



**SOUTH CAROLINA JUNIOR ACADEMY OF SCIENCE
SCHEDULE OF EVENTS**

7:30 AM - 11:00 AM <i>7:30 AM – 9:00 AM</i>	SCJAS Registration <i>Continental Breakfast</i>	Wall Building (atrium) <i>Wall Building near registration table</i>
8:30 AM – 10:30 AM	SCJAS Oral Session I <i>See SCJAS oral session listing for details & room numbers</i>	Wall Building
10:30 AM – 10:45 AM	Break	
10:45 AM – 12:30 PM	SCJAS Oral Session II <i>See SCJAS oral session listing for details & room numbers</i>	Wall Building
[10:30 AM – 12:30 PM]	SCAS Poster Session <i>Junior Academy members are encouraged to visit SCAS posters</i>	
12:00 PM – 1:30 PM	Lunch <i>Ticket is in your badge holder</i>	Hicks Dining Hall
1:30 PM– 2:30 PM	Plenary Session	Jackson Student Union (in the Theater)
2:45 PM – 3:45 PM	Afternoon SCJAS Activities & Workshops Meet in atrium - front of Wall Building	
Wall 119	Interactive visual neuroscience: how neurons in the brain generate perception Phillip O'Herron PhD (MUSC)	
Wall 209	Journey to the center of the Atom Bill Wabbersen and Jon Guy (Savannah River Site)	
Atrium	Campus/Sciences tour with Coastal Students/Science Ambassadors	
4:00 PM	SCJAS Awards Ceremony	Jackson Student Union (in the Theater)

SCJAS 2017 ANNUAL MEETING ORAL PRESENTATIONS

Biochemistry / Mentored Wall 118

- 8:30AM Nina Daneshvar, Dutch Fork High School
THE EFFECTS OF TENSION, CURVATURE, & LIPID DIFFUSION ON THE ENRICHMENT OF RAS PROTEINS IN THE CELL MEMBRANE
- 8:45AM Katrina Bynum, Governor's School for Science & Mathematics
TEMPORAL RELEASE DYNAMICS OF VARIOUS TEMPERATURE SENSITIVE LIPOSOME FORMULATION
- 9:00AM Harrison Howell, Governor's School for Science & Mathematics
GENERATION OF A YEAST OVEREXPRESSION PLASMID FOR PURIFICATION OF THE IRON TRANSCRIPTION FACTOR AFT2
- 9:15AM Sunjay Jayaram, Dutch Fork High School
THE EFFECTS OF POLYCYCLIC AROMATIC HYDROCARBONS ON THE PRODUCTION OF LACTATE DEHYDROGENASE IN MCF-7 CELLS
- 9:30AM Tyreek Jenkins, Governor's School for Science & Mathematics
SYNTHESIS AND EVALUATION OF D-AMINO ACID SUBSTITUTED CYCLIC PEPTIDE INHIBITORS OF LYSINE SPECIFIC DEMETHYLASE 1
- 9:45AM Eric Vo, Governor's School for Science & Mathematics
THE ROLE OF ALDEHYDE DEHYDROGENASE 2 IN LIVER SICHEMIA/REPERFUSION INJURY
- 10:00AM Sarah Davis, Home School
INHIBITION OF TBK1 AND IKKE BY AMLEXANOX SYNERGIZES WITH BORTEZOMIB TO REDUCE MYELOMA CELL GROWTH

Biochemistry / Non-Mentored Wall 118

- 10:45AM Kaouri Marie Alipio, Spring Valley High School
THE EFFECT OF DIFFERENT LIGHT CONDITIONS ON *CHLORELLA* SP. GROWTH AND LIPID PRODUCTION
- 11:00AM Ryan Trinter, Chapin High School
EFFECT OF LAKE DEPTH ON BIOELECTRICAL POTENTIAL OF SEDIMENTS IN MICROBIAL FUEL CELLS
- 11:15AM Vikram Kumar, Spring Valley High School
A COMPARISON OF THE TOTAL POLYPHENOLS IN *DAUCUS CAROTA*, *CYANOCOCCUS*, *CITRUS SINENSIS*, *CITRUS LIMON*, *ACTINIDIA DELICIOSA*, AND *MANGIFERA INDICA*
- 11:30AM Riley Haywood and Noah Schumacher, Heathwood Hall
THE DIFFERENCE IN AMOUNT OF ETHANOL PRODUCED BY PORTOBELLO AND SHIITAKE MUSHROOM CELLULOSE
- 11:45AM Kayla O'Grady, Spring Valley High School
THE EFFECT OF COPPER(II) SULFATE PENTAHYDRATE ON THE PRODUCTION OF THE ETHYLENE HORMONE ON *CUCURBITA PEPO*
- 12:00PM Noah Rowell, Center for Advanced Technical Studies
OPTIMIZATION THE PRODUCTION OF BIODIESEL

Botany / Mentored Wall 211

- 11:30AM Samantha Czwalina, Governor's School for Science & Mathematics
USING RACE PROTOCOL TO GET FULL LENGTH GENE FRAGMENTS OF CANDIDATE GENES SELECTED IN *PASPALUM VAGINATUM* AND *ARABIDOPSIS THALIANA*

Botany / Non-Mentored Wall 211

- 11:45AM Wenlan He, Heathwood Hall
THE EFFECT OF DIFFERENT COLOR LIGHT AFFECT THE GROWTH OF PLANTS.
- 12:00PM Hailey Nicks, Heathwood Hall
THE EFFECT OF DIFFERENT LEVELS OF CAFFINE ON THE GROWTH OF WISCONSIN FAST PLANTS
- 12:15PM Isaac Lee, Spring Valley High School
THE EFFECTS OF SIMULATED ACID RAIN ON THE GROWTH OF *LEMNA MINOR*

