



**SOUTH CAROLINA ACADEMY OF SCIENCE
NINETIETH ANNUAL MEETING
2017 SCHEDULE OF EVENTS**

7:30 AM - 10:00 AM	SCAS Registration	Science (SCI) 2 Lobby
<i>7:30 AM – 9:00 AM</i>	<i>Continental Breakfast</i>	SCI 2 Lobby
8:30 AM – 11:30 AM	SCAS Oral Sessions	SCI 2
Cellular Biology		Room 203
Field Biology		Room 119
Molecular Biology		Room 204
Medicine / Pharmacology / Public Health		Room 206
Chemistry / Biochemistry		Room 120
Math / Computer Science / Physics / Astronomy		Room 122
10:30 AM – 12:30 PM	Poster Session	Swain Hall Lobby
	Posters may be set up anytime between 8 a.m. and 10 a.m. <i>(All posters must be on display by 10:00 a.m.)</i>	
12:00 PM – 1:15 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)
2:15 – 3:00	Governor’s Awards / Undergraduate Awards	Jackson Student Union (in the Theater)

<i>Judges Conference Room</i>	<i>SCI 2 Room 125</i>
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TOPICAL SESSIONS SCAS Saturday, March 25th 2017

BIOLOGY: CELLULAR 8:30AM - 10:00AM Science 2, Room 203

- 8:30 AM MARIJUANA Δ 9-TETRAHYDROCANNABINOL INDUCES UNIQUE CHANGES IN THE MURINE GUT MICROBIOME THROUGH INDUCTION OF MYELOID-DERIVED SUPPRESSOR CELLS AND T HELPER 17 CELLS. William Becker and Mitzi Nagarkatti, University of South Carolina School of Medicine
- 8:45 AM DETERMINING THE SEQUENCES INVOLVED IN MPING TRANSPOSITION
Jazmine I. Benjamin and C. Nathan Hancock, University of South Carolina Aiken
- 9:00 AM EXAMINING THE ENVIRONMENTAL IMPACT OF THE 1000-YEAR FLOOD ON THE ESTUARINE FISH *FUNDULUS HETEROCLITUS* Anna Outlaw, Peyton Lee, and Marlee Marsh, Columbia College
- 9:15 AM EXPRESSION OF VIF-RESISTANT APOBEC3G FROM A HIV-1-DEPENDENT LENTIVIRAL VECTOR Erin McLaughlin and William Jackson, University of South Carolina Aiken
- 9:30 AM AGING AND ROS-MEDIATED NEURODEGENERATION IN *C. ELEGANS*
Chelsea Shoben and Daniel Williams, Coastal Carolina University
- 9:45 AM EXPRESSION OF HEART-SPECIFIC FLUORESCENT REPORTER PLASMIDS IN *CIONA INTESTINALIS* JUVENILES Brooke Davis and Heather Evans-Anderson, Winthrop University

BIOLOGY: FIELD 8:30AM - 9:30AM Science 2, Room 119

- 8:30 AM EFFECT OF BOT FLY (*CUTEREBRA FONTINELLA*) PARASITISM ON THE MOVEMENT AND MICROHABITAT SELECTION OF WHITE-FOOTED MICE (*PEROMYSCUS LEUCOPUS*) Allison Johnson and Jonathan Storm, University of South Carolina Upstate
- 8:45 AM CHANGES IN THE VASCULAR PLANT DIVERSITY OF CUTTYHUNK ISLAND, MASSACHUSETTS Richard Stalter, St. John's University
- 9:00 AM EVALUATION OF THE TOXIC EFFECTS OF GLYPHOSATE, 2,4-DICHLOROPHENOXYACETIC ACID, AND THEIR COMBINED FORMULAS ON EARTHWORMS (*EISENIA FETIDA*) Caitlin Lazurick, Nicole Lidzbarski, Rachel Owings, Jeff Brotherton, and Edna Steele, Converse College
- 9:15 AM ACCLIMATION TIME OF EASTERN PAINTED TURTLES (*CHRYSEMYS PICTA PICTA*) TO A NOVEL EXPERIMENTAL ENVIRONMENT Daijha Ashford, Kajol Bajaj, and David Ferris, University of South Carolina Upstate

