

## Meeting Jointly

with The Alabama Junior Academy of  
Science Gorgas Scholarship  
Competition

# 21-23 February 2024



hosted by  
**Jacksonville State University**

The College of Arts, Humanities, and Sciences

Jacksonville, AL

<https://www.alabamaacademyofscience.org>



**ONE HUNDRED FIRST ANNUAL MEETING**  
**of the**  
**ALABAMA ACADEMY OF SCIENCE, INC.**



Meeting Jointly With  
ALABAMA JUNIOR ACADEMY OF SCIENCE  
and  
GORGAS SCHOLARSHIP COMPETITION PROGRAM BOOK  
Feb 21<sup>st</sup>-23<sup>rd</sup>, 2024

Jacksonville State University, Jacksonville, AL

[www.alabamaacademyofscience.org](http://www.alabamaacademyofscience.org)

<http://alabamajunioracademyofscience.org>

<http://alabamajunioracademyofscience.org/home/gorgas-scholarship-competition>

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# ALABAMA SCIENCE & ENGINEERING FAIR SYSTEM

## Engage in the scientific research process!

Students perform research, collect data, interpret results and then communicate findings at school or county science and engineering fairs.

Winners advance to one of four regional fairs in March in either the middle school junior division (grades 6-8) or high school senior division (grades 9-12).

Top students from each regional fair progress to the **Alabama Science and Engineering Fair (ASEF)** in April with a chance to compete for 150 awards totaling more than \$15,000.

## ABOUT ASEF

ASEF is an affiliate fair of the Regeneron International Science and Engineering Fair (Regeneron ISEF), the world's largest international pre-college science competition.

More than a dozen Alabama high school students will advance to **Regeneron ISEF** from **May 11-17, 2024** in Los Angeles, CA and will compete against the top 1500 students in the world for nearly \$9 million in prizes and scholarships.

The top 10% of middle school winners from ASEF advance to the **Thermo Fisher Scientific Junior Innovators Challenge**.



## REGIONAL FAIRS

### MOBILE (MRSEF)

**Website:** southalabama.edu/colleges/engineering/mrsef/

**Date:** March 1, 2024

**Location:** University of South Alabama, Mobile

**Regional Director:** Dr. David Allison

**Email:** dallison@southalabama.edu

### CENTRAL ALABAMA (CARSEF)

**Website:** uab.edu/carsef/

**Date:** March 2, 2024

**Location:** University of Alabama, Birmingham

**Regional Director:** Kevin Jarrett

**Email:** kjarrett@uab.edu

### NORTH ALABAMA (NARSEF)

**Website:** sites.google.com/a/uah.edu/narsef/

**Date:** March 6, 2024

**Location:** University of Alabama, Huntsville

**Regional Director:** Laurie Campbell

**Email:** narsef@uah.edu

### GREATER EAST ALABAMA (GEARSEF)

**Website:** aum.edu/collegeofsciences/gearsef/

**Date:** March 11, 2024

**Location:** Auburn University, Montgomery

**Regional Director:** Dr. Matt Grillot

**Email:** mgrillio@aum.edu

## ALABAMA STATE FAIR (ASEF)

**Website:** https://aub.ie/ASEF

**Date:** April 13, 2024

**Location:** Auburn University, Auburn

**ASEF Coordinator:** Dr. Karen Dane

**Email:** kyd0002@auburn.edu

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COLLEGE OF ARTS,  
HUMANITIES, & SCIENCES  
JACKSONVILLE STATE UNIVERSITY

Welcome to the *Friendliest Campus in the South!*

On behalf of all of us in the newly formed College of Arts, Humanities, and Sciences, I want to thank you for attending the 101<sup>st</sup> Annual Meeting of the Alabama Academy of Science on our beautiful campus. May this meeting be the springboard for another 100 years of presentations, collaboration, and comradery among Alabama scientists. The state and regional meetings across the country are integral to the collaborative endeavor we call science, and the AAS is a prime example of a thriving scientific community. For a century now, the annual meetings have provided the backdrop for conversations that started career-long collaborations and lifetimes of exploration. For students, the meetings are oftentimes the first chance they have to converse with scientists from another institution. These conversations are critical to the advancement of science. I am grateful for the Academy and for its impact on students in particular.

While you are on campus, you'll notice a lot of construction to help us feed and house our growing student body. In our college, we are most excited about the Randy Owen Center for the Performing Arts. If you take a trip to the top floors of the library, you'll see this facility taking shape to your east, in the foreground of Chimney Peak. This facility will contain a 1000-seat performance hall, classrooms, and a recital hall to make arts and arts education accessible to everyone in our region. I hope you'll return to see a performance in the "ROC," perhaps one in which several JSU scientists are performing.

Please enjoy your time on campus and let us know if you need anything during your visit. My many thanks to the organizer, Donna Perygin, and to her colleagues for hosting the start of new century of science in Alabama.

Sincerely,

A handwritten signature in black ink that reads "Tim Lindblom".

Tim Lindblom, Ph.D.  
Dean

700 Pelham Road North  
Jacksonville, AL 36265-1602  
256.782.5225  
[www.jsu.edu](http://www.jsu.edu)

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## Welcome Messages





7 February 2024

Dear AAS Annual Meeting Attendees,

Hello, and welcome to the 101<sup>st</sup> Annual Meeting of the Alabama Academy of Science!

As the 2023-2024 President of the [Academy](#) it is my pleasure to welcome you to the campus of Jacksonville State University. This year's meeting continues our celebration of the Academy's first 100 years that we began at last year's 100<sup>th</sup> Annual Meeting at Samford. This year represents 100 years since Dr. Wright Gardner founded the Academy in 1924. At the time, Gardner was the Head of Botany and Plant Physiology at Alabama Polytechnic Institute – which would eventually become Auburn University. Along with colleagues from around the state, including representatives of the other major colleges and universities of the time – the University of Alabama, Birmingham Southern College, Spring Hill College, the University of Montevallo, and others – as well as representatives from Alabama's major technical industries, Gardner decided that the best way to expand opportunities for science in the South was to emulate larger national and international groups by forming a state-wide organization of scientists. What emerged from these early discussions was a joint meeting of the Alabama Education Association along with the nascent Alabama Academy of Science at Sidney Lanier High School in Montgomery on April 4, 1924. With the exception of the war years 1943-1944, the AAS has hosted a conference every subsequent year, welcoming scientists and trainees from all disciplines around the state to present their work and interact in a collegial environment.

Much has changed for Alabama science since 1924. We have many more institutions of higher education now, and many more opportunities for Alabamans of all backgrounds to study in STEM fields in the state. Alabama has also been a world-class center for advancement in numerous fields such as space exploration and biotechnology. Through all of it, the Alabama Academy of Science has persisted as a formidable advocate for the sciences in this state, connecting and supporting researchers from Huntsville to Mobile and from Tuscaloosa to Auburn. We are proud of what we have accomplished over our first century and look forward to another 100 years of advances and discoveries.

Thank you so much for sharing this anniversary with us. We hope you have an excellent and productive visit to Jacksonville State and leave this meeting with new colleagues and new ideas, and will continue in your support of the Academy for many more years.

Sincerely,

J. Jeffrey Morris  
Associate Professor  
Department of Biology  
University of Alabama at Birmingham

**COLLEGE OF ARTS AND SCIENCES**  
Department of Biology

3100 East Science Hall | 902 14<sup>th</sup> Street South | Mailing Address: ESH 3100 | 1720 2ND AVE SOUTH | BIRMINGHAM AL 35294-1170  
phone: 205.934.8308 | [L-fax: 205.975.6097](mailto:cas@uab.edu) | [www.uab.edu/cas/biology](http://www.uab.edu/cas/biology)

MAYOR - Johnny L. Smith  
CITY ADMINISTRATOR - Albertha Grant  
CITY CLERK - Brenda Long  
CITY TREASURER – Alberta Grant  
CITY ATTORNEY - Richard Rhea



CITY COUNCIL  
President - Tony K. Taylor  
President Pro-Tempore - Coty Galloway  
Andrew Green  
Terry Wilson  
Sherry Laster

## CITY OF JACKSONVILLE

It is such a pleasure to have the opportunity to host the Alabama Academy of Science Conference in our great city of Jacksonville! We are happy to have each one of you here and hope you will take every chance to see our beautiful city, enjoy our Chief Ladiga Trail for your walking or biking fun and enjoy our shops and restaurants around town.

Jacksonville is the proud home of the Jacksonville State University Gamecocks! As you attend this conference, I encourage you to look around the beautiful campus and experience all that JSU has to offer. Again, we are grateful to have your visit and hope that your time here will be pleasant.

GO GAMECOCKS!

Sincerely,

Johnny L. Smith  
Mayor

JLS/pw



Respected Colleagues in the Scientific Community,



I am pleased to extend a heartfelt welcome to each and every one of you as we come together for the 101st Annual Meeting of the Alabama Academy of Science. We are currently in the midst of celebrating our 100th anniversary, having marked this significant milestone during our 100th Anniversary Meeting and Celebration at Samford University in March of 2023. It was a truly remarkable event, and I encourage you to explore our 100th Anniversary Book, available at this link:

<https://www.alabamaacademyofscience.org/100th-anniversary-history-book/>.

It is of utmost importance to emphasize the profound significance of our mission, a mission that unites scientists, science educators, and students across a wide spectrum, ranging from high school scholars to post-doctoral fellows, all gathering under the banner of a unique and unparalleled institution. The Alabama Academy of Science plays a cherished role within our state, providing vital support for initiatives such as the State Science Fair System, the Science Olympiad, the Alabama Junior Academy of Science, and the Gorgas Scholarship Competition. In 2021, we took on the primary responsibility for hosting the Alabama State Science Fair, even in a virtual format, in collaboration with Auburn University. Our commitment remains steadfast as we continue to support the State and Regional Science Fairs, the Alabama Junior Academy of Science Paper Reading Competition, and the Gorgas Scholarship Competition.

Within the confines of the AAS, we take great pride in organizing the Gorgas competition, a rarity in the landscape of fully endowed, privately organized science competitions tailored for high school seniors in the United States. Additionally, we are equally proud of our establishment of the Alabama Science Trail,

Alabama Academy of Science

75 S. University Blvd., Suite 1000. Mobile, AL 36688-0002

[jstremlay@southalabama.edu](mailto:jstremlay@southalabama.edu)

<https://www.alabamaacademyofscience.org>

a resource readily accessible through our main website at [Insert Website Link]. This trail offers a carefully curated collection of the most exemplary scientific destinations that the state of Alabama has to offer, designed for students, educators, and families. We are also delighted to offer the Science Train Patch Systems for Scouts across Alabama!

The architecture of this year's gathering has been meticulously designed to be highly interactive. It aims to provide an outstanding platform for the dissemination of original scientific and creative endeavors spanning the entire spectrum of STEAM disciplines. This will be achieved through live presentations in specialized gatherings, complemented by poster sessions, and graced by the presence of our distinguished Keynote speaker, Dr. G. Walter Ingram, Jr., Ph.D., Research Fisheries Biologist for NOAA.

Our joy knows no bounds as we host the Alabama Junior Academy of Science and the Gorgas Scholarship Competitions this year. These competitions bring together outstanding finalists from every corner of the state, all vying for substantial scholarships and the coveted titles of AJAS and Gorgas Winners. I encourage you to view our video that elucidates the intricacies of these programs, as they have proven instrumental in launching the careers of emerging scientists into prestigious institutions within our state and across the nation. Previous awardees have found academic homes in esteemed institutions such as Auburn University, the University of Alabama, the Massachusetts Institute of Technology, and the University of Southern California. The hands-on, in-depth learning experiences provided by these programs are truly transformative, preparing our students to navigate a world characterized by perpetual change and formidable challenges.

I kindly request that you allocate some of your valuable time to explore the Journal of the Alabama Academy of Sciences. There, you can immerse yourself in the latest frontiers of scientific inquiry, authored by individuals right here in Alabama. Furthermore, I extend a warm invitation to our professional and student members to consider the possibility of submitting your original research, reviews, and editorials for consideration in our upcoming issue.

In the spirit of scientific discovery and camaraderie, I wish you a rewarding and enlightening experience throughout the duration of this event, and eagerly anticipate the day when we can gather in person once more.

Warm regards,

Dr. Jack Shelley-Tremblay  
Executive Director, Alabama Academy of Science

Alabama Academy of Science  
75 S. University Blvd., Suite 1000. Mobile, AL 36688-0002  
[jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu)  
<https://www.alabamaacademyofscience.org>

## **LOCAL ARRANGEMENTS COMMITTEE**

The Academy expresses its appreciation to Jacksonville State University, College of Arts, Humanities and Sciences, and the Local Arrangements Committee for planning and hosting this 101<sup>st</sup> Annual Meeting.

### **Chairpersons**

Dr. Donna Perygin  
Mark Schuichetti

### **AAS Program Coordinator**

Donna H. Perygin  
Alisha Henson

### **Food/ Hospitality**

Meredith Strain  
Tracy Casey

### **Printing/Signage**

Richard Watkins  
Mark Schuichetti

### **Promotions/Publicity**

Mark Schuichetti  
Bernice Robinson

## GENERAL INFORMATION

- Registration badges will be required for admission to paper/poster scientific sessions (including all presenters), the Thursday evening Sci-Mix, and the banquet. Registration link: <https://www.alabamaacademyofscience.org/aasajas-registration-form/> Tickets for the Joint AJAS/AAS banquet may be purchased at the registration desk until all tickets are gone.
- At least one of the authors of a presented paper or poster must be a member of the Academy. Membership payment must be made at <http://www.alabamaacademyofscience.org/join-aas-2/> and is separate from registration payment.
- Computers will be provided where needed for presentations (PCs for PowerPoint). Presenters will not be allowed to plug in their own computers.
- Parking is in the designated spaces only. Campus police will not be issuing tickets during the conference. Please follow signage for more information.
- A map of the JSU campus can be found on the back outside cover of the program booklet. Please check the appropriate booklet section for location information. You may also access a campus map here: <https://www.jsu.edu/cockycare/docs/cockycare-brochure.pdf>

## LOCAL RESOURCES

### *On-campus police, fire, medical service:*

- **All Emergencies (Fire, Ambulance, Police)** **911**
- **University Police Department [jsu.edu/police](http://jsu.edu/police)** **(256) 782-5050**
- **The HUB: Samford Information Center** **(256) 782-5781**
- **Counseling Services (Confidential)** **(256) 782-5475**

### *Off-campus emergencies (Police, Fire, Medical)*

**Jacksonville Police, Fire, Ambulance** **911**

## POSTER PRESENTATION INFORMATION

Alabama Academy of Science Poster set-up begins at 8:00 AM Thursday, February 22<sup>nd</sup> in the **Houston Cole Library**. **AAS Posters are available for viewing on Thursday from 8:30 AM until 4:15 PM according to the Sections' schedule below.** Each poster is allotted **up to 46"X46" of display space on mobile bulletin boards**, but 42" wide by 32" high would scale to normal dimensions and is the recommended size. These are hard boards, so tape must be used for poster display. Authors are encouraged to bring what they need. Authors for the section posters should be present for discussions with viewers and competition judges at the designated times below. **All posters should be removed at the conclusion of the session, and all must be removed by 4:15 PM.**

Gorgas Scholars and Junior Academy Posters may be set up beginning at 4:15 PM Thursday February 22<sup>nd</sup> in the Houston Cole Library for the Sci-Mix. On Friday, February 23<sup>rd</sup>, Gorgas Posters should be set up at 7:30 AM. Each poster is allotted **up to 46"X46" of display space.**

Posters will be available for public viewing in the **Sci-Mix from 4:30 – 5:45 PM on Thursday (Sci-Mix)**, prior to the joint banquet.