Cell and Molecular Biology / Mentored Wall 209

- 9:00AM Maegan Albert, Governor's School for Science & Mathematics
MODULATION OF LYMPHOMA CELL SURVIVAL AND ANTIGEN PRESENTATION BY INORGANIC ARSENIC
- 9:15AM Julia Altman, Governor's School for Science & Mathematics
EPIGENETIC CHANGE EFFECTS ON DIFFERENTIATED EMBRYONIC STEM CELLS *IN VITRO* AND *IN VIVO* IN MICE
- 9:30AM Claire Benson, Governor's School for Science & Mathematics
CLONING OF LPAR2 VARIANT (CHEST973J21) FOR FUNCTIONAL ANALYSIS
- 9:45AM Abbie Bowman, Governor's School for Science & Mathematics
IDENTIFYING MARKERS OF STEM CELL DIFFERENTIATION THROUGH QPCR QUANTIFICATION
- 10:00AM Pierce Carrouth, Governor's School for Science & Mathematics
EFFECTS OF LONG-TERM LIF EXPOSURE ON MYOTUBE DIAMETER AND PROTEIN SYNTHESIS
- 10:15AM Eric Chen, Dutch Fork High School
THE EFFECT OF STROMAL CELLS ON TUMOR CELL GROWTH UNDER HYPOXIA
- 10:45AM Alexander Giep, Dorman High School
EFFECTS OF *GANODERMA LUCIDUM* ON CELL MIGRATION
- 11:00AM David Kindervater, Governor's School for Science & Mathematics
THE EFFECT OF POLYINOSINIC:POLYCYTIDILIC ACID ON THE HEMATOPOIETIC STEM CELL CYCLE
- 11:15AM Danielle McLaughlin, Governor's School for Science & Mathematics
E4 DOMAINS AND THEIR ANTI-FIBROTIC NATURE
- 11:30AM Shakthika Saravanan, Spring Valley High School
EXPLORING THE ANTIOXIDANT PROPERTIES OF *PANAX QUINQUEFOLIUS* AND ITS COMPONENTS
- 11:45AM Dola Thota, Governor's School for Science & Mathematics
STUDY OF THE AGGREGATION OF AMYLOID-BETA 40 & 42 IN ALZHEIMER'S DISEASE
- 12:00PM Paige Swanson, Governor's School for Science & Mathematics
THE GENETIC AND DEVELOPMENTAL ROLES OF DZIP1 ON MITRAL VALVE PROLAPSE
- 12:15PM Winter Widdifield, Governor's School for Science & Mathematics
IDENTIFYING REGIONS OF THE CXCR3 PROMOTOR REQUIRED FOR ACTIVATION BY FLI1 IN STIMULATED T-CELLS

Chemistry / Mentored Wall 226

- 9:00AM Natalie Duprez, Governor's School for Science & Mathematics
COMPARING INTERACTION ENERGIES OF WATER AND NH₂ ADSORBATE ACROSS VARYING COVERAGES
- 9:15AM Benjamin Gray, Governor's School for Science & Mathematics
CONDUCTIVITY OF SOLID OXIDE FUEL CELL CATHODE MATERIALS
- 9:30AM Jamaal Jacobs, Governor's School for Science & Mathematics

- 9:45AM Julia Ladson, Governor's School for Science & Mathematics
HIERARCHICAL STRUCTURE WITH PERSISTENT MICELLE TEMPLATE (PMT)
THE POLYMERIZATION OF N-VINYLPYRROLIDONE IN PHENYLETHYLENE BIS-UREA MACROCYCLES
- 10:00AM Aryana Mattmann, Governor's School for Science & Mathematics
NOX EMISSION REDUCTION IN POWER PLANTS
- 10:15AM Lam Nguyen, Governor's School for Science & Mathematics
MEASUREMENT OF THE FLORY HUGGINS INTERACTION PARAMETER OF PHA-PS AND PHA-PLA
- 10:45AM Jack Orlandi, Governor's School for Science & Mathematics
SYNTHESIS AND INVESTIGATION OF THE NAPHTHALENE BIS-UREA MACROCYCLE
- 11:00AM MaryGrace Rainsford, Governor's School for Science & Mathematics
THE SYNTHESIS AND CHARACTERIZATION OF CORANNULENE-BASED METAL-ORGANIC FRAMEWORKS
- 11:15AM Caleb Simpson, Governor's School for Science & Mathematics
DETERMINING THE DEGRADATION ALONG THE LENGTH OF QUARTER INCH POLYESTER URETHANE MAGNETIC TAPES USING ATR FT-IR SPECTROSCOPY
- 11:30AM Hosam Arammash, Spring Valley High School
COMPARING DIFFERENT METHODS OF OBTAINING GRAPHENE FROM GRAPHITE
- 11:45AM Top Lee, Governor's School for Science & Mathematics
VERIFYING HIGH-THROUGHPUT METHODS FOR DETERMINING MECHANICAL PROPERTIES OF UV CURED POLYMERS

Chemistry / Non-Mentored Wall 226

- 12:00PM Elizabeth Dillon, Spring Valley High School
THE EFFECT OF TEMPERATURE ON ZINC LEACHING FROM RUBBER TIRE MULCH
- 12:15PM Christopher Kong, Spring Valley High School
THE EFFECT OF ZEOLITES ON THE PERCENT TRANSMITTANCE OF LEAD CONTAMINATED WATER

Computer Science / Mentored Wall 119

- 9:00AM Brennora Cameron, Governor's School for Science & Mathematics
EXPLORING VIRTUAL BRANCHING STORIES FOR VR HEADSET GAMING USING UNITY ASSETS AND C# SCRIPTS
- 9:15AM Steven McDade, Governor's School for Science & Mathematics
CONVERTING A JAVA ASG TO A GENERAL ASG
- 9:30AM Hailey Mollica, Governor's School for Science & Mathematics
DIGITAL VILLAGES DISCOVERABLE: CONCEPTUALIZING, DESIGNING, AND IMPLEMENTING THE USER-INTERFACE OF A CROWD-SOURCED, MEDIA-UPLOAD, IOS APPLICATION
- 9:45AM Jeffrey Russell, Governor's School for Science & Mathematics
FILE COMPRESSION USING HUFFMAN CODING WITH VARIOUS BIT LENGTHS
- 10:00AM Jacob Sargent, Governor's School for Science & Mathematics
DIGITAL VILLAGES: CREATING A STABLE BACK-END PROGRAM FOR A CROWDSOURCED IMAGE APPLICATION
- 10:15AM Victoria Young, Governor's School for Science & Mathematics
USING AN EYE TRACKER TO DETERMINE WHETHER INSTRUCTIONS ARE UNDERSTOOD BY THE USER
- 10:45AM Andrew Zheng, Governor's School for Science & Mathematics
DETERMING THE COMPLEXITY OF A PROGRAM TO AID PROGRAMMING

