CURRICULUM VITAE

ELIZABETH "LIZ" A. KARR
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Education

1999-2003	Ph.D., *Molecular Biology, Microbiology*, *& Biochemistry,* Southern Illinois University, Carbondale
1997-1999	Bachelor of Science, *Biology (Chemistry* Minor*)*, Murray State University, Murray, KY, *Magna Cum Laude*
1995-1997	Associate in Science, Paducah Community College/Western Kentucky Technical and Community College, Paducah, KY, *High Distinction*

Experience

2020 –…	Associate Dean, OU Graduate College & Office of Postdoctoral Affairs, University of Oklahoma
2017-2020	Graduate Program Director, Microbiology and Plant Biology, University of Oklahoma
2014 –…	Associate Professor* of Microbiology, University of Oklahoma
2014 – …	Associate Director, Price Family Foundation Institute of Structural Biology
2007-2014	Assistant Professor of Microbiology, University of Oklahoma
2003-2007	The Ohio State University, Postdoctoral Fellow*, Microbiology*
2000-2003	Graduate Research Assistant, Southern Illinois University, Carbondale
1999-2000	Graduate Teaching Assistant, Southern Illinois University, Carbondale
1999	Undergraduate Teaching Assistant, Murray State University
1998-1999	Undergraduate Research Assistant, Murray State University

**Currently in the promotion process, with positive departmental/school votes*

Awards and Honors

2020	OU Graduate College, Graddy Award
2004-2006	NSF Postdoctoral Fellowship, Microbial Biology
1999	Outstanding Senior in Biology, Murray State University
1999	Gamma Beta Phi Leadership Award, Murray State University
1998	Gamma Beta Phi inductee
1997	Phi Theta Kappa inductee

Administrative Experience

Associate Dean of the OU Graduate College (July 2020 to present)

The University of Oklahoma Graduate College oversees approximately 6200 graduate students, including online and in-person professional master's, research master's, and doctoral degrees. I work collaboratively with the Provost's office, academic colleges, departments, and other stakeholders on all matters related to graduate education. My appointment to Associate Dean of the Graduate College in July 2020 coincided with unveiling the 'Lead On, University' strategic plan. Many aspects of my role allow me to impact institutional goals directly. My day-to-day activities collectively support Pillar 2, Strategies 1, 2, and 8 of the OU 'Lead On, University' strategic plan, which includes fostering a student-centered culture across the institution, improving graduate degree completion rates, and increasing the overall doctoral completion rate. I have noted other contributions throughout this section.

Responsibilities

Academic Program Portfolio

My portfolio includes graduate students and faculty in the colleges and corresponding programs below.

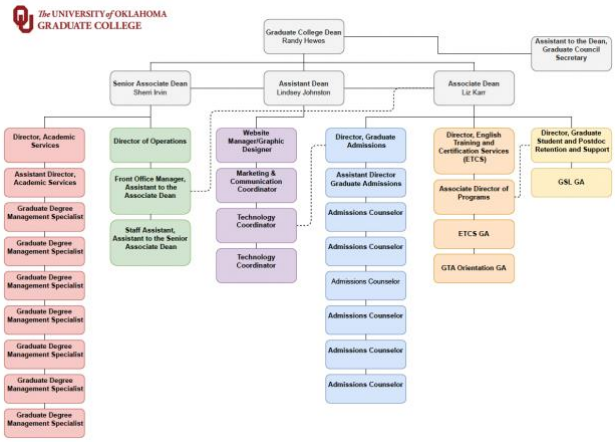
- College of Architecture – *Architecture, Construction Science, Regional & City Planning, Landscape Architecture, Interior Design, and Ph.D. in Planning, Design & Construction*
- College of Journalism and Mass Communication – *Professional Writing, Journalism & Mass Communication, Strategic Communication & Digital Strategy*
- College of Earth and Energy – *Geology & Geophysics, Petroleum Engineering*
- College of Atmospheric and Geographic Sciences – *Geography & Environmental Sustainability, Meteorology*
- College of Engineering (through Sept 2022) – *Aerospace and Mechanical Engineering, Biomedical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, General Engineering*
- Dodge Family College of Arts and Sciences (DFCAS) – *Anthropology, Communication, Economics, Environmental Science, Health and Exercise Science, Human Relations (Norman & Tulsa), Library and Information Sciences, Math, Native American Studies, Philosophy, Physics and Astronomy, Sociology, Women's and Gender Studies, Administrative Leadership*, Museum Studies*, Criminal Justice**
- College of Professional and Continuing Studies (through Summer 2023) – *including oversight of programs transitioning to DFCAS* and teaching out of Advanced Programs (Human Resources, Communication, Instructional Leadership & Academic Curriculum)*

Within these academic programs, I manage matters that rise to the Graduate College level on:

- mentor/mentee relationship issues
- graduate program milestones (comprehensive exams, general/qualifying exams, thesis & dissertation defenses)
- academic appeals of milestone events and program dismissal
- graduate course- and program-related issues
- graduate faculty criteria and status
- graduate student well-being and professional development
- international student support
- graduate assistant policy, onboarding, and termination

Additional Responsibilities

- Supervise the Director of Graduate Admissions, the Director of Graduate Student and Postdoc Retention and Support, and the Director of English and Training Certification and Services and their corresponding areas.



- In the Fall of 2021, I also had temporary supervisory responsibilities for the Director of Graduate College Operations and the Director of Graduate Academic Services and their respective areas.

- Work with the Graduate College Dean, Senior Associate Dean, and Director of Operations to manage and administer the ~$3 million central Graduate College operating budget.
- Work with the Graduate College Senior Leadership Team on Graduate College direction, planning, and significant initiatives.
- Work with various stakeholders (graduate students, graduate student organizations, academic unit leadership, and academic college leadership) to identify barriers to academic progress and completion, increase retention, and decrease time to degree.
- Serve as an *ex officio* member of the OU Graduate Council.
    - Serve as the committee chair for the Graduate Council Travel and Research Subcommittee (2020-present). This *includes administration/management of the ~$150,000 to $190,000 annual travel and research fund budget.*
    - Served as the committee chair for the Course and Programs subcommittee in Fall 2021
- Serve as the Graduate and Assessment Liaisons for OU's Interdisciplinary Ph.D. Program and Organizational Leadership Ph.D. Program
- Manage graduate academic integrity cases and sanctions in collaboration with the Office of Academic Integrity (2020-2022)
- Serve as the Graduate College liaison to the Office of Diversity Equity and Inclusion and member of the Inclusion Council (Fall 2021)
- Serve as the Graduate College's representative and liaison to the primary institutional representative for the Higher Learning Commission
- Oversee various Graduate College award committees (these duties occasionally rotate between the Associate Deans) – Graduate Dean's Award for Excellence in Mentoring of Graduate Students Committee, Graduate Dean's Distinguished Master's Thesis Award Committee, Provost's Doctoral Dissertation Prize Committee, Eddie Carrol Smith Fellowship Committee, Mergler and Bullard Dissertation Completion Fellowship Awards Committee
- Prepare OU nominations to Midwestern Association of Graduate Schools (MAGS) and Council of Graduate Schools (CGS) award competitions.

