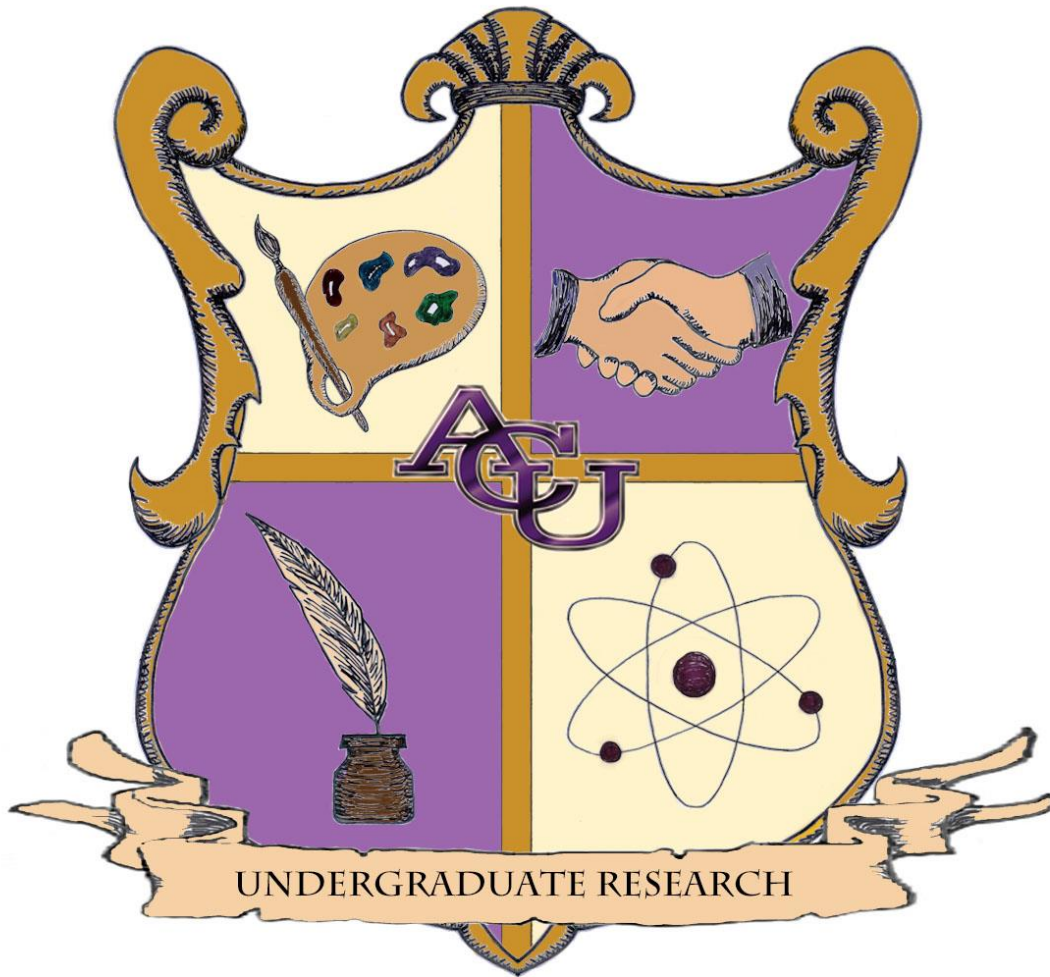


2015 ACU Undergraduate Research Festival




March 31, 2015

The ACU Undergraduate Research Festival

is brought to you by

The Office of Undergraduate Research.

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A Message from the Director:

Thank you so much for being a part of the 7th ACU Undergraduate Research Festival. It is so exciting to see the wide variety of research being done by undergraduates here at ACU. Those of us who have been involved in planning the Research Festival are so impressed with and proud of the work that students have been doing – work that requires intellectual curiosity, creativity, and critical thinking. Whether you are here to present, mentor, judge entries, or learn about others' research, I am so grateful that you are part of this day.

The Research Festival would not take place without the many hours of hard work put in by Research Festival Planning Committee. They have my deepest appreciation. Thank you also to the Honors College and Graduate School for co-sponsoring this event.