### POSTER VIEWING TIMES Houston Cole Library 1103A/B

**NOTE:** Posters for AAS may be set up in the **Houston Cole Library** beginning at 8:00 AM, Thursday February 22<sup>nd</sup>. Locate posters by cards on poster boards indicating Section and Poster # in the program booklet.

**All Senior Academy posters must be removed by 4:15 PM**

**Sci-Mix (AJAS and Gorgas)**

**4:30 – 5:45 PM Houston Cole 1103**

## ORAL PAPER PRESENTATION INFORMATION

All presentation rooms are equipped with monitor screens and computers. The technology in the library is open access, and available to users. The library staff asks that you do not plug in your own devices. For questions regarding the equipment, please ask the library staff. Presenters are asked to bring their **Windows compatible (PowerPoint, Word, etc.) presentations pre-loaded on a USB-A thumb drive.** If presenters log into their email to download presentations, their email will show up on the screen for all to see. All thumb drives are to be removed at the conclusion of the presentation.

**PROGRAM OF THE ALABAMA ACADEMY OF  
SCIENCE**

**Executive Committee Dinner  
Wednesday, February 21st, 2024  
6 pm Leone Cole Auditorium**

**AAS Awards Banquet  
Thursday, February 22nd, 2024  
6 pm Leone Cole Auditorium  
Dr. Walter Ingram  
"How I Became a Marine Biologist and the  
Research I Conduct for NOAA Fisheries"**

**AAS Luncheon  
Thursday, February 22nd, 2024  
12:00 pm Houston Cole Library 11th Floor  
(Photo opportunity immediately preceding)**



***Thursday, February 22<sup>nd</sup>, 2024***  
**College of Arts, Humanities and Sciences, JSU**

8:00 AM – 3:00 PM	Registration	Houston Cole Library 11 <sup>th</sup> Floor
8:00 AM	Poster Set-Up (Morning Session)	Houston Cole Library 1103A/B
11:45 AM	Take down	Houston Cole Library 1103A/B
8:30 AM – 11:30 AM	Academy of Science Program Paper Sessions	
	Biological Sciences (Section I) STEM Education	1101 A/B
	Environmental and Earth Science (Section VIII)	1101C
	Physics and Mathematics (Section III)	10B
	Health Sciences (Section IX); Neuroscience	1103C
8:30 – 11:30 AM	Poster Viewing (Morning Session)	1103A/B
	ALL SECTIONS	
	Biological Sciences (Section I)	
	Physics and Mathematics (Section III)	
	Engineering and Computer Science (Section IV)	
	Social Sciences (Section IV)	
	Anthropology (Section VI)	
12:00 Noon	AAS Photo	Houston Cole Library
12:10-1:00 PM	Sack Lunch	Houston Cole Library 11 <sup>th</sup> Floor
1:00 PM	Poster Set-Up (Afternoon Session); Take down by 4:15	1103A/B
1:15 – 4:15 PM	<i>Academy of Science Program Paper Sessions</i>	
	Anthropology (Section VI)	1103C
	Alabama Honors Scholars	Basement Computer Lab
4:15 PM	Business Meeting	9 <sup>th</sup> Floor Open Classroom
	Update to the membership of the AAS by the Executive Director.	
	Voting for Officers	
1:15 – 4:15 PM	Poster Viewing (Afternoon Session)	
	Biological Sciences (Section I)	
	Chemistry (Section II)	
	Health Sciences (Section IX); Neurosciences	
	Bioethics, History & Philosophy of Science (Section X)	
	Alabama Honors Scholars (Special Section A)	
	STEM Education (Section VII)	
	Environmental & Earth Science (Section VIII)	
	Material Science Symposium	

4:30 PM	AAS/AJAS Joint Annual Business Meeting	9 <sup>th</sup> Floor Open Classroom
4:30 – 5:45 PM	Sci-Mix/Viewing of AJAS & Gorgas Scholars' Posters	1103A/B
6:00 PM	Joint AJAS/AAS Banquet	Leone Cole Auditorium

***Guest Speaker: G. Walter Ingram, Jr., Ph.D.***

***“How I Became a Marine Biologist and the Research I Conduct for NOAA Fisheries”***

Research Fishery Biologist

Walter Ingram, Ph.D. is a Research Fishery Biologist in the Oceanic and Coastal Pelagics Branch of the Population and Ecosystems Monitoring Division of the Southeast Fisheries Science Center.

**PROGRAM OF THE ALABAMA JUNIOR ACADEMY OF SCIENCE Thursday,  
February 22<sup>nd</sup> 2024  
Houston Cole Library  
College of Arts, Humanities and Sciences, JSU**

**Thursday, February 22<sup>nd</sup> 2024**

4:00 – 5:00 PM	Registration	Houston Cole Library 11 <sup>th</sup> Floor
4:30 – 5:45 PM	Poster Set-up and Orientation	Houston Cole Library 11 <sup>th</sup> Floor
4:30 – 5:45 PM	“Sci Mix” Viewing of AJAS and Gorgas Scholars’ Posters	11 <sup>th</sup> Floor
6:00 PM	Joint AJAS/AAS Banquet	Leone Cole Auditorium

***Guest Speaker: G. Walter Ingram, Jr., Ph.D.***

***“How I Became a Marine Biologist and the Research I Conduct for NOAA Fisheries”***

Research Fishery Biologist

Walter Ingram, Ph.D. is a Research Fishery Biologist in the Oceanic and Coastal Pelagics Branch of the Population and Ecosystems Monitoring Division of the Southeast Fisheries Science Center.

**ALABAMA JUNIOR ACADEMY OF SCIENCE**  
**Friday, February 23<sup>rd</sup> 2024**  
**Houston Cole Library**  
**College of Arts, Humanities and Sciences, JSU**

**Friday, February 23<sup>rd</sup> 2024**

Breakfast on your own; hotel and town locations

7:00 AM	Registration	Houston Cole Library, 11 <sup>th</sup> Floor
7:30 AM	Paper Reading Orientation	1101A/B
7:30 AM	AJAS Judges Orientation	1103C
8:00 AM	Paper Competition Life Sciences Physical Science Engineering and Mathematics and Computer Science Environmental Science, Earth Science, and Space Science Medicine and Health, Behavioral, and Social Sciences	1101A/B 1103C 1101C 10B 9 <sup>th</sup> floor OC
8:00 AM	Prepare for AJAS 2025 (Mentoring Workshop for Future Competitions, Dr. Mark Jones, AJAS Director)	Basement Computer Lab
11:30 AM	Elections and Business Meeting	9 <sup>th</sup> floor OC
12:00 Noon	AJAS-Gorgas Group Photo	Jack Hopper Dining Hall
12:00 Noon	Sack Lunch	Houston Cole Library 11 <sup>th</sup> Floor
1:15 PM	AJAS Paper Competition Finals	1103A/B
2:55 PM	AJAS Judges meeting	1102
3:15 PM	Awards Reception, Joint AJAS/Gorgas	1103A/B

**PROGRAM OF THE GORGAS SCHOLARSHIP COMPETITION**

**Friday, February 23<sup>rd</sup> 2024**

**Houston Cole Library**

**College of Arts, Humanities and Sciences, JSU**

**Thursday, February 22<sup>nd</sup> 2024**

4:00 – 5:00 PM	Registration	Houston Cole Library 11 <sup>th</sup> Floor
4:30 – 5:45 PM	Poster Set-up and Orientation	Houston Cole Library 11 <sup>th</sup> Floor
4:30 – 5:45 PM	“Sci Mix” Viewing of AJAS and Gorgas Scholars’ Posters	11 <sup>th</sup> Floor
6:00 PM	Joint AJAS/AAS Banquet	Leone Cole Auditorium

***Guest Speaker: G. Walter Ingram, Jr., Ph.D.***

***“How I Became a Marine Biologist and the Research I Conduct for NOAA Fisheries”***

Research Fishery Biologist

Walter Ingram, Ph.D. is a Research Fishery Biologist in the Oceanic and Coastal Pelagics Branch of the Population and Ecosystems Monitoring Division of the Southeast Fisheries Science Center.

**GORGAS SCHOLARSHIP COMPETITION March 9-10, 2023**  
**Samford University College of Health Sciences**

**Friday, March 10, 2023**

Breakfast on your own; hotel and town locations

7:00 AM	Registration Houston Cole Library	11 <sup>th</sup> Floor
7:00 – 8:00 AM	Set Up Science Exhibits/Display/Poster/Orientation	1101A/B
7:15 – 8:00 AM	AJAS Paper Reading Orientation (for dual competitors)	1101A/B
7:15 – 8:00 AM	Gorgas Judges Orientation	1103C
8:45 – 9:45 AM	Demonstrations for Judges	1101A/B
10:00 AM – Noon	Individual Interviews with Judges, conducted with posters	1101A/B
12:00 Noon	AJAS-Gorgas Group Photo	Houston Cole Library
12:00 Noon	Sack Lunch	Houston Cole Library
12:00 – 1:00 PM	Gorgas Judges Executive Session	
1:15 PM	AJAS Paper Competition Finals	1101A/B
2:30 – 3:15 PM	Afternoon Break	
2:55 PM	Remove Posters and Displays	1101A/B
3:15 PM	Awards Reception, Joint AJAS/Gorgas.	1101A/B

The Alabama Science Scholar Talent Search and Gorgas Scholarship Competition are supported and administered by the Alabama Academy of Science, Inc.

The Gorgas Scholarship Competition website,  
<http://alabamajunioracademyofscience.org/home/gorgas-scholarship-competition/>, contains  
detailed information on the annual competition and awards available  
to winners and finalists.

## ACADEMY SCIENTIFIC SESSIONS

### SECTION I. BIOLOGICAL SCIENCES Paper Session I Thursday Morning –1101A/B Grover Brown, Presiding Meeting Jointly with STEM Education

1. 8:30 **\*g Interaction study of the developmental effects of sodium fluoride and sodium selenate on *Ambystoma maculatum* embryos.** Shelby Wolfram, Jacksonville State University; James Rayburn, Jacksonville State University; Grover Brown, Jacksonville State University; Micheal Burns, Jacksonville State University.
2. 8:50 **Translation Dereglulation in Mutant p53 Cancer.** Le Su, Jacksonville State University; Jessica Arriaga-Aguilar, Jacksonville State University.
3. 9:30 **\*g Utilizing an Embryo Growth Model to Predict the Sex Ratio of *Kemp's Ridley, Lepidochelys kempii*, Nests.** Forrest Collins, University of Alabama at Birmingham; Thane Wibbels, UAB; Ken Marion, UAB University of Alabama at Birmingham.
4. 9:50 **\*u Studying the Transfer of Antibiotic Resistance Genes within the Microbiome.** Isabella Parkhurst, University of Alabama at Birmingham; Anuradha Goswami, University of Alabama at Birmingham; J. Jeffrey Morris, University of Alabama at Birmingham.
5. 10:10 **Using a Biography Science Project to enhance Introductory Biology Students Research Skills through Diversity and Inclusion in STEM fields.** Diann Jordan, Alabama State University Alabama State University - Montgomery, AL.

### SECTION I. BUSINESS MEETING [Elect a Vice-Chair, term ending 2023-24]

6. 10:40 **Ecology and Seasonal Movements of Eastern Chicken Turtles in Southern Alabama.** Andrew Coleman, Talladega College; Scott Rush, Mississippi State University.
7. 11:00 **\*g Impacts of Tank Space and Stocking Density on Growth and Energy Allocation in the Sea Urchin *Lytechinus variegatus*.** Raven Edwards, University of Alabama at Birmingham; Jami de Jesus, UAB; Jeri Brandom, UAB; Michael Williams, UAB; Victoria Gibbs, UAB; Stephen Watts, UAB.
8. 11:20 **\*g Transgenic model for Stochastic Expression in *C. elegans* Neurons.** Jean-Pierre Arditi, Ryan Littlefield. University of South Alabama.

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SECTION I. BIOLOGICAL SCIENCES Poster Session I**  
**Thursday Morning – 1103A/B**

1. **\*g A Comparative Study of a Non-Small Cell Lung Cancer-associated EGFR Missense Variant of Uncertain Significance.** Vanessa Mejia, Jacksonville State University; Logan Pitts, Jacksonville State University; Zainub Kaleem, Jacksonville State University; Taylor Cockrell, Jacksonville State University; Ashley Turner, Ph.D., Jacksonville State University.
2. **\*g The Effect of Genetics, Sex, and a Methionine Restricted Diet on the Oxidative Stress Response in *D. melanogaster*.** Joshua Smith, University of Alabama at Birmingham; Steven Austad, UAB.
3. **Cathepsin L Inhibitor Enhances Sorafenib's Efficacy on Hepatocellular Carcinoma.** Olamide Crown, University of Alabama in Huntsville; Bosede Kolawole, Jackson State University, Jackson MS; Olawale Adeyinka, Victor Ogungbe.
4. **A leatherback sea turtle (*Dermochelyidae*) from the Lower Oligocene (Rupelian) Byram Formation of Alabama, USA.** Andrew Douglas Gentry, University of Alabama at Birmingham; Kimberly Gregson, Alabama School of Math and Science.
5. **A basilosaurid whale from the Lower Oligocene (Rupelian) of Alabama, USA.** Andrew Douglas Gentry, University of Alabama at Birmingham; Lindsey Stallworth, Alabama School of Math and Science.
6. **\*u A comparison of the distribution and concentration of antibiotics in two streams in Jefferson County, Alabama.** MacKinzie McCravy, Samford University; Sadie Wright, Samford University; Kate Morgan, Samford University; Brad Bennett, Samford University; Drew Hataway, Samford University.
7. **\*u Genetic Assessment of Familial Hemiplegic Migraine Type 1 Associated CACNA1A Variants of Uncertain Significance in *Caenorhabditis elegans*.** JoAnna LaPoint, Jacksonville State University; Kritika Marharjan, JSU; Ashley Turner, JSU.
8. **2-oxphytodieonic Acid Primes Induced Systemic Resistance in Cottons.** Sang-Wook Park, Auburn University; Ashna Adhikari, Auburn University; Simrandeep Kaur, Auburn University.
9. **Significant new population of Florida Willow (*Salix floridana* Chapman) discovered in Pike County, Alabama.** Alvin Diamond, Troy University.
10. **\*u Using 18S rDNA metagenomic sequencing to identify the animal components of tree bark microecosystems.** Madison Hardegree, Samford University; David Johnson, Samford University.
11. **\*u Using 18S rDNA metagenomic sequencing to identify potential lichen components of tree bark microecosystems.** Karis Williamson, Samford University; David Johnson, Samford University.
12. **\*u Using 18S rDNA metagenomic sequencing to elucidate tree bark microecosystems: A class molecular biological ecology exercise.** Isaac Hennessey, Samford University; David Johnson, Samford University.



