

TRUMAN STATE UNIVERSITY



# TRC

# S R C

STUDENT RESEARCH CONFERENCE

**35<sup>TH</sup>** ANNUAL  
UNDERGRADUATE

**20<sup>TH</sup>** ANNUAL  
GRADUATE

APRIL  
**21**  
2022

# FOREWORD

Welcome to the 2022 Truman State University Student Research Conference, our university-wide celebration of student research, scholarship, and creative achievement. This year is the 35th Annual Undergraduate and 20th Annual Graduate Student Research Conference.

We received over 200 student presentation submissions mentored by over 80 faculty members. Face-to-face oral, poster, performance art, studio art, and asynchronous virtual presentations are being facilitated. Information for viewing virtual and face-to-face presentations can be found at the conference website - <https://osr.truman.edu/src/>

In addition to providing an opportunity for Truman students to share their outstanding and diverse work, one of the highlights of the day will be the plenary speaker, Dr. Sonia Arteaga, Supervisory Health Scientist Administrator in the Environmental influences on Child Health Outcomes (ECHO) Program at the National Institute of Health. Dr. Arteaga is a Truman alumna who graduated with her BA in Psychology and Spanish and participated in the McNair Program. Dr. Arteaga will be joining us via Zoom for her plenary address, 'Environmental influences on Child Health Outcomes (ECHO) Program at the National Institutes of Health: A nationwide children's health research program'. You can join us in MG 2001 for a live showing or on Zoom - <https://truman-edu.zoom.us/j/98415632910>. I am excited to have Dr. Sonia Arteaga joining us to discuss her important work.

Jessica Colpoys, PhD  
Director of the Office of Student Research

# ACKNOWLEDGMENTS AND CREDITS

The 2022 Student Research Conference would not have been possible without the time, talent and efforts of many people and offices across Truman's campus.

Conference Organizers – Jessica Colpoys & Cherakee Raine

Poster/Cover Design – Teresa Wheeler

Program Booklet Design – Katie Best

University Gallery Director - Heidi Cook

Special thanks to – Moderators, Student Workers, OSR Steering Committee and many others

# PROGRAM AT-A-GLANCE

## 8:30 - 10:00 am - Concurrent Oral Sessions

Student Union Building & Magruder Hall

**101: Athletic Training** • SUB Alumni Room

**102: Interdisciplinary Studies**  
SUB Georgian Room A

**103: Sociology & Anthropology I**  
SUB Georgian Room B

**104: Philosophy & Religion**  
SUB Georgian Room C

**105: Biochemistry & Molecular Biology I**  
MG 2001

**106: Biology** • MG 1000

**107: Computer Science** • MG 1098

## 10:15 - 11:45 am - Concurrent Oral Sessions

Student Union Building & Magruder Hall

**201: Music & Art I** • SUB Alumni Room

**202: Environmental Studies**  
SUB Georgian Room A

**203: Sociology & Anthropology II**  
SUB Georgian Room B

**204: English & Linguistics**  
SUB Georgian Room C

**205: Biochemistry & Molecular Biology II**  
MG 2001

**206: Chemistry** • MG 1000

**207: Physics I** • MG 1098

## 12:00 - 1:00 pm - Plenary Address

**Dr. Sonia Arteaga**

MG 2001 (live showing) and

Zoom - <https://truman-edu.zoom.us/j/98415632910>

## **1:15 - 2:45 pm - Concurrent Oral Sessions**

Student Union Building & Magruder Hall

**301: Music II** • SUB Alumni Room

**302: Economics & Psychology**

SUB Georgian Room A

**303: Political Science**

SUB Georgian Room B

**304: Communication Disorders**

SUB Georgian Room C

**305: Biochemistry & Molecular Biology III**

MG 2001

**306: Health** • MG 1000

**307: Physics II** • MG 1098

**308: French** • SUB 3201

## **3:00 - 4:00 pm - Poster Session**

Student Union Building Activities Room

## **3:00 - 4:00 pm - Studio Art Reception**

Ophelia Parrish Art Gallery

**Annual Juried Student Exhibition** • OP Art Gallery

**Handcrafted Rebellion** • OP Side Art Gallery

## **Asynchronous Virtual Presentations**

<https://flipgrid.com/b28a52c2>

12:00 - 1:00 p.m. - **Plenary Session**

**Dr. Sonia Arteaga**

MG 2001 (live showing) and

Zoom - <https://truman-edu.zoom.us/j/98415632910>

## **Environmental influences on Child Health Outcomes (ECHO) Program at the National Institutes of Health: A nationwide children's health research program.**

Moderator: Dr. Heather Cianciola



What factors effect children's health and how can we enhance it? In this presentation you will learn about one of the largest investments that the National Institutes of Health (NIH) has put into child health, the productive and impactful science it has yielded, and the anticipated success for the next phase. The mission

of the Environmental influences on Child Health Outcomes (ECHO) at the NIH is to enhance the health of children for generations to come. The scientific goal of ECHO is to understand the effects of a broad range of early environmental influences on child health and development. ECHO uses information from existing longitudinal cohorts that include more than 50,000 children from diverse backgrounds across the United States. Together, these cohorts follow participants from before they are born through childhood and adolescence. ECHO also supports a 17-state clinical trials network to test prevention and treatment strategies among children from rural and medically underserved backgrounds. ECHO informs solutions to five common pediatric outcomes with major public health impact. These five outcome areas include pre, peri and postnatal, upper and lower airway, obesity, neurodevelopment and positive health or well-being. In addition to learning about ECHO, you will also learn more about the NIH and Dr. Arteaga's career trajectory.

# PROGRAM

## Concurrent Oral Sessions

**8:30-10:00 a.m.**

**SUB Alumni Room**

SESSION 101

**ORAL PRESENTATION -  
Athletic Training**

Presiding: Dr. Brandy Schneider

**8:30 a.m. • 101 - 1**

**ELIZABETH D. TWEHUS♦**

Dr. Brandy Schneider, Faculty Mentor

Incidence of Depression Among  
Division II Collegiate Football  
Players

**8:45 a.m. • 101 - 2**

**RENEE E. WILLIAMS♦**

Dr. Brandy Schneider, Faculty Mentor

Ankle Taping Effect on Balance and  
Postural Sway in Division II Female  
Soccer Athletes

**9:00 a.m. • 101 - 3**

**VALERIE D. ALVARADO\*♦ and**

**PAULLETTE GUERRIER♦**

Dr. Brandy Schneider, Faculty Mentor

Ankle Taping Effect on Basketball  
Sport Performance

**9:15 a.m. • 101 - 4**

**HANNAH LOWRANCE\*♦ and**

**DANIEL DELAPORTE♦**

Dr. Brandy Schneider, Faculty Mentor

The Effect of Achilles Tendon and  
Ankle Inversion Taping on Vertical  
Jump Height

**9:30 a.m. • 101 - 5**

**AVIGAYIL N. LEVY♦**

Dr. Brandy Schneider and Ms. Jana  
Arabas, Faculty Mentors

Cardiopulmonary Resuscitation Skill  
Retention and Confidence Level in  
High School and College Coaches

