georgia College & State University



March 3, 2023



Dear Members of the Georgia Academy of Science and Guests,

Welcome to the Centennial Meeting of the Georgia Academy of Science! Our first meeting was back in 1923! This meeting has some exciting events including a Special Section on Psychological Science (See Section IX in the Program). There are some great activities on and around the Georgia College and State University Campus for you to enjoy as well as the meeting itself. There are over 130 podium and poster presentations this year. I am excited to see all of the student and faculty work showcased here at GSCU!

I would like to thank Dr. Al Mead, the Local Arrangements Committee Chair and Technical Program Chair, members of the Local Arrangements Committee: Dr. Dominic DeSantis, Dr. Hasitha Mahabaduge, Dr. Samuel Mutiti, and Dr. Kristine White; and Dr. Cason Kelley for the GCSU Meeting webpage. I am also grateful for the GAS Executive and the Section Chairs who have made this another awesome and successful year.

In addition, I would like to thank Interim Editor in Chief of the Georgia Journal of Science, Dr. Evan Lampert; the Associate Editor, Dr. Adam Davis; and especially our outgoing Editor in Chief of the GJS, Dr. Trinanjan Datta for his years of service in this position.

As we celebrate our 100th meeting and scholarly successes as an Academy this year, we must remember that this success is due to a healthy membership. To keep our membership healthy, please encourage your colleagues to join us. In expanding our membership, we can expand our roles as scientific ambassadors in Georgia and continue our mission to enhance the scientific literacy of the population of our state.

Please consider submitting articles based on the scholarly work presented here at our 100th meeting for consideration in the Georgia Journal of Science. It is an excellent venue for publication and is open access. Publication in the GJS is also free of charge for academy members!

At the end of this meeting, I will be handing over the gavel of the Presidency to Dr. Margaret (Meg) Smith. It has been an honor to serve as president for the past two years and I thank you for your confidence in me. I know that I leave the Academy in very capable hands!

With gratitude,

A handwritten signature in blue ink that reads "Amanda Duffus".

Amanda Duffus

President, Georgia Academy of Science



Office of the President
Campus Box 20
Milledgeville, Georgia 31061-0490
Phone 478-445-4444
Fax 478-4452510

Georgia Academy of Sciences Colleagues,

Welcome to Georgia College & State University in historic Milledgeville for the 100th Annual Meeting of the Georgia Academy of Sciences. Georgia College faculty have a long history of dedication to and support for the Academy and we are honored to host this special anniversary event.

As Georgia's designated Public Liberal Arts University, undergraduate research is one of the pillars of our students' academic experience. We recently received the 2020 Campus-wide Award for Undergraduate Research Accomplishments presented by the National Council on Undergraduate Research. Additional evidence of our commitment to student research is the creation of the Georgia College Aquatic Sciences Center which harnesses faculty expertise and institutional resources to promote teaching, research, and community engagement on water-related issues.

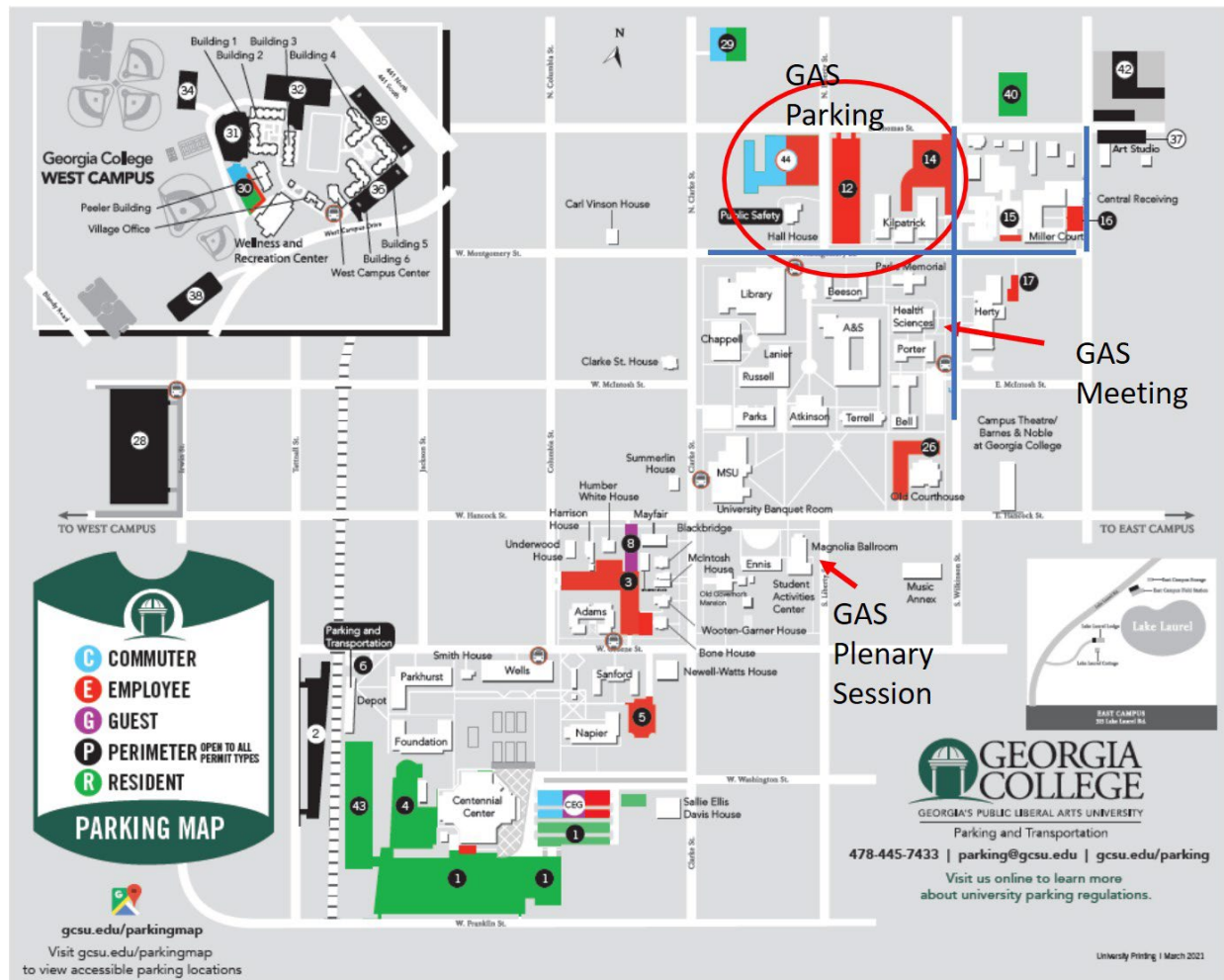
While you are here on our beautiful campus, we hope you will make time to tour our recently constructed Integrated Science Complex, as well as the William P. Wall Museum of Natural History and Aquatic Sciences Center in Herty Hall, the Old Governor's Mansion (a National Historic Landmark), and Andalusia, former home of world renowned gothic writer and GCSU alumna Flannery O'Connor and also America's most recently designated National Historic Landmark. In addition, the shops and restaurants of downtown Milledgeville and the Old State Capitol Building are located within a few blocks of campus.