**SECTION II. BIOLOGICAL SCIENCES Poster Session II**  
**Thursday Afternoon – 1103A/B**

13. **\*g Streptococcus agalactiae Effect on Breast Cancer Resistance Protein in Brain-Like Endothelial Cells.** Alexandra Meyer, University of Alabama; Brandon Kim, University of Alabama.
14. **\*u A Comprehensive Overview of Research Methodologies for determining the association between water quality and freshwater fish health: A global perspective.** Maya Seesholtz, Jacksonville State University; Lori Tolley-Jordan, Jacksonville State University.
15. **\*u A review of freshwater quantity and quality challenges and effects on the conservation and regulatory needs in Small Island Developing States.** Christian Strachan, Jacksonville State University; Dr. Lori Tolley-Jordan, Jacksonville State University.
16. **\*g Exploring the pathogenicity of a type 2 diabetes mellitus associated INSR missense variant of uncertain significance through daf-2 in the C. elegans model.** Brittany White, Jacksonville State University; Ashley Turner, Jacksonville State University; Trinity Elston, Jacksonville State University.
17. **A Mechanism for Doxycycline Resistance in a Probiotic.** Brad Bennett, Samford University; Sarah Frances Little, Samford University; Ansley Applestone, Samford University; Kwadwo Antwi-Fordjour, Samford University; Drew Hataway, Samford University.
18. **\*u Molecular genetic analysis of congenital stationary night blindness associated TRPM1 genetic variants of uncertain significance in humans and horses utilizing Caenorhabditis elegans.** Victoria Moses, Jacksonville State University; Gabrielle Davis, Auburn University; Sara Morris, Jacksonville State University; Ashley Turner, Jacksonville State University.
19. **\*u The State of the Science: Wetland degradation worldwide and its effect on Herpetofauna biodiversity.** Jalen Scott, Jacksonville State University; Lori Tolley-Jordan, Jacksonville State University.
20. **\*g Exploring the Functional Significance of a YAPI Missense Variant of Uncertain Significance (VUS) in Caenorhabditis elegans.** Nathan Jones, Jacksonville State University; Ashley Turner, Jacksonville State University.
21. **\*g Effects of Vitis vinifera Seed Extract on Short-term Memory of Amyloid-beta-mediated neurodegeneration in Transgenic Caenorhabditis elegans.** Elise Patrick, Jacksonville State University; Ashley Turner, Jacksonville State University.
22. **\*u Global Scale Effects of Pollution and Parasitism on Freshwater Fish Health: A Review.** Lori Tolley-Jordan, Jacksonville State University; Kathleen Madden, Jacksonville State University; Tori Tolley-Jordan, Jacksonville State University.
23. **\*u The effects of probiotics on Drosophila melanogaster aging and behavior.** Aubrey Pridemore, Nyah Brack, and Katelynn Corder, Samford University.

**SECTION II. CHEMISTRY Paper Session Thursday Morning**  
**Stephen Slauson, Presiding**

1. **Investigation of Non-Structural Protein 2 (nsP2) Inhibitors as Therapeutics for Encephalitis and Chikungunya Viral Infections.** Victor Ogungbe, University of Alabama in Huntsville; Olawale Adeyinka, The University of Alabama in Huntsville; Damilohun Metibemu, The University of Alabama in Huntsville; Olamide Crown, The University of Alabama in Huntsville; John Falode, The University of Alabama in Huntsville.

**SECTION II. BUSINESS MEETING [Elect a Vice-Chair, term ending 2023-24]**

**SECTION II. CHEMISTRY Poster Session Thursday Afternoon – 1103A/B**

1. **\*u The Effects on Thermal Stabilities of Barracuda LDH-A Proteins by Site Directed Mutagenesis.** Elizabeth Cortez, Jacksonville State University; Dr. Sharifah Albraiki, Jacksonville State University; Sharifah Albraiki, Jacksonville State University.
2. **\*g Investigation of Non-Structural Protease 2 as Therapeutic Targets in Alphaviruses.** Chinenye Ojobor, University of Alabama in Huntsville; Olawale Adeyinka, University of Alabama in Huntsville; John Falode, University of Alabama in Huntsville; Victor Ogungbe, University of Alabama in Huntsville.
3. **\*u A Comparison of Active-Site Interactions for LDH Between Wild-type and Two Mutants.** Ziyad Tariq, Jacksonville State University; Demetrice Marable, Jacksonville State University; Macee Glick, Jacksonville State University; Sharifah Albraiki, Jacksonville State University; Donna Perygin, Jacksonville State University.
4. **\*u Energy harvesting using defect rich Ni-MoSe<sub>2</sub> counter electrode-based dye-sensitized solar cells.** John Bailey, University of North Alabama; Humayun Kabir, University of North Alabama.
5. **\*u Electrochemical Detection of Metal Ions Using Metal-Organic Frameworks-Based Sensing.** Sarah Clouse, University of North Alabama; Md Abu Shohag, Univ. of North Alabama; Cameron Gren, Univ. of North Alabama; Aubrey Clay, Univ. of North Alabama; Md Humayun Kabir, Univ. of North Alabama.
6. **\*u Detection of Heavy Metals in Water Using Sensitive Metal-Organic Frameworks.** Aubrey Clay, University of North Alabama; Elizabeth Ford, Duke University; Cameron Gren, University of North Alabama; Md Humayun Kabir, University of North Alabama.
7. **\*u Synthesizing and Characterizing Fatty Acid Methyl Ester Biodiesel Fuels Derived from Acorn Biowaste.** Ryley Gilley, University of North Alabama; Cameron Gren, UNA; Humayun Kabir, UNA; Frank Diaz, UNA; Sarah Clouse, UNA.

8. **\*u Inorganic Synthesis of Cobaloxime Variants and Investigation as Possible Electrocatalysts in Photo-Driven Processes.** Nicholas Covalsen, Jacksonville State University; Anusree Mukherjee.
9. **\*u Exploring Analgesic Possibilities: 3-nButyl & 3-Methyl Homoepibatidine.** Evan Hester, Jacksonville State University; Reagan Pruitt, Jacksonville State University.
10. **\*u Polypropylene Face Mask Recycling.** Martin Boulido, Troy University; Mojtaba Enayati, Troy University.

**SECTION II. BUSINESS MEETING** [Elect a Vice-Chair, term ending 2023-24]

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

### SECTION III – PHYSICS AND MATHEMATICS Paper

#### Session Thursday Morning – 10B

Presiding: Byunghoon Lee, Padmaja Guggilla

1. 8:20 **Quantum Unruh Effect on Singularity and Radiation of Black Holes.** Tianxi Zhang, Alabama A&M University; Brian Papandrea, Alabama A&M University; Jason Papandrea, Alabama A&M University, Maria Dudley, Alabama A&M University.
2. 8:40 \*g **Optical studies of tellurium oxide-based glasses embedded with Silver and Samarium.** Kevin Bennett, Alabama A&M University; Rami Bommareddi, Alabama A&M University.
3. 9:00 **Dynamic Spacetime and Cosmic Dark Energy Mystery.** Tianxi Zhang, Alabama A&M University.
4. 9:20 \*g **A Modified Czochralski Method for Growth of Cesium Hexachlorohafnate Scintillator Crystals.** Elijah Adedeji, Angel Reader, Stephen Babalola, Alabama A&M University.
- 5.

**SECTION III. BUSINESS MEETING** [Elect a Vice-Chair, term ending 2023-24]

### SECTION III – PHYSICS AND MATHEMATICS Poster

#### Session Thursday Morning – 1103A/B

**Posters Section 8:30 – 11:45. All Poster Presenters Are To Be Present For Their Presentation(s) From 10:00 – 11:45. Posters Are To Be Removed at 11:45 a.m.**

**Presiding: Byunghoon Lee,  
Padmaja Guggilla**

1. \*u **Electronic Authentication for Secure Identification.** Isaac Anokye, Alabama A&M University; Mohan Aggarwal, Alabama A&M University; Marius Schamschula, Alabama A&M University.
2. \*g **A Comparative Study of Virgin and Recycled Metal Powder in Additive Manufacturing.** Ajibike Joan Farounbi, Alabama A&M University; PADMAJA GuGGILLA, Alabama A&M University; JUDITH SCHNEIDER, University of Alabama Huntsville; Ajibike Joan Farounbi, Alabama A&M University.
3. \*g **Strain Engineering of Nano-crystalline CaTiO<sub>3</sub> and LiNbO<sub>3</sub> in PVDF Matrix for Efficient Smart Material.** Angela Davis, Alabama A&M University; Angela Davis, Alabama A&M University; Clyde Varner, Alabama A&M University; Padmaja Guggilla, Alabama A&M University; Ashok K. Batra, Alabama A&M University
4. \*u **Optical investigation of samarium doped Barium carbonate.** Ja'Heim Goodwin, Alabama A&M University; Aaron Johnson, Alabama A&M University; B. Rami Reddy, Alabama A&M University

5. **\*u Raman scattering studies of Silbond H-5.** Ja'Heim Goodwin, Alabama A&M University; Amari Williams, Alabama A&M University; B. Rami Reddy, Alabama A&M University
6. **\*g Unruh-DeWitt Particle Detectors in QED for Testing Stochastic Signatures of the Unruh Effect.** Jason Papandrea, Alabama A&M University; Brian Papandrea, Alabama A&M University; Tianxi Zhang, Alabama A&M University.
7. **\*g Quantum Chromodynamics for Quark Pair-Production and Lepton Disintegration.** Brian Papandrea, Alabama A&M University; Jason Papandrea, Alabama A&M University; Tianxi Zhang, Alabama A&M University.
8. **\*g Optical Investigations of Samarium Doped Barium Borate Glass.** Aaron Johnson, Alabama A&M University; Ja'Heim Goodwin, Alabama A&M University; Rami Bommareddi, Alabama A&M University.
9. **Lifespans of the Greatest Mathematician-Physicists of the Modern Era in Europe.** Arjun Tan, Alabama A&M University.
10. **Sufficient Conditions for Explosive and Collisional Fragmentations of Spacecraft in Orbit.** Arjun Tan, Alabama A&M University
11. **Partial Fraction Decomposition by Synthetic Division.** Youngsoo Kim, Tuskegee University; Byunghoon Lee, Tuskegee University
12. **\*u Josephson Junction and Superconducting Qubit. De'Angelo Bailey, Alabama A&M University; Tianxi Zhang, Alabama A&M University** **\*g Generic Text** Ajibike Joan Farounbi, Alabama A&M University; PADMAJA GuGGILLA, Alabama A&M University; JUDITH SCHNEIDER, University
13. **\*u Investigating the Impact of Cold Plasma Jet on Ferroelectric Polymer Thin Films and Nanofiber Membranes.** Amari Williams, Alabama A&M University
14. **\*u Machine Learning Application for Antineutrino Event Selection with PROSPECT.** Pablo Ruiz-Crespo, Alabama A&M University; Diego Venegas-Vargas, University of Tennessee, Knoxville; Andrea Delgado, Oak Ridge National Laboratory.
15. **\*u Applying Multilayer Perceptron's to DFT.** Cornelius Salonis, Alabama A&M University; Matija Medvidović, Flatiron Institute.
16. **\*u System of Radiation Detection.** Sarah Olocha. Alabama A&M University.
17. **\*u System of Radiation Detection.** Ibrahim Bello, Elijah Adedeji, Nehemiah Ibi-Eletta, Claudiu Muntele, Steven Balboa, Marius Schamschula. Alabama A&M University.
18. **\*u Design and Fabrication of Precision Linear Motion Stage for Bridgman Crystal Growth Setup.** Success Oluwole, Elijah Adedeji, Nehemiah Ibi-Eletta, De-Angelo Bailey, Claudiu Muntele, Steven Balboa, Marius Schamschula. Alabama A&M

University.

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SECTION IV. ENGINEERING AND COMPUTER SCIENCE Paper Session  
Thursday Morning – 10B  
Heejoon Park, Presiding**

1. 9:50 **\*g Patient-specific mechanical analysis of PCL periodontal membrane: Modeling and simulation.** Rakesh Pemmada, University of Alabama at Birmingham.
2. 10:10 **Engineered Hydrogels For Contact Guidance Of Fibroblasts.** Vineeth Vijayan, Alabama State University; Amrita Natarajan, Alabama State University; Sunate Kim, Wyss Institute For Biologically Inspired Engineering, Harvard University; Gerardo Hernandez, Southern Research; Derrick Dean, Alabama State University; Christopher Chen, Wyss Institute For Biologically Inspired Engineering, Harvard University.

**SECTION IV BUSINESS MEETING 11:30 AM [Elect Vice-Chair with term ending 2023-24]**

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SECTION IV. Engineering and Computer Science Poster Session Thursday Morning –  
1103A/B**

1. **\*g Plasma/ Ozone Induced Graft Polymerization Of Peek Scaffolds For Bio- Integrated Orthopaedic Implants.** Chandrima Karthik, University of Alabama at Birmingham; Vinoy Thomas, University of Alabama at Birmingham.
2. **\*u A Phenomenological Model for the Crushing Failure Mechanism in Lattice Structures.** Matthew Wise, University of North Alabama; Md Abu Sayeed Shohag.
3. **\*u Prototyping A Spatial Atomic Layer Deposition (Ald) System Using A Gear Drive System And Programmable Logic Controller (Plc).** Emmanuel SOEREN KOUM NGANDO, University of North Alabama; Tegra Kabue Mubikayi, University of North Alabama; Dongqing Pan, University of North Alabama.

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SECTION V. SOCIAL SCIENCES and SECTION VI. ANTHROPOLOGY Paper Session**  
**Thursday Afternoon – 1103C**  
**Dr. Cynthia Lovelace, Presiding**

1. 1:10 **\*u Gender Differences in Sub-categories of Narcissism, Extraversion, Conscientiousness, and Psychopathy.** Julianna Mostillo, Jacksonville State University; Heidi Dempsey, Jacksonville State University.
2. 1:30 **\*g “Nobody Knows My Name”: Confronting America’s Amnesia about the Middle Passage and Resurrecting Collective Memory Through the Ritual of Remembrance” by Chadra Pittman.** Chadra Pittman, University of Alabama at Birmingham.
3. 1:50 **\*g Gender-Affirming Care as an Expression of Agency, and a Right.** Macy Sauls, University of Alabama at Birmingham.
4. 2:10 **\*u Visualizing Archeology: New research from Viking Age Iceland.** Evie Vaughn, Jacksonville State University; Dr. Kathryn A. Catlin, Jacksonville State University.
5. 1:30 **\*u Menstrual Taboos in the United States in the Twenty-First Century.** Cam Brand, University of Alabama at Birmingham.
6. 1:50 **\*g Mixed Martial Arts, Meaning, And Behavioral Peace: Examining Social Relationships In A Diverse Environment.** Dana Dawson, University of Alabama at Birmingham.

**SECTION V BUSINESS MEETING [Elect a Vice-Chair, term ending 2023-24]**

**SECTION V. SOCIAL SCIENCES and SECTION VI. ANTHROPOLOGY Poster Session**  
**Thursday Morning – 1103A/B**

1. **\*u The Connection Between Schadenfreude, Dark Traits, and Counterproductive Workplace Behaviors.** Rachel Powell, Jacksonville State University; Richard Sheffield, Jacksonville State; Harley Fields, Jacksonville State; Haley Helms, Jacksonville State; Kayleigh Forehand, Jacksonville State; Katherine Robles, Jacksonville State; Heidi Dempsey, Jacksonville State.
2. **\*u Does Endorsement of Sex Roles Differentially Predict Sex Guilt, Indirect Aggression, Sadism, and Narcissism? Kayleigh Forehand, Jacksonville State University; Katherine Robles, Jacksonville State University; Rachel Powell, Jacksonville State University; Richard Sheffield, Jacksonville State University; Harley Fields, Jacksonville State University; Haley Helms, Jacksonville State University; Heidi**



Dempsey, Jacksonville State University.

