



#### **RESEARCH**

**COLLEGE OF ARTS AND SCIENCES** 



## OSU Research is for





Getting Started in Research and Creative Activity



## Roadmap to Research





# What is Undergraduate Research?





66

Research is a verb!

Go seek!
Go look!
Go explore!



Reseach is formalized curiosity. It is poking and prying with a purpose.

Zora Neale Hurston



## What student researchers actually DO?

## Read



Gather



Explore



Work in a Lab



Make Observations



Work in the Field



...and so much more!

## Research Environment



Undergraduate research assistants



mentor

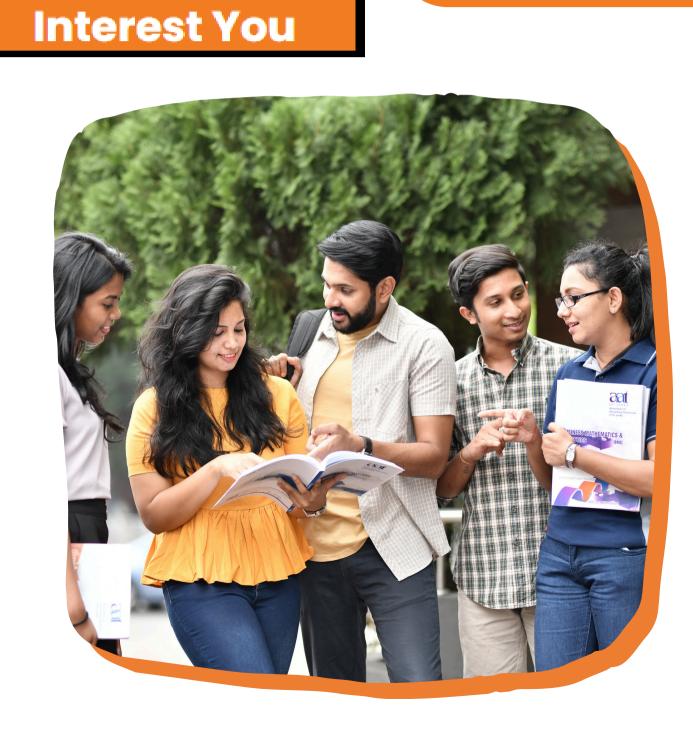
Faculty/professor
The PI
Advisor



Graduate students
Post-docs
Staff scientists



# What Research Topics Interest You?





## What Excites You?

What are your skills?
What do you find
enjoyment in?

What courses or topics do you find interesting?

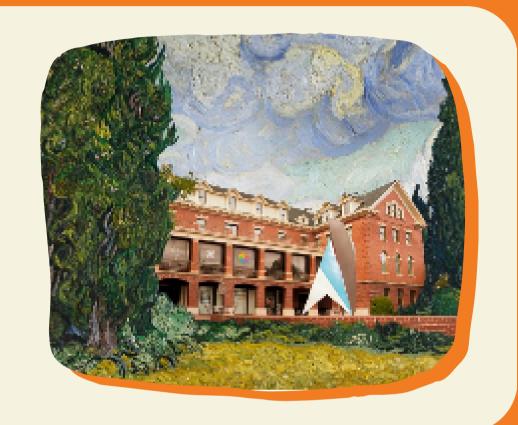
What do you do in your free time?



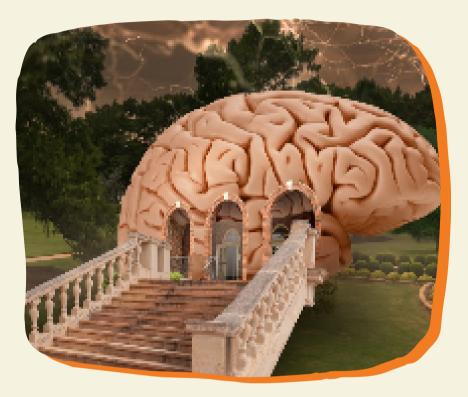
What do you like to read or learn about?

