2015 ACU
Undergraduate Research Festival

March 31, 2015
The ACU Undergraduate Research Festival

is brought to you by

The Office of Undergraduate Research.
blogs.acu.edu/undergradresearch
@acuresearch

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
   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
   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.
Coloten 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

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 - McCabe 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 - McCabe 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 Clown Hoof: Écriture feminine 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

Politics in Eurovision Song Contest?  
Richard Elmore

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 bursutisima (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 Gentle 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-Normally 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
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 Baldridge     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               Lauren Lemley
Darby Hewitt
To view the complete program online go to http://blogs.acu.edu/researchfest/2015program/

http://go.acu.edu/uzpwk

To view the abstracts please go to http://blogs.acu.edu/researchfest/2015abstracts

http://go.acu.edu/zkabp

PROUD SPONSOR OF THE UNDERGRADUATE RESEARCH FESTIVAL!

HTTP://BLOGS.ACU.EDU/HONORSCOLLEGE/
Graduate School

ACU offers 33 flexible distance and on-campus degree and certificate programs

Recognized in top 10 percent of Forbes’ 2011 ranking of “America’s Best Colleges”

Ranked #1 “Up-and-Coming” university in the West Region by U.S. News & World Report

Here at ACU, graduate students experience real people and education through both personal relationships with faculty and curriculum that is relevant; exceptional educational experiences from leaders in their disciplines; and innovative methods of academic learning and implementation of that learning into practical experiences.

For more information, please visit acu.edu/grad.