

Anika James

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Summary

PhD candidate in the Department of Molecular Biosciences at the University of Kansas specializing in Cellular, and Developmental Biology with a strong foundation in Cancer Biology research. My research is focused on the role of nuclear APC in regulating MUC2 expression, mucus barrier integrity and mitigation of colonic inflammation.

Education

- **PhD in Molecular, Cellular, and Developmental Biology** Aug 2020 – Present
University of Kansas GPA: 3.85/4.00
- **B.S. in Biology, Minor in Chemistry** Aug 2016 – May 2020
Metropolitan State University of Denver (MSU Denver) GPA: 3.80/4.00

Research Experience

Graduate Research Assistant — Neufeld Lab, University of Kansas — Aug 2020 – Present:

- Dissected nuclear APC control of *MUC2* transcription and mucus barrier integrity; examined downstream pathways connecting APC to intestinal homeostasis and inflammation.
- Explored microbiome contributions to inflammatory bowel disease (IBD) and how sex-specific differences influence disease susceptibility.
- Elucidated molecular pathways linking APC regulation to intestinal homeostasis and inflammation, with implications for gastrointestinal cancer.
- Presented findings at national and local conferences, contributing to collaborative research discussions of APC's role in colon cancer..

Undergraduate Researcher — Zajdowicz Lab, MSU Denver — Aug 2019 – May 2020:

- Studied effects of *Neisseria lactamica* on *Streptococcus mutans* oral biofilm formation; presented a poster at a national conference.

Undergraduate Researcher — Bonham Lab, MSU Denver — Aug 2018 – Aug 2019:

- Developed electrochemical biosensor approaches for sensitive serologic detection of pathogenic *Mycoplasma*; reported findings at ASBMB venues.

Teaching & Leadership

Graduate Teaching Assistant — University of Kansas, Lawrence, KS Spring 2022 – Fall 2023:

- BIOL 152 (Principles of Organismal Biology) – Spring 2022
- BIOL 688 (The Molecular Biology of Cancer) – Fall 2023

Project Lead, Biology Study Room — University of Kansas, Lawrence, KS Fall 2021:

- Directed the comprehensive redesign of BioCenter for Collaborative Learning (BCCL), developing detailed spatial layouts and procurement plans for instructional equipment and collaborative furnishings.

Achievements

- **FASEB Trainee Award / Outstanding Poster Presentation Award** Fall 2022
- **Dean's Doctoral Fellowship (Fully Funded)** Fall 2022–Spring 2023; Fall 2020–Spring 2021
- **KUCC Travel Award** Nov 2021
- **Certificate of Recognition, ASBMB 23rd Annual Undergraduate Poster Competition** Apr 6, 2019

- **Undergraduate Research Mini-Grants** Nov 12, 2019; Nov 13, 2018
- **Dean and Provost Scholarship** Nov 7, 2019; Apr 5, 2018; Nov 2, 2017
- **CO-WY AMP Research Grant Funding Awards** Nov 7, 2019; Nov 1, 2018

Professional Memberships

- Associate Member, American Association for Cancer Research (AACR) Dec 2024 – Present
- Member, The National Society of Leadership and Success Feb 2019 – Present
- Student Member, American Society for Biochemistry and Molecular Biology (ASBMB) 2018 – 2020

Technical Skills

- **Laboratory:** PCR, qPCR, ChIP-PCR, RNA/DNA extraction, Western blotting, ELISA, molecular cloning, protein purification, mammalian cell culture, immunofluorescence (IF), immunohistochemistry (IHC), fluorescence in situ hybridization (FISH)
- **Histology:** H&E staining, Alcian Blue staining, tissue processing, paraffin embedding, microtome sectioning
- **Animal Research:** Mouse colony management (breeding, husbandry), genotyping, ear tagging, teeth trimming, euthanasia, necropsy, tissue/fecal sample collection
- **Imaging:** Nikon and Keyence microscope operation; training of lab members on instrumentation
- **Analysis/Software:** GraphPad Prism, SPSS; MS Office (Word, Excel, PowerPoint); L^AT_EX
- **Mentorship & Lab Management:** Train undergraduates and first-year graduate students in experimental design and techniques; oversee supply procurement and inventory to ensure research continuity
- **Scientific Writing:** Experience in writing and preparing grant proposals

Publications

Peer-Reviewed:

- Sandoval, A. Q., **James, A.**, & Neufeld, K. L. *Nuclear adenomatous polyposis coli elevates STAT1 and reduces CXCL1, 2, and 3 expression and inhibits neutrophil recruitment. Cellular Signaling*, 111957.