Enjoy the Festival!

Dr. Autumn Sutherlin
ACU Director of Undergraduate Research

Festival Schedule Overview

8:00 – 3:00 PM Registration

Lobby of the Hunter Welcome Center

8:30 – 9:20 AM Oral Presentations

- A1. Ethics and Scripture - McCaleb Room Zone A
- A2. Culture and Crises - McCaleb Room Zone B
- A3. Health: Food, Aquaponics, and Smoking Cessation – Alumni Conference Room
- A4. Teaching and Learning - LYNAY Classroom
- A5. Health and Wellness – AT&T Theater
- A6. Cultural Concerns – McCaleb Room Zone C

9:30 – 10:50 AM Oral Presentations

- B1. Drama and Music - McCaleb Room Zone A
- B2. Biology Cluster: Aeromonas, Mammals, and More - McCaleb Room Zone B
- B3. SeaQuest and COMPASS – Alumni Conference Room
- B4. Perspectives in History and Literature – LYNAY Classroom
- B5. Law, Politics, and Peacemaking - AT&T Theater

11:00 – 11:45 AM Halbert-Walling Groundbreaking Ceremony

At the former site of Chambers Hall

11:45 – Lunch is served (Pre-registration required)

McCaleb Room Zone C

12:00 – 12:40 PM Poster Session I

Atrium of the Hunter Welcome Center

12:45 – 1:20 PM Poster Session II

Atrium of the Hunter Welcome Center

1:30 – 2:50 PM Oral Presentations

- C1. Culture and Rhetoric - McCaleb Room Zone A
- C2. “Time” for Physics: “Exciting” - McCaleb Room Zone B
- C3. Computers, Student Learning, and IT – Alumni Conference Room
- C4. STEM Assortment: Drugs, Energy, Fuel, and Rockets - LYNAY Classroom
- C5. Christianity and Scripture – AT&T Theater

3:00 – 4:20 PM Oral Presentations

- D1. Biochemistry Focus McCaleb Room Zone A
- D2. Math in Action – Alumni Conference Room
- D3. Sex and Gender – AT&T Theater

5:30 – 6:30 Awards Ceremony and Dinner (Pre-registration required)

McCaleb Room Zone C

SESSIONS

Tuesday, March 31, 8:30 – 9:20 AM

Session A1: Ethics and Scriptures - McCaleb Room Zone A

The Higher Ethics: Utilitarianism and Freedom in Three Dystopian Novels

James Churchill

The Origin and Impact of United States' Geo-Political Military Aid In The World.

Coleton Spruill

Transactional Reading and the Bible: What Does It Mean for Us?

Ashley Towe and Katlin Sehres

Session A2: Culture and Crises - McCaleb Room Zone B

The Moore, Oklahoma tornado crisis

Audrey Gonzalez

Toyota Gas Pedal Recall

Naomi Johnson

Cultural Synthesis in Sir Gawain and the Green Knight

McKinley Terry

Session A3: Health: Food, Aquaponics, and Smoking Cessation – Alumni Conference Room

Children's Fruit & Vegetable Consumption

Priscilla Clayton

Nurses' Role in Tobacco Counseling: Ending the Epidemic

Dulce Mancine

Design Considerations for West Texas Aquaponics Systems

Francisco Teran

Session A4: Teaching and Learning - LYNAY Classroom

Effectiveness of Speech Therapy Utilizing Music for the Development of Specific Communication Skills in Children with Autism

Christina Wise

Choice is a tricky thing: Learning to choose in an uncertain world

Allison Phillips

Politics in Eurovision Song Contest?

Richard Elmore

Session A5: Health and Wellness – AT&T Theater

A Comparative Analysis of Satisfaction Among Post Hospital Birth and Non-Hospital Birth Mothers

Christina Brown

Are Wellness Programs Beneficial for the Workplace?

