

# SCJAS

## South Carolina Junior Academy of Science

Volume XXXIX, Issue 1

Fall 2007

### President's Perspective

#### Ella Soltz, SCJAS President

Hello to SCJAS members!



I am excited to begin a new year as president. I hope to see many of you at the Fall Workshop. The registration deadline is quickly approaching! It was unfortunate that last year's Winter Workshop did not take place. However, this year's workshop will be hosted by my own highschool, A.C.Flora, in the new science department. I would love to hear any suggestions for the upcoming events, so, please feel free to contact me at [Soltzfamily@aol.com](mailto:Soltzfamily@aol.com).

Thank-you,

Ella Soltz

#### Special points of interest:

- SCJAS Fall 2007 Upcoming Events

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### SCJAS Upcoming Events

Fall and winter workshops are sponsored annually at a South Carolina college or university. These workshops provide opportunities to share ideas among fellow students and to familiarize students with the state's scientific community.

#### 2007-2008 Workshops

- **SCJAS Fall Workshop 2007**  
USC Upstate  
Date: October 20, 2007
- **SCJAS Winter Workshop**  
AC Flora High School  
Date: February 2, 2008

#### 2008 Annual Meeting

- **SC Academy of Science Annual Meeting**  
Clemson University  
Date: March 20, 2008

Updates, deadlines, and more information can be found on the SCJAS website: <http://www.erskine.edu/scjas/>

# ANNOUNCING

FALL WORKSHOP  
For  
SOUTH CAROLINA JUNIOR  
ACADEMY OF SCIENCE

Fall Workshop Date: October 20, 2007  
Deadline to Register: October 10, 2007

## USC Upstate

David Ferris  
Division of Natural Science & Engineering  
USC Upstate  
800 University Way  
Spartanburg, SC 29303  
Phone: (864) 503-5685 E-mail: [dkferris@uscupstate.edu](mailto:dkferris@uscupstate.edu)

Who Can Attend: Students in grades 8-12, parents, & teachers

Keynote Address:

*"Are We Really What We Eat? : Using Stable Isotopes to Investigate Animal Ecology & Physiology".*

*Dr. Melissa Pilgrim*

*USC Upstate, Savannah River Ecology Laboratory*

IN ADDITION, THERE WILL BE:

Twenty - Five (25 to 30) Hands-on Sessions in Science, Engineering, & Environmental Science  
(students pick two)

Parents are Welcome to Attend!  
Great Ideas for Classroom Teachers, too!

For more information about the scheduled workshop, to register,  
or how to join the South Carolina Junior Academy of Science,  
contact:

Dr. Karen Fox / University of South Carolina / School of Medicine /  
Dept. of Pathology, Microbiology and Immunology / Columbia, SC 29208 /  
Phone: (803) 733-1529 / Fax: (803) 733-3192 / Email: [kfox@med.sc.edu](mailto:kfox@med.sc.edu)  
You may also find information online at [www.erskine.edu/scjas](http://www.erskine.edu/scjas)

NURTURING SCIENCE AND MATH IN SOUTH CAROLINA  
For GRADES 8-12

Sponsored by the South Carolina Academy of Science & USC Upstate.

## SCJAS TRAVEL GRANTS

The SCJAS Board of Directors has once again budgeted funds to help those schools that need financial assistance to attend the Fall Workshop at USC Upstate.

The money can only be used to help with the cost of the travel – not registration fees, meals or lodging. To increase exposure to Academy events, priority will be given to schools which have not been active in Junior Academy events. If your school needs financial assistance, please go visit the following url:

<http://www.erskine.edu/scjas/2007fallwstravelgrant.pdf>

to complete the travel grant request by October 5, 2007.