- 11:00AM Thomas McLean, Spring Valley High School
THE MODELLING OF INDUSTRIAL CONTAMINANT SPILLAGE USING
HYDRODYNAMICS IN CONJUNCTION WITH STEREOGRAMMETRY
- 11:15AM David Schmitt, Governor's School for Science & Mathematics
SIZE MINIMIZING STRATEGIES FOR REMOVING OF REDUNDANT EXPRESSIONS
FROM A SUPERSET
- 11:30AM Elaine Patterson, Spring Valley High School
MODELLING HUMAN ACTIVITY THROUGH STRUCTURAL VIBRATIONS WITH
ALTERNATE COMPUTATIONAL DEVICES TO INCREASE COST EFFICIENCY

Computer Science / Non-Mentored Wall 119

- 11:45AM Elizabeth Bickel, Spring Valley High School
THE EFFECT OF A MOBILE APPLICATION ON FIRE SAFETY EDUCATION
- 12:00PM Chris Lou, Heathwood Hall
THE EFFECT OF DIFFERENT MATERIALS ON BLOCKING CELL PHONE SIGNAL
- 12:15PM Parker Davis, Chapin High School
THE CREATION OF AN APPLICATION ON THE UNDERSTANDING OF SENSORY
OVERLOAD OCCURRENCES

Consumer Science / Mentored Wall 210

- 8:30AM Matthew Beymer and Graycen Hensley, Governor's School for Science & Mathematics
CHALLENGES FACED BY CYBER SECURITY ASSETS IN THE UNIVERSITY OF
SOUTH CAROLINA
- 8:45AM Wells Carter, Governor's School for Science & Mathematics
EVALUATING THE IMPACT OF PUBLIC ART IN CULTURAL DISTRICTS: RESULTS
OF A SURVEY IN THE CONGAREE-VISTA
- 9:00AM Ethan Chan, Governor's School for Science & Mathematics
AN ANALYSIS OF THE EDUCATIONAL POTENTIAL OF THE BIG SHORT
- 9:15AM Samuel Floyd, Governor's School for Science & Mathematics
VARIABLE TOLLING FOR EXTERNALITY REDUCTION IN COLUMBIA, SOUTH
CAROLINA TRAFFIC
- 9:30AM Daniel Morris, Governor's School for Science & Mathematics
INCREASING AFRICAN AMERICAN TOURISM IN SOUTH CAROLINA
- 9:45AM Dennis Perea, Governor's School for Science & Mathematics
COMPARISON OF AUTOMATIC VERSUS HAND CODING TECHNIQUES IN EYE
TRACKING SOFTWARE
- 10:00AM Caleb Rummel, Governor's School for Science & Mathematics
TRANSFER ENTROPY WITHIN THE NASDAQ STOCK EXCHANGE
- 10:15AM Casey Carter, Spring Valley High School
ENHANCING THE BIOMECHANICAL DESIGN OF THE FOOTBALL HELMET
(CONCUSSION PREVENTION) PT. 2

Consumer Science / Non-Mentored Wall 210

- 10:45AM Mary Martha Beard and Julia Faulds, Heathwood Hall
THE EFFECT DIFFERENT FLAVORS OF ICE CREAM HAVE ON THEIR MELTING
RATE
- 11:00AM Moji Awe, Spring Valley High School
THE EFFECTS OF DIFFERING PROMOTIONAL METHODS ON RECYCLING
BEHAVIOR
- 11:15AM Allison Hall, Heathwood Hall
THE EFFECT OF THE NUMBER OF TIMES THE BATTERY IS CHARGED ON HOW
LONG THE CHARGE LASTS

- 11:30AM Jasmine Marie Flora, Spring Valley High School
THE EFFECT OF LED LIGHTING ON THE DETERIORATION OF OIL PAINT
- 11:45AM Ava Rosenbaum and Molly Caballero, Heathwood Hall
HOW DO TRAITS DIFFER BETWEEN GMO AND ORGANIC APPLES, POTATOES,
AND CORN
- 12:00PM Katie Chin, Center for Advanced Technical Studies
DISASTER-READY KIT
- 12:15PM Hayden Spencer, Center for Advanced Technical Studies
MITIGATING THE URBAN HEAT ISLAND EFFECT BY UTILIZING COOL ROOFING
- 12:30PM Kate Nassab, Heathwood Hall
THE EFFECT OF CALORIC LABELING ON CONSUMERS CALORIE INTAKE

Engineering / Mentored Wall 223

- 8:30AM Saulo Arias Hernández, Governor's School for Science & Mathematics
PROCESSING OF MISCIBLE THERMOSET BLEND WITH IMPROVED
MECHANICAL AND WEAR BEHAVIOR
- 8:45AM Audrey Wang, Dutch Fork High School
THE DEVELOPMENT OF A PHOTON-BASED VELOCIMETER TO STUDY
TRANSPORT PHENOMENA OF TUMOR CELLS
- 9:00AM Chris Bodkin, Governor's School for Science & Mathematics
USING ULTRASONIC WAVES TO DETERMINE BOND QUALITY BETWEEN
ALUMINUM PLATES
- 9:15AM Nikki Bregman, Governor's School for Science & Mathematics
AUTONOMOUS COURSE NAVIGATION BY HIGH-SPEED 1/10 SCALE RACECARS
USING LIDAR AND PASSIVE STEREO CAMERA
- 9:30AM Dennis Daly, Governor's School for Science & Mathematics
USING NON-TRADITIONAL RESOURCES TO BUILD TEMPORARY HOUSING FOR
THE HOMELESS
- 9:45AM Chloe Harris, Governor's School for Science & Mathematics
IROBOT ROOMBA AND ARDUINO AS AN ACCELERATED LEARNING PLATFORM
FOR INTERDISCIPLINARY PRINCIPLES
- 10:00AM Faisal Lachab, Governor's School for Science & Mathematics
RAPID PROTOTYPING OF COMPACT BONE OSTEOONS
- 10:15AM Weston Light, Governor's School for Science & Mathematics
CAPABILITY OF COLLABORATIVE ROBOTS IN AN INDUSTRIAL PROCESS
- 10:45AM Evan Livingston, Governor's School for Science & Mathematics
SYNTHESIS OF WEAR RESISTANT POLYMERS WITH ENHANCED MECHANICAL
PROPERTIES
- 11:00AM Vanessa Madrid, Governor's School for Science & Mathematics
CO₂ SEPARATION AND DRY METHANE REFORMING FOR SYNTHESIS SYNGAS
BY A MECC MEMBRANE REACTOR
- 11:15AM Abson Madola, Governor's School for Science & Mathematics
3D BIOFABRICATION OF CANCER CELLS AND THE CHARACTERIZATION OF
THE FISNAR I&J7100
- 11:30AM Shelby Rader, Governor's School for Science & Mathematics
THE DEVELOPMENT OF A PGG LOADED POLYMER BASED VESSEL GRAFT
- 11:45AM Jacob Rains, Governor's School for Science & Mathematics
DISPARITY BETWEEN BUILD TIME ESTIMATION AND ACTUAL PRINT TIME IN
THE PROJET MJP 3600 PRINTER SERIES
- 12:00PM Wes Robinson, Governor's School for Science & Mathematics
EFFECTS OF VARIABLE PRESSURE ON NEWTONIAN AND NON-NEWTONIAN
MICROFLUIDIC FLOW