John Daily

Controversy of Economic, Religious and Domestic Slum Life in Dharavi, India

Kelsey Kotara

Session A6: Cultural Concerns – McCaleb Room Zone C

Cultural Awareness in Study Abroad

Annie Bailey

Tolerance in Toledo, Spain between Muslims, Christians, and Jews in 711-1031

Kendra Oregon

Conservation or Cultural Dominance?: Ecotourism in the Himalayas

Brooks Mendenhall

Tuesday, March 31, 9:30 – 10:50 AM

Session B1: Drama and Music - McCaleb Room Zone A

ACU Theatre Spring 2015 Season Dramaturgy

Diego Gonzalez, Sarah Yarbrough, and Braden Clark

Change You Fate: A Rhetorical Analysis of Disney's Pixar's Brave

Allison White

An Examination of Gender Roles and Suicide in Shakespeare's Plays

Alyssa Johnson

A Comparison and Analysis of "Come away, death" from Twelfth Night as set to music by Roger Quilter and Gerald Finzi

Marc Gutierrez

Session B2: Biology Cluster: Aeromonas, Mammals, and More - McCaleb Room Zone B

Inhibition of ER Ca²⁺ release or the p38 SAPK inhibits UPR signaling and apoptosis activation during moderate ER stress

Tina Johnson

Isolating Aeromonas from Precipitation and the Atmosphere

Kathryn Preston

*Determining the effect of *clpA* in the Natural Transformation ability of *Aeromonas salmonicida**

Kristen Clemons

Small Mammals of Guandera Biological Reserve, Carchi Province, Ecuador and Comparative Andean Small Mammal Ecology

Rachel Ritchie

*Patterns of D-Loop Sequence Variation in *Thomomys* (RODENTIA: CRICETIDAE)*

John Iragena, Nathan Dougherty, and Amberly Grothe

Session B3: SeaQuest and COMPASS – Alumni Conference Room

The monitoring of environmental conditions for SeaQuest

Zhaojia Xi

SeaQuest / E906 Shift Alarm System

Noah Kitts

Design of Drift Chamber 05 for the COMPASS II experiment

James Mallon

Building a new Drift Chamber for COMPASS

Megan Cromis

Wiring the new COMPASS Drift Chamber

Lacey Medlock

Session B4: Perspectives in History and Literature – LYNAY Classroom

The Views of Blood in Renaissance Europe

Adam Lubbers

Milky White Ink and the Black Cloven Hoof: Écriture féminine in Abdellah Taïa's Un mélancolie arabe

Spence Horner

Prophet, Poet, or Madman an evaluation of William Blake

Daniel Edwards

The Boxer Rebellion: A Holistic Approach

David Wall

The Sleeping Giant of Monotheism

Richard Elmore

Session B5: Law, Politics, and Peacemaking - AT&T Theater

Various Federal Laws and Their Effects on Identity Theft and Data Breaches in the United States

Tyler Salter

The Effect of Cultures on Management Styles

Judith Morales

The Solid South: Campaign Issue Strategies in the 2014 Southern Senate Races

Caleb Orr

The Weight of Identity in Peacemaking

Nicole Ramos

Tuesday, March 31, 11:00 – 11:45 AM

Halbert-Walling Research Center Groundbreaking

At the former site of Chambers Hall

Tuesday, March 31, 11:45 – 12:40 PM

Lunch: McCaleb Room Zone C (Pre-registration required)

Tuesday, March 31, 12:00 – 12:40 PM

Poster Session I: Hunter Welcome Center Atrium

The Power of "Charge": Lessons in Leadership at the Goodspeed

Lauren Fertig

Caught in the Crossfires: The Effect of the Israeli-Palestinian Conflict on the Nations' Children

Bethany Richardson

Social Media Jealousy

Kylie Richter, Alexandra Gartley, BrieAnna Hawkins, and Brandon Clements

This Avoidance is Stressing Me Out! How Avoidance Contributes to Test Anxiety in a College Population

Hannah Anderson, Mackenzie Harrington, and Morgan Watten

Child Life Specialist Impact on Family Stress Resilience: A Parent's Perspective

Katie Bell

Feelings of Shame: A Consideration of Abuse and Mental Illness

Lindsay Palmer, Lauren Pratt, and Maci Smith

Water Disputes Between Israel and its Islamic Neighbors

Sarah Young and Caleb Laster

Selfies: Evidence of Narcissism, Sociability or Insecurity?

