

Ashbey N. Manning

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EDUCATION

University of Colorado Boulder, Boulder, CO
PhD Student, Chemical Engineering

August 2024 - Present

University of Kentucky, Lexington, KY
Bachelor of Science, Chemical Engineering
Certificate, Biopharmaceutical Engineering
Cumulative GPA: 3.91

August 2020 – May 2024

Western Kentucky University, Bowling Green, KY
Non-Degree Seeking, dual enrollment through the Gatton Academy
Cumulative GPA: 3.75

August 2018 – May 2020

Notable Coursework: Fundamentals of Pharmaceutical Sciences, Physiology, Intersections of Chemical Engineering and Health Equity, Biochemical Engineering

SCHOLARSHIPS & HONORS

Dean's Future Leaders Fellowship, University of Colorado

Awarded Fall 2024

Dean's Fellowship for Excellence, University of Colorado

Awarded Fall 2024

Chair's IMPACT Fellow, University of Colorado

Awarded Fall 2024

AIChE Outstanding Senior, University of Kentucky

Awarded Spring 2024

University of Kentucky Presidential Scholarship, University of Kentucky

Fall 2020 – Spring 2024

L. Stanley Pigman Engineering Scholarship, University of Kentucky

Fall 2020 – Spring 2024

RESEARCH EXPERIENCE

University of Colorado Boulder, Department of Chemical and Biological Engineering

Graduate Research Assistant, November 2024 – Present

Advisor: Dr. Kristi Anseth

University of Kentucky, Department of Chemical and Materials Engineering

Undergraduate Research Assistant, August 2021 – May 2024

Advisor: Dr. Brittany Givens

Synthesized nanoparticles intended for use as a drug delivery agent. Specific focus on tuning the synthesis of poly(caprolactone) nanoparticles to meet specific sizing requirements for a variety of healthcare applications. Gained extensive experience in cell culture and nanoparticle synthesis.

University of Iowa, Nanoscience and Nanotechnology Institute

National Science Foundation REU, May – July 2022

Advisor: Dr. C. Allan Guymon

Prepared poly(ethylene glycol dimethacrylate) hydrogels for applications in cochlear implants. Synthesized drug-loaded poly(lactic-co-glycolic acid) microspheres and integrated them into the hydrogel system. Studied mechanical properties of hydrogels.

RESEARCH AWARDS

University of Kentucky 5-Minute Fast Track Undergraduate Research Oral Competition, Second Place Talk	University of Kentucky	2023
AIChE National Conference Food, Pharma, and Biotech I Poster Competition, Third Place Poster	American Institute of Chemical Engineers	2023

PUBLICATIONS

- **Manning, A.N***; Rowlands, C.E. *; Saindon, H.; Givens, B.E.; “Tuning the emulsion properties influences the size of poly(caprolactone) particles for drug delivery applications.” 2023. The AAPS Journal, DOI: 10.1208/s12248-023-00869-4.

* Co-first authors

POSTER PRESENTATIONS

- **Manning, A.**; Rowlands, C.; Saindon, H.; Givens, B.E.; "Influence of emulsion properties on poly(caprolactone) microparticle size" *AIChE Annual Conference, Orlando, FL, USA*. November 2023.
- **Manning, A.**; Peel, A.; Ben-Shlomo, N.; McMillan, A.; Guymon, C.A.; “Dexamethasone eluting zwitterionic hydrogel coatings for cochlear implants” *Summer Undergraduate Research Conference, University of Iowa, Iowa City, IA, USA*. July 2022.
- **Manning, A.**; Rowlands, C.; Givens, B.E.; “Modulating particle synthesis for advanced drug delivery applications” *Showcase of Undergraduate Scholars, University of Kentucky, Lexington, KY, USA*. April 2022.
- Caldbeck, S.; Caldbeck, W.; **Manning, A.**; “Wildcar, University of Kentucky 2021-2022 chemE car team” *Chem-E-Car Poster Competition, AIChE Annual Student Conference, Boston, MA, USA*. November 2021.

ORAL PRESENTATIONS

- **Manning, A.**; Rowlands, C.; Saindon, H.; Givens, B.E.; "Influence of emulsion properties on poly(caprolactone) microparticle size" *Case Western Reserve University Biomaterials Day, Cleveland, OH, USA*. November 2023.

INDUSTRY EXPERIENCE

Patheon by Thermo Fisher Scientific, Cincinnati, OH

Manufacturing Sciences Co-op, May – July 2023

Analyzed data for and authored API qualification protocols, process pre-validation reports, and process qualification reports. Authored protocols to transfer products to new equipment. Edited commercial batch records to reflect current client needs. Reviewed commercial batch records for GDP.

Formulation Science Co-op, January – May 2023

Worked closely with clients to meet both client and regulatory requirements. Authored and reviewed batch production records (BPRs), production test records (PTRs), and formulation trial records (FTRs) to ensure all records followed GDP and regulatory requirements. Performed laboratory in-process testing. Executed small, lab-scale manufacturing trials utilizing GLP.

Project Engineering Co-op, August 2022 – January 2023

Managed facility projects critical to maintaining an FDA/DEA facility. Analyzed job site hazards and signed daily safe work permits. Created preventative maintenance plan for critical life safety equipment.

LEADERSHIP

Aperture, University of Kentucky Journal of Undergraduate Research

Launch Committee Member & Co-Editor-in-Chief, July 2023 – Present

Outlined foundational tasks required for the startup of an undergraduate, faculty-reviewed research journal. Collaborated with the Office of Undergraduate Research to ensure all legal and marketing tasks are properly executed. Specific deliverables included the creation of journal bylaws, contracts, and development of the submission and faculty review guidelines. Served as Co-Editor-in-Chief upon launch.

American Institute of Chemical Engineers (AIChE)

Chapter President, July 2023 – Present

Planned and hosted social and professional events for chemical engineering undergraduates. Promoted chapter service and philanthropy initiatives. Assisted chapter advisor in organizing attendance for the AIChE national and regional conferences.

ChemE Car

Starting Mechanism Lead, August – December 2021

Collaborated with team to develop an effective starting mechanism for the 2021 AIChE national chem-E-car competition.

MEMBERSHIP

DanceBlue (2024)

Society for Biomaterials (2023 – 2024)

Tau Beta Pi (2022 – 2024)

Omega Chi Epsilon (2022 – 2024)

Society of Women Engineers (2020 – 2024)

SERVICE

Ohio Academy of Science

Science Fair Judge, March 2023 - Present

Served as a judge for the Southwest Ohio Science and Engineering Expo and the Ohio State Science Day fairs.

RefugeeConnect

Soccer Coordinator, April – June 2023

Organized soccer teams for the annual World Refugee Day Cup community event.