- 12:15PM William Schmidt, Governor's School for Science & Mathematics
USING FIBER BRAGG GRATINGS TO DETECT DAMAGE IN METAL PLATES
- 12:30PM *LUNCH BREAK*
- 1:30PM Alexander Spitzer, Governor's School for Science & Mathematics
THE EFFECTS OF JOULE HEATING ON ELECTRIC-DRIVEN MICROFLUIDIC FLOW
- 1:45PM Janelle Taliaferro, Governor's School for Science & Mathematics
CHARACTERIZATION OF PROXPA, HST, AND TPU FOR USE IN 3D PRINTING WITH SELECTIVE LASER SINTERING (SLS) MACHINES
- 2:00PM Nathan Ulmer, Governor's School for Science & Mathematics
THE EFFECTS OF ETHANOL CONCENTRATION ON CONTACT ANGLE
- 2:15PM Anjali Mohan and Ian Wilde, Governor's School for Science & Mathematics
CHARACTERIZING THE MECHANICAL PROPERTIES OF JSC MARS-1A MARTIAN SOIL SIMULANTS

Engineering / Non-Mentored Wall 225

- 9:00AM Nithin Saravanapandian, Spring Valley High School
THE EFFECT OF COMPOUND AND METALLIC COATINGS OF GRAPHITE, SILVER, TIN OXIDE AND COPPER ON THE ABILITY OF A PIEZOELECTRIC DISC TO BOOST ITS PRODUCTION OF PIEZOELECTRICITY AFTER TENSILE FAILURE
- 9:15AM Paul Dubberly, Spring Valley High School
THE DEVELOPMENT OF LIQUID ELECTRODE BATTERIES WITH AQUEOUS LITHIUM CARBONATE
- 9:30AM Evan Barker, Luke Gabel, and DeBose Tyler, Heathwood Hall
THE EFFECT OF THE BICYCLE SAFETY DEVICE ON HOW FAR AWAY A CYCLIST CAN DETECT A CAR BEHIND THEM.
- 9:45AM Christopher Bristow, Center for Advanced Technical Studies
DEVELOPING A HUMAN POWERED ELECTRIC BICYCLE
- 10:00AM Cody Foster, Spring Valley High School
THE EFFECT OF AEROBIC EXERCISE ON THE ELECTRICAL OUTPUT OF A THERMOELECTRIC ARMBAND
- 10:15AM Clay Mitchell, Heathwood Hall
THE EFFECT OF TEMPERATURE, PRESSURE, AND HUMIDITY ON EMF SIGNALS
- 10:30AM *BREAK*
- 10:45AM Royce Frye, Spring Valley High School
TESTING THE ABILITY OF A PROSTHETIC TO RESIST CHANGE IN POSITION AND HANDLE WEIGHT
- 11:00AM Joshua Keller, Center for Advanced Technical Studies
THERMOELECTRIC GENERATORS UTILIZING A COOLER
- 11:15AM Ishita Kapoor, Spring Valley High School
EXPLORING POSSIBILITIES OF AN ADAPTIVE NEBULIZER SYSTEM FOR IMPROVED AND EFFICIENT AEROSOL THERAPY: A COMPREHENSIVE EXPERIMENTAL STUDY
- 11:30AM Brogan Brown, Center for Advanced Technical Studies
BREAST CANCER RADIATION BRA

Environmental Science / Mentored Wall 205

- 9:30AM Ivey Li, Governor's School for Science & Mathematics
FECAL SOURCE TRACKING AT LITTLE CANE CREEK AND CANE CREEK
- 9:45AM Jillian Marlowe, Governor's School for Science & Mathematics
EXAMINING THE EFFECTS OF TRAFFIC ON THE VOCALIZATION OF LITHOBATES CATESBEIANUS AND LITHOBATES CLAMITANS

10:00AM Brandon Marrone, Governor's School for Science & Mathematics
EFFECTS OF CYSTEINE ON THE AGGREGATION AND DISSOLUTION OF SILVER NANOPARTICLES

Environmental Science / Non-Mentored Wall 206

8:30AM Isaac Vardi, Center for Advanced Technical Studies
DIESEL EMISSIONS

8:45AM Madeline Ashcraft, Heathwood Hall
THE EFFECT OF THE LOVES TRUCK STOP ON THE TEMPERATURE, PH, MERCURY, DISSOLVED OXYGEN, AND TURBIDITY ON THE NEARBY WETLANDS

9:00AM Sreya Varanasi, Spring Valley High School
THE EFFECT OF COPPER (II) SULFATE AND IRON (II) SULFATE ON GAS PRODUCTION, ABSORBANCE, AND PH OF *CHLAMYDOMONAS REINHARDTII*

9:15AM Matt Hooker, Chapin High School
IMPACT OF ENVIRONMENTAL EDUCATION ON COMPOST LEVELS AND LANDFILL WASTE REDUCTION AT CHAPIN HIGH SCHOOL

9:30AM Townsend Christian and Audrey Osborne, Heathwood Hall
THE EFFECTS OF SOIL CONTENT ON THE DECOMPOSITION OF A NAPKIN

9:45AM Sarayu Das, Spring Valley High School
A NOVEL TECHNIQUE TO PURIFY WATER USING THE COAGULANT PROPERTIES OF MORINGA OLEIFERA TO FILTER PHARMACEUTICALS, HEAVY METALS, AND HERBICIDES FROM CONTAMINATED WATER SOURCES.

