

AISWHARYAA LALGUDI NAGARAJAN

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SUMMARY Results-driven and intellectually curious high school student with a rigorous academic record (4.0 UW / 5.0 W GPA) and hands-on research experience. Possesses a strong work ethic and exceptional collaborative skills, eager to apply analytical and interpersonal abilities to support and contribute to a professional research team.

RESEARCH EXPERIENCE

Novel Rabies Virus Vector Computational Model for Alzheimer's Treatment May 2025 - Present

- Investigate the potential of a modified rabies virus vector to surpass the blood-brain barrier (BBB) and deliver therapeutic agents for Alzheimer's Disease.

AI Model for Stem Cell Differentiation Prediction Sept 2024 - April 2025

- Developed a Python-based machine learning model (Scikit-learn/TensorFlow) to predict stem cell differentiation from RNA-seq data, achieving 95% accuracy.
- Preprocessed genomic datasets to identify key transcriptional markers for model training.
- Mentored by JHU researcher and AI industry professional.

Review: Stem Cell Therapy for Age-Related Macular Degeneration Sept 2023 - Dec 2024

- Authored a comprehensive review paper synthesizing current clinical trials, methodologies, and therapeutic outcomes of stem cell therapies for AMD.
- Collaborated with an industry professional from the biotech sector to ensure clinical and commercial relevance of the analysis.
- Manuscript currently under review for publication in Curiex Academic Journal

LEADERSHIP EXPERIENCE

Community Outreach Officer | HOSA-Future Health Professionals May 2023 - Present

- Manage and organize competitive events for 50+ chapter members, coordinating schedules, rules, and preparation resources.
- Qualified for the HOSA State Conference and placed 5th in Biotechnology.
- Selected as a Top 10 Finalist in Biotechnology at the State Conference
- Elected as a State Officer Qualifier; declined due to external constraints.

Founder and President | Regeneron Science Fair Club May 2023 - Present

- Established the school's first student-run research club to identify and support promising young scientists.
- Provide one-on-one and group coaching to 20+ students on formulating hypotheses, experimental design, and data analysis for their independent projects.
- Empower peers to develop independent research projects, resulting in 15 students qualifying for district fairs

VOLUNTEER EXPERIENCE

Companion Volunteer | Lovewell Hospice May 2024 - Present

- Offer empathetic support and social interaction to hospice patients, providing comfort and improving their quality of life.

Community Engagement Volunteer | National Breast Cancer Foundation May 2024 - Present

- Represent the foundation at public events to educate diverse audiences, raise awareness, and promote early detection initiatives.

SKILLS

- Technical: Python (TensorFlow, Scikit-learn), Machine Learning, Data Analysis, Genomic Data Preprocessing
- Research: Academic Writing, Literature Review, Hypothesis Development
- Interpersonal: Leadership, Public Speaking, Mentoring, Proactive & Adaptable
- Languages: English (Native), Hindi (Professional), Tamil (Professional)

AWARDS AND ACHIEVEMENTS

- USABO Semifinalist (2025)
- DECA State Qualifier (2024)
- FPSPi State Qualifier (2024)
- DRSEF Finalist (2024)
- EarthX Finalist (2024)
- Theater, participated in 3 productions (2021-2024)