

Samuel West
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Education

University of Texas at Austin

Expected Graduation: May 2027

Doctor of Philosophy in Chemical Engineering

Georgia Institute of Technology

August 2017–December 2021

Bachelor of Science in Chemical and Biomolecular Engineering

Research Experience

University of Texas at Austin: Rosales and Kumar Lab Groups

August 2022–present

- Synthesized polymer hydrogel frameworks with lanthanide-binding peptides attached to improve separation of rare earth metal ions
- Utilized 3D bioprinting to create functionalized hydrogel scaffolds for engineered bacteria

Georgia Institute of Technology: Brettmann and Stingelin Lab Groups

May 2021–August 2021

- Developed and executed experiments to measure photoactivity of polycyclic aromatic hydrocarbons diffused through multi-layer polymer films
- Applied a variety of materials characterization tools, including DSC, FTIR, and TGA, to analyze polymer properties after photocuring
- Optimized procedures for creating multi-layer films with ethylene co-acrylic acid as adhesive

Georgia Institute of Technology: Stockton Lab Group

January 2017–May 2017

- Collected data on moisture content, particle size, and ATP content of sediment samples from the Atacama Desert
 - Correlated sediment properties with levels of ATP and other biomarkers to develop models connecting sediment properties and signs of biological activity, to be utilized in extraterrestrial sediment analysis
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Teaching Experience

Tutor with East Cobb Tutoring Center

February 2022–August 2022

- Assisted middle and high school students in a variety of STEM subjects, including remedial-level to post-AP level Biology, Chemistry, Physics, Calculus, and Statistics
- Designed multi-week plans for students preparing for the SAT and/or ACT to help them study
- Worked with parents to help best serve students with learning disabilities as needed

Tutor with GT Tutoring and Academic Support

January 2019–December 2021

- Improved student understanding of concepts in chemistry, mathematics, computer science, and chemical engineering
- Tutored in both a one-to-one, scheduled environment and a more casual group environment
- Conducted tutoring sessions in an in-person and a virtual format

Problem Solving Leader with GT Tutoring and Academic Support

July 2020–December 2021

- Coordinated and hosted two chemical engineering small-group (3-20 students) problem-solving sessions each week
 - Communicated with students and professors about course material to create engaging problem-solving lesson plans
 - Crafted activities for problem-solving sessions to encourage active student discussion
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Projects

Fryer Steam Recovery and Biological Treatment for Wastewater Purification

April 2021

- Designed a water treatment process involving a novel membrane bioreactor for a Pepsico plant

- Performed an analysis of reaction kinetics to simulate degradation of water contaminants inside a membrane aerated bioreactor
 - Completed an economic analysis for the treatment process as a whole to assess the viability of process implementation
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Professional Memberships

- Omicron Delta Kappa: National Leadership Honor Society
 - Tau Beta Pi: National Engineering Honor Society
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Skills

Materials Synthesis: Solid Phase Peptide Synthesis, Bioprinting, MeltPrep

Materials Characterization: MALDI-ToF, NMR, DSC, TGA, FTIR, SEM

Chemistry: HPLC, Thin Layer Chromatography, Absorbance Spectroscopy

Computer Science: MATLAB, Origin, G-code, ChemDraw, LAMMPS

Languages: Working understanding of Spanish (reading/writing)