BIOLOGY: MOLECULAR 8:30AM - 11:45AM Science 2, Room 204

- 8:30 AM TESTING STRATEGIES TO PRODUCE TARGETED INSERTION OF MPING Mary Roby and C. Nathan Hancock, University of South Carolina Aiken
- 8:45 AM ROLE OF MIR-34A IN AMELIORATION OF SEB-INDUCED LUNG INJURY TREATED WITH TETRAHYDROCANNABINOL (THC) Amira Mohammed and Mitzi Nagarkatti, University of South Carolina School of Medicine
- 9:00 AM FUNCTIONAL CHARACTERIZATION OF AN ESSENTIAL CHLOROPLAST PROTEIN
Christopher Pierpont and Michelle Barthet, Coastal Carolina University
- 9:15 AM UNDERSTANDING THE FUNCTION OF KDM1A USING CRISPR/CAS-9 IN ZEBRAFISH Franes Loyo-Rosado and April Delaurier, University of South Carolina Aiken
- 9:30 AM GENERATING MEF2CA AND MEF2CB TRANSGENIC ZEBRAFISH LINES USING BAC-MEDIATED RECOMBINATION Kenneth Glenn and April Delaurier, University of South Carolina Aiken
- 9:45 AM CTSK:MCHERRY-ITOL2 - A TRANSGENIC CONSTRUCT TO STUDY THE ROLE OF OSTEOCLASTS DURING ZEBRAFISH DEVELOPMENT Brianna Snelling and April Delaurier, University of South Carolina Aiken

- 10:15 AM TESTING A SIRNA TARGETING HIV-1 VIF Alyssa Smith and William Jackson, University of South Carolina
- 10:30 AM GENERATING A HIV-1-DEPENDENT CHIMERIC VECTOR TO DELIVER A PRO-APOPTOTIC GENE Natalie Arthur and William Jackson, University of South Carolina Aiken
- 10:45 AM DEVELOPMENT OF AN MPING-BASED ACTIVATION TAG FOR ZEBRAFISH MUTAGENESIS Tiana Chandler and Nathan Hancock, University of South Carolina Aiken
- 11:00 AM PROTEIN-PROTEIN INTERACTIONS ASSOCIATED WITH A PUTATIVE CHLOROPLAST SPLICEOSOME Alexandra Margets and Michelle M. Barthet, Coastal Carolina University
- 11:15 AM ROLE OF AHR LIGANDS IN MICRORNA-MEDIATED TH17/T REGULATORY CELL DIFFERENTIATION IN DELAYED TYPE HYPERSENSITIVITY Osama Abdulla, Mitzi Nagarkatti, and Prakash Nagarkatti, University of South Carolina School of Medicine
- 11:30 AM SIRNA MEDIATED DOWNREGULATION OF HIV-TAT IN ANTI-TAT SIRNA PROTECTED LYMPHOCYTE POPULATIONS Christian Fay and William Jackson., University of South Carolina Aiken