## SCJAS Goals and Objectives

The South Carolina Junior Academy of Science, sponsored by the South Carolina Academy of Science (an affiliate of the American Association for the Advancement of Science and the National Association of Academics of Science), is organized with the following objectives:

- To promote greater participation in science and mathematics activities.
- To improve the quality of achievement in science and mathematics by encouraging students to develop original ideas and participate in research.
- To develop an understanding of the scientific community through close association with leaders in science.
- To seek improvement of science club activities by sponsoring a speakers bureau, workshops, campus and state meetings and other activities to encourage student interaction with participating scientists, scholars and peers from throughout the state in scientific as well as social activities designed to stimulate intellectual scientific pursuits and fun!
- To instill within its members scientific attitudes and ideals that lead to greater development of service to the world.

The Junior Academy also encourages teachers to become members of the Senior Academy so that these goals can be fulfilled throughout the state.

### SCJAS Board Members 2007-2008

#### STUDENT OFFICERS

President  
Ella Soltz  
AC Flora High School

Vice President  
Graham Van Schaik  
Spring Valley High School

Secretary  
Araba Appiagyei-Dankah  
Academic Magnet High School

Treasurer  
Ryan Clark  
Hilton Head Preparatory Academy

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Matt Shrader, SVHS  
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Roger Schmidt,  
Columbia College  
Clyde Smith,  
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Sondra Wieland,  
Heathwood Hall Episcopal

#### SCJAS BOARD ADVISORS

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John Inman,  
Presbyterian College  
Jim Privett,  
USC Sumter  
Roger Schmidt,  
Columbia College  
Tom Reeves,  
Midlands Technical College

## Three Students in the Top 400 National Semifinalist By Dr. Don M. Jordan

The USC Region II Science & Engineering Fair, along with the College of Arts and Sciences, the Office of Research, The College of Engineering, and USC School of Medicine is pleased to announce three semifinalists selected for the 2007 Discovery Channel Young Scientist Challenge chosen as the three of the top 400 semifinalists from over 7,000 students who won a DCYSC nomination at their local, regional or state fair. The three Region II semifinalists are:



**Arjun Aggarwal**

Pleasant Hill Middle School,  
7th grade

Teacher: Elizabeth Frazer

Title: *Can the Concept of Equilibrium Be Applied in Robotics?*

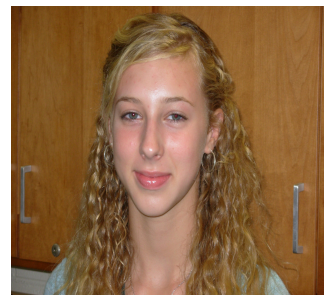


**Ian Wright**

Cardinal Newman Middle School,  
8th grade

Teacher: Mary S. Burts

Title: *Local Concern: A Case of Bad Water*



**Emily Bakaj**

Dent Middle School  
8th grade

Teacher: Susan Yelton

Title: *The Effects of Nutrient vs. Antibacterial Substances on Escherichia coli Biofilms*

National evaluators and judges spent the summer reading and reviewing the entries looking for those students with projects that demonstrated scientific merit and originality and who were able to communicate this process clearly and creatively to the judges via the entry form. The result of their difficult job is the selection of the 400 DCYSC national semifinalists.

These talented students represent three of the nine semifinalists from the state of South Carolina. By the time of this announcement these students will have advanced to the next grade level.

From the national group of 400 Semifinalists, 40 Finalists will be chosen to attend an all-expenses paid trip to Washington, DC from October 20-24, 2007 to compete in science challenges. The 40 finalists will compete for discretionary experiential awards and to win over \$40,000 in scholarship monies with the top student winning a \$20,000 scholarship. Finalists will be announced on September 12, 2007. We would like to thank the 200 plus Judges for Region II at the 2007 USC Fair for their distinguished nominations and especially the teachers; Elizabeth Frazer of Pleasant Hill Middle, Lexington School District I, Susan Yelton, Dent Middle Richland II School District, and Mary S. Burts of Cardinal Newman Middle School. We hope South Carolina will be represented in the final 40. We especially appreciated The Support of the University of South Carolina and the Office of Research.