- Serve as the Graduate College's representative to the Office of the Vice President for Research and Partnerships (OVPRP) Associate Deans for Research (ADRs) Council. The council aims to inform and update ADRs about the various initiatives and plans under development within the OVPRP and get feedback and input into these same initiatives and plans. This supports Pillar 5, Strategy 1, Tactic 9 of the 'Lead On, University' strategic plan.
- Serve as the Campus Program Manager and grant PI for the NSF-funded OK-Louis Stokes Alliance for Minority Participation (LSAMP) on the OU campus. The program pairs underrepresented undergraduates in STEM fields with research mentors and prepares them to apply for graduate school. It also supports international experiences, supports conference travel, research engagement, and overall scholarly development. This supports Pillar 4, Strategy 1, Tactic 4 of the 'Lead On, University' strategic plan.
- Address graduate student/program matters on the Tulsa campus.
- Manage annual Graduate College recruitment fund allotments to academic departments (*Budget $30,000*)

Key Accomplishments

- Efforts in Attracting, Supporting, and Retaining Talented Staff
    - Oversaw the implementation of a new base starting salary for the graduate admissions counselors and the reclassification of the Director of Graduate Admissions. This supports Pillar 1, Strategy 3, Tactics 5 & 9, and Pillar 3, Strategy 2, Tactic 5 of the 'Lead On, University' strategic plan.
    - Oversaw the Director of Graduate Information Services promotion to the Assistant Dean of Graduate Information Services and the planning for a new Information Services team, including adding three new positions (Marketing and Communications Coordinator, Technology Coordinator, and Website Manager/Graphic Designer), which have now been filled. This supports Pillar 3, Strategy 2, Tactic 5 of the 'Lead On, University' strategic plan.
    - Oversaw the rebranding of our Academic Counselors on our Graduate Academic Services Team to Graduate Degree Management Specialists (GDMS). This title better describes their roles. I also oversaw the implementation of a new salary equity plan for the GDMS positions on the Graduate Academic Services teams, as well as the promotion of several GDMSs to senior roles. This supports Pillar 1, Strategy 3, Tactics 5 & 9, and Pillar 3, Strategy 2, Tactic 5 of the 'Lead On, University' strategic plan.
    - I have successfully nominated two of our Graduate College Staff to win university-wide staff awards. This supports Pillar 1, Strategy 3, Tactic 9.
- Brought together Graduate Academic Services, Graduate Admissions, Graduate Information Services, the Office of Enrollment Management, and Undergraduate Advising to overhaul application/admissions to accelerated bachelor's and master's degree programs at OU. I identified multiple bottlenecks and problematic areas that needed to be addressed. Together, we are making efforts to consolidate and streamline the process.
- Collaborated with our Directors of Graduate Admissions and English and Training Certification Services to update our English-speaking countries list for demonstrated English proficiency for admission to OU (undergraduate and graduate)
- Planned and implemented two new awards to the Graduate College's portfolio of annual awards: a faculty award – the Graduate Dean's Award for Excellence in Mentoring of Graduate Students, and a student award – the Graduate Dean's

Distinguished Master's Thesis Award. This supports Pillar 2, Strategy 1, Tactic 1 of the 'Lead On, University' strategic plan.

- Developed specialized Graduate Admissions policies for applicants that do not already hold bachelor's degrees, which is a standard requirement for admission to graduate programs at OU. These policies required approval by the Graduate Council, and then the OU Regents.
    - For exchange students from Universidad Popular Autónoma Del Estado De Puebla (UPAEP) that begin pursuing accelerated master's degrees at OU before completing the bachelor's degree at UPAEP.
    - For Pharm.D. students pursuing an MBA. Pharmacy students typically complete 62 hours of undergraduate courses before entering a Pharm.D. program without earning a bachelor's; those that wanted to pursue our dual MBA/Pharm.D. degree needed an admission mechanism to the MBA portion.
- Introduced and implemented the following Graduate College Bulletin policy revisions:
    - Master's thesis credit hours: this policy revision changes the minimum required hours for the non-thesis master's degree from 32 to 30. This supports Pillar 2, Strategy 2, Tactic 2 of the 'Lead On, University' strategic plan.
    - Tuition waiver policy: this policy revision permits an additional semester of tuition waiver beyond the maximum hours required for the degree.
- Worked with the director of Graduate Admissions, the College of International Studies, OU's Office of Legal Counsel, and the leadership at Universidad Popular Autónoma Del Estado De Puebla (UPAEP) to write a Memo of Understanding implementing a Graduate Bridge Program with UPAEP. In the program, a student from UPAEP spends the final year of a UPAEP undergraduate program taking graduate-level classes that can be considered part of an accelerated master's program at OU. After completing the bachelor's degree, the student completes the master's program at OU. Credits are shared between the two degrees. This supports Pillar 3, Strategy 1, Tactic 7 of the 'Lead On, University' strategic plan.
- Worked with stakeholders in the College of International Studies, Center for English as a Second Language, English and Training and Certification, Graduate Admissions, International Student Services, the Bursar, the Registrar, and individual graduate programs on planning and implementing the new *Graduate English Pathway Program*. This program allows international students that have not met the English proficiency standards for admission to begin coursework in their programs while simultaneously taking English training in the US. The program hosted its first cohort in the fall of 2022. I continue to oversee the management of this program. This supports Pillar 3, Strategy 1, Tactic 7 of the 'Lead On, University' strategic plan.
- Worked with other leaders in the Graduate College to outline our strategic plan and led the subgroup focused on postdoctoral training experiences.
- Spearheaded a project to catalog all of OU's non-thesis master's degrees, classifying them as academic/coursework-focused or professional, cataloging those accredited and those that led to licensure, and tracking the culminating experience.
    - Utilizing information from this project, I worked with Graduate Admissions to implement systems for direct disclosures at the time of program application and again at program admission for application and admission of graduate programs that lead to licensure.

- Allows for quick responses to audits such as the Department of Defense Voluntary Education Program Readiness Institutional Compliance Program

- To increase the number of OU students receiving NSF Graduate Research Fellowships (GRFP), I organize workshops on applying for the NSF GRFP. I co-host a workshop session on program eligibility and requirements with Georgia Kosmopoulou, Associate Dean, Dodge Family College of Arts and Sciences. Following this, I host a panel session with faculty who have served as past NSF GRFP reviewers. They answer questions and point out important aspects of the review process. I assembled a Canvas course for students that included recordings of the live events and sample applications that successfully obtained NSF GRFPs. This supports Pillar 2, Strategy 6, Tactic 5 of the 'Lead On, University' strategic plan.

- Implemented a communication strategy and stakeholder collaboration (departmental leadership, classroom management, English Training and Certification Services, and Institutional Research and Reporting) to ensure Graduate Teaching Assistant (GTA) percent responsibilities are accurately reported each semester to ensure Institutional Research and Reporting has accurate data to meet institutional reporting requirements and for the Graduate College to ensure GTAs have completed the required training and English Training certifications (when applicable) that keep us in compliance with Oklahoma State Regents for Higher Education requirements.

The following key accomplishments address the calls to action for graduate deans in the CGS and Jed Foundation 2021 Report "Supporting Graduate Student Mental Health and Well-Being: Evidence-Based Recommendations for the Graduate Community".

- In several academic programs in my portfolio, I have used graduate program metrics (such as attrition and time to degree) in conjunction with results from the gradSERU (Graduate Student Experience in the Research University) survey to identify and launch targeted strategies to improve graduate program climate and culture.

- My colleagues and I have presented our efforts in graduate student success and support at several national conferences, including the Student Experience at the Research University (SERU) Symposium, the Coaching in Higher Education Consortium Conference, and the Graduate Student Success and Wellness Conference.

    - Irvin, S. and **E. A. Karr**. Promoting a Supportive Climate for Graduate Students. Virtual SERU Research Symposium – Student Success and Wellbeing at Research Universities. June 15-16, 2022.
    - Irvin, S., R. Bates, W. Bush*, **E.A. Karr**, and K. Shea Smith. Academic Life Coaching to Promote Graduate Student Thriving.
        - Presented at Coaching in Higher Education Consortium 2021 Virtual Conference, July 30, 2021, and;
        - Graduate Student Success and Wellness Conference, May 7, 2021.

- Collaborated on GradThriving, a multi-university collaboration funded by the National Academy of Engineering's Connecting Efforts to Support Minorities in Engineering Education Mini-Grant – "GradThriving": Building a bigger network to support current minority graduate students. This supports Pillar 4, Strategy 1, Tactic 4 of the 'Lead On, University' strategic plan.