We hope you have a productive conference and enjoy your stay in the land of the Bobcats!

Sincerely,

Cathy Cox, J.D.
President

Costas Spirou, Ph.D.
Provost & Vice President for Academic Affairs



PARKING:

Parking will be difficult until 2:00 pm on Friday. Prior to 2:00 pm, you may find free 2-hour street parking (dark blue lines on map) near the Health Sciences Building. We have asked the City of Milledgeville not to ticket Friday afternoon. Stay tuned for more information. Also, there is a City-run free 2-hour parking deck located on E. McIntosh St. (next to the “M” in “Meeting” on the map). Beginning at 2:00 pm Friday, Lots 14, 12, and 44 (circled in red on map) will be available to meeting attendees.

Please use this link to register for a guest parking permit while on campus

https://georgiacollege.aimsparking.com/permits/?cmd=new_non_auth .

For Saturday, Lots 14, 12, and 44 will be available.

The Georgia Academy of Science Local Arrangements Committee extends our gratitude to the following for supporting the 100th Annual Meeting of the Georgia Academy of Science

President Cathy Cox, Georgia College & State University
Dr. Costas Spirou, Provost, Georgia College & State University
Dr. Eric Tenbus, Dean Arts and Sciences, Georgia College & State University
Sara Stallings and Lisa Castillo, Facility Reservations, Georgia College & State University
Jessi Jenkins, Admissions, Georgia College & State University
Matt Davis, Old Governor's Mansion, Georgia College & State University
William Goldstein and Angie Ingalls, Catering & Events, Georgia College & State University
Keith Bergeron, Production Services, Georgia College & State University
John Jackson, Parking Services, Georgia College & State University
Sheryl Melton and Angie Woodham, Continuing Education, Georgia College & State University
Katie Smith, MURACE, Georgia College & State University
Ashley Quinn and Heidi Mead, Natural History Museum, Georgia College & State University

GEORGIA ACADEMY OF SCIENCE
100th ANNUAL MEETING
MARCH 3-4, 2023
GEORGIA COLLEGE & STATE UNIVERSITY
Friday, March 3, 2023

- 11:00 am to 6:00 pm: On-site registration Health Sciences 309
- 11:00 am to 1:00 pm: Georgia Academy of Science Board of Directors business meeting (closed to the public) Herty 252
- 8:30 am to 5:00 pm: Natural History Museum Herty 143
- 9:00 pm to 5:00 pm: Planetarium shows (beginning on the hour) Herty 143
- 10:00 am to 4:00 pm: Old Governor's Mansion tours (free admission with GAS badge)
..... 120 S Clarke St
- 10:00 am to 4:00 pm: Andalusia: Home of Flannery O'Connor (free admission with GAS badge)
..... 2628 N Columbia St
- 1:00 pm to 5:00 pm: Observatory tours Herty 406
- 1:00 pm to 4:00 pm: Refreshments Health Sciences 309
- 2:00 pm to 5:00 pm: Oral Sessions.
Section I: BIOLOGICAL SCIENCES Health Sciences 144
Section IV: PHYSICS, MATHEMATICS, COMPUTER SCIENCE, ENGINEERING
AND TECHNOLOGY Health Sciences 304
- 3:00 pm to 4:30 pm: Poster Presentation set up Health Sciences 314
- 5:00 pm to 7:00 pm: Welcome Reception with heavy Hors d'oeuvres and Poster Presentations
(all sections)Health Sciences 309/314
- 5:00 pm to 5:15 pm: Opening remarks, Dr. Costas Spirou, GCSU Provost, and Dr. Eric Tenbus,
Dean College of Arts & Sciences Health Sciences 309/314
- 7:30 pm to 9:00 pm: Telescope night-sky viewing Herty 406

Saturday, March 4, 2023

- 7:30 am to 8:30 am: Light breakfast Health Sciences 309
- 7:30 am to 10:00 am: On-site registration Health Sciences 309
- 8:00 am to 12:00 pm: Oral sessions/Section business meetings (10:30-11:00)
- Section I: BIOLOGICAL SCIENCES Health Sciences 207
- Section II: CHEMISTRY Health Sciences 201
- Section III: EARTH AND ATMOSPHERIC SCIENCES Health Sciences 309
- Section IV: PHYSICS, MATHEMATICS, COMPUTER SCIENCE, ENGINEERING
AND TECHNOLOGY Health Sciences 304
- Section V: BIOMEDICAL SCIENCES Health Sciences 105
- Section VI: PHILOSOPHY AND HISTORY OF SCIENCE Health Sciences 202
- Section VII: SCIENCE EDUCATION Health Sciences 121
- Section VIII: ANTHROPOLOGY Health Sciences 300
- Section IX: PSYCHOLOGICAL SCIENCES Health Sciences 144
- 12:15 pm to 1:45 pm: Plenary Session, Luncheon, Keynote Speaker, Student Awards, and
Academy Business Meeting Magnolia Ballroom

