



HLC Accreditation 2020-2021

Evidence Document

Academic Affairs

Dorothy and Bill Cohen Honors College

FYRE: First Year Research Experience

Additional information: See the web page at:
<https://www.wichita.edu/academics/research/undergradresearch/fyre.php>
(Accessed April 6, 2021.)

FYRE



A first-year research experience in science,

[Get Funding](#)[URCA Grant Program](#)[Dorothy and Bill Cohen Honors College](#)[Research Opportunities](#)[FYRE](#)[Kansas UG Research Day at Capitol](#)[FAQs](#)[SRI](#)[Return to Student Research Home](#)

The First Year Research Experience in STEM aims to build a community of STEM students, faculty and professionals to support STEM majors or potential majors as they form identities as members of the scientific community. FYRE is supported by funding from the Helen Clay Frick Foundation.

[FYRE Faculty Mentor Application](#)[Student Application, due Oct. 1](#)

Fall 2020 Virtual FYRE Info Session

Learn more about the FYRE program at a virtual information session led by Program Director Dr. Moriah Beck at 3:00 p.m. Wednesday, Sept. 9.

[Register for the Zoom Info Session Here!](#)

Overview

FYRE is an applied learning program designed to connect first-year students with authentic hands-on research experiences in a variety of STEM-related disciplines. Students selected for the FYRE program enroll in an introductory research seminar course that exposes them to research methods and are matched with research positions in WSU labs actively involved in scholarly STEM research. FYRE students will be better prepared for advanced careers in STEM fields and will develop important skills in critical thinking and problem-solving that can be applied to careers outside of research.

- The FYRE in STEM program is open to ALL first year students at Wichita State University. This includes transfer students in their first year as well as traditional freshmen, even those who may have enough credits to be considered a sophomore.
- Students need not be a member of the Honors College, but should have a strong interest in STEM fields.
- For the purposes of the FYRE program, we will use a broad definition of STEM that is not limited to basic sciences, engineering and math, but could also include exercise science, health professions (including CSD, public health, nursing, medical laboratory sciences, etc.), psychology, and education majors focused on STEM fields.

Goals

- Build a community of STEM students, faculty, and professionals that support young STEM majors as they form identities as members of the scientific community, thus improving the likelihood that they will persist in STEM majors.
- Provide a gateway to understanding scientific research that begins early in undergraduate career to increase likelihood of continuing research projects beyond the first year.

Benefits for Students

- Participate in faculty-mentored research which contributes new knowledge to your discipline
- Receive training and support in finding a research mentor
- Be part of interdisciplinary network of peer, academic and professional mentors
- Discover funding, career, and advanced opportunities in research
- Honors credit

Benefits for Faculty

- Supports academic success through increased recruitment, retention and engagement
- Creates a network of undergraduate and graduate researchers to increase the overall numbers of WSU STEM majors, graduates and professionals
- Matched with pre-vetted undergraduate students interested in research early in career with no long-term commitment required
- Opportunity to recruit and retain UG researcher in your lab for 4 years

Time Commitment

- Students should expect a weekly time commitment of approximately 1 hour of in-class meetings and 2-3 hours of out of class for homework/class-related activities for the introductory STEM research course
- Students should plan on an additional 8-10 hours of research per week under the supervision of a faculty mentor
- FYRE students must participate in a research poster session to be held in the last week of the semester during the class period