10:00AM Kathleen Powers, Heathwood Hall
THE EFFECT OF GREYWATER ON THE GROWTH OF *LEPIDIUM SATIVUM* AND SOIL QUALITY

10:15AM Anne Lobitz, Spring Valley High School
THE EFFECT OF *NASTUTIUM OFFICINALE* ON THE PREVENTION OF UNOXIDIZED SHEET STEEL CORROSION

10:45AM Pranav Bellukutty, Spring Valley High School
THE EFFECT OF ULTRAVIOLET RADIATION ON THE GROWTH OF THE PHYTOPLANKTON *AMPHIDIUM*

11:00AM Keshav Nair, Spring Valley High School
THE EFFECT OF CLINOPTILOLITE VS. DICYANDIAMIDE ON NITRATE LEACHING FROM SILT LOAM SOIL

11:15AM Maeghan Ainsworth, Center for Advanced Technical Studies
IMPROVING EVACUATED TUBES

11:30AM Zachary Kochert, Center for Advanced Technical Studies
METHANE PRODUCTION FROM MICROBIAL FUEL CELLS

11:45AM Jasdeep Singh, Spring Valley High School
THE BIODEGRADATION OF POLYETHYLENE FOAM VIA *TENEBRIO*

12:00PM Bryan Tran, Center for Advanced Technical Studies
WATER FILTRATION SYSTEM

12:15PM Kierson Sutton, Spring Valley High School
THE EFFECT OF PETROLEUM BASED OILS ON THE AMOUNT OF DISSOLVED OXYGEN IN WATER

12:30PM **LUNCH BREAK**

1:30PM Kristina Trifonova, Spring Valley High School
ASSESSING THE ADSORPTION CAPACITIES OF HYPERACCUMULATOR BIOCHARS COMPARED TO WOOD WASTE BIOCHAR

1:45PM Sreeja Varanasi, Spring Valley High School
AN ACUTE TOXICITY TEST ON THE EFFECT OF VARYING CONCENTRATIONS OF TITANIUM DIOXIDE NANOPARTICLES ON *DAPHNIA MAGNA* AND *ARTEMIA SALINA*

2:00PM Vinita Cheepurupalli, Spring Valley High School
NOVEL MOSQUITO CONTROL: A NATURAL APPROACH TO REDUCING AND
REPELLING MOSQUITO POPULATIONS

2:15PM Mikaila Widener, Spring Valley High School
THE EFFECTS OF GLYPHOSATE VERSUS SPINOSAD ON THE NITRATE
CONCENTRATION IN THE SOIL

Mathematics / Mentored Wall 205

10:45AM Max Land, Dutch Fork High School
UPPER BOUND ON THE BURNING NUMBER OF GRAPHS

11:00AM Jacob Folks, Governor's School for Science & Mathematics
FINDING THE SPLITTING NUMBERS OF TILES

11:15AM Sydney Miyasaki, Governor's School for Science & Mathematics
SPLITTABLE COVERINGS OF THE INTEGERS

Mathematics / Non-Mentored Wall 205

11:30AM Caleb Taylor, Chapin High School
THE IMPACT OF ARITHMETIC SKILLS ON THE ABILITY TO SOLVE SIMPLE
ALGEBRAIC EQUATIONS

Microbiology / Mentored Wall 224

11:00AM Timothy Christie, Governor's School for Science & Mathematics
CHARACTERIZATION AND LOCALIZATION OF TRAB AND TRAJ THROUGH
FLUORESCENCE STUDIES

11:15AM Gabriel Paradise, Governor's School for Science & Mathematics
ANALYSIS OF THE HYPERACTIVITY OF A MUTANT MPING TRANSPOSABLE
ELEMENT

11:30AM Samah Malik, Governor's School for Science & Mathematics
OPTIMIZATION OF BIVECTOR SYSTEMS FOR EXPORT OF ISOPRENOIDS IN
BIOFUEL APPLICATIONS

11:45AM Nitya Muppala, Governor's School for Science & Mathematics
MINIMAL INHIBITORY CONCENTRATION OF CHITOSAN

12:00PM Jacob Stokes, Governor's School for Science & Mathematics
CHANGES IN MAGNETIC NANOPARTICLE SIZE IN DIFFERENT CELL GROWTH
MEDIA

12:15PM Aman Pitalia, Spring Valley High School
THE EFFECT OF PHENOLIC COMPOUNDS (BENZOIC ACID) ON THE
SUSCEPTIBILITY OF GRAM-POSITIVE AND GRAM-NEGATIVE BACTERIA
EXPOSED TO ANTIBIOTICS.

Microbiology / Non-Mentored Wall 224

8:30AM Adam Abdulrahman, Chapin High School
EFFECT OF THICKNESS OF COPPER PLATING ON ANTIMICROBIAL
PROPERTIES AGAINST *S. AUREUS*

8:45AM Roann Abdeladl, Greenville Technical Charter High School
DETERMINING THE AMOUNTS OF BACTERIA PRESENT IN MEAT POST
VARIOUS FORMS OF COOKING AND THAWING

9:00AM Erin Blalock, Spring Valley High School
THE EFFECT OF CORTICOSTEROIDS AND ANTIHISTAMINES ON THE GROWTH
RATE OF THE FUNGUS *ALTERNARIA ALTERNATA*

- 9:15AM Isak Jatoi, Spring Valley High School
A NOVEL APPROACH IN THE EXTRACT OF *MELALEUCA ALTERNIFOLIA* AS A POTENTIAL TOPICAL TREATMENT OF CUTANEOUS *ASPERGILLUS USTUS* INFECTIONS
- 9:30AM Olivia Antonetti and Olivia Merritt, Heathwood Hall
WHAT IS THE RELATION BETWEEN SCHOOL DIVISION AND THE AMOUNT OF BACTERIA IN EVERYDAY PLACES
- 9:45AM Garrett Kaufman, Spring Valley High School
THE EFFECT OF CORROSION ON THE ANTIBACTERIAL ABILITY OF COPPER, BRASS, ALUMINUM, AND STAINLESS, STEEL
- 10:00AM Austen Money, Spring Valley High School
THE EFFECT OF THE T4 BACTERIOPHAGE, SUBLETHAL CONCENTRATIONS OF CIPROFLOXACIN AND METRONIDAZOLE, AND COMBINED PHAGE-ANTIBIOTIC USE ON *ESCHERICHIA COLI* B COLONY DENSITY
- 10:15AM Ben Mathews, Heathwood Hall
THE EFFECT OF ANTIBIOTICS ON THE PROTEIN CHANGES IN *E. COLI*.
- 10:30AM **BREAK**
- 10:45AM Alejandra Ramirez, Spring Valley High School
THE EFFECT OF OMEGA-3 PUFAS ON *ENTEROBACTER AEROGENES*

