

SOPHIA LAMASTRO

C H E M I S T R Y

OBJECTIVE

Chemistry major with a minor in Mathematics and undergraduate research experience seeking a laboratory or industrial internship in chemistry. Interested in applying chemistry to environmental and energy-related challenges, with plans to pursue doctoral study and contribute to sustainable scientific solutions.

CONTACT DETAILS

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EDUCATION

University of Scranton, Scranton PA
Bachelor of Science in Chemistry | Minor in Mathematics

Graduation Expected: 2027

GPA: 3.69

ACS Certification Expected Upon Graduation

Dean's List: Fall 2023, Spring 2024, Fall 2024,

Spring 2025, Fall 2025, Spring 2026

Courses: Chemistry I & II, Organic Chemistry I & II, Inorganic Chemistry, Instrumental Analysis Chemistry, Physical Chemistry I & II, Physics I & II, Calculus I, II & III, Linear Algebra, Differential Equations and all corresponding labs

TEACHING AND LEADERSHIP

Office of Student Support & Success (OSSS) - University of Scranton

Chemistry and Calculus Tutor | August 2024 - Present

- Tutor undergraduate students in General Chemistry and Calculus for approximately 5 hours per week, reinforcing conceptual understanding, quantitative reasoning, and exam preparation.
- Supported academic success through one-on-one sessions, collaborative problem-solving, and development of personalized study strategies.

University of Scranton Women's Crew Team

August 2023-Present

- Led and trained as a crew member in 5 state and regional regattas, contributing to team success through leadership, discipline, and strong teamwork
- Coordinate fundraising and apparel for a 55-member collegiate rowing team, helping to generate approximately \$800 in support of team operations and competition expenses

RESEARCH AND EXPERIENCE

GEASP-Group of Elemental Analysis and Sample Preparation

Undergraduate Researcher & Thesis Researcher | University of Scranton | October 2025–Present

- Conduct undergraduate research investigating crop nutrient and toxic metal concentrations in soil/biochar growth systems for off-world agriculture applications.
- Prepare experimental samples and solutions, including 70% ethanol and 1% agar, following controlled laboratory procedures and precise quantitative measurements.
- Perform multi-stage seed preparation and germination, including ethanol treatment, temperature-controlled water soaking, agar germination, and preparation of precisely measured soil/biochar.
- Maintain controlled plant-growth experiments through scheduled watering, pH measurement, sample monitoring, harvesting, drying, and preparation for subsequent instrumental analysis.
- Document experimental procedures, observations, and sample conditions to support reproducibility across research trials.

President's Fellowship for Summer Research | 2026

Competitive Undergraduate Research Award

- Awarded a competitive \$3,000 research fellowship supporting independent undergraduate research.

Independent HPLC Analysis

Instrumental Analysis - University of Scranton

- Co-designed and conducted an independent HPLC experiment to quantify ergosterol across 5 mushroom and commercial supplement samples, including fresh mushroom tissue, gummies, and bulk powder.
- Performed sample preparation and extraction using solvent extraction, sonication, centrifugation, filtration, and volumetric dilution prior to HPLC analysis.
- Evaluated 3 mobile-phase formulations to address solubility and separation challenges and identified an expired analytical standard during method troubleshooting.
- Generated and applied a calibration curve to quantify and compare ergosterol concentrations across multiple sample matrices

LABORATORY & TECHNICAL

Instrumentation: HPLC, UV-Vis spectroscopy, GC, GC-MS, ICP, atomic absorption spectroscopy, fluorescence spectroscopy, Raman spectroscopy, IR spectroscopy, analytical balances; introductory ¹H NMR spectroscopy

Wet Chemistry & Sample Preparation: Acid-base titration; pH measurements; solution preparation and dilution; filtration; recrystallization; distillation; chromatography; purification and separation; melting/boiling point analysis; experimental sample preparation

Laboratory & Quality Practices: SOP adherence; laboratory documentation; GLP-compliant laboratory notebooks; technical lab report writing; quantitative measurements; error analysis; data interpretation; safe handling of acids, bases, solvents, and chemical waste

Computational & Technical: Gaussian 16W/GaussView 6; Microsoft Office Suite; Google Workspace