Savannah Hipes

GMOs: Europe vs. North America

Imani Morris, Hannah Carter, and Savannah Johnson

Assimilation of Chin Burmese Refugees in the U.S.

Deanna Romero, Rachel Williams, and Nicole Ramos

The Correlation Between Education and Child Marriage in Bangladesh

Kelsey Kotara, Valerie Kocsis, Brooke Crisp, Jill Baker, and Traci Bricka

*Requirement for the SWR1 complex and Nap1 chaperone after TBP association in *Saccharomyces cerevisiae**

Julia Taylor and Tim Kang

*Investigating the Intraspecific Genetic Variation of *Mentzelia hirsutissima* (Loasaceae)*

Abigail Rogers and Angela Adhikari

An animal biodiversity survey in Runnels County, a preliminary study

Darby Thornton, Leslie Morrell, and Anthony Kocher

*Reconstructing the Paleoniche of *Prosopis glandulosa* (Honey Mesquite)*

Mike Keenan

Pre-Prandial Vinegar Ingestion Improves Two-Hour Glucose Control in Older, Type II Diabetics More Than Post-Prandial Walking

Sarah Taylor

Wire Tension Measurements and Analysis for the New COMPASS Drift Chamber

Vicente Rojas Aguirre

Inspection of anode and field wires for the COMPASS drift chamber, DC5, with Environmental Scanning Electron Microscope

Sonia Cyuzuzo

Time-Clamped, RPE-Matched Treadmill Activity and Interactive Video Game Dancing Differ in Step Count But Not Heart Rate Response

Cara Loveland

*Phylogenetic Species Analyses In *Thomasomys* (Rodentia : Cricetidae)*

Bryan Lim Yew Tian, Ian Gunn, Denise Naude, and Joseph Ayunde

*The Role of the *tapY1* Gene and Natural Transformation in *Aeromonas**

Christina Lee

Tuesday, March 31, 12:45 – 1:20 PM

Poster Session II: Hunter Welcome Center Atrium

Biopsychosocial factors impacting positivity and resilience in individuals undergoing cancer treatment

Kaitlin Pegoda

Influence of Religious Upbringing on Views of Women in Leadership

Cara Buenz

Patterns of Conflict and Disaffiliation in Churches Among Traditionalists and Egalitarians

Megan Brackenbury, Matthew Hoard, and Allison Lamberth

Physiological Response to “Wicked” Problems Under High or Low Need for Closure

Taylor Munden, Daniel Edwards, Caleb Carr, Jesse J. Luna, Nathan W. Daniels, and Zachary Shakelford

Dark Humor: The Dark Triad and Humor Styles

Andrew Vun and Selina Thornton

Don't Feed the Trolls: Correlating the Dark Triad and Internet Trolling

Sarah Kirby and Kyle Levenick

Do You Like Me?: Affirmation Sensitivity on Social Media

Mackenzie Harrington and Jesse Luna

Finding Food: Venezuela's Severe Shortages

Chandler Gum, Katy Escott, and Meagan Songer

Impact of Mobile Technology on Student Attitudes, Engagement, and Learning

Victoria Sun

Human Identity: From Story to Science

Catherine Blakemore, Hannah Anderson, and Trevor Thompson

Experiencing Professional Development Through Lesson Study

Jaclyn Barker

*The Role of *RecA* in the Natural Transformation of *Aeromonas salmonicida**

Jacob Woods and Grace McNair

*Phylogenetic Relationships in *Mentzelia section Bicuspidaria* (Loasaceae)*

Tabitha Lewis, William Morales, and Samuel Nix

The effect of organic fertilizers in urban raised bed gardens

Reece Wells, Kevin Watson, and Anna Curby

The Need for Reporting Metabolic Sampling Interval in Publication: An Example Using Maximal VO₂ Values and Running Economy

Chase Harbach, Sarah Taylor, and Logan Smith

The Impact of Simulated Altitude on Selected Elements of Running Performance

Logan Smith and Heather Johnston

The Effects of Remaining Hydrocarbons on Ecological Succession and Vegetation Following Bioremediation of a Crude Oil Spill