**8:30-10:00 a.m.**

**SUB Georgian Room A**

SESSION 102

**ORAL PRESENTATION -  
Interdisciplinary Studies**

Presiding: Dr. Heidi Cook

**8:30 a.m. • 102 - 1**

**JOSHNA KARKI**

Dr. Heidi Cook, Faculty Mentor

Post-Pandemic Assessment of  
International Student Wellness &  
Creation of Support Spaces: Nepali  
Students Case Study at a Rural-  
Midwestern Liberal Arts University

**8:45 a.m. • 102 - 2**

**HANNAH R. GREEN**

Dr. Heidi Cook and Dr. Ashley Ramsey,  
Faculty Mentors

Analyzing Adoption in Children's  
Literature

**9:00 a.m. • 102 - 3**

**JESSE WREN**

Dr. Heidi Cook and Dr. Wendy Miner,  
Faculty Mentors

Youth Incarceration: Understanding  
the Factors that Influence  
Successful Reentry

**9:15 a.m. • 102 - 4**

**ABIGAIL BIDWELL**

Dr. Heidi Cook, Faculty Mentor

How Cultural Diversity Affects  
Pedagogy in ESOL Education

**9:30 a.m. • 102 - 5**

**BENJAMIN HAEFNER**

Dr. Heidi Cook, Faculty Mentor

Effectiveness of FEMA Reform  
Following Hurricane Katrina

**9:45 a.m. • 102 - 6**

**STEWART M. SMYTHE**

Dr. Heidi Cook and Dr. Doug Ball,  
Faculty Mentors

Teaching Japanese Vowel Length  
to English Speakers: Speech  
Waveforms as a Visual Aid

**8:30-10:00 a.m.**

**SUB Georgian Room B**

SESSION 103

**ORAL PRESENTATION -**

**Sociology & Anthropology I**

Presiding: Dr. Anton Daughters

**8:30 a.m. • 103 - 1**

XINYU ZHOU

Dr. Amber Johnson, Faculty Mentor

Work Values and Their Impacts on  
People's Ways of Working

**8:45 a.m. • 103 - 2**

RENEE C. HAYS

Dr. Victoria Mayer, Dr. Anton  
Daughters, and Dr. Brian Ott, Faculty  
Mentors

Truman Students' Self Perceptions  
and How it Affects their  
Conceptualization of What is  
Success

**9:00 a.m. • 103 - 3**

JOSEPH D. VAN LIESHOUT

Dr. Anton Daughters and Dr. Brian  
Ott, Faculty Mentors

Esports: Motivation in  
Spectatorship and Participation

**9:15 a.m. • 103 - 4**

ARIANA R. GERARD

Dr. Anton Daughters and Dr. Brian  
Ott, Faculty Mentors

Fairy Story Analysis

**9:30 a.m. • 103 - 5**

RILEY E. SCHMIDT

Dr. Brian Ott and Dr. Amber Johnson,  
Faculty Mentors

Effects of Neolithic Agriculture  
on the Irish Environment and  
Population

**9:45 a.m. • 103 - 6**

ALLISON E. GRIFFARD

Dr. Brian Ott and Dr. Anton  
Daughters, Faculty Mentors

U.S. Transracial Adoption:  
Contribution to the White Racial  
Hierarchy

**8:30-10:00 a.m.**

**SUB Georgian Room C**

SESSION 104

**ORAL PRESENTATION -**

**Philosophy & Religion**

Presiding: Dr. Heather Cianciola

**8:30 a.m. • 104 - 1**

KIMBERLY RAMOS

Dr. Dereck Daschke, Faculty Mentor

Killing Like a Girl: Jennifer's Body as  
Redefining Female Empowerment

**8:45 a.m. • 104 - 2**

VIANNEY R. HERRERA

Dr. Natalie Alexander, Faculty Mentor

Latinx Identity: Through the Lens of  
María Lugones and Gloria Anzaldúa

**9:00 a.m. • 104 - 3**

SCOTT D. KRAUSE

Dr. Dereck Daschke, Faculty Mentor

Jainism: Constructive Discourse  
and Influence

**9:15 a.m. • 104 - 4**

DANIEL J. WILLIE

Dr. Chad Mohler, Faculty Mentor

The Justification of Belief Systems  
within Epistemological Communities

**9:30 a.m. • 104 - 5**

JOSH S. ROHLFING

Dr. William Ashcraft and Dr. Dereck  
Daschke, Faculty Mentors

Catholic Education and the  
Inclusion of LGBTQ+ Individuals

**9:45 a.m. • 104 - 6**

WILL HENRICKSON

Dr. Natalie Alexander, Faculty Mentor

Sexual Anarchy: Remapping the  
Social Lines of Sex Abstract

**8:30-10:00 a.m. • MG 2001**  
SESSION 105  
**ORAL PRESENTATION -**  
**Biochemistry & Molecular Biology I**

Presiding: Dr. Cassidy Dobson

**8:30 a.m. • 105 - 1**  
JONATHAN C. BRADFIELD  
Dr. Bill Miller, Faculty Mentor  
Computational Investigation of the  
Aducanumab Antibody in its Binding  
to Amyloid- $\beta$  Species Associated  
with Alzheimer's Disease

**8:45 a.m. • 105 - 2**  
KATHLEEN G. LOVE\* and FARIDA  
A. ELKADI  
Dr. Brittany Hagenhoff, Faculty  
Mentor  
Potential of Polyphenols in the  
Prevention of Alzheimer's Disease

**9:00 a.m. • 105 - 3**  
DOMINIC A. CAPUTA  
Dr. Bill Miller, Faculty Mentor  
Computational Drug Discovery  
of APOBEC3B Inhibitors as a  
Treatment for Epithelial Cancers

**9:15 a.m. • 105 - 4**  
LIZZIE CREMER  
Dr. Bill Miller, Faculty Mentor  
Computational Drug Design to  
Inhibit the Zika NS2B/NS3 Protease

**9:30 a.m. • 105 - 5**  
GUTHRIE L. STROH  
Dr. Cassidy Dobson, Faculty Mentor  
Investigation into the Efficacy of  
Urea-Spiked Lysozyme Assays  
to Demonstrate the Chaperone  
Activity of DBF Enzyme on Protein  
Aggregates

**9:45 a.m. • 105 - 6**  
CHRISTINE W. CHEN  
Dr. Bill Miller, Faculty Mentor  
Computational Investigation  
of Stilbenoids as Aggregation  
Inhibitors of Amyloid  $\beta$  as it Relates  
to Alzheimer's Disease

**8:30-10:00 a.m. • MG 1000**  
SESSION 106  
**ORAL PRESENTATION -**  
**Biology**

Presiding: Dr. Brett Berke

**8:30 a.m. • 106 - 1**  
LEAH M. CHANEY  
Dr. Cassidy Dobson, Faculty Mentor  
Mutagenesis of Disulfide Bond  
Forming Enzyme

**8:45 a.m. • 106 - 2**  
MANIE BREMA  
Dr. Stephanie L. Maiden, Faculty  
Mentor  
The Role of MRP-5 Exporting  
Heme to the Hypodermis In Adult  
*Caenorhabditis elegans*

**9:00 a.m. • 106 - 3**  
SYDNEY S. WIEBERG  
Dr. Stephanie L. Maiden, Faculty  
Mentor  
The Genetic Interaction of sma-  
1 in the Embryonic Epidermis of  
*Caenorhabditis elegans*

**9:15 a.m. • 106 - 4**  
TRE'ANDICE A. WILLIAMS  
Dr. Stephanie L. Maiden, Faculty  
Mentor  
The role of rpm-1 gene on  
*Caenorhabditis elegans* behavior  
when exposed to organophosphate  
pesticides

**9:30 a.m. • 106 - 5**  
MAGGIE J. WHITE\* and DAKOTA  
HALL  
Dr. Stephanie L. Maiden, Faculty  
Mentor  
Determining the Cause of the tbcd-  
1 (RNAi) Phenotype in Embryonic *C.*  
*elegans* Epidermal Tissue



**8:30-10:00 a.m. • MG 1098**

SESSION 107

**ORAL PRESENTATION -  
Computer Science**

Presiding: Dr. Kafi Rahman

**8:30 a.m. • 107 - 1**

KYLE T. SEIDEL

Dr. Kafi Rahman, Faculty Mentor

Prim's Maze Adventure

**8:45 a.m. • 107 - 2**

JUSTIN A. CARINGAL

Dr. Ruthie Halma, Faculty Mentor

Implementing Convolutional Neural  
Networks to Identify Pedestrians

**9:00 a.m. • 107 - 3**

MOHAMMADHOSSEIN MOMENI

Dr. Kafi Rahman, Faculty Mentor

Utilizing Computer Vision to Enforce  
COVID Precautionary Measures

**9:15 a.m. • 107 - 4**

SAMUEL J. MYERS

Dr. Ruthie Halma, Faculty Mentor

Using Convolutional Neural  
Networks to Identify Snake Species

**9:30 a.m. • 107 - 5**

KRISHNA S. CHEBOLU\*,

MOHAMMADHOSSEIN MOMENI,

and THAD C. MEADOWS

Dr. Don Bindner, Faculty Mentor

Introducing the Dynamic Gradient  
Indicator for Price Action Analysis

**10:15-11:45 a.m. • SUB Alumni Room**

SESSION 201

**ORAL PRESENTATION -  
Music & Art I**

Presiding: Dr. Jesse Krebs

**10:15 a.m. • 201 - 1**

CATHERINE G. DEAN

Dr. Jocelyn Prendergast, Faculty  
Mentor

The Use of Music in the General  
Elementary School Classroom

**10:30 a.m. • 201 - 2**

RIANNA RICE

Prof. Priya Kambli, Faculty Mentor

A Separation Between Myself and  
My things

**10:45 a.m. • 201 - 3**

HANNAH M. HUDDLESTON

Dr. Jesse D. Krebs, Faculty Mentor

A Brief Analysis of the Industrial  
Worker's of the World's Little Red  
Songbook Using Music Psychology  
and Neuroscience.

**11:00 a.m. • 201 - 4**

BIANCA P. OVERBECK

Dr. Eric Dickson, Faculty Mentor

The Relationship Among  
Music Performance Anxiety,  
Perfectionism, and Mindfulness-  
Based Meditation Practices in  
Collegiate Music Students.

**11:15 a.m. • 201 - 5**

JINYU LI

Prof. Priya Kambli, Faculty Mentor

Where I am?

**10:15-11:45 a.m.**

**SUB Georgian Room A**

SESSION 202

**ORAL PRESENTATION -  
Environmental Studies**

Presiding: Dr. Joey Hubbard

**10:15 a.m. • 202 - 1**

ANDREW S. MILES

Dr. Chad Montgomery and Dr. Heidi Cook, Faculty Mentors

A case study on feral cat populations and their impact on the city of Kirksville

**10:30 a.m. • 202 - 2**

ETHAN C. GOOCH\*, WILL W. NEISEN, and JACK G. HUNZIKER

Dr. Kelly Walter, Faculty Mentor

Sustainability in Farming:  
Comparison of land management practices implemented on Rented vs Owned Land

**10:45 a.m. • 202 - 3**

ASHLEY V. STAAB\*, LUKE C. STOCK, and KATHRYN ASHTON

Dr. Joanna Hubbard, Faculty Mentor

Effects of Vocal Mimicry of Cooper's Hawk (*Accipiter cooperii*) Calls by Blue Jays (*Cyanocitta cristata*) on Competing Songbirds

**11:00 a.m. • 202 - 4**

NIKKI NEWHOUSE

Dr. Brian Ott and Dr. Anton Daughters, Faculty Mentors

Environmental Injustice: An Analysis of Communities Surrounding EPA NPL Sites in Missouri

**11:15 a.m. • 202 - 5**

JOSHUA T. STEFFENS\*, ANNE S. WELLS, ZACHARY A. BOEYINK, and ADRIEN M. SEABLOOM

Dr. Kelly Walter and Dr. Bob Johnson, Faculty Mentors

Pirates vs. Lions: Using Predatory Insects to Control Herbivorous Pests

**11:30 a.m. • 202 - 6**

LUKE C. STOCK\*, ASHLEY V. STAAB, and KATHRYN ASHTON

Dr. Joanna Hubbard, Faculty Mentor

Variance in Songbird Species' Responses to Mimicked Predator Calls

**10:15-11:45 a.m.**

**SUB Georgian Room B**

SESSION 203

**ORAL PRESENTATION -  
Sociology & Anthropology II**

Presiding: Dr. Amber Johnson

**10:15 a.m. • 203 - 1**

TAYLOR A. KEATHLEY

Dr. Anton Daughters and Dr. Brian Ott, Faculty Mentors

COVID-19 and Negative Living Environments on the Minds of College Students

**10:30 a.m. • 203 - 2**

HALEY R. SCHNURBUSCH

Dr. Anton Daughters and Dr. Brian Ott, Faculty Mentors

Heroes, Villains, and Sidekicks: The Misrepresentation of Disability in Children's Films

**10:45 a.m. • 203 - 3**

JOSEPH A. JOLLY

Dr. Saint Rice (Director of the Center of Equity and Inclusion), Faculty Mentor

Discrimination in Greek Life

**11:00 a.m. • 203 - 4**

RYAN M. FUEMMELER

Dr. Anton Daughters and Dr. Brian Ott, Faculty Mentors

Talkin' Sh\*t: The Taboo Nature of Human Excrement

**11:15 a.m. • 203 - 5**

ERIC C. LEIMER

Dr. Brian Ott and Dr. Anton Daughters, Faculty Mentors

Drowning and Fear: A Study of the Effects of Membership in Aquatic aligned Organizations on the Fear Response

**10:15-11:45 a.m.**  
**SUB Georgian Room B**  
SESSION 204  
**ORAL PRESENTATION -**  
**English & Linguistics**

Presiding: Lydia Matheny

**10:15 a.m. • 204 - 1**

SOPHIA M. PICARD  
Dr. Christine Harker, Faculty Mentor  
Le Sot Chevalier: Old French Fabliau  
or Biblical Allegory?

**10:30 a.m. • 204 - 2**

ADAM F. BISHOP  
Dr. Gregory Richter, Faculty Mentor  
Qaran Berber: An Analysis of a  
Previously Undocumented Egyptian  
Variety of the Berber Languages

**10:45 a.m. • 204 - 3**

JOSEPH DOUGHERTY  
Dr. Bob Mielke, Faculty Mentor  
“Lycans of the Labyrinth” and  
Dissecting the Formula of H.P.  
Lovecraft

**11:00 a.m. • 204 - 4**

MADISON P. POST  
Dr. Andrew Kiyukovski, Faculty Mentor  
An Analysis of Bill Clinton’s Apology  
Speech Using Pentadic Criticism

**11:15 a.m. • 204 - 5**

MARLIERE G. TOOTHAKER  
Dr. Dereck Daschke, Faculty Mentor  
Cupid’s Gauntlet: How Apocalyptic  
Romance Novels Further Abusive  
Relationships

**11:30 a.m. • 204 - 6**

REGAN P. BRUNS\*, MUTIARA J.  
SCHLANKER, ZHIHAO JIN, YAOXI  
CHEN, and RU XIANG  
Dr. Zhijun Wen and Dr. Gregory  
Richter, Faculty Mentors  
How Confucianism Affects Chinese  
Women: Examined Through Chinese  
Film

**10:15-11:45 a.m. • MG 2001**  
SESSION 205  
**ORAL PRESENTATION -**  
**Biochemistry & Molecular Biology II**

Presiding: Dr. Bill Miller III

**10:15 a.m. • 205 - 1**

CADE K. ROHLER  
Dr. Cassidy Dobson, Faculty Mentor  
Chaperoned Aggregation of  
Gamma D Crystallin Proteins

**10:30 a.m. • 205 - 2**

DIANA E. HECKERT  
Dr. Bill Miller, Faculty Mentor  
Determining Selectivity of  
PahZ1KT-1 in Polyaspartic Acid  
Hydrolysis

**10:45 a.m. • 205 - 3**

JACKSON DYROFF  
Dr. Bill Miller, Faculty Mentor  
Molecular Dynamics Investigation  
of Amyloid  $\beta$  Polyphenol Inhibitors in  
Alzheimer’s Disease

**11:00 a.m. • 205 - 4**

ALISON REGINA  
Dr. Cassidy Dobson, Faculty Mentor  
Determination of the Ratio of  
Oxidized Cysteine to G-S

**11:15 a.m. • 205 - 5**

GEORGIA R. HOLLINGSWORTH  
Dr. Bill Miller, Faculty Mentor  
Early Design of Aromatase  
Inhibitors as a Treatment for  
Endometriosis using Computational  
Methods

**11:30 a.m. • 205 - 6**

HANNAH C. ZIMMERMAN  
Dr. Bill Miller, Faculty Mentor  
Investigation of Stilbenoids on the  
Disaggregation of the Amyloid  $\beta$   
Protein for Alzheimer’s Disease

**10:15-11:45 a.m. • MG 1000**

SESSION 206

**ORAL PRESENTATION -  
Chemistry**

Presiding: Dr. Barbara Kramer

**10:15 a.m. • 206 - 1**

ANDREW M. EGAN

Dr. Tim Humphry, Faculty Mentor

Cubane: Synthetic Boxing

**10:30 a.m. • 206 - 2**

TAYLOR R. BRADSHAW\* and

GRACE E. GIBSON

Dr. Tim Humphry, Faculty Mentor

Synthesis of the Sulfate Ester,  
Tertiary Isoprene Sulfate

**10:45 a.m. • 206 - 3**

WENDY A. MORFELD

Dr. Barbara K. Kramer, Faculty Mentor

The Reality of Research: Diagnosing  
and Troubleshooting Malfunctioning  
Instrumentation

**11:00 a.m. • 206 - 4**

BRUCE J. DOLENZ

Dr. Tim Humphry, Faculty Mentor

Synthesis and determination  
of Lactic Acid Sulfate via x-ray  
crystallography

**11:15 a.m. • 206 - 5**

MEGAN G. PERKINS

Dr. Tim Humphry, Faculty Mentor

Synthesis of Cubane

**11:30 a.m. • 206 - 6**

KRISTINE M. MAXWELL

Dr. Barbara K. Kramer, Faculty Mentor

Determination of additives and  
contaminants in drinking water  
in low-income and high-income  
communities in Missouri

**10:15-11:45 a.m. • MG 1098**

SESSION 207

**ORAL PRESENTATION -  
Physics I**

Presiding: Dr. Tim Wiser

**10:15 a.m. • 207 - 1**

LAUREN HOFFMAN

Dr. Rasanjali Jayathissa, Faculty  
Mentor

Strangers on the Moon: Detecting  
Anomalous Objects in the Second  
HETDEX Data Release with  
the Isolation Forest (A Machine  
Learning Approach)

**10:30 a.m. • 207 - 2**

JASON J. NIFFEN

Dr. Taner Edis, Faculty Mentor

Measuring Matter Distribution in a  
Toy Model Universe

**10:45 a.m. • 207 - 3**

HAYDON WINDSOR

Dr. Rasanjali Jayathissa, Dr. Deshan  
Yang (Washington University in St.  
Louis), and Dr. Yao Hao (Washington  
University in St. Louis), Faculty  
Mentors

Quantifying Intrafractional Pelvic  
Organ Motion due to Bladder Filling  
Rate During Adaptive Radiotherapy  
Treatments

**11:00 a.m. • 207 - 4**

DAPHNE J. ZAKARIAN\*,

EMMANUELLA E. GOE, and

BIWANSH KHATRI

Dr. Rasanjali Jayathissa, Faculty  
Mentor

Towards Green Energy: Dye-  
Sensitized Solar Cells using Natural  
Dyes

**11:15 a.m. • 207 - 5**

BRENDEN L. MCKEONE

Dr. Rasanjali Jayathissa, Faculty  
Mentor

Minimization of Sonic Booms in Air  
Travel

**1:15-2:45 p.m. • SUB Alumni Room**  
SESSION 301  
**ORAL PRESENTATION -**  
**Music II**

Presiding: Dr. Jesse Krebs

**1:15 p.m. • 301 - 1**

BOB L. CAGLE

Dr. Marc Rice and Dr. Taylor  
Hutchinson, Faculty Mentors

A Brief Analysis and Performance  
of the Music of Tom Cipullo

**1:30 p.m. • 301 - 2**

JESSICA M. ALVARADO BRENES ♦

Dr. Jesse D. Krebs, Faculty Mentor

Concerto for Clarinet and Strings  
by Carlos Escalante Macaya: A  
Construction and Representation of  
Latin American Multiculturalism.

**1:45 p.m. • 301 - 3**

TAYLOR A. HOWARD

Dr. Jesse D. Krebs, Faculty Mentor

Changing the Foundations  
of Musical Diversity for Black  
Musicians' Expansion

**2:00 p.m. • 301 - 4**

CHRISTIAN BAUGHER

Dr. Marc Rice, Faculty Mentor

Sounds of the Sahel: The Modern  
Development of Music From the  
Tuareg People

**2:15 p.m. • 301 - 5**

MADISON N. NGUYEN

Dr. Scott Alberts and Dr. Jan Miyake  
(Oberlin College and Conservatory),  
Faculty Mentors

A Data Analysis of the Music of  
Joseph Haydn

**1:15-2:45 p.m.**

**SUB Georgian Room A**

SESSION 302

**ORAL PRESENTATION -**  
**Economics & Psychology**

Presiding: Dr. Heather Cianciola

**1:15 p.m. • 302 - 1**

JESSICA ROOD

Dr. David Gillette, Faculty Mentor

Determinants of Income  
Distributions in the United States  
2010-2019

**1:30 p.m. • 302 - 2**

EMMA D. RICHARDSON

Dr. David Gillette, Faculty Mentor

Analysing Roles of Micro-loans on  
Entrepreneurship and Economic  
Development

**1:45 p.m. • 302 - 3**

RYAN A. FREESE

Dr. Yuna Ferguson, Faculty Mentor

Effects of Self-Analyzing a Personal  
Academic Goal in an Online  
Intervention on Self-Efficacy