GEORGIA ACADEMY OF SCIENCE
100th ANNUAL MEETING
MARCH 3-4, 2023
GEORGIA COLLEGE & STATE UNIVERSITY

Friday, March 3, 2023
Oral Presentations

Section I: BIOLOGICAL SCIENCES, Health Sciences 144

2:00 pm

PRELIMINARY ANALYSIS OF SUPPLEMENTAL FEEDING ON CAMERA TRAP CAPTURES OF SMALL MAMMALS IN CENTRAL GEORGIA

*Travis J. Cunningham**, *Raena McCown**, and *Alfred J. Mead*

2:15 pm

COMPARISON OF DIATOM COMMUNITIES IN LOW-IMPACT STREAMS IN MIDDLE GEORGIA

*Sydney Brown** and *Kalina Manoylov*

2:30 pm

AQUATIC INSECT (HEXAPODA) DIVERSITY IN MILLEDGEVILLE, GA

*Heath M. Ghioto** and *Kristine N. White*

2:45 pm

EMERGING VIBRIO HARVEYI AND VIBRIO CAMPBELLII PATHOGENS IN GEORGIA WATERS: PRESENCE, DISTRIBUTION, AND CONCENTRATIONS**

*Cameron Brown**, *Alexandra Rosa-Calix**, and *Andrei L. Barkovskii*

3:00 pm

THE EFFECT OF CALLERY PEAR (PYRUS CALLERYANA) ON SOIL MACROFAUNA (DIPLOPODA AND OLIGOCHAETA)**

*Joseph M. McGee** and *Bruce A. Snyder*

3:15 pm

DETERMINING THE SOURCES OF FECAL POLLUTION IN THE WATERSHEDS OF PENSACOLA, FLORIDA

*Jodel M. Nicholas**

3:30 pm

MEASURING REPRODUCTIVE OUTPUT OF WILD-CAUGHT DWARF SEAHORSES (HIPPOCAMPUS ZOSTERAE)

*Dalila Sanchez**, *Taylor L. Taylor*, and *Emily Rose*

3:45 pm

HIGH-FREQUENCY ACCELEROMETER RECORDING OF KEY PREDATORY BEHAVIORS IN VIPERS: A CASE STUDY WITH TIMBER RATTLESNAKES (CROTALUS HORRIDUS)**

*Morgan L. Thompson**, *Richard H. Adams*, *Anna F. Tipton*, and *Dominic DeSantis*

4:00 pm

TERRESTRIAL ISOPOD SPECIES DISTRIBUTION AROUND YOUNG HARRIS COLLEGE, GA

Caleb Thompson and *Kevin Geyer*

4:15 pm

OEDICEROTIDAE (CRUSTACEA: AMPHIPODA) OF BOCAS DEL TORO, PANAMA

*Elizabeth L. Durham** and *Kristine N. White*

4:30 pm

HOW DO PAINTED NEST BOXES AFFECT EASTERN BLUEBIRD NEST TEMPERATURE?

*Mathew C. Gordon** and *Katie J. Stumpf*

4:45 pm
OOCYTE AND FOLLICULAR DEVELOPMENT IN IMMATURE EASTERN FENCE LIZARDS
Audrey H.S. Parrott and Matthew R. Milnes

**Section IV:PHYSICS, MATHEMATICS, COMPUTER SCIENCE, ENGINEERING
AND TECHNOLOGY, Health Sciences 304**

2:30 pm
MATHEMATICAL MODELING OF POST-EXPOSURE PROPHYLAXIS OF SARS-COV-2
*Makayla Marie Preston**

2:45 pm
DESIGN OF A HIGH VACUUM CHAMBER AND MICROWAVE FABRY-PEROT CAVITY
Siam Sarower, Varun Raghuraman*, Valera Karpenko, and Lu Kang*

3:00 pm-3:30 pm
Break

3:30 pm
IDENTIFYING UFOS IN THE COS FUV SPECTRA OF PDS 456
Kseniya Harrington and Jay P. Dunn*

3:45 pm
AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN THE GLOBAL COVERING FRACTION AND
LUMINOSITY OF AN AGN
Alton Patrick and Jay P. Dunn*

4:00 pm
EXPERIMENTAL DESIGN AND COMPARATIVE ANALYSIS OF DESALINATION OF HYPERSALINE
BRINES USING TEMPERATURE SWING SOLVENT EXTRACTION
Cristin Colona, Voytek Tarnowski*, Favor Archer*, and Seungjin Lee*

4:15 pm
A MODIFIED L-SHAPED BANDSTOP FILTER FOR INDUSTRIAL, SCIENTIFIC AND MEDICAL (ISM)
APPLICATIONS
Jordan Hewins, Marissa Norlund*, and Shantanu Chakraborty*

4:30 pm
APPLICATION OF A DIATOMIC MOLECULE MODEL POTENTIAL TO HOMO- AND HETERODIATOMIC
MOLECULES
Dorien E. Carpenter and Javier E. Hasbun*

4:45 pm
OPTIMIZATION OF A BALL'S LAUNCH IN SPORTS
Andrew C. Smith and Javier E. Hasbun*

Friday, March 3, 2023
Poster Presentations, 5:00 pm to 7:00 pm
Health Sciences 314

Section I: BIOLOGICAL SCIENCES

1. TESTING PRECISION LIMITS IN ALGAL COMMUNITY ANALYSES FOR USES IN WATER QUALITY ASSESSMENT
Anna L. Agi, Sally Entrekin, and Kalina Manoylov*
2. EFFECT OF STREAM SIZE ON DENSITY OF A HEADWATER SPECIES OF AQUATIC SNAIL (ELIMIA PROXIMA)
Jenna Ash and Carlos D. Camp*
3. THE EFFECT OF SALINITY AND PH ON A SPECIES OF SEA URCHIN LARVAE**
Sydney L. Ashcraft, Emma Hopper*, Elice Ventrieri*, Kacie Miller*, Margaret Smith, and Nancy Dalman*
4. FLUORESCENT AND COMPARATIVE ANALYSIS OF PROTEIN LOCALIZATION IN SACCHAROMYCES CEREVISIAE**
Lewis S. Barr and Ellen France*
5. THE EFFECTS OF WINTER SHELTER CHARACTERISTICS ON OVERWINTERING DURATION, BODY MASS LOSS, AND OPHIDIOMYCES OPHIDIICOLA INFECTION LOAD IN A SOUTHEASTERN POPULATION OF TIMBER RATTLESNAKES (CROTALUS HORRIDUS)**
Danielle C. Bartlett and Dominic L. DeSantis*
6. MONITORING GOPHER TORTOISE (GOPHERUS POLYPHEMUS) MORTALITY AND RELIABILITY OF PASSIVE INTERGRATED TRANSPONDERS (PIT TAGS)**
Jazmin M. Borges, Nicole E. Woolridge, and Mitchell J. Lockhart
7. DEGRADATION OF MICROCRYSTALLINE CELLULOSE BY NEW ISOLATES OF ADHERENT, BIO-FILM FORMING BACTERIA
John D. Butler, Emma S. Young*, John P. Escate*, Pedro A. Flores*, and William J. Kenyon**
8. TEMPERATURE PREFERANCES IN LARVAE OF TWO SPECIES OF TWO-LINED SALAMANDER (EURYCEA BISLINEATA SPECIES COMPLEX)
Victor Cañas and Carlos D. Camp*
9. SPATIAL AND TEMPORAL PATTERNS OF E. COLI DISTRIBUTION IN THE PIEDMONT UNIVERSITY WETLANDS, DEMOREST, GEORGIA
Jojo Croffie and Timothy O. Menzel*
10. WHOLE GENOME SEQUENCING FOR MILLIPEDE CHEROKIA GEORGIANA (BOLLMAN 1889)**
Elena Cruz, Bruce A. Snyder, and Arnab Sengupta*
11. HEALTH SCREENING OF AN AQUATIC TURTLE POPULATION IN NORTH GEORGIA, USA**
Amanda L.J. Duffus, Ashley N. Fenner, E. Jill Pugh*, Michael J. Bender, and Jennifer L. Mook*
12. AN INTEGRATED APPROACH TO THE BIODIVERSITY AND CONSERVATION OF ODONTOTAENIUS DISJUNCTUS AND O. FLORIDANUS
Katelyn Enderle, Frank Fontanella, Ally Shinall, and Jaylah Adams
13. THE EFFECTS OF SLEEP DURATION ON COGNITION AND MOTOR FUNCTION
Samuel Figueiro and Helene Peters*
14. CAN CINNAMON SUPPLEMENTS LOWER BLOOD GLUCOSE LEVELS?
Chelsea Frederick and Helene Peters*
15. ROLE OF REGULATORY MRNA STRUCTURES IN THE EXPRESSION OF CANCER-RELATED GENES**
Alexandra Furney, Brittany Benner*, Jin Yeong Kim*, and Arnab Sengupta*