- I was appointed to my position in July 2020, and beginning in the Fall of 2020, the Graduate College leadership undertook initiatives to become intentional about stakeholder outreach as many continued to work remotely or were only intermittently

on campus. These events continue as we have found them valuable in connecting and keeping our finger on the pulse of the graduate education community.

  - We implemented Graduate College Brown Bags for Graduate Student Support targeted at graduate program leadership. Topics initially included international student support, graduate student well-being, supporting graduate education, the mentor/mentee relationship, best practices, etc. The topics have evolved, but the practice has remained in place. The sessions are held on Zoom, recorded, and archived as a resource library in a course within our Learning Management System. This supports Pillar 2, Strategies 1 and 2 of the 'Lead On, University' strategic plan.
  - We also implemented Virtual Coffee Chats with Graduate Students and Postdocs and Virtual Office Hours with Graduate Program Leadership that are hosted monthly. The Graduate College leadership team rotates through hosting responsibilities for these events.

- Partnered with the Center for Faculty Excellence for the New Faculty Orientation In-Depth: Undergrad and Graduate Student Mentoring series. This workshop is designed to provide new faculty with insight into best practices in mentoring, the support available on campus, and strategies for approaching mentoring, depending on the audience. This supports Pillar 2, Strategy 8, Tactic 4 of the 'Lead On, University' strategic plan.
- Collaborated with Senior Associate Dean Sherri Irvin and the Center for Faculty Excellence to identify strong faculty mentors to send to the CIMER faculty mentor training program to serve as workshop facilitators. From there, those facilitators work at OU to provide workshops to faculty interested in enhancing their mentoring skills. This supports Pillar 2, Strategy 8, Tactic 4 of the 'Lead On, University' strategic plan.
- Introduced and implemented the Family and Medical Graduate Assistant Leave policy. This new policy allows graduate assistants to step away from their duties for a semester and maintain their tuition and student health plan waivers.

Office of Postdoctoral Affairs (September 2020 to present)

Adjacent to my role as the Associate Dean of the Graduate College, I oversee the Office of Postdoctoral Affairs (OPA) housed with the OU Graduate College. Postdoctoral researchers are vital to advancing the research mission of the institution. Additionally, the growth and support of our postdoc population are integral to the institution's goal of gaining admission to the AAU. At its inception in the Fall of 2020, I was tasked with establishing a robust office that served as a centralized source of support, information, and advocacy for postdocs on the OU Norman and Tulsa campuses. I have led OPA efforts to vitalize the postdoctoral training experience at OU and bring structure to the use of postdoc titles and the appointment process. These efforts support Pillar 1, Strategy 1, Tactic 4 and Strategy 3, Tactic 6, as well as Pillar 3, Strategy 2, Tactic 2 of the 'Lead On, University' Strategic plan.

Responsibilities

- Consult on postdoc mentor/mentee issues
- Assist with postdoc onboarding matters
- Assist with clarification of policies and benefits pertaining to postdocs
- Provide reports on the OU postdoc population to OU leadership
- Engage with the National Postdoc Association regarding postdoc matters and policy reporting

- Outline and implement postdoc-specific policy in accordance with national trends in postdoctoral training

Key Activities and Accomplishments

- Detailed reporting and tracking of the OU postdoc population. In the fall of 2020, I worked with the Office of Institutional Research and Reporting to develop a customized report structure using the OU postdoc position codes and key information to allow me to begin tracking the postdoc community in detail. I've used these reports to:
    - Track fluctuation in the postdoc population over time.
    - Monitor OU postdoc salary trends and compare them to national trends on postdoc salary. This information is being used to support the implementation of a new postdoc minimum salary to be implemented next year.
    - Identify units that consistently pay low postdoc salaries compared to the unit's overall extramural funding rates and use targeted outreach and education.
    - Understand the distribution of postdocs across colleges, research centers, the Norman main and research campuses, and our Tulsa campus.
- Assembled a Postdoctoral Advisory Committee to provide insight and feedback on policy and the needs of the postdoctoral community.
- Based on the Postdoctoral Advisory Committee, I developed a series of guidance that the OPA has been using for postdoc title usage, compensation, and postdoc definitions. At the same time, I am working to formalize them into policy and procedures.
- Collaborated with the Associate Provost for Faculty and Student Affairs, the head of HR Employee Relations, and the Office of Legal Counsel to develop a standard offer letter template provided upon request.
- Worked to understand disciplinary differences in postdoc culture, e.g., math and humanities postdocs, and to ensure an inclusive environment supporting all postdoctoral training experiences.
- Worked to establish the OPA as a central source of information on postdoc benefits and policy.
- Collaborated with stakeholders (Dean's Council, Associate Dean's for Research, academic unit leadership with high postdoc concentrations, HR admins, the Academic Personnel Records office, Human Resources Benefits office, and the Office of the Vice President for Research and Partnerships and the Office of Research) across campus to formalize policy and procedures (effective early 2024) that will:
    - Standardize the definition and term lengths of postdocs at OU.
    - Implement a minimum postdoc salary in line with AAU/national averages, this includes a plan for early inclusion in grant budgets in preparation for the implementation.
    - Centralize the offer and onboarding process for postdocs.
    - Formalize expectations of postdoctoral mentors at OU.

Graduate Program Director/Graduate Liaison – Microbiology and Plant Biology Graduate Program (2017-2020)

Responsibilities

- Serve as the liaison between the academic unit's graduate program and the Graduate College
- Graduate program admissions - including application processing and distribution to faculty, admissions, offer letters, organizing recruitment weekends
- Managing all paperwork related to student matriculation in the program
- Address student and faculty concerns that arose
- Serve as a central source of information for graduate students, applicants, and faculty on all matters related to the graduate program and Graduate College policy
- Advocate for graduate students and work closely with the Graduate College on unique student situations.
- Oversee program progress evaluations and semester GTA evaluations
- Chair department committee on graduate education

Key Accomplishments

When I stepped into a leadership role for the Microbiology and Plant Biology Graduate Program in January 2017, the program suffered neglect. This was reflected in student morale, student degree progress, and the overall program climate. I immediately worked to overhaul many systemic issues in the graduate program structure, improve the program climate, and encourage disciplinary inclusion.

- Coordinated efforts to implement evaluations of graduate teaching assistants (GTAs) each semester. The GTA's faculty teaching supervisor completes the evaluations, which are supplemental to the student teaching evaluation.
- Led efforts to remove the requirement of GRE scores for our graduate program applicants. These efforts were in line with national trends in biosciences and supported by data indicating that the scores have little predictive power of success in biosciences graduate programs and may serve as a barrier to entry for students in underrepresented groups.
- Coordinated with the department chair to implement a multi-year stipend increase program for graduate students using funds provided by the administration to improve the competitiveness of stipends in several key disciplinary areas.
- Regularly for students facing challenges that negatively impacted their ability to carry out research and academic requirements.
- Implemented open office hours to increase student access to discuss issues, progress, and barriers.
- Implemented a final semester thesis and dissertation draft timeline to allow sufficient time for committee feedback and revision prior to defense

Though the CGS and Jed Foundation "Supporting Graduate Student Mental Health and Well-Being: Evidence-Based Recommendations for the Graduate Community" would not come until 2021, my efforts below preemptively addressed the recommendations and priorities for Graduate Program Directors.

- Spearheaded a complete revision of the general exam process that is more informative and beneficial to the student. The new process increased transparency surrounding the process, expectations, objectives, and outcomes.

- Led efforts to implement a more comprehensive annual evaluation process, including individual development plans and a required yearly advisory committee meeting.
- Worked collaboratively with the department chair to improve graduate student morale and interactions/comradery. These efforts encouraged a more inclusive environment and facilitated communications between the microbiology and plant biology disciplines for both students and faculty.
- Worked closely with the Graduate College to identify additional means of financial support and modify academic plans to accommodate student needs.
- Implemented action plans to guide students, particularly those struggling with progress toward their degree.
- Collaborated with the department chair to implement a one-credit-hour professional development seminar course for first-year students. The course launched in the Fall of 2017.
- Drafted a departmental "Expectations for Graduate Education" document outlining expectations and roles for department leadership, graduate faculty, and graduate students. It also outlines best practices and avenues for resolving conflicts that arise.

