

Benecia Angelica

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EDUCATION

Western Michigan University

MSc in Biological Sciences

Kalamazoo, MI

Expected May 2026

Western Michigan University

BSc in Biomedical Sciences, Minor in Chemistry and General Business

Kalamazoo, MI

Dec 2023

EXPERIENCE

Microbiology Researcher

Western Michigan University

Aug 2023 – Present

Kalamazoo, MI

- Conducted microbiology and virology research on *Shigella* metabolism, viral immune evasion, and cell optimization
- Investigated isoleucine metabolism and virulence in *Shigella flexneri* by conducting MTT, growth, invasion, and plaque assays on knockout strains using Henle-407 cells
- Engineered 4 P1 phage transduction from *E. coli* to *Shigella* knockout strains, validating successful genetic integration through PCR screening and sequencing analysis
- Cloned, PCR-amplified, and recombinantly expressed vIL-18BP in *E. coli* to advance tanapoxvirus protein development through sonication and cryogenic grinding (liquid N₂)
- Enabled scalable virology workflows by adapting owl monkey kidney cells from monolayer to suspension culture using spinner flasks and hemocytometer counting for TPV infections

Human Physiology Lab Teaching Assistant

Western Michigan University

Jan 2024 – Present

Kalamazoo, MI

- Streamlined human physiology instruction through lab teaching, assessment design, and optimized class workflows
- Led laboratory instruction for **50+** students, overseeing hands-on experiments, teaching advanced instrument techniques, and maintaining a safe working environment
- Created comprehensive PowerPoint slides, quizzes, and exams, boosting student quiz scores from **60%** to **90%**

Biochemistry Intern

Kalsec Inc.

May 2023 – Dec 2023

Kalamazoo, MI

- Developed protein pipelines for food ingredient optimization by expression, stability, and siderophore enhancement
- Produced **13** recombinant proteins by transforming, verifying, and expressing plasmids in competent cells through optimized purification and buffer exchange methods
- Improved oil quality assessment by conducting **6+** automated oxidation stability tests through Oxidative Stability Index (OSI) analysis to evaluate compound performance
- Enhanced siderophore production analysis by preparing and purifying samples through Cu-CAS assay, media preparation, resin extraction, and vacuum filtration

LEADERSHIP

Marketing Intern

Indokemika Jayatama

May 2025 – Aug 2025

Jakarta, Indonesia

- Optimized multi-division data management with mapping, improving accuracy **30%** across budgets and reports
- Contributed to product and market development reports by innovatively organizing, synthesizing, and analyzing data from **8** divisions, improving strategic clarity by **15%**

Director of Marketing and Outreach

Western Michigan University

May 2024 – Aug 2025

Kalamazoo, MI

- Directed social media team for **18** events, boosting engagement **2x** through strategic outreach and weekly meetings

Vice President

Indonesian Student Association

May 2022 – May 2023

Kalamazoo, MI

- Drove **2x** recruitment growth through outreach, led a **6**-member team and improved overall cost efficiency by **15%**

TECHNICAL SKILLS

Molecular Biology: PCR/qPCR, cloning, DNA/RNA extraction, P1 transduction, sequencing, MTT assay

Protein work: ELISA, SDS-PAGE, Western Blot, affinity purification, sonication, LiN₂ grinding, GC-MS, LC-MS

Cell Culture: Mammalian cell lines (OMK, Henle-407, WI-38), plaque assay, invasion assay, flow cytometry