

2021 ASEF Categories & Subcategories

JUNIOR DIVISION: Grades 6-8 – Same as Senior Division except for Cellular & Molecular Biology and Microbiology

SENIOR DIVISION: Grades 9-12

ANIMAL SCIENCES

Animal Behavior • Cellular Studies • Development • Ecology • Genetics • Nutrition and Growth • Physiology • Systematics and Evolution • Other

BEHAVIORAL AND SOCIAL SCIENCES

Clinical & Developmental Psychology • Cognitive Psychology • Physiological Psychology • Sociology and Social Psychology • Other

CHEMISTRY, BIOCHEMISTRY and MATERIALS SCIENCE

Analytical Chemistry • Computational Chemistry • Environmental Chemistry • Inorganic Chemistry • Materials Chemistry • Organic Chemistry • Physical Chemistry • Analytical Biochemistry • General Biochemistry • Medicinal Biochemistry • Structural Biochemistry • Biomaterials • Ceramic and Glasses • Composite Materials • Computation and Theory • Electronic, Optical, and Magnetic Materials • Nano Materials • Polymers • Other

BIOMEDICAL AND HEALTH SCIENCES

Disease Diagnosis • Disease Treatment • Drug Development and Testing • Epidemiology • Nutrition • Physiology and Pathology, Biomedical Engineering • Computational Biomodeling • Computational Evolutionary Biology • Computational Neuroscience • Computational Pharmacology • Genomics

Biomaterials and Regenerative Medicine

• Biomechanics • Biomedical Devices • Biomedical Imaging • Cell and Tissue Engineering • Synthetic Biology • Disease Detection and Diagnosis • Disease Prevention • Disease Treatment and Therapies • Drug Identification and Testing • Pre-Clinical Studies • Other

CELLULAR & MOLECULAR BIOLOGY AND MICROBIOLOGY

Cell Physiology • Genetics • Immunology • Molecular Biology • Neurobiology • Antimicrobial and Antibiotics • Applied Microbiology • Bacteriology • Environmental Microbiology • Microbial Genetics • Virology • Other

COMPUTER SCIENCES AND MATHEMATICS

Algorithms • Cybersecurity • Databases • Programming Languages • Operating Systems • Biomechanics • Cognitive Systems • Control Theory • Robot Kinematics • Machine Learning • Algebra • Analysis • Combinatorics, Graph Theory, and Game Theory • Geometry and Topology • Number Theory • Probability and Statistics • Circuits • Internet of Things • Microcontrollers • Networking and Data Communication • Optics • Sensors • Signal Processing • Other

EARTH AND ENVIRONMENTAL SCIENCES

Atmospheric Science • Climate Science • Environmental Effects on Ecosystems • Geosciences • Water Science • Bioremediation • Land

Reclamation • Pollution Control • Recycling and Waste Management • Water Resources Management • Other

ENERGY: CHEMICAL & PHYSICAL

Alternative Fuels • Computational Energy Science • Fossil Fuel Energy • Fuel Cells and Battery Development • Microbial Fuel Cells • Solar Materials • Hydro Power • Nuclear Power • Solar • Sustainable Design • Thermal Power • Wind • Other