University Service

Graduate and Postdoctoral Education

2023	Workshop developer and lead. Teaching Philosophy Workshop, Instructional Core Competencies Micro-Credential Program
2021	Workshop Lead, Graduate College Brown Bag for Graduate Student Support – Implementing Individual Development Plans Across Disciplines
2020-2021	Committee Member, Provost Initiative-Holistic Admissions Training Development
2020-2022	Panelist, Graduate College Welcome Week: Making the Most of Graduate School
2020-2021	Panelist, New Graduate Teaching Assistant Training: Assessment Best Practices
2020-2022	Committee Member, Campus-Wide Graduate Student Support Committee.
2020	Panelist and Workshop Organizer, Virtual Interviewing Skills, Postdoc Appreciation Week
2020	Panelist and Workshop Organizer, Art of Negotiation in Academic Positions, Postdoc Appreciation Week
2020	Project Participant, Doctoral Committee Role Best Practices and Communications Development
2020	Nancy L. Mergler and Bullard Dissertation Completion Fellowships Committee
2017-2020	Chair, Microbiology and Plant Biology Graduate Committee
2019	3-Minute Thesis semi-final round judge
2018	3-Minute Thesis preliminary round judge
2015-2016	Microbiology and Plant Biology Graduate Admission, Retention, and Rotation Committee

University Research Enterprise

2021-2022	Vice President for Research and Partnerships Postdoc Incentive Program Review Panel
2020	Vice President for Research and Partnerships COVID-19 Research Continuity Committee
2020	Team Lead, Emerging Pathogenic Threats, Life Sciences and the Future of Health, OU Vice President for Research and Partnerships strategic planning group
2019-2020	Vice President for Research and Partnerships Research Council, Presidential Appointee
2018 – …	NIH COBRE Protein Production and Characterization Core Advisory Committee

Faculty Development and Recruitment

2021-2022	In-depth Workshops-New Faculty Orientation – Mentoring Graduate Students and Undergraduates in Research & Creative Activities
2020-2022	Guest Speaker, OU New Faculty Orientation on Graduate College.
2019-2021	Junior Faculty Mentor to Kara De León, Microbiology and Plant Biology
2019-2021	Junior Faculty Mentor to Krithi Sankaranarayanan, Microbiology and Plant Biology
2019	Member, Faculty Search Committee, Microbiology
2015-2016	Chair, Faculty Search Committee, Microbiology
2014-2019	NIH COBRE Faculty Mentor to Rakhi Rajan in Chemistry and Biochemistry
2014-2019	NIH COBRE Faculty Mentor to Christina Bourne in Chemistry and Biochemistry
2014	External Representative, Faculty Search Committee, Department of Chemistry and Biochemistry, COBRE-related hire
2013	External Representative, Faculty Search Committee, Department of Chemistry and Biochemistry, COBRE-related hire
2012	External Representative, Faculty Search Committee, Department of Chemistry and Biochemistry, COBRE-related hire
2010	Member, Faculty Search Committee, Plant Biology

Campus Governance

2019-2020	Chair and Committee A, Dodge Family College of Arts and Science Dean's Executive Committee
2018-2020	Member, Dodge Family College of Arts and Science Dean's Executive Committee, Natural Sciences Representative, Elected
2016-2019	Faculty Senate, College of Arts and Sciences, Natural Sciences Representative, Elected

Curriculum Development & Support

2021	Curriculum design of proposed accelerated master’s degree programs in Plant Biology and Microbiology
2020	DFCAS Biological Sciences Internal Working Group, Appointed by Dean
2019	Academic Tech Expo: Faculty Panel on Implementation of Gradescope

2015	Member, Curriculum development for new Structural Biology emphasis within the Biochemistry Ph.D.
2016-2020	Member of Microbiology and Plant Biology Assessment Committee
2014-2017	Microbiology and Plant Biology Biotechnology Curriculum Committee

Additional University Service

2019-2020	Education Abroad Advisory Committee
2011-2016	Chair, Microbiology and Plant Biology, Website Migration Committee
2010-2020	Microbiology and Plant Biology External Speakers Committee
2011-2017	Microbiology Undergraduate Student Advising
2009-2010	University Radiation Safety Committee
2009	Premedical Advisory Interview Committee
2008	Member, Microbiology and Plant Biology Safety Committee

Selected Professional Development

2022	Council of Graduate Schools Summer Workshop
2021	Identifying and Challenging Bias in Ourselves, in Others, and in Systems Training (facilitated by the Anti-Defamation League) for OU Associate Deans and Provost Leads
2021	National Postdoc Association Annual Conference, Virtual Meeting
2020	Council of Graduate Schools Summer Workshop and New Deans Institute- with quarterly New Deans cohort meetings through May 2021
2020	OU Green Zone Veteran Support Training
2018	OU Graduate College Workshop: Graduate Student Mentoring
2018	OU Graduate Workshop: Graduate Student and Postdoc Mental Health: A Discussion for Faculty
2017	OU LGBTQ+ Ally Training
2009	National Science Foundation: Joint Annual Meeting, Washington, D. C.
2007	Women in Higher Education: Career Strategies for Entering the Workplace, The Ohio State University
2006	Transforming the Professoriate: Preparing Women for Academic Careers in Science and Engineering, Virginia Tech

Funding

External Funding (Total $2,991,734)

- DOE Basic Energy Sciences**, Karr. E.A.** (PI), Project Title: Electron Flow and Energy Conservation in Syntrophic Metabolism, $558,548. January 15, 2018 – July 14, 2024. Award number DE-FG02-96ER20214.
- Oklahoma State University/National Science Foundation**, Karr, E.A.** (OU subaward - PI), Project Title: Louis Stokes STEM Pathways and Research Alliance: OK-LSAMP Alliance Phase VI, $184,000. August 1, 2021 – July 31, 2024. Primary Award PI: Jason Kirskey, Oklahoma State University, Award Number 1911370.
- Givaudan**,** McInerney, M.J. (PI), **Karr, E.A.** (Co-PI), Project Title: Biological Production of a Base Flavor Chemical, $49,186. January 13, 2022 – December 31, 2022.

- Price Family Foundation (private donor), West, A.H. (PI), **Karr, E.A.** (co-PI)**,** Richter-Addo, G.B. (co-PI), Anaerobic Structural Biology, $1,300,000. February 2014 – March 2017.
- National Institutes of Health Center of Biomedical Research Excellence in Structural Biology, West, A.H. (PI), **Karr, E.A.** (JI)**,** Project Title: Structure-Function Studies of MsvR, a Methanogen-Specific Transcriptional Regulator, $750,000. August 1, 2012 – August 31, 2017. Award Number 5P20GM103640-04, Subproject 8227.
- National Science Foundation Starter Grant, **Karr, E.A.** (PI), Project Title: Molecular Analysis of Transcription Regulation in the archaeon *Methanothermobacter thermautotrophicus*, $50,000 (direct costs). Sept. 2008 – Aug. 2010. Award Number 0803286.
- National Science Foundation Postdoctoral Fellowship in Microbiology, **Karr, E.A.** (PI), Project title: Identification and characterization of regulators of transcription in prokaryotic *Archaea,* $100,000 (direct costs). January 2005 – February 2007**.** Award Number 0400072.

