Lidya Oracs Barros

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Education:

University of Houston – Houston, TX — Anticipated Graduation: May 2030

- Ph.D. in Chemistry — Cumulative GPA: 3.57/4.00

Our Lady of the Lake University – San Antonio, TX — Graduated May 2025

- Bachelor of Science in Chemistry — Cumulative GPA: 3.90/4.00

State Technical School (ETEC) Antônio Furlan – Barueri, SP, Brazil — Graduated December 2018

- High School Diploma
- Accounting Technician Diploma

Work Experience:

Teaching Assistant, University of Houston. *August 2025 – Present.*

- Teach and supervise undergraduate General Chemistry 2 laboratory sessions.
- Guide students in experimental design, data collection, and interpretation.
- Assist in grading reports and assignments.

Accounting Clerk, Our Lady of the Lake University. *October – November 2021.*

- Updated and organized payroll database for ease of access.
- Received office deliveries and delivered payroll documents to the university student business office.

Research Experience:

Synthesis of MOFs Utilizing Naphthalene and Biphenyl Phosphate-Based Diimide Ligands. St. Mary's University, *January – May 2025.*

Mentor: Dr. Pius Adelani; CHEM 3440 – Inorganic Chemistry

- Synthesized PNDI and PBDI ligands using reflux reactions.
- Formed ligand-metal complexes with various metals under high-temperature conditions and adjusted furnace settings to enable crystallization.
- Characterized final products using UV-Vis and FTIR spectroscopy to confirm final structures.

Comparative Analysis of Methylisothiazolinone Content in Concentrated and Non-Concentrated Dish Soaps Using UV-Vis Spectroscopy. St. Mary's University, *January – May 2025.*

Mentor: Dr. Susan Oxley; CHEM 3424 – Instrumental Analysis

- Applied a UV-Vis spectroscopy method to quantify preservatives in detergents using external calibration.
- Analyzed and compared MI concentrations in different formulations and compared results to FDA safety limits.

The Difference in Caffeine Concentration Between Pre-Ground and Fresh Ground Coffee in Medium Roast Arabica Coffee Beans. St. Mary's University, *October – November 2024.*

Mentor: Dr. Susan Oxley; CHEM 3423 – Analytical Chemistry

- Study consisted of 5 weeks, and learned analytical chemistry techniques, including identifying, separating, and quantifying chemical composition, standard usage, and instrumental operation of HPLC.

The Differences in Antibacterial Activity and Chemical Composition of Various Plant Parts of *Mimosa strigillosa* Against *Escherichia coli* and *Staphylococcus epidermidis.* Our Lady of the Lake University, *May – June 2024.*

Mentor: Dr. Teresita Munguia; supported by The Welch Foundation, Grant Number: BU-0042

● Study consisted of 6 weeks, 40 hours a week, and included learning organic, synthetic, and microbiological laboratory techniques, including simple distillation, Soxhlet extraction, lyophilization, and optical density measurements. Plant extracts were tested against *E. coli* and *S. epidermidis,* and used Biotech Epoch Microplate spectrometer to determine bioactivity. Also conducted tests to identify the chemical composition of different plant structures.

Extracurriculars/ Awards:

- Our Lady of the Lake University Dean's List: January 2022 – January 2025
- Sigma Zeta – Math and Science National Honor Society: January 2024 – Present

Skills:

- Proficient with Google Workspace and Microsoft Office applications.

Instrumentation

- Proficient with HPLC, UV-Vis, Biotech Epoch Microplate, GC-MS, FT-IR, and NMR operation and data analysis.

Languages:

- English – Fluent in reading, writing, and speaking.
- Portuguese – Native speaker, fluent in reading, writing, and speaking.
- Spanish – Intermediate level.