AMERICAN SOCIETY FOR MICROBIOLOGY

K12 Teacher Resources

The American Society for Microbiology has developed a website for chemistry and biology educators to gain access to teaching lessons, literature as well as resources for students studying these subjects.

Visit online at www.asm.org/Education

SPECIAL AWARDS (CONT'D)

THREE STUDENTS REPRESENTED SOUTH CAROLINA AT INTERNATIONAL I-SWEEEP CONFERENCE

Edna Steele, SCJAS treasurer presented the Byrne Award to Karolina Puskarczyk of the Governor's School of Math and Science and the Jackson Award to Thad Moore of Heathwood Hall. Their titles respectively were "Proliferation of Neural Crest Derived Cells for Columella Condensation" in the mentored Zoology division and "The Effects of Growing Method and the Food Processing System on Bacterial Concentration in Spinach" in the non-mentored Consumer Affairs division.

The American Association of Physics Teachers Award is presented annually for outstanding research in the field of Physics. At the 2009 SCJAS Annual Meeting on April 16th, Jae Ro of Spring Valley High and his teacher sponsor, Dale Soblo, were named the recipients of this year's American Association of Physics Teachers award. He received a first place award for both his written and oral presentations as well. Jae Ro's research in the non- mentored physics division was "A Determination of the Calorific Value of Chicken Feathers in Comparison to Woodchips".

The South Carolina Council of Teachers of Mathematics presented their annual award to Wiliam Fishburne of Spring Valley High School. William was chosen due to his outstanding research in the Math and Computer Science non-mentored division. The title of his research was "The Effect of Seed Source on the Randomness of the Output of a Pseudorandom Number Generator".

Overall, SCJAS students this year took home a record number of extramural awards. In addition, many sponsors from the Science, Technology and Health Conference have pledged support for new awards at the 2010 meeting, so students and teachers can look forward to even greater recognition next year!

Tammy Taylor

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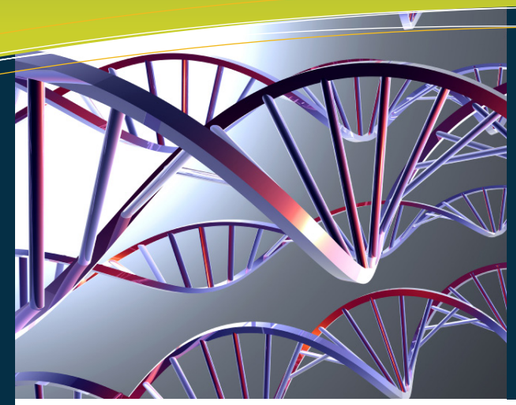

this issue

2009 SCJAS AWARDS

This Year's Winners

BIOCHEMISTRY MENTORED

1st	Anurag Deeconda (SVHS)
2nd	Catherine Cochran (GSSM)
HM	Shannon McCartha (GSSM)

BOTANY MENTORED

1st	Olivia Keyes (GSSM)
2nd	William McGee (GSSM)

BOTANY NON-MENTORED

1st	Aubree Decoteau (DF)
2nd	Shaquille Fontenot (SVHS)

CELL & MOLECULAR BIOLOGY MENTORED

1st	Katerina Hilleke (AMHS)
2nd	Anil Patel (DF)
3rd	Anthony Dyer (GSSM)
4th	Daneille Mumford (GSSM)
5th	Anna Merryman (GSSM)
6th	Sarah Lancaster (GSSM)

CELL & MOLECULAR BIOLOGY NON-MENTORED

1st	Nancy Zhong (SVHS)

CHEMISTRY MENTORED

1st	Mark Kalata (GSSM)
1st	Sarah Law (HHES)
2nd	Stephanie Ackerson (SVHS)
3rd	William Ivey (SVHS)
4th	Nazia Tabassum (DF)

CONSUMER AFFAIRS

1st	Thad Moore (HHES)
2nd	Lauren Glazer & LaurenArmstrong (HHES)
3rd	Alyssa Trenery (SVHS)
4th	Annie Jerkovic (SHS)
HM	David Stevens (SHS)

Awards Continued on Page 3

JUNIOR ACADEMY CELEBRATES 2009 ANNUAL MEETING

SCJAS held its Annual Meeting this year in conjunction with the Science, Technology and Health Conference at the Columbia Metropolitan Convention Center in Columbia on April 16th.

This year's meeting was witness to an unprecedented magnitude of both students research presentations and keynote addresses. Over 200 students participated in oral presentation sessions. Students and faculty were privileged to witness Dr. John Baynes and Dr. Jeff Ling deliver keynote addresses.

