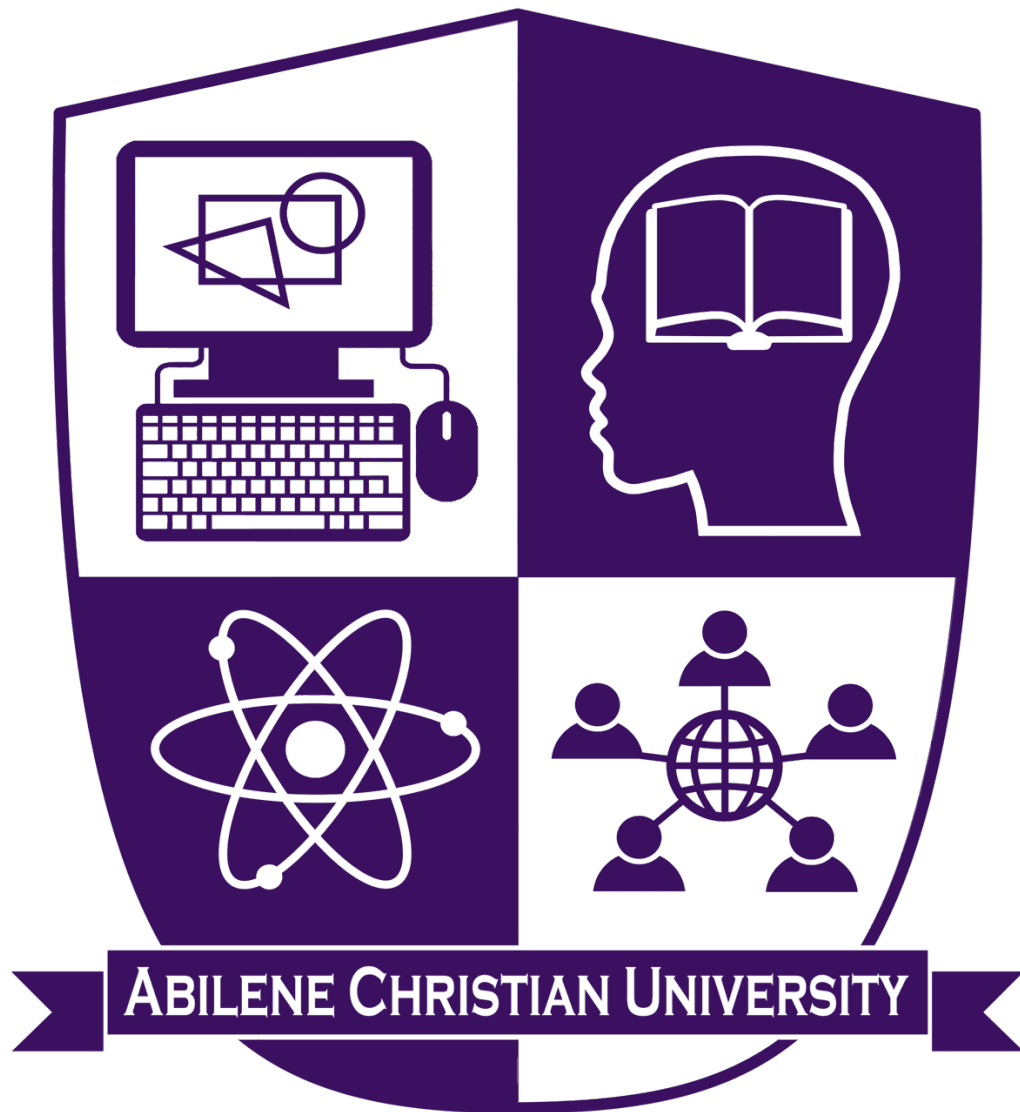


2020 ACU
VIRTUAL
UNDERGRADUATE
RESEARCH FESTIVAL



APRIL 13 – 17, 2020
OFFICIAL PROGRAM

The ACU *VIRTUAL* Undergraduate Research Festival

is brought to you by

The Office of Undergraduate Research.

blogs.acu.edu/undergradresearch

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A Message from the Director:

Welcome to ACU's 12th annual Undergraduate Research Festival, presented for the first time in an online-only format. This conference celebrates some of the best of our students' work – work that requires intellectual curiosity, creativity, and critical thinking. Together we also honor the partnership between the student researchers and the faculty who mentor them. Many hours of hard work have gone into the preparation for this event, so many thanks to the Research Festival Planning Committee. And finally, whether you are presenting your research, judging the entries, or simply learning about others' research, we are so appreciative of your support for our Undergraduate Scholars. Enjoy the Festival!