Physics / Mentored Wall 307

- 8:30AM Anish Chaluvadi, Governor's School for Science & Mathematics
QUANTIFYING THE EFFECT OF CATIONS ON TRIPLET EXCITED STATES IN G-QUADRUPLEXES IN HUMAN TELOMERIC DNA
- 8:45AM Matthew Siden, Governor's School for Science & Mathematics
COMPOSITION OF STAINLESS STEEL BY AUGER ELECTRON SPECTROSCOPY
- 9:00AM David Madden, Governor's School for Science & Mathematics
USING MOTION CAPTURE CAMERA TECHNOLOGY TO UNDERSTAND THE MECHANICS OF BUTTERFLY FLIGHT AT VARYING PRESSURES
- 9:15AM Yohan Moon, Governor's School for Science & Mathematics
SINGLE-STRANDED DNA INVESTIGATION USING FLUORESCENCE ANALYSIS AND COMPUTER SIMULATION
- 9:30AM Nikhil Gottipaty, Spring Valley High School
THE CORRELATION BETWEEN THE DISTANCE OF THE OBJECT FROM THE PLATE TO THE RESOLUTION AND DEPTH OF THE HOLOGRAM PRODUCED BY A HELIUM NEON LASER
- 9:45AM Juliet O'Riordan, Governor's School for Science & Mathematics
EFFECT OF ETHANOL ON THE MAGNETIC PROPERTIES OF GOLD AND COBALT BILAYER FILM

Physics / Non-Mentored Wall 307

- 10:00AM John Heaton, Heathwood Hall
THE EFFECTS OF ADDING DIVOTS TO THE HULL OF A BOAT ON ITS DRAG
- 10:15AM **BREAK**
- 10:45AM Parker Dixon, Chapin High School
EFFECTS OF CARBON NANOTUBES ON THE BALLISTIC APPLICATION OF SPIDER SILK
- 11:00AM Davis Buchanan, Heathwood Hall
EXPANSION OF A HELMET'S EFFECTIVE DENSITY EFFECT ON AMOUNT OF LINEAR ACCELERATION EXPERIENCED INTERNALLY

- 11:15AM Noah Swingle, Chapin High School
THE EFFECT OF VIDEO ANALYSIS ON INITIAL DISCUS LEARNING CURVE FOR NOVICE THROWERS
- 11:30AM Spears Goodlett and Jackson Pringle, Heathwood Hall
THE EFFECT OF VARIOUS GOLF BALL TYPE ON DISTANCE TRAVELED
- 11:45AM *Presentation Withdrawn*
- 12:00PM Bangjie Xue, Heathwood Hall
THE EFFECT OF DIFFERENT KINDS AND AMOUNT OF GRANULAR MATERIAL ON THE STABILITY OF A BALL ROLLING DOWN AN INCLINED RAMP.
- 12:15PM Lee Sightler, Center for Advanced Technical Studies
REAL VS. ADVERTISED CAPACITY AND CAPACITY FADE IN LITHIUM ION 18650 BATTERIES

Physiology and Health / Mentored Wall 318

- 8:30AM Priya Chokshi, Governor's School for Science & Mathematics
ADIPOSE-DERIVED STEM CELLS SUPPRESSING INFLAMMATION IN PANCREATIC STELLATE CELLS TREATED WITH ETHANOL AND CERULEIN
- 8:45AM Emily Pope, Governor's School for Science & Mathematics
A LITERATURE REVIEW OF PHYSICAL THERAPY FOLLOWING NECK DISSECTION IN HEAD AND NECK CANCER PATIENTS
- 9:00AM Gayle Cunningham, Governor's School for Science & Mathematics
FLUSHED AND FROZEN: DEVELOPING OPTIMIZED METHODS FOR WHOLE BODY PERFUSION OF A MOUSE PRIOR TO CRYOPRESERVATION
- 9:15AM Samuel Helms, Governor's School for Science & Mathematics
IDENTIFICATION OF ZEBRAFISH CARRYING THE ZMYM2 AND ZMYM3 MUTANT ALLELES
- 9:30AM Brantley Leaphart, Governor's School for Science & Mathematics
A NEW MOUSE MODEL OF HUMAN PROSTATE CANCER DRIVEN BY MYC OVEREXPRESSION AND PTEN LOSS
- 9:45AM Emily Lowther, Governor's School for Science & Mathematics
ASSESSMENT OF TRAUMATIC BRAIN INJURY IN INFANTS USING DIFFUSIONAL KURTOSIS IMAGING
- 10:00AM Claire Moore, Governor's School for Science & Mathematics
G418 TREATMENT FOR THE SUPPRESSION OF A NONSENSE MUTATION IN THE X-LINKED INTELLECTUAL DISABILITY GENE CUL4B
- 10:15AM Emily Giep and Aliyah Jamison, Dorman High School
THE EFFECTS OF ESTROGEN AND PHYTOESTROGEN ON MCF-7 HUMAN BREAST CANCER CELLS
- 10:45AM Daniel Patino, Governor's School for Science & Mathematics
IMPACT OF ALCOHOL CONSUMPTION ON BODY MASS INDEX
- 11:00AM Matthew Re, Governor's School for Science & Mathematics
RELATIONSHIP BETWEEN THE EXPRESSION OF PGC-1A AND MUSCLE FATIGUE IN APCMIN/+ MICE.
- 11:15AM Greylan Smoak, Governor's School for Science & Mathematics
MODELING OF HYDROGEL RHEOLOGY IN APPLICATIONS FOR LUNG MUCUS
- 11:30AM Jonathon Tate, Governor's School for Science & Mathematics
EMERGENCY DEPARTMENT UTILIZATION BY DIABETIC PATIENTS IN SOUTH CAROLINA
- 11:45AM Stewart Trask, Governor's School for Science & Mathematics
THE EFFECTIVENESS OF WORKSTATION ORGANIZATION OF MEDICAL ERRORS IN THE OPERATING ROOM

