SARAH LI

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CAREER OBJECTIVE

Driven and dedicated sophomore in college with a passion for the integration of medicine, basic sciences, and engineering, aspiring to become an MD-PhD. Highly motivated to address current medical challenges through research and innovation. Experienced in formulating new research questions, leading teams, and committed to contributing to impactful solutions in healthcare. Eager to leverage strong analytical skills, a rigorous work ethic, and collaborative experience to further develop expertise in medical research and patient-centered healthcare advancements

EDUCATION

- Bachelor of Science in Molecular Biophysics and Biochemistry
- Certificate in Advanced Chinese Language Studies
- Expected Graduation: May 2027
- GPA: 3.95/4.0

RESEARCH EXPERIENCE

- Yale Department of Immunobiology (2024-present)
    - Iwasaki Lab
    - Working on developing a mucosal vaccine to provide defense against herpes simplex virus (HSV). Tasks focus on working with mice in an animal study on the efficacy of the preliminary vaccine package
- Yale Department of Orthopaedics & Rehabilitation (2023-Present)
    - Wiznia Lab
    - Worked on projects including confirmation studies for a CT-based approach to core decompression surgery
    - Creation of foam-based surgical antiseptics to solve current application challenges
- LSU Chemistry Department (2021-2023)
    - LSU Employee working in the Pojman Lab
    - Anisotropic frontal polymerization's effect on front velocity and using frontal polymerization to replicate 3D printable closed-cell foams through a divinyl ether system.
- LSU Mechanical Engineering Department (2019)
    - Summer internship for conducting research in the development of two-way shape memory polymers in artificial muscles for conventional use in pavement

PUBLICATIONS AND PATENTS

- First author in a refereed journal paper titled "Anisotropic Frontal Polymerization in a Model Resin/Copper Composite" in the Nonlinear Science journal Chaos: An Interdisciplinary Journal of Nonlinear Science, Volume 32, Paper Number 013109, (January 2022)
    - Supported by Dr. John Pojman of LSU Chemistry
    - Performed all necessary lab-scale experimentations by preparing the acrylate mixture, machining copper sheets needed to alter the material's frontal polymerization pattern
    - Wrote and revised the Materials and Experimentation Methods section of the manuscript and served as a preliminary proof-reader for the Abstract

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- Second author in a submitted manuscript discusses a hybrid artificial muscle that binds conventional springs with two-way shape memory polymers or polymeric artificial muscles to create a 'free-standing' muscle to Smart Materials and Structures; the hybrid muscle has been applied for a patent (2023)
    - Supported by Dr. Jizhou Fan of LSU Mechanical Engineering
    - Used a dynamic mechanical analysis (DMA) machine to test the actuation of the muscle; developed dynamics model with MatLab
    - Approved as a non-provisional patent (US Patent App. 17/655,014, 2022)

AWARDS AND FELLOWSHIPS

- Biomedical Engineering Healthcare Innovation Fellow - Medical Device Design Track (2024)
    - 8 week program where students worked with physicians at Yale New Haven Hospital to solve clinical challenges identified in the clinic and operating room.
    - Creation of foam-based surgical antiseptics to solve current application challenges
- Hahn Scholar (2023)
    - Subset of the YES Scholar fellowship program (see below). Selected 8 students of the cohort with exceptional experience in conducting independent research (demonstrated with publications and patents) to fund year-round research in a laboratory setting
- YES Scholar (2023)
    - Highly selective fellowship program at Yale University that recruits students directly out of high school with strong research backgrounds to be directly admitted to the university. 40 total.
- Presidential Scholar Finalist (2023)
- National Merit Finalist (2023)
- RWDC (Real World Design Challenge) state champion, national representative at the international tournament (2021)
    - Designed a company based on unmanned aerial vehicle for package delivery
    - Created a 15-minute business pitch for funding
- Science Olympiad local/state champion (2017-2021), participated in nationals with 7th place in Anatomy & Physiology (2019), 14th in National Science Olympiad Invitational for Anatomy & Physiology (2022)