# 2012 ACU Undergraduate Research Festival April 2, 2012



# **Festival Schedule Overview**

# 8:00 - 11:00 AM Oral presentations

LNAY Conference Room, Alumni Conference Room, AT&T Theater, McCaleb Room Zone C

# 11:00 - 11:25 AM Chapel with Dr. Randy Harris

LYNAY Conference Room

# 11:40 AM - 12:50 PM Luncheon and Plenary Presentation

A Winding Path, Lark E. Mason, Jr.

McCaleh Room Zone A and B

# 1:00 - 1:45 PM Poster Session 1

McCaleb Room Zone C

# 2:00 - 2:45 PM Poster Session 2

McCaleb Room Zone C

# 1:00 – 4:45 PM Oral Presentations

LYNAY Conference Room, AT&T Theater, McCaleb Room Zone A, McCaleb Room Zone B

# 5:30 PM Award Ceremony

McCaleb Room Zone A

# 8:00 AM

LYNAY Conference Room

Global Gene Expression Analysis in the Mdrla Knockout Rat, Allison Songstad

Faculty Mentor: Dr. Autumn Sutherlin, ACU Chemistry and Biochemistry

Alumni Conference Room

Does Generation Affect Attitudes and Perceptions about Welfare? Jonathan Holmes

Faculty Mentor: Dr. Thomas Winter, ACU School of Social Work

AT&T Theater

Number Derivative, Adam Simpson

Faculty Mentor: Dr. John Ehrke, ACU Mathematics

McCaleb Room Zone C

Overcoming Both Class and Age: The Implications for Intergenerational Relationships in the Works of Alan

Hollinghurst, Taylor Schmitt

Faculty Mentor: Dr. Joe Stephenson, ACU English

#### 8:15 AM

LYNAY Conference Room

Comparative Survey of Small Mammal Populations in Four Different Microhabitats from 2002 to 2011, Erin Boyd

Faculty Mentor: Dr. Thomas E. Lee, Jr., ACU Biology

Alumni Conference Room

Congregations in Community: An Analysis of the Effects of Congregation Location on Social Welfare

Involvement, Jared Perkins

Faculty Mentor: Dr. Suzie Macaluso, ACU Sociology and Family Studies

AT&T Theater

Dots and Boxes: A NP Children's Game, Jacob Schofield

Faculty Mentor: Dr. David Hendricks, ACU Mathematics

McCaleb Room Zone C

Sylvia Plath - The Quintessential Confessional Poet, Spencer Goudeau

Faculty Mentor: Dr. Jeremy Elliott, ACU English

# 8:30 AM

LYNAY Conference Room

Biogeography of Mentzelia thompsonii (Loasaceae) on the Colorado Plateau, Emily Crain

Faculty Mentor: Dr. Joshua Brokaw, ACU Biology

Alumni Conference Room

The Übermensch is a Thirteen-Year-Old Boy with a Joystick, Joshua Havens

Faculty Mentor: Dr. Fred Aquino, ACU Graduate School of Theology

AT&T Theater

Finding the Best Solution among Multiple Optimal Solutions, David Reynolds

Faculty Mentor: Dr. Jason Holland, ACU Mathematics

McCaleb Room Zone C

Tangled up in Convention, Elizabeth Bernhardt

Faculty Mentor: Dr. Joe Stephenson, ACU English

# 9:00 AM

LYNAY Conference Room

Extracting and Analyzing Semivolatile and Nonvolatile Hydrocarbons from Soil Samples, Blaine Gilbert

Faculty Mentor: Dr. Kim Pamplin, ACU Chemistry and Biochemistry

Alumni Conference Room

The Thing with Feathers, Brittany Taylor

Faculty Mentor: Dr. Dawne Swearingen, ACU Theater

AT&T Theater

NIFFTE Time Projection Chamber for Fission Cross Section Measurements, Ryan Castillo