## Use those questions to explore CAS options...

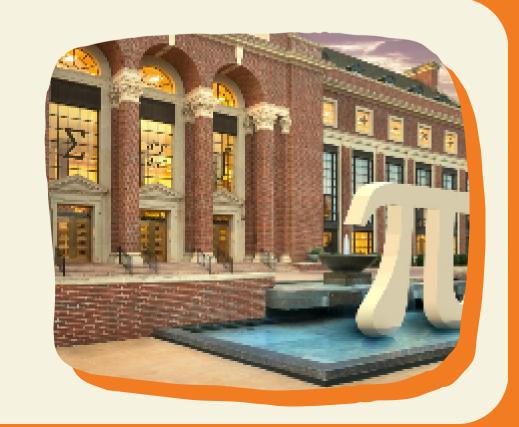
Arts and Humanities



**Social Sciences** 



Math and Sciences



Interdisciplinary Programs



Real OSU undergraduate projects, and so many more

Identifying microbes in animal gut biomes

Bio-inspired design of underwater drones

Linking mathematics and music

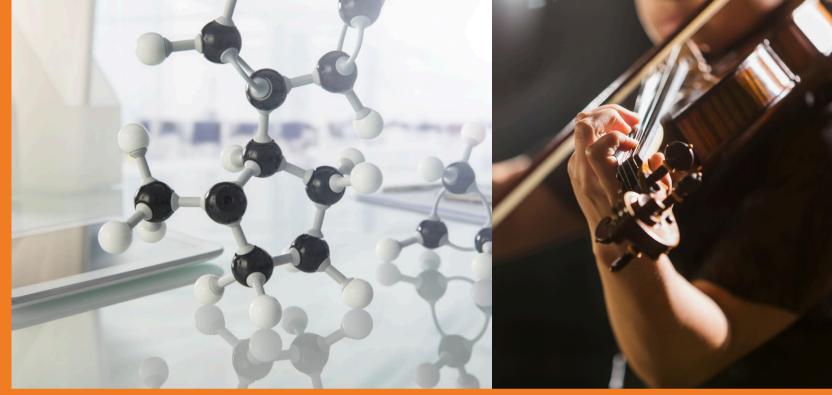
Augmented reality in retail clothing world

Psychology of jealousy in friendship

Business linguistics in companies

3-D printing for sign language instruction

Social media marketing for art performances





## Student Researchers Will Benefit in...

Learning beyond the classroom



Enhancing qualifications for future jobs and academic training

Developing a stronger community

Discovering diverse career paths

Clarifying and completing academic and career goals

## Research for Career Readiness

Skills developed via research experiences map to essential career-readiness competencies





# A Position Paper: Recognizing Undergraduate Research, Scholarship, & Creative Inquiry as a Career-Readiness Tool

- Equality and inclusion
- Leadership
- Communication
- Professionalism
- Career Development
- Teamwork
- Creativity
- Technology

## Additional Benefits

### **OSU & Personal Benefits**

Depending on your choice of program...

- Paid!
- Counts towards OSU Credits
- Could include travel!



## **Building Your Resume!**

- Job Experience
- Research Experience
- Professional Reference
- Letters of Recommendation

3. Learn about Research Programs and Opportunities

# Research Programs and Opportunities





OSU Research Opportunities

## **Undergraduate Research Transcript Designation**

- Notation on your transcript
- 2 (or more) semesters of research with a mentor
- Must present or publish your work outside of OSU



#### **OK-LSAMP**

- Louis Stokes Alliance for Minority Participation
- STEM focused
- Research experiences, grad school preparation
- Stipend

#### **McNair Scholars**

- Mentoring and resource program for undergraduates
- Preparation for PhD programs, specifically
- Research and scholarly training activities
- Stipend



## **AURCA Program**

- AURCA (rhymes with "orca")
- Advancing Undergraduate Research & Creative Activity
- Work-study research/creative assistant
- Pays \$12.00 per hour!
- Mentored by a faculty member
- Applications open in late spring for 2025–2026 school year
- https://cas.okstate.edu/workshops/aurca\_program/aurca students.html

#### **AURCA Program**

The Advancing Undergraduate Research and Creative Activity (AURCA) program provides expands access to paid research opportunities for undergraduates in the OSU College of Arts and Sciences.

okstate.edu/Apr 26, 2022

## Non-OSU Research Opportunities

- National Science Foundation's REUs
- Council on Undergraduate Research
- Pathways to Science
- American Physiological Association's "Undergraduate Opps & internships" page
- Search: [insert your interest] summer research"
- Broad listing hosted by other institutions





#### Search REU Sites

NSF's mission is to advance the progress of science, a mission accomplished by funding proposals for research and education made by scientists,...