Dr. Joshua Brokaw

Faculty Director of the ACU Office of Undergraduate Research

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Festival Sessions

Monday, April 13th – Friday, April 17th

Narrated Session 1: Arts & Humanities – Culture

- N01 – *The Sad Irony of a Young Heroic Socialist*
Cassandra Dale
- N03 – *Hall of Stories*
Jael Morel, Alisson Meador, and Alissa Davis
- N04 – *John Hughes' The Breakfast Club: A Forum for Postfeminist Discussion*
Rachel Shipley

Narrated Session 2: Arts & Humanities – Scripture and Spiritual Practices

- N05 – *The Jesus of Mark's Gospel: Angry or Compassionate?*
Hannah Garza
- N06 – *Psalms Interpretation*
Savannah McLain

Narrated Session 3: Social Sciences – Education Practices

- N08 – *Higher Education and the Evolution of the Female Narrative*
Madison Johnson
- N09 – *Benefits of Read-Alouds for English Language Learners*
Michelle Pullen
- N10 – *Learning Through Play: The Importance of Games in Language-Learning Classrooms*
Autumn Vaught

Narrated Session 4: Social Sciences/STEM – Behavior and Biology

- N12 – *Marriage Games: A Game Theory Exploration of Martial Cooperation*
Luke Stevens
- N13 – *Flora of the Wood Conservation Easement in Callahan County, Texas*
Destiny Brokaw

Narrated Session 5: STEM – Applied Engineering and Physics

- N15 – *Instrumentation for Molten Salt Reactors*
Keaton Brewster
- N16 – *Design for a Linear Cavity System for use in SHG*
Pak In Chan
- N18 – *Finding High Radiation Limit of Novel Detectors for Proton Beamline Monitoring in Simulation*
Benjamin Edwards
- N17 – *Modeling Heat Transfer for Molten Salt Applications*
Brazos Fitch

Narrated Session 6: STEM – Nuclear Physics

- N19 – *E1039 Luminosity Monitor Testing and Installation*
Emily Branson
- N20 – *Improving Function of Wire Chamber Particle Detectors for E1039/SpinQuest*
Elizabeth Jennings
- N21 – *Manufacturing Scintillator Tiles for the STAR Forward Upgrade*
Lillian McIntosh
- N22 – *Monte Carlo Simulation Studies for Correcting Hadron-in-Jet Multiplicity Measurements at STAR*
Roy Salinas

Poster Session 1: Art & Humanities and Social Sciences

- P01 – *A Quantitative Study of the Awareness of Risk Factors and Symptoms of Myocardial Infarction Among Women in Taylor County*
Julissa Avila
- P09 – *The Effects of Academic Expectations on Undergraduate Student Anxiety*
Kathyanne Best
- P02 – *“God Creates Only Good:” Enforcing Heteronormativity at ACU from 1960-1980*
Jenna Bonner
- P03 – *Food Security and School Meal Programs: The Value of Universal Feeding*
Sara Chaney
- P04 – *The Effects of Tokenism on African Americans in Educational & Professional Environments*
Tres Cox
- P10 – *Public Perceptions of People with Disabilities*
Elissa Duren, Yasmeen Gonzales, Chioma Onyekere, and Tariq Roberts
- P31 – *The Enslavement Experience of Black People in Texas c.1829 to 1865*
Allayna Ford
- P05 – *The Relationship Between Dualism and Belief in Science*
Jared Grover, Emma Tidwell, Samuel Gomora, Katie Kilmer, Jenny Shaw, Zachary Valentine, Lindsey Blaylock, and Zane Oseletto
- P32 – *Human Nature Embodied in Ubuntu: An African Philosophy of Life*
Shekinah Kahongo
- P12 – *Entrenched Politics: Relationship Between the Length of Tenure in Office and the Freedoms Experienced by Peoples in the Middle East and Africa*
Noah Pruitt
- P07 – *The Purpose of Museums and Monuments in Public Memory*
Carlisle Ross
- P13 – *Conflict Between Hong Kong and China*
Mark Shi
- P06 – *Comparison of Traditional Clothing Expectations in Israel*
Sierra Shoaff
- P08 – *Enactus Brainstorming Committee*
Luke Stevens, Jared Feller, and Katie Carter

