# DeKalb Regional Science and Engineering Fair Overview

## September 2018


DeKalb County School District

K-12 Science Coordinators

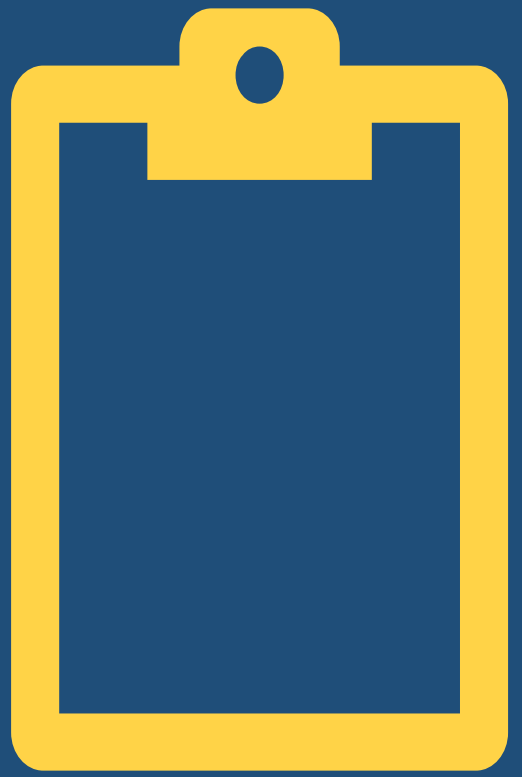
Mrs. Deneen Mc Bean-Warner & Dr. Jacqueline Stephens

Science Professional Learning Facilitators

Mrs. Danielle Armstrong and Mrs. Kassidy Moore

# Session Outline

1. Project Timelines
2. DeKalb Regional Science and Engineering Fair Rules
3. Benefits of Participation
4. Tips for a Successful School Science and Engineering Fair
5. DeKalb Regional Science and Engineering Fair Timelines and Expectations



# Wonders of Science

**The DeKalb Regional Science and Engineering Fair project provides an opportunity to take concepts we have learned and use them to solve a real-world problem.**

# Session Handouts

**All documents for the DeKalb Regional Science and Engineering Fair are housed in the Verge Curriculum Community in the science folder labeled:**

**2019 DeKalb Regional Science and Engineering Fair**

# Divisions of the Regional Science and Engineering Fair

N

## Novice Division Grades 3 – 5

Earth Science, Life Science, Physical Science and Engineering

Submission: Maximum- **4 projects** per school

J

## Junior Division Grades 6 - 8

22 Categories found in Project Guide

Submission: Minimum **5 projects** and Maximum **15 projects**

S

## Senior Division Grades 9 - 12

22 Categories found in Project Guide

Submission: Minimum **5 projects** and Maximum **15 projects**

# Fees for Team Entries

**All DCSD schools are assessed a fee of $30.00 per project (not team).**

**Example: 4 projects x $ 30.00 = $120 for the school**

**There are a maximum of three (3) students per team.**

**The fee is used to offset some of the costs associated with hosting the DeKalb Regional Science and Engineering Fair.**

# Components of DeKalb Regional Science and Engineering Fair

**T** — **Topic Selection and Background Research**

**P** — **Investigation/ Engineering Design Plan**

**A** — **Findings/ Real-World Applications**

## 2019 DeKalb Regional Science and Engineering Fair
## Timeline of Important Dates

- **September**: DRSEF Resources uploaded to the Science home page on VERGE
- **September 21, 2018**: Turn in completed GSEF paperwork at your local school. *Teacher reviews paperwork for completeness; approves standard projects; submits others to Scientific Review Committee (SRC) or Institutional Review Board (IRB). No experimentation can start until projects (s) are approved. All projects requiring SRB or IRB committee must be approved before experimentation.*
- **September2018:** Science Representatives' and Science Department Chairpersons' DRSEF learning opportunity. **Location**: Virtual
- **October 23, 2018:** *Suggested*: Deadline for approval of all SRC/IRB Paperwork at the local school site.
- **November 16, 2018:** *Suggested**: FINAL RESEARCH REPORT is due to the local school teacher - all experimentation should be complete by this time.
- **Dec. 03 – 14, 2018:** *Suggested*: Submit display board, abstract and log notebook to the local school teacher/school science and engineering fair coordinator.
- **December 19, 2018:** *Suggested* LAST DAY to hold school-based fair.