16. THE EFFECTS OF DIET AND SPINOSYN ON THE LARVAL LIFE HISTORY OF TRICHOPLUSIA NI**
Laura K. Gleaton and Margaret Smith*
17. AN INVESTIGATION INTO THE OCCURRENCE OF STAPHYLOCOCCUS AUREUS (ROSENBACH, 1884) AND SCREENING FOR ALCOHOL PRESENCE IN MECHANICALLY EXPRESSED BREASTMILK SAMPLES
Ansley Hartley and Helene Peters*
18. POSTHATCHING DEVELOPMENT OF THE REPRODUCTIVE ANATOMY IN MALE EASTERN FENCE LIZARD (SCELOPORUS UNDULATUS)
Sarah Holder, Christina Riecke*, and Matthew Milnes*
19. SPATIAL AND TEMPORAL TRENDS IN CONDITION INDEX OF SAPELO ISLAND, GEORGIA OYSTERS (CRASSOSTREA VIRGINICA)
Rebekah M. Huneke, MacEva Wright, Jill Schulze, and Nancy Dalman
20. AQUATIC HABITAT RESOURCE USE OF EASTERN BOX TURTLES IN NORTHEASTERN GEORGIA**
Emily E. Jones, Amy L. Rodriguez*, Natalie L. Hyslop, and Jennifer Mook*
21. THE FEMALE MICROBIOME: PROBIOTICS, LACTOBACILLUS INCIDENCE AND ANTIBIOTIC RESISTANCE
Grace Jones and Helene Peters*
22. AVIAN COMMUNITY OF TUMBLING CREEK WOODS**
Myra A. Kincaid and Dawn E.W. Drumtra*
23. LUNG CAPACITY OF ATHLETES AT BREWTON-PARKER COLLEGE AND THE GROWTH AND ANTIBIOTIC RESISTANCE OF STAPHYLOCOCCUS AUREUS AND PSEUDOMONAS AERUGINOSA
Alexia Mays and Helene Peters*
24. GENETIC SUPPRESSOR SCREEN FOR INTERACTORS OF SEC6 TEMPERATURE SENSITIVE MUTANT SEC6-49 AND IN SACCHAROMYCES CEREVISIAE**
Sophia A. McNeill and Ellen C. France*
25. THE APPLICATION OF MULTILOCUS GENOTYPING TO DETECT INVASIVE HYBRIDS IN THE GENUS CYPRINELLA**
Maci S. Miller and Gregory J. Glotzbecker*
26. THE RELATIONSHIP BETWEEN SHOULDER INTERNAL AND EXTERNAL RANGE OF MOTION AND ISOMETRIC GRIP STRENGTH OF COLLEGIATE BASEBALL AND SOFTBALL ATHLETES
Cuyler Morris and Helene Peters
27. EFFECTS OF ROADWAYS ON MATE SEARCHING MOVEMENTS AND MATE LOCATION SUCCESS IN AN IMPERILED PIT VIPER (CROTALUS HORRIDUS)**
Elizabeth J. Noble, Anna F. Tipton and Dominic L. DeSantis*
28. BEHAVIORAL CORRELATES OF OVERWINTERING SITE SELECTION IN A SOUTHEASTERN POPULATION OF TIMBER RATTLESNAKES (CROTALUS HORRIDUS)**
John R. Powers, Dominic L. DeSantis and Alfred J. Mead*
29. HOW DOES YOUR CHOICE OF MINNOW TRAP INFLUENCE STREAM CAPTURE SUCCESS?***
Stormy Ramey, C. Walker Peck*, Michael J. Bender, and Mike Saunders*
30. COMPARISON OF HOUSEHOLD DISINFECTANT SPRAYS USING THE KIRBY BAUER DISK DIFFUSION METHOD
Emily Y. Rankin and Julia M. Schmitz
31. VARIATION IN GROWTH RATES OF EASTERN BOX TURTLES (TERRAPENE CAROLINA CAROLINA) IN AN INVASIVE-DOMINATED HABITAT IN NORTH GEORGIA**
Amy L. Rodriguez, Emily E. Jones*, Natalie Hyslop, and Jennifer Mook*