Internal Funding (Total $34,096)

- The University of Oklahoma Research Council PI Research Investment Grant, **Karr, E.A.** (PI), Project Title: Analysis of Gene Expression Patterns in a Methanogen, $8,600, June 2012 – May 2013.
- The University of Oklahoma, Dodge Family College of Arts and Sciences – Information Technology Grant, **Karr, E.A.** (PI), Dunn, A.K. (Co-PI), Project Title: Request for Tablet PC Upgrades for Teaching Upper Division Science Courses, $4,468, Fall 2011.
- The University of Oklahoma, Dodge Family College of Arts and Sciences – Junior Faculty Summer Fellowship, **Karr, E.A.** (PI), Project Title: Regulation of Biofilm Formation in Methanogens, $7,000, June 2011.
- The University of Oklahoma, Dodge Family College of Arts and Sciences – Junior Faculty Summer Fellowship, **Karr, E.A.** (PI), Project Title: Metal Dependent Regulation of Oxidate Stress in The Archaeon *Methanothermobacter thermautotrophicus,* $6,000, June 2009.
- The University of Oklahoma Research Council PI Research Investment Grant, **Karr, E.A.** (PI), Project Title: Development of an *in vitro* transcription system for *Nitrosopumilus maritimus,* $8,028, April 2008 – April 2009.

Travel Awards

- *National Science Foundation Travel Award*: NSF Joint Annual Meeting, **2009.**
- *National Science Foundation Selected Participant,* ADVANCE Transforming the Professoriate: Preparing Women for Academic Careers in Science and Engineering, Virginia Tech, **2006.**

Role as Key Participant

- National Science Foundation: Research Experience for Undergraduates, Sims, P.A., (PI,); Schroeder, S.J. (Other Key Participant, OKP), Bartley, L.E. (OKP), Burgett, A.W. (OKP), **Karr, E.A.** (OKP), Richter-Addo, G.B. (OKP), West, A.H. (OKP), Project Title: REU Site: Program in Structural Biology at the University of Oklahoma, October 1, 2014 – September 30, 2017.

Publications

*Indicates corresponding author, #Indicates Karr Lab researcher

- Yaghoubi, S.#, M. Arbing, R. Gunsulas, **E.A. Karr*.** Crystal structure of the electron transfer flavoprotein EtfAB3 from *Syntrophomonas wolfeii*. Target Journal - Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. *In preparation.*
- Dinh, D.#, S. Yaghoubi#, L.M. Thomas, N. Wofford, M.J. McInerney, **E.A. Karr***. Functional and Structural Characterization of AMP-forming Acetyl-CoA Synthetase (Acs1) from *Syntrophus aciditrophicus* strain SB. Target Journal – mBIO. *In preparation.*
- Chanderban, M#. and **E.A. Karr***. A two-component signaling system is essential for the growth of *Methanococcus maripaludis* on formate. Target Journal – BIOS. (a journal highlighting undergraduate research). *In preparation.*
- Gilcrest, K#, V. Trinh#, C.E. Isom#, K. Mundy-Shelton#, D.J. Lessner, and **E.A. Karr***. The regulon and expanded redox-responsive cysteine residues in *Methanosarcina acetivorans* MsvR. Target Journal – BMC Microbiol. *In preparation.*
- Isom, C.E.#, S.K. Menon, A.H. West, and **E.A. Karr*.** Crystal structure and DNA functional analysis of an HxlR/DUF24 family transcription regulator, *Cd*TR_3200 from hypervirulent *Clostridioides difficile* R20291. Target Journal - Proteins: Struct. Funct. Genet. *In review.*
- Dinh, D.M.#, L.M. Thomas, **E.A. Karr***. 2023. Crystal structure of putative 3-hydroxypimelyl-CoA dehydrogenase, Hcd1, at 1.78 Å resolution from *Syntrophus aciditrophicus* strain SB. *Acta Cryst.* F79: 151-158.
- James, K.L., J.W. Kung, B.R. Crable, H. Mouttaki, J.R. Sieber, H.N. Nguyen, Y. Yang, Y. Xie, J. Erde, N.Q. Wofford, **E.A. Karr**, J.A. Loo, R.R. Ogorzalek Loo, R.P. Gunsalus and M.J. McInerney*. 2019. *Syntrophus aciditrophicus* uses the same enzymes in a reversible manner to degrade and synthesize aromatic and alicyclic acids. *Environ Microbiol,* 21: 1833-1846.
- Hebdon, S., S.K. Menon, **E.A. Karr**, G.B. Richter-Addo, A.W. West*. 2018. Regulatory targets of the response regulator RR_1586 from *Clostridioides difficile* identified using a bacterial one-hybrid screen. *J. Bacteriol.* Vol 200.
- Jennings, M.E., F.H. Lessner, **E.A. Karr**, D.J. Lessner*. 2017. The [4Fe-4S] clusters of Rpo3 are key determinants in the post Rpo3/Rpo11 heterodimer formation of RNA polymerase in *Methanosarcina acetivorans*. *Microbiol. Open*.
- Isom, C.E.#, S.K. Menon, L.M. Thomas, A.H. West, G.B. Richter-Addo and **E.A. Karr***. 2016. Crystal structure of a PadR family transcription regulator from hypervirulent *Clostridium difficile* R20291. *BMC Microbiol*. 16:231.
- Wang, B., S.M. Powell, N. Hessami, F.Z. Najar, L.M. Thomas, **E.A. Karr**, A.H. West, G.B. Richter-Addo*. 2016. Crystal structures of two nitroreductases from hypervirulent *Clostridium* difficile and functionally related interactions with the antibiotic metronidazole. *Nitric Oxide: Biol. Chem*. 60:32-39.
- James, K.L., L.A. Ríos-Hernández, N.Q. Wofford, H. Mouttaki, J.R. Sieber, C.S. Sheik, H.N. Nguyen, Y. Yang, Y. Xie, J. Erde, L. Rohlin, **E.A. Karr**, J.A. Loo, R.R. Ogorzalek-Loo, G.B. Hurst, R.P. Gunsalus, L.I. Szweda, and M.J. McInerney*. 2016. Pyrophosphate-dependent ATP formation from acetyl Coenzyme A in *Syntrophus aciditrophicus*, a new twist on ATP formation. *mBio* 7.
- Sheehan, R.C., A.C. McCarver, C.E. Isom#, **E.A. Karr***, and D.J. Lessner*. 2015. The *Methanosarcina acetivorans* thioredoxin system activates DNA binding of the redox-sensitive transcriptional regulator MsvR. *J. Ind. Microbiol. Biotechnol*. 42:965-969.

- Isom, C.E. [#], J.L. Turner[#], D.J. Lessner, **E.A. Karr***. 2013. Redox-sensitive DNA binding by homodimeric *Methanosarcina acetivorans* MsvR is modulated by cysteine residues. *BMC Microbiol*. 13:163.
- Islam, S. [#], **E.A. Karr*.** 2013. Examination of metal corrosion *by Desulfomicrobium thermophilum*, *Archaeoglobus fulgidus*, and *Methanothermobacter thermautotrophicus. BIOS*, 84.
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- **Karr, E.A.*** 2010. The methanogen-specific transcription factor MsvR regulates the adjacent *fpaA-rlp-rub* oxidative stress operon in *Methanothermobacter thermautotrophicus*. *J. Bacteriol*. 192 5914-5922.
- Dunn, A.K.*, **E.A. Karr**, Y. Wang, A. Batton, E. Ruby, and E. Stabb. 2010. The alternative oxidase (AOX) gene in *Vibrio fischeri* is controlled by NsrR and upregulated in response to nitric oxide stress. *Mol. Microbiol*. 77: 44-55.
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- **Karr, E.A.,** K. Sandman, R. Lurz, and J.N. Reeve. 2008. TrpY Regulation of *trpB2* Transcription in *Methanothermobacter thermautotrophicus*. *J. Bacteriol*. **190:** 2637-2641.
- Cubonova, L., K. Sandman, **E.A. Karr**, A. Cochran, and J.N. Reeve. 2007. Mutational analysis of the archaeal regulator TrpY. *J. Bacteriol*. 189: 4338-4342.
- **Karr, E.A.,** W.M. Sattley, S.M. Belchik, M.T. Madigan, and L.A. Achenbach*. 2006. Biodiversity of methanogenic and other *Archaea* in the permanently frozen Lake Fryxell, Antarctica. *Appl. Environ. Microbiol*. 72: 1663-1666.
- **Karr, E.A.,** W.M. Sattley, M.R. Rice, D.O. Jung, M.T. Madigan, and L.A. Achenbach*. 2005. Diversity and distribution of sulfate-reducing bacteria in the permanently frozen Lake Fryxell, McMurdo Dry Valleys, Antarctica. *Appl. Environ. Microbiol*. 71: 6353-6359.
- Jung, D.O., L.A. Achenbach, **E.A. Karr**, S. Takaichi, and M.T. Madigan*. 2004. A gas vesiculate planktonic strain of the purple nonsulfur bacterium *Rhodoferax antarcticus* isolated from Lake Fryxell, Dry Valleys, Antarctica. *Arch. Microbiol*. 182: 236-243.
- **Karr, E.A.,** W.M. Sattley, D.O. Jung, M.T. Madigan, and L.A. Achenbach*. 2003. Remarkable diversity of phototrophic purple bacteria in a permanently frozen Antarctic Lake. *Appl. Environ. Microbiol.* 69: 4910-4914.