NSF







#### Arts & Humanities | Undergraduate Research Experiences

There are many off-campus summer undergraduate research opportunities spanning most arts and...



## Types of Experiences and Programs:

## Individual Research or Creative Assistant

Discipline

Any

paid or volunteer

**Structure** 

Arranged by student and mentor

Course Credit No

Time

Flexable hours or duration

Competitive

Moderate; many professors looking, so go for it!

## Types of Experiences and Programs:

## Research Course

Discipline

Most

**Not Paid** 

Structure

Find mentor; enroll in course

Course Credit Yes

Time

# of hours depends on # of credits

Competitive

Low

## Formalized Programs

Discipline

Common in STEM, including social sciences

Stipend

Structure

Must apply; small cohort; research project plus extra training

Course Credit Varies

Time

Usually fulltime in summer; some part-time during school year

Competitive

High; apply to many to boost your chances!

## Visit the CAS Undergraduate Research Site

Learn how to take the first steps to becoming a undergraduate researcher.

#### **Quick-start Steps**









#### **Research Goals Planning**

Dr. Rachael Eaton, the CAS Program

Manager for Student Research.

#### **FAQs**

Quick answers for students interested in research or creative activity at OSU

#### **CAS Research Registration**

Students should register with CAS Research for news, updates, and opportunities



#### Research Shadowing

Get a first-hand look at the research experience alongside a Research Leader



#### **Workshops and Resources**

Attend a workshop and take the next steps toward reaching your goals!

#### **Share your Success**

We want to showcase your research and creative achievements.





# How to Find and Reach out to Potential Mentors





## **OSU Faculty Mentors**



#### Charles I. Abramson, Ph.D.

egents Professor awrence L. Boger Professor of International Studies oston University

imparative psychology. Studies include mathematical odels of the learning process, influence of agrochemicals and metals on learning, development of a social insect model of ethanol induced behavior, molecular mechanisms of learning, development of inquiry-based science activities, comparative analysis of

If interested please contact Dr. Abramson.

Lab Website



Amanda Baraldi, Ph.D. rizona State University

Missing data analyses, methods for assessing mediation, ongitudinal growth modeling, and health and prevention research. Recent publications appear in Psychological Methods, Multivariate Behavioral Research, and



Jarrod Bock, Ph.D. isiting Assistant Professor Oklahoma State University

and Social Cognition.

#### arrod.bock@okstate.edu

am currently teaching Social Psychology, Psychology of Learning, and Research Methods. My research broadly examines gender norms within cultures of honor, with a specific focus on how masculinity norms and features of honor cultures (e.g., firearm accessibility) impact mental health and suicide risk

John M. Chaney, Ph.D.

motional adjustment in pediatric chronic illness

Will NOT be reviewing Fall 2024 applications.

oulations, particularly juvenile rheumatic diseases and

University of Missouri

Lab Website

hn.chaney@okstate.edu

nflammatory bowel disease.

Angela Andrade, Ph.D.

urrent courses include Introductory Psychology, statistical Methods in Psychology, and Psychology of

Prejudice and Discrimination, Research interests: Social

psychology, issues of social inequality based on race,

publications appear in Cultural Diversity and Ethnic

Minority Psychology, the Journal of Social Psychology,

class, gender, and sexual orientation, Recent

eaching Assistant Professor

Oklahoma State University

Will NOT be reviewing Fall 2024 applications.



Psychobiology of the stress response including sex differences, developmental and life history factors, wit ocus on female sociality as it relates to evolutionary psychology more broadly. Recent publications appear in Psychoneuroendocrinology, Physiology and Behavior, and Hormones & Behavior.