**2:00 p.m. • 302 - 4**

ANNA R. BROWN\*, JIAWEN XU,  
and JADE A MARCEAU

Dr. Zhijun Wen and Dr. Gregory  
Richter, Faculty Mentors

The Chinese Cultural Revolution: A  
Retrospective View

**2:15 p.m. • 302 - 5**

ALEXANDER J. OTTO\*,  
CONSTANCE NOWAK, ZIXIAN  
JIANG, OLAF WEI, and JIANXIONG  
CHU

Dr. Gregory Richter and Dr. Zhijun  
Wen, Faculty Mentors

Women's Status in Traditional China  
as Illustrated in Chinese Cinema

**1:15-2:45 p.m.**

**SUB Georgian Room B**

SESSION 303

**ORAL PRESENTATION -  
Political Science**

Presiding: Dr. Randy Hagerty

**1:15 p.m. • 303 - 1**

HANNAH E. ROHM

Dr. Meg Edwards, Faculty Mentor

Factors Predicting Female  
Representation in National  
Legislatures

**1:30 p.m. • 303 - 2**

GRIFFIN P. ROSTER

Dr. Michael Rudy, Faculty Mentor

Explaining Gun Violence in  
Developed Countries

**1:45 p.m. • 303 - 3**

VICTORIA Y. TAYLOR

Dr. David Gillette, Faculty Mentor

Strengthening the Public Sector  
Through Work Engagement

**2:00 p.m. • 303 - 4**

WARREN D. BARGE

Dr. David Gillette and Dr. Michael  
Rudy, Faculty Mentors

Evaluating the Effect of Household  
Level Income Inequality on State  
Level Voter Turnout in the 2012 and  
2016 Presidential Elections

**2:15 p.m. • 303 - 5**

CHRISTIAN MARZO

Dr. Michael V. Barnes, Faculty Mentor

Financial Accounting: An  
Examination of the Casual Investor

**1:15-2:45 p.m.**

**SUB Georgian Room C**

SESSION 304

**ORAL PRESENTATION -  
Communication Disorders**

Presiding: Dr. Ilene Elmlinger

**1:15 p.m. • 304 - 1**

TIA R. KEATTING\*, KAYLA L.

BUCHHEIT, and BAILEY A. HUGHES

Dr. Ilene Elmlinger, Faculty Mentor

College Student Perception of  
Earphone Usage Compared to  
Actual Practices

**1:30 p.m. • 304 - 2**

VICTORIA A. STREGE\*, KELLY J.

STILES, and LEAH M. CAPUTO

Dr. Ilene Elmlinger, Faculty Mentor

College Student Perceptions of  
Augmentative and Alternative  
Communication

**1:45 p.m. • 304 - 3**

QUIN M. QUINTANA

Dr. Ilene Elmlinger, Faculty Mentor

The Journey to True Voice: How  
Family and Community Support  
Impacts Transgender Individuals'  
Willingness to Pursue Voice and  
Communication Therapy

**2:00 p.m. • 304 - 4**

NICOLE A. TAYLOR\* and TUCKER M.  
MURRY

Dr. Ilene Elmlinger, Faculty Mentor

Impact of COVID-19 on Initial  
Clinical Preparedness

**2:15 p.m. • 304 - 5**

ZOE S. KROWAS\*, MADDIE G.

DUNCAN, and FAITH E. BRANSON

Dr. Ilene Elmlinger, Faculty Mentor

Comfort and Knowledge of  
Augmentative and Alternative  
Communication Devices in College  
Students

**1:15-2:45 p.m. • MG 2001**

SESSION 305

**ORAL PRESENTATION -  
Biochemistry & Molecular Biology III**

Presiding: Dr. Cassidy Dobson

**1:15 p.m. • 305 - 1**

ALEXANDRA P. PLATT

Dr. Bill Miller, Faculty Mentor

Computational Investigation  
of Polyphenols as Inhibitors to  
the Aggregation of Amyloid  $\beta$  in  
Alzheimer's Disease

**1:30 p.m. • 305 - 2**

MARGO C. MOTES\* and RACHEL A.  
STANFIELD

Dr. Tim Humphry, Faculty Mentor

Synthesis of 5-methyl-5-sulfato-4-  
hydroxy-furanone

**1:45 p.m. • 305 - 3**

ADAM D. VASKE\* and ELLA  
MOZIER

Dr. Brittany Hagenhoff, Faculty Mentor

Using Analytical Methods to  
Determine Polyphenol Effect on A $\beta$   
Aggregation

**2:00 p.m. • 305 - 4**

KARISSA P. WILLIAMS

Dr. Cassidy Dobson, Faculty Mentor

Using Disulfide Bond Forming  
Enzyme to Prevent Gamma-D  
Crystallin Aggregation

**2:15 p.m. • 305 - 5**

RICHARD W. PARKS

Dr. Bill Miller, Faculty Mentor

Computational Chemistry  
Exploration of Inhibitors for  
APOBEC3B as a Potential Cancer  
Treatment

**2:30 p.m. • 305 - 6**

SARAH E. HOLMES

Dr. Bill Miller, Faculty Mentor

Computational Drug Design  
of Aromatase Inhibitors as a  
Treatment for Endometriosis

**1:15-2:45 p.m. • MG 1000**

SESSION 306

**ORAL PRESENTATION -  
Health**

Presiding: Dr. Rolena Stephenson

**1:15 p.m. • 306 - 1 B**

RADEN T. LEUTHAUSER♦

Dr. Julene Ensign, Faculty Mentor

Project-Based Learning's Effect  
on Secondary Health Students'  
Knowledge of Emotions and Stress  
Compared to Lecture Based  
Education

**1:30 p.m. • 306 - 2**

LAUREN C. SHAW

Dr. Rolena Stephenson, Faculty  
Mentor

Community Readiness Model for  
Prevention: Addressing Obesity  
and Physical Inactivity in a Local  
Community

**1:45 p.m. • 306 - 3**

MADISON E. FITZGERALD-  
INGERMAN

Dr. Scott Alberts, Faculty Mentor

COVID-19 Vaccination Rates Survey  
Project

**2:00 p.m. • 306 - 4**

BASHAR ZAHEER\*, MELODY  
ZAKARIAN, MCKAYLA BOGDA,  
MADISON SPRUNG, and ADDIE  
GODSY

Dr. Frederic Shaffer, Faculty Mentor

Rhythmic Skeletal Muscle Tension to  
Increase HRV: Are Wrist-and-Ankle  
Contraction Necessary?

