

The College of Sciences and Engineering and the Center for Research Excellence present

Summer Scholars Institute Summer Symposium



Summer Scholars Institute

USC Aiken • Learning Beyond the Classroom

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**College of Sciences
and Engineering**
University of South Carolina Aiken



W • O • R • C
WORKFORCE OPPORTUNITIES
IN REGIONAL CAREERS

Thursday, July 31, 2025
1:00 pm-3:00 pm

Poster Session

Gregg-Graniteville Library

1:00-3:00 pm

Students may set up posters between 12:00-1:00 pm. Posters will be presented by students from 1:00-3:00 pm.

SSI Participants

Integrated DNS sinkhole and web threat filtering via Palo Alto Next Generation firewall.

Charlie Hancock

Faculty Mentor: Dr. Ali AlSabeh

Funded by WORC

Efficient intrusion detection and classification of malware traffic using machine learning.

Jam Kushal Mankar

Faculty Mentor: Dr. Ali AlSabeh

Funded by WORC

The relationship between mobility and performance on the countermovement jump and hop test.

Peri Rouillard

Faculty Mentor: Dr. Andy Hatchett

Funded By ADP

A comparison of stretched-range overcoming isometric training and dynamic strength training on neuromuscular and musculoskeletal adaptations.

Dalton Sanders

Faculty Mentor: Dr. Andy Hatchett

Funded by ADP

Genotyping *rcor1* and *rcor2* mutant zebrafish.

Amanda Counts

Faculty Mentor: Dr. April DeLaurier

Funded by INBRE

Identification of desmocollin (dsc) in zebrafish.

Adam Langworthy

Faculty Mentor: Dr. April DeLaurier

Funded by INBRE

Mercury detection using porphyrin metal organic frameworks.

Allison Roberts

Faculty Mentor: Dr. Bryan Borders

Funded by INBRE

Using Raman spectroscopy to determine molecular organization of 3D printed polymers.

Izabella Fogt

Faculty Mentor: Dr. Bryan Borders

Funded by INBRE

The relationship between energy expenditure and muscular force during closed kinetic chain exercise.

Savanna Spires

Faculty Mentor: Dr. George Grieve

Funded By ADP

Conducting inhibition assays to evaluate the binding of catechol to DAD.

Jose Hernandez

Faculty Mentor: Dr. Ken Roberts

Funded by INBRE

Investigating the role of tyrosine-94 of 2,4'-dihydroxyacetophenone dioxygenase through active-site mutation.

Lakyn Phillips

Mallory Shaver

Faculty Mentor: Dr. Ken Roberts

Funded by INBRE

Is reproductive success affected by nest timing in wood storks?

Lee Anthony

Faculty Mentor: Dr. Kristina Ramstad

Funded by INBRE

Relationship between nest height and productivity in wood storks.

Rachel Wood

Faculty Mentor: Dr. Kristina Ramstad

Funded by INBRE

The effects of acute mindfulness on emotion regulation and theta power in parents.

Breanna Schults

Casey Vojcek

Faculty Mentor: Dr. Laura Swain

Funded by WORC and ADP

Differences in self-reported anxiety and somatic symptoms by levels of nicotine dependence.

Adrienne Crandell

Faculty Mentor: Dr. Mary Rogers

Funded by WORC

Trait impulsivity, stealth vaping, and nicotine dependence.

Austin Powell

Faculty Mentor: Dr. Mary Rogers

Funded by ADP

Developing hyperactive *mping*-based tags for targeted insertion.

Madison Hamlin

Faculty Mentor: Dr. C. Nathan Hancock

Funded by INBRE

Assessing the effect of element size on *dTgm9* transposition in yeast.

Brenden Bogar

Faculty Mentor: Dr. C. Nathan Hancock

Funded by INBRE

Transposition of the *Spm* element in Arabidopsis.

Axel Hornung

Faculty Mentor: Dr. C. Nathan Hancock

Funded by INBRE

Installation of a positioning and receiver system for a radio astronomy antenna.

Benjamin Ferrick

Faculty Mentor: Professor Neil Miller

Funded by WORC

An algorithm for the constrained longest common subsequence and substring problem for multiple strings.

Brandon Weathers

Richy Appa Modugu

Faculty Mentor: Dr. Rao LI

Funded by WORC

The effect of mixing method on stability of nanofluids.

Elias James

Faculty Mentor: Dr. Titan Paul

Funded by WORC

The effects of oxidation on contact angle.

Emily Jacobs

Faculty Mentor: Dr. Titan Paul

Funded by WORC

Analyzing the effect of HIV-1 Tat and Rev in regulating HIV-dependent GFP expression.

Gillian Gregory

Faculty Mentor: William H. Jackson

Funded by INBRE

Characterizing pro-apoptotic BimL expression using a HIV-dependent expression plasmid.

H. Abby Taylor

Faculty Mentor: William H. Jackson

Funded by INBRE

Characterizing HIV-dependent induction of pro-apoptotic BimL in HEK293T cells

Gracie Goss

Faculty Mentor: William H. Jackson

Funded by INBRE

Cloning the HIV-1 inhibitory sequence (INS1) into the inducible plasmid, p(LIR)X.pA.

Marissa Brooks

Faculty Mentor: William H. Jackson

Funded by INBRE

Summer Research 2025 Participants

USCA STEM Students

Kushal Mankar
Peri Rouillard
Dalton Sanders
Adam Langworthy
Zara Lacera
Adam Langworthy
Day'Lyn McKinnis
Nazeerah Rahman
James Saxon
Allison Roberts
Izabella Fogt
Savanna Spires
Jose Hernandez
Mallory Shaver
Lakyn Phillips
Lee Anthony
Rachel Wood
Casey Vojcek
Austin Powell
James Burns
Madison Hamlin
Brenden Bogar
Jennifer Gonzalez
Benjamin Ferrick
Brandon Weathers
Richy Appa Modugu
Gillian Gregory
H. Abby Taylor
Gracie Goss
Marissa Brooks

USCA Faculty Mentors

Dr. Ali AlSabeh
Dr. Bryan Borders
Dr. Andy Hatchett
Dr. April DeLaurier
Dr. George Grieve
Dr. Andrew Hatchett
Dr. Ken Roberts
Dr. Kristina Ramstad
Professor Neil Miller
Dr. Laura Swain
Dr. Mary Rogers
Dr C. Nathan Hancock
Dr. Titan Paul
Dr. William H Jackson

High School Students

Charlie Hancock
Amanda Counts
Kaydee Croom
Breanna Schults
Adrienne Crandell
Axel Hornung
Elias James
Emily Jacobs

Acknowledgements

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Community Reuse Organization

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Dr. April DeLaurier
Dr. C. Nathan Hancock
Dr. Michele Harmon
Dr. William H. Jackson
Dr. Scott McKay
Prof. Brad Reinhart
Ms. Sarah Marie Williamson