3. **The Relationship Between Guilt, Shame, and the Dark Tetrad.** Heidi Dempsey, Jacksonville State University; Kayleigh Forehand, Jacksonville State University; Rachel Powell, Jacksonville State University; Haley Helms, Jacksonville State University; Katherine Robles, Jacksonville State University; Harley Fields, Jacksonville State University; Richard Sheffield, Jacksonville State University.
4. **A Closer Look at the Shortage of Geropsychologists.** Beverly Myers, Stillman College.
5. **Examining the relationship between lighting and crime on a university campus.** Michelle Wooten, University of Alabama at Birmingham; Kendal Colley, Jefferson County IB School.
6. **\*u The Relationship Between Age, Emerging Adulthood, Empathy, Moral Reasoning, and Dark Traits.** Harley Fields, Jacksonville State University.
7. **\*u Psychopathy, Machiavellianism, Aggression, and Moral Taboos.** Katherine Robles, Jacksonville State University; Kayleigh Forehand, Jacksonville State University; Richard Sheffield, Jacksonville State University; Rachel Powell, Jacksonville State University; Haley Helms, Jacksonville State University; Harley Fields, Jacksonville State University; Heidi Dempsey, Jacksonville State University.
8. **\*u The Link Between Psychopathy and Empathy.** Haley Helms, Jacksonville State University; Harley Fields, Jacksonville State University; Kayleigh Forehand, Jacksonville State University; Katherine Robles, Jacksonville State University; Rachel Powell, Jacksonville State University; Richard Sheffield, Jacksonville State University; Heidi Dempsey, Jacksonville State University.

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**SECTION VII. STEM EDUCATION Paper Session**  
**Thursday Morning –1101A/B**  
**Dr. Samiksha Raut, Presiding**  
**Meeting Jointly with Biological Sciences**

1. 10:10 **Using a Biography Science Project to enhance Introductory Biology Students Research Skills through Diversity and Inclusion in STEM fields.** Diann Jordan, Alabama State University Alabama State University - Montgomery, AL.

**SECTION VII. BUSINESS MEETING [Elect Section Officers]**

**SECTION VIII. ENVIRONMENTAL AND EARTH SCIENCE Paper Session**  
**Thursday Morning –1101C**  
**Jonghwa Oh & Shaoyang Liu, Presiding**

1. **8:30 \*g Plasma Surface Engineered ACF Mats for Effective Aerosol-Mediated Heavy Metal Remediation.** Renjith Rajan Pillai, University of Alabama at Birmingham; David McMahan, UAB; Lea Hebert, Grambling State University; Claudiu Lungu, UAB; Vinoy Thomas, UAB.
2. **8:50 Survey of Molecular Weight Distribution of Post-Consumer Recycled Polypropylene and Polyethylene.** Emily Sustarich, Troy University; Pixiang Wang, Troy University; Shaoyang Liu, Troy University.
3. **9:10 \*u Deconvolution of GPC chromatograms of PP-PE mixtures with multiple-band IR detector.** Dayne Long, Troy University; Shaoyang Liu, Troy University; Pixiang Wang, Troy University.

**SECTION VIII. BUSINESS MEETING [Elect a Vice-Chair, term ending 2023-24]**

**SECTION VIII. ENVIRONMENTAL AND EARTH SCIENCE Poster Session**  
**Thursday Afternoon – 1103A/B**

1. **\*g Development of a Dual-Air Purifying Respirator: Analysis of Activated Carbon Fiber's simultaneous Filtration Efficiency and VOC Capture.** Megan McMahan, University of Alabama at Birmingham.
2. **Sustainable PET waste recycling: thermolysis of PET water bottle labels provide catalyst for PET waste recycling.** Somayeh Mohammadi, Troy University; Mojtaba Enayati, Troy university; Martin G. Boulido, Troy University.
3. **\*u Rheological and mechanical behavior of maleatedrecycled high-density polyethylene.** Deacon Godfrey, Troy University; Aboulfazl Barati, Troy University; Erfan Dashtimoghadam, Troy University.

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SECTION IX. HEALTH SCIENCES/NEUROSCIENCES Paper Session AM**  
**Joint with**  
**SPECIAL SECTION D. NEUROSCIENCES BIOLOGICAL**  
**Paper Session Thursday Morning – 1103C**  
**Mark Caulkins and Katelynn Corder-Greer, Presiding**

1. 8:30 **Distance horizontal fusional facility (DFF): A new diagnostic vergence test for the acquired brain injury (ABI) population.** John Shelley-Tremblay, University of South Alabama; Barry Tannen, EyeCare Professionals, Inc.; Emma Karlin, Dr. Shalu Pal and Associates; Kenneth Ciuffreda, SUNY/College of Optometry; Noah Tannen, EyeCare Professionals, Inc.
2. 8:50 **\*g The Evolution of An Interactive “Edissection” Manual To Enhance The Laboratory Experience of Health Science Learners.** James Martin, University of Alabama at Birmingham; Christopher Cesiro, University of Alabama at Birmingham; Michael Herr, University of Alabama at Birmingham.
3. 9:10 **Stereotactic Breast Biopsy.** Donna Cleveland, University of South Alabama; Donna Cleveland, University of South Alabama. Donna Cleveland, M. Ed, RT (R)(M); RDMS (AB/BR/OB/GYN); FAAS Director Diagnostic Medical Ultrasound Program Department of Radiologic Sciences University of South Alabama (251)445-9357 [dcleveland@southalabama.edu](mailto:dcleveland@southalabama.edu)
4. 9:30 **Cadaver Anomalies in graduate student cadaver dissection.** Mark Caulkins, Samford University; Nicholas Washmuth, Samford University; Will Scogin, Samford University.

**SECTION IX BUSINESS MEETING [Elect Vice-Chair with term ending 2024-25]**

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SECTION IX. HEALTH SCIENCES/NEUROSCIENCES Poster Session PM**  
**Joint with**  
**SPECIAL SECTION D. NEUROSCIENCES BIOLOGICAL**  
**Poster Session Thursday Afternoon– 1103A/B**

1. **\*g Depakote-Induced Pancreatitis in a 12-Year-Old Male with Complex Psychiatric Comorbidities.** Neil Vuppala, Alabama College of Osteopathic Medicine; Kamran Ather, Alabama College of Osteopathic Medicine; Soumya Sidana, Alabama College of Osteopathic Medicine.
2. **TeamSTEPPS®: A Framework to Foster Teamwork and Collaboration Among Interprofessional Students.** Donna Copeland-Streeter, University of South Alabama; Margaret Nadler, Moore.
3. **\*u Assessment of Gut Microbial Diversity among Sexual and Gender Minority Young Adults.** Ashley Guy, University of Alabama at Birmingham; Taylor Miller, UAB; Lauren Picken, UAB; Christine Loyd, UAB.
4. **\*g Social Vulnerability related to Mental Health During the 2020 COVID-19 Pandemic in Alabama, Georgia, and Florida.** Alejandro Arroyo Rodriguez, Alabama College of Osteopathic Medicine; Cassie Odahowski, University of South Carolina; Joy Taazieh, Alabama College of Osteopathic Medicine; Stephanie Gonzalez, Alabama College of Osteopathic Medicine.
5. **\*u Changes in Multimorbidity Among Hospitalized Adults in the US.** Richelle Sanders, University of Alabama at Birmingham; Christine Loyd, University of Alabama at Birmingham; Lauren Picken, University of Alabama at Birmingham; Briahna Ballay, University of Alabama at Birmingham; Yue Zhang, University of Alabama at Birmingham; Richard E. Kennedy, University of Alabama at Birmingham; Cynthia J. Brown, Louisiana State University Health.
6. **Forearm Muscle Anomalies in Student Dissected Cadavers.** Anna-Blake Lowe; Samford University; Miranda Rein, Samford University; Will Scogin, Samford University; Nicholas Washmuth, Samford University; Mark Caulkins, Samford University.
7. **Bilateral Absence of Semimembranosus Muscles in Student Dissected Cadaver.** Karly Grace Holt, Samford University; Emma Bishop, Samford University; Alyssa Brown, Samford University; Caroline Overstreet, Samford University; Ryan Tomlinson, Samford University; Will Scogin, Samford University; Nicholas Washmuth, Samford University; Mark Caulkins, Samford University.

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SECTION X. BIOETHICS AND HISTORY AND PHILOSOPHY OF SCIENCE**

**Paper Session**

1. No Entries

3:45 BUSINESS MEETING: Elect Section Chair / Vice-Chair 2023-24

**SECTION X. BIOETHICS AND HISTORY AND PHILOSOPHY OF SCIENCE**

**Poster Session**

**Thursday Afternoon – 1103A/B**

1. **Ethical Issues Surrounding the Use of Synthetic Human Embryos in Scientific Research.** Shuntele Burns, Alabama State University.

**Special Sections**

SPECIAL A. Alabama Honors Scholars

SPECIAL C. Material Science and Engineering Graduate Students Symposium

SPECIAL D. Neuroscience

**SPECIAL SECTION A. ALABAMA HONORS SCHOLARS Paper Session**  
**Thursday Afternoon – Basement Computer Lab**  
**Michael Sloane and Doug Marshall, Presiding**  
**1:00-4:00 pm**

1. 1:00 **\*u The evolution of Artificial Intelligence (AI) and evolving ramifications.** Brian Officer Jr., Miles College.
2. 1:20 **\*u Harlem Renaissance: how a single neighborhood created modern African American culture.** Jessica Harris, Kaleigh Burden, Miles College.
3. 1:40 **\*u A Look into Second Amendment Jurisprudence: Analyzing United States v. Rahimi.** Anthony Venezia, Liberty Wigen. University of Alabama at Birmingham.
4. 2:00 **\*u Calling for Innovative Approach to addressing Deviant Behaviors of Adolescents.** Kaleigh Burden, Jessica Harris, Miles College.
5. 2:20 **\*u Making Space For all of our Voices: Student-led Action UAB-style.** Lina Jabr, Rachael George, Nikhita Mudium, University of Alabama at Birmingham.
6. 2:40 **\*u Parental Obligations in Educating their Children.** Liberty Wigen, University of Alabama at Birmingham.
7. 3:00 **\*u An Analysis of Religious Experience during Hindu and Muslim Prayer.** Priya Mantraratnam, University of Alabama at Birmingham.

**SPECIAL SECTION A. BUSINESS MEETING**  
**Thursday Afternoon – Basement Computer Lab**  
**Michael Sloane and Doug Marshall, Presiding**  
**3:00 – 3:15 Elect Student representative for next year to be on the AAS EC. Decide on Meeting format for 2025 (Troy)**

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

**SPECIAL SECTION A. ALABAMA HONORS SCHOLARS Poster Session**  
**Thursday Morning – 1103A/B**  
**10:00-11:30 AM**

1. **\*u Next-Generation Biodegradable Lipid-Like Nanoparticles.** Mary Helene Marmande, Bailey Baxter, David Forbes, Richard Honkanen, University of South Alabama.
2. **\*u Investigating the effect of WNK lysine deficient protein kinase inhibition in**



- breast cancer.** Suhas Patil, Suman Prabhat, Kakkat Sooraj, Turbat-Herrera Elba, Singh Seema, Sarkar Chandrani, Chakroborty Debanjan, University of South Alabama.
3. **\*u Student contributions to a campus tree inventory.** Muhammad Shalan, Yeachan Park, Sakshyat Chhetry, University of Alabama at Birmingham.
  4. **\*u Data Analysis of Gene Expression in Pancreatic Cancer Tumor Tissue.** Brianna Leahr, Miles College.
  5. **\*u Alterations in prefrontal cortex dendritic spine morphology accompany behavior abnormalities in progranulin haploinsufficient mice.** Juliana Eberhardt, University of Alabama at Birmingham.
  6. **\*u Patient Safety: Orthotic Thermoplastics Demonstrate a Similar Contamination Potential to Bacillus Bacteria Recovered from Thermoplastic Radiation Therapy Masks.** Dev Mehta, Terrence Ravine, Catherine Brock, University of South Alabama.
  7. **\*u The Prevalence and Effect of Misinformation About Birth Control on TikTok.** Kaitlyn Riggins, Jung Choi, University of South Alabama.
  8. **\*u Inter-group Contact, Beliefs About Gender, and Anti-Trans Prejudice.** Samantha Oyler, Erica Ahlich, University of South Alabama.
  9. **\*u Discovering the Truth Behind Football Culture: Examining the Effects Football Has On Collegiate Male Athletes.** Paige Fandel, University of South Alabama; Caitlyn Hauff, University of South Alabama.

*\*u or \*g* Denotes presentation entered in student competition as an undergraduate or graduate student, respectively. Authors must be present **for this entire period of time** for judging interviews with Honors judges.

**AJAS & Gorgas Student Sections**  
**ALABAMA JUNIOR ACADEMY OF SCIENCE**  
**Mark Jones, State Director, Presiding Posters at Sci-Mix Session**  
**Thursday Evening, 4:30 PM– 5:45 PM**  
**Houston Cole Library 1103A/B**

**Engineering Math and Computer Science**

1. \*Eli Mrug, *Computation of Regions of Guaranteed Attraction of Parabolic Fixed Points*, Alabama School of Fine Arts, Birmingham
2. Will Bao, *Adapting Acoustic Absorbers for Highly Effective Noise Mitigation*, Auburn High School, Auburn
3. John Belew, *Analysis of Robotics in Cultivation of Agriculture*, Wetumpka High School, Wetumpka
4. Michael Mazur, *Detecting Sleep States via Machine Learning Analysis*, Alabama School of Fine Arts, Birmingham
5. Kevin Yan, *Developing a Novel Autonomous Wildfire Mitigation System Using Convolutional Neural Networks and Time-Series Forecasting*, Auburn High School, Auburn
6. Darwin Ford, *Flow-Off*, Hoover High School, Hoover
7. David Naylor, *Making an App for Helping Food Banks, Pantries, and Food Insecure People*, Hoover High School, Birmingham
8. Abhai Anand, *Parametric Design Optimization of Soft Pneumatic Network Actuators for Rehabilitation*, Alabama School of Fine Arts, Birmingham
9. Edwin Wu, *Smart Assistive Senior Care*, The Montgomery Academy, Montgomery
10. Levi Gels, *The Use of Electromagnetic in Space Transportation*, Hoover Higher School, Hoover
11. Noah Lowry, *Transformer Networks Using mpMRI and Radical Prostatectomy Samples: Beyond Dominant Lesion Segmentation*, Alabama School of Fine Arts, Birmingham
12. Nathan Lee, *Wireless Robot for Sewer Pipe Exploration*, Northridge High School, Tuscaloosa

**Life Science**

1. \*Ashley Fulmer, *Peter Piper's Pick of Perfect Peppers*, Wetumpka High School, Wetumpka
2. \*Rhea Rastogi, *Understanding How the Maternal Epigenetic Reprogramming Function of LSD1 Contributes to Inherited Developmental Disease*, Loveless Academic Magnet Program High School, Montgomery
3. McNair Shah, *A Comparative Study of Machine Learning Methods in Event Related Potential Decoding for ASD*, Alabama School of Fine Arts, Birmingham
4. Greeshma Vinoy, *Assessing Environmental Toxicity Across Varied Habitats Through Daphnia Magna Analysis*, Alabama School of Fine Arts, Birmingham
5. Sumin Park, *Effects of Sublethal Methylmercury on Telencephalon and Hippocampus Volume of Zebra Finches*, Loveless Academic Magnet Program (LAMP) High School, Montgomery

6. Whitley Shull, *Furthering Agriculture Through Automated Buoyant Hydroponic Pods*, Wetumpka High School, *Wetumpka*
7. Hayden Mckenzie, *Luminal luminosity*, Wetumpka High School, *Wetumpka*
8. Annie Bao, *Modifying Oncolytic Adenovirus for Osteosarcoma Treatment*, Auburn Junior High School, *Auburn*
9. Jason Bailey, *Qualitative and quantitative analysis of various bottled water brands and local tap water.*, Wetumpka High School, *Wetumpka*
10. Dominic Vilardi, *Sleep Zone: How long is Necessary to Feel Well?*, Wetumpka High School, *Wetumpka*
11. Ashu Anand, *The Effects of Electrical Stimulation on Planaria Tissue Regeneration*, Alabama School of Fine Arts, *Birmingham*
12. Cynthia Liu, *The Molecular Basis for Female Sex Predisposition of Autoimmune B Cells in Systemic Lupus Erythematosus*, Alabama School of Fine Arts, *Birmingham*

