

University of Missouri, St. Louis

IRL @ UMSL

---

Undergraduate Research Symposium

UMSL Undergraduate Works

---

2017

## 2017 Program

University of Missouri-St. Louis

Follow this and additional works at: <https://irl.umsl.edu/urs>

---

### Recommended Citation

University of Missouri-St. Louis, "2017 Program" (2017). *Undergraduate Research Symposium*. 131.  
Available at: <https://irl.umsl.edu/urs/131>

This Program is brought to you for free and open access by the UMSL Undergraduate Works at IRL @ UMSL. It has been accepted for inclusion in Undergraduate Research Symposium by an authorized administrator of IRL @ UMSL. For more information, please contact [marvinh@umsl.edu](mailto:marvinh@umsl.edu).

# URS

Undergraduate  
Research  
Symposium

---

*Research • Scholarship • Creative Works*

---

2017

University of Missouri—St. Louis

# ***Mission Statement***

---

The members of the University of Missouri–St. Louis chapter of Golden Key International Honour Society are committed to the creation of educational opportunities and the development of leadership skills. As leaders, we are dedicated to formulating a paradigm for student activism that preserves and advances the interests and reputation of our campus and its faculty.

In 2002, Golden Key members designed the Undergraduate Research Symposium (URS) to furnish a venue for undergraduate students to present their research, scholarship, and creative works as they would at a professional conference. This multidisciplinary event is intended to help students achieve their educational and professional goals by presenting students an opportunity to refine their communication skills and network with scholars. The URS also provides an opportunity for faculty and the broader academic community to express support for the undergraduate scholars in furthering their research and graduate studies.



## **Chapter Officers 2016–2017**

Meghan Littles, President

Ari Zakroff, Vice President

Jasmine Jones, Treasurer

Jin Wang, Secretary

Nicholas Terzich, SGA Representative

Jodi M. Heaps-Woodruff, PhD, Co-Advisor

Kathryn A. Walterscheid, PhD, Advisor

# URS

Undergraduate Research Symposium

## The URS Committee

Meghan Littles, URS Chair

Jasmine Jones, Fundraising

Landon Bland, Marketing Coordinator

Jin Wang, Awards Liaison

Jodi M. Heaps-Woodruff, PhD, Poster Editor

Kathryn A. Walterscheid, PhD, Faculty Director

## Awards



The UMSL chapter of Sigma Xi, The Scientific Research Society, will present three awards for posters. Faculty judges will assess the posters on content and style, the abstracts on content and clarity, and the presenters on their interaction with the audience. These awards are made possible by Dr. Patricia Parker through her Des Lee Endowed Professorship Grant.

Graduate School  
Application-Fee Waivers

**UMSL**

The Graduate School is awarding application-fee waivers to URS Participants.

The URS Committee will be sending a list of URS participants to the graduate school. When you fill out the on-line graduate school application, use the statement of purpose box to indicate that you participated in the URS and are requesting a fee waiver.

# Thanks to the URS Sponsors

---

## *Primary Sponsors*

Golden Key International Honour Society

Student Affairs

Pierre Laclède Honors College

## *Co-Sponsors*

Sigma Xi: The Scientific Research Society

University of Missouri-St. Louis Graduate School

Sodexo, Triton Dining Services

## Acknowledgments

The members of Golden Key would like to thank all of the dedicated administrators, faculty, and staff who have inspired and helped us. In particular, we wish to express our appreciation to the following individuals:

Jay Frey

Printing Services

Jodi M. Heaps-Woodruff, PhD

Assistant Research Professor, Psychology

We would also like to thank all the mentors who supervised the research, reviewed abstracts countless times, edited posters, coached oral presenters, and were there when they were needed.

# *Table of Contents*

Anthropology	5
Biochemistry & Biotechnology	6
Biology	7
Civil Engineering	8
Criminology & Criminal Justice	8
English	8
Physics	9
Psychology	9
Nursing	12

Oral Presentations will be held in Century Room A and  
MSC Meeting Room 316.

The URS ends at 3:00 pm. Shortly thereafter, the awards  
will be presented at a brief ceremony in the Millennium  
Student Center, on the third floor, in Century Room A.

# *Anthropology*



**Shipping Habit Study for the West African Diaspora Communities:  
Feasibility Study for the Creation of a Shipping Company to Serve  
West African Immigrants Sending Items to their Homelands**

Akpedje Aquereburu, Anthropology

Mentor: Susan Brownell, PhD

**Hold the Applause:  
An Action Plan to Lower Chlamydia and Gonorrhea Rates in St. Louis**

Ben Hibbett, Anthropology

Kristy Gammill, Anthropology

Serena Blue Herman, Anthropology

Jamie Crabtree, Anthropology

Kerry Rayford, Anthropology

Mentor: Susan Brownell, PhD

**Healing Waters: Recreating and Contextualizing  
the Turn of the Century Site of Regent Spring in Excelsior Springs, Missouri**

