

Skye Lane Goetz

Bioinformatician and Data Scientist

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EDUCATION

California Polytechnic State University, San Luis Obispo | *BS Biochemistry* **2023 -2026**

- Cumulative GPA: 3.700
- Relevant Coursework: Honors Biochemical Research, Cell and Molecular Biology, Statistical Inference, and Environmental Engineering Research
- Clubs: Mycology Club and CalPoly Amature Radio Club

EXPERIENCE

Insitute for Systems Biology (ISB) **Seattle, Wa**
Research Assistant (Data Science) (Hood Lab) **NOV 2024 - PRESENT**

- Designed, Built, and Implimented Tablassert2 (with advanced NLP techniques and database tools)
- Created Three New Quality Control tools for Knowledge Graphs

Data Science Intern (Hood Lab) **AUG 2024 - SEP 2024**

- Improved and Released the Preliminary Version of MicrobiomeKG (a Microbