

SIXTH SC LIFE COLLOQUIUM OF UNDERGRADUATE RESEARCH

*Clafin University - JST Science Center
Orangeburg, South Carolina
April 12, 2008*



Benedict College
Clafin University
Clemson University
Morris College

*Funded by an award from the Howard Hughes Medical Institute
Undergraduate Science Education Program to Clemson University*

AGENDA

Saturday, April 12

- 9:30-10:00am **Registration & Breakfast**
Minister's Hall
- 10:00-10:20am **Opening Remarks**
Minister's Hall
Dr. Verlie Tisdale, Dean, School of Natural Sciences and Mathematics
Claflin University
- 10:30am - 12:15pm **Oral Presentations**
Concurrent Sessions - JST Science Center:
Session A - Room 129
Session B - Room 204
Session C - Room 208
Session D - Room 224
Session E - Room 226
- 12:15- 1:30pm **Lunch**
Student Center Dining Area
- 1:30 - 3:00pm **Oral Presentations**
Concurrent Sessions - JST Science Center:
Session F - Room 129
Session G - Room 204
Session H - Room 208
Session I - Room 224
Session J - Room 226
- 3:15 - 4:15 pm **Poster Presentations & Refreshments**
Jonas T. Kennedy Gymnasium

Two 30 minute sessions - students with odd numbered posters should be at their posters from 3:15-3:45pm. Students with even numbered posters should be at their posters from 3:45 -4:15pm.

ORAL PRESENTATIONS

TIME	SESSION A <i>JST Science Center - Room 129</i> Chair - Albert Abbott	SESSION B <i>JST Science Center - Room 204</i> Chair - Xi Wang
10:30	Yen Tran -Making Ethanol with Local Waste Produce	Tara Chamblee -A Comparison of the Effects of Feverfew Extracts and the Presumptive Active Constituent Parthenolide on Gene Regulation in MCF7 and T47D Breast Cancer Cell Lines
10:42	Meg Croom -The Conversion of Agricultural Products to Biofuels	Maurissa Charles - Determining the Inhibitory Effects of bitter leaf and Pakistani Lily plant extracts on Hela-CD4+ cell line infected with HIV-1
10:54	Stephanie Riffle - <i>Thermatoga neapolitana</i> Converts Various Resources to Hydrogen Gas, a Potential Bio-Fuel	Laura-mae Britton -The Correlation between Human and Simian Human Herpes Virus Type 8 as relates to HIV-1 transmission in <i>Homo Sapiens</i>
11:06	Lauren Staple -Biodiesel from Waste Oil	Daniel Williams -The Effects of Various Phytochemicals on the Regulation of TGF-beta
11:18	Holly Taylor -Molecular farming- production of human interferon-gamma in transgenic rice and turfgrass	Irine Chepkoech -Effect Of Overexpression Of Tissue Transglutaminase (Tg) On Cellular Growth And Induction Of Apoptosis In Human Breast Cancer Cells
11:30	Logan Grier -Streamlining Biodiesel Production via Oilseeds Engineered to Express Fungal Lipases	Jason Crumpler -Proliferative effects from rG3 protein on non-tumorigenic epithelial human breast cells
11:42	Joy Dean - <i>Oplopanax horridus</i> (an Alaska Ginseng): Assessment of its Bioactivity	Matthew Ward -DNA hypermethylation and gene regulation of tumor suppressor gene p16
11:54	Shraddha Patel -The Effect of Goldenseal Extracts on the E-flux Pumps of the Multiple-Drug-Resistant <i>Staphylococcus aureus</i>	Cindi Lewis -The role of Human Endogenous Viruses W(HERV-W) in the maintenance of Placentation and Immunotolerance
12:15	LUNCH	LUNCH

ORAL PRESENTATIONS

TIME	SESSION C <i>JST Science Center - Room 208</i> Chair - Tamara McNealy	SESSION D <i>JST Science Center - Room 224</i> Chair - Margaret Ptacek
10:30	Trenton C. Williams -Bacteriophage Treatment of Contaminated Produce	Angela M. Gorney -Determining the level of genetic differentiation in Hawaiian goby fishes
10:42	Renée Holland -Development of Phage Therapy for the Treatment of Acne	Rachel Glenn -Distribution of the invasive plant Japanese honeysuckle in forest fragments of reservoir island
10:54	Lauren Hayes - Characterizing the Anti-Acne Bacteriocin of <i>P. jensenii</i>	Chelsea L. Reighard -Comparative genomics in the Hawaiian Silversword Alliance adaptive radiation using conserved orthologous sequences
11:06	Kate Demchenko -Bacterial Adhesion Specific Nanomechanical Biosensor for Detection of Pathogens	Michael Inyangetor -Muscle Plasticity in the House Cricket Exposed to Simulated Microgravity
11:18	James Morris -Attempts to silence a potential <i>Listeria monocytogenes</i> essential gene by inducible expression of an antisense RNA	Lindsey Edwards -Rearing the Diana fritillary butterfly: A protocol to bypass Speyerian diapause
11:30	Daniel Murrell -Differential protein expression in <i>Francisella tularensis</i> planktonic cultures and biofilms as identified by 2-D gel analysis	Saphronia Johnson -Involvement of HSP-70 in flight muscle histolysis.
11:42	Jae Hee Cho -Antibacterial nanodevices based on protein attachment to nanoparticles	Samuel Strachan -Steroidogenesis in Leydig Cells
11:54	Brittany Taylor -Model development Evaluating Photocatalytically Activated TiO ₂ Nanoparticles against Bacteria	Emily Self -Food Sources of Nutrients in the Diets of Primary School Children in Dominica
12:15	LUNCH	LUNCH

ORAL PRESENTATIONS

TIME	SESSION E <i>JST Science Center - Room 226</i> Chair - Kerry Smith
10:30	Shweta Kailasan - Directed evolution to study temperature adaptation in a/b barrel Luciferase enzyme from <i>Vibrio Harveyii</i>
10:42	Kevin W. Hackett -Mutational Study of a Bacterial DNA Glycosylase SMUG1
10:54	Julien Nunes -Partial purification and characterization of mutant human Thymidylate Synthase
11:06	Jamie Garner -Evaluation of Interactions between Domains of Spider Dragline Silk Proteins
11:18	Eric Stashko -Characterization of Acetate Kinase in the Fungal Pathogen <i>Cryptococcus neoformans</i>
11:30	Adam Larkins -Characterization of a mutant form of the human Dmc1 recombinase
11:42	John Barry -Mutational Analysis of Thymine DNA Glycosylase from <i>Schizosaccharomyces pombe</i>
11:54	Shelia Baccus -Synthesis of an {[2'-(1-ethyl-4,5-dimethyl-1H-imidazol-2-yl)biphenyl-3-yl]oxy}acetic acid; an Inhibitor of aP2 and a New Approach for Diabetes Treatment
12:15	LUNCH

TIME	SESSION F <i>JST Science Center - Room 129</i> Chair - Hong Luo
1:30	Mario Machado -Transgene Containment in Turfgrass-Construction of a Chimeric Gene for Cre Recombinase
1:42	Kristelle Gene -Transformation of Carrot with CBF gene using <i>Agrobacterium</i> method
1:54	Jason Markey -Oxalic acid, a potential novel selection agent for plant genetic transformation via organogenesis
2:06	Richard Gillette -Adventures with pSUNN::GUS-expression analysis of a <i>Medicago truncatula</i> gene
2:18	Jon Coleman -Cloning and characterization of two genes involved in resistance and tolerance against herbivory in hybrid Poplar
2:30	Andrew Sawyer -Expression analysis of a rice gene involved in plant stature using RT-PCR
2:42	

ORAL PRESENTATIONS

TIME	SESSION G <i>JST Science Center - Room 204</i> Chair - Naseema M. Hoosein	SESSION H <i>JST Science Center - Room 208</i> Chair - Bill Marcotte
1:30	Sian Ramlal - Elevation in ryanodine receptor expression in melanoma	Andrew Medvec -A Characterization of Prokaryotic Enzymes in Pathogenic Eukaryotic Microbes
1:42	Samantha Saunders -Analyzing the sufficiency of UBX binding sites to alter the expression pattern of native and synthetic CREs	Benjamin Hilton -Comparison of Lipase Activity of the yeast <i>Pichia</i> Transformed with a Lipase B gene to that of a Lipase A gene from <i>A. niger</i>
1:54	Purvi Amin -The Araucana rumpless phenotype results from a tail organizer developmental defect	Colleen Fenn -Developing High Throughput Assays to Select for Endocytosis Mutants of the Human Protozoan Parasite, <i>Entamoeba histolytica</i>
2:06	Justin Benoit -Identification of UBX-responsive regulatory sequences of the <i>ana</i> gene in <i>Drosophila</i>	Brette C. Winston -Fully Loaded and Going Green: Fatty Acid Uptake in African Trypanosomes
2:18	Anna-Lee Clarke - Role of the Ubiquitin-Proteasome in Cell Cycle Control of breast Cells	Adam Criswell - Spidroin Gene Assembly to Express Artificial Spider Silk Proteins
2:30	Andrew C. Sayce -The 3' UTRs of Hexokinases Influence Post-Transcriptional Regulation in <i>Trypanosoma brucei</i>	Drew Gunnells -Dose-response relations for the cytotoxic activity of rG3 protein on non-tumorigenic epithelial human breast cells
2:42	Ely Stein -Gene regulation of VEGFA and VEGFC by the phytochemicals Curcumin, Parthenolide, and Epigallocatechin-3-gallate	Jordon Grube -Optimization of the use of <i>C.elegans</i> as a model host with <i>Listeria monocytogenes</i>

ORAL PRESENTATIONS

TIME	SESSION I <i>JST Science Center - Room 224</i> Chair - Harry Kurtz, Jr.	SESSION J <i>JST Science Center - Room 226</i> Chair - David Magnin
1:30	Thomas D. Crowder -Expression of a plant antimicrobial peptide in turfgrass for enhanced disease resistance	Jennifer Scott -Biochemical Study of Fpg/EndoVIII family DNA glycosylase in <i>Mycobacterium Tuberculosis</i>
1:42	Paige Ward -Genetic Engineering of Switchgrass for Enhanced Drought and Salt Tolerance	Geeta Bhat -Testing Lipase Activity of the Yeast <i>Pichia</i> Transformed with the <i>A. Niger</i> Lipase B gene
1:54	Jarrod Smith -Silencing Genes More Efficiently in <i>Trypanosoma brucei</i>	Will Kelly -Cloning, expression, and isolation of the <i>Caulobacter crescentus</i> CB2A fur gene and protein
2:06	Matthew Balderston -Characterization of Mitochondrial Induction in <i>Arabidopsis thaliana</i>	Ami Hughs -Role of ATP binding and hydrolysis in the human Dmc1 recombinase
2:18	Ryan Fernandes -Supernodulation & flower development: Can <i>SUNN</i> rescue <i>CLV1</i> ?	Herbert Blassengale -Role of key residues in DNA binding in the human Dmc1 recombinase
2:30	Matt Pruitt -Molecular Cloning of a Rice Genetic Locus that is Involved in Plant Stature	Perry Davis -Synthesis of {[2'-(4,5-diphenyl-1,3-oxazol-2-yl)biphenyl-3-yl]oxy}acetic acid: An Inhibitor of α P2 and a New Approach for Diabetes Treatment
2:42	Joshua Blackwell -Functional characterization of a rice genetic locus involved in tillering using an RNAi approach	David Jacobs -Media-based dynamics of <i>Francisella tularensis</i> biofilm formation

POSTER PRESENTATIONS

3:15 - 4:15pm - Jonas T. Kennedy Gymnasium

The poster presentations are divided into two 30-minute sessions. Students with odd numbered posters should be at their posters from 3:15-3:45pm. Students with even numbered posters should be at their posters from 3:45-4:15pm.

Your poster number is also your abstract number.

<u>Poster #</u>	<u>Student Name</u>	<u>Poster #</u>	<u>Student Name</u>	<u>Poster #</u>	<u>Student Name</u>
1.	Amin, Purvi	26.	Garner, Jamie	51.	Murrell, Daniel
2.	Baccus, Shekelia	27.	Gene, Kristelle	52.	Nunes, Julien
3.	Balderston, Matthew	28.	Gil, Maritza	53.	Patel, Shraddha
4.	Barry, John	29.	Gillett, Richard	54.	Pruitt, Mathew
5.	Benoit, Justin	30.	Glenn, Rachel	55.	Ramlal, Sian
6.	Bhat, Geeta	31.	Gorney, Angela	56.	Reighard, Chelsea
7.	Blackwell, Joshua	32.	Grier, Logan	57.	Riffle, Stephanie
8.	Blassengale, IV, Herbert	33.	Gruber, Jordon	58.	Saunders, Samantha
9.	Britton, Laura-Mae	34.	Gunnells, Drew	59.	Sawyer, Andrew
10.	Chamblee, Tara	35.	Hackett, Kevin	60.	Sayce, Andrew
11.	Charles, Maurissa	36.	Hayes, Lauren	61.	Scott, Jennifer
12.	Chepkoech, Irine	37.	Hilton, Ben	62.	Self, Emily
13.	Cho, Jae Hee	38.	Holland, Renée	63.	Smith, Jarrod
14.	Clarke, Anna-Lee	39.	Hughes, Ami	64.	Staples, Lauren
15.	Coleman, Jon	40.	Inyangetor, Michael	65.	Stashko, Eric
16.	Criswell, Adam	41.	Jacobs, David	66.	Stein, D. Ely
17.	Croom, Meg	42.	Kailasan, Shweta	67.	Strachan, Samuel
18.	Crowder, Thomas	43.	Kelly, IV, John Wilson	68.	Taylor, Brittany
19.	Crumpler, Jason	44.	Larkins, Adam	69.	Taylor, Elizabeth
20.	Davis, Jr., Morgan Perry	45.	Lewis, Cindi	70.	Tran, Yen Kim
21.	Dean, S. Joy	46.	Machado, Mario	71.	Ward, Matthew
22.	Demchenko, Kate	47.	Markey, Jason	72.	Ward, Paige
23.	Edwards, Lindsey	48.	McLaurin, Rachel	73.	Williams, Daniel
24.	Fenn, Colleen	49.	Medvec, Andrew	74.	Williams, Trenton
25.	Fernandes, Ryan	50.	Morris, James	75.	Winston, Brette

2007-2008 SC LIFE UNDERGRADUATE RESEARCH PROGRAM PARTICIPANTS

FACULTY MENTOR		SCHOOL/DEPARTMENT	STUDENT	MAJOR	CLASS
Bert	Abbott	<i>Clemson University - Genetics and Biochemistry</i>	Logan Grier	Genetics	Senior
Florence	Anorou	<i>Claflin University - Biology</i>	Maurissa Charles	Biology	Junior
Omar	Bagasra	<i>Claflin University - Biology</i>	Cindi Lewis	Biology	Junior
			Laura-Mae Britton	Biology	Junior
Heather	Borick	<i>Clemson University - Biological Sciences</i>	Jason Crumpler	Health Science	Junior
			Drew Gunnells	Biological Sciences	Senior
Rebecca	Bullard-Dillard	<i>Claflin University - Biology</i>			
Min	Cao	<i>Clemson University - Biological Sciences</i>	James Morris	Microbiology	Junior
Weiguo	Cao	<i>Clemson University - Genetics and Biochemistry</i>	John Barry	Biochemistry	Senior
			Kevin Hackett	Genetics	Senior
			Jennifer Scott	Biochemistry	Junior
Susan	Chapman	<i>Clemson University - Biological Sciences</i>	Purvi Amin	Microbiology	Junior
Chin-Fu	Chen	<i>Clemson University - Genetics and Biochemistry</i>	Tara Chamblee	Biochemistry	Senior
			D. Ely Stein	Genetics	Senior
			Matthew Ward	Biochemistry	Senior
			Daniel Williams	Genetics	Senior
Kamal	Chowdhury	<i>Claflin University - Biology</i>	Kristelle Gene	Biology	Junior
Saara	DeWalt	<i>Clemson University - Biological Sciences</i>	Rachel Glenn	Biological Sciences	Junior
Yuqing	Dong	<i>Clemson University - Biological Sciences</i>	Jordon Gruber	Microbiology	Junior
Caye	Drapcho	<i>Clemson University - Agricultural and Biological Engineering</i>	Yen Kim Tran	Biosystems Engineering	Junior
Julia	Frugoli	<i>Clemson University - Genetics and Biochemistry</i>	Ryan Fernandes	Biochemistry	Senior
			Richard Gillett	Genetics	Senior
J. Michael	Henson	<i>Clemson University - Biological Sciences</i>	Meg Croom	Microbiology	Junior
			Stephanie Riffle	Microbiology	Senior
Bradley	Hersh	<i>Clemson University - Biological Sciences</i>	Justin Benoit	Biological Sciences	Senior
			Samantha Saunders	Biological Sciences	Senior
Naseema	Hoosein	<i>Claflin University - Biology</i>	Sian Ramlal	Biology	Junior
Xiuping	Jiang	<i>Clemson University - Food Science & Human Nutrition</i>	Trenton Williams	Microbiology	Senior
Saphronia	Johnson	<i>Benedict College - Biology, Chemistry & Environmental Health Sciences</i>	Maritza Gil	Biology	Senior
			Irine Chepkoech	Biology	Senior
Elizabeth	Kunkel	<i>Clemson University - Food Science and Human Nutrition</i>	Emily Self	Food Science	Junior
Harry D.	Kurtz, Jr.	<i>Clemson University - Genetics and Biochemistry</i>	John Wilson Kelly, IV	Biochemistry	Senior
Amy	Lawton-Rauh	<i>Clemson University - Genetics & Biochemistry</i>	Chelsea Reighard	Genetics	Senior
Haiying	Liang	<i>Clemson University - Genetics and Biochemistry</i>	Jon Coleman	Genetics	Senior
			Jason Markey	Biological Sciences	Senior
Hong	Luo	<i>Clemson University - Genetics and Biochemistry</i>	Joshua Blackwell	Biochemistry	Senior
			Thomas Crowder	Genetics	Senior
			Mario Machado	Biochemistry	Senior
			Mathew Pruitt	Biochemistry	Senior
			Andrew Sawyer	Genetics	Senior
			Elizabeth Taylor	Genetics	Senior
			Paige Ward	Biochemistry	Senior
			Rachel McLaurin	Genetics	Senior

FACULTY MENTOR		SCHOOL/DEPARTMENT	STUDENT	MAJOR	CLASS
David	Magnin	<i>Morris College - Natural Sciences & Mathematics</i>	Shekelia Baccus Morgan Perry Davis, Jr.	Biology Engineering	Sophomore Sophomore
William	Marcotte	<i>Clemson University - Genetics and Biochemistry</i>	Adam Criswell Jamie Garner	Biochemistry Biochemistry	Senior Senior
Tamara	McNealy	<i>Clemson University - Biological Sciences</i>	David Jacobs Daniel Murrell	Microbiology Microbiology	Junior Junior
Brandon	Moore	<i>Clemson University - Genetics and Biochemistry</i>	Matthew Balderston	Biochemistry	Senior
James	Morris	<i>Clemson University - Genetics and Biochemistry</i>	Andrew Sayce Jarrod Smith	Biochemistry Genetics	Senior Senior
Rush	Oliver	<i>Benedict College - Biology, Chemistry & Environmental Health Sciences</i>	Anna-Lee Clarke Michael Inyangetor Samuel Strachan	Biology Biology Biology	Senior Junior Senior
Nick	Panasik	<i>Claflin University - Biology & Chemistry</i>	Shweta Kailasan	Biology	Junior
Kim	Paul	<i>Clemson University - Biological Sciences</i>	Brette Winston	Biological Sciences	Junior
Angela	Peters	<i>Claflin University - Chemistry</i>	Julien Nunes	Biochemistry	Junior
Margaret	Ptacek	<i>Clemson University - Biological Sciences</i>	Angela Gorney	Biological Sciences	Senior
Michael	Sehorn	<i>Clemson University - Genetics and Biochemistry</i>	Herbert Blassengale, IV Ami Hughes Adam Larkins	Biochemistry Biochemistry Biochemistry	Senior Junior Junior
Kerry	Smith	<i>Clemson University - Genetics and Biochemistry</i>	Andrew Medvec Eric Stashko	Genetics Genetics	Senior Senior
Kathy	Sparace	<i>Clemson University - Genetics and Biochemistry</i>	Geeta Bhat Ben Hilton	Biochemistry Biological Sciences	Junior Senior
Lesly	Temesvari	<i>Clemson University - Biological Sciences</i>	Colleen Fenn	Microbiology	Junior
David	Tonkyn	<i>Clemson University - Biological Sciences</i>	Lindsey Edwards	Biological Sciences	Senior
Jeremy	Tzeng	<i>Clemson University - Biological Sciences</i>	Kate Demchenko Lauren Hayes Renee Holland Shraddha Patel Brittany Taylor	Microbiology Biological Sciences Microbiology Microbiology Microbiology	Junior Sophomore Senior Sophomore Sophomore
Alexey	Vertegel	<i>Clemson University - Bioengineering</i>	Jae Hee Cho	Bioengineering	Junior
Terry	Walker	<i>Clemson University - Agricultural & Biological Engineering</i>	Lauren Staples	Biosystems Engineering	Junior
Xi	Wang	<i>Clemson University - Genetics & Biochemistry</i>	S. Joy Dean Sarah Shelton	Genetics Genetics	Junior Senior

SC LIFE: Education & Outreach

Clemson University's SC LIFE Project, supported since 1998 by \$5.4 million from the Howard Hughes Medical Institute (HHMI) Undergraduate Science Education Program, and additional leveraged funding, provides life sciences education and outreach programs to middle and high school students and teachers throughout South Carolina and supports undergraduate research at four institutions (Benedict College, Claflin University, Clemson University, and Morris College). Our programs support middle school and high school curricula through virtual field trips (www.knowitall.org), loans of equipment footlockers to certified teachers, workshops and graduate-level science courses for in-service teachers and community-based research.

SC LIFE also supports students' participation in enrichment and research activities such as the Summer Program for Research Interns, Biology Merit Exam, laboratory field trips to the South Carolina DNA Learning Center and our Undergraduate Research Program.

Project Directors

Dr. Barbara J. Speziale, Associate Dean, Academic Outreach and Summer Academic Programs
Professor, Biological Sciences

Dr. James K. Zimmerman, Professor, Biochemistry (emeritus)

Faculty & Staff

Ms. Ginger Foulk, SC LIFE Project Manager

Ms. Cora Allard, Lecturer, Biological Sciences

Dr. Robert E. Ballard, Professor, Biological Sciences & Director, SC DNA Learning Center

Dr. Lisa C. Benson, Assistant Professor, Engineering and Science Education

Dr. Karen J. L. Burg, Endowed Chair & Professor, Bioengineering

Dr. Joseph D. Culin, Professor, Entomology, Soils and Plant Sciences

Mr. John Cummings, Lecturer, Biological Sciences

Dr. Alix G. Darden, Associate Professor, Biology, The Citadel

Dr. Julia Frugoli, Associate Professor, Genetics and Biochemistry

Dr. Vincent S. Gallicchio, Professor, Biological Sciences, and Associate VP for Research

Dr. Karen C. Hall, Lecturer, Forestry & Natural Resources - Master Naturalist Program

Dr. John Hains, Associate Professor, Biological Sciences

Dr. Kathleen A. Kegley, Lecturer, Management, and the SC DNA Learning Center

Dr. K. Dale Layfield, Associate Professor, Biological Sciences

Dr. Patrick D. McMillan, Curator, Campbell Museum of Natural History

Dr. John C. Morse, Professor, Entomology, Soils and Plant Sciences

Dr. Edward B. Pivorun, Professor, Biological Sciences (emeritus)

Dr. Margaret Ptacek, Associate Professor, Biological Sciences

Dr. Timothy P. Spira, Professor, Biological Sciences

Ms. Stephanie D. Stocks, Lecturer, Biological Sciences

Dr. John R. Wagner, Professor, Geological Sciences

Dr. Jerry A. Waldvogel, Professor, Biological Sciences

Dr. Greg K. Yarrow, Professor, Forestry and Natural Resources

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