South Carolina Academy of Science
SCHEDULE OF EVENTS

7:30 AM - 10:00 AM
SCAS Registration
Trone Student Center

7:30 AM – 9:00 AM
Continental Breakfast

8:30 AM – 11:30 AM
SCAS Oral Sessions
Townes Science Center
Cellular Biology
Room 026 (Basement of Townes)
Field Biology (before break)
Room 028 (Basement of Townes)
Earth Science (after break)
Room 028 (Basement of Townes)
Molecular Biology
Room 030 (Basement of Townes)
Medicine/Pharmacology/Health
Room 031 (Basement of Townes)
Chemistry / Biochemistry
Room 231 (2nd Floor of Townes)
Math / Computer Science /
Room 222 (2nd Floor of Townes)
Physics / Astronomy

10:30 AM – 12:30 PM
Poster Session
Townes Science Center
(with SCBASM)
You can put your poster up anytime between 8 a.m. and 10 a.m.
(All posters must be on display by 10:00 a.m.)

12:30 PM – 1:15 PM
Lunch
Daniel Dining Hall
Ticket is in your badge holder

1:30 PM – 2:15 PM
Plenary Session
Burgiss Theatre;
Trone Student Center

2:15 – 3:00
Governor’s Awards /
Undergraduate Awards
Burgiss Theatre;
Trone Student Center
TOPICAL SESSIONS SCAS  
Saturday, April 11th 2015  
*Only the name of the first presenter is listed for most presentations, please see the relevant abstract for full authorship.*

**BIOLOGY: CELLULAR**  
8:30AM - 10:15AM  
Room 026 (Basement of Townes)

8:30AM  INVESTIGATION OF AHR ANTAGONISTIC EFFECTS OF GANODERMA LUCIDUM  
Erica Williams, Furman University

8:45AM  SOYBEAN ISOFLAVONE EFFECTS AGAINST CERVICAL CARCINOMA  
Kristen Hawkins, Michael Hart, Diana Ivankovic, and Donna Weinbrenner, Anderson University

9:00AM  THE ANTI-PROLIFERATIVE EFFECTS OF LAMIUM AMPLEXICAULE EXTRACTS ON HUMAN T-LYMPHOCYTES  
Braxton Noll, Anderson University

9:15AM  AN INVESTIGATION OF THE ANTI-PROLIFERATIVE EFFECTS OF ELLAGIC ACID ON HUMAN MESOTHELIOMA  
Devan Fisher, Diana Ivankovic, and Donna Weinbrenner, Anderson University

9:30AM  EXPRESSION OF HEART-SPECIFIC CONSTRUCT IN CIONA INTESTINALIS EMBRYOS  
Katlyn Brumley, Winthrop University

9:45AM  BRAIN-PENETRATING HISTONE DEACETYLASE INHIBITOR RG2833 REDUCES THE GROWTH AND VIABILITY OF MALIGNANT MELANOMA CELLS IN VITRO  
Lauren Green, Winthrop University

10:00AM  IDENTIFICATION OF THE CIONA INTESTINALIS FOXO DNA BINDING DOMAIN AND TARGET GENE SEQUENCES  
Lucas Boncorddo, Winthrop University

10:15AM  ENZYMATIC COMPLEMENTATION TO IMAGE CELL SURFACE MARKERS  
Michelle Sutton, Morris College

**BIOLOGY: FIELD**  
8:30AM - 9:00AM  
Room 028 (Basement of Townes)

8:30AM  A PRELIMINARY STUDY OF THE VASCULAR FLORA OF STRAWBERRY SWAMP, GEORGETOWN COUNTY, SOUTH CAROLINA  
Richard Stalter, Saint Johns University

8:45AM  THE EFFECT OF DIETARY PHYTOESTROGEN ON THE ESTROUS CYCLE OF WISTAR RATS  
Reshma Thomas, Converse College
9:00AM SURVEY RESULTS AND COMPARISON OF BREEDING HABITATS FOR THE PINE BARRENS TREEFROG AT CAROLINA SANDHILLS NATIONAL WILDLIFE REFUGE  
Gregory T. Joye, University of South Carolina Salkehatchie

BIOLOGY: MOLECULAR  
8:30AM - 9:45AM  
Townes Science Center, Room 030 (Basement of Townes)

8:30 AM IDENTIFICATION OF CHROMIUM RESISTANCE GENES  
Jessica A. Fuller, Claflin University