Dr. John Baynes, from the University of South Carolina spoke before lunch on the Chemical Properties of Aging. Baynes comes from the Exercise Science Department and his work focuses on the chemical modification of proteins and how this plays a large role in not only aging but the progression of many pathological processes in diabetes and heart disease.

Baynes' talk gave important insight to our audience on the specific mechanisms of insulin resistance in type II diabetes, a disease which affects a large proportion of the South Carolina and US population. This talk was perfect for our audience as many of our students and faculty have immersed themselves in diabetes research.

Dr. Jeff Ling comes to the Academy from DARPA, where he leads research as a clinical neurologist. Ling's talk focused on "Repairing the Injured Solider", looking at neural devices designed to replace limbs of injured US servicemen and women.

Ling's work is at the absolute forefront of prosthetic and neural device science. Students and teachers were able to see actual videos of patients involved in clinical trials of prosthetic devices that can actually interpret the body's neural firing patterns. This research allows for a patient who has lost a limb to be able to control a prosthetic device with their thoughts!

Ling's work was featured on 60 Minutes and in US Today only days before his arrival in Columbia and we are very indebted to him for taking the time to come and speak with us

Anyone in attendance was amazed at the breadth of work of both of our guests.

On behalf of the Senior and Junior Academies of Science, a great deal of congratulations and gratitude for all the schools, teachers, students, and speakers who participated in this spectacular event. We look forward to seeing everyone for next year's meeting in Charleston.

-James T. Powell

Business Manager, Senior Academy

jpowell@scacadscience.org

SC WINS AT I-SWEEEP '09

HOUSTON - Houston as energy capital of the world hosted the world's largest international science fair focusing on energy, engineering, and environment this week. The Second Annual International Sustainable World (Energy, Engineering & Environment) Project Olympiad known as I-SWEEEP 2009 was completed successfully.

450 highly qualified projects from 60 different countries were displayed at the George R. BrownConvention center during April 15 through the 20th. Nearly 1,200 young scientists and project supervisors came to Houston for this remarkable event. Finalist students were selected to compete at ISWEEEP by winning a top prize at a local, regional, state or national science fair. Participants enjoyed the opportunity to meet with their friends from different parts of the world while seeing that they are not
the only ones who committed to find solutions to globe's problems.

The Cosmos Foundation, event organizer, presented Grand Awards at the I-SWEEEP 2009 Award Ceremony. The I-SWEEEP Awards are valued at nearly $400,000 in scholarships, monetary prizes, tuition grants, and scientific internships.

Students of SC participated in the University of South Carolina, Central South Carolina Region II, 53rd Annual Science and Engineering Fair, held in March 2009. Three of them had won the I-SWEEP Awards Package in Engineering. Selected for outstanding work in the theme of environmental sustainability and innovation. Each one of them received sponsorship for representing the State of South Carolina at I-SWEEEP held at Huston, TX from April 15th to 20th.

Three contestants had represented SC and all of them returned winners. Arjun Aggarwal of Lexington High School took the Bronze medal in Engineering. Benjamin Strauss of Spring Valley took the Bronze medal in Environment. And Emily Bajak of Spring Valley took Honorable mention in Environment.

SPECIAL AWARDS

Program Director Tammy Taylor reviews the special category awards recieved by SCJAS students this year at the Annual Meeting

Nine awards, sponsored by a variety of organizations recognizing academic excellence, were presented at the 2009 SCJAS Annual Meeting. This year's awardees were determined by overall judge's scores in their respective categories of research.

The American Chemistry Society award was presented by Dr. Jim Privett to Sarah Law of Heathwood Hall for her outstanding oral presentation in the non-mentored Chemistry division. Sarah and her parents were invited to attend the local meeting of the American Society of Chemistry to receive her award. The title of Sarah's research was "The effect of Incubation Time on the Generation of Benzene in Sierra Mist Free."

The American Association for Biochemistry & Molecular Biology sponsored two awards, one for the Biochemistry division and a second for the Cell/Molecular Biology division. The winners were determined based on a combination of their oral and written presentation scores. Anurag Deeconda of Spring Valley High School claimed the award for the mentored Biochemistry division with his research on "Inhibition of Bcl-2 Potentiated Apigenin for Induction of Apoptosis in SK-N-DZ Neuroblastoma Cells." The award for the Cell/Molecular Biology division (non-mentored) was presented to Nancy Zhong of Spring Valley High School. Her research was titled "The effect of omega-3 fatty acid (n-3) concentrations on the sustainability of astrocytoma cells when exposed to 1-methyl-4-phenyl-1,2,3,6-tetrahydropryidine."

