

# 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 N<sub>2</sub>)
- 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

Jan 2024 – Present

*Western Michigan University*

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

May 2023 – Dec 2023

*Kalsec Inc.*

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

May 2025 – Aug 2025

*Indokemika Jayatama*

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

May 2024 – Aug 2025

*Western Michigan University*

Kalamazoo, MI

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

### Vice President

May 2022 – May 2023

*Indonesian Student Association*

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, LiN<sub>2</sub> grinding, GC-MS, LC-MS

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