The Lowcountry Regional Science and Engineering Fair (LSF) will be held Tuesday, April 5, 2016. Logistics for the event are included in this packet. To compete in the LSF, registration must be completed by Tuesday, March 8, 2016. The following checklist will help you complete the registration process. More information on the LSF, all forms, and the online registration link can be found on the LSF website at http://lhsm.cofc.edu/lowcountry-science-fair.

JUNIOR DIVISION (GRADES 5-8) REGISTRATION CHECKLIST

This checklist is provided for your use only. This does not need to be submitted to the LSF.


For problem-based projects, in first and last name, write the student representatives if known; otherwise submit your class name.

For team projects, each student submits an online registration and approval form. Select “Team Project” under the Category heading. To avoid confusion, please enter the same project name and description.

Project Name

Description

LSF registration confirmation email received.

Research Plan is completed and reviewed by guardian and teacher.

Approval Form is signed by student, guardian, and teacher.


Fees: $25/individual project; $30/problem-based project; $30/team project*

Approval Form, Research Plan, and Registration Fee are mailed or submitted online (may be postmarked March 8, 2016) to:

Lowcountry Science Fair
ATTN: Cynthia Hall
66 George Street, Bell 201
Charleston, SC 29424

* If team members are splitting the cost of the fee, only send a check or pay online for your portion of the cost. Each team member should not pay the entire fee.

For questions regarding registration, please contact Cynthia Hall, LSF Director, at 843.953.7847 or hallcr@cofc.edu.
**Registration deadline is Tuesday, March 8, 2016**

Sample of Online Registration Questions

The following questions will be required on the Online Registration at http://blogs.cofc.edu/lowcountryhall/lowcountry-science-and-engineering-fair-registration/. This document is meant as an aid in completing the online registration. **This is not a substitute for submitting the online registration.**

<table>
<thead>
<tr>
<th><strong>First Name</strong> <em>(This will appear on all documents.)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Last Name</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Preferred Name</strong> <em>(to be called at Awards Ceremony, if different from First)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Phone Number</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Student or Guardian Email Address</strong> <em>(Communication from the LSF Director will be sent to this address.)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Student Mailing Address</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>City</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>State</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Zip Code</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Grade</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Gender</strong> <em>(for reporting purposes only)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ethnicity</strong> <em>(for reporting purposes only)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>If OTHER, please specify</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>School Name</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Science Teacher Name</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Teacher Email</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Division</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Category of exhibit</strong> <em>(See Category List)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Title of exhibit</strong> <em>(Team Projects: Use the same title for each member)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Does your display require electricity?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Brief Summary of Project</strong> <em>(Team Projects: Use the same title for each member)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

---

*For questions regarding registration, please contact Cynthia Hall, LSF Director, at 843.953.7847 or hallcr@cofc.edu.*
Registration deadline is Tuesday, March 8, 2016

APPROVAL FORM
Must be signed before start of experimentation.

Part 1: Every student must submit an Approval Form with Part 1 completed.

STUDENT APPROVAL
I have read the rules and regulations of the Lowcountry Regional Science and Engineering Fair and agree to abide by them.

_____________________________  ________________________________  
Student Signature                  PRINT Student Name                Date

PARENT/GUARDIAN APPROVAL
I have read and understand the risks and possible dangers involved in the Research Plan. I consent to my child participating in this research. I will assume responsibility for the safety of my child during the research.

I understand that photographs may be taken during the competition and awards ceremony for publicity purposes (such as brochures, booklets, etc.), Students are never identified in the photographs used. Please check one of the following statements.

o I give permission to the Lowcountry Science Fair to use the photographs of my child for publicity purposes.

o I do not give permission to the Lowcountry Science Fair to use the photographs of my child for publicity purposes.

_____________________________  ________________________________  
Parent/Guardian Signature                  PRINT Parent/Guardian Name                Date

TEACHER APPROVAL
I have read and understand the Research Plan and approve it for the participation in the Lowcountry Regional Science and Engineering Fair.

_____________________________  ________________________________  
Teacher Signature                  PRINT Teacher Name                Date

Part 2: For projects involving HUMAN SURVEYS: Permission must be gained of participants. A copy of the statement of permission as well as a copy of the question(s) asked must be submitted with final project report.