Each year, the University Of South Carolina School Of Medicine announces winners in the division of Cell/Molecular Biology. This year's 1st place in the mentored division was achieved by Sarah Lancaster of the Governor's School for Math & Science. Her research was on "The Effects of Testosterone on Skeletal Muscle Mitochondrial Biogenesis and Apoptosis through Protein Expression of PGC-1 and Bax". The second place recipient in the mentored division was Sharon Guffy of the Governor's School for Math & Science with research on "Determination of the Distribution of Paternally Inherited Mitochondria in Mytilus galloprovinciali Tissues Using In Situ PCR with Fluorescently Labeled Nucleotides." Nancy Zhong of Spring Valley High School took 1st place in the non-mentored division with Ali Robertson of Heathwood Hall winning 2nd place in the non- mentored division. Their research was on "Determination of the Distribution of Paternally Inherited Mitochondria in Mytilus galloprovincialis Tissues Using In Situ PCR with Fluorescently Labeled Nucleotides" and "Comparing the Myosin Light Chain Protein Profile of Atlantic Salmon to Standard Protein Profiles" respectively.

In the Physiology & Health mentored division, the 1st place winner was Wanjiao Zhang of Academic Magnet High School. His research involved the "Construction, Expression and in vitro Characterization of a Novel P-Selectin scFv-Crry and CD 59 Fusion Protein for a Potential Treatment for Stroke." The second place winner in this division was Adam Oppenheimer of Hilton Head Preparatory High School. His research dealt with "Temperature Changes resulting from a GaAlAs Laser in the Decontamination of a Failing Dental Implant." In the non-mentored division the 1st place winners were Christopher Metzger and Landon Sanford of Heathwood Hall. Their research focused on "The Effectiveness of Five Different 30 SPF Sunscreens with Respect to Their Ability to Block UV Rays." Rachel Parker of Spring Valley High School who conducted "An Epidemiological Study on the Relationship between Serum Vitamin C and Cancer Prevalence," was the 2nd place finisher in the non-mentored Physiology and Health division.

The recipient chosen to represent South Carolina at the National Youth Science Camp in West Virginia this summer is Csilla Czako of the Governor's School of Math & Science. Her research was reviewed in the mentored Physics division and was a "Search for a New Type of Neutrino Interaction: Checking for the MinBooNE Anomoly." Three alternates were also named for this award. They are: Raques McGill, also of the Governor's School of Math and Science, Ryan Moran of Spring Valley High School, and Ryan Britt of the Governor's School of Math and Science.

The American Association for the Advancement of Science (AAAS) recognizes the extraordinary achievements of the men and women in the scientific field. AAAS presents this award annually to two winners. This year's recipients of the AAAS award were Justin Lozano of Spring Valley High School who presented his research in the Math and Computer Science mentored division. The title of his research was "Finding Optimum and Consistent Solves for a 2x2x2 and 3x3x3 Rubik's Cubes Using Visual Basic. Net Programming in Visual Studio's Integrated Development Environment." The team of Patrick Reeves and Ian Buckley of Heathwood Hall were winners in the Microbiology non-mentored division. The title of their research was "The Effects of Low Temperature and Pressure on Bacillus thuringiensis Endospore Germination."

The Explorers Club is an international multidisciplinary professional society dedicated to the advancement of field research and the ideal that it is vital to preserve the instinct to explore. Since its inception in 1904, the Club has served as a meeting point and unifying force for explorers and scientists worldwide.

(Continued on Page 4)

Pictured left to right SCJAS Director Tom Reeves, The Clemson Tiger, SCAS President Dave Gangemi, SCAS Business Manager James Powell, USC's Cocky, SCAS Treasurer Vernon Beaty

2009 SCJAS AWARDS WINNERS CONT'D

ENGINEERING MENTORED

1st	Ji-Hoon Kim (SVHS)
2nd	Nicholas Pomata (GSSM)
3rd	Clarence Mabry (GSSM)
4th	Andy Musselwhite (GSSM)
5th	Cuchulain Kelly (GSSM)

ENGINEERING NON-MENTORED

1st	Kekeli Dawes (SVHS)
2nd	Brady Russo (SVHS)
3rd	Travis Byrd (SVHS)
4th	Ryan Moran (SVHS)
5th	Taylor Brazell (SVHS)
6th	David Cooke (SVHS)
HM	Young-hoon Kim (SVHS)