Faculty Mentor, Dr. Rusty Towell, ACU Engineering and Physics

McCaleb Room Zone C

**The Justice System: How just is it?,** Lark Mason III Faculty Mentor: Dr. Steve Weathers, ACU English

# 9:15 AM

LYNAY Conference Room

Going Green in University Computer Labs, Patrick Luberus

Faculty Mentor: Dr. Alfa Nyandoro, ACU College of Business Administration

Alumni Conference Room

The Illusions of Sex on TV: The Secret Life of the American Teenager, Allye Foster

Faculty Mentor: Dr. Lauren Lemley, ACU Communication

AT&T Theater

SeaQuest: Investigating the Structure of the Nucleon, Tyler Hague

Faculty Mentor: Dr. Donald Isenhower, ACU Engineering and Physics

McCaleb Room Zone C

A Silent Statement: How Modern Dance Functioned as a Platform for Social Critique in the Twentieth Century,

Allison Oden

Faculty Mentor: Dr. Cole Bennett, ACU English

# 9:30 AM

LYNAY Conference Room

What Happened to Climate Change? Spenser Lynn

Faculty Mentor: Dr. Mike Sadler, ACU Engineering and Physics

Alumni Conference Room

Growls, Snarls, and Deception: Implications of Villain Names in Literature, Avery Weems

Faculty Mentor: Dr. Mikee Deloney, ACU English

AT&T Theater

Studying What's inside the Proton, Walker Nikolaus

Faculty Mentor: Dr. Rusty Towell, ACU Engineering and Physics

McCaleb Room Zone C

Shakespeare and Male over Female Domination, Katherine Handy

Faculty Mentor: Dr. Joe Stephenson, ACU English

# 10:00 AM

LYNAY Conference Room

**A Software Tool to Teach Visual Estimation**, Clement Ho Faculty Mentor: Dr. Brent Reeves, ACU Management Sciences

Alumni Conference Room

What Happened to Lament?, Austin Holt

Faculty Mentor: Dr. Glenn Pemberton, ACU Bible, Missions and Ministry

AT&T Theater

Raising Children: Differences Between Arab and American Cultures, Darby O'Rear

Faculty Mentor: Dr. Paul Roggendorff, ACU Foreign Language

10:15 AM

LYNAY Conference Room

A System for Critiquing Body Stance, Clement Ho

Faculty Mentor: Dr. Brent Reeves, ACU Management Sciences

Alumni Conference Room

"Gardening with Grace:" The Effectiveness of a Community Garden on Building Community, Wiepie

Rojas

Faculty Mentor: Dr. Jonathan Camp, ACU Communication

AT&T Theater

The White Man's Burden: U.S. Foreign Aid Policies, Lauren Tarnow

Faculty Mentor: Dr. Robert Brown, ACU Foreign Language

10:30 AM

LYNAY Conference Room

Entering a Virtual Reality Using the Microsoft Kinect, Brandon Bowen, Nate Hurley, Andrew Miller

Faculty Mentor: Dr. Michael Daugherity, ACU Engineering and Physics

Alumni Conference Room

Constitutive Rhetoric and the Taqwacore Culture, Margaret Moore

Faculty Mentor: Dr. Lauren Lemley, ACU Communication

AT&T Theater

Ireland and Abortion: The Crumbling Bulwark, Christopher Fields

Faculty Mentor: Dr. Ron Morgan, ACU Center for International Education

# 1:00 PM

LYNAY Conference Room

Liposomal Activation of Complement and Recruitment of Myeloid Derived Suppressor Cells to Tumor Tissue,

Camila Robles

Faculty Mentor: Dr. John Xu, ACU Biology

AT&T Theater

Art, History, and the Next Generation, Morgan Hallmark

Faculty Mentor: Dr. Mark Cullum, ACU History

#### 1:15 PM

LYNAY Conference Room

 $Search \ for \ a \ Genetic \ Barcode \ to \ Distinguish \ Tetraploid \ and \ Hexaploid \ Populations \ of \ \textit{Mentzelia jonesii}, \ Tanner$ 