Previous FYRE in STEM projects

- FYRE 2019 Projects:
- "Evaluation of Lingual Posture and Relation to Functional Balance" by Hanna Chastain in lab of Dr. Heidi VanRavenhorst-Bell, Human Performance Studies
- "Is Palmer's goldenrod real?" by Mikayla Haynes in lab of Dr. James Beck, Biological Sciences
- "a-Conotoxin Peptide Dynamics" by Parker Holloway in lab of Dr. Katie Mitchell-Kock, Chemistry
- "Effect of Changes in Non-Conserved Regions of LDH on Enzyme Activity and Thermal Stability" by Shamir Khan in lab of Dr. Moriah Beck, Chemistry
- "Protein Secondary Structure of Lethal Factor Anthrax N-Terminus" by Tristen Nguyen in lab of Dr. James Bann Chemistry
- "Protecting aircraft wing leading and trailing edge devices from hail damage" by Siddharth Pathak, Aerospace Engineering
- "Effect of Laminar and Oscillatory Fluid Shear Stress on Nuclear Morphology during in situ cell Fixation" by Sarah Schmitt in lab of Dr. David Long, Biomedical Engineering
- "The Effects of Automated Driving on Hazard Perception" by Jacob Tubach in lab of Dr. Rui Ni, Psychology
- "Palladin Ig3 domains bind to monomeric G-activ" by Kelsey Young in lab of Dr. Moriah Beck, Chemistry
- FYRE 2020 Projects:
- "Characterizing 3D Printed Carbon Fiber Nylon" by Emma Ahrenholtz in lab of Dr. Nicholas Smith, Aerospace Engineering
- "Sweat Based Biosensor for Constant Health Monitoring" by Caesar Cedillo-Silva in lab of Dr. Yongkuk Lee, Biomedical Engineering
- "Initial Investigation for the Discovery of Mg_4TS_6 (T=Si, Ge, Sn)" by Gary Cicirello in lab of Dr. Jian Wang, Chemistry
- "Determination of Lingual Performance Differences between Two Head Positions: Frankfurt Plane and Flexion Beyond Frankfurt Plane" by Isabel Burns & Ticie Dumas in lab of Dr. Heidi A. VanRavenhorst-Bell, Human Performance Studies
- "Investigating Anomalous Fluorescence by Site-Directed Mutagenesis" by Aaron Fater in lab of Dr. Moriah Beck, Chemistry
- "Measuring Acoustic Characteristics of Materials for Aerospace Systems with an Impedance Tube" by David Alberto Nevarez-Saenz in lab of Dr. Bhisham Sharma, Aerospace Engineering
- "Processing Audio Signals into a Complete Scenario: Possibility Investigation" by Trent Oberlander in lab of Dr. Bhisham Sharma, Aerospace Engineering
- "Design, fabrication, and characterization of a mesoscale electrostatic zipper actuator" by Jasmin Soriano in lab of Sindhu Preetham Burugupally, Mechanical Engineering
- "Nylon Strain Resistance" by Jay Thompson in lab of Dr. Nicholas Smith, Aerospace Engineering
- "Higher Concentrations of Fetal Bovine Serum Increases Endothelial Cell Growth" by Anna Tri in lab of Dr. David Long, Biomedical Engineering

Application Information

The application includes the following:

- Demographic information about the applicant
- Major/STEM interests
- Essays: (250 words or less for each)

Essay prompts include:

1. Explain interest in selected research areas.
2. What are your current career goals? Why did you choose this career path and what other options might you consider? It is fine to be undecided at this point, but please indicate the types of career paths that interest you.
3. Please describe why you are interested in taking part in becoming part of a research group, what benefits do you hope to gain from being part of a research group?
4. Describe a scientific discovery you have recently heard/read about in popular media and explain why you found it interesting.
5. A range of academic interests, personal identities, and life experiences among people in STEM fields is valuable. Please describe an interest, identify, or experience that will help you make a distinctive contribution as a FYRE Scholar.

Timeline

- October 1 - Deadline for student applications
- October 15 - Deadline for faculty mentor applications
- Mid-October - Interviews between potential mentors and selected students
- November 1 - Final notification of matches
- November 9 - Enroll in HNRS 310X (Spring 2021, Mondays 4 - 5:15 p.m.)
- Winter Break - Meet with your mentor to learn about project
- Spring 2021 - Start work in the lab and HNRS 310X course
- Finals Week - Present at FYRE in STEM Showcase (poster or oral)

Contact

- For more information please contact Dr. Moriah Beck, Faculty Director of FYRE, at moriah.beck@wichita.edu or 316-978-5476