MEDICINE / PHARMACOLOGY / PUBLIC HEALTH 8:30AM - 11:45AM Science 2, Room 206

- 8:30 AM COMBINATION OF CANNABINOIDS, Δ^9 -TETRAHYDROCANNABINOL (THC) AND CANNABIDIOL (CBD), AMELIORATE EXPERIMENTAL AUTOIMMUNE ENCEPHALOMYELITIS BY PROMOTING CELL CYCLE ARREST AND APOPTOSIS IN ACTIVATED T CELLS THROUGH MIRNA SIGNALING PATHWAYS Zinah Al-Ghezi, Mitzi Nagarkatti, and Prakash Nagarkatti, University of South Carolina School of Medicine
- 8:45 AM 2,3,7,8-TETRACHLORIDBENZO-P-DIOXIN (TCDD)-INDUCED MDSCS MEDIATE IMMUNOSUPPRESSIVE ACTIVITY THROUGH MICRORNA DYSREGULATION Wurood Neamah, Prakash Nagarkatti, and Mitzi Nagarkatti, University of South Carolina School of Medicine
- 9:00 AM MICRORNA-30 MODULATES METABOLIC INFLAMMATION BY REGULATING NOTCH SIGNALING IN ADIPOSE TISSUE MACROPHAGES Kathryn Miranda, Prakash Nagarkatti, and Mitzi Nagarkatti, University of South Carolina School of Medicine
- 9:15 AM ENDOCANNABINOID AMELIORATES ACUTE LUNG INJURY INDUCED BY STAPHYLOCOCCUS AUREUS ENTEROTOXIN B (SEB) THROUGH REGULATION OF MICRO-RNA Muthanna Sultan, Hasan Alghetaa, Mitzi Nagarkatti, and Prakash Nagarkatti, University of South Carolina School of Medicine
- 9:30 AM THE EFFECTS OF CAFFEINE AND A HIGH SUCROSE DIET ON ADIPOSE TISSUE ACCUMULATION, MEMORY, AND ANXIETY IN RATS London Vickers and Michelle Vieyra, University of South Carolina-Aiken
- 9:45 AM EFFECTS OF HEAD IMPACT ON NEUROCOGNITIVE FUNCTIONS AND BALANCE Shaquanda Ross-Simmons and Michelle Vieyra, University of South Carolina Aiken
- 10:15 AM INVESTIGATION OF MORINGA OLEIFERA LEAF EXTRACT AND ITS CANCER SELECTIVE ANTIPROLIFERATIVE PROPERTIES Reagen Welch and Ashlee Tietje, Southern Wesleyan University
- 10:30 AM PROGESTERONE LEVELS IN BLOOD VERSUS SALIVA OF BEEF CATTLE Leah Moorefield and Staci Johnson, Southern Wesleyan University

CHEMISTRY / BIOCHEMISTRY 8:30AM - 9:15AM Science 2, Room 120

- 8:30 AM A 1ST GENERATION AMPEROMETRIC GALACTOSE BIOSENSOR Amanda Burton and Gillian Horn and Will Case, Converse College

- 8:45 AM COMPARISON OF BACTERIOPHAGE FOUND AT RESIDENTIAL AND COMMERCIAL ENVIRONMENTS Alexis Setta and Elizabeth Christmas and Dr. Paul Richardson, Coastal Carolina
- 9:00 AM INVESTIGATING THE ACTION OF DIMETHYLFUMARATE IN NEURONS Tulsi Patel and Norma Frizzell, University of South Carolina School of Medicine

MATH / COMPUTER SCIENCE / PHYSICS / ASTR 8:30AM - 9:45AM Science 2, Room 122

- 8:30 AM "INVESTIGATING NON-EQUILIBRIUM FLUCTUATIONS OF NANOCOLLOIDS UNDER THE INFLUENCE OF A MAGNETIC FIELD USING DIRECT IMAGING AND SHADOWGRAPHY METHODS." Ashley Rice and Ana Oprisan and Sorinel Oprisan, College of Charleston
- 8:45 AM IMPROVED ALGORITHMS FOR THE THERMAL IMAGING OF EXTRASOLAR PLANETS WITH SPITZER/IRAC AND HUBBLE/NICMOS David Melnick and Joseph Carson, College of Charleston
- 9:00 AM RECURSIVE RESETTING IN NEURAL NETWORKS Dave Austin and Sorinel Oprisan, College of Charleston
- 9:15 AM LOW- DIMENSIONAL CHAOS IN ONTOGENETIC MICE INJECTED WITH COCAINE Julia Imperatore and Sorinel Oprisan, College of Charleston

POSTER SESSION Swain Hall Lobby 10:30 AM-12:30 PM
BIOLOGY: CELLULAR

- 1 IDENTIFYING WHICH SUBCELLULAR COMPARTMENTS IN THE BRAIN EXPRESS PDE9A AND HOW THAT EXPRESSION CHANGES WITH AGE
Neema Patel and Michy Kelly, University of South Carolina
- 2 CULTURING MURINE ADIPOSE-DERIVED STEM CELLS AS SPHEROIDS IN THE PRESENCE OF TRICHOSTATIN A AND 5-AZACYTIDINE ALTERS GENE EXPRESSION
Elizabeth McAbee and Matthew Stern, Winthrop University
- 3 PORCINE ACELLULAR MUSCLE MATRIX SCAFFOLDS SUPPORT RECELLULARIZATION BY MYOGENIC CELLS
Natalie Mseis, Carolina Pham, and Matthew Stern, Winthrop University
- 4 THE CORRELATION BETWEEN ENVIRONMENTAL HYDROCARBON CONTAMINATION AND PARASITIC INFECTION IN FUNDULUS HETEROCLITUS
Michaela McElveen, Michelle Troup and Marlee Marsh, Columbia College
- 5 ASSESSING THE FUNCTION OF KLEPTOPLASTY WITHIN FORAMINIFERA
Joshua Squires, Tyler Aulffo, Nyquashia Edwards, Lauren Schexnayder, and Megan Cevasco, Coastal Carolina University and Massachusetts Institute of Technology
- 6 MPING AS A TOOL FOR TRANSPOSON MUTAGENESIS IN ZEBRAFISH
Alec Jones and April Delaurier, University of South Carolina Aiken
- 7 EPIGENETIC MODIFIERS 5-AZACYTIDINE AND TRICHOSTATIN A ALTER ADIPOSE-DERIVED STEM CELL GENE EXPRESSION
Melissa Barr and Matthew Stern, Winthrop University
- 8 CHARACTERIZATION AND CLONING OF A DEVELOPMENTAL MUTANT ALLELE IN *C. ELEGANS*
Taylor Hinds and Daniel Williams, Coastal Carolina University
- 9 CHARACTERIZING GALACTOSEMIA IN *C. ELEGANS*
Ashley Pribble and Daniel Williams, Coastal Carolina University
- 10 DEVELOPMENT OF A BICISTRONIC VECTOR SYSTEM TO TEST ANTI-HIV 1 SIRNAS THAT TARGET THE ACCESSORY PROTEIN VIF
Rebecca Beaudry and William Jackson, University of South Carolina Aiken
- 11 EXAMINING THE INFLUENCE OF REGULATORY PATHWAYS ON IMPORTIN EXPRESSION

- 12 Ramsha Shams, Quentell Wagener, and Christine Byrum, College of Charleston
THE EFFECT OF KARYOPHERIN DISTRIBUTION AND EXPRESSION ON THE
EARLY DEVELOPMENT OF THE SEA URCHIN
Devon Hathaway, Paul Siegwald, Greg Mcfadden, Melanie Overcash, and Christine
Byrum, College of Charleston
- 13 INVESTIGATION OF Δ 9-TETRAHYDROCANNABINOL (THC)-MEDIATED
REGULATION OF MYELOID-DERIVED SUPPRESSOR CELLS (MDSCS) IN MICE
Arianna Miskin and Narendra Singh, University of South Carolina
- 46 ANGIOGENESIS AND MAST CELLS IN PRECANCEROUS PROSTATE
Ahmed Aladhami, Michael Hobensack, Nabihah I. Kumte, Alena P. Chumanevich, Taryn
L. Cranford, Reilly T. Enos, Kandy T. Velázquez, Ioulia Chatzistamou, John W. Fuseler,
E. Angela Murphy, and Carole A. Oskeritzian, University of South Carolina School of
Medicine

BIOLOGY: FIELD

- 14 ACOUSTIC MONITORING OF BAT POPULATIONS IN FLORENCE, SC
Aaron Robinson and Jeffrey Steinmetz, Francis Marion University
- 15 RESULTS OF A COURSE-BASED STUDY RELATING AMPHIBIAN DISTRIBUTION
AND LAND USE FEATURES IN SOUTH CAROLINA
Leisa M. Rauch and Eran S. Kilpatrick, University of South Carolina Columbia
- 16 PASSIVE ACOUSTIC MONITORING OF BLUEGILL SUNFISH (LEPOMIS
MACROCHIRUS) - FIELD AND LABORATORY CALLING PATTERNS
Michelle Gallo and Jeff Steinmetz, Francis Marion University
- 17 INVESTIGATING THE TOXICITY AND ACCUMULATION OF A MEDICALLY
IMPORTANT HERBICIDE 2,4-DICHLOROPHENOXYACETIC ACID (2,4-D) USING
EARTHWORM AS A MODEL SYSTEM
Nicole Lidzbarski, Caitlin Lazurick, Rachel Owings, Jeff Brotherton, and Edna Steele
Converse College
- 18 DEVELOPMENT OF METHODS FOR THE DETECTION OF 2,4-D AND
GLYPHOSATE IN EARTHWORMS
Rachel Owings and Jeff Brotherton, Converse College
- 19 ABUNDANCE AND DISTRIBUTION OF MICROPLASTIC PARTICLES IN
WINYAH BAY, S.C.
Dillon King and George Boneillo, Coastal Carolina University

BIOLOGY: MOLECULAR

- 20 APPLICATION OF TOL2-BASED ACTIVATION TAG CONSTRUCTS FOR ZEBRAFISH
MUTAGENESIS
Allison Swiecki and Nathan Hancock, University of South Carolina Aiken
- 21 USING CRISPR/CAS9 TO STUDY THE ROLE OF ZMYM2 AND ZMYM3 IN
ZEBRAFISH CRANIOFACIAL DEVELOPMENT
Terence Willoner and April Delaurier, University of South Carolina Aiken
- 22 DETERMINING THE ROLE OF HOMOLOGOUS RECOMBINATION IN
REPLICATIVE TRANSPOSITION OF MPING
Lisette Payero and C. Nathan Hancock, University of South Carolina Aiken
- 23 DETERMINING THE ROLE OF LDLRAP1A IN CRANIOFACIAL DEVELOPMENT IN
ZEBRAFISH
Kali Wiggins and April Delaurier, University of South Carolina Aiken
- 24 CLONING A HIV-1 VIF-RESISTANT A3G GENE INTO A LENTIVIRAL VECTOR
McKenzie Spires and William Jackson, University of South Carolina Aiken
- 25 CLONING A SIRNA TARGETED TO HIV-1 VIF
Kirstyn Denney and William Jackson, University of South Carolina Aiken

CHEMISTRY / BIOCHEMISTRY

- 26 SYNTHESIS OF PHIDIANIDINE ANALOGS CONTAINING 1,2,3- TRIAZOLES
David Laws and Bryan Wakefield, Coastal Carolina University
- 27 PHIDIANIDINE ANALOGUES CONTAINING AN ISOXAZOLE RING STRUCTURE
Breana Wilson, Nehemiah Stafford, and Bryan Wakefield, Coastal Carolina University
- 28 A 1ST GENERATION AMPEROMETRIC GALACTOSE BIOSENSOR
Gillian Horn, Amanda Burton and Will Case, Converse College
- 29 ANALYSIS OF THE MOLECULAR WEIGHT DISTRIBUTION OF
POLYHEXAMETHYLENE BIGUANIDE USING EQUILIBRIUM DIALYSIS, SIZE-
EXCLUSION CHROMATOGRAPHY, DYNAMIC LIGHT SCATTERING, AND ULTRA-
PERFORMANCE LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY
Ashley Thompson and Sandy Wheeler, Furman University
- 30 INVESTIGATING PHAGE ACTIVITY WITHIN THE STUDENT POPULATION AT
COASTAL CAROLINA UNIVERSITY
Amy Powers, Lisa Pieterse and Paul Richardson, Coastal Carolina University
- 31 COMPARISON OF BACTERIOPHAGE FOUND AT RESIDENTIAL AND
COMMERCIAL ENVIRONMENTS
Alexis Setta, Elizabeth Christmas, and Paul Richardson, Coastal Carolina University
- 32 SPECTROSCOPIC CHARACTERIZATION OF FLUTAMIDE-
POLYVINYLPIRROLIDONE INTERACTION: IMPROVING BIOAVAILABILITY OF
DRUG MOLECULES.
Henry Nickson and Bijoy Dey, Claflin University
- 33 DEVELOPMENT OF PRUSSIAN BLUE MODIFIED ELECTROCHEMICAL SENSORS
STABILIZED WITH NICKEL HEXACYANOFERRATE.
Mallory Byrne, Kathryn Stillman, and Drew Budner, Coastal Carolina University
- 34 SELF-ASSEMBLED MONOLAYERS OF ALKYL CARBOXYLIC ACIDS ON ZNO
NANOPARTICLES
Aerin Richardson and Nicholas Marshall, University of South Carolina Aiken
- 35 SOLVENT-ISOTOPE EFFECTS ON THE 2,4-DIHYDROXYACETOPHENONE
DIOXYGENASE REACTION
Haley Cave and Kenneth Roberts, University of South Carolina Aiken
- 36 PRODUCT INHIBITION IN THE REACTION OF 2,4-DIHYDROXYACETOPHENONE
Ineisha Herrington and Ken Roberts, University of South Carolina
- 37 PH DEPENDENCE OF THE OXIDATIVE CLEAVAGE OF 2,4-
DIHYDROXYACETOPHENONE (DHA) BY 2,4-DIHYDROXYACETOPHENONE
DIOXYGENASE
Jason Weeks and Ken Roberts, University of South Carolina-Aiken
- 39 INTRAMOLECULAR PROTON TRANSFER DYNAMICS IN MALONALDEHYDE
BASED ON THE HAMILTON-JACOBI EQUATION
Shaquille Shaw and Bijoy Dey, Claflin University