Dr. Frank Blum Regents Professor

Dr. Ziad El Rassi

Regents Professor

Dr. Reza Latifi

Teaching Assistant Professor



Dr. Richard Bunce



Dr. Christopher **Fennell** 

Dr. Barry Lavine



Dr. Tracy Kerr Teaching Assistant Professor



Dr. Nicholas Materer



Dr. Sadagopan

**Krishnan** 

**Dr. Gabriel Cook** 

Assistant Professor

#### **COMPUTER SCIENCE FACULTY & STAFF**

#### **Faculty**



Roger Mailler Department Head 220 MSCS 405-744-5683 roger.mailler@okstate.edu



H B Acharya **Assistant Professor** 210 MSCS 405-744-2606 hbhatta@okstate.edu



Sadiq Al Buhamood **Teaching Assistant Professor** 228 MSCS 405-744-9872 albuham@okstate.edu



Arunkumar Bagavathi Assistant Professor 215 MSCS 405-744-5674 abagava@okstate.edu Professional Homepage



Rekha Bhowmik **Visiting Assistant Professor** 324 North Hall - OSU Tulsa 918-594-8441 rekha.bhowmik@okstate.edu

H. K. Dai

209 MSCS

405-744-7207

Associate Professor

dai@cs.okstate.edu

Professional Homepage



J. Cecil Professor 231 MSCS 405-744-5675 i.cecil@okstate.edu Professional Homepage



Richard L Churchill **Adjunct Instructor** 232 MSCS 405-744-5676 richard.l.churchill@okstate.edu



**Christopher Crick Associate Professor** 213 MSCS 405-744-5673 chriscrick@cs.okstate.edu Professional Homepage



K. M. George Professor 510 MSCS 405-744-5221 kmg@cs.okstate.edu



**Professional Homepage** 

Douglas Heisterkamp Coordinator 918-200-9377



**Sharmin Jahan** Associate Professor/Graduate 207 MSCS - OSU Stillwater 321 N Hall - OSU Tulsa 918-594-8577 doug@cs.okstate.edu



**Assistant Professor** 208 MSCS 405-744-3705 sharmin.jahan@okstate.edu Professional Homepage

University of Missouri

#### jennifer.byrd.craven@okstate.edu

Will NOT be reviewing Fall 2024 applications.

Lab Website

## with interesting research.

Find someone

### **DEPARTMENT OF CHEMISTRY FACULTY**

#### **Current Faculty**





Dr. Jeanne Bolliger Assistant Professor









### Search News, Websites, Articles, and Social Media

#### **CAS Faculty Spotlights**



Dr. John Doyle Department of Mathematics



Dr. Antonio Castilla Department of Plant Biology, **Ecology and Evolution** 



Jason Estala Department of Theatre



Dr. Saber Brasher Department of Geography



**Dr. Tony Thornton** Greenwood School of Music



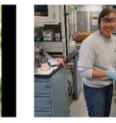
Dr. Spencer Pitre Department of Chemistry



Dr. Kara Kerr Department of Psychology



Shamsuddin Department of Computer Science



Dr. Rittika

Dr. Juwon Hwang School of Media and Strategic

Communications





Dr. Tracy Quan Boone Pickens School of Geology



Dr. Derek Meyers

Department of Physics

Dr. Liz McCullagh Department of Integrative



Dr. Lisa Hollenbach

Department of English

Dr. Avi Mitra Department of Microbiology and Molecular Genetics



Dr. Erica Townsend-Department of Political Science





Dr. Heather Stewart Department of Philosophy



Oklahoma State University 2 February 21 · 🚱

Saving lives at #okstate (\*)

Advancing the mission of One Health, the Oklahoma State College of Veterinary Medicine is using animal medical research to aid humans as well as continuing to advance animal health.