Part 3: For projects involving the following subjects, a medical doctor or person with a masters or doctorate in a scientific field must supervise the research and sign the statement below:

• Vertebrate animals (such as fish, birds, hamsters, etc.- not insects or worms)
• Human Subjects (in research other than a survey)
• Controlled Substances (including tobacco, alcohol, over the counter drugs like aspirin, cough syrup, etc)
• Pathogenic Agents (including any bacteria or virus, as they all have the potential for pathogenicity)
• Human/Animal Tissue (such as teeth, blood, skin, etc.)

I certify that I have reviewed the Research Plan and have a working knowledge of the techniques to be used in this research. I will supervise the research as it is being conducted.

_____________________________  
Scientist's Signature                  Date

_____________________________  
Institution                  Position

For Information Contact:  Cynthia Hall, Lowcountry Science Fair Director, 843.953.7847 or e-mail: hallcr@cofc.edu.
Registration deadline is Tuesday, March 8, 2016

RESEARCH PLAN
Illegible and/or incomplete forms will be returned. Only one research plan is needed for team projects.
Please print or type.

Student(s) ________________________________________________________________

School ___________________________ Grade ________________

Project Title ____________________________________________________________

Question Posed & Hypothesis:

Procedure - i.e. the step by step list of what you plan to do (attach a second page if needed):

List any risks or safety considerations:

For Information Contact: Cynthia Hall, Lowcountry Science Fair Director, 843.953.7847 or e-mail: hallcr@cofc.edu
Determining Project Categories

Please use this guide to help determine the best category for your project. In many cases, a project could fit into two different categories. A detailed project description helps determine in which category project belongs. Please contact Cynthia Hall at 843.953.7847 or hallcr@cofc.edu with questions.

Behavioral & Social Sciences
- Human behavior
- Clinical, developmental, cognitive, & physiological psychology
- Sociology
*(Does not include animal behavior)*

Biological Sciences
- Animal sciences (development, ecology, husbandry, pathology, physiology, populations genetics, systematics)
- Plant sciences (agriculture, development, ecology, genetics, photosynthesis, physiology, systematics, evolution)
- Cellular & Molecular biology (genetics, immunology)
- Microbiology (antibiotics, antimicrobials, bacteriology, microbial genetics, virology)
- Biomedical and Health Sciences (disease diagnosis & treatment, epidemiology, physiology & pathology)

Chemistry & Biochemistry
- Analytical, inorganic, organic, physical chemistry
- Metabolism
- Structural biochemistry

Earth & Environmental Sciences
- Climatology & weather
- Geochemistry
- Mineralogy
- Paleontology
- Geophysics
- Tectonics
- Bioremediation
- Ecosystems management
- Environmental engineering
- Land resource management, forestry
- Recycling, waste management
- Air pollution & air quality
- Soil contamination & soil quality
- Water pollution & water quality

Engineering, Embedded Systems, and Mathematics
- Electrical & mechanical engineering (robotics, thermodynamics, solar)
- Materials & bioengineering (civil & construction engineering)
- Chemical engineering
- Industrial engineering
- Material science
- Aerospace and aeronautical engineering (aerodynamics)
- Alternative Fuels, Fossil Fuel Energy, & Renewable Energies
- Vehicle Development
- Applied mathematics
- Probability & statistics
- Algorithms & data bases
- Artificial intelligence
- Networking & communications
- Computational science & computer graphics
- Software engineering (programming languages)
- Computer system (operating system)
- Networking and data communication
- Optics and sensors

Physics & Astronomy
- Atoms, molecules, and solids
- Biological physics
- Instrumentation and electronics
- Magnetics & electromagnetics
- Nuclear and particle physics
- Optics, lasers, masers
- Theoretical physics
- Theoretical or computational astronomy
- Planetary science

Problem-Based Learning
- Whole, team-based, and individual projects
- Relevant problems to students and community
- Climate change, sea level rise, water pollution, etc.