Nathan Neill

Quantifying Wolbachia and Spiroplasma Infection Rates in Monarch and Queen Butterflies

Lydia Brown and Jamie Thompson

An Analysis of Genetic Relationships Between North American and South American Populations of Tadarida brasiliensis

Kimberly Burt and Michael Ramirez

Determination of Environmental Impact of Urbanization in Abilene Based on Changes of Soil Conditions and Plant Types

Jaime Gordon, Alex Buckel, and Dayna Roe

Tuesday, March 31, 1:30 – 2:50 PM

Session C1: Culture and Rhetoric - McCaleb Room Zone A

Do We Value Commitment? A Rhetorical Analysis of New Girl

Bailey Cate

The Power of the Pant Suit: A Rhetorical Analysis of Hillary Clinton's Campaign Dress

Kalyn Prince

Earth Speaks: Environmentalism and the Music of John Luther Adams

Austin Lemmons

The Building Blocks of Society: An Analysis of Messages in The Lego Movie

Abby Ayers

What's Black and White and Read Online?

Madeline Orr and Marissa Jones

Session C2: "Time" for Physics: "Exciting" - McCaleb Room Zone B

Improved Excited-State Interaction Potentials for Alkali-Rare Gas Pairs and Their Application to Alkali Laser System Development

Christopher Campbell

Measuring the number of protons in a particle accelerator pulse using light

Anthony Brown

Building Detectors to Study a New Phase of Matter

Cecily Towell

Improved Timing Instruments for Particle Identification

Hannah Hamilton

Laser Transport System for Calibration of the NIFFTE Time Projection Chamber

Aric Tate

Session C3: Computers, Student Learning, and IT – Alumni Conference Room

Security for the Internet of Things

Alicia Clark

Securing an Organization: Prioritized Steps

Alani Peters

Improving Automated Feedback for Programming Courses

Roger Gee

An Innovative Technique for Measuring Concept Mastery

Kayla Holcomb and Nevan Simone

Session C4: STEM Assortment: Drugs, Energy, Fuel, and Rockets - LYNAY Classroom

Distributed Drug Discovery: Synthesis of Unnatural Amino Acids as Potential Antimalarial Drugs

Amanda Dugan

Energy Harvesting via Piezoelectric Generators for Smart Devices

Kyle Bowling

Comparison of Two Biologically Derived Disaccharides for Use in Sugar-KNO₃ Rocket Fuel

Daniel Whitefield

Computational Optimization of Model Rocket Flight and Experimental Analysis

Christopher Campbell

Session C5: Christianity and Scripture – AT&T Theater

John Calvin and the Ecclesiastical Government in Geneva

Parker Pollard

Paul's Ministry in Thessalonica

Dominique Rideout

Esau, Edom, and Christian Identity

Ethan Laster

The Gentile Mission Revealed in Acts 2

Joseph Prince

An Intertextual Study of Acts 20:17-38 and the Septuagint

Garrett Lane

Tuesday, March 31, 3:00 – 4:20 PM

Session D1: Biochemistry Focus - McCaleb Room Zone A

New Osmium Carbonyl Clusters with Dicarboxylate Ligands

Soo Hun Yoon

*Searching for an interaction between *E. faecalis*' Fusion and Synthase proteins, of the mevalonate pathway, through the use of FRET*

Ana Arango

Microbial Diversity and Antibiotic Production in Sorcerers Cave

David Sanderson

*Novel role of the yeast *Spn1* protein in DNA Damage Repair*

Rachael Carstens

Formulation Predictivity: A Design of Experiments

Barret Davidson, Drew Dossett, and Grayson Hurst

Session D2: Math in Action - Alumni Conference Room

Pinochle Families: An Application of Combinations of Multisets with Finite Multiplicities

Jordan Miller

How to Solve "Lights Out!"