Agee

Faculty Mentor: Dr. Joshua Brokaw, ACU Biology

AT&T Theater

Transcendence of Ideas, Ryker Fitch

Faculty Mentor: Dr. Joe Stephenson, ACU English

# 1:30 PM

LYNAY Conference Room

Basis for the Neurological Evolution of Morality, Zack Morgan

Faculty Mentor: Dr. Dan Brannan, ACU Biology

AT&T Theater

Terrorism: WWJD? Morgan Myer

Faculty Mentor: Dr. Neal Coates, ACU Political Science

# 2:00 PM

LYNAY Conference Room

Synthesis and Characterization of Chromium Metal Complexes with Acidic Functions, Nathan Worley

Faculty Mentor: Dr. Edward Donnay McMurry University Chemistry

AT&T Theater

Crafting Trust: Why we feel it and how advertisers use it, Taylor Edwards

Faculty Mentor: Dr. Joyce Haley, ACU Journalism and Mass Communication

#### 2:15 PM

LYNAY Conference Room

Controlling Transitions: A New Role for the Reg1 Phosphatase in Postrecruitment Activation of RNAPII,

Jonathon Jacobs, Andrew Moehlman

Faculty Mentor: Dr. Sarah Lee, ACU Chemistry and Biochemistry

AT&T Theater

Framing Net Neutrality: The Media Coverage of Media Ownership, Farron Salley

Faculty Mentor: Dr. Susan Lewis, ACU Journalism and Mass Communication

# 2:30 PM

LYNAY Conference Room

New Cluster Complexes with Mixed Bridging Groups, David Kempe, Nigel Gwini

Faculty Mentor: Dr. Greg Powell, ACU Chemistry and Biochemistry

AT&T Theater

The Internal Revenue Service's Relationship with Religious Freedom, Joseph Austin

Faculty Mentor: Dr. Andy Little, ACU Management Sciences

# 3:00 PM

AT&T Theater

A Rhetorical Analysis of Doctor Who, Krystal Fogle

Faculty Mentor: Dr. Lauren Lemley, ACU Communication

McCaleb Room Zone A

An Analysis of the Texas Physics Teaching Certification from 2007-2011, Kristin Holz

Faculty Mentor: Dr. Jess Dowdy, ACU Engineering and Physics

#### 3:15 PM

McCaleb Room Zone A

Characterization of CS1 Students When Allowing for Iterative Development, Nigel Bosch

Faculty Mentor: Dr. John Homer, ACU School of Information Technology and Computing

McCaleb Room Zone B

NeuroCuro: Can Art Make us Happier? Julie Brannan

Faculty Mentor: Dr. Geoff Broderick, ACU Art and Design

## 3:30 PM

AT&T Theater

Subjective Truth: The Madness of Allen Ginsburg, Daniel J. Gomez

Faculty Mentor: Dr. Joe Stephenson, ACU English

McCaleb Room Zone A

From Computers to the World, Katherine Perritano

Faculty Mentor: Dr. Robert Byrd, ACU School of Information Technology and Computing

McCaleb Room Zone B

The Unconscious Effects of Music, Caroline Nikolaus

Faculty Mentor: Dr. Susan Teel, ACU Music

# 4:00 PM

McCaleb Room Zone A

"The Writing Guide": Reexamining Tutoring Approaches for ELL Students in the Writing Center, Juliana Kocsis Faculty Mentor: Dr. Cole Bennett, ACU English

McCaleb Room Zone B

U.S. Farm Policy and USDA Expenditures: ACU Student Preferences Relative to the National Electorate, Kyle

Faculty Mentor: Dr. Foy Mills, Jr., ACU Agriculture and Environmental Sciences

# 4:15 PM

McCaleb Room Zone A
Generous Justice as Argument, Gregory C. Jeffers
Faculty Mentor: Dr. Debbie Williams, ACU English