Manuscripts in Progress:

- **James, A.**, Washington, K., & Neufeld, K. L. *Nuclear APC Couples Epithelial NF- κ B Control to Mucin Homeostasis and Sex-Specific Inflammatory Outcomes*. (manuscript in progress)
- **James, A.**, Washington, K., & Neufeld, K. L. *APC-Dependent Microbiome Remodeling Underlies Helicobacter-Mediated Protection from Colitis*. (manuscript in progress)

Presentations

- **Microbiome modulation by *Helicobacter hepaticus* reveals nuclear APC-dependent protection against colitis**
BIOL 902 – Advanced Molecular Cellular Biology (AMCB) Seminar; Lawrence, KS (Oral) Sep 2025
- **Nuclear APC maintains colon homeostasis and mitigates inflammation**
Molecular Biosciences Symposium 2025; Lawrence, KS (Poster) Aug 2025
- **Nuclear APC maintains colon homeostasis and mitigates inflammation**
KUCC Cancer Biology Research Program Meeting; Olathe, KS (Oral & Poster) Jul 2025
- **Nuclear APC maintains colon homeostasis and mitigates inflammation**
KU Center for Genomics 4th Annual Symposium; Lawrence, KS (Poster) May 2025
- **Nuclear APC maintains colon homeostasis and mitigates inflammation**
AACR Annual Meeting 2025; Chicago, IL (Poster) Apr 2025
- **Nuclear APC maintains colon homeostasis and mitigates inflammation**
Biology Senior Seminar, Baker University; Baldwin City, KS (Oral) Mar 2025

- **Nuclear Localization of APC Is Essential for Mucus Barrier Integrity and Mitigation of Colonic Inflammation: A Sex-Specific Study**
23rd Annual K-INBRE Symposium; Kansas City, MO (Poster) Jan 2025
- **Nuclear Localization of APC Is Essential for Mucus Barrier Integrity and Mitigation of Colonic Inflammation**
Molecular Biosciences Fall Seminar; Lawrence, KS (Oral) Dec 2024
- **Nuclear Localization of APC Is Essential for Colon Mucus Barrier Integrity and Mitigation of Colonic Inflammation: A Sex-Specific Study**
KUCC Research Week 2024; Overland Park, KS (Poster) Nov 2024
- **The Role of Nuclear APC in Regulating MUC2 Expression and Colonic Inflammation**
KUCC Cancer Biology Research Program Meeting; Olathe, KS (Poster) Jul 2024
KU Center for Genomics 3rd Annual Symposium; Lawrence, KS (Poster) May 2024
21st Annual K-INBRE Symposium; Overland Park, KS (Poster) Jan 2023
BIOL 902 AMCB Seminar; Lawrence, KS (Oral) Jan 2024
KUCC Research Week 2023; Overland Park, KS (Poster) Nov 2023
FASEB GI Epithelium Conference; Steamboat Springs, CO (Poster) Sep 2023
Molecular Biosciences Symposium; Lawrence, KS (Poster) Aug 2023
KUCC Cancer Biology Research Program Meeting; Olathe, KS (Poster) Aug 2023
KU Center for Genomics 2nd Annual Symposium; Lawrence, KS (Poster) May 2023
BIOL 902 AMCB Seminar; Lawrence, KS (Oral) Feb 2023
21st Annual K-INBRE Symposium; Overland Park, KS (Poster) Jan 2023
KUCC Research Week; Kansas City, KS (Poster) Nov 2022
Molecular Biosciences Symposium; Lawrence, KS (Poster) Aug 2022
FASEB “Gastrointestinal Tract XX”; Steamboat Springs, CO (Poster) Aug 2022
- **The role of nuclear APC in regulating MUC2 expression and colonic inflammation**
University of Kansas Cancer Center Research Symposium; Kansas City, KS (Oral) Nov 2021

References

- **Dr. Kristi Neufeld**
Frank B. Tyler Professor of Cancer Research
Department of Molecular Biosciences, University of Kansas
Email: klneuf@ku.edu
- **Dr. Dan Dixon**
Professor, Winthrop P. Rockefeller Cancer Institute, University of Arkansas for Medical Sciences
Email: ddixon2@uams.edu
- **Dr. Mizuki Azuma**
Professor, Department of Molecular Biosciences, University of Kansas
Email: azumam@ku.edu