Dana Channell, Anthropology

Mentor: Daniel Pierce, MA

**Saint Louis Mounds:  
A Proposal for the Awareness of the Past and Preservation for the Future**

Stephanie Reinheimer, Anthropology

Terra Williams, Anthropology

Timothy Wayman, Anthropology

Madeline Kodelja, Anthropology

Thomas Unterreiner, Anthropology

Mentor: Susan Brownell, PhD

---

*Biochemistry & Biotechnology*



**Comparing Parasite Identity and Prevalence between Two Tamarin Species**

Shay Dudaie, Biochemistry & Biotechnology

Mentor: Patricia G. Parker, PhD

**Investigation of the Novel Cyanobacterium 2RC**

Sara Ricardez, Biochemistry & Biotechnology

Abigail Eaker, Biochemistry & Biotechnology

Mentor: Teresa Thiel, PhD

---



# *Biology*



**Temporal Patterns of Small Blue Grecian Butterfly Thoracic Temperatures  
at an Equatorial Site**

Noreen Heyari, Biology

Mentor: Godfrey R. Bourne

**Molecular Approaches to Screen for Avian Malaria in Galapagos Mosquitoes,  
*Aedes Taeniorhynchus* and *Culex Quinquefasciatus***

Nathaniel Jones, Biology

Mentor: Patricia G. Parker, PhD

**Assessing Feeding Preferences among *Culex Quinquefasciatus* in Galapagos**

Sawsan Salah, Biology

Mentor: Patricia G. Parker, PhD

**Preliminary Investigation into Local Ecological Strategy Dimensions  
in a Coastal African Forest**

Isaac Wilson, Biology

Mentor: Sebastian Tello, PhD

## *Civil Engineering*



### **Overcoming Security Challenges in Smart Infrastructure**

Nicole Gevers, Civil Engineering

Mentor: Ann Torrusio, MA

---

## *Criminology & Criminal Justice*



### **Fatal Police Encounters in St. Louis from 2013-2014: A Qualitative Study**

Heidi Wallner, Criminology & Criminal Justice

Heather Taylor, Social Work

Mentors: Michael Campbell, PhD; Nancy Gleason, MA

---

## *English*



### **BioShock and Awe: The Mechanics of Fear in Video Gaming**

Kaitlin Henning, Psychology

Mentor: Kim Baldus, PhD

### **Monsters in the Closet: Victor's Homosexual Repression in Mary Shelley's *Frankenstein***

Zachary J. Lee, English

Mentor: Kim Baldus, PhD

---

---

## *Physics*



### **Synchronization of Hindmarsh-Rose Model Neurons**

Sarah Myers, Psychology

Mentor: Sonya Bahar, PhD

### **Radial Velocities of Young Stellar Objects in the Rho Ophiuchi Infrared Cluster**

Lindsey Rodgers, Physics

Mentor: Bruce Wilking, PhD

---

## *Psychology*



### **Relationships between Childhood Reading Experiences and Current Reading Ability**

Samantha Austin, Psychology

Stephanie Faulkingham, Psychology

Jaelyn Herbstreit, Psychology

Mentor: Suzanne Welcome, PhD

### **Individual Differences in Neural Rhyme Effects**

Anne Birchem, Psychology

Rawan Almasalmeh, Psychology

Stephanie Gallagher, Psychology

Mentor: Suzanne Welcome, PhD

**Maternal Support and Sexual Behavior Following Childhood Sexual Abuse**

Claudia Campbell, Psychology

Mentor: Rachel Wamser-Nanney, PhD

**Growth Mindset Buffers the Negative Relationship between Discrimination Anxiety  
and Science Outcomes for Women in STEM**

Brian Flammang, Psychology

Michael A. Fague, Psychology

Drake A. Anderson, Psychology

Erika M. McClellan, Psychology

Andrew S. Cheli, Psychology

Mentor: Bettina J. Casad, PhD

**Caring for Older Adults with Mental Health Concerns:  
Impact on Family Care Partners' Perceived Stress**

Adriana Givens, Psychology

Mentor: Ann Steffen, PhD

**Perceived Control as a Function of Acute Social Stress**

Miranda Jany, Psychology

Josie Stiens, Psychology

Mentor: Carissa Philippi, PhD

**Was it Rape if it Feels Like I Consented?  
The Role of Perceived Consent in Labeling Nonconsensual Sexual Experiences**

Courtney Jones, Psychology

Kristen Scheidter, Psychology

Sara Kern, MA

Mentor: Zoë D. Peterson, PhD

**The Role of Women's Gender and Identity Integration in  
Math Attitudes and Commitment to STEM**

Jennifer Kennedy, Psychology

Danielle L. Oyler, Psychology

Emily M. White, Psychology

Erin T. Sullivan, Psychology

Savannah M. Price, Psychology

Destiny N. Tierney, Psychology

Ren E. Bay, Psychology

Paul A. Greenley, Psychology

Mentor: Bettina Casad, PhD

**Snakes, Angry Faces, and the Effect of Threat on Early Attention**

Kristen Scheidter, Psychology

Mentor: Sandra Langeslag, PhD

**The Effects of Childhood Trauma on Parenting Outcomes**

Kayla Shane, Psychology

Mentor: Rachel Wamser-Nanney, PhD

**Positive Scientific Social Climate Buffers the Negative Relationship between  
Lower Math Identity and Math Anxiety, Devaluing, and Disengagement**

Destiny Tierney, Psychology

Drake A. Anderson, Psychology

Paul Greenley, Psychology

Mentor: Bettina J. Casad, PhD

---

*Nursing*



**Breastfeeding and Childhood Obesity in America**

Madison Bick, Nursing

Mentor: Jean Nelson, PhD, RN