McCaleb Room Zone B

**Defining Socioemotional Wealth's Influence on Business Success**, Jess Weeden, Jennifer Watson Faculty Mentor: Dr. Orneita Burton, ACU Management Sciences

# 4:30 PM

McCaleb Room Zone A

It's All Connected: The Ecofeminist Idea and Pursuit of Community, Kaleigh Wyrick Faculty Mentor: Dr. Mikee Deloney, ACU English

McCaleb Room Zone B

The Biology of a Psychopath, Savannah Wesley
Faculty Mentor: Dr. Dan Brannan, ACU Biology

#### 4:45 PM

McCaleb Room Zone A

**Deracination and Heritage: Alice Walker's Multifaceted Freedom**, Erin Daugherty Faculty Mentor: Jeremy Elliott, ACU English



# **Poster Session 1**

McCaleb Room Zone C

# 1:00 PM

**Acedia: The Mental Affliction That was Lost in Time**, Sabrina Wegner Faculty Mentor: Dr. John Eric Swenson, ACU Psychology

**Go Speed Racer: Big Five Correlates of Risk Taking**, Lily Assaad, Meagan Wilcox Faculty Mentor: Dr. Cherisse Y. Flanagan, ACU Psychology

**William Shakespeare and Love and Death,** Landrey Lemons Faculty Mentor: Dr. Joe Stephenson, ACU English

**Mentoring to Success: A Program for Spanish Teaching Majors**, Kaleigh Wyrick Faculty Mentor: Dr. Beatriz Walker, ACU Foreign Language

# Persuasion and Human Trafficking Awareness, Krystal Fogle

Faculty Mentor: Dr. Kristina Davis, ACU Communication

# Using Aging Stiumulaton to Increase Gerontological Awareness, Jonathan Holmes

Faculty Mentor: Dr. Charlie Pruett, ACU Pruett Gerontology Center

#### Food Disparity: A Glance at the Navajo Reservation, Wiepie Rojas

Faculty Mentor: Dr. Michael Nicodemus, ACU Agricultural and Environmental Sciences

#### A Short Take on the News, Jozie Sands

Faculty Mentor: Dr. Mike Wiggins, ACU Art & Design

# The Monster of Sexualized Children's Media, Katie Thornton, Morgan Myer, Elizabeth Ellery

Faculty Mentor: Dr. Jennifer Shewmaker, ACU Psychology

# Desensitization Exercises and Their Influence on Understanding Physical Limitations, Farren Franke, Kelsey

McHenry, Julie Reeger

Faculty Mentor: Dr. Charlie Pruett, ACU Sociology and Family Studies

#### Finding a Safer way to Make Biodiesel, Andrew Hester, Hannah Johnston

Faculty Mentor: Dr. Hardegree, ACU Chemistry and Biochemistry

#### The Demographics of Altruism, Zack Morgan

Faculty Mentor: Dr. Brannan, ACU Biology

# A Beginning Study of the Biology of Religiosity: Cerebral Structures Associated with Belief, Christianna Maurer

Faculty Mentor: Dr. Dan Brannan, ACU Biology

#### Bioremediation of a Tallgrass Prairie Revisited: Effects of Remaining Petroleum Hydrocarbons, Isabel Lee,

Samantha Saldivar, Emily Adams

Faculty Mentor: Dr. Josh Brokaw, ACU Biology

# Comparison of the Heat Resistance of Various Wild Type Bacillus thuringiensis Spores Grown on Soil Extract and Brain Heart Infusion Media, Matthew Durham