8:45AM UNDERSTANDING THE RELATION BETWEEN VACUOLAR PROTEIN SORTING GENES AND AFLATOXIN EXPORT IN ASPERGILLUS PARASITICUS  
Shaquille Jackson, Morris College

9:00AM SIRNA-MEDIATED DOWNREGULATION OF AN ESSENTIAL HIV REGULATORY PROTEIN  
Emily M. Webb, University of South Carolina Aiken

9:15AM OPTIMIZING GERMINAL TRANSPOSITION OF MPING IN ARABIDOPSIS THALIANA  
Courtney Burckhalter, University of South Carolina Aiken

9:30AM PRECISE REPAIR OF MPING EXCISION SITES IS FACILITATED BY TARGET SITE DUPLICATION DERIVED MICROHOMOLOGY  
David Gilbert, University of South Carolina Aiken

9:45AM TARGETED INSERTION OF THE TRANSPOSABLE ELEMENT, MPING  
Ashley Strother And C. Nathan Hancock, University of South Carolina Aiken

CHEMISTRY / BIOCHEMISTRY  
8:30AM - 11:00AM  
Townes Science Center, Room 231 (2nd Floor of Townes)

8:30AM SEPARATION AND MASS ANALYSIS OF POLYCATIONIC BIOCIDES IN MULTIPURPOSE CONTACT LENS SOLUTIONS UTILIZING ULTRA PERFORMANCE  
Frederic David, Furman University

8:45AM UTILIZING CHIRAL CAPILLARY ELECTROPHORESIS IN THE SEPARATION AND ANALYSIS OF NOVEL CR(III) COMPLEXES EXHIBITING DNA PHOTOCLEAVAGE  
Christopher Stachurski, Furman University

9:00AM ASSESSING CR(III) COMPLEXES AS POTENTIAL ANTICANCER AGENTS USING PCR, CAPILLARY GEL ELECTROPHORESIS AND GEL ELECTROPHORESIS  
Yasmine Álvarez García, Furman University

9:15AM REVERSIBLE THERMOCHROMISM IN POLYDIACETYLENES  
Garret Gotthelf, Clemson University

9:30AM DETERMINATION OF BISPHENOL S LEACHED FROM PLASTIC BOTTLES
Quentin Lane, University of South Carolina Lancaster

9:45AM  BIOPHYSICAL PARAMETERS THAT DETERMINE RNA-METAL COMPLEX FORMATION  
Lance McDaniel, Coastal Carolina University

10:00AM  ZINC IS THE MOLECULAR “SWITCH” THAT CONTROLS THE CATALYTIC CYCLE OF BACTERIAL LEUCYL-TRNA SYNTHETASE  
Layla Baykal, Coastal Carolina University

10:15AM  - BREAK

10:30AM  AN EXPERIMENTAL STUDY OF THE FORENSIC LUMINOL TEST FOR DETECTION OF BLOODSTAINS  
Katherine A. Witherspoon, University of South Carolina Columbia

10:45AM  STRUCTURAL CHARACTERIZATION OF 1-DEOXY-D-XYLULOSE-5-PHOSPHATE REDUCTOISOMERASE FROM VIBRIO VULNIFCUS  
Makenzie Perdue, University of South Carolina Columbia

11:00AM  NMR BASED METABOLICOMICS STUDY OF CHROMIUM(VI) TREATED PSEUDOMONAS FLUORESCENS  
Yugaananthy Thanaiah, Claflin University

EARTH SCIENCES  
10:30AM - 11:15AM  
Townes Science Center, Room 028 (Basement of Townes)

10:30AM  DESIGN AND TESTING OF A RAINDROP VELOCIMETER  
Derek Tuck, College of Charleston

10:45AM  USING VOLUME FRACTION AS A STATISTICAL MEASURE OF THE RAINDROP SIZE DISTRIBUTION  
Joshua B. Teves, College of Charleston

11:00AM  ERRONEOUS DROP SIZING IN IMPACT DISDROMETERS  
Kate O'dell, College of Charleston

11:15AM  DIURNAL RHYTHMS OF NEAR SURFACE WINDS' POWER SPECTRUM  
Alexis Payne, College of Charleston

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MATH/COMPUTER SCIENCE/PHYSICS/ASTRONOMY
8:30AM - 10:15AM
Townes Science Center, Room 222 (2nd Floor of Townes)

8:30AM RELATIONSHIPS BETWEEN LOCATION OF BRAIN INJURY OR CONCUSSION AND RECUPERATION TIME IN NFL FOOTBALL PLAYERS
Brianna Dyar, Brandon Johnson, David Prager and Diana Ivankovic, Anderson University