Team Projects
- May cover any topic but work is complete by two students
Due to a full school year calendar (PASS testing, public and private school Spring Breaks, and religious holidays), the 2016 LSF competition and awards ceremony will be held on the same day. The competition and awards ceremony is scheduled for Tuesday, April 5, 2016 at the College of Charleston’s TD Arena (301 Meeting Street, Charleston, SC 29401).

The LSF will be able to provide dinner for all student participants and two chaperones per school/home school association.

Dinner for students in Finals Judging
Final Interviews to determine overall winners
6:00 – 7:00
7:00 – 8:30
Robotics Demo
Awards Ceremony

Reminders:

Registration forms are due Monday, March 8, 2016. Refer to page 9 of the educators' guidebook for more information.

Reminder: Dinner to be provided!

Location
The College of Charleston’s TD Arena is located at 301 Meeting Street, Charleston, SC 29401.

Directions to TD Arena
Take I-26 East into Charleston until the freeway comes to an end. Take Exit 221-B (exits to the left) and follow the signs to Meeting Street. Bear right from the exit ramp on to Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.

Schedule of Events for Tuesday, April 5, 2016

Due to a full school year calendar (PASS testing, public and private school Spring Breaks, and religious holidays), the 2016 LSF competition and awards ceremony will be held on the same day. The competition and awards ceremony is scheduled for Tuesday, April 5, 2016 at the College of Charleston’s TD Arena (301 Meeting Street, Charleston, SC 29401).

The LSF will be able to provide dinner for all student participants and two chaperones per school/home school association.

Dinner for students in Finals Judging
Final Interviews to determine overall winners
6:00 – 7:00
7:00 – 8:30
Robotics Demo
Awards Ceremony

Reminders:

Registration forms are due Monday, March 8, 2016. Refer to page 9 of the educators' guidebook for more information.

Reminder: Dinner to be provided!

Location
The College of Charleston’s TD Arena is located at 301 Meeting Street, Charleston, SC 29401.

Directions to TD Arena
Take I-26 East into Charleston until the freeway comes to an end. Take Exit 221-B (exits to the left) and follow the signs to Meeting Street. Bear right from the exit ramp on to Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.

Schedule of Events for Tuesday, April 5, 2016

Due to a full school year calendar (PASS testing, public and private school Spring Breaks, and religious holidays), the 2016 LSF competition and awards ceremony will be held on the same day. The competition and awards ceremony is scheduled for Tuesday, April 5, 2016 at the College of Charleston’s TD Arena (301 Meeting Street, Charleston, SC 29401).

The LSF will be able to provide dinner for all student participants and two chaperones per school/home school association.

Dinner for students in Finals Judging
Final Interviews to determine overall winners
6:00 – 7:00
7:00 – 8:30
Robotics Demo
Awards Ceremony

Reminders:

Registration forms are due Monday, March 8, 2016. Refer to page 9 of the educators' guidebook for more information.

Reminder: Dinner to be provided!

Location
The College of Charleston’s TD Arena is located at 301 Meeting Street, Charleston, SC 29401.

Directions to TD Arena
Take I-26 East into Charleston until the freeway comes to an end. Take Exit 221-B (exits to the left) and follow the signs to Meeting Street. Bear right from the exit ramp on to Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.

Schedule of Events for Tuesday, April 5, 2016

Due to a full school year calendar (PASS testing, public and private school Spring Breaks, and religious holidays), the 2016 LSF competition and awards ceremony will be held on the same day. The competition and awards ceremony is scheduled for Tuesday, April 5, 2016 at the College of Charleston’s TD Arena (301 Meeting Street, Charleston, SC 29401).

The LSF will be able to provide dinner for all student participants and two chaperones per school/home school association.

Dinner for students in Finals Judging
Final Interviews to determine overall winners
6:00 – 7:00
7:00 – 8:30
Robotics Demo
Awards Ceremony

Reminders:

Registration forms are due Monday, March 8, 2016. Refer to page 9 of the educators' guidebook for more information.

Reminder: Dinner to be provided!

Location
The College of Charleston’s TD Arena is located at 301 Meeting Street, Charleston, SC 29401.

Directions to TD Arena
Take I-26 East into Charleston until the freeway comes to an end. Take Exit 221-B (exits to the left) and follow the signs to Meeting Street. Bear right from the exit ramp on to Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.