### **Medicine, Health and Social Science**

1. \*Rishi Yellamraju, *Identification of Doxorubicin-treatable Cancer Gene Mutations through Quantitative High-throughput Cell Proliferation of Yeast*, Alabama School of Fine Arts, *Birmingham*
2. Natascha Helfrecht-Kannady, *Association Between Concussion History and Perceived Psychological Distress in a Sample of American High School Football Athletes*, Alabama School of Fine Arts, *Birmingham*
3. Ananya Mohanraj, *Curvature of a Flow-Volume Curve and its Utility as A Diagnostic Marker for COPD*, Alabama School of Fine Arts, *Birmingham*
4. Serena Agrawal and Isabel Polhemus, *Female Athlete Triad -- Are Coaches in Alabama Aware of This?*, Hoover High School, *Birmingham*
5. Srihansi Sagi and Prisha Sharma, *Projecting Transcontinental Cardiovascular Disease Mortality Trends*, Hoover High School, *Hoover*
6. Advitiya Kana, *In Two Minds*, Hoover High School, *Hoover*
7. Aanchal Behara, *Localization of Frontotemporal Dementia Risk Gene Rab38 to Glutamatergic Neurons: Implications for Selective Neuronal Vulnerability*, Alabama School of Fine Arts, *Birmingham*
8. Kim Pham, *Maladaptive Daydreaming Mediates the relationship between Personality and Academic Performance.*, Baker High School, *Mobile*
9. Ayesha Korin, *Testing How Bilinguals and Monolinguals Compare in Cognitive Function Tests*, Islamic Academy of Alabama, *Birmingham*
10. Jewel McCrary, *The Effect of Perceived Appearance on Body Schema Integration in the Rubber Hand Illusion*, UMS-Wright Preparatory School, *Mobile*
11. Monisha Bommu, *The effect of PM2.5 on Mental Health*, Alabama School Of Fine Arts, *Birmingham*
12. Rhyana Mahatsente, *Voxel Based Morphometry of Temporal Lobe Epilepsy for Detection of Ictal Impaired Consciousness*, Northridge High School, *Tuscaloosa*

### **Physical Sciences**

1. \*Varsha Vinoy, *Applications of Plasma Treatment on the Polydopamine Coated 3D Printed Polymer Scaffold*, Alabama School of Fine Arts, *Birmingham*

2. \*Nicholas Godwin, *Dietary Ketone Esters Slow Renca Renal and 4T-1 Mammary Cell Lines*, Alabama School of Fine Arts, *Birmingham*
3. \*Yiwen Wang, *Producing Sustainable, Cost-Effective Aluminum-Sulfur Batteries Through a Triple-Function Cathode Design and Anion Charge Carriers*, Northridge High School, *Tuscaloosa*
4. Aiden Khansaheb and Peter Nichols, *Water Heaters Year Two*, Hoover High School, *Hoover*
5. Parker Thompson, *Analysis of Harmful Chemical Residues in Common Clothing*, Wetumpka High School, *Wetumpka*
6. Joseph LeFevre, *Are you safe? A Study on Better Alternatives to Traditional Motorcycle Protection*, Wetumpka High School, *Wetumpka*
7. Zubayr Rasheed, *Bird's Nest*, Islamic Academy of Alabama, *Birmingham*
8. Joshua Minnon, *Calculating the Speed of Light*, Libertas Classical Community, *Decatur*
9. Jackson Rodriguez, *Can LIDAR Navigate an Environment?*, Wetumpka High School, *Wetumpka*
10. Greyson Marker, *Effect of Fabric Denier on Fall Time of a Parachute*, Houston Academy, *Dothan*
11. Jakub Hel, *Effect of Solvent Polarity on the Rate of S<sub>N</sub>1 Reactions*, Hoover High School, *Hoover*
12. Mira Menon, *On the Tully Fisher Relation for AGN Host Galaxies*, Loveless Academic Magnet Program High School, *Montgomery*

### **Environmental Science**

1. \*Abby Gobbels, *Quantifying the Potential of Reforestation (as a Sustainable Solution) in Mitigating PM 2.5 Pollution in Urban Schools*, Hoover High School, *Hoover*
2. Mustafa Gurbuz, *Cleaning Up the World's Oceans with ROV-Mounted DNN-Based Underwater Laser Image Recognition*, Northridge High School, *Tuscaloosa*
3. Adonay Mahatsente-Tewelde, *Cleaning Up the World's Oceans with ROV-Mounted DNN-Based Underwater Laser Image Recognition*, Northridge High School, *Tuscaloosa*
4. Reagan Kelley, *Is Biomass a Good Indicator for the Effects of Light Pollution?*, Hoover High School, *Hoover*
5. Syeda Fatima, Syeda Rizvi and Michelle Torres Romo, *Leaf Packs*, Hoover High School, *Birmingham*
6. Suhani Jeewani, *Recycle for Better*, Hoover High School, *Hoover*
7. Clark Baty and Albert Chen, *Simulating Solar Panel Efficiency Under Varying Dust Storm Conditions*, Alabama School of Fine Arts, *Birmingham*
8. Minlu Wang-He, *SmartSpray: An Effective, Efficient Sprinkler Nozzle*, Auburn Junior High School, *Auburn*
9. Lillian Vilardi, *Solving the Issue with Microplastics*, Wetumpka High School, *Wetumpka*
10. Krish Nathan, *Sustainable Water Filtration System*, Hoover High School, *Hoover*
11. Arturo Briseno, *The App That Recycles*, Hoover High School, *Hoover*
12. Bellamy Williams, *The Effects of Pectins on Copper Ion Concentrations in Waters*, Alabama School of Fine Arts, *Birmingham*

\*Gorgas Finalist

## GORGAS SCHOLARSHIP COMPETITION

### Sci-Mix Session

Houston Cole Library 1103A/B

Thursday Evening, 4:30 PM– 5:45 PM Ellen Buckner, Presiding

1. *Madhushalini Balaji*, Development of a Software Platform that Performs Deep Brain Stimulation to Produce Synthetic Sight for the Visually Impaired. James Clemens High School. [Teacher Sponsor: K. Weir].
2. *Ashley Fulmer*, Peter Piper's Pick of Perfect Peppers. Wetumpka High School. [Teacher Sponsor: V. Vilardi].
3. *Abby Gobbels*, Quantifying the Potential of Reforestation (as a Sustainable Solution) in Mitigating PM 2.5 Pollution in Urban Schools. Hoover High School. [Teacher Sponsor: J. Ort].
4. *Nicholas Godwin*, Exogenously Introduced Dietary Ketone Esters Slow Renca Renal and 4-T1 Mammary Tumor Growth. Alabama School of Fine Arts. [Teacher Sponsor: H. Chin].
5. *Eli Mrug*, Computation of Guaranteed Regions of Attraction for Parabolic Fixed Points. Alabama School of Fine Arts. [Teacher Sponsor: V. Lugemwa].
6. *Irene Park*, The Effect of Roundup on Drosophila Feeding. Loveless Academic Magnet Program High School. [Teacher Sponsor: P. Johnson].
7. *Rhea Rastogi*, Understanding How the Maternal Epigenetic Reprogramming Function of LSD1 Contributes to Inherited Developmental Disease. LAMP High School. [Teacher Sponsor: E. Castillo].
8. *Deepakkumar Sathishkumar*, Exploring T Cell Aging Across Multiple Tissues in Mice. Alabama School of Fine Arts. [Teacher Sponsor: D. White].
9. *Dmitriy Sazonov*, Music as a Markovian Process: Dimensionality Reduction of Intervallic Data. Alabama School of Fine Arts. [Teacher Sponsor: C. Flournoy].
10. *Varsha Vinoy*, Application of the Plasma Treatment on the Polydopamine Coated 3D Printed Polymer Scaffolds. Alabama School of Fine Arts. [Teacher Sponsor: H. Chin].
11. *Yiwen Wang*, Producing Sustainable, Cost-Effective Aluminum-Sulfur Batteries Through the Synthesis of a Graphite-Sulfur Composite via Sulfur Vapor Deposition Method. Northridge High School. [Teacher Sponsor: A. Townsend].
12. *Rishi Yellamraju*, Identification of doxorubicin-treatable cancer gene mutations through quantitative high-throughput cell proliferation of yeast. Alabama School of Fine Arts. [Teacher Sponsor: H. Chin].

## OBJECTIVES OF THE ALABAMA ACADEMY OF SCIENCE

The objectives of the Academy are to:

- Promote the development of interest in scientific matters in the state,
- Provide means for publication of papers and abstracts,
- Provide opportunity for increased cooperation and fellowship among its members,
- Cooperate with other organizations having similar aims,
- Render public service in scientific matters,
- Promote the interest in and study of science by the youth of Alabama,
- Provide for and award scholarships to deserving youth of Alabama.

In fulfilling these objectives, the Academy is devoted to nearly all aspects of science and science education.

## EDUCATIONAL ACTIVITIES OF THE ACADEMY

The Academy Sponsors.

- Alabama Junior Academy of Science, a statewide organization of high school science clubs,
- Junior Science and Humanities Symposium, an activity supported by the United States Army, U.S. Navy, U.S. Air Force, and the U.S. Coast Guard,
- Seven Regional Science Fairs at which high school students exhibit the results of their research or study projects. Regional Finalists compete in the Alabama State Science & Engineering Fair. Winners go to the International Science and Engineering Fair (ISEF),
- Science Olympiads in which regional winners compete at the state level. Alabama winners go to the National Competition,
- Visiting Scientist Network in which volunteer members, upon invitation by a teacher, go to high schools to present talks, demonstrations, or workshops,
- Travel grants to enable students to attend the annual meetings where they can present their research results in the Student Research Award Competition,
- Research grants to enable students to carry out mentored research.

### 2023 NATIONAL JSHS COMPETITION

The 62nd National Junior Science and Humanities Symposium will take place in Albuquerque, New Mexico from May 1-4, 2024. The National JSHS brings together 245 high school students who qualify by submitting and presenting original scientific research papers in regional symposium held at universities nationwide. Approximately 130 high school teachers, mentors, university faculty, military personnel, and others also attend and join in encouraging the future generation of scientists and engineers and celebrating student achievement in the sciences. The AJAS State winners receive an expense-paid trip to compete at the National JSHS. ALAS State Director is Mark Jones, Auburn, AL [jonesmt@troup.org](mailto:jonesmt@troup.org);

## 2024 REGIONAL SCIENCE FAIRS

### MOBILE (MRSEF)

Website: [southalabama.edu/colleges/engineering/mrsef/](http://southalabama.edu/colleges/engineering/mrsef/)

Date: March 1, 2024

Location: University of South Alabama, Mobile

Regional Director: Dr. David Allison

Email: [dallison@southalabama.edu](mailto:dallison@southalabama.edu)

### CENTRAL ALABAMA (CARSEF)

Website: [uab.edu/carsef/](http://uab.edu/carsef/)

Date: March 2, 2024

Location: University of Alabama, Birmingham

Regional Director: Kevin Jarrett

Email: [kjarrett@uab.edu](mailto:kjarrett@uab.edu)

### NORTH ALABAMA (NARSEF)

Website: [sites.google.com/a/uah.edu/narsef/](http://sites.google.com/a/uah.edu/narsef/)

Date: March 6, 2024

Location: University of Alabama, Huntsville

Regional Director: Laurie Campbell

Email: [narsef@uah.edu](mailto:narsef@uah.edu)

### GREATER EAST ALABAMA (GEARSEF)

Website: [aum.edu/collegeofsciences/gearsef/](http://aum.edu/collegeofsciences/gearsef/)

Date: March 11, 2024

Location: Auburn University, Montgomery

Regional Director: Dr. Matt Grillot

Email: [mgrillio@aum.edu](mailto:mgrillio@aum.edu)

### ALABAMA STATE FAIR (ASEF)

Website: <https://aub.ie/ASEF>

Date: April 13, 2024

Location: Auburn University, Auburn

ASEF Coordinator: Dr. Karen Dane

Email: [kyd0002@auburn.edu](mailto:kyd0002@auburn.edu)

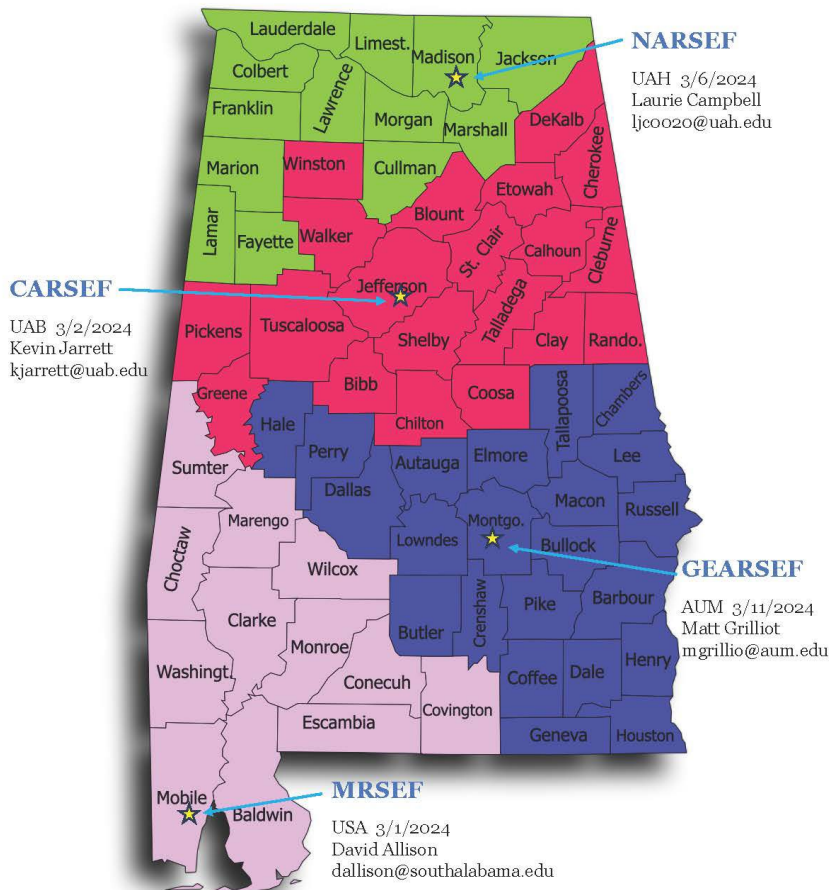
## 2024 INTERNATIONAL SCIENCE AND ENGINEERING FAIR

An activity of Regeneron Science Service, 1719 N Street, NW, Washington, DC 20036, (202) 785-2255, FAX (202) 785-1243. <https://www.societyforscience.org/isef/>

**The Regeneron 2023 ISEF will be held May 11-17, 2024, in Los Angeles, CA**

Dr. Virginia Vilardi, Regeneron/ISEF and State Coordinator, 1251 Coosa River Parkway, Wetumpka H.S., 36092, (334) 799-0104, [virginia.vilardi@elmoreco.com](mailto:virginia.vilardi@elmoreco.com); [vavilardi@gmail.com](mailto:vavilardi@gmail.com)

### AL Regional Fairs





## ALABAMA SCIENCE OLYMPIAD 2024

The Alabama Science Olympiad site is at <https://scilympiad.com/al>. Individuals can visit the [Tournaments](#) page for details. The following is the listing of tournaments with hot links to the various sites:

### Division B/C Regional Tournaments:

UAB Regional	2/10/2024	Divisions B/C
University of Alabama Regional	3/2/2024	Divisions B/C
South Alabama Regional	3/2/2024	Divisions B/C
North Alabama Regional	3/9/2024	Divisions B/C

### Division AA Regional Tournaments:

Auburn University Elementary Regional	2/10/2024	Division AA
Jacksonville Elementary Regional	2/24/2024	Division AA
Wiregrass Elementary Regional	3/16/2024	Division AA
Gilliard Elementary Regional	3/16/2024	Division AA

### State Tournament (B/C

**only):** Winners from the division B/C regionals are invited to participate in the Alabama State Tournament. Division winners of the state tournament will then go on to compete at the National Science Olympiad Tournament.