- 12:00PM Chase Turner, Governor's School for Science & Mathematics
FLUORESCENT LABELING TO GENERATE GREEN FLUORESCENT PROTEIN (GFP) POSITIVE NEURAL STEM CELLS
- 12:15PM Nikhil Vallabhaneni, Governor's School for Science & Mathematics
THE USE OF CANCER MICRO-TUMORS FOR ANTI-CANCER DRUG SCREENING
- 1:30PM Delaney Walden, Governor's School for Science & Mathematics
THE EFFECT OF HISTONE METHYLATION ON NOISE INDUCED HEARING LOSS
- 1:45PM Wenxin Fan, Spring Valley High School
ASSOCIATION BETWEEN DIETARY INTAKE OF ADVANCED GLYCATION END PRODUCTS AND PROSTATE CANCER AGGRESSIVENESS
- 2:00PM Vincent Ylagan, Governor's School for Science & Mathematics
CHARACTERIZATION OF THE INTERACTION BETWEEN SECRETED FRIZZLED-RELATED PROTEIN 2 (SFRP2) AND FRIZZLED-5 (FZD5) BY CO-IMMUNOPRECIPITATION
- 2:15PM Dabriel Zimmerman, Governor's School for Science & Mathematics
DIET AND DEPRESSION: A STATICAL ANALYSIS OF MAGNESIUM INTAKE AND DEPRESSIVE SYMPTOMS

Physiology and Health / Non-Mentored Wall 321

- 8:30AM Olivia Fladung, Chapin High School
THE CORRELATION OF PATIENT SELF ASSESMENT OF SCAR TISSUE TO PHYSICAL THERAPIST EVALUATION
- 8:45AM Alexander Dixon, Chapin High School
A STUDY ON THE SEVERITY OF NARCOTIC DIVERSION IN HOSPITALS
- 9:00AM Kate Willhide, Heathwood Hall
THE EFFECT OF MUSIC GENRE AND VOLUME ON A PERSON'S HEART RATE AND REACTION TIME
- 9:15AM Garrett Dean, Chapin High School
OPTIMAL WEIGHT LOSS METHODS FOR PHYSICAL PERFORMANCE IN SOUTH CAROLINA ADOLESCENT WRESTLERS
- 9:30AM Lily Richter, Heathwood Hall
WHAT IS THE CORRELATION BETWEEN POOL CHEMISTRY AND A SWIMMER'S HEALTH?
- 9:45AM Riana Shelly, Heathwood Hall
THE EFFECT OF GLUCOSE ON THE LACTASE ENZYME
- 10:00AM Hannah Guess, Chapin High School
THE EFFECT OF OFF-SEASON TRAINING ON ONE MILE RACE TIMES
- 10:15AM Trevor Squirewell, Heathwood Hall
THE CORRELATION BETWEEN COMMON LIQUID CONDUCTIVITY, BLOOD CONDUCTVITY, AND CRAMPS.
- 10:45M Garrett Ringer, Chapin High School
ANALYZING THE EFFECT OF WHEY PROTEIN TIMING ON BENCH PRESS MAX
- 11:00AM Noah Hook, Spring Valley High School
THE EFFECT OF ULTRASOUND ON *E.COLI* DECONTAMINATION
- 11:15AM Alyssa Sheppard, Chapin High School
ANALYSIS OF SNELLEN VISION TEST VERSUS PICTURE TEST DATA COMPARISON
- 11:30AM Katie Dzoba, Center for Advanced Technical Studies
BANDAGE TO DECREASE COAGULATION TIME
- 11:45AM Beverly Whitesides, Chapin High School
SLEEP LOSS AND MOTOR VEHICLE CRASH CORRELATION SURVEY IN ADOLESCENTS

- 12:00PM Hillary Melton, Center for Advanced Technical Studies
EVALUATION OF SOLID MATERIAL MASS CASUALTY DECONTAMINATION
- 12:15PM Hayden Derrick and Sam Coleman, Center for Advanced Technical Studies
DESIGNING AN ATTACHABLE ACCESSORY TABLE FOR WHEELCHAIRS

Psychology and Sociology / Mentored Wall 322

- 9:00AM Johnathan Kovarna, Governor's School for Science & Mathematics
GROWTH AND DEVELOPMENT IN THE RUSSIAN FEDERATION BETWEEN 1990 AND 2014
- 9:15AM Lauren Hawes, Governor's School for Science & Mathematics
THE IMPACT OF INCREASED LANE MILEAGE ON TRAFFIC FATALITIES
- 9:30AM Samantha Wei, Dutch Fork High School
THE PREVALENCE OF EMOTIONAL AND BEHAVIORAL DISORDERS IN YOUTH
- 9:45AM Haley Nolan, Governor's School for Science & Mathematics
THE RELATIONSHIP BETWEEN GENERAL ANXIETY AND LANGUAGE DYSFLUENCIES IN MOTHERS WITH THE FMR1 PREMUTATION
- 10:00AM Nancy Ou, Governor's School for Science & Mathematics
THE EFFECT OF PAST TRAUMA ON THE BODY'S RESPONSES TO STRESS
- 10:15AM Malik Sanders, Governor's School for Science & Mathematics
HOW DO ANXIETY AND DEPRESSION SYMPTOMS RELATE TO ACADEMIC SELF-EFFICACY AMONG ADOLESCENTS?
- 11:00AM Vivian Vork, Governor's School for Science & Mathematics
IS DEPRESSION RELATED TO HEALTH-RISK BEHAVIORS AMONG ADOLESCENTS?