Faculty Mentor: Dr. Gary Wilson, McMurry University Biology

# Effect of Crystal Absence on Heat Resistance of Bacillus Spores in SEA and BHI, Jonathan Urbanczyk

Faculty Mentor: Dr. Gary Wilson, McMurry University Biology

#### Evolutionary Potential of Rare Plant Species: Mentzelia mollis and M. packardiae (Loasaceae), Blaine Gilbert,

Emily Sparks, Isabel Lee

Faculty Mentor: Dr. Joshua Brokaw, ACU Biology

# Exploration of Sequence Diversity in Mentzelia lindheimeri and M. oligosperma, Jason Iris

Faculty Mentor: Dr. Joshua Brokaw, ACU Biology

#### Genetic Comparisons of Mentzelia crocea and M. lindleyi, Samantha Saldivar

Faculty Mentor: Dr. Joshua Brokaw, ACU Biology

# **Poster Session 2**

McCaleb Room Zone C

2:00 PM

#### Molecular Systematics of Ophuroidea using 16S rDNA the Op, Shannon Rose, Brittany Armenta

Faculty Mentor: Dr. Rebecca Hunter, ACU Biology

# Morphological and Molecular Diagnostic Characters for Mentzelia monoensis (Loasaceae), Levi Gates

Faculty Mentor: Dr. Joshua Brokaw, ACU Biology

# P450 DNA Extraction for Gene Sequencing, Leann Black, Allison Songstad

Faculty Mentor: Dr. John Xu, ACU Biology

Predation on Mexican Free-tailed Bats (*Tadarida brasiliensis*) by Merlin (*Falco columbarius*), Stephanie G. Martinez Faculty Mentor: Dr. Thomas E. Lee, Jr., ACU Biology

Testing ndhF-rpl32R as a Genetic Barcode to Distinguish Mentzelia eremophila and M. nitens, Jordan Dekeratry Faculty Mentor: Dr. Josh Brokaw, ACU Biology

# Testing the Hypothesis of the Evolutionary Origins of Mentzelia micrantha, Quincy Carroll

Faculty Mentor: Dr. Joshua Brokaw, ACU Biology

# Wolbachia and the Biological Control of Horn Flies, Marian Cabasal, Chloe French

Faculty Mentor: Dr. Qiang Xu, ACU Biology

Biogeography of *Mentzelia thompsonii (Loasaceae)* on the Colorado Plateau, Elizabeth Lurz, Jonathan Stites Faculty Mentor: Dr. Josh Brokaw, ACU Biology

# Analysis of Global Chromatin Compaction During Adult Neural Stem Cell Differentiation, Evan Jones

Faculty Mentor: Dr. Autumn Sutherlin, ACU Chemistry and Biochemistry

#### Phenyl Acrylate Synthesis, Charles Holt, Jacob Lowry

Faculty Mentor: Dr. Brian Cavitt, ACU Chemistry and Biochemistry

# When Being a Variant is Advantageous: A Role for Chromatin Remodeling After TBP Recruitment, Hillary

Eichelberger, James Huddleston

Faculty Mentor: Dr. Sarah Lee, ACU Chemistry and Biochemistry

#### Microwave Chemistry: Reactions of Os<sub>3</sub>(CO)<sub>12</sub> with Halogens, Nigel Gwini, David Kempe

Faculty Mentor: Dr. Greg Powell, ACU Chemistry and Biochemistry

# New Osmium Cluster Complexes Derived From Reactions Involving Alcohols, Ben Lang, David Kempe, Nigel

Faculty Mentor: Dr. Greg Powell, ACU Chemistry and Biochemistry

# In-Memory Computing Improves Efficiency, Landon Gray

Faculty Mentor: Dr. Orneita Burton, ACU School of Information Technology and Computing

#### Wind Turbine Caused Bat Fatalities in Central Texas, Patty Doyle

Faculty Mentor: Dr. Thomas Lee, Jr., ACU Biology

#### Interactive e-Learning, Ashley Dillin

Faculty Mentor: Dr. Brian Burton, ACU School of Information Technology and Computing

## Elementary School Science, Alyssa Estes

Faculty Mentor: Dr. Jess Dowdy, ACU Engineering & Physics

# Structurized Interviews, Holly McKenna,

Faculty Mentor: Dr. Yelena Kosheleva, ACU Psychology