A complete list of 2007 Discovery Young Scientist Challenge Semifinalists may be found at <http://www.sciserv.org/dcysc/07dcysc/semis07.pdf>

The other six semifinalists from the State of South Carolina are:

**Ion Garcia** - Greenville Middle Academy, 6th grade Title: *Inactive Ingredients in Pedialyte: Are They Really Inactive?;*

**Thomas McAllister** - McCants Middle School, 7th grade, Title: *The Transpiration of Leaves.*

**Thomas Melanson** - Hilton Head Middle School, 6th grade, Title: *Polymer Power: What Type of Compressible Material Most Efficiently Releases Energy?*

**Randal Parker** - Laurens Middle School, 7th grade, Title: *Experiments in Holography.*

**PJ Tewell** - Bryson Elementary School, 5th grade, Title: *Rolling on the Green. And*

**Darby Woodard** - Mitchell Road Christian School, 8th grade, Title: *Portion Distortion: Are Subtle Visual Cues Contributing to Our Expanding Waistlines?*

## Midlands Students Win First and Third Places in the World!! By Dr. Don M. Jordan



**Graham van Schaik** of Spring Valley High School won first place in the Environmental Science category and Best of Show in the Environmental Science competition, and **Shivani Agarwal**, also of Spring Valley won third place in the Bio-Chemistry category at the International Science & Engineering Fair (ISEF) held in Albuquerque, NM, May 14-19. The ISEF is the largest pre-collegiate science and engineering competition in the world with over 1500 participants from the U.S. and 50 countries, and over \$4 million dollars in awards given out.

Graham, who placed second in this competition last year, won \$8000 and a laptop computer presented by the Intel Foundation for his project titled “Pyrethroids and Neurodegeneration: The Absorption of Pyrethroids into *S. domesticus* (pig) Lungs and the Effect of the Recovered Pyrethroid Levels on PC12 Neurite Retraction.” He was mentored by **Dr. Paul Housley** of the USC School of Medicine.

Shivani won \$1000 presented by Agilent Technologies for her project titled “The Effect of Green Tea EGCG on the Ability of p25-Activated Cyclin-Dependent Kinase 5 (cdk5) to Induce Cell Death in cos-7 Kidney Cells: Implications for Alzheimer's Disease.” Her mentor was **Dr. Deanna Smith** of the USC Biology Department.

Spring Valley High School and the USC Region II Science and Engineering Fair will also receive \$1000 each in recognition of the work of these students. Dr. Don Jordan, Director of the USC Region II Fair says, “This is no small win for South Carolina’s USC Region II Science and Engineering Fair or these terrific students, as we must compete against the magnet schools in Virginia, New York, Ohio, and California as well as very many gifted international students”.

Other students representing the Midlands from the Region II Science Fair were team members **Kaitlyn Rainwater** and **Ariel Guinn** of Dreher High School. Students sent as official observers were **Lauren Nixon** and **Ryan Moran** of Spring Valley High School. USC also sent **Lisa McAlpine** and **Dr. Robin Henderson** of Spring Valley High School to lead the official ISEF party for the State of South Carolina. In addition, **Judith Ray** of Dreher High School was a lead teacher and mentor for the USC Region II Science and Engineering Fair.

We're on the Web  
<http://www.erskine.edu/scjas>

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**Students:**

- Do you have a special scientific interest or field that you would like highlighted in the next edition of the SCJAS Newsletter? If so, send me your ideas, thoughts and comments to [mhurst@sc.edu](mailto:mhurst@sc.edu).
- Do you have a teacher or mentor that deserves special recognition for their hard work and dedication? If so, send me an email to [mhurst@sc.edu](mailto:mhurst@sc.edu) and your teacher or mentor may be featured in the next edition of the SCJAS newsletter.

**Educators:**

- Do you have a special scientific interest or field that you would like highlighted in the next edition of the SCJAS Newsletter? If so, send me your ideas, thoughts and comments to [mhurst@sc.edu](mailto:mhurst@sc.edu).
- Do you have a student or peer that deserves special recognition for their hard work and dedication? If so, send me an email to [mhurst@sc.edu](mailto:mhurst@sc.edu) and your Student or peer may be featured in the next edition of the SCJAS newsletter.

I welcome any other comments or suggestions for the next SCJAS newsletter!