ENGINEERING

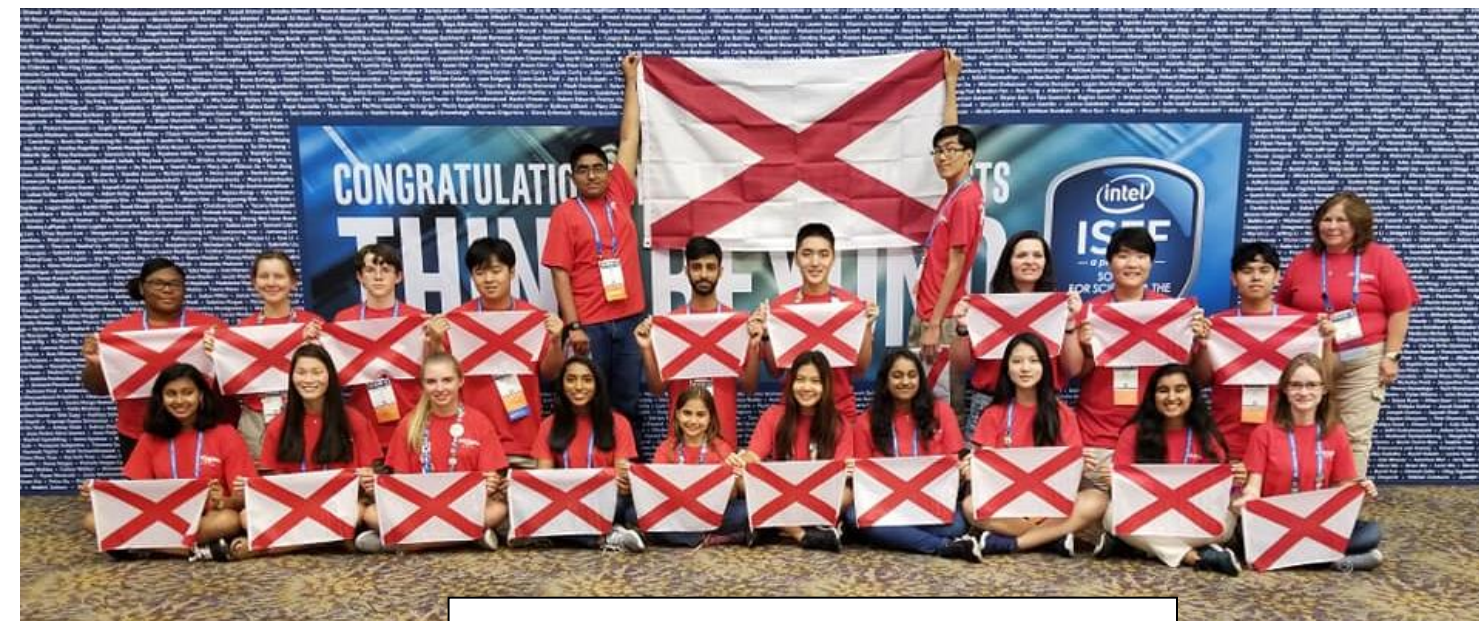
Aerospace and Aeronautical Engineering • Civil Engineering • Computational Mechanics • Control Theory • Ground Vehicle Systems • Industrial Engineering-Processing • Mechanical Engineering • Naval Systems

PHYSICS AND ASTRONOMY

Atomic, Molecular, and Optical Physics • Astronomy and Cosmology • Biological Physics • Computational Physics and Astrophysics • Condensed Matter and Materials • Instrumentation • Magnetism, Electromagnetics and Plasmas • Mechanics • Nuclear and Particle Physics • Optics, Lasers, Masers • Quantum Computation • Theoretical Physics • Other

PLANT SCIENCES

Agronomy • Growth and Development • Ecology • Genetics/Breeding • Pathology • Physiology • Systematics and Evolution • Other



From Alabama to the World
2019 Alabama ISEF Delegation

Twenty one students from across Alabama attended the 2019 Intel International Science and Engineering Fair (ISEF), held May 12-17 in Phoenix, Arizona. More than 1,800 students from 80 countries, regions or territories competed for prizes in the event.

Eighteen of the students from Alabama had earned the right to compete at this prestigious event by winning a top prize at their regional or at the state science fair. The other three students attended as student observers – these observers served as event volunteers and attended special workshops for improving research skills.

Students attending were: Cary Xiao, Brayden Noh, Vanessa Siggers, Eesha Banerjee, Benjamin Davis, Raj Mehta, Victoria Whitehead, Catherine Blevins, Sai Sumedha Bobba, Dongwon (Eric) Lee, Yewon Lee, Reagan Shoop, Sidhant Singh, Claire Jun, Eric Cheng, JiHo Lee, Suma Ejantkar, Haley Donovan, Nikitha Sridhar, Hannah Beumer and Kira Lefevre.

