Bella Bishop

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PROFESSIONAL SUMMARY

Aspiring scientist with a strong interest in the intersection of microbiology and chemistry, particularly in the development of innovative, technology-driven solutions to global challenges. Demonstrates a consistent commitment to service, equity, and collaborative progress, guided by the principle that a rising tide lifts all boats. Brings both compassionate leadership and a respect for methodological rigor to research environments. Values science as a global endeavor rooted in shared ideals of curiosity, cooperation, and impact.

EDUCATION

Ohio Wesleyan University **Delaware, OH**

Bachelors of the Science in Chemistry May 2029 (Expected)

- Minor: Mathematics
- GPA: 3.8/4.0
- Scholarships/Awards: Choose Ohio First Scholar, Branch Rickey Scholarship

Study Abroad

AIFS Abroad, University of Limerick, Limerick, Ireland August 2027 - December 2027

SKILLS

Laboratory: Infrared Spectroscopy, Nuclear Magnetic Resonance, Chromatography, Spectrophotometry, Titration, Electrochemistry, General Lab Practices, Scanning Electron Microscope, Aseptic Techniques, Cell Propagation
Computer: Microsoft Office Suites, Google Suites, R Studio, Minitab, ChemDraw, LabVIEW, SPSS

CHEMISTRY RESEARCH EXPERIENCE

Undergraduate Researcher | Columbus, OH

OH5SURE Program, The Ohio State University May 2028 - July 2028

Mentor: Dr. Christine Thomas | email@osu.edu

"Nickel-Templated Replacement of Phosphine Substituents in a Tetradentate Bis(amido)bis(phosphine) Ligand."

- Conducted synthesis of air- and moisture-sensitive transition metal complexes under inert atmosphere using glovebox and Schlenk line techniques
- Characterized inorganic and organometallic compounds using NMR (^{1}H, ^{13}C), IR, UV-Vis spectroscopy, and cyclic voltammetry
- Investigated catalytic activation of small molecules (e.g., CO_2, N_2, NH_3) for sustainable transformation reactions
- Applied principles of green chemistry to develop earth-abundant metal catalysts aimed at improving environmental sustainability
- Maintained detailed laboratory records and presented experimental findings in weekly group meetings

Undergraduate Researcher | Delaware, OH

Independent Research Project, OWU Department of Chemistry August 2026 - March 2027

Mentor: Dr. Kayce Tomcho | katomcho@owu.edu

"Interaction of Sphingomyelin-dipalmitoylphosphatidylcholine-cholesterol monolayers with the following potential CPPs in the M3-M4 loop: 310QHKELLR316 and 317FRRKRRHHK325"

- Investigated the interaction of potential cell-penetrating peptides (CPPs) from the M3-M4 loop of the glycine receptor with lipid monolayers mimicking human biological membranes
- Prepared and analyzed Langmuir monolayers of sphingomyelin, DPPC, and cholesterol as simplified models of cell membranes
- Collected and interpreted surface pressure-area isotherms using a Langmuir trough to assess CPP-lipid interactions

- Visualized monolayer morphology with Brewster angle microscopy to assess structural perturbations induced by poly-Arg/Lys peptide regions
- Contributed to a broader understanding of membrane-associated behavior of the GlyR M3-M4 loop, relevant to neurotransmission and chronic pain mechanisms

MICROBIOLOGY RESEARCH EXPERIENCE

Undergraduate Researcher | Delaware, OH
Student Researcher, OWU Summer Science Research Program May - July 2026
Mentor: Andrea Suria | amsuria@owu.edu
"Modeling Host Defense Mechanisms of Euprymna scolopes Symbionts Against Fungal Pathogens"

- Modeled host-pathogen interactions by inoculating synthetic alginate squid egg analogs with symbiotic bacterial strains and exposing them to fungal pathogens
- Assessed antifungal activity of bacterial isolates from *Euprymna scolopes* using fluorescence microscopy and culture-based assays
- Performed molecular techniques (PCR, cloning, DNA sequencing) to identify genes essential for antifungal compound production in symbiotic strains
- Screened random bacterial mutants for loss-of-function phenotypes to uncover genetic mechanisms of defensive symbiosis
- Contributed to understanding how beneficial microbes protect animal hosts through secretion of bioactive molecules under host-like conditions

PRESENTATIONS

OH5SURE Capstone Session, Columbus, Ohio, July 2027. Vroom, M., **Bishop, B.,** Thomas, C. "Nickel-Templated Replacement of Phosphine Substituents in a Tetradentate Bis(amido)bis(phosphine) Ligand." (Poster Presentation).

Patricia-Belts Conrades Summer Science Research Symposium, Delaware, Ohio, September 2026. **Bishop, B.**, Suria, A. "Modeling Host Defense Mechanisms of Euprymna scolopes Symbionts Against Fungal Pathogens." (Poster Presentation and Lecture).

OTHER EXPERIENCE

Hospital Volunteer, Delaware, OH
Grady Memorial Hospital October 2026 - Present

- Supported patient care by assisting with comfort measures, wayfinding and non-clinical needs, ensuring a welcoming and responsive environment for staff and patients
- Maintained cleanliness and functionality of technical equipment through routine sanitation and preparation procedures, contributing to safe and efficient clinical operations

House Leader, Delaware, OH August 2026 - Present
Service, Engagement and Leadership House (SEAL)

- Coordinated and participated in semester-long service initiatives focused on community impact and civic engagement, in alignment with SEAL's mission to promote service-based leadership
- Developed and implemented campus-wide educational programming on service and social responsibility in collaboration with SLU peers and University partners
- Contributed to the daily function and health of the SLU community through chore rotations, conflict resolution and peer accountability
- Represented SEAL to the broader community as a positive ambassador of OWU's commitment to intentional, values-based residential life