Christian Lovins

Operations With Rational Numbers and Algebra Readiness

Jaclyn Barker

The Effect of Non-Normaily Comparing Confidence Intervals On Two Populations

Cindy Mazariegos

Are High School Proofs Childproof? A Lesson Study on Mathematical Proof

Janessa Beach

Session D4: Sex and Gender - AT&T Theater

Mother Ganges Wept: Rape Culture and Sexual Violence in India

Maggie McAlister

Women and Power in the Church, Family, and Work Setting

Elizabeth Watters

Women's Rights in Iran's Legislative Documents: A Critical Analysis of the Constitution, Civil, and Penal Code

Joyce Schuster

A Demographic Case Study and Comparative Analysis of Sexual Violence and Texas Bordertowns

Savannah Hostetter

Young adults' use of texting shorthand on Facebook

Hailey Hendricks

Tuesday, March 31, 5:30 – 6:30 PM

Awards Ceremony and Dinner in the McCaleb Conference Room Zone C (Pre-registration required)

A special thanks to...

...the co-sponsors of the Undergraduate Research Festival

The Honors College and The Graduate School

...the Director of Undergraduate Research

Autumn Sutherlin

...the Student Worker for the Office of Undergraduate Research

Evan Bridges

...all of our judges:

Jeff Arrington	Cherisse Flanagan	Christopher Hutson	Kim Pamplin	Joe Stephenson
Melissa Atkinson	Allison Garrett	Mac Ice	Raymond Pettit	Rachel Team
Dale Bertram	Rendi Hahn	Donald Isenhower	Cynthia Powell	Rusty Towell
Ed Brokaw	Becky Hammack	Ryan Jessup	Greg Powell	Jeanine Varner
Clint Buck	Darby Hewitt	Rich Jinkerson	Sheila Ritchie	Beatriz Walker
Dennis Cavitt	Brandon	Tim Kennedy	Nil Santana	John Weaver
Dena Counts	Houghtalen	Sarah Lee	Phil Schubert	Wendi Wolfram
Ken Cukrowski	Lori Houghtalen	Susan Lewis	Lynette Sharp	Kelly Young
Kristina Davis	Rachael Hubbard	Tamara Long	Penya	
Suanna Davis	Andrew	Suzie Macaluso	Jessica Smith	
John Ehrke	Huddleston	Doug Mendenhall	Raymond Smith	
Chris Flanders	Rebecca Hunter	Ron Morgan	Greg Straughn	

...the University Undergraduate Research Council

Matthew Garver	Rebecca Hunter	Jennifer Shewmaker	Jeanine Varner
Kari Hatfield	Ryan Jessup	Trevor Thompson	

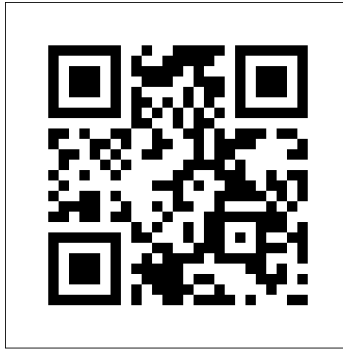
...the Student Panel on Undergraduate Research

Lydia Brown	Caroline Gafford	Nigel Gwini	Allison Philips	Alikay Wood
Megan Cromis	Marc Gutierrez	Kaitlyn Pegoda	Caitlyn Spain	Josie Zack

...the Undergraduate Research Festival Planning Committee

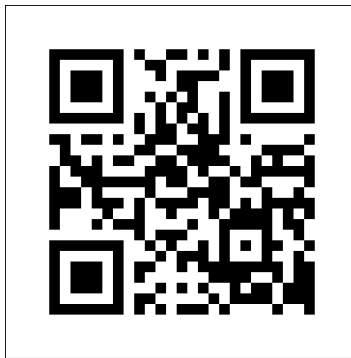
Stephen Baldrige	Rebecca Hunter	Suzie Macaluso
Josh Brokaw	Andrew Huddleston	Mark McCallon
Brian Burton	Jennifer Huddleston	Joe Stephenson
Mark Cullum	Ryan Jessup	Josh Willis
Matthew Garver	Sarah Lee	
Darby Hewitt	Lauren Lemley	

To view the complete program online go to <http://blogs.acu.edu/researchfest/2015program/>



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