8:45AM MATHEMATICAL MIND: INSIDE ARTIFICIAL INTELLIGENCE
Wesley Alexander, Morris College

9:00AM SYSTEMATIC SYNTHESIS OF CORE-SHELL-SHELL NANOPARTICLES WITH MINIMAL DISSOLUTION
Yvonne Wright, Morris College

9:15AM SUM OF SQUARES OF LUCAS NUMBERS
Kaige Lindberg, The Citadel

9:30AM AUGMENTED HAPPY FUNCTIONS OF HIGHER POWER
Marcus Harbol, The Citadel

9:45AM EXPLORING RAINDROP ARRIVAL TIME CORRELATIONS VIA A DROP SIZE DEPENDENT PAIR CORRELATION FUNCTION
Robert Lemasters, College of Charleston

10:00AM TOWARDS A LOW-DIMENSIONAL MODEL OF THE NEURAL NETWORK RESPONSIBLE FOR GAMMA SYNCHRONIZATION USING OPTOGENETICS
Patrick Lynn, College of Charleston

10:15AM DIRECT IMAGING OF CONCENTRATION-INDUCED FLUCTUATIONS IN NANOCOLLOIDS
Lincoln Fraley, College of Charleston

MEDICINE / PHARMACOLOGY / HEALTH
8:30AM - 10:00AM
Townes Science Center, Room 031 (Basement of Townes)

8:30AM THE BODY PROJECT 4 ALL: A COMPARISON OF A FEMALE-ONLY TO A CO-ED BODY IMAGE PROMOTION PROGRAM
Amanda Hock, Furman University

8:45AM SOCIOECONOMIC INEQUALITY IN ACCESS TO QUALITY, AFFORDABLE, VARIED HEALTHY FOOD: A MULTIVARIATE APPROACH TO MEASURING FOOD DESERT
Will Mccabe, Furman University

9:00AM THE DOSE DEPENDENT EFFECTS OF CAFFEINE ON COGNITIVE PERFORMANCE AND NEURONAL ACTIVATION
Helen Morris, University of South Carolina Aiken
9:15AM  SYNERGISTIC EFFECT BETWEEN CAFFEINE AND SUGAR ON COGNITIVE PERFORMANCE
Sandra Urquiza, University of South Carolina Aiken

9:30AM  THE EFFECTS OF STRESS, SUGAR AND EXERCISE ON DEPRESSION AND HIPPOCAMPAL NEUROGENESIS IN RATS
Austin Kaiser, University of South Carolina Aiken

9:45AM  THE EFFECTS OF CHRONIC STRESS, EXERCISE AND SUGAR CONSUMPTION ON BODY WEIGHT AND FAT PERCENTAGE IN RATS
Christina Thomas, University of South Carolina Aiken

10:00AM  THE SEARCH FOR LYTIC BACTERIOPHAGES WITHIN THE POPULATION OF COASTAL CAROLINA UNIVERSITY STUDENTS
Derek Pride, Coastal Carolina University
POSTER SESSION with SCBASM
Townes Science Center
10:30 AM-12:30 PM
Poster set up is between 8 a.m. and 10 a.m.
(All posters must be on display by 10:00 a.m.)

BIOLOGY: CELLULAR

POSTER #1 ENHANCING THE DEVELOPMENTAL POTENTIAL OF MURINE ADIPOSE-DERIVED MESENCHYMAL STEM CELLS
Kathryn Steverson, Winthrop University

POSTER #2 USING A SUITE OF ANTIBODIES TO EXAMINE THE HOST-PARASITE RELATIONSHIPS IN HEAD KIDNEYS OF FUNDULUS HETEROCCLITUS FROM NORTH INLET ESTUARY (HOBCAW BARONY) IN GEORGETOWN, SOUTH CAROLINA
Caitlin Brickley, Columbia College

POSTER #3 DETERMINING THE PRESENCE OF THE ARYL HYDROCARBON RECEPTOR (AHR) IN FUNDULUS HETEROCCLITUS LIVER TISSUES FROM THE BELLE BARUCH MARINE SANCTUARY A HOBCAW BARONY (GEORGETOWN, SOUTH CAROLINA)
Jasmin Jones, Columbia College

POSTER #4 USING MAB M24-2 (A FISH LYSOZYME) TO EXAMINE THE HOST-PARASITE RELATIONSHIPS IN LIVERS OF THE FISH FUNDULUS HETEROCCLITUS FROM NORTH INLET ESTUARY (HOBCAW BARONY) IN GEORGETOWN, SOUTH CAROLINA
Lillian Neal, Columbia College