32. IDENTIFICATION OF THE SOURCES OF FECAL CONTAMINATION IN BRUSHY CREEK WATERSHED**
Kathryn Sanders, Isreal Thrape*, and Dave Bachoon*
33. THE INCIDENCE OF CONCUSSIONS IN SOCCER PLAYERS AT BREWTON-PARKER COLLEGE AND THE USEFULNESS OF CONCUSSION SYMPTOM SEVERITY REPORTS
Mackenzie Stewart and Helene Peters*
34. QUANTIFYING FUNGI AND THE PRESENCE OF ASPERGILLUS IN HEMP AND GARDEN SOILS OF GEORGIA
Jaiden A. Stidston and C. Daniel Burt*
35. HIGH-FREQUENCY ACCELEROMETER MONITORING OF FORAGING AND MOVEMENT BEHAVIOR IN A SECRETIVE PREDATOR (CENTRAL RAT SNAKES, PANTHEROPHIS ALLEGHENIENSIS)**
Amber A. Stubbs, Morgan L. Thompson*, and Dominic L. DeSantis*
36. COMPARISON BETWEEN HISTOLOGY TECHNIQUES USED ON ERISTALIS TENAX HEADS AND BRAINS**
Elizabeth L. Taylor and Jason D. Lang*
37. MOLECULAR DETECTION OF PATHOGENIC LEPTOSPIRA IN PENSACOLA FLORIDA WATERSHEDS
*Israel C. Tharpe**
38. REVISITING THE ENERGETICS HYPOTHESIS: CAN ACCELEROMETER MONITORING REVEAL HIDDEN VARIATION IN THE MOVEMENT PATTERNS OF SNAKES?
William L. Tillett II, Parker L. Wilson*, and Dominic L. DeSantis*

Section II: CHEMISTRY

39. AN OPTIMIZATION OF TIME IN THE BROMINATION OF VANILLIN REACTION**
Chandler Lowe and Elaine Bailey*
40. SYNTHESIS, GELATION, AND STEADY-STATE FLUORESCENCE PROPERTIES OF N-(HYDROXYPHENYL)ALKANAMIDE DERIVATIVES**
Byron Fisher, Daniel Li*, Ryan Lee*, and Ajay Mallia*
41. CANNIBIS CRIME: UNDERGRADUATE INVESTIGATION
Kaitley Congdon, Liam Newsome*, Emmy Ho*, Peter Rosado-Flores, and Catrena Higginbotham Lisse*
42. QUALITATIVE DETECTION OF ILLICIT DRUG USE IN HAIR SAMPLES VIA GC/MS ANALYSIS**
P. Carson Griffith, Catrena Higginbotham Lisse*
43. SYNTHESIS OF A COLORIMETRIC SILICA SOL-GEL SENSOR FOR THE DETECTION OF METHAMPHETAMINE**
Richard Jenkins and Catrena Higginbotham Lisse*
44. SYNTHESIS OF MESALAMINE AND CURCUMIN CAPPED SILVER NANOPARTICLES FOR THE TREATMENT OF IRRITABLE BOWEL DISEASE (IBD)*
Haidee Martinez-Perez, Logan M. Hall*, and Peter J. Rosado Flores*
45. PREPARING AND CHARACTERIZING PT AND PD SINGLE ATOM CATALYSTS ON ZrO₂**
Jake McCarthy, Kailong Ye, Fudong Liu, and Sampyo Hong*
46. SYNTHESIS AND BIOLOGICAL ACTIVITY OF N-SUBSTITUTED-BENZOTHIAZOLIUM SALTS UPON APPLICATION WITH ALS CELLS AND THE EFFECTS OF THE TDP-43 PROTEIN**
Katelynn B. Powell, Alisha Kennedy*, Destini Thornton*, Harris Carlisle*, Rakaiya Martin*, and Kerri Taylor*

47. SYNTHESIS, GELATION, AND STEADY STATE FLUORESCENCE PROPERTIES OF ALKYLOXYCOUMARIN DERIVATIVES**

Joshua Leonora, Nguyen Le*, and Ajay Mallia*

48. DESIGNING AN UNDERGRADUATE FORENSIC CHEMISTRY EXPERIMENT ON THE LEVELS OF AMPHETAMINE IN URINE USING TWO DIFFERENT METHODS**

Madeline E. Teigen, Wathsala Medawala, and Mia Popkin*

Section III: EARTH AND ATMOSPHERIC SCIENCES

49. LATE PLEISTOCENE TURTLES FROM COASTAL GEORGIA

Lucy A. Beck, Alfred J. Mead, and Josh. L. Clark*

50. INVESTIGATING THE RELATIONSHIP BETWEEN CHINESE PRIVET, SOIL ORGANIC CARBON, AND PHYSICAL SITE CHARACTERISTICS

Tori L. Morgan, Heidi Whitten*, and Christine Mutiti*

51. THE EFFECTS OF COMPOSTABLE DISHWARE ON OVERALL COMPOST QUALITY

Shannon E. Northen, Isabella Banich*, Savannah Kimbrell*, and Allison VandeVoort*

52. COMPARISON OF AVIAN AND NON-AVIAN REPTILE DIGESTION ON SMALL MAMMAL REMAINS AND ITS IMPLICATIONS ON PALAEOECOLOGICAL INTERPRETATIONS**

Todd B. Bennett and Alfred J. Mead*

53. LATE PLEISTOCENE ECOSYSTEM EVOLUTION IN SOUTHEASTERN NORTH AMERICA: A TRANSDISCIPLINARY APPROACH USING FOSSIL AMERICAN ALLIGATOR ENAMEL ISOTOPES**

Atticus Tomcho, Mary Dickens*, Alfred J. Mead, Heidi F. Mead, Christopher Seminack, and David B. Patterson*

54. SOIL AND HEAVY METAL CHARACTERIZATION AT TAILING DUMPS IN ZAMBIA**

Abigail Logan, Alana Stevens*, Ashley Clark*, Lupupa K. Tembo, Victor Shitumbanuma, Rennie Kaunda, and Samuel Mutiti*

55. MOBILIZATION, LEACHING, AND TRANSPORT OF Pb AND Cu IN POLLUTED SOILS**

Wiley Bundy, Ashley Clark*, and Samuel Mutiti*

Section IV: PHYSICS, MATHEMATICS, COMPUTER SCIENCE, ENGINEERING AND TECHNOLOGY

56. FUTURE TRANSITABILITY OF THE CIRCUMBINARY PLANET KEPLER-16B**

Ralph Avery, Billy Quarles, and Veselin B. Kostov*

57. IMPLEMENTATION OF SERIERS FED PATCH ANTENNA FOR BEAM FOCUSING

*William Logan Spooner**

Section V: BIOMEDICAL SCIENCES

58. EFFECT OF DELTA-9 AND DELTA-8 TETRAHYDROCANNABINOL ON DEVELOPMENTAL MORPHOLOGY OF ZEBRAFISH**

Cynthia A. Jackson and Linda Grayson Jones*

59. EFFECTS OF TYPE I DIABETES ON THE HEALTH OF ATHLETES' GUT MICROBIOMES**

Erika M. Williams and Andrea L. Kwiatkowski*

60. COMPARISON OF STRESS-INDUCED AGGRESOMES IN ADENOVIRUS E4 11K INFECTIONS AND CDCL₂ TREATMENT**

Heather Vincent, Sarah West*, and Kasey Karen*

61. THE EFFECTS OF PHYSICAL INTERACTIONS ON THE CONSERVATION OF INSULIN-SIGNALING PATHWAY GENES BETWEEN *D. MELANOGASTER* AND *D. ARIZONAE*