Timeline updated on September 12, 2018 by Mrs. Deneen M. Bean-Warner and Dr. Jacqueline Stephens, K-12 Science Coordinators

# Topic Selection and Background Research

- **Intel ISEF Categories and Subcategories**
- **Refer to the list of 22 categories to assist with identifying where project best align.**

## Intel ISEF Categories and Subcategories

The categories have been established with the goal of better aligning judges and student projects for the judging at the Intel ISEF. Local, regional, state and country fairs may or may not choose to use these categories, dependent on the needs of their area. Please check with your affiliated fair(s) for the appropriate category listings at that level of competition.

Please visit our website at student.societyforscience.org/intel-isef-categories-and-subcategories for a full description and definition of the Intel ISEF categories:

**ANIMAL SCIENCES (ANIM)**
Animal Behavior
Cellular Studies
Development
Ecology
Genetics
Nutrition and Growth
Physiology
Systematics and Evolution
Other

**BEHAVIORAL AND SOCIAL SCIENCES (BEHA)**
Clinical and Developmental Psychology
Cognitive Psychology
Neuroscience
Physiological Psychology
Sociology and Social Psychology
Other

**BIOCHEMISTRY (BCHM)**
Analytical Biochemistry
General Biochemistry
Medical Biochemistry
Structural Biochemistry
Other

**BIOMEDICAL AND HEALTH SCIENCES (BMED)**
Cell, Organ, and Systems Physiology
Genetics and Molecular Biology of Disease
Immunology
Nutrition and Natural Products
Pathophysiology
Other

**BIOMEDICAL ENGINEERING (ENBM)**
Biomaterials and Regen Medicine
Biomechanics
Biomedical Devices
Biomedical Imaging
Cell and Tissue Engineering
Synthetic Biology
Other

**CELLULAR AND MOLECULAR BIOLOGY (CELL)**
Cell Physiology
Cellular Immunology
Genetics
Molecular Biology
Neurobiology
Other

**CHEMISTRY (CHEM)**
Analytical Chemistry
Computational Chemistry
Environmental Chemistry
Inorganic Chemistry
Materials Chemistry
Organic Chemistry
Physical Chemistry
Other

**COMPUTATIONAL BIOLOGY AND BIOINFORMATICS (CBIO)**
Computational Biomodeling
Computational Epidemiology
Computational Evolutionary Biology
Computational Neuroscience
Computational Pharmacology
Genomics
Other

**EARTH AND ENVIRONMENTAL SCIENCES (EAEV)**
Atmospheric Science
Climate Science
Environmental Effects on Ecosystems
Geosciences
Water Science
Other

**EMBEDDED SYSTEMS (EBED)**
Circuits
Internet of Things
Microcontrollers
Networking and Data Communications
Optics
Sensors
Signal Processing
Other

**ENERGY: CHEMICAL (EGCH)**
Alternative Fuels
Computational Energy Science
Fossil Fuel Energy
Fuel Cells and Battery Develop
Microbial Fuel Cells
Solar Materials
Other

**ENERGY: PHYSICAL (EGPH)**
Hydro Power
Nuclear Power
Solar
Sustainable Design
Thermal Power
Wind
Other

**ENGINEERING MECHANICS (ENMC)**
Aerospace and Aeronautical Engineering
Civil Engineering
Computational Mechanics
Control Theory
Ground Vehicle Systems
Industrial Engineering-Processing
Mechanical Engineering
Naval Systems
Other

**ENVIRONMENTAL ENGINEERING (ENEV)**
Bioremediation
Land Reclamation
Pollution Control
Recycling and Waste Management
Water Resources Management
Other