Alabama State Tournament	3/23/2024	Auburn University	1 team/school per division
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### Invitational Tournaments:

Jefferson County Elementary Invitational	1/20/2024	Division AA	Contact: Jordan Fancher  Email: jfancher@jefcoed.com
Jefferson County Division B/C Invitational	1/20/2024	Division B/C	Contact: Ashley Lehman  Email: alehman@jefcoed.com
WashU Online Invitational	2/3/2024	Division C	Contact: Check out their website for more info  <a href="https://www.washuscioly.com/">https://www.washuscioly.com/</a>

## National Science Olympiad Tournament

The Science Olympiad National Tournament is the pinnacle of achievement for 120 of the country's best Science Olympiad teams and our Global Ambassador Team from Japan, representing more than 2,000 students. For the 40th Annual Science Olympiad National Tournament, we are going back to the site of our very first National Tournament, Michigan State University! The event will take place on May 24-25, 2024, in Lansing, Michigan.

<https://soinc.org/2024-national-tournament>

**State Director: Mary Lou Ewald**, Director of Science and Math Outreach, 131 SCC Building, Auburn University, Auburn, AL 36849 (334) 844-5745, [ewaldml@auburn.edu](mailto:ewaldml@auburn.edu).

Alabama Science Olympiad web page: <http://alabamaso.org/>.

National Science Olympiad web page: <http://soinc.org/about>.

# ASEF 2024 Judging

Alabama Science and Engineering Fair



## SAVE THE DATE!

ASEF 2024  
Saturday, April 13, 2024  
Judging 8am-2pm  
ACL Building, Auburn University

All judges will attend an online orientation session before the in-person event.

- Qualified judges should have a Bachelor's or equivalent degree to judge junior division projects (grades 6-8). Judges should have a Master's Degree, Ph.D., M.D. or equivalent degree OR related professional experience to judge senior division projects (grades 9-12).
- Judges will select 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> places for 11 categories in each the junior and senior division. In addition, judges determine winners of special awards given by professional organizations, representing government, industry, and educational institutes. Three students will be selected as 'Best of Fair' and will attend Regeneron ISEF.

### Directions to Register as a Judge on STEM Wizard

- Go to <https://asefau.stemwizard.com>
- On the top right, click "Registration"
- Select "Judge" and fill out your information
- Select judge type from dropdown: Category, Special Awards, or Best of Fair
- Log into Stem Wizard
- There are 4 Milestones to complete (clickable red circles)
- For each milestone: fill out your qualifications and preferences
- Download the STEM Wizard Judging app on your phone from GlowTouch Technologies (use your STEM Wizard credentials with our subdomain "asefau")
- Please register by March 1, 2024



Thank you for signing up as an ASEF judge!  
Contact Karen Dane ([kyd0002@auburn.edu](mailto:kyd0002@auburn.edu)) with registration questions.

# ASEF 2024 STEM Expo

Alabama Science and Engineering Fair



To: *STEM is Everywhere Expo* Exhibitor

From: Mary Lou Ewald, Director, STEM Outreach Center

Subject: Invitation to Host a Table at the 2024 ASEF *STEM is Everywhere Expo*

Date: Saturday, April 13, 2024  
1:30pm - 3:30pm  
Academic Classroom & Laboratory Complex (ACLC)  
347 Duncan Drive, Auburn University

We need your help at our *STEM is Everywhere Expo* as we welcome over 200 of the top young STEM minds in Alabama in grades 6-12 and their teachers and families. Our goal is to highlight exciting STEM careers and activities!

We invite organizations and people from academia, industry, and business to serve as liaisons in the Expo from 1:30pm - 3:30pm (set up begins at 12:30pm). Informational tables, displays and short interactive activities that highlight the breadth of STEM programs and careers are encouraged.

Please fill out the following Qualtrics survey to register as a STEM Expo Exhibitor:  
<https://aub.ie/asefexpo>

If you have any questions, please contact Dr. Karen Dane at [kvd0002@auburn.edu](mailto:kvd0002@auburn.edu). We look forward to having you at the Alabama Science & Engineering Fair!

Sincerely,

A handwritten signature in black ink that reads "Mary Lou Ewald".

Mary Lou Ewald  
Director, STEM Outreach Center  
Auburn University  
[ewaldml@auburn.edu](mailto:ewaldml@auburn.edu)



# ALABAMA SCIENCE & ENGINEERING FAIR SYSTEM

## Engage in the scientific research process!

Students perform research, collect data, interpret results and then communicate findings at school or county science and engineering fairs.

Winners advance to one of four regional fairs in March in either the middle school junior division (grades 6-8) or high school senior division (grades 9-12).

Top students from each regional fair progress to the **Alabama Science and Engineering Fair (ASEF)** in April with a chance to compete for 150 awards totaling more than \$15,000.

## ABOUT ASEF

ASEF is an affiliate fair of the Regeneron International Science and Engineering Fair (Regeneron ISEF), the world's largest international pre-college science competition.

More than a dozen Alabama high school students will advance to **Regeneron ISEF** from **May 11-17, 2024** in Los Angeles, CA and will compete against the top 1500 students in the world for nearly \$9 million in prizes and scholarships.

The top 10% of middle school winners from ASEF advance to the **Thermo Fisher Scientific Junior Innovators Challenge**.



## REGIONAL FAIRS

### MOBILE (MRSEF)

**Website:** [southalabama.edu/colleges/engineering/mrsef/](https://southalabama.edu/colleges/engineering/mrsef/)

**Date:** March 7, 2024

**Location:** University of South Alabama, Mobile

**Regional Director:** Dr. David Allison

**Email:** [dallison@southalabama.edu](mailto:dallison@southalabama.edu)

### CENTRAL ALABAMA (CARSEF)

**Website:** [uab.edu/carsef/](https://uab.edu/carsef/)

**Date:** March 2, 2024

**Location:** University of Alabama, Birmingham

**Regional Director:** Kevin Jarrett

**Email:** [kjarrett@uab.edu](mailto:kjarrett@uab.edu)

### NORTH ALABAMA (NARSEF)

**Website:** [sites.google.com/a/uah.edu/narsef/](https://sites.google.com/a/uah.edu/narsef/)

**Date:** March 6, 2024

**Location:** University of Alabama, Huntsville

**Regional Director:** Laurie Campbell

**Email:** [narsef@uah.edu](mailto:narsef@uah.edu)

### GREATER EAST ALABAMA (GEARSEF)

**Website:** [aum.edu/collegeofsciences/gearsef/](https://aum.edu/collegeofsciences/gearsef/)

**Date:** March 11, 2024

**Location:** Auburn University, Montgomery

**Regional Director:** Dr. Matt Grillot

**Email:** [mgrillio@aum.edu](mailto:mgrillio@aum.edu)

## ALABAMA STATE FAIR (ASEF)

**Website:** <https://aub.ie/ASEF>

**Date:** April 13, 2024

**Location:** Auburn University, Auburn

**ASEF Coordinator:** Dr. Karen Dane

**Email:** [kyd0002@auburn.edu](mailto:kyd0002@auburn.edu)

## WILLIAM H. MASON SCIENCE TEACHER FELLOWSHIPS

The William H. Mason Science Teacher Fellowship Fund honors the late Dr. Mason's dedication and leadership in the Academy. Contributions may be made online on the Alabama Academy of Science website. Mickie Powell serves as Chair of the Mason Science Teacher Fellowship Committee, [mpowell@uab.edu](mailto:mpowell@uab.edu). Downloadable applications and further information can be found on the Academy web site, [www.alabamaacademyofscience.org](http://www.alabamaacademyofscience.org).

Fellowships have been awarded to these individuals for study at the indicated institutions:

1990 - 1991	Mrs. Amy Livengood Sumner, UAB
1991 - 1992	Mrs. Leella Holt, UNA
1992 - 1993	Mrs. Joni Justice Shanklee, Samford University
1993 - 1994	Jeffrey Baumbach, Auburn University
1994 - 1995	Not Awarded
1995 - 1996	Laura West Cochran, University of Montevallo
1996 - 1997	Tina Anne Beams, UA
1997 - 1998	Carole Collins Crabbe Clegg, UAB
1998 - 1999	Cynthia Ann Phillips, UNA
1999 - 2000	Ruth Borden, UAB
2000 - 2001	Amy K. Murphy, UAB, Karen L. Celestine, AL A&M
2001 - 2002	Jeannine Ott, Eubanks, Auburn University
2002 - 2003	Not Awarded
2003 - 2004	Kanessa Miller, Auburn University
2004 - 2005	Not Awarded
2005 - 2006	Mary Busbee, UAB, and Bethany Knox, UAB
2006 - 2007	Kelly Harbin, UAB
2007 - 2008	Michael Hallman, UA
2008 - 2009	Sherri Sanders Grosso, UNA
2009 - 2010	Not Awarded
2010 - 2011	Danielle Brooke Morlan, UWA
2011 - 2012	Cory Goble, University of Montevallo
2012 - 2013	Amber Foster, UA
2013 - 2014	Amy Bolding
2014 - 2015	Arpan Bosmia, UAB
2015 - 2016	Lacey McEwen, Samford
2016 - 2017	Tyler Rice, Auburn
2017 - 2018	Celia Dozier, Samford
2018 - 2019	Jacob Helf, Auburn
2019 - 2020	Joshua Evans, University of Montevallo
2022 - 2023	Jaclynne Alivia Carden, Auburn University
2023 - 2024	Kelsey McCraw, and Todd Lamb, USA
2024 - 2025	Andria Covell, USA, and Jacqueline Cox, UAB

## WRIGHT A. GARDNER AWARDEES

Recipients are selected for their Outstanding Contributions to Science

- 1984 Robert P. Bauman, Physics, University of Alabama at Birmingham
- 1985 Nolan E. Richards, Research Scientist, Reynolds Metals Company, Sheffield
- 1986 S. T. Wu, Mechanical Engineering and Aeronautic Research, University of Alabama in Huntsville
- 1987 Herbert H. Winkler, Microbiology, University of South Alabama
- 1988 Richard W. Compans, Microbiology and Senior Scientist, University of Alabama at Birmingham
- 1990 Max Cooper, Medicine and Immunology, University of Alabama at Birmingham
- 1991 Dan Urry, Biochemistry, University of Alabama at Birmingham
- 1992 Gail Cassell, Microbiology, University of Alabama at Birmingham
- 1994 Frank Rose, Electrical Engineering, Space Power Institute, Auburn University
- 1996 Prakash Sharma, Physics, Tuskegee University
- 1997 Robert E. Pieroni, Internal and Family Medicine, University of Alabama, Tuscaloosa
- 1998 Thomas J. Wdowiak, Physics and Space Exploration, University of Alabama at Birmingham
- 1999 Samuel B. Barker, Physiology, and Dean Emeritus, University of Alabama at Birmingham
- 2000 George Crozier, Dauphin Island Sea Lab, Mobile
- 2001 James B. McClintock, Biology, University of Alabama at Birmingham
- 2002 Sara C. & Wayne H. Finley, University of Alabama at Birmingham Medical School
- 2003 Leven S. Hazlegrove, Samford University, Executive Director, Alabama Academy of Science
- 2004 William J. Barrett, Southern Research Institute, Retired, Birmingham
- 2005 Eugene Omasta, Professor Emeritus, Troy University.
- 2006 Dan Holliman, Professor Emeritus, Birmingham Southern College
- 2007 No award
- 2008 No award
- 2009 No award
- 2010 No award
- 2011 J. Michael Wyss, Director of CODR, University of Alabama at Birmingham
- 2012 No award
- 2013 David B. Allison, Associate Dean for Science, School of Public Health, UAB, Birmingham.  
Ram Gupta, Chemical Engineering, Auburn University.
- 2014 Arnold Luterman, Ripps-Meisler Professor of Surgery, University of South Alabama
- 2015 Shaik Jeelani, Chair, Department of Materials Science & Engineering; Tuskegee University
- 2016 Pradeep Lall, John and Anne MacFarlane Endowed Professor, Department of Mechanical Engineering, Director, NSF-CAVE3 Electronic Research Center, Auburn University.
- 2017 E. O. Wilson, University Professor Emeritus, Harvard University.
- 2018 No Award
- 2019 David J. Wineland, Nobel Laureate in Physics, University of Oregon.
- 2020 Jodi Singer, Director, NASA Marshall Space Center, Huntsville;  
Richard Myers, Director and President, HudsonAlpha Institute for Biotechnology, Huntsville.
- 2021 Errol Derwin Crook, Professor and Chair, Abraham Mitchell Endowed Chair, Department of Internal Medicine, University of South Alabama
- 2022 Michael Saag, Professor & Associate Dean for Global Health, University of Alabama at
- 2023 Dr. Larry Krannich, University of Alabama at Birmingham, Dr. Martha Varghese, Alabama A&M University



2024 None.

### FELLOWS OF THE ALABAMA ACADEMY OF SCIENCE

- 2007 Ellen Buckner (University of Alabama at Birmingham), Leven Hazlegrove (Samford University), Richard Hudiburg (University of North Alabama), Larry Krannich (University of Alabama at Birmingham), Eugene Omasta (Troy University), Prakash Sharma (Tuskegee University).
- 2008 Ram B. Gupta (Auburn University), Harry O. Holstein (Jacksonville State University), Adriane G. Ludwick (Tuskegee University), Ken Marion (University of Alabama at Birmingham), Michael B. Moeller (University of North Alabama)
- 2009 Stephen A. Watts (University of Alabama at Birmingham) and Jane Nall (State Director, Science Olympiad Program)
- 2010 George Cline (Jacksonville State University), David H. Nelson (University of South Alabama), and Virginia Vilardi (State Coordinator, Science Fairs, Wetumpka High School)
- 2011 James T. Bradley (Auburn University), Anne Cusic (University of Alabama at Birmingham), James B. McClintock (University of Alabama at Birmingham)
- 2012 Benjamin J. Bateman (Troy University) and Edward E. Thomas (Auburn University)
- 2013 Safaa H. Al-Hamdani (Jacksonville State University) and Catherine D. Shields (Jefferson County International Baccalaureate School)
- 2014 Brian Burnes (University of West Alabama), Ronald N. Hunsinger (Samford University), and Pradeep Lall (Auburn University)
- 2015 Mickie Powell (University of Alabama at Birmingham) and David Brian Thompson (University of North Alabama)
- 2016 No award
- 2017 No award
- 2018 Mark Jones (J. F. Drake Middle School) and Akshaya Kumar (Tuskegee University)
- 2019 Lawrence J. Davenport (Samford University) and Puneet Srivastava (Auburn University)
- 2020 Mel Blake (University of North Alabama) and Arjun Tan (Alabama A&M University)
- 2021 No award
- 2022 Matthew Edwards (Alabama A&M University) and Courtney N. Haun (Samford University)
- 2023 Dr. Bettina Riley (University of South Alabama), Dr. Clark Lundell (Auburn University), Dr. Betsy Dobbins (Samford University), Dr. Donna Cleveland (University of South Alabama),
- 2024 Drew Hataway (Samford University) and Vinoy Thomas (UAB) and Mark Caulkins (Samford University)

**ADRIEL D. JOHNSON SENIOR MENTORING AWARD**

2023 Samishka D. Raut, UAB and Virginia Vilardi, Wetumka High School

## SECTION OFFICERS, 2023-2024

### Section I: Biological Sciences:

- Chair: (2023) Andrew Coleman, 512 Scenic Circle, Trussville, AL 35173, [acoleman@talladega.edu](mailto:acoleman@talladega.edu).
- Co-Chair: (2023) Grover Brown, Dept. of Biology, Jacksonville State University, Jacksonville, AL 36265, [gjbrown@jsu.edu](mailto:gjbrown@jsu.edu).