Awards won by the students included two category and one special awards

SPECIAL AWARDS

Oracle Academy: Award of \$5,000 for outstanding project in the systems software category Cary Xiao, Alabama School of Mathematics and Science, Tuscaloosa, AL

Wolfram Research, Inc:

Mathematica software for all Alabama ISEF Finalists and Observers

CATEGORY AWARDS

Second Award of \$1,500 – Brayden Noh

Fourth Award of \$500 – Vanessa Siggers

Why we support student scientists and engineers

The future of science and engineering exploration begins with our youth. By encouraging and nurturing their quest for discovery, our community develops a steady stream of young people who will be the next generation of science and engineering leaders. These talented individuals will be working to provide the answers to questions which have yet to be asked.

For this reason, we support the Alabama Science & Engineering Fair (ASEF). ASEF is a statewide competition, with the best students and their projects coming from regional science fairs around the state.

This year we anticipate more than 150 students will attend our fair virtually. Each student is competing against the best and brightest students from around the state for category prizes, scholarships and an opportunity to compete in the 2021 Regeneron International Science & Engineering Fair which will also be held virtually this year.

Students put time and dedication into developing their skills in math, statistics, ethics, critical thinking, scientific methodology, multiple field learning, and public speaking. This is a wonderful learning experience that can significantly impact a student's perspective of science.

Under the guidance of a committee of dedicated individuals the Alabama Academy of Science is hosting Alabama Regional Science & Engineering Fair (ASEF) on **April 9 & 10, 2021**.

In the past, our corporate donors and supporters ensured the success of the fair by creating opportunities for students who might not have had the resources to participate. The Alabama Academy of Science will provide resources, personnel, and funding — and together we strive to make the fair experience a memorable one for the students.



Alabama Science & Engineering Fair

April 9-10, 2021 ASEF

<http://www.alabamaacademyofscience.org/alabama-state-science-and-engineering-fair-2021/>

ASEF questions? Contact Dr. Virginia Vilardi at virginia.vilardi@elmoreco.com (334-799-0104) or Dr. Jack Shelley Tremblay jstremblay@southalabama.edu (251) 460-6883 or: (251) 460-6320



ALABAMA ACADEMY OF SCIENCE

Donor Response Form

2021 Alabama Science & Engineering Fair

Company Name: _____

Address: _____

City, State, Zip: _____

Contact Person: _____

Title: _____ Phone: _____

E-Mail Address: _____ Fax: _____

Please check the area you would like to support as an ASEF supporter.

Past category donors have priority selection until March 15th. The list of categories is on the back of this form.

ASEF PATRON DONOR (\$5,000 or more) \$_____ Patron Donor recognition includes:

- Sponsoring 2 category selections (see attached list)

Category #1: _____ Category #2: _____ Alternate: _____

- An opportunity for up to 2 ASEF judges from your company to review and recommend top winners

Judge #1 Name: _____ Phone: _____ Email: _____

Judge #2 Name: _____ Phone: _____ Email: _____

- Donor recognition in all publications and advertisements

CATEGORY DONOR (\$2,500 or more) \$_____ Category Donor recognition includes:

- Sponsoring 1 category (see attached list): Preferred Category: _____ Alternate: _____

- Recognition in all publications and advertisements

- An opportunity for 1 ASEF judge from your company to review and recommend top winners

Judge Name: _____ Phone: _____ Email: _____

FAIR SUPPORTER (Other) \$_____ Fair Supporter recognition includes:

- Recognition in all publications and advertisements

Please send a high resolution copy of your logo (JPEG or PNG files preferred) to Jack Shelley-Tremblay, Ph.D.

jstremblay@southalabama.edu

Signature: _____ Date: _____

Please provide us with an invoice for the amount above, and send to the attention of: _____

Thank you for your support! Please make checks payable to Alabama Academy of Science and designate for ASEF. Return this form along with payment to:

Dr. Larry K. Krannich, Executive Director, Alabama Academy of Science 2108 Fox Valley Circle Birmingham, AL 35216