Marc A. Pierre and Brian W. Schwartz*

62. EFFECT OF THE NUMBER OF PHYSICAL INTERACTIONS ON DIVERGENT EVOLUTION BETWEEN INSULIN-SIGNALING PATHWAY GENES OF *DROSOPHILA MELANOGASTER* AND *DROSOPHILA BIPECTINATA*

Rajvi J. Desai and Brian W. Schwartz*

Section VII: SCIENCE EDUCATION

63. APPLICATION OF ANALYTICAL METHODS IN MARINE CHEMISTRY – A FIELD STUDY**

William M. Huang, Xiaopong Li, Hongxia Guan, Ying Guo, Kathryn Zimmermann, and Qing Shao

64. A COMPARATIVE STUDY OF OVINE, BOVIN, AND SWINE BRAIN ANATOMY

Ronald Garcia and Helene Peters*

65. A TEACHING TOOL: DETERMINING RATES OF CELLULAR RESPIRATION AND PHOTOSYNTHESIS FOR PLANT SPECIES ON GEORGIA COLLEGE'S CAMPUS

Jinha Kim, Cooper Williams*, and C. Daniel Burt*

Section IX: PSYCHOLOGICAL SCIENCES

66. INDIVIDUAL AND PRISON FACTORS INFLUENCING INCARCERATED ADULTS' LITERACY AND NUMERACY SKILLS IN THE UNITED STATES**

*Roula Aldib**

67. EVALUATING MATCHING AND ODDITY-TO-SAMPLE LEARNING IN HOUSE CRICKETS**

Zachary T. Guerra and Walter L. Isaac*

68. THE RELATIONSHIPS BETWEEN EMOTIONAL INTELLIGENCE, CORONAVIRUS IMMUNIZATION STATUS, MASK WEARING BEHAVIORS, AND MPOX CONCERN AMONG HBCU STUDENTS**

Lisa Padua, Theodosia M. Lovett, and Mark D. Thomas*

69. IMPACTS OF COMMUNITY SERVICE ON VOLUNTEERS' MENTAL HEALTH

Annie J. Lin, Courtney J. Lowe*, Jenny Nguyen, and Wei-Lun Sun*

Saturday, March 4, 2023 Oral Presentations

Section I: BIOLOGICAL SCIENCES, Health Sciences 207

8:00 am

SUSCEPTIBILITY TO POLYCYSTIC OVARY SYNDROME AND TREATMENT OPTIONS FOR AFRICAN AMERICAN WOMEN IN GEORGIA

Shernaille Bataille and Timothy O. Menzel*

8:15 am

EMERGING VIBRIO HARVEYI AND VIBRIO CAMPBELLII PATHOGENS IN GEORGIA'S CRASSOSTREA VIRGINICA OYSTERS AND MERCENARIA MERCENARIA CLAMS: PRESENCE, DISTRIBUTION, AND CONCENTRATIONS**

Alexandra Rosa-Calix, Cameron Brown*, and Andrei L Barkovskii*

8:30 am

DEVELOPMENT OF A NOVEL CYT-B MITOCHONDRIAL DNA MARKER FOR RAT FECAL CONTAMINATION**

*A'aden Redhead**

8:45 am

NON-INSECT AQUATIC MACROINVERTEBRATE ABUNDANCE AND COMMUNITY COMPOSITION IN MILLEDGEVILLE, GEORGIA**

Michelle K. Murdock and Kristine White*

9:00 am

INVESTIGATING THE EFFECTS OF ALGAL TURBIDITY ON MATING SYSTEM OF THE DWARF SEAHORSE (HIPPOCAMPUS ZOSTERAE)**

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

9:15 am

THE EFFECT OF PH ON THE LARVAE OF TWO SEA URCHIN SPECIES USING DIFFERENT PH MANIPULATION METHODS**

Kacie Miller

9:30 am

ARABIDOPSIS THALIANA EIF2A KINASE, GCN2 IS ESSENTIAL FOR MEDIATING SURVIVAL RESPONSES TOWARDS METHYL JASMONATE STRESS

Daniel F. Diaz, Ansul Lokdarshi, and Teressa K. Akuoko

9:45 am

REGIONAL AQUATIC MACROINVERTEBRATE BIODIVERSITY

Sally J. Sir and Kristine N. White*

10:00 am

THE POPULATION GENETICS OF THE WHITE TUBERCLED CRAYFISH (PROCAMBARUS SPICULIFER, LECONTE 1856) FROM THE OCONEE RIVER DRAINAGE OF GEORGIA**

Noah Rylee and David Weese*

10:15 am

EVALUATION OF MICROBIOLOGICAL SHELF LIFE AT DIFFERENT TEMPERATURES AND FATE OF SSSSS-SLIPPERY SYSTEMATICS OF SLITHERING SNAKE WORMS**

Zoe S. Von Holten, Tyler J. Achatz, and Vasyl V. Tkach*

10:30 am-11:00 am

Section Business Meeting

11:00 am

ESCHERICHIA COLI O157:H7 INOCULATED IN PASTEURIZED MILK**

Md Niamul Kabir, JaTorious Henley, Olabisi O. Ojo

Section II: CHEMISTRY, Health Sciences 201

8:30 am

BIOFUEL SYNTHESIS FROM WASTE OIL AND GREASE: CHARACTERIZATION, BLEND PERFORMANCE, AND COMBUSTION ANALYSIS

*Jasmine Mena**, *Corina Paun**, *Pedro Rodriguez-Romero**, *Tyler Rockey**, *Jessica Taza**, *Sang H. Park*, *Neelam Khan*, and *David P. Pursell*