**MATERIALS SCIENCE (MATS)**
Biomaterials
Ceramic and Glasses
Composite Materials
Computation and Theory
Electronic, Optical and Magnetic Materials
Nanomaterials
Polymers
Other

**MATHEMATICS (MATH)**
Analysis
Combinatorics, Graph Theory, and Game Theory
Geometry and Topology
Number Theory
Probability and Statistics
Other

**MICROBIOLOGY (MCRO)**
Antimicrobials and Antibiotics
Applied Microbiology
Bacteriology
Environmental Microbiology
Microbial Genetics
Virology
Other

**PHYSICS AND ASTRONOMY (PHYS)**
Astronomy and Cosmology
Atomic, Molecular, and Optical Physics
Biological Physics
Condensed Matter and Materials
Mechanics
Nuclear and Particle Physics
Theoretical, Computational and Quantum Physics
Other

**PLANT SCIENCES (PLNT)**
Agriculture and Agronomy
Ecology
Genetics/Breeding
Growth and Development
Pathology
Plant Physiology
Systematics and Evolution
Other

**ROBOTICS AND INTELLIGENT MACHINES (ROBO)**
Biomechanics
Cognitive Systems
Control Theory
Machine Learning
Robot Kinematics
Other

**SYSTEMS SOFTWARE (SOFT)**
Algorithms
Cybersecurity
Databases
Human/Machine Interface
Languages and Operating Systems
Mobile Apps
Online Learning
Other

**TRANSLATIONAL MEDICAL SCIENCES (TMED)**
Disease Detection and Diagnosis
Disease Prevention
Disease Treatment and Therapies
Drug Identification and Testing
Pre-Clinical Studies
Other



See International Rules and Guidelines Page: 28

# Rules and Guidelines

- **Guidelines for Completing the project**
- **All forms are available in the 2019 DeKalb Regional Science and Engineering Fair Folder housed in Verge.**
- **Display and Safety Rules**

# Rules and Guidelines Cont.

Be mindful of experiments or surveys involving :

- Humans
- Vertebrate Animals
- Toxic Chemicals
- Biological Agents

The guidelines require working with professionals in the field or in some cases completely revising the project.

# Experiment/Design Process Log

**Students will need the following:**

- **An Official Abstract**
  Must be typed and visual on display area

**MUST BE IN A NOTEBOOK**

- **Forms**
  - 1
  - 1A
  - 1B
- Research Plan and Project Display

# The Research Plan

- **Required by All Participants**

Includes :

- Project Rationale
- Research Questions
- Hypothesis (es) or Engineering Goals
- Procedures
- Risk and Safety
- Data Analysis
- Bibliography

**Students working with humans, vertebrates or toxic/biological hazards have additional information and should follow the rules and guidelines for further details.**

# Experiments or Engineering Designs

- Students should be taking notes in their log book (suggested)
- Photographs of themselves doing the work
- The photographs can be used in the display as authentication of their procedures

# Display of the Project

## Items NOT allowed on Display

- Liquids
- Living Organisms
- Flames
- Sharp Objects


**REFER TO THE GUIDELINES FOR EXACT DIMENTSION OF THE DISPLAY BOARD AND AREA**

# SCHOOL-BASED SCIENCE FAIR

## Your school will host a local science fair:

- The top projects will move to the DeKalb Regional Science and Engineering Fair
- Your school's science team and invited community experts will use a scoring guide to select the winners
- Ensure that judges include suggestions to aide students in revising their projects for the next stages

# Required Documentation


**Your top project winners of your local school science fair will move on to the DeKalb Regional Science and Engineering Fair.**

- All forms and documents for winning projects are due to the Science Coordinators on January 10, 2019.

- The DeKalb Regional Science and Engineering Fair will be held on February 1-2, 2019

# QUESTIONS

## Please contact us


**DeKalb County School District**
**K-12 Science Coordinators**

**Mrs. Deneen McBean-Warner &**
**Dr. Jacqueline Stephens**