Kathleen “Kate” Jackson

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EDUCATION:

Hendrix College • August 2021 - expected May 2025
Bachelor of Arts in Biochemistry/Molecular Biology & Computer Science
Conway, AR

Central High School • August 2017 - May 2021
Little Rock, AR

RESEARCH EXPERIENCE:

Duke Amgen Scholar May 2024 - Present
Duke University Medical Center | Durham, NC

- Performed procedures including mammalian cell culture, bacterial culture, western blotting, and PCR.
- Developed problem solving and critical thinking skills through troubleshooting and planning experiments.
- Analyzed and applied current genetics literature to experimentation and interpretation of results.

Biochemistry/Molecular Biology Research Fellow May 2023 - July 2023
University of Arkansas Medical School | Little Rock, AR

- Performed procedures including mammalian cell culture, immunofluorescence, and proximity ligation assays.
- Developed scientific communication skills through presentations and conference attendance.
- Analyzed and discussed published research papers on biochemical topics.

Biochemistry/Molecular Biology Research Assistant August 2022 - May 2023
Hendrix College | Conway, AR

- Performed procedures involving bacterial transformations, DNA isolation, SDS-PAGE, protein concentrations, etc.
- Developed interpersonal skills by completing and sharing procedures with lab teammates and instructors.

RESEARCH PRESENTATIONS:

“Alternative Splicing of PARP2 in IAV Infection.” **Jackson K,** Connelly GG, Wang, L, Ko DC. Poster presentation. Duke Summer Research Showcase, Durham, North Carolina.

“Alternative Splicing of PARP2 in IAV Infection.” **Jackson K,** Connelly GG, Wang, L, Ko DC. Oral presentation. Duke Amgen Summer Symposium, Durham, North Carolina.

“Investigation into the Role of DHX36 in Rev1-mediated G4 Resolution.” **Jackson K,** Paxton B, Gunderson J, Eoff RL. Poster presentation. AR INBRE Conference, Fayetteville, AR. **Awarded Best Biology Poster*.

“Investigation into the Role of DHX36 in Rev1-mediated G4 Resolution.” **Jackson K,** Paxton B, Gunderson J, Eoff RL. Poster presentation. Arkansas Undergraduate Summer Research Symposium, Little Rock, AR.

“Determination of Human Rev1-mediated, G4-associated Replication Gap Suppression.” **Jackson K,** Paxton B, Gunderson J, Eoff RL. Oral presentation. SURF Midsummer Symposium, Little Rock, AR.

HONORS & AWARDS:

Hendrix Murphy Grant: Learning French in the South of France *Awarded Spring 2024*

- Travel grant awarded to the student for two weeks of French language and culture immersion at the Institut Linguistique Adenet in Montpellier, France.

Best Biology Poster, Arkansas INBRE Conference *Awarded Fall 2023*

- Presented to the student with the best biology poster presentation at the INBRE Conference at the University of Arkansas, in Fayetteville, AR.

Hendrix College Goldwater Scholarship Nominee *Awarded Fall 2023*

- Provided to students who intend to pursue careers in natural sciences, mathematics, and engineering

Murphy Scholar in Literature and Language *Awarded Spring 2022*

- Awarded to students who excel in literature and language, regardless of major, with opportunity for study travel, Oxford tutorials, and co curricular experiences

Hendrix College Scholarship *Awarded Fall 2021*

- Based on GPA, standardized test scores, leadership and extracurricular activities, recommendations
- Hendrix College Dean’s Scholarship: Added to Hendrix College Scholarship based on academic and extracurricular excellence

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LEADERSHIP ACTIVITIES:

Hendrix College Office of Academic Success August 2022 - Present
General & Organic Chemistry Peer Learning Assistant

- Developed analytical and problem solving skills by completing and explaining problems quickly.
- Collaborated with teammates and communicated effectively to students and supervisors.
- Analyzed students and materials in each session to tailor tutoring towards specific needs.