Schedule of Events for Tuesday, April 5, 2016

Due to a full school year calendar (PASS testing, public and private school Spring Breaks, and religious holidays), the 2016 LSF competition and awards ceremony will be held on the same day. The competition and awards ceremony is scheduled for Tuesday, April 5, 2016 at the College of Charleston’s TD Arena (301 Meeting Street, Charleston, SC 29401).

The LSF will be able to provide dinner for all student participants and two chaperones per school/home school association.

Dinner for students in Finals Judging
Final Interviews to determine overall winners
6:00 – 7:00
7:00 – 8:30
Robotics Demo
Awards Ceremony

Reminders:

Registration forms are due Monday, March 8, 2016. Refer to page 9 of the educators' guidebook for more information.

Reminder: Dinner to be provided!

Location
The College of Charleston’s TD Arena is located at 301 Meeting Street, Charleston, SC 29401.

Directions to TD Arena
Take I-26 East into Charleston until the freeway comes to an end. Take Exit 221-B (exits to the left) and follow the signs to Meeting Street. Bear right from the exit ramp on to Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.

Schedule of Events for Tuesday, April 5, 2016

Due to a full school year calendar (PASS testing, public and private school Spring Breaks, and religious holidays), the 2016 LSF competition and awards ceremony will be held on the same day. The competition and awards ceremony is scheduled for Tuesday, April 5, 2016 at the College of Charleston’s TD Arena (301 Meeting Street, Charleston, SC 29401).

The LSF will be able to provide dinner for all student participants and two chaperones per school/home school association.

Dinner for students in Finals Judging
Final Interviews to determine overall winners
6:00 – 7:00
7:00 – 8:30
Robotics Demo
Awards Ceremony

Reminders:

Registration forms are due Monday, March 8, 2016. Refer to page 9 of the educators' guidebook for more information.

Reminder: Dinner to be provided!

Location
The College of Charleston’s TD Arena is located at 301 Meeting Street, Charleston, SC 29401.

Directions to TD Arena
Take I-26 East into Charleston until the freeway comes to an end. Take Exit 221-B (exits to the left) and follow the signs to Meeting Street. Bear right from the exit ramp on to Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.

Schedule of Events for Tuesday, April 5, 2016

Due to a full school year calendar (PASS testing, public and private school Spring Breaks, and religious holidays), the 2016 LSF competition and awards ceremony will be held on the same day. The competition and awards ceremony is scheduled for Tuesday, April 5, 2016 at the College of Charleston’s TD Arena (301 Meeting Street, Charleston, SC 29401).

The LSF will be able to provide dinner for all student participants and two chaperones per school/home school association.

Dinner for students in Finals Judging
Final Interviews to determine overall winners
6:00 – 7:00
7:00 – 8:30
Robotics Demo
Awards Ceremony

Reminders:

Registration forms are due Monday, March 8, 2016. Refer to page 9 of the educators' guidebook for more information.

Reminder: Dinner to be provided!

Location
The College of Charleston’s TD Arena is located at 301 Meeting Street, Charleston, SC 29401.

Directions to TD Arena
Take I-26 East into Charleston until the freeway comes to an end. Take Exit 221-B (exits to the left) and follow the signs to Meeting Street. Bear right from the exit ramp on to Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.
From Northbound Hwy 17
Go southbound into Charleston over Cooper River Bridge, follow signs to Meeting Street. Proceed south exactly 0.85 miles down Meeting Street. The TD Arena is on the right, just past the Calhoun Street/Meeting Street intersection.

From Southbound Hwy 17
Go northbound across the Ashley River Bridge bearing right onto Lockwood Blvd, staying in the left hand lane. At the first light, after the overpass, turn left onto Calhoun Street. Turn right at the corner of Meeting Street and Calhoun Street. (Intersection - BP Station, hotel, First Citizens Bank). The TD Arena is on your right.

Parking
Any groups planning to arrive by bus should notify the fair director March 2016 so parking arrangements can be made.

The map below shows the TD Arena (marked as the Carolina First Arena) with nearby parking. Please note that payment is required for each of these garages and lots.