Other Research Products

[#]Indicates Karr Lab researcher

- Yaghoubi, S. [#], L.M. Thomas, **E.A. Karr.** PDB Deposition in Preparation. Crystal structure of *Syntrophus aciditrophicus* Acs1 G196E/T197G mutant in the adenylate-forming conformation at 2.2 Å.
- Yaghoubi, S. [#], D.M. Dinh[#], L.M. Thomas, **E.A. Karr.** PDB Deposition in Preparation. Crystal structure of *Syntrophus aciditrophicus* Acs1 in the adenylate-forming conformation at 2.2 Å.
- Dinh, D.M. [#], L.M. Thomas, **E.A. Karr.** PDB Deposition in Preparation. Crystal structure of *Syntrophus aciditrophicus* Acs1 in the adenylate-forming conformation at 3.4 Å.

- Yaghoubi, S.[#], D.M. Dinh[#], M. Arbing, **E.A. Karr.** PDB Deposition in Preparation. Crystal structure of *Syntrophus aciditrophicus* Acs1 N-terminal domain in the thioester-forming conformation at 2.6 Å.
- Yaghoubi, S.[#], L.M. Thomas, M. Arbing, **E.A. Karr.** PDB Deposition in Preparation. Crystal structure of *Syntrophomonas wolfeii* EtfAB3 at 2.5 Å.
- McInerney, M.J., **E.A. Karr**, N. Wofford, and E. Bolling. Enhanced Biological Production of a Base Flavor Chemical, ID Number: Invention Disclosure No. 2023-025, Disclosed: October 25, 2022.
- Thomas, L.M., **E.A. Karr**, D.M. Dinh[#]. 2022. PDB ID 7SUB 3-oxoacyl-ACP reductase FabG from *Syntrophus aciditrophicus*.
- Menon, S.K.· C.E. Isom[#], and **E.A**. **Karr.** 2021. PDB ID 7KD3 Structure of an HxlR/DUF24 family transcription regulator, *Cd*TR_3200 from hypervirulent *Clostridioides difficile* R20291.
- Isom, C.E.[#], **E.A. Karr**, S.K. Menon, A.H. West, G.B. Richter-Addo. 2016. PDB ID 5DYM Crystal structure of a PadR family transcription regulator from hypervirulent *Clostridium difficile* R20291 – *Cd*PadR_0991 to 1.89 Angstrom resolution.
- Powell, S.M., B. Wang, N. Hessami, F.Z. Najar, L.M. Thomas, A.H. West, **E.A. Karr**, G.B. Richter-Addo. 2016. PDB ID 5J6C FMN-dependent Nitroreductase (CDR20291_0767) from *Clostridium difficile* R20291.
- Powell, S.M., B. Wang, N. Hessami, F.Z. Najar, L.M. Thomas, A.H. West, A.H., **E.A. Karr**, G.B. Richter-Addo. 2016. PDB ID 5J62 FMN-dependent Nitroreductase (CDR20291_0684) from *Clostridium difficile* R20291.
- **Karr, E.A.** 2003. Molecular analyses of sulfur-cycling prokaryotes and Archaea in permanently frozen Antarctic lakes. Dissertation, Doctor of Philosophy, Molecular Biology, Microbiology, and Biochemistry Graduate Program, Southern Illinois University, Carbondale, IL.
- A list of over forty conference poster presentations is available on my website.
- A list of invited seminars and conference presentations is available on my website.

Book Chapters and Proceedings

*Indicates corresponding author, [#]Indicates Karr Lab researcher

- McDermott, J.E.*, S. Lee, N. Parshall, S.M. McBride, **E.A. Karr.** 2022. Developing a New Partnership Between Universities Focused on Supporting Minority Graduate Students in Engineering. To Be included in *Connecting Efforts to Support Minorities in Engineering Education Workshop: Proceedings of a Workshop.* National Academies of Engineering. Washington, DC: The National Academies Press.
- **Karr, E.A.,** C.E. Isom[#], V. Trinh[#], and E. Peeters*. 2017. Transcription factor-mediated gene regulation in *Archaea*. In: Nucleic Acids and Molecular Biology, Vol. RNA metabolism and gene expression in Archaea, Béatrice Clouet-d'Orval (ed). Vol. 32, Spring, Cham, pp 27-69. Invited Review.
- **Karr, E.A.*** 2014. Transcription Regulation in the Third Domain. *Adv. Appl. Microbiol*. Chapter 3, Vol 89:101-133. Invited Review.
- Madigan, M.T., D.O. Jung, **E.A. Karr**, W.M. Sattley, L.A. Achenbach, and M. van der Meer. 2005. Diversity of anoxygenic phototrophs in contrasting extreme environments. In: Geothermal Biology and Geochemistry in Yellowstone National Park. W. Inskeep (ed). Thermal Biology Institute, Montana State University.

Teaching Experience

University of Oklahoma

(*course carries or can be taken for graduate credit)

Graduate Professional Development Seminar, MBIO/PBIO 5821, Fall 2022, 1 credit hour. Role: Instructor

The professional development seminar covers various topics and involves activities targeted at helping graduate students succeed in their first year of study. It also provides an opportunity to build community with other incoming students since our graduate program does not operate on a cohort-based model. Students also work on their individual development plans using myIDP. While Fall 2022 was the first time I taught this seminar, this was a seminar course that I worked with the department chair to develop and implement as part of the first-year graduate student experience during my time as the Graduate Program Director.

Physiology of Microorganisms, MBIO 4853, Spring 2018 (co-taught), Spring 2020, Spring 2021 (online), 3 credit hours. Role: Instructor

Physiology of Microorganisms is one of our pinnacle courses in the microbiology degree. In Spring 2018, I set out alongside my colleague to completely revamp and co-teach this mid-sized course. The course details the variety of microbial metabolisms and strategies for success in the natural environment. The content spans energetics to environmental diversity. We took a slightly different approach to the course content and emphasis while maintaining some of the pedagogical techniques of our predecessor. However, from initially co-teaching this course to a semester interrupted (Spring 2020) to a completely online offering in the Spring of 2021, I never got the opportunity to build this course to its full potential.

Case Studies in Medical Microbiology, MBIO 4810 and MBIO 4873, Fall Semesters, 2016-2019, 3 credit hours. Role: Instructor

Case Studies in Medical Microbiology was a new course I developed partly based on a lab course I experienced as an undergraduate and one that involves topics relevant to those that students will encounter in professional training for medical careers. Case Studies is an elective discussion-based course where the students discuss a patient case, determine the cause of illness, and discuss various critical microbiological features. The goal of this course is two-fold. First, it increases students' knowledge of medical microbiology using an inquiry-based approach, like what those pursuing medicine will do in their careers. Secondly, it increases their ability to work as a team and communicate amongst and with their peers through discussions, discussion leadership, writing, and presentations.