Hendrix Campus Kitty *501(c)(3)* August 2021 - Present
Committee Chair *(August 2023 - Present)* | Vice Chair *(August 2022 - August 2023)* | Event Planning Committee *(August 2021 - August 2022)*

- Organized campus activities for upwards of 1,000 students throughout the school year.
- Collected donations to fund non-profit organizations based in Arkansas.
- Developed COVID-cautious methods to maintain a fun, safe environment for on-campus students.

Hendrix Ultimate Frisbee Team August 2021 - Present
Treasurer *(April 2024 - Present)*

- Devoted 4+ hours weekly to practice, train, and attend leadership meetings.
- Analyzed and created budgets, prepared financial reports, and planned tournament trips for the team.
- Collaborated with the leadership team to develop a welcoming environment for students interested in frisbee.

Hendrix Scientific Magazine August 2022 - August 2024
Managing Editor

- Managed personnel, data, and magazine content to ensure publication by deadline.
- Hired and trained magazine editors and assistants.
- Collaborated with a team to edit stories and create a consistent, quality content.

OTHER ACTIVITIES:

Hendrix College Senior Committee August 2024 - Present
Committee Member

- Organized activities for senior students at Hendrix College.
- Developed strategies for communication with college students in order to raise money.
- Planned and executed the senior gift for the class of 2025.

Hendrix College Department of Chemistry August 2023 - Present
Student Teaching Assistant

- Cleaned, organized, and staffed the chemistry stockroom during laboratory meetings.
- Tested and troubleshot experiments for general chemistry students to ensure a smooth learning experience.
- Supervised and instructed lab exercises for general chemistry students.

Volunteer Action Committee August 2022 - Present
General Committee

- Organized and staffed one volunteering opportunity per semester of involvement.
- Developed communication and planning skills through collaboration with volunteer coordinators and organizations.
- Arranged and served inclusive dinners for one VAC meeting per semester of involvement.

Jimmie Lou Fisher Fellow June 2022 - July 2022
Democratic Party of Arkansas | Little Rock, AR

- Researched AR legislative districts in geographic, demographic, and electoral areas.
- Collaborated to develop field guides and notes for every district with a Democrat running in November 2022.
- Designed and implemented maps of the state according to district lines and the candidates filed in each area.

PROGRAMMING PROJECTS:

Portfolio Website October 2024 - Present
https://k-atej.github.io/
Jekyll-based website for showcasing computing projects.
- Personalized a Jekyll template to match portfolio needs and personal preferences.
- Developed problem-solving and critical thinking skills for troubleshooting issues with large bodies of code written by others.

smFRET Toolkit August 2024 - Present
https://github.com/k-atej/smFRET
Python-based data analysis and visualization tool for single-molecule FRET data.
- Researched and developed a platform for storing, analyzing, and visualizing single-molecule data.
- Built tools for creating, modifying, and saving publication-quality line plots and histograms.

Modeling Invasive Stoats in New Zealand November 2024 - December 2024
https://www.kaggle.com/code/katejackson02/modeling-invasive-stoats-on-new-zealand-islands
Jupyter notebook modeling invasive stoat species by dynamical systems and agent-based modeling.
- Researched and developed a dynamical systems model and an agent-based model to capture stoat and prey population dynamics.
- Evaluated and generalized model outcomes with significance to conservation biology..

iSeeGreen Plant Identification Website September 2023 - December 2023
https://github.com/reidst/csci340-iseegreen
Azure-based website for identifying and listing plants by scientific name.
- Designed and implemented algorithms for storing and searching 300,000+ items in the database.
- Collaborated with the development team to organize and style web pages based on client preferences.

Protein Structure Predictor February 2023 - May 2023
Java-based lattice model-based protein structure predictor.
- Designed and implemented appropriate algorithms for data analysis and storage.
- Researched and modeled biochemical properties of amino acids.

JellyGa Game November 2021 - December 2021
Python-based, Galaga-style game for entertainment.
- Learned to optimize game organization, documentation, and version control.
- Analyzed and troubleshot code bugs.