MATH / COMPUTER SCIENCE / PHYSICS / ASTRONOMY

- 39 COMPUTATIONAL METHODS FOR PREDICTING AEROELASTIC FLUTTER
Katelynn Huneycutt, Spencer Wilder , Jason Howell , and Justin Webster, College of
Charleston
- 40 3D IMAGING SYSTEM FOR SCREENING AND DIAGNOSING CERVICAL CANCER
Elyana Crowder and Joe Carson, College of Charleston
- 41 EXPLORING THE THERMAL AND VISCOUS INSTABILITIES IN RELATIVISTIC,
RADIATIVE, VISCOUS HYDRODYNAMIC SIMULATIONS OF THIN DISKS
Sarina Etheridge, Chris Fragile, Bhupendra Mishra, Peter Anninos, College of
Charleston, Nicolaus Copernicus Astronomical Center, Lawrence Livermore National
Laboratory

42 NUMERICAL SIMULATIONS OF A JET-CLOUD COLLISION AND STARBURST:
APPLICATION TO MINKOWSKI'S OBJECT
Jason Witry and Chris Fragile, College of Charleston

MEDICINE / PHARMACOLOGY / PUBLIC HEALTH

43 THE USE OF BONE GROWTH STIMULATORS FOR OSTEOARTHRITIS OF THE
KNEE

Logan Willeford and Kenneth Willeford, Coastal Carolina University

44 EFFECT OF RESVERATROL ON GUT MICROBIOME IN TNBS-INDUCED COLITIS
Haider R Alrafas, Brandon, P. Busbee, Prakash Nagarkatti and Mitzi Nagarkatti,
University of South Carolina School of Medicine and WJB Dorn Veterans Affairs Medical
Center

45 THE INFLUENCE OF PERCEIVED CONTROL OVER TASK DIFFICULTY ON
COPING WITH MATH ANXIETY

Christine Hartmann and Keri Weed, University of South Carolina Aiken

Dwight Camper Outstanding Undergraduate Research Award

The following entries have been nominated for 2017 award:

EFFECT OF BOT FLY (CUTEREBRA FONTINELLA) PARASITISM ON THE MOVEMENT AND
MICROHABITAT SELECTION OF WHITE-FOOTED MICE (PEROMYSCUS
LEUCOPUS)

Allison Johnson, University of South Carolina Upstate

IDENTIFYING WHICH SUBCELLULAR COMPARTMENTS IN THE BRAIN EXPRESS PDE9A
AND HOW THAT EXPRESSION CHANGES WITH AGE

Neema Patel, School of Medicine, University of South Carolina

INVESTIGATION OF MORINGA OLEIFERA LEAF EXTRACT AND ITS CANCER SELECTIVE
ANTIPROLIFERATIVE PROPERTIES

Reagen Welch, Southern Wesleyan University