Introduction to Molecular Biology, PBIO/MBIO/BIOL 4843/5843, Fall 2008 and Spring Semesters 2009-2014, Fall 2014, Spring 2017, 3 credit hours. Role: Instructor

Introduction to Molecular Biology is a rigorous course that focuses on the Central Dogma and cellular process related to the flow of information in cells. It is a large service course is offered to undergraduate and graduate students across various majors. I emphasize how the material they learn in this course will help them understand the basis for genetic diseases and cancer, genetic testing, induced pluripotent stem cell technology, and the mechanisms of many pharmaceutical compounds. We regularly compare the similarities and differences between these processes in bacteria and eukaryotes and why this is important for drugs targeted toward bacteria. Throughout the semester, I reiterate these points as we cover relevant material, always relating the themes to why they matter in "the real world."

Practical Bioinformatics, MBIO 3763, Spring 2016, 3 credit hours. Role: Instructor

Practical bioinformatics is a core course in our Biotechnology concentration for our undergraduate degrees. It is a smaller course that was taught in a computer lab setting. Students regularly worked on bioinformatic problems in groups and had an outside semester-long project on a specific topic.

****Advanced Molecular Biology, MBIO/PBIO 5883, Fall 2015, 3 credit hours. Role: Instructor***

Advanced Molecular Biology was a graduate-level course that I co-taught with a colleague. I taught the second half of the semester and focused on preparing students for molecular biology in the research laboratory. My course portion focused on protein-based molecular biology techniques and approaches using modern scientific literature.

Introduction to Biotechnology, HON 3513, Fall Semesters, 2010-2012, 3 credit hours. Role: Instructor

I developed and offered this small undergraduate course through the OU Honors College. The course covered a broad introduction to biotechnology and topics from recombinant DNA technology and transgenic organisms to gene therapy and stem cells. My overall goal in this course was to introduce students to current or development technologies. Moreover, I aimed to give them the information they needed to make informed decisions. Students left the class able to weigh the pros and cons of multiple technologies from scientific, ethical, and ecological standpoints. Ultimately, I hope they can educate others when discussions regarding biotechnology arise in day-to-day life.

****Scientific Integrity, MBIO 4810/5810, Fall 2009, 2 credit hours. Role: Instructor***

I developed this course to educate graduate students and advanced undergraduates involved in research on the importance of integrity in scientific research through reading and discussing case studies. Topics discussed included mentoring, authorship, peer review, use of animals in research, managing competing interests, collaborative research, data ownership, intellectual property, genetic technology, use of animals in research, and scientific record keeping.

****Graduate Student Seminar Series, MBIO/PBIO 5971, Spring 2008, Fall 2013, Spring 2018, 1 credit hour. Role: Coordinator***

Microbiology and Plant Biology graduate students must give multiple research seminars for their degree program. Master's students present two seminars, while Ph.D. students present three during graduate school. As course coordinator, I was responsible for organizing the schedule, running the seminar, and providing students feedback and mentoring to help them effectively communicate their research to an audience of their peers and faculty.

Southern Illinois University

2003 Guest Lecturer, Molecular Biology Lecture, 3 lectures

2002 Guest Lecturer, Bacterial and Viral Genetics, 2 lectures

2000 Graduate Teaching Assistant, Elementary Microbiology Lab

1999 Graduate Teaching Assistant, Principles of Microbiology Lab

Murray State University

1999 Undergraduate Teaching Assistant, Introduction to Microbiology Lab

Graduate Thesis and Doctoral Committees

1. Nicolas Cole Kiger, Microbiology and Plant Biology, Ph.D. student, *Role – Committee Member, 2022 –…*
2. Milad Nourbakhsh, Electrical and Computer Engineering, Ph.D. Student*, Role* – Graduate College Representative (*GCR)/Outside Member, 2022 –…*
3. Chhandosee Ganguly, Chemistry & Biochemistry, Ph.D. Candidate, *Role – GCR/Outside Member, 2021 –…*
4. Kaushika Premachandra, Chemistry and Biochemistry, Ph.D. Candidate, *Role – GCR/Outside Member, 2020 – …*
5. Chase Roedl, Chemistry and Biochemistry Ph.D. student, *Role –GCR/Outside Member, 2020 – 2021.*
6. Sogol Salary, Planning Design and Construction, Ph.D., *Role –GCR/Outside Member, 2020 – 2021.*
7. Adwaita Parab, Microbiology and Plant Biology, M.Sc., *Role – Committee Member, 2019 – 2021.*
8. Pete Pickens, Microbiology and Plant Biology, Ph.D. Candidate, *Role – Committee Member, 2019 –…*
9. **Selena Yaghoubi,** M.Sc.– Ph.D. candidate, Microbiology, *Role –Committee Chair/Advisor,* 2019 – …, expected Ph.D. completion Spring 2024, earned M.Sc. in 2022.
    - Specialized Training, Awards, and Funding while in the Karr Lab:
        - 2024 Dodge Family Finishing Fellowship, Dodge Family College of Arts and Sciences
        - 2023 Hollingsworth Family Endowed Scholarship, Dodge Family College of Arts and Sciences
        - 2023 ASM Future Leaders Mentoring Fellowship, ASM Microbe
        - 2023 Kenneth & Joye Harwell Scholarship
        - 2022 M.Sc., non-thesis, Microbiology
        - 2022 Louis Pfeister Scholarship, OU
        - 2021 Provost's Certificate of Distinction in Teaching
10. **Zane Mills** – M.Sc. student, Microbiology, *Role –Committee Chair/Advisor,* 2019. *Since June 2020, Zane has been enrolled in the Doctor of Dental Surgery Degree Program at the University of Oklahoma Health Sciences Center.*
11. Samuel Miller, Microbiology and Plant Biology, Ph.D. Candidate, *Role – Committee Member, 2018 – …*
12. Savannah Morris, Chemistry and Biochemistry Ph.D., *Role –GCR/Outside Member, 2018 –2023.*
13. Shannon Fulton, Microbiology and Plant Biology, M.Sc., *Role – Committee Member, 2018 – 2020.*
14. Annie Doyle, Microbiology and Plant Biology, M.Sc., *Role – Committee Member, 2018 – 2020.*
15. April Aloway, Chemistry and Biochemistry Ph.D. student, *Role –GCR/Outside Member, 2018 – 2020.*
16. Cansu Demirel Floyd, Geology, Ph.D., *Role –GCR/Outside Member, 2017 – 2022.*
17. **Christine Woelfel-Monsivais**, M.Sc., Microbiology, non-thesis, *Role –Committee Chair/Advisor,* 2017 – 2019. *Christine is enrolled in a Ph.D. program at Clemson University.*