POSTER #5 PROBING THE ENTRYWAY FOR INFECTION: AN EXAMINATION OF THE GI TRACTS OF FUNDULUS HETEROCCLITUS FOR IMMUNE RESPONSES TO METACESTODE
Mara Reiss, Columbia College

POSTER #6 ROS-MEDIATED NEURODEGENERATION IS INDEPENDENT OF THE RYANODINE RECEPTOR IN CAENORHABDITIS ELEGANS
Lyndsay Young, Coastal Carolina University

POSTER #7 CLONING AND EXPRESSION OF THE DNA BINDING DOMAIN OF FOXO FROM CIONA INTESTINALIS THAT CONTAINS AN N-TERMINAL NUCLEAR LOCALIZATION SIGNAL
Mikala Smith, Winthrop University

POSTER #8 EFFECTS OF GANDODERMA LUCIDUM EXTRACTS ON THE VIABILITY OF CANCEROUS VS. NON-CANCEROUS BREAST CANCER CELL LINES
Brooke Harrison, Converse College

POSTER #9 RESISTANCE AND REDUCTION POTENTIAL OF SERRATIA MARCESCENS IN HEXAVALENT CHROMIUM
Ijeoma Ekpenuma, Claflin University
BIOLGY: FIELD

POSTER #10  HEAVY METAL CONCENTRATION IN DONAX CLAMS FOUND IN MYRTLE BEACH ANALYZED USING ATOMIC ABSORPTION
Harley Coates and Larissa Martin, Coastal Carolina University

POSTER #11  MONITORING ACTIVITY PATTERNS OF THE AMERICAN CROW (CORVUS BRACHYRHYNCHOS) POPULATIONS ON THE CAMPUS
Morgan Soulantikas, Francis Marion University

POSTER #12  SPECIFICITY OF KLEPTOPLEASTY IN SOUTH CAROLINA MARSH FORAMINIFERA
Cobi Guilbeau, Coastal Carolina University

POSTER #13  ACOUSTIC MONITORING OF BAT POPULATIONS IN FLORENCE, SC
Ebony Brown, Francis Marion University

POSTER #14  CR 6+ RESISTANCE OF BACTERIAL WASTEWATER ISOLATES
Shatresa Bradley, Claflin University

BIOLGY: MOLECULAR

POSTER #15  GENETIC MAPPING OF ARABIDOPSIS MUTANTS INVOLVED IN TRANSLATIONAL REGULATION OF MIRNAS
Amber Bailey and Ingrid Bonilla, Charleston Southern University

POSTER #15  OPTIMIZING IN VITRO FERTILIZATION PROCEDURES IN ZEBRAFISH
Madelyn Wasden, University of South Carolina Aiken

POSTER #17  USING THE CRISPR/CAS9 SYSTEM TO UNDERSTAND THE FUNCTION OF THE PHF21A COMPLEX IN DANO RERIO CRANIOFACIAL DEVELOPMENT
Khadijah Jihad, University of South Carolina Aiken

POSTER #18  OPTIMIZATION OF THE RETROVIRAL VECTOR, PLGN, FOR DELIVERY OF ANTI-TAT SIRNAS FOR INHIBITION OF HIV REPLICATION
Jennifer Deily, University of South Carolina Aiken

POSTER #19  DEVELOPING MPING-BASED ACTIVATION TAGS
Tiana Chandler, University of South Carolina Aiken

POSTER #20  BUILDING CONSTRUCTS FOR CATHEPSIN K-MEDIATED EXPRESSION OF EGFP OR MCHERRY TO STUDY BONE RESORPTION IN THE DEVELOPING ZEBRAFISH
Brianna Snelling, University of South Carolina Aiken

POSTER #21  EVALUATING MPING TRANSPPOSITION IN MIMULUS LEWISII
Autumn Busbee, University of South Carolina Aiken

POSTER #22  DEVELOPING A DNA TRANSPSON-BASED VECTOR TO EXPRESS ANTI-HIV GENES
Brittnay Adams, University of South Carolina Aiken
POSTER #23  DEVELOPING A FUSION GENE UNDER THE CONTROL OF AN HIV-1 LTR PROMOTER
Erin M. McLaughlin and Natalie M. Arthur, University of South Carolina Aiken