C of C Parking Garages
1. Gaillard Garage - Located on Alexander Street between Calhoun and George
2. St. Philip Street Garage - Located on St. Philip St. between George and Liberty
3. Wentworth Street Garage - Located on corner of St. Philip and Wentworth
4. CofC PG Garage - Located on St. Philip St. between Vanderhorst and Calhoun

Additional PUBLIC Parking
5. Francis Marion Garage - Located on King Street just off Marion Square
6. George Street Surface Lot - Located between Meeting and King
7. Wentworth/Renaissance Garage - Located on Wentworth between Meeting and King
8. Camden Exchange Garage - Located on John Street between Meeting and King
9. Aquarium Garage - Located on Calhoun Street between Washing and Concord

There are a number of city owned metered spaces around the TD Arena. Please observe all signage on parking areas to avoid being ticketed or towed.
**Display & Safety Regulations**

The Exhibit Hall will be set up with six-foot tables and chairs. For the Junior Divisions, each six-foot table will hold two individual projects. The 3-foot allotted space will accommodate a standard tri-fold display board. Each team project will have a six-foot table.

Each Senior Division project will have its own six-foot table. Senior Division projects must adhere to the ISEF maximum project size requirements:

- Depth (front to back): 30 inches or 76 centimeters
- Width (side to side): 48 inches or 122 centimeters
- Height (floor to top): 108 inches or 274 centimeters (including table height of 36 inches or 91 centimeters)

Students needing electricity for their display (120/220-volt AC only) may request it during the online registration. Students are responsible for bringing their own Underwriters Laboratories-approved cord of proper load-carrying capacity, which is at least nine feet long and equipped with a standard grounded plug.

**Items not allowed:**

- Living organisms, including plants
- Soil, sand, rock, cement and/or waste samples, even if permanently encased in a slab of acrylic
- Taxidermy specimens or parts
- Preserved vertebrate or invertebrate animals
- Human or animal food as part of the exhibitor demonstration of the project.
- Human/animal parts or body fluids (for example, blood, urine)
- Plant materials (living, dead, or preserved) that are in their raw, unprocessed, or non-manufactured state (Exception: manufactured construction materials used in building the project or display)
- All chemicals including water (Projects may not use water in any form in a demonstration)
- All hazardous substances or devices (Example: poisons, drugs, firearms, weapons, ammunition, reloading devices, and lasers)
- Items that may have contained or been in contact with hazardous chemicals (Exception: Item may be permitted if professionally cleaned and documented for such cleaning is available)
- 3-D Printers
- Dry ice or other sublimating solids
- Sharp items (for example, syringes, needles, pipettes, knives)
- Flames or highly flammable materials
- Batteries with open-top cells or wet cells
- Glass or glass objects unless deemed by the Display and Safety Committee to be an integral and necessary part of the project (for example, glass that is an integral part of a commercial product such as a computer screen)
- Any apparatus deemed unsafe by the Scientific Review Committee, the Display and Safety Committee, or Society for Science & the Public (Example: large vacuum tubes or dangerous ray-generating devices, empty tanks that previously contained combustible liquids or gases, pressurized tanks, etc.)
- **Awards or medals from previous competitions.**
- Photographs or other visual displays of vertebrate animals in surgical techniques, dissections, or other lab procedures
- Any photograph, visual image, chart, table, and/or graph that is deemed offensive or inappropriate by the Fair Director and Judge Coordinator.
Other Information

- A project data book is not required but highly recommended.
- Project sounds, lights, odors, and other display items must not be distracting.
- The Fair Director and Judge Coordinator reserve the right to remove any project or item for safety reasons or to protect the integrity of the LSF and its rules and regulations.
- The LSF Display and Safety Regulations are based on the International Science & Engineering Fair Regulations. While planning their display, Senior Division (grades 9-12) students should review all ISEF Display & Safety Regulations.


Identifying Marks

Personal identifying markers such as last name and school name, including in display photographs, are not allowed on the front of the display. Students’ and school names may be written on the back of the display board.

Students should not wear clothing with their school name. This rule is to eliminate potential bias on the part of the judges. Exception: The LSF will concede to school rules regarding dress. Therefore, if a participating school requires uniforms to be worn during school outings, uniforms will be permitted. However, any identifying logos or names should be covered. Opaque tape will be available.