Psychology and Sociology/ Non-Mentored I Wall 305

- 9:00AM Bianca Huet, Chapin High School
THE ASSOCIATION BETWEEN ADOLESCENT AMBLYOPIA AND THE PREDISPOSITION OF INTROVERSION OR EXTROVERSION IN A HIGH SCHOOL POPULATION
- 9:15AM Jessica Cole, Chapin High School
OVERCOMING STEREOTYPES THAT HINDER ACADEMIC PERFORMANCE THROUGH PSYCHOLOGICAL PRIMING
- 9:30AM Addison Blackmon, Chapin High School
THE COMPARISON OF VARYING MUSIC GENRES ON CONCENTRATION WITH ADOLESCENTS
- 9:45AM Emily Franklin, Chapin High School
"ACADEMICALLY GIFTED": HOW DEFINING STUDENTS AFFECTS SELF-ESTEEM
- 10:00AM Wesley Hankinson, Spring Valley High School
THE EFFECT OF ANTI-PHONE PSAS ON ADOLESCENTS' PHONE USE AND ADDICTION
- 10:15AM Danielle Murrin, Spring Valley High School
THE EFFECT OF PHOTO FILTERS ON THE EMOTIONAL RESONANCE OF TEENAGERS
- 10:45AM Sarayu Parise, Spring Valley High School
A COMPARISON OF FORMATIVE AND SUMMATIVE ASSESSMENTS ON THE LEARNING RETENTION OF ADOLESCENTS
- 11:00AM Zachary Young, Spring Valley High School
THE EFFECTS OF SPECIFIC BACKGROUND VARIABLES ON THE AGGRESSION OF ADOLESCENTS PLAYING TETRIS
- 11:15AM Caroline Quan, Heathwood Hall
THE EFFECT OF ORGANIC LABELING ON TASTE PERCEPTION

11:30AM Lydia Comer, Heathwood Hall
THE EFFECT OF DIFFERENT PHOTO LINEUP DESCRIPTIONS OF AN EYEWITNESS TESTIMONY ON IDENTIFYING SUSPECTS IN A CRIMINAL INVESTIGATION

11:45AM Skye Majka, Chapin High School
THE MOST EFFECTIVE WAY TO TEACH ENGLISH TERMINOLOGY

Psychology and Sociology/ Non-Mentored II Wall 308

9:00AM Clayton Bellinger, Chapin High School
WHAT FEATURES OF A NEWS POST ON SOCIAL MEDIA MAKE IT SEEM CREDIBLE?

9:15AM Karsen Ward, Chapin High School
DOES A HANDS-ON, VISUAL PRESENTATION ABOUT WILDLIFE TO ELEMENTARY STUDENTS IMPACT LOCAL AWARENESS ABOUT WILDLIFE RESCUE?

9:30AM Tyrell Fleshman, Spring Valley High School
THE EFFECT OF MARCHING BAND AND NON-MARCHING BAND ACTIVITIES ON A STUDENT'S ACADEMIC ACHIEVEMENT

9:45AM Sydney Bertram, Center for Advanced Technical Studies
PARENTAL BASIS FOR HPV VACCINATION REFUSAL

10:00AM Gabriel Corn, Spring Valley High School
THE APPLICATION OF THE PRISONER'S DILEMMA ON THE ABILITY OF DIFFERENT AGE GROUPS ON THE ABILITY TO TRUST OTHERS ONLINE

10:15AM Gloria Kim, Spring Valley High School
THE EFFECT OF VARIOUS TYPES OF DISTRACTIONS IN A TESTING ENVIRONMENT ON THE PERFORMANCE OF ACADEMIC TASKS

10:45AM Kelsey Pratt, Chapin High School
THE EFFECT OF PEER TUTORING ON THE NARRATIVE COMPOSITION SKILLS OF REMEDIAL LEVEL ENGLISH STUDENTS

11:00AM Sara Taylor, Chapin High School
CORRELATION BETWEEN PERSONAL ORGANIZATION AND HIGH SCHOOL GRADE POINT AVERAGE

11:15AM Ben Feldman, Heathwood Hall
HOW FURTHER INTERNET USE ACCELERATES FUTURE INTERNET USE

11:30AM Faith Robertson, Heathwood Hall
THE RELATIONSHIP BETWEEN GRADE LEVEL AND THE STROOP EFFECT

11:45AM Justin Feagin, Chapin High School
THE EFFECT OF SLEEP ON AVERAGE WEIGHTED GPA

12:00PM Erin Siegfried and Anna Jowers, Chapin High School
DOES THE SPORT AND ATHLETE PLAY AFFECT THE WAY THEY THINK

Zoology / Mentored

Wall 211

8:30AM Elizabeth DeLanghe, Governor's School for Science & Mathematics
GROWTH OF *MANDUCA SEXTA* FROM EGG TO PUPATION

8:45AM Sydney Lykins, Governor's School for Science & Mathematics
THE GROWTH OF *MANDUCA SEXTA*

Zoology / Non-Mentored Wall 211

9:00AM Sydney Hannibal, Spring Valley High School
THE EFFECT OF DIFFERENT CONCENTRATIONS OF POLYETHYLENE MICROBEADS *DAPHNIA MAGNA*

- 9:15AM Cynthia Leonard, Spring Valley High School
THE EFFECT OF PRODUCTS CONTAINING ENDOCRINE DISRUPTORS, COLGATE TOTAL®, MICROBEADS, AND BPA, ON THE REGENERATIVE ABILITIES OF *DUGESIA IIGRINA*
- 9:30AM Rahithya Meda, Spring Valley High School
THE EFFECT OF SUCROSE AND ASPARTAME ON THE GROWTH OF *PLANARIA*
- 9:45AM Shubhanjali Minhas, Spring Valley High School
THE EFFECT OF IRON(III) OXIDE ON *DAPHNIA MAGNA* HEART RATE AND MORTALITY RATE
- 10:00AM Gillian Patton, Spring Valley High School
THE EFFECT OF NONASSOCIATIVE LEARNING COGNITIVE PROCESSING ON ALZHEIMER'S DISEASE SEVERITY IN *CAENORHABDITIS ELEGANS*
- 10:15AM Matthew Payne, Spring Valley High School
THE EFFECT OF BISPHENOL-A SUBSTITUTES ON THE HEART RATE OF *DAPHNIA MAGNA*
- 10:45AM Bridgette Ravindra, Spring Valley High School
THE EFFECT OF GLYPHOSATE AND GAMMA CYHALOTHRIN ON THE TOTAL NUMBER OF VIABLE *DAPHNIA MAGNA* AND THE AVERAGE NUMBER OF OFFSPRING PER *DAPHNIA* SPECIMEN
- 11:00AM Bethany Quinton, Center for Advanced Technical Studies
HANDS-FREE RELEASABLE LEASH
- 11:15AM Katherine Hayden, Center for Advanced Technical Studies
REDESIGNING THE CANINE WHEELCHAIR