8:45 am

ANALYTICAL DISCUSSION ON THE POTENCY OF WATER DESALINATED VIA TEMPERATURE SWING SOLVENT EXTRACTION

*Jonathan McKinney**, *Voytek Tarnowski** and *Seungjin Lee*

9:00 am

DEVELOPMENT OF A PASSIVE MULTIPHASE ACOUSTIC FLOW METER

*Liam A. Newsome**, *Callie Miller**, *Sierra Lutz**, *Damian Harris**, *Isabella Malloch**, *Harrison Smy**, *Katelyn Dixon**, *Reese Allen**, *Ryan Smith**, and *Kenneth C. McGill*

9:15 am

OPTIMIZATION OF BIOETHANOL PRODUCTION FROM KUDZU, *PEURARIA MONTANA***

*Jordan T. Pandolph**, *Suzanne E. Moore**, *Charles D. Swor*, and *Andrea L. Kwiatkowski*

9:30 am

SYNTHESIS OF METALLO-MESO-TETRAPHENYLPORPHYRIN DERIVATIVE USING ZINC (II) METAL

*Cole Smith**, *Nicole Snyder**, *Catrena Higginbotham Lisse*, and *Peter J. Rosado Flores*

9:45 am

CLONING OF AN ALGAL AQUAPORIN GENE

Donna L Gosnell

10:30 am

Section Business Meeting

Section III: EARTH AND ATMOSPHERIC SCIENCES, Health Sciences 309

10:30 am

Section Business Meeting

Section IV: PHYSICS, MATHEMATICS, COMPUTER SCIENCE, ENGINEERING AND TECHNOLOGY, Health Sciences 304

9:00 am

MOON PACKING AROUND AN EARTH-MASS PLANET

Billy Quarles, *Suman Saytal*, and *Marialis Rosaio-Franco*

9:15 am

EXPERIMENTAL DEMONSTRATION OF DIELECTRIC CONSTANT ENHANCEMENT WITH METAL PATCHES

Arun K. Saha and *Walker G. Pendleton*

9:30 am

PHOTOMETRY OF TWO TOTAL LUNAR ECLIPSES

Richard Willis Schmude

9:45 am

WHOLE DISK J- AND H-FILTER BRIGHTNESS MEASUREMENTS OF THE MOON

Richard Willis Schmude

10:00 am

STRUCTURAL, ELECTRICAL AND MAGNETIC CHARACTERIZATIONS OF CHIRAL MAGNETIC OXIDES SYNTHESIZED BY CONVENTIONAL SOLID-STATE METHODS

Ananta R. Acharya, August Meads*, Brady Wilson*, and Chetan Dhital

10:30 am-11:00 am

Section Business Meeting

11:00 am

CONTRASTING THE PLANCK AND RAYLEIGH JEANS RADIATION MODELS, A HISTORIC PERSPECTIVE

Peter Alden Roessle

11:15 am

DO EXOPLANETS EXIST AROUND HIGH VELOCITY STAR SYSTEMS?

Braven Lyall, Idan Ginsburg, and Sébastien Lépine*

Section V: BIOMEDICAL SCIENCES, Health Sciences 105

9:00 am

DETERMINING THE EFFECTS OF GREEN TEA EXTRACT, QUERCETIN, AND EPICATECHIN ON CELL PROLIFERATION AND LACTATE LEVELS IN MOUSE HEPATOCYTES**

Kiera E. Lewis and Jennifer C. Schroeder*

9:15 am

POTENTIAL ROLE OF ADENOVIRUS E4 11K PROTEIN IN THE RIG-I-MEDIATED TYPE 1 INTERFERON RESPONSE**

Elizabeth C. Seidita, Camille Browning*, Jadalynn A. Ginn*, and Kasey Karen*

9:30 am

COMPARISON OF THE EVOLUTIONARY CONSERVATION OF INSULIN-LIKE PEPTIDES BETWEEN *D. MELANOGASTER* AND *D. VIRILIS*

Andrew C. Holmes and Brian W. Schwartz*

9:45 am

EFFECTS OF CANNABIDIOL AND OMEPRAZOLE ON CELL GROWTH AND INTRACELLULAR LACTATE LEVELS IN MOUSE LIVER CELLS

Madeline T. Deaton and Jennifer C. Schroeder*

10:30 am

Section Business Meeting

Section VI: PHILOSOPHY AND HISTORY OF SCIENCE, Health Sciences 202

8:30 am-8:50 am

TRANSMITTING SCIENTIFIC AND SCHOLARLY KNOWLEDGE: BOOKS VS. ARTICLES

Ronald E. Mickens and Charmayne E. Patterson

9:00 am-9:20 am

A HIDDEN FIGURE, A BEAUTIFUL MIND IN THE THEORY OF MATHEMATICAL GAMES

Isom Herron

9:30 am-9:50 am

EVENTS IN THE EARLY QUANTUM PERIOD, HISTORICAL RECORDS VS. TEXTBOOK PORTRAYAL

Peter A. Roessle

10:00 am-10:20 am

EXPECTATION IN THE STOCK MARKET

Ping Ye

10:30 am-11:00 am
Section Business Meeting

11:00 am-11:20 am
TEACHING, LEARNING, AND STUDENT ENGAGEMENT AS CONSEQUENTIAL INDICATORS IN
UNIVERSITY RANKINGS
William A. Said

11:30 am-11:50 am
GENDER GAP IN SOCIAL WELFARE POLICY ATTITUDES**
Vivian Cassaniti

Section VII: SCIENCE EDUCATION, Health Sciences 121

10:00 am
MENTOR SCIENCE IDENTITIES AND THEIR INFLUENCE ON STUDENT RELATIONSHIPS WITH
SCIENCE: A QUALITATIVE EXPLORATION OF THE IBEARS PROGRAM
Melvin Hilson, Jerin Jamil*, and Alex T. St. Louis*

10:15 am
EPISTEMOLOGY OF A MISCONCEPTION REGARDING THE FLOW OF OXYGEN AND CARBON
DIOXIDE DURING PHOTOSYNTHESIS
William A. Said

10:30 am-11:00 am
Section Business Meeting

Section VIII: ANTHROPOLOGY, Health Sciences 300

8:30 am
CRIME RATES NEAR RUNNING TRAILS AND PARKS IN ATLANTA, GEORGIA
Shannon Northen and Doug Oetter*

8:45 am
A SOCIAL ZOOARCHAEOLOGICAL INVESTIGATION OF SHARK AND
RAY REMAINS FROM THE NORTHEASTERN COASTAL FLORIDA SITE OF
MARINELAND **
Isabella Rosinko