### Section II: Chemistry:

- Chair: (2024) Stephen Slauson, Dept. of Chemistry and Geosciences, Jacksonville State Univ., Jacksonville, AL 36265, [sslauson@jsu.edu](mailto:sslauson@jsu.edu).
- Vice Chair: (2024) Ruigang Wang, Dept. of Metallurgical & Materials Engineering, The University of Alabama, Tuscaloosa, AL 35487, <mailto:rwang@eng.ua.edu>.

### Section III: Physics and Mathematics:

- Chair: (2024) Byunghoon Lee, Dept. of Mathematics, Tuskegee University, Tuskegee, AL [blee@tuskegee.edu](mailto:blee@tuskegee.edu).
- Vice-Chair: (2024) Padma Guggilla, Dept. of Physics, Chemistry, and Mathematics, Alabama A&M, Normal, AL [padmaja.guggilla@aamu.edu](mailto:padmaja.guggilla@aamu.edu).

### Section IV: Engineering and Computer Science:

- Chair: (2024), Heejoon Park, Dept. of Engineering Technology, University of North Alabama, Florence, AL 35632, [hpark4@una.edu](mailto:hpark4@una.edu).
- Vice Chair: (2024) Vacant.

### Section V: Social Sciences:

- Chair: (2024) Mohit Anand, Division of Business and Accounting, Miles College, Fairfield, AL 35064, [manand@miles.edu](mailto:manand@miles.edu).
- Vice Chair: (2024) Cynthia Lovelace, College of Business, Sanders Hall, 300 N. Beaty Street, Athens, Alabama 35611, [Cynthia.Lovelace@athens.edu](mailto:Cynthia.Lovelace@athens.edu).

### Section VI: Anthropology:

- Chair: (2024) Jason Heaton, Department of Biology, Birmingham Southern College, Birmingham, AL 35254, (205) 226-7816, [jheaton@bsc.edu](mailto:jheaton@bsc.edu)
- Vice Chair: (2024) Jordan Kiper. Department of Anthropology, The University of Alabama at Birmingham. <mailto:kiper@uab.edu>

### Section VII: STEM Education:

- Chair: (2024) Sami Raut, Dept. of Biology, University of Alabama at Birmingham, Birmingham, AL 35294, [sraut@uab.edu](mailto:sraut@uab.edu).
- Vice Chair: (2024). Stephanie Varghese, PhD, MBA, FAAO | OPSEL Instructor. The University of Alabama at Birmingham. [bvarghese@uab.edu](mailto:bvarghese@uab.edu).

### Section VIII: Environmental and Earth Science:

- Chair: (2024) Shaoyang Liu, Dept. of Chemistry, Troy University, Troy, AL 36082,

[lius@troy.edu](mailto:lius@troy.edu).

- Vice Chair: (2024) Fahad Rabbani, Department of Chemistry, University of Alabama at Birmingham. [Fahad@uab.edu](mailto:Fahad@uab.edu).

**Section IX: Health Sciences:**

- Chair: (2024) R. Mark Caulkins, Physician Assistant Program, Samford University, Birmingham, AL 35229 (205) 726-4835, [rcaulkin@samford.edu](mailto:rcaulkin@samford.edu).
- Vice Chair: Vacant

**Section X: Bioethics and History and Philosophy of Science:**

- Co-Chair: (2024) Clark Lundell, Dept. of Industrial & Graphic Design, Auburn University, Auburn, AL 36849, [lundece@auburn.edu](mailto:lundece@auburn.edu).
- Co- Chair: (2024). James Bradley, Auburn University, [bradljt@auburn.edu](mailto:bradljt@auburn.edu).

**Special Section Alabama Honors Scholars:**

- Co-Chair: (2024) Douglas Marshall, Dean of the Honors, University of South Alabama, [dougmarshall@southalabama.edu](mailto:dougmarshall@southalabama.edu)
- Co- Chair: (2024). Michael Sloane, Director, University Honors Program, University of Alabama at Birmingham. [sloane@uab.edu](mailto:sloane@uab.edu).

## ELECTED OFFICERS, 2023-2024

**President:** J. Jeffrey Morris, Department of Biology, University of Alabama at Birmingham, Birmingham, AL 35294, (205) 934-9498, [evolve@uab.edu](mailto:evolve@uab.edu).

**President-Elect:** Vinoy Thomas, Department of Materials Science and Engineering, University of Alabama at Birmingham, (205) 975-4098, [vthomas@uab.edu](mailto:vthomas@uab.edu).

**Second Vice-President:** Matthew Edwards, Department of Physics, Alabama A&M Univ., Normal, AL, 35762, (256) 372-8119 or (256) 372-8104, [matthew.edwards@aamu.edu](mailto:matthew.edwards@aamu.edu)

**Secretary:** Malia Fincher, Department of Biology, Samford University, 900 Lakeshore Dr., Birmingham, AL 35229, (205) 726-2928 [rmfinche@samford.edu](mailto:rmfinche@samford.edu).

**Treasurer:** Bettina Riley, USA College of Nursing, 161 N. Section Street, Suite C, Fairhope, AL 36532, [briley@southalabama.edu](mailto:briley@southalabama.edu).

**Editor:** Brian Toone, Department of Computer Sci., Samford University, Birmingham, AL 35229 (205) 726-2960, [brtoone@samford.edu](mailto:brtoone@samford.edu).

**Coordinator of the Junior Academy:** Mark Jones, Auburn, AL [jonesmt@troup.org](mailto:jonesmt@troup.org); [jonesm\\_s@knology.net](mailto:jonesm_s@knology.net)

**Associate Counselor to the Junior Academy:** Ronald (Mel) Blake, Dept. of Physical and Earth Science, University of North Alabama, Florence AL 35632 (256) 765-4284 [rdblake@una.edu](mailto:rdblake@una.edu).

**Associate Counselor to the Junior Academy: VACANT.**

**Coordinator of State Science Fairs:** Virginia Vilardi, Wetumpka High School, 1251 Coosa River Parkway, Wetumpka, AL 36092 (334) 799-0104, (334) 514-1770 [virginia.vilardi@elmore.k12.al.us](mailto:virginia.vilardi@elmore.k12.al.us).

**Coordinator of State Science Olympiad:** Mary Lou Ewald, Director of Science and Math Outreach, 131 SCC Building, Auburn University, Auburn, AL 36849 (334) 844-5745, [ewaldml@auburn.edu](mailto:ewaldml@auburn.edu).

**AAAS Representative:** Stephen Watts, Department of Biology, University of Alabama at Birmingham, Birmingham, AL 35294–1170 (205) 934–2045, [sawatts@uab.edu](mailto:sawatts@uab.edu).

**Executive Director:** John Shelley-Tremblay, Department of Psychology, University of South Alabama, UCOM 1123, Mobile, AL 36688 (251) 460-6883, [jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu)

### At Large Officers:

- Daniel Lerew, Southern Company, 501 12<sup>th</sup> Street South, Birmingham, AL 35217 (205) 994-0126, [delerew@uab.edu](mailto:delerew@uab.edu)
- Vineeth Vijayan, Alabama State University, Montgomery, AL, [vineeth@uab.edu](mailto:vineeth@uab.edu).
- (Vacant)

### Graduate Student At Large Officers:

- Ranjith Pillai, Dept. of Materials Science & Engineering, University of Alabama at Birmingham, AL 35294, [rrpillai@uab.edu](mailto:rrpillai@uab.edu).
- Jean-Pierre Arditi, Department of Biology, University of South Alabama, Mobile, AL 36688.
- (Vacant)

### TRUSTEES:

- Matthew Edwards, (2023) Dept. of Physics, Chemistry, & Math, Alabama A&M University, Normal, AL 35762 (256) 372-8119, [Matthew.edwards@aamu.edu](mailto:Matthew.edwards@aamu.edu).
- Ken Marion, (2023) Department of Biology, University of Alabama at Birmingham, Birmingham, AL 35294–1170, [kmarion@uab.edu](mailto:kmarion@uab.edu).
- David Nelson, (2023) Department of Biology, University of South Alabama, Mobile, AL 36688 (252) 460-6331, [dnelson@usouthal.edu](mailto:dnelson@usouthal.edu).
- Prakash Sharma, (2023) Department of Physics, Tuskegee University, Tuskegee, AL 36088 (334) 727-8998, [psharma@tuskegee.edu](mailto:psharma@tuskegee.edu).
- Ellen B. Buckner, (2024) Moffett & Sanders School of Nursing, Samford University, (205) 726-2092 [ellen.buckner@samford.edu](mailto:ellen.buckner@samford.edu)
- Brian Toone, (2024) Department of Computer Sci., Samford University, Birmingham, AL 35229 (205) 726-2960, [brtoone@samford.edu](mailto:brtoone@samford.edu).
- Stephen Watts, (2024) Department of Biology, University of Alabama at Birmingham, Birmingham, AL 35294–1170 (205) 934–2045, [sawatts@uab.edu](mailto:sawatts@uab.edu).
- Virginia Vilardi (2024) Wetumpka High School, 1251 Coosa River Parkway, Wetumpka, AL 36092 (334) 799-0104, [virginia.vilardi@elmore.k12.edu](mailto:virginia.vilardi@elmore.k12.edu).
- Larry Krannich, (2025) Department of Chemistry, University of Alabama at Birmingham, Birmingham, AL 35294 (205) 936-0823, [krannich@uab.edu](mailto:krannich@uab.edu).
- Richard Hudiburg, (2025) Department of Psychology, University of North Alabama Box 5187, Florence, AL 35632 (256) 383-0443, [rahudiburg@una.edu](mailto:rahudiburg@una.edu).
- Ron Hunsinger, (2025) Professor Emeritus, Samford University, Birmingham, AL 35229, (205) 540-6732 [rhunsin@samford.edu](mailto:rhunsin@samford.edu).
- Adriane Ludwick, (2025) Department of Chemistry, Tuskegee University, Tuskegee, AL 36088, [aludwick@tuskegee.edu](mailto:aludwick@tuskegee.edu).

## APPOINTED COMMITTEES 2023-24

### Archives

- VACANT

### Auditing Senior Academy

- Budget and Finance Committee

### Auditing Junior Academy

- Budget and Finance Committee
- Mark Jones, 655 Spencer Ave., Auburn, AL 36832, (334) 444-3099, [jonesmt@troup.org](mailto:jonesmt@troup.org).

### Budget and Finance

- Trustee, Mark, (Chair) 2023, Dept. of Biology, Univ. of Alabama at Birmingham, Birmingham, AL, 35294-1170, , [kmarion@uab.edu](mailto:kmarion@uab.edu)
- Trustee, Ellen Buckner, (2024) College of Health Sciences, School of Nursing, Samford University, Birmingham, AL, 35229, (205)726-2092(w); (205) 810-9877(c), [ebuckne2@samford.edu](mailto:ebuckne2@samford.edu); [ebbuckner@gmail.com](mailto:ebbuckner@gmail.com)
- First Vice-President, Vinoy Thomas, Department of Materials Science and Engineering, University of Alabama at Birmingham, (205) 975-4098, [vthomas@uab.edu](mailto:vthomas@uab.edu).
- Counselor to the Junior Academy, Mark Jones, (2024) 1233 Sanders St., Auburn. AL 36870, [jonesmt@troup.org](mailto:jonesmt@troup.org).
- President, J. Jeffrey Morris, Department of Biology, University of Alabama at Birmingham, Birmingham, AL 35294, (205) 934-9498, [evolve@uab.edu](mailto:evolve@uab.edu).
- Treasurer, Bettina Riley, (2024) USA College of Nursing, 161 N. Section Street, Suite C, Fairhope, AL, 36532, (251) 517-5363, [briley@southalabama.edu](mailto:briley@southalabama.edu)
- Secretary, Melia Fincher, (2024) Department of Biology, Samford University, Birmingham, AL, 35229, (205) 726-2928, [rmfinche@samford.edu](mailto:rmfinche@samford.edu)
- Executive Director, John Shelley-Tremblay, Department of Psychology, University of South Alabama, UCOM 1123, Mobile, AL 36688 (251) 460-6883, [jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu)

### Editorial Board and Associate Journal Editors: (staggered 3-yr terms)

- John Shelley-Tremblay, (Acting Chair) (2022), Department of Psychology, University of South Alabama, UCOM 1123, (251) 460-6883 Mobile, AL 36688, [jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu)
- Chitra Nayak, (2025) Dept. of Physics, Tuskegee Univ. Tuskegee, AL 36088, [cnayak@tuskegee.edu](mailto:cnayak@tuskegee.edu)
- Prakash Sharma, (2024) Department of Physics, Tuskegee University, Tuskegee, AL 36088, [psharma@tuskegee.edu](mailto:psharma@tuskegee.edu)

### Electronic Media: (3-yr terms)

- Diann Jordan, (2025) 915 South Jackson Street, Montgomery, AL 36101, [djordan@alasu.edu](mailto:djordan@alasu.edu)
- Richard Hudiburg, Associate Editor, (2022) Department of Psychology, University of North Alabama, Box 5187, Florence, AL 35632, [rahudiburg@una.edu](mailto:rahudiburg@una.edu)
- Brian Toone, (2025) Dept. of Computer Science, Samford Univ., Birmingham, AL, 35229,

(205) 726-2960, [brtoone@samford.edu](mailto:brtoone@samford.edu)

- Jason L. Heaton, (2024) Dept of Biology, Birmingham Southern College, Birmingham, AL, [jheaton@bsc.edu](mailto:jheaton@bsc.edu)

#### **Emmett B. Carmichael Award: (staggered 2-yr terms)**

- Richard Hudiburg, Chair, (2023) Department of Psychology, University of North Alabama, Box 5187, Florence, AL 35632, [rahudiburg@una.edu](mailto:rahudiburg@una.edu)
- David Nelson, (2024) Department of Biology, University of South Alabama, Mobile, AL 36688, [dnelson@usouthal.edu](mailto:dnelson@usouthal.edu)
- Brian Toone, (ex officio) Department of Computer Sci., Samford University, Birmingham, AL 35229 (205) 726-2960, [brtoone@samford.edu](mailto:brtoone@samford.edu).
- Larry Davenport, (2023) Department of Biological Sciences, Samford University, Birmingham, AL 35229, [ljdavenp@samford.edu](mailto:ljdavenp@samford.edu)

#### **Gorgas Scholarship Program: (staggered 3-yr terms)**

- Ellen Buckner, Co-chair, College of Health Sciences, School of Nursing, Samford University, Birmingham, AL 35229 (205) 910-9877 [ebbuckner@gmail.com](mailto:ebbuckner@gmail.com) & [ellen.buckner@samford.edu](mailto:ellen.buckner@samford.edu)
- John Shelley-Tremblay, Co-chair, Department of Psychology, University of South Alabama, UCOM 1123, (251) 460-6883 Mobile, AL 36688, [jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu)
- Elizabeth Dobbins, (2023) Department of Biology, Samford University, Birmingham, AL 35229, [egdobbin@samford.edu](mailto:egdobbin@samford.edu)
- David H. Nelson, (2023) Department of Biology, University of South Alabama, Mobile, AL 36688, [dnelson@southalabama.edu](mailto:dnelson@southalabama.edu)
- Prakash Sharma, (2025) Department of Physics, Tuskegee University, Tuskegee, AL 36088, [psharma@tuskegee.edu](mailto:psharma@tuskegee.edu).
- Lauren Rast Boban, (2025) Dept. of Physics, Univ. of Alabama at Birmingham, Birmingham, AL 35294, (205) 975-0219 [laurenr@uab.edu](mailto:laurenr@uab.edu).
- Mitzi Adams (2025) 320 Sparkman Drive, Huntsville, AL, 35805, [mitzi.adams@nasa.gov](mailto:mitzi.adams@nasa.gov)

#### **Junior Academy:**

- Mark Jones, 1233 Sanders St., Auburn, AL 36870, [jonesmt@troup.org](mailto:jonesmt@troup.org).