Poster Session 2: STEM – Biosciences and Biotechnology

- P14 – *Study of the Effects of Heat and Cold Stress on Red and Black Bos Taurus Internal Temperature Regulation*
Hannah Adrion, Natalie Lauver, Corbin Craft, Kaitlyn Smith
- P15 – *Induction of Production of Antibiotic Compounds from Bacterial Cave Isolates*
Evan Babb
- P16 – *Extraction of Secondary Metabolite Structures Within Antibiotic Producers of Sorcerer’s Cave Isolates*
Destiny Brokaw
- P17 – *Previously Unrecognized Phenotypic Variation Among Populations in Mentzelia Section Trachyphytum (Loasaceae) from the Southern Coast Ranges of California, USA.*
Kylie Davis, Meghan Moten, and Destiny Brokaw
- P18 – *Small Mammals of the Xishuangbanna Region of Yunnan Province, China*
Jonathan Jasper, Brooke Riley, and Caleb Horne
- P19 – *Pesticide Resistance and Resulting Gene Expression in Texas Strains of Spider Mites*
Ranj Lahony, Leo Garcia, Savannah Piersall, and Rebecca Soo

- P20 – *Areas of Endemism Based on Species Selected from Southern U.S.A. Flora*
Julie Nelson
- P21 – *Extraction of Antimicrobial Compounds from Cave Microorganisms*
Carolina Ramirez
- P22 – *Identification of Membrane Protein Chaperone as Therapeutics to Prevent Protein Aggregation of Alzheimer's Disease*
Shermali Ratnasinghe
- P23 – *Investigating Origins of Enigmatic Populations of Mentzelia Section Trachyphytum (Loasaceae) from Western California, USA.*
Sophia Wagle, Brianna Garrett, Mariana Castillo

Poster Session 3: STEM – Physical Sciences and Technology

- P25 – *Fluoride Molten Salt Test Loop (FMSTL) Pump Conceptual Design*
Reuben Howe
- P26 – *Analysis in Digital Signal Processing*
Brighton Mica
- P27 – *Energy Recovery Unit using Phase Change Materials*
Kelton Vidal, Rumelia Thomas, Thilanka Senevirathne, Joshua Lambright, and Saleh Almutairi
- P28 – *Numerical Study of Liquid Droplets Inside Supersaturated Vapor using Density Functional Theory for 2D Lattice Gas with Short Range Interactions*
Joseph Watson, Aaron Herring, and Mason Mireles
- P29 – *Calculating an Average Deformation Gradient*
Bethany Witemeyer

Photography: Images of Aging – Black and White

- | | |
|------------------------------|---------------------------------|
| <i>number one</i> | <i>Dad's Workbench Motor</i> |
| Adriana Colunga, winner | Callie Nevill, winner |
| <i>Sunday Morning</i> | <i>Exercising Through Life</i> |
| Carson Chapman | Tony Davis II |
| <i>Happiness</i> | <i>Dream</i> |
| Miranda Garrison-Vela | Katie Pantoja |
| <i>A Day on the Farm</i> | <i>Legacy</i> |
| Faith Parsons | Riley Simpson |
| <i>Casting a Long Shadow</i> | <i>Poppa with his Landscape</i> |
| Zach Snyder | Corbin VanSteenberg |
| <i>Do What You Love</i> | |
| Abby Young | |

Photography: Images of Aging – Color

- | | |
|--|-----------------------|
| <i>Contemplation</i> | <i>Preservation</i> |
| Adriana Colunga, winner | Pooja Ghalley, winner |
| <i>Grandma Colunga</i> | <i>Forever Love</i> |
| Lauren Alaniz | Blakely Eller |
| <i>Calm Waters</i> | <i>Peter</i> |
| Shaun Hickey | Somaia Jeter |
| <i>Riders in the Sky</i> | <i>No Bull Here</i> |
| Katie Pantoja | Faith Parsons |
| <i>Nana Receives Double Blessings from God</i> | <i>Born Crabby</i> |
| Taelyn Williams | Bailey Yale |

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...our many presentation judges from offices and disciplines across the university

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