POSTER #24  IDENTIFYING SEQUENCES RESPONSIBLE FOR THE HIGH TRANSPOSITION RATE OF A TOURIST MITE
Daymond Parrilla, University of South Carolina Aiken

POSTER #25  IDENTIFYING THE GENE UNDERLYING A JAW MUTATION IN ZEBRAFISH
Kayce Vanpelt, University of South Carolina Aiken

CHEMISTRY / BIOCHEMISTRY

POSTER #26  MASS SPECTROMETRY ANALYSIS OF THE ANTIOXIDANT ACTIVITY OF SULFUR AND SELENIUM COMPOUNDS
Emily Kurfman, Furman University

POSTER #27  CHARACTERIZATION AND UPTAKE STUDIES FOR THE BIOCIDES POLYHEXAMETHYLENE BIGUANIDE AND ALEXIDINE WITH EMPHASIS ON CONTACT LENS SOLUTIONS
Hazel Davis, Furman University

POSTER #28  SURFACE MODIFICATION VIA DIACETYLENE ALCOHOL SAM FORMATION
Maria S. Gonzalez, Furman University

POSTER #29  CHARACTERIZATION OF IMMOBILIZED RUTHENIUM(II) EMITTERS intercalated diacetylene self-assembled layers
NATHAN RIVERS, FURMAN UNIVERSITY

POSTER #30  BIOPHYSICAL PARAMETERS THAT DETERMINE RNA-METAL COMPLEX FORMATION
Mariah Harden, Coastal Carolina University

POSTER #31  DETERMINATION OF BPA IN ENVIRONMENTAL SAMPLES
Adrian Coates, Columbia College

POSTER #32  APPLICATION OF THE VIBRATIONAL SPECTROSCOPY FOR MONITORING THE ENZYMATIC HYDROLYSIS OF SOY HULL
Rashshana Blackwood, Claflin University

POSTER #33  IMMOBILIZATION OF POLYDIACETYLENE SENSORS ONTO CELLULOSE
Sara J. Garbowski and Salley A. Reamer, Clemson University
MATH/PHYSICS/ASTRONOMY

POSTER #34 A NEW HYBRID METHOD FOR SOLVING OSCILLATORY INITIAL VALUE PROBLEMS
Jenny Beebe, USC Salkehatchie

POSTER #35 PHASE RESETTING OF NEURAL OSCILLATORS SUBJECT TO MULTIPLE INPUTS
Kelsey Vollmer, College of Charleston

POSTER #36 A PHOTOMETRIC STUDY OF AH HERCULIS
Christopher Sherman, Furman University

POSTER #37 INVESTIGATING DARK MATTER COMPOSITION THROUGH DECAYS INTO FLAVOR CONSERVING TAU PAIRS
William Hester, College of Charleston

POSTER #38 SEARCHING FOR EMISSION EPISODE SELF CONSISTENCY IN GAMMA-RAY BURST LIGHT CURVES
Thomas Cannon, College of Charleston

POSTER #39 CONFORMATIONAL ISOMERIZATION AND CHEMICAL REACTIVITY INDICES OF BUT-2-ENEDIOL ACID: A COMPUTATIONAL STUDY
Britney Stewart and Dr. Johnson Agbo, Coastal Carolina University

POSTER #40 CHARACTERIZING A NEW METHOD OF HARVESTING ENERGY FROM THE NATURAL ENVIRONMENT AND EXPLORING THE PHYSICS OF THE TRIBOELECTRIC EFFECT
Ryan Michael Sullivan and Dr. Alem Abraha Teklu, College of Charleston

EARTH SCIENCES

POSTER #41 SUSTAINING THE SOUTH: THE MOVEMENT OF URBAN CENTERS TOWARDS SUSTAINABLE DEVELOPMENT
W. Hayden Couvillion, Furman University

MEDICINE/PHARMACOLOGY/HEALTH

POSTER #42 THE SEARCH FOR LYTIC BACTERIOPHAGES WITHIN THE POPULATION OF COASTAL CAROLINA UNIVERSITY STUDENTS
Amy Powers, Coastal Carolina University

POSTER #43 INHIBITORY EFFECT OF PARTIAL DECOUPLING AGENTS AS AN ALTERNATIVE THERAPY FOR CANCER
Kareem Heslop, Claflin University

POSTER #44 SOUTH CAROLINA PLEISTOCENE TERRESTRIAL VERTEBRATE DIVERSITY
Adam Kirtley, Dakota Pruitt, and Joseph Shillinglaw, Charleston Southern University