



AERSF JR/SR CATEGORIES

revised for 2022

Animal Sciences (ANIM)

- Agricultural Animal Science
- Animal Behavior
- Cellular Studies
- Development
- Ecology
- Genetics
- Nutrition and Growth
- Physiology
- Systematics & Evolution

Behavioral and Social Sciences (BEHA)

- Clinical and Development Psychology
- Cognitive Psychology
- Neuroscience
- Physiological Psychology
- Social Psychology

Biochemistry (BCHM)

- Analytical Biochemistry
- General Biochemistry
- Medicinal Biochemistry
- Structural Biochemistry

***MODIFIED* Biomedical and Health Sciences/ Biomedical Engineering (BMED)**

- Biomedical Engineering
- Cell, Organ, and Systems Physiology
- Genomics and Genetics
- Nutrition
- Computational Bio-modeling
- Computational Biology
- Computer Neuroscience

Cellular and Molecular Biology (CELL)

- Cell Physiology
- Cellular Immunology
- Genetics
- Molecular Biology
- Neurobiology

Chemistry (CHEM)

- Analytical Chemistry
- Computational Chemistry
- Environmental Chemistry
- Organic/Inorganic chemistry
- Materials Chemistry
- Physical Chemistry

***MODIFIED* Computer Science: Hardware/ Embedded Systems (EBED)**

- System Hardware
- Circuits
- Internet of Things
- Microcontrollers
- Networking/Communications
- Optics
- Sensors
- Signal Processing
- Robotic Mechanical Design

***MODIFIED* Computer Science:**

Systems Software (SOFT)

- Algorithms
- Cybersecurity
- Databases
- Human/Machine Interface
- Languages and Operating Systems
- Mobile Apps
- Online Learning
- Software Performance
- Robotics Artificial Intelligence/Cognitive Systems
- Machine Learning

***MODIFIED* Earth and Environmental Sciences (EAEV)**

- Atmospheric Science
- Climate Science
- Environmental Effects on Ecosystems
- Geosciences
- Water Science

***MODIFIED* Energy: Sustainable Materials and Design (EGSD)**

- Biological Process and Design
- Solar Process, Materials, and Design
- Energy Storage
- Wind and Water Movement Power Generation
- Hydrogen Generation and Storage
- Thermal Generation and Design
- Triboelectricity and Electrolysis

Engineering Mechanics (ENMC)

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

***NEW* Environmental Engineering (ENEV)**

- Bioremediation
- Land Reclamation
- Pollution Control
- Recycling and Waste Management
- Water Resources Management

Materials Science (MATS)

- Biomaterials
- Ceramic and Glasses
- Composite Materials
- Computation and Theory
- Electronic, Optical, and Magnetic Materials
- Nanomaterials
- Polymers

Mathematics (MATH)

- Algebra
- Combinatorics, Graph Theory, and Game Theory
- Geometry and Topology
- Mathematical Analysis
- Number Theory
- Probability and Statistics

Microbiology (MCRO)

- Antimicrobials and Antibiotics
- Applied Microbiology
- Bacteriology
- Environmental Microbiology
- Microbial Genetics
- Virology

Physics and Astronomy (PHYS)

- Atomic, Molecular, and Optical Physics
- Astronomy and Cosmology
- Biological Physics
- Condensed Matter and Materials
- Mechanics
- Nuclear and Particle Physics
- Theoretical, Computational, and Quantum Physics

Plant Sciences (PLNT)

- Agriculture and Agronomy
- Ecology
- Genetics and Breeding
- Growth and Development
- Pathology
- Plant Physiology
- Systematics and Evolution

***NEW* Translational Medical Sciences (aka Disease Studies) (TMED)**

- Disease Detection and Diagnosis
- Disease Prevention
- Disease Treatment and Therapies
- Drug Identification and Testing
- Pre-Clinical Studies
- Computational Pharmacology

Note: The Robotics and Intelligent Machines (ROBO) category has been removed. For robotics projects, please choose one of the Computer Science categories depending on the project.