ENVIRONMENTAL SCIENCE MENTORED

1st	Carly Alanna Slack (GSSM)

ENVIRONMENTAL SCIENCE NON-MENTORED

1st	Reid D'Amico,Patrick Andrews (HHPS)
2nd	Curtis Keisler (GSSM)
3rd	Anna Mesa (SVHS)
4th	Michael Hobensack (SVHS)
5th	Ji-Hyun Lim & Sam Feldman (HHES)

MATH & COMPUTER SCIENCE MENTORED

1st	Justin Lozano (SVHS)
2nd	Ryan Britt (GSSM)

MATH & COMPUTER SCIENCE NON-MENTORED

1st	William Fishburne (SVHS)
2nd	Kristen McLaurin (SVHS)

MICROBIOLOGY

1st	Ian Buckley & Patrich Reeves (HHES)
2nd	Marshall Sanford & Taylor Zurcher (HHES)
3rd	Travis Garriott (GSSM)
4th	Joshua Voltin (Scholar's Acad)
5th	Alexandra Cooke & Mary Covington (HHES)

PHYSICS MENTORED

1st	Timothy Ochsner (HHPS)

PHYSICS NON-MENTORED

1st	Jae Ro (SVHS)
2nd	Douglas Edmonson (DF)
3rd	Kyle Moore (SHS)

PHYSIOLOGY & HEALTH MENTORED

1st	Brian Mugo (GSSM)
2nd	Adam Oppenheimer (HHPS)
3rd	William Zhang (AMHS)

PHYSIOLOGY & HEALTH NON-MENTORED

1st	Nimrat Malhi (SVHS)
2nd	Derek Kaczmarski & Sanchit Kapur (HHES)
3rd	Connor Hoffman & Rob Smith (HHES)
4th	Freddie Powers & Michael Mireb (HHES)
5th	Chris Metzger & Landon Sanford (HHES)

PSYCHOLOGY & SOCIOLOGY MENTORED

1st	Yijia Mu (AMHS)
2nd	Muyi Li (AMHS)

PSYCHOLOGY & SOCIOLOGY NON-MENTORED

1st	Evan Wechsler (DF)
2nd	Charles Harding (SVHS)
3rd	Jennifer Flanigan (SVHS)

ZOOLOGY MENTORED

1st	Raques McGill (GSSM)
2nd	Christine Noonan (GSSM)
3rd	Karolina Puskarczyk (GSSM)
4th	Kathryn Mercer (GSSM)
5th	Miroslava Radieva (GSSM)
HM	Wickham Flannagan (GSSM)

ZOOLOGY NON-MENTORED

1st	Mason Lee Branham (SVHS)
2nd	Hope Sendler (SVHS)
3rd	Andrew Ewing (SVHS)

KATY METZNER-ROOP OF ACADEMIC MAGNET NAMED 2009 SCJAS TEACHER OF THE YEAR

BY EDNA STEEL, SC DEPT. OF ED.

Ms. Metzner-Roop received a BS degree in Marine Science from College of Charleston in 1990 and a Masters degree in Marine Science from the University of Charleston in 1993. She also holds Advanced Placement certification. She was selected Teacher of the Year at Academic High School in 2004 and SCJAS Sponsor of the Year in 2005.

Ms. Metzner-Roop's creativity is evidenced throughout her teaching, and her students are engaged in meaningful inquiry-based labs on a regular basis. Activities which stimulate the interest of young people in science include bringing her students to SCJAS workshops and competitions. She practices with the challenge bowl teams and reviews the students' research papers and presentations. Her students compete and win in the Low Country Science Fair and the International Science and Engineering Fair as well as the Junior Science and Humanities Symposium. She and her students are involved in the Noisette Creek Research Project in which they monitor the health of the water and soil around the marsh creek that runs through the school campus. As a result, her students were invited to present their Noisette Creek research in Washington DC and lobby for environmental protection before the President's Cabinet, the Senate, House of Representatives, and world renowned scientists.

Ms. Metzner-Roop believes that teaching is the most important job because we guide the next generation and help determine the future of our world. She says that "I love being a teacher and I cannot imagine doing anything else." Colleagues point out that she is a dedicated teacher who truly loves her school and works tirelessly on providing students with relevant and fun activities.

It is therefore appropriate that this wonderful teacher be recognized by the SCAS for her innovation and effectiveness in the classroom, her dedicated service to school and community, and her ability to impart to her students an understanding of science as a way of knowing about the world. Ms. Katharine Metzner–Roop is hereby named the 2009 Awardee for Excellence in Science Discovery.