



Hear from participating students about the undergraduate research experience at OSU:
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OKLAHOMA STATE UNIVERSITY FRESHMAN RESEARCH SCHOLARS

Oklahoma State University's Freshman Research Scholars program provides around 80 students a \$1,000 scholarship and the opportunity to go beyond the classroom and conduct research with experienced faculty.

The priority deadline for Freshman Research Scholars applications is Nov. 1, with a final deadline of Feb. 1.

To apply, log in to your completed OSU application and locate a section titled, "Consider Research" in the "Opportunities" tab. You'll find a link to apply for the Freshman Research Scholars program.

QUESTIONS? Contact the Office of Scholar Development at 405-744-7313 or by email at schdev@okstate.edu

5 FACTS

ABOUT UNDERGRADUATE RESEARCH AT OSU

- 1 Any incoming freshman can apply to become a Freshman Research Scholar.** You can research any subject, no matter your major. It's not just labs and test tubes. Have a question? You've got your research opportunity.
- 2 Research is easier when you're surrounded by faculty** who are leading experts in their fields and want to help.
- 3 Taking part in research impacts your life in many ways.** You make long-term connections with faculty and your peers while making a contribution inside or outside your discipline.
- 4** There's nothing holding you back from conducting research. You just have to be **intellectually curious, motivated and have a strong work ethic.**
- 5** Take advantage of valuable resources and bright minds at a **comprehensive research university.**



JULIANNA R.
Strategic Communication

"The Freshman Research Scholars program was beneficial not just for the research aspect, but in the way of defining my career goals. By working with my mentor, I began to find what I like and dislike within my major and how I can use these preferences to find jobs and internships."



BRYSON W.
Mechanical and Aerospace Engineering

"Research has been a great opportunity for me to get a more hands-on approach to my major. The program opened my eyes to the vastness of engineering jobs and applications I could work in as I discover what my future career looks like."



SARAH S.
Nutritional Sciences

"This program has helped me form lasting relationships with my faculty mentor and exposed me to new opportunities I never would have had otherwise. Being able to dive deeper into topics that are specific and applicable to my major has been super interesting and helped me expand the horizons of my learning experience."

FRESHMAN RESEARCH EXPERIENCES

RESEARCH QUESTION:

Can fungi increase the growth of medicinal plants that are culturally important to Native Americans?



SERREEN E.

College: Ferguson College of Agriculture
Major: Environmental Science
Faculty Mentor: Gail Wilson, Ph.D.

"As a Freshman Research Scholar, I discovered more about how our remarkable world works. It provided me an avenue to make new friends, create connections with supportive faculty and learn more about the variety of amazing resources that Oklahoma State provides to students!"



"Our research team wanted to determine if fungi could increase the growth of medicinal plants that are culturally important to Native Americans. Medicinal plants have been over-harvested from the wild, which has caused issues for natural ecosystems and communities reliant on these plants. We hypothesized that the fungus would significantly and positively increase medicinal plant growth. Our results supported our hypothesis, showing that certain fungi could be used as a sustainable, cost-effective and eco-friendly method to grow medicinal plants and support natural ecosystems with and without drought conditions. We hope that our project will raise awareness of a growing issue — the destruction of the Great Plains and its natural resources, both of which are extremely important to the livelihood of Native Americans."

Oklahoma State University

The Henry Bellmon Office of Scholar Development and Undergraduate Research

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RESEARCH QUESTION:

What is the maximum weight of ear tags that cattle can support?



BROCK V.

College: Ferguson College of Agriculture
Major: Animal Science
Faculty Mentor: Ryan Reuter, Ph.D.

"I have always wanted to be involved in research on a higher level and the Freshman Research Scholars program gave me the perfect opportunity. It offered me new connections around campus and helped me develop critical thinking skills, which was huge for my personal development and academic experience."



"The main thing that I was trying to learn from my research is 'What is the maximum weight of ear tags that cattle can support?' The increased use of precision agriculture will provide insight into what technologies we can use without damaging the health of cattle and without affecting production. In the first study, we used smaller weights resulting in insignificant ear damage. We noticed that ears began to heal by the end of 28 days. In our second study, we used heavier weights resulting in significant visual damage to the animal's ears. In conclusion, I was surprised with the results because I assumed there would be substantial damage by the end of the first study, which wasn't the case. However, the less surprising results were that heavier weights caused more damage. This data has the potential to help agriculture technologists make better decisions regarding innovative cattle ear tags."

RESEARCH QUESTION:

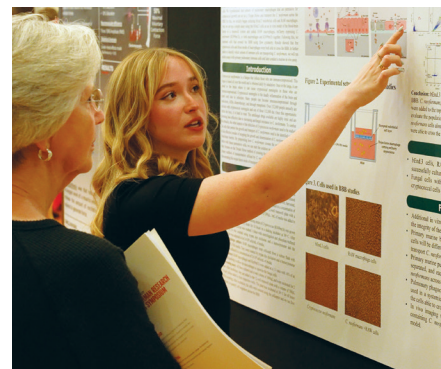
Can immune cells carry deadly fungi across the blood-brain barrier?



ABIGAIL G.

College: College of Arts and Sciences
Major: Microbiology
Faculty Mentor: Karen Wozniak, Ph.D.

"Hands-on participation in actual ongoing research projects through the Freshman Research Scholars program has helped me expand my knowledge on more levels than traditional classroom lectures can. With one-on-one guidance by faculty members, my self-confidence has dramatically increased."



"My research aimed to identify if immune cells allow and carry deadly fungi across the blood-brain barrier. I hypothesized that these immune cells are transporting fungi across this barrier by a 'Trojan horse' method, where the fungus is actually hidden inside the immune cells. I set up an outside-of-the-body model of the blood-brain barrier to identify if these immune cells are allowing this transport. My results have shown that deadly fungi within the cell line were able to cross this model of the blood-brain barrier. I was surprised at how well this deadly fungus was able to easily cross in this model, which opens up more questions about the other modes of transportation and confirms the integrity of our blood-brain barrier."

 /ScholarDevelopment

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