9:00 am
CARABELLI'S TRAIT EXPRESSION IN AGILE MANGABEYS (*CERCOCEBUS AGILIS*), ANGOLAN
COLOBUS MONKEYS (*COLOBUS ANGOLENSIS*) AND OLIVE BABOONS (*PAPIO ANUBIS*): THE ROLE
OF SIZE AND PHYLOGENY
Victoria E. Hogans and Frank L'Engle Williams*

9:15 am
SEXUAL DIMORPHISM OF THE SECOND CERVICAL VERTEBRA IN HUMANS
Morgan Paskins and Frank L'Engle Williams*

9:30 am
SEXUAL DIMORPHISM AND PHYLOGENY OF THE MANDIBULAR NORTH IN HUMANS, APES AND
FOSSIL HOMININS
Meghana R. Rapelli and Frank L'Engle Williams*

9:45 am
TESTING THE VALIDITY OF DOWSING FOR APPLICATIONS IN FORENSIC ANTHROPOLOGY
Ariel Owens, McKayla McCray*, and Alice Gooding*

10:00 am

FROM THE PROFANE TO THE SECULAR: IDENTIFYING ANCIENT MAYA ARCHITECTURAL SPACE AT PACBITUN, BELIZE

Terry G. Powis

10:15 am

GEOCHEMICAL ANALYSIS OF THE GEORGE SMITH LITHIC ARTIFACTS USING PORTABLE X-RAY FLUORESCENCE**

Dane Roberts and Bryan Moss**

10:30 am--Section Business Meeting

11:00 am

THE PRECONTACT UTILIZATION OF A DEPRESSIONAL WETLAND AT THE GRESSTON SPRING SITE (9DG152) IN DODGE COUNTY, GEORGIA**

*Jonathan L. Brown**

11:15 am

PIGMENTS AND PALETTES: ART PRODUCTION AT A MIDDLE MISSISSIPPIAN PERIOD HOUSE IN NORTH GEORGIA**

Riley James, Bryan Moss*, and Terry G. Powis*

11:30 am

MILLING AROUND IN SCRIVEN**

M. Jared Wood

Section IX: PSYCHOLOGICAL SCIENCES, Health Sciences 144

9:00 am

Introductions & set up for presenters.

9:15 am

REFLECTIONS ON PAST AND PRESENT COPING STRATEGIES FOR COVID-19 RELATED STRESS AND THE IMPACT ON MENTAL WELL-BEING: A PILOT STUDY IN COLLEGE STUDENTS**

Elizabeth Schultz and Stephanie E. Jett*

9:30 am

TOWARD A TRANSGENERATIONAL TRAUMA ASSESSMENT TOOL**

Marlena M. Salters

9:45 am

A PILOT STUDY EXPLORING VETERAN IDENTIFY USING LYRIC ANALYSIS IN A QUALITATIVE, COMMUNITY-BASED PARTICIPATORY ACTION RESEARCH FRAMEWORK**

Joseph Pabian, Lauren Ernst-Fortin*, Marley Lentine-Brown*, Shay Silvia*, Laurie Peebles, and Stephanie E. Jett*

10:00 am

A PILOT STUDY INVESTIGATING VETERAN IDENTIFY USING THE PHOTOVOICE TECHNIQUE IN A QUALITATIVE, COMMUNITY-BASED PARTICIPATORY ACTION RESEARCH FRAMEWORK**

Alicia Zarker, Meredith Robertson*, Trenholm Fahy*, Dawson Robinson*, Laurie Peebles, and Stephanie E. Jett*

10:15 BREAK

10:30 am-- SECTION BUSINESS MEETING (45 MINUTES LONG)

11:15 am

USING PERCENTAGES TO CALCULATE CHI-SQUARE TESTS OF INDEPENDENCE

Mark D. Thomas and Pamela P. Brown

11:30 am

INFLUENCES ON SELECTING A COLLEGE MAJOR BEFORE AND AFTER COVID-19 PANDEMIC

Charles R. Talor

Saturday, March 4, 2023
Plenary Business Meeting of the Academy
12:15 pm to 1:45 pm, Magnolia Ballroom

Luncheon, Keynote Speaker, Student Awards, and Academy Business

Keynote Address:

“COVID-19 and Readiness for What’s Next”

Jay C. Butler, MD
Deputy Director for Infectious Diseases at CDC

Jay C. Butler, MD became Deputy Director for Infectious Diseases at CDC in April 2019. Dr. Butler has 30 years of experience in increasingly complex public health leadership and management positions. He graduated from North Carolina State University with a BS in zoology, received his MD at the University of North Carolina, and did internship and residency training in medicine and pediatrics at Vanderbilt. After completing CDC’s Epidemic Intelligence Service in the Wisconsin Division of Health, Dr. Butler completed a preventive medicine residency with the Respiratory Diseases Branch in the National Center for Infectious Diseases, and an infectious disease fellowship at Emory University. He is board certified in medicine, pediatrics and infectious diseases, and has served in public health positions at federal, state, and tribal government, including completing more than 22 years in the Commissioned Corps of the US Public Health Service, from which he retired at the level of Captain (Medical Director) in 2012. He has authored or co-authored over 150 scientific papers, reviews, and book chapters and is an Adjunct Assistant Professor of Medicine at the Emory University School of Medicine in Atlanta.

From 1998-2005, Dr. Butler was Director of CDC’s Arctic Investigations. He held leadership roles in multiple emergency responses, including CDC’s response to bioterrorist anthrax in 2001, the SARS outbreak in 2003, and Incident Manager for the CDC COVID-19 response in May and June of 2020. Dr. Butler has also held multiple leadership roles in Alaska, including Chief Medical Officer for the Alaska Department of Health and Social Services (2014-2019 and 2007-2009), State Epidemiologist (2005-2007), and Senior Director of the Division of Community Health Services for the Alaska Native Tribal Health Consortium (2010-2014). He hosted a weekly hour-long call-in radio show, *Line One, Your Health Connection*, carried statewide on the Alaska Public Radio Network in 2018 and early 2019. He has been a volunteer race official for Nordic ski events, including serving as Chief of Finish at the 2010 US Olympic Trials in Anchorage, AK. He was President of the Association of State and Territorial Health Officials in 2016-2017 and has made important contributions to public health approaches to reducing harms associated with addiction.