Learn more: https://okla.st/49rQeO6

#OrangeIsTheAnswer | #WeAreLandGrant



NEWS, OKSTATE, EDU

Saving Lives: CVM researchers' efforts aim to assist both

**Utilize the CAS Faculty Spotlights!** experts.okstate.edu

#### **NEWS**









CAS faculty awarded 2024 **Excellence in Research** Mentoring Award

Apr 16



industry leaders to groundwater summit at Hamm Institute

Apr 11



Cowboy100 Gala celebrates OSU-owned, OSU-led businesses

Apr 11

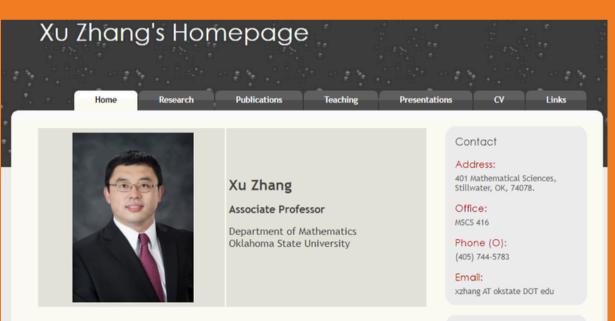


A March to Remember: OSU ROTC cadets participate in annual Bataan Memorial Death March

Apr 10

## Look At Faculty Research Websites to Learn More About Their Work!





Useful Links

College of Arts & Sciences

Dept of Mathematics

#### About me

Xu Zhang is an Associate Professor in the <u>Department of Mathematics</u> at <u>Oklahoma State University</u>. He received his Ph.D. degree in <u>Mathematics</u> from <u>Virginia Tech</u> in 2013. His dissertation was advised by <u>Dr. Tao Lin</u>. From 2013 to 2016, he was a Golomb Visiting Assistant Professor in the <u>Department of Mathematics</u> at <u>Purdue University</u>. Before joining Oklahoma State University, he was an Assistant Professor (tenure-track) in the <u>Department of Mathematics and Statistics</u> at <u>Mississippi State University</u> during 2016-2019.

#### Research in Environmental Toxicology

Belden Laboratory
Department of Zoology
Oklahoma State University



Our laboratory group is interested in exploring the effects of chemical contaminants on biota.

We focus on both the environmental fate and effects of contaminants with a strong emphasis on measuring exposure.



# Shannon Spaulding, PhD ASSOCIATE PROFESSOR PHILOSOPHY DEPARTMENT OKLAHOMA STATE UNIVERSITY Home About Me CV Research Contact Me



#### PROF. SHANNON SPAULDING

I am an Associate Professor of Philosophy at Oklahoma State University. My general philosophical interests are in cognitive science, philosophy of psychology, and philosophy of science. The principal goal of my research is to construct a philosophically and empirically plausible account of social cognition. My current research projects are on motivated empathy, the relationship between trust and perspective taking, and cognitive structure of implicit bias. I recently published a book on social cognition called How We Understand Others: Philosophy and Social Cognition.

READ MORE

**UPCOMING EVENTS** 

### How To Pick a Mentor?

- 1. Read & Research
  - Read their previous works
  - Research their topics of study
- 2. Organize
  - Write down key information about your potential mentor, so you can come back to that information
- 3. Rank
  - 1. Dr. A genetics...
  - 2. Dr. B mathematics...
  - 3. Dr. C psychology...



### MAKE the first connection!

## **Email**

Follow our email outline and tips on the next slides!

## **After Class**

If you have them as a professor or find out where they teach

## Office Hours

Find out when they happen and be there

#### GTA

Graduate Teaching
Assistants do research with
mentors

## The First Email

# From: awesomestudent@okstate.edu Subject: Undergraduate research opportunities

Dear Professor X,

My name is Awesome OSU Student, and I am a..... [first-year Zoology major]. I read about your project studying..... [bluebird nests in prairies], and I think your research seems really exciting [because......]. I am interested in starting a research experience and I think your work fits well with my interests. I plan to be.....[a conservation scientist in the future].

Could we set up a time to talk more about your research and potential opportunities in your group? I would be happy to come to your office hours or meet at a time that is open on your schedule. My schedule is mostly/usually open on.....[Wednesday afternoons or Tuesday mornings].

Thank you for your time.

Sincerely,
Awesome OSU Student

### Don't be afraid to send a second email!



Carrie Masiello @biogeochem · 11h Truth:

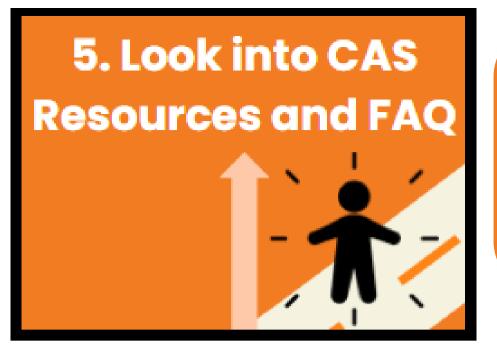
• • •



#### Harmit S. Malik @HarmitMalik · 13h

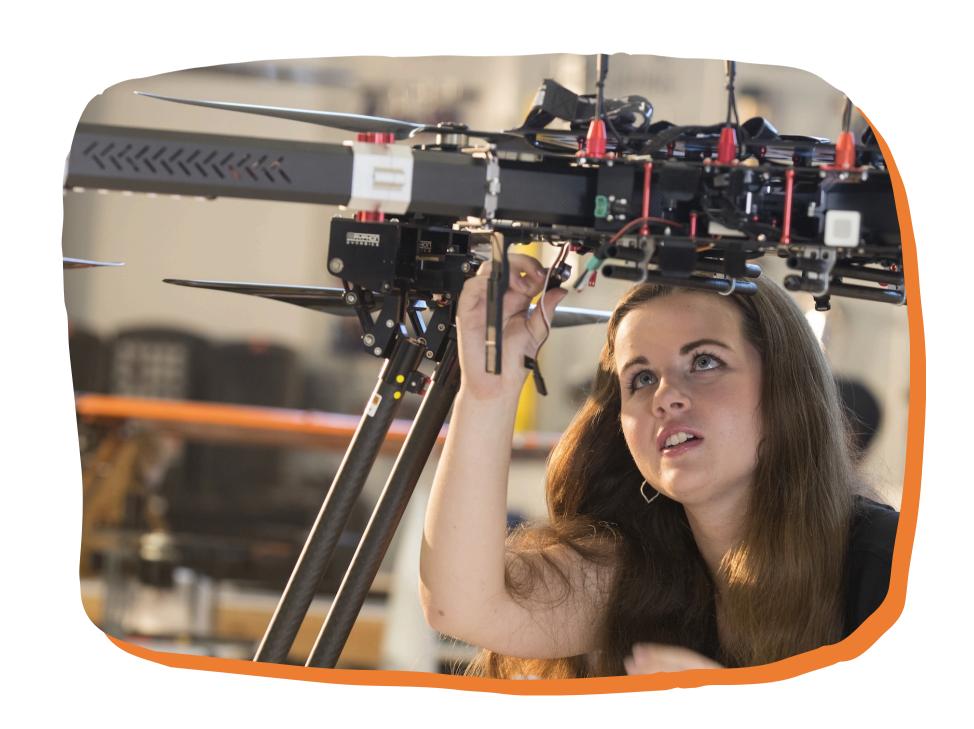
Dear trainees, two emails is not stalking. If you write to a PI requesting something and they don't get back to you within a reasonable time frame (say 1-2 weeks) please don't hesitate to contact them again. They may have meant to but forgot. 1/

Show this thread



## CAS Resources and FAQ





## START EARLY









It's **OK** to be new to research.

Just start.

It's **OK** to have a mentor outside of your major

It's **OK** to contact a professor you do not know

Don't take "no" personally.

Just contact someone else.

Be persistent AND polite

## Do I need to have previous research experience to be an OSU student researcher?

No, you don't! Research is for everyone and you do not need prior experience to try a new research opportunity.

## What happens if I do not like the project I selected?

You are not required to stay with the same research project/group until you graduate. You can switch mentors, labs, ect.

When going into the project, always ask what the expected time is going to be.

## Am I required to work on a project in my major?

NO. Your project can be in any discipline or interdisciplinary.

# Can I do research, even if I do not want to be a professional researcher or go to graduate school?

Of Course! The benefits of undergraduate research extends to all studenst, regardless of career path.

## Can I do research if I am a freshman, first-year student, or transfer student?

Yes! Research and creative experiences are for everyone.

# Connect with CAS Research

News Events Resources Opportunities





### CREATE KNOWLEDGE. BE A **STUDENT RESEARCHER**.





@CASRESEARCHOSU





@CASRESEARCHOKSTATE