18. Marcee Olvera, Chemistry and Biochemistry Ph.D. Candidate, *Role –GCR/Outside Member, 2017–…,*
19. **David Dinh**, Ph.D., Microbiology, *Role –Committee Chair/Advisor,* 2016 – 2022. *Currently completing a postdoc at UC Irvine.*
    - Specialized Training, awards, and funding while in the Karr Lab:
        - 2021 – 2022 Robert E. and Mary B. Sturgis Award
        - 2020 – 2021 David C. Steed (Dodge Family College of Arts & Sciences) Scholarship
        - 2020 – 2021 RapiData at Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory "Data Collection & Structure Solving: A Practical Course in Macromolecular X-Ray Diffraction Measurement"
        - 2020 Roberson & Wethington Scholarship for prestigious training at another institution, OU
        - 2020 Provost's Graduate Teaching Assistant Award, OU
        - 2018 Graduate Student Teaching Excellence Award, Department of Microbiology & Plant Biology, OU
        - 2016 Provost's Certificate of Distinction in Teaching, Fall Semester, OU
20. Emily Junkins, Microbiology and Plant Biology, Ph.D., *Role – Committee Member, 2016 – 2020.*
21. Rachel Kim Bosun, Chemistry & Biochemistry, Ph.D. student, *Role –GCR/Outside Member, 2016 – 2018.*
22. Hari Priya Parameshwaran, Chemistry & Biochemistry, *Role –GCR/Outside Member, 2015 –2021.*
23. Hongyan Ma, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2015 – 2020.*
24. Casey Stevens, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2015 –2020.*
25. Mason J. VanOrden, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2015 –2020.*
26. Katie Sharp, Chemistry & Biochemistry, Ph.D. student, *Role –GCR/Outside Member, 2015 – 2018.*
27. Varsha Jhawar, Chemistry & Biochemistry, Ph.D. student, *Role –GCR/Outside Member, 2015 – 2018.*
28. **Jack Lee**, M.Sc., Microbiology, non-thesis, *Role –Committee Chair/Advisor,* 2015 – 2017. *Jack is the Mid-South Regional Sales Representative for BMG Lab Tech.*
29. **Kylie Gilcrest**, M.Sc., Microbiology, *Role –Committee Chair/Advisor,* 2014 –2016. *Kylie is a Research Scientist at BioAgilytix in Raleigh-Durham, North Carolina.*
30. Skyler Hebdon, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2013 – 2018.*
31. **Kristen Mundy Shelton**, M.Sc., Microbiology, *Role –Committee Chair/Advisor,* 2013 –2017. *Kristen is a Ph.D. candidate in the Instructional Leadership and Academic Curriculum STEM Education program at the University of Oklahoma.*
    - Specialized Training, awards, and funding while in the Karr Lab:
        - X-ray Methods in Structural Biology, Cold Spring Harbor Lab, New York
        - RapiData at Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory "Data Collection & Structure Solving:

A Practical Course in Macromolecular X-Ray Diffraction Measurement"

32. Erwin Abucayon, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2013 – 2015.*
33. **Alyssa Grossen**, M.D. – M.Sc. student, Microbiology, *Role –Committee Chair/Advisor,* 2013 –2014. *Alyssa is currently an Internal Medicine Physician at OU Medicine in Oklahoma City.*
34. James Creecy, Microbiology and Plant Biology, Ph.D., *Role – Committee Member, 2012 – 2015.*
35. Caitlin Crowder, Chemistry & Biochemistry, Ph.D. student, *Role –GCR/Outside Member, 2012 – 2014.*
36. Viridiana Herrera, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2011 – 2019.*
37. April Clevenger, Chemistry and Biochemistry Ph.D., *Role –GCR/Outside Member, 2010 – 2019.*
38. Emily N. Kennedy, Chemistry & Biochemistry, M, Sc., Ph.D., *Role –GCR/Outside Member, 2010 – 2016.*
39. Huynh Le, Microbiology and Plant Biology, M.Sc., *Role – Committee Member, 2010 – 2013.*
40. Chamindika Siriwardana, Microbiology and Plant Biology, Ph.D., *Role – Committee Member, 2009 – 2014.*
41. Brittany Kitchens Chapman, Chemistry & Biochemistry, Ph.D. student, *Role – GCR/Outside Member, 2009 – 2012.*
42. Anjumala P. Herath, Microbiology and Plant Biology, M.Sc., *Role – Committee Member, 2009 –2013.*
43. **Jessica Turner Harper**, M.Sc., MHS, PA-C, – M.Sc. Microbiology, *Role –Committee Chair/Advisor,* 2009 – 2012. *Jessica is a Physician Assistant at the University of Oklahoma Children's Hospital.*
44. Yue Huang, Microbiology and Plant Biology, M. Sc., *Role – Committee Member, 2009 – 2012.*
45. **Chrystle McAndrews** – M.Sc. student, Microbiology, LSAMP Bridge the Doctorate Fellow, *Role –Committee Chair/Advisor,* 2009 – 2011.
46. Feifei Liu, Microbiology and Plant Biology, Ph.D., *Role – Committee Member, 2008 – 2017.*
47. Katie Branscum Foster, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2008 – 2015.*
48. Peter Bradstock, Microbiology and Plant Biology, Ph.D. student, Role – *Committee Member, 2007 – 2009.*
49. Bryan Crable, Microbiology and Plant Biology, Ph.D., *Role – Committee Member, 2007 – 2013.*
50. Shuo Lu, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2007 – 2013.*
51. Catherine Bishop Isom, Microbiology and Plant Biology, Ph.D., *Role – Committee Member, 2007 – 2013.*
52. Chuck Smallwood, Chemistry & Biochemistry, Ph.D., *Role –GCR/Outside Member, 2007 –2012.*
53. Jessica Sieber, Botany and Microbiology, Ph.D., *Role – Committee Member, 2007 – 2011.*

Postdoctoral Advisees

1. **Catherine Bishop Isom, Ph.D.,** Postdoctoral Researcher, 2012 – 2017. *Cat is completed a master's in clinical professional counseling program and teaches in undergraduate biology labs at OU. Before this, she worked as a manager at Immunomycologics (IMMY), a Norman-based biotech company, and as a research scientist in the Department of Chemistry and Biochemistry at OU.*
    a. Specialized Training, awards, and funding while in the Karr Lab:
    b. RapiData at Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory "Data Collection & Structure Solving: A Practical Course in Macromolecular X-Ray Diffraction Measurement"
2. **Vy Trinh, Ph.D.** – Postdoctoral Researcher, 2015 –2017. *Vy is a scientist at Cytovance Biologics, Oklahoma City. Before taking her position at Cytovance, she worked as the Department of Microbiology undergraduate microbiology lab* coordinator and media prep center director.

Undergraduate Research Mentoring

- I have mentored twenty-four undergraduates in my research lab during my faculty career. A list is available on my website. Undergraduates have completed Honors Research, Senior Theses, been engaged in the Four-Year Research Experience Program (FYRE), as OK-LSAMP scholars, or part of the OU Structural Biology NSF Research Experience for Undergraduates.

External Service

Editorial

2020 – Associate Editor, Antonie van Leeuwenhoek Journal, Anaerobic Bacteria Section.

2012 – Review Editor, Frontiers in Microbial Physiology and Metabolism.

Grant Panels

2019 DOE Office of Basic Research, Basic Energy Sciences Physical Biosystems.

2011 NSF Antarctic/Polar Programs.

2009 USDA NRI Biobased Products and Bioenergy Production Research Program.

2008 USDA NRI Biobased Products and Bioenergy Production Research Program.

Ad Hoc Grant Review

- NSF Antarctic/Polar Programs
- DOE Early Career Programs – DOE Basic Energy Sciences Physical Biosystems
- NSF Molecular and Cellular Biology
- ORAU/NASA Postdoc Program

Ad Hoc Manuscript Review

Microbiology, Journal of Bacteriology, Molecular Microbiology, Nucleic Acids Research, BMC Genetics, Astrobiology, Environmental Science and Technology, Canadian Journal of Microbiology, Journal of Visualized Experiments, Environmental Microbiology, PLOS One, Antonie van Leeuwonhoek, mBIO, Journal of Biological Chemistry

Outreach

2009-2019	Biotechnology Curriculum Advisory Committee, Moore Norman Technology Center
2018	Life at the Extremes. Presentation to 6th-grade science classes at Whittier Middle School, Norman, OK
2015	Navigating the Sciences at OU. Presentation to Moore Norman Technology Center Biotechnology Program high school students
2014	Becoming a scientist. Presentation to 3rd-grade science classes at Trinity Lutheran School, Norman, OK
2012	Life at the Extremes. Presentation to 1st-3rd grade science classes at Trinity Lutheran School, Norman, OK
2011	Biology of Archaea. Presentation to Environmental Microbiology and Biotechnology undergraduate summer course at OU
2010	Science in the Karr Lab. Presentation to Moore Norman Technology Center Biotechnology Program high school students
2008	An Antarctic Adventure. Presentation to Pre-K class at St. Josephs Early Childhood Development Center, Norman, OK