**1:15-2:45 p.m. • MG 1098**

SESSION 307

**ORAL PRESENTATION -  
Physics II**

Presiding: Dr. Taner Edis

**1:15 p.m. • 307 - 1**

ELEANOR M. DAUES

Dr. Timothy Wiser, Faculty Mentor

Exploring Physics Education  
through Augmented Reality Spinors

**1:30 p.m. • 307 - 2**

KEATON D. PORCH

Dr. Rasanjali Jayathissa, Faculty  
Mentor

Efficiency Enhancement of Organic  
Photovoltaics through Non-  
Fullerene Acceptors

**1:45 p.m. • 307 - 3**

JOSIAH C. SHAW

Dr. Rasanjali Jayathissa and Dr.  
Riccardo Longo (University of Illinois  
Urbana-Champaign), Faculty Mentors

Determination Of Optimal Fused-  
Silica Fibers for the ATLAS Reaction  
Plane Detector

**2:00 p.m. • 307 - 4**

ANDREW R. MCCANDLISS

Dr. Taner Edis, Faculty Mentor

A simulation of a one-dimensional  
discrete toy universe

**1:15-2:45 p.m. • SUB 3201**

SESSION 308

**ORAL PRESENTATION -  
French**

Presiding: Dr. Erin Joyce

**1:15 p.m. • 308 - 1**

MEGAN L. MCHENRY

Dr. Ronald Manning , Faculty Mentor

Science Occulte et Magie Pratique,  
a Translation

**1:30 p.m. • 308 - 2**

EMILY M. KEMP

Dr. Ronald Manning , Faculty Mentor

Fashion of the French Revolution

**1:45 p.m. • 308 - 3**

TORI SMITH

Dr. Erin Joyce, Faculty Mentor

A Look Into Second Language  
Acquisition Teaching: Reading and  
Listening

**2:00 p.m. • 308 - 4**

WOLF M. WHEELER

Dr. Erin Joyce, Faculty Mentor

Un Peuple Fier



## Poster Session

3:00-4:00 p.m.

**SUB Activities Room**

**Health Sciences & Education**

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### P-1 - 1

KILEY FREESMEIER \* and  
ALYSSA FERRY

Dr. Ilene Elmlinger, Faculty Mentor

Does the use of masks impact a  
Communication Disorder students'  
ability to identify articulation  
errors?

### P-1 - 2

KAILEE J. EDELEN

Dr. Carol Cox, Faculty Mentor

Secondary Substance Use  
Prevention Needs Assessment For  
a Suburban Missouri County

### P-1 - 3

ABBIGAIL E. SAUER\* and LINH N.  
NGUYEN

Dr. Nancy Daley-Moore and Dr.  
Julene Ensign, Faculty Mentors

Wellness Trends among College  
Freshman

### P-1 - 4

KIRSTYN E. DIETLE\* and  
EDELHEIDE N. ISEMANN

Dr. Roberta Donahue, Faculty Mentor

Promotion of Online Suicide  
Prevention Training to Enhance  
Campus Mental Health

### P-1 - 5

JESSICA N. BREYFOGLE\* and AMY  
KANG

Dr. Roberta Donahue, Faculty Mentor

Promotion of Sense of Belonging to  
Reduce Unhealthy Behaviors

### P-1 - 6

MOLLY N. JONES

Dr. Jerry Mayhew, Faculty Mentor

Validation of Skeletal Dimensions to  
Predict Ideal Body Weight in College  
Women

### P-1 - 7

KATELYN M. JUSKIV\*, LUCY P.  
O'CONNOR, and KATIE G. PAUL

Dr. Jerry Mayhew, Faculty Mentor

Relationship of 10-yd Sprint  
Acceleration to 40-yd Sprint Time  
in NFL Combine Participants

### P-1 - 8

MORGAN R. SMITH\* and JOSHUA  
A. SCHEIDERER

Ms. Michelle Boyd, Faculty Mentor

Early Detection of COVID-19 in  
College Athletics: What Works?

## Science & Mathematics

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### P-2 - 1

ABIGAIL L. HANKINS\*, KACIE E.  
BARKER, BRETT GRIESBAUM, and  
ZACHARY A. BOEYINK

Dr. Bob Johnson, Faculty Mentor

Regenerative Orchard  
Implementation at Thousand Hills  
Farm

### P-2 - 2

KATELYN E. HOPKINS

Dr. Drew Sieg, Faculty Mentor

Tracking Herbivory and Fungal  
Infection in *Plantago* spp. Using  
iNaturalist

**P-2 - 3**

ALEJANDRA ANCHONDO SAKODA  
Dr. Elisabeth A. Hooper, Faculty  
Mentor

Characterization of the Bacterial  
and Archaeal Community in the  
Rhizosphere of Peatland Vascular  
Plants as Temperature and Oxygen  
Changes

**P-2 - 4**

KEIRA SPROGOE\* and MICAH J.  
HENMAN  
Dr. Laura Fielden, Faculty Mentor

Transitioning from Bricks and  
Mortar to Virtual - Insect  
Collections at Truman

**P-2 - 5**

KATHRYN ASHTON\*, ASHLEY V.  
STAAB, and LUKE C. STOCK  
Dr. Joanna Hubbard, Faculty Mentor

Habituation of Songbirds to Vocal  
Mimicry of Cooper's Hawk calls by  
Blue Jays

**P-2 - 6**

MEGHAN C. NOVOTNY\* and  
AUDREY HEATHCOTE  
Dr. Yohei Norimatsu (A.T. Still  
University ) and Dr. Stephen Hudman,  
Faculty Mentors

Expression of KCNJ5 with KCNJ3  
and OPRM1 in Xenopus Oocytes

**P-2 - 7**

ZACHARY W. WILLIARD  
Dr. Joanna Hubbard, Faculty Mentor

Background Coloration Impacts  
Spectrometer Measurements of  
Bird Plumage

**P-2 - 8**

THI A. TRAN  
Dr. Brett A. Berke, Faculty Mentor

Investigating a role for the  
Numb adapter protein in  
neurotransmission at the  
Drosophila neuromuscular junction

**P-2 - 9**

JEREMIAH A. DOMON  
Dr. Brett A. Berke, Faculty Mentor

A role for the Fem-1 gene of  
Drosophila melanogaster in  
synapse formation

**P-2 - 10**

EVAN J. CLARK\*, CAROL COOB,  
KARA SARGENT, and ELIZABETH K.  
COLLIER

Dr. Brett A. Berke, Faculty Mentor  
Drosophila Cyp1 Regulates Larval  
Behavior and Toxin Sensitivity

**P-2 - 11**

ISAAC J. VILCHIS  
Dr. Joyce Patrick, Faculty Mentor

Motility of Soil Bacteria Bacillus  
subtilis In Vitro

**P-2 - 12**

MORGAN D. PAYNE\*, HUNTER J.  
MADISON, SARAH G. SIMONS,  
EZRA G. ORTBALS, and MAR  
AGELET

Dr. Brett A. Berke, Faculty Mentor  
Understanding motoneuron cell  
death in ALS using the fruit fly  
Drosophila melanogaster

**P-2 - 13**

CHARAN DYAVANAPALLI  
Dr. Daniela Ostrowski and Dr. Tim  
Ostrowski (A.T Still University), Faculty  
Mentors

Comparison of vGLUT2 expression  
in Control and Alzheimer's Disease-  
induced rats

**P-2 - 14**

ALICIA A. KOOGLER  
Dr. Daniela Ostrowski and Dr. Tim  
Ostrowski (A.T Still University), Faculty  
Mentors

Alteration of the glutamate  
signaling in the nucleus tractus  
solitarius of Alzheimer's disease-  
induced rats

**P-2 - 15**

BROOKE L. DIEHL

Dr. Daniela Ostrowski and Dr. Tim Ostrowski (A.T Still University), Faculty Mentors

Alterations of the Glutamate Signaling in the Hippocampus of Alzheimer's Disease-Induced Rats

**P-2 - 16**

CASSADI FORMAN

Dr. Daniela Ostrowski and Dr. Tim Ostrowski (A.T Still University), Faculty Mentors

Quantification of Beta-1-Adrenergic Receptors in Hearts of Alzheimer's Induced Rats Using Western Blot Technique

**P-2 - 17**

KEIRA SPROGOE

Dr. Daniela Ostrowski, Faculty Mentor

Reduction of Methanol-Containing Hazardous Waste Produced By the Western Blot Method

**P-2 - 18**

ELIZABETH J. THOMPSON

Dr. Stephen Hudman and Dr. Yohei Norimatsu (A.T. Still University), Faculty Mentors

Investigating the True Open Structure of the CFTR Protein Using Site-Directed PCR Mutagenesis

**P-2 - 19**

PEYTON G. WILLIAMS\* and AINSLEY P. LAMORE

Dr. Bill Miller, Faculty Mentor

Novel Inhibitors of HIV Viral Infectivity Factor using Computational Design and Analysis

**P-2 - 20**

ANNA E. BURNS\* and CHRISTINA M. JUROTICH

Dr. Yohei Norimatsu (ATSU Department of Physiology) and Dr. Stephen Hudman, Faculty Mentors

Analyzing the effects of the potassium channel KCNJ6 on the mu Opioid Receptor

**P-2 - 21**

JAKE A. COLLINS

Dr. Bill Miller, Faculty Mentor

Characterization of Sphingomonas sp. KT-1 PahZ1 Interface Mutant Domain via Crystallization and QM/MM

**P-2 - 22**

THOMAS J. SCHODL

Dr. Cassidy Dobson, Faculty Mentor

Analysis of gamma-D Crystallin Aggregation in the Presence of Disulfide Bond-Forming Enzyme

**P-2 - 23**

AMI R. PATEL\* and HANNAH F. SANDERS

Dr. Yohei Norimatsu (A.T. Still University) and Dr. Stephen Hudman, Faculty Mentors

Effect of Zinc on Beta2-adrenergic Receptor Signal Transduction in Xenopus Oocytes

**Social & Cultural Studies**

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**P-3 - 1**

CLAIRE M. PARSON\*, MORGAN W. IRELAND, and RACHEL C. WHALEY

Dr. Jeffrey Vittengl, Faculty Mentor

What Types of Conversations Do People Find Satisfying?

**P-3 - 2**

JORDAN M. CLEMENT\*, CONNOR J. FIRTH, KATHERINE SPEAK,

EMILIA K. DURHAM, NORAH KOVAC, and GEMMA BROM

Dr. Karen Vittengl, Faculty Mentor

Overthinking: A Student Perspective

**P-3 - 3**

ANNA C. BLECHA

Dr. Katherine Judd, Faculty Mentor

The Effect of Actual and Perceived Political Orientations on Academic Evaluations

## Studio Art

### 3:00-4:00 p.m. • OP Art Gallery Annual Juried Student Exhibition

ABIGAYLE KELLER  
"Tarnished"

ANNA GRAHLHERR  
A Period Piece and Penis Sheath

ANNA GRAHLHERR  
Petrified

ASHLEY BURGESS  
Moonlit Wonder

BECCA KUBIN  
Ceramic Pitcher

CAROLINA FLEMING  
Nine Lives

CATHERINE WRIGHT  
Come Closer

CATHERINE WRIGHT  
Come Closer (II)

CATHERINE WRIGHT  
Come Closer (III)

CHARLOTTE DAUES  
Matthew 13:42

ELLIE DUNNAVANT  
Adventure Slugs

EMILY HLAS  
Exploring Form

EMILY HLAS  
Cat Portrait

GABRIELLE KUSTER  
Marking

HALEY PEER  
Dripeesha

IBRAHIM SAKIBU  
Struggles of the African Female  
Graduate

IBRAHIM SAKIBU  
Protecting the African Child from  
Adopting Western Culture

JESSICA VEENSTRA  
Flowers from Knees

JINYU LI  
Where I am?

KALI S. TEAGUE  
Compromise

KAMERON CLARK  
Butcher, Volume II: Decay Triptych

KAMERON CLARK  
Rent Strike

KATIE WELTER  
Untitled

LEE GARDUNIA  
Queen Baby Cat

LESLIE MCGUIRE  
Waffle House

MARGARET HOWARD  
Mind Full

MARGARET HOWARD  
P(i)e(a)ce

MARIAM ELKADI  
Peaches the Snake

MARIAM ELKADI  
Be the Cowboy?

NICOLE LANDWEHR  
Peace

OLIVIA PURSLEY  
Her

PHOEBE PRIMEAU  
Entangled Lies

RACHEL MCCARY  
Untitled Jellyfish

RIANNA RICE  
Echoed Eras

RIANNA RICE  
Remorseful Repeat

RILEY E. SCHMIDT  
A Natural Woman

RIN OHTAKE  
Dreaming

ROBIN KINCAID  
Figure Studies in Ink

SARAH TOLLIVER  
Rain Across the Creek at Michigan  
Trail

SARAH TOLLIVER  
Evening Chores

SARAH TOLLIVER

Untitled

SHANIA MONTUFAR

Harry's Home

ZUZU SMUGALA

Emma

ZUZU SMUGALA

Grace

ZUZU SMUGALA

Harsh

WESLEY SCAFE

M541 Autonomous Minigun

WESLEY SCAFE

Hyperfocus – Out of Focus

SAMANTHA A. WEBSTER

Classification: Unclassified

VERONICA KELLY

Big Bend

TY M. BUSHNELL

Big Fish

STEPHEN POINDEXTER OROZCO

Jesus Fetus

STEPHEN POINDEXTER OROZCO

Pop Culture Projection (Diptych)

**3:00-4:00 p.m.**

**OP Side Art Gallery**

**Handcrafted Rebellion**

HANNAH CHAMP

LEVI CULLIFER

JACK DANTER

ALEXA DAY

AMANDA DENNO

RYAN FUEMMELER

ARIANA GERARD

HANNAH GRIFFITH

VIANNEY HERRERA

GRACE MARSHALL

CAMERON MASSIEON

LAUREN MCCOLLUM

MCKELVIE MCMURRY

ANNA MERCER

ELIZABETH NAHACH

NIKKI NEWHOUSE

NORA RECHTIEN

POLLY REKITTKE

MEGAN RICHARDSON

RILEY SCHMIDT

HANNAH SENAY

TESSA SOTTILE

KENDALL TARANTINO

LUCY TAYLOR

NORA VEGIARD

JOE WILLIAMS

HALLE WORKMAN

Dr. Heidi Cook, Faculty Mentor

Handcrafted Rebellion: The Arts  
and Crafts Movement

## Asynchronous Virtual Presentations

<https://flipgrid.com/b28a52c2>

### Arts & Letters

#### **V-1 - 1**

PATRICK M. NORTHEM

Dr. Eric Dickson, Faculty Mentor

Sound the Trumpet! An Analysis of Common Trumpet Sounds in Modern Practice

#### **V-1 - 2**

ASHLEY E. WHITE

Dr. Ernst Hintz, Dr. Jack Davis, and Dr. Gregory Richter, Faculty Mentors

Übersetzung und Analysen Über die Astronomischen und Ökologischen Auswirkungen des StarLink-Program von SpaceX

#### **V-1 - 3**

EMMA R. GUENTHER

Dr. Jose Carreno-Medina, Faculty Mentor

Trauma and Disability in Mexico City's Public Transport in El huésped by Guadalupe Nettel

#### **V-1 - 4**

NATALIE J. VANCE

Dr. Stacy Davis, Faculty Mentor

Gender as Performance in Sirena Selena vestida de pena

### Health Sciences & Education

#### **V-2 - 1**

OLIVIA GOOCH♦

Dr. Christopher J. Maglio, Faculty Mentor

Are Students Meeting Their iReady Goals?

#### **V-2 - 2**

NAOMI E. RUHMAN♦

Dr. Christopher J. Maglio, Faculty Mentor

Effectiveness of Heggerty Across Early Literacy and Reading Skills

#### **V-2 - 3**

OLIVIA A. CATLIN

Dr. Nancy Daley-Moore, Faculty Mentor

College Fraternity Members' Body Image Perceptions

#### **V-2 - 4**

MEGAN E. GROSSMAN\* and

MONICA P. BATES

Dr. Nancy Daley-Moore, Faculty Mentor

TruHealthy Women

#### **V-2 - 5**

MORGAN N. MILLER♦

Dr. Christopher J. Maglio, Faculty Mentor

The Impact of Multiplication Strategies on Multiplication Scores

#### **V-2 - 6**

HAILEY L. LAWRENCE♦

Dr. Christopher J. Maglio, Faculty Mentor

The Impact of Student Choice on Assignment Scores

#### **V-2 - 7**

MIRANDA L. FORBES♦

Dr. Stacy Davis, Faculty Mentor

Investigation into the Efficacy of the Implementation of Digital Portfolios in the Classroom

#### **V-2 - 8**

ASHLEY E. MENG\* and NICOLE R. YOUNG

Dr. Jerry Mayhew and Ms. Elizabeth Jorn, Faculty Mentors

Comparisons of Strength Gain from Different Resistance Training Modes in Men and Women of Equal Fat-Free Mass Index

## ***Science & Mathematics***

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### **v-3 - 1**

ASHLEY E. WHITE

Dr. Rasanjali Jayathissa and  
Dr. Vayujeet Gokhale, Faculty Mentors

Astronomical and Environmental  
impacts of SpaceX's StarLink program

### **v-3 - 2**

REBEKAH L. KIMPEL

Dr. Stephanie L. Maiden, Faculty  
Mentor

Investigation of the function of  
UNC-33 in embryonic development  
of *Caenorhabditis elegans*

### **v-3 - 3**

BROOKE L. DIEHL\* and ALICIA A.  
KOOGLER

Dr. Daniela Ostrowski and Dr. Tim  
Ostrowski (A.T Still University), Faculty  
Mentors

Oxidative Stress in an Alzheimer's  
Disease-Induced Rat Model

### **v-3 - 4**

SAMANTHA A. WEBSTER

Dr. Cassidy Dobson, Faculty Mentor

Optimizing the Aggregation of  
Gamma S Crystallin

### **v-3 - 5**

MELINA C. MANSFIELD\*, MOLLY  
L. MENNE, NOAH A. ENNIS,  
JONATHON D. DABLE, and BLAKE  
D. CURRY

Dr. Kelly Walter and Dr. Bob Johnson,  
Faculty Mentors

Effect of Goats on Forages in  
Northeast Missouri Pasture Land

### **v-3 - 6**

SUTTON Q. PURINTON

Dr. Cassidy Dobson, Faculty Mentor

Determination of the Impact of  
Copper(II) chloride on DBF as a  
Molecular Chaperone for Gamma  
Crystallin D

### **v-3 - 7**

COLLIN J. HANSEN

Dr. Bill Miller, Faculty Mentor

Computational investigation of the  
PD1/PDL2 allosteric binding site

### **v-3 - 8**

CHANZ S. SILKEY

Dr. Bill Miller, Faculty Mentor

Computational Investigation of  
Potential Small Molecule Inhibitors  
of Zika Virus's NS2B-NS3 Protease

### **v-3 - 9**

GRANT M. FREITAS

Dr. Bill Miller, Faculty Mentor

Inhibiting SARS-CoV-2: A  
Computational Approach

### **v-3 - 10**

ELISE D. STUERTZ\*, IRELAND G.  
BOYD, and MARIAN HANDAL

Dr. Brittany Hagenhoff, Faculty  
Mentor

Method Development of Iron  
Analysis Using Atomic Absorption  
Spectroscopy for Filtered Rain  
Water

### **v-3 - 11**

CORBIN A. ESTES

Dr. Cassidy Dobson, Faculty Mentor

Investigation into Higher Ratios  
of DBF Compared to Denatured  
Lysozyme to Determine the  
Chaperone Activity of DBF

### **v-3 - 12**

KALLISTA M. STUBBLEFIELD

Dr. Joanna Hubbard, Faculty Mentor

Does Mercury Exposure in  
an Insectivorous Bird Affect  
Development of a Sexually Selected  
Trait?

### **v-3 - 13**

OLIVIA R. NOACK

Dr. Jessica D. Colpoys, Faculty Mentor

Impact of Environmental Enrichment  
on Calf Behavior at Weaning

## ***Social & Cultural Studies***

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### **v-4 - 1**

STEPHANIE L. COONFIELD  
Dr. Brian Ott, Faculty Mentor

The Preservation and  
Transformation of Racial Inequality  
in America

### **v-4 - 2**

MEGAN E. GROSSMAN\* and EMMA  
G. WITUK

Dr. Karen Vittengl, Faculty Mentor

Face Masks Effects On Emotion  
Recognition Via Facial Expressions

### **v-4 - 3**

COLTON Z. BORDERS

Dr. Dereck Daschke and Dr. Natalie  
Alexander, Faculty Mentors

Seeing Eye to Eye with Stoicism and  
Existentialism: How Two Schools of  
Thought Have Similar Cognitive Beliefs

### **v-4 - 4**

DUY LE

Dr. Katherine Judd, Faculty Mentor

How Do Religion Match, Religious  
Coping, & Religiosity Impact  
Acculturative Stress Levels Among  
International Students?

### **v-4 - 5**

TEAGAN S. WILSON

Dr. Brian Ott, Faculty Mentor

Reading Habits of University  
Students Based on Gender Identity

### **v-4 - 6**

HANNAH C. ZIMMERMAN\*,  
LAUREN E. HAPPE, HYUN JOON  
BANG, and SAMUEL J. BERGMAN  
Dr. Ashley Ramsey, Faculty Mentor

The Differential Influence of Sensory  
Modalities on the Perception of  
Locomotion

### **v-4 - 7**

AMBER M. BARRON

Dr. Victoria Mayer, Faculty Mentor

Understanding the Male Perspective  
of a Feminist Movement on a College  
Campus

# **RESEARCH MENTOR OF THE YEAR AWARD**

Congratulations to Dr. Ilene Elmlinger, recipient of the Research Mentor of the Year Award!





# SRC

STUDENT RESEARCH CONFERENCE

# 2022