#### **Junior Academy Regional Counselors:**

- Virginia Vilardi, Wetumpka High School, 1251 Coosa River Parkway, Wetumpka, AL 36092 (334) 799-0104, (334) 514-1770 [virginia.vilardi@elmore.k12.al.us](mailto:virginia.vilardi@elmore.k12.al.us).

#### **Local Arrangements at Committee (2024 Annual Meeting)**

- Donna Perygin, Chemistry and Geosciences, College of Science and mathematics, Jacksonville State University, Jacksonville, AL, 36265. [dperygina@jsu.edu](mailto:dperygina@jsu.edu)

#### **Long Range Planning: (staggered 4-yr terms, committee elects chair)**

- Akshaya Kumar (2025) Department of Physics, Tuskegee University, Tuskegee, AL 36088, (334) 727-8968, [akumar@tuskegee.edu](mailto:akumar@tuskegee.edu).
- Puneet Srivastava (2023) 200 Corley Building, Biosystems Engineering, Auburn AL 36849, [srivapu@auburn.edu](mailto:srivapu@auburn.edu).



- Brian Toone, (ex officio) (2024) Department of Computer Sci., Samford University, Birmingham, AL 35229 (205) 726-2960, [brtoone@samford.edu](mailto:brtoone@samford.edu).
- John Shelley-Tremblay, (2026), Department of Psychology, University of South Alabama, UCOM 1123, (251) 460-6883 Mobile, AL 36688, [jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu)

**Mason Scholarship: (staggered 3-yr terms)**

- Mickie Powell (Chair) (2024) Department of Biology, University of Alabama at Birmingham, Birmingham, AL 35294 [mpowell@uab.edu](mailto:mpowell@uab.edu)
- Ronald Hunsinger (2023) 1070 Crest Rd., Leads, AL [rhunsin@samford.edu](mailto:rhunsin@samford.edu)
- Enrique Jackson (2025) Miles College, [emj.academic.consulting@gmail.com](mailto:emj.academic.consulting@gmail.com); Enrique.m.jackson@nasa.gov
- Michael Hallman (2025) Alabama Dept. of Public Health, PO Box 303017, Montgomery, AL 36130, [michael.hallman@adph.state.al.us](mailto:michael.hallman@adph.state.al.us), [hallman.michael@gmail.com](mailto:hallman.michael@gmail.com).
- R. Melvin Blake, (2023) Department of Physical and Earth Science, University of North Alabama, Florence, AL 35632, [rdblake@una.edu](mailto:rdblake@una.edu)

**Membership and Development:**

- Past President: John Shelley-Tremblay, (2026), Department of Psychology, University of South Alabama, UCOM 1123, (251) 460-6883 Mobile, AL 36688, [jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu).

- Active Past Presidents

Adriane G. Ludwick	1989-90
Ken R. Marion	1991-92
Michael B. Moeller	1992-93
Prakash Sharma	1993-94
Eugene Omasta	1994-95
Ellen B. Buckner	1997-98
Richard Hudiburg	2000-01
Stephen A. Watts	2002-03
Anne M. Cusic	2003-04
Larry Davenport	2005-06
David Nelson	2006-07
D. Brian Thompson	2009-10
Brian Burnes	2010-11
Mickie Powell	2011-12
Ronald N. Hunsinger	2012-13
Emanuel Waddell	2013-14
John McCall	2014-15
Brian R. Toone	2015-16
Akshaya Kumar	2016-17
Ketia Shumaker	2017-18
Nixon Mewabi	2018
Drew Hataway	2018-2020
Cameron Gren	2020-21
John Shelley-Tremblay	2021-22

**Nominating:**

- Matthew Edwards, Department of Physics, Alabama A&M Univ., Normal, AL, 35762, (256) 372-8119 or (256) 372-8104, [matthew.edwards@aamu.edu](mailto:matthew.edwards@aamu.edu), and all Section Chairs

**Place and Date of Meeting: (5 members, staggered 5-yr terms)**

- Kenneth Roblee (Chair) (2027) Dept. of Mathematics, Troy University, Troy, AL 36082 [krblee@troy.edu](mailto:krblee@troy.edu).
- Donna Perygin (2026) Department of Chemistry and Geosciences, Jacksonville State University, Jacksonville, AL 36265, [dperygina@jsu.edu](mailto:dperygina@jsu.edu).
- Larry Krannich, (2025) Department of Chemistry, University of Alabama at Birmingham, Birmingham, AL 35294, (205) 936-0823, [krannich@uab.edu](mailto:krannich@uab.edu)
- Manoj Mishra, (2027) Dept. of Biological Sciences, Alabama State University, Montgomery, AL 36104 (334) 229-5085 [mmishra@alasu.edu](mailto:mmishra@alasu.edu).
- Itza Soloman (2024), University of Mobile, 5735 College Parkway, Mobile, AL 36613, [sitza@umobile.edu](mailto:sitza@umobile.edu).

**Research: (5 members with staggered 5-yr terms)**

- Brian Burnes, Chair (2024) [bburnes01@gmail.com](mailto:bburnes01@gmail.com)
- Ruigang Wang (2027) Dept. of Metallurgical & Materials Engineering, The University of Alabama, Tuscaloosa, AL 35487, [rwang@eng.ua.edu](mailto:rwang@eng.ua.edu)
- Vinoy Thomas, (2026) Department of Materials Science and Engineering, University of Alabama at Birmingham, (205) 975-4098, [vthomas@uab.edu](mailto:vthomas@uab.edu)
- Bernece Herbert, (2023) Department of Community and Regional Planning, Alabama A&M University, Normal, AL 35762 (256) 372-4988, [bernece.herbert@amm.edu](mailto:bernece.herbert@amm.edu)

**Resolutions:**

- Brian Burnes, Chair (2026) [bburnes01@gmail.com](mailto:bburnes01@gmail.com)

**Science, Public Policy, and Public Relations: (staggered 4-yr terms)**

- Scott Brande, co-Chair, (2025) Department of Geology, University of Alabama at Birmingham, Birmingham, AL 35294, [sbrande@uab.edu](mailto:sbrande@uab.edu)
- Brian Burnes, co-Chair (2026) [bburnes01@gmail.com](mailto:bburnes01@gmail.com)
- Ellen Buckner, (2023), College of Health Sciences, School of Nursing, Samford University, Birmingham, AL 35229 (205) 726-2092(w); (205) 810-9877(c), [ebuckne2@samford.edu](mailto:ebuckne2@samford.edu); [ebbuckner@gmail.com](mailto:ebbuckner@gmail.com).
- Gregory Buckley (2023) Dept. of Physical and Earth Science, University of North Alabama, Florence, AL 25632, [gbuckley@una.edu](mailto:gbuckley@una.edu).
- James Bradley, (2024) Department of Biological Sciences, Auburn University, Auburn, AL 36849, [bradljt@auburn.edu](mailto:bradljt@auburn.edu)
- Marisol Alcantara Ortigoza (2025) Dept. of Physics, Tuskegee Univ., Tuskegee, AL 36088, [malcantaraortigoza@tuskegee.edu](mailto:malcantaraortigoza@tuskegee.edu)

**Steering:**

- Immediate Past President, John Shelley-Tremblay, (2023), Department of Psychology, University of South Alabama, UCOM 1123, (251) 460-6883 Mobile, AL 36688, [jstremblay@southalabama.edu](mailto:jstremblay@southalabama.edu).
- President, J. Jeffrey Morris, (2023), Department of Biology, University of Alabama at

Birmingham, Birmingham, AL 35294, (205) 934-9498, [evolve@uab.edu](mailto:evolve@uab.edu).

- Vice President, Vinoy Thomas, (2023) Department of Materials Science and Engineering, University of Alabama at Birmingham, (205) 975-4098, [ythomas@uab.edu](mailto:ythomas@uab.edu)
- Second Vice President, Matthew Edwards, (2023) Dept. of Physics, Alabama A&M Univ., Normal, AL, 35762, (256) 372-8119 or (256) 372-8104, [matthew.edwards@aamu.edu](mailto:matthew.edwards@aamu.edu)
- Secretary, Bettina Riley, (2024) USA College of Nursing, 161 N. Section Street, Suite C, Fairhope, AL 36532, [briley@southalabama.edu](mailto:briley@southalabama.edu).
- Treasurer, Malia Fincher, (2024) Department of Biology, Samford University, 900 Lakeshore Dr., Birmingham, AL 35229, (205) 726-2928 [rmfinche@samford.edu](mailto:rmfinche@samford.edu)

**Wright A. Gardner Award: (4 members with staggered 2-yr terms)**

- Prakash Sharma, Chair, (2022) Department of Physics, Tuskegee University, Tuskegee, AL 36088, [psharma@tuskegee.edu](mailto:psharma@tuskegee.edu)
- Matthew Edwards, (2023) Dept. of Physics, Alabama A&M Univ., Normal, AL, 35762, (256) 372-8119 or (256) 372-8104, [matthew.edwards@aamu.edu](mailto:matthew.edwards@aamu.edu)
- Akshaya Kumar, (2023) Dept. of Physics, Tuskegee University, Tuskegee, AL 36088, [akumar@tuskegee.edu](mailto:akumar@tuskegee.edu).
- Vacant (2020)

## PAST PRESIDENTS

<i>NAME</i>	<i>TERM</i>	<i>NAME</i>	<i>TERM</i>
Wright A. Gardner (2 terms)	1924-26	Reuben B. Boozer	1974-75
Stewart J. Lloyd	1926-27	Thomas E. Denton	1975-76
John R. Sampey	1927-28	Urban L. Diener	1976-77
Walter C. Jones	1928-29	James C. Wilkes	1977-78
Fred Allison	1929-30	William F. Arendale	1978-79
Emmett B. Carmichael	1930-31	Jack H. Moore	1979-80
George J. Fertig	1931-32	Geraldine M. Emerson	1980-81
J.F. Duggar	1932-33	Kenneth Ottis	1981-82
J.L. Brakefield	1933-34	Charles M. Baugh	1982-83
Russell S. Poor	1934-35	Raymond E. Isbell	1983-84
A.G. Overton	1935-36	John F. Pritchett	1984-85
Walter B. Jones	1936-37	Stanley T. Jones	1985-86
Roger W. Allen	1937-38	Philip G. Beasley	1986-87
P.H. Yancey	1938-39	H. Dean Moberly	1987-88
George D. Palmer	1939-40	Richard L. Shoemaker	1988-89
C.M. Farmer	1940-41	Adriane G. Ludwick	1989-90
Paul D. Bales	1941-42	Michael E. Lisano	1990-91
W.M. Mobley	1942-43	Ken R. Marion	1991-92
E.V. Jones	1943-44	Michael B. Moeller	1992-93
J.T. McKenzie	1944-45	Prakash Sharma	1993-94
J.M. Robinson	1945-46	Eugene Omasta	1994-95
James L. Kassner	1946-47	Dan C. Holliman	1995-96
John Xan	1947-48	Thomas S. Jandebour	1996-97
Eugene D. Emigh	1948-49	Ellen B. Buckner	1997-98
C.A. Basore	1949-50	Moore Asouzu	1998-99
Harold E. Wilcox	1950-51	Larry R. Boots	1999-00
Henry Walker	1951-52	Richard Hudiburg	2000-01
John A. Fincher	1952-53	Roland Dute	2001-02
Joseph F. Volker	1953-54	Stephen A. Watts	2002-03
William T. Wilks	1954-55	Anne M. Cusic	2003-04
Ralph Chermock	1955-56	Ronald L. Jenkins	2004-05
J. Allen Tower	1956-57	Larry Davenport	2005-06
Howard Carr	1957-58	David Nelson	2006-07
Herbert A. McCullough	1958-59	George Cline	2007-08
Samuel B. Barker	1959-60	Kenneth Roblee	2008-09
James R. Goetz	1960-61	D. Brian Thompson	2009-10
Paul C. Bailey	1961-62	Brian Burnes	2010-11
Louis J. Eisele	1962-63	Mickie Powell	2011-12
E. Carl Sensenig	1963-64	Ronald N. Hunsinger	2012-13
William J. Barrett	1964-65	Emanuel Waddell	2013-14
James F. Sulzby, Jr	1965-66	John McCall	2014-15
David L. DeJarnette	1966-67	Brian R. Toone	2015-16
H. Ellsworth Steele	1967-68	Akshaya Kumar	2016-17
Ruric E. Wheeler	1968-69	Ketia Shumaker	2017-18
Wilbur B. DeVall	1969-70	Nixon Mwebi	2018-18
W.L. Furman	1970-71	Drew Hataway	2018-20
G.O. Spencer	1971-72	Cameron Gren	2020-21
Joseph C. Thomas	1972-73	James Jeffrey Morris	2021-22
Robert T. Gudauskas	1973-74	John Shelley-Tremblay	2022-23

## HOSTS FOR FUTURE ALABAMA ACADEMY OF SCIENCE MEETINGS

2025 – Troy University

The Local Arrangements Manual for planning Academy annual meeting can be found on the Academy website: [www.alabamaacademyofscience.org](http://www.alabamaacademyofscience.org).



# CAMPUS MAP



- 02. Amphitheater
- 41. Anders Hall (Round House)
- 31. Angle Hall
- 51. Athletic Fieldhouse
- 25. Ayers Hall
- 10. Baseball Field
- 36. Bennett Field
- 06. Brewer Hall
- 56. Campus Inn Apts
- 23. Carlisle Fine Arts Facility
- 63. CEPS Complex
- 59. Colonial Arms Apts
- 07. Conferences and Support Operations
- 29. Counseling Services
- 20. Crow Hall
- 48. Curtiss Hall
- 46. Dauge Hall
- 57. Dillon Field
- 19. Dixon Hall
- 22. Duncan Maintenance

- 45. Fitzpatrick Hall
- 52. Gamecock Field
- 42. Hammond Hall
- 01. Honors House
- 27. Houston Cole Library
- 15. International House
- 33. Intramural Field/Track
- 39. Jack Hopper Dining Hall
- 55. Jax Apts
- 64. JSU-RMC
- 49. JSU Stadium
- 53. Kenamer Hall
- 38. Leone Cole Auditorium
- 14. Logan Hall
- 62. Longleaf Studios
- 16. Martin Hall
- 17. McGee Science Center
- 28. Mason Hall
- 58. Meehan Hall
- 04. Merrill Hall

- 60. Mountain Street Homes
- 37. Pannell Hall
- 13. Patterson Hall
- 35. Paul Carpenter Village
- 32. Penn House Apts

- 21. Pete Mathews Coliseum
- 05. The Pointe@JSU
- 26. President's Home
- 40. Quad
- 30. Ramona Wood Building
- 54. Recreation & Fitness Center
- 12. Rock House
- 09. Rowe Hall
- 47. Salls Hall (University Police)
- 18. Self Hall
- 11. Soccer Field
- 08. Softball Field
- 24. Sparkman Hall
- 50. Stephenson Hall
- 03. Stone Center
- 34. Tennis Courts
- 43. Theron Montgomery Bldg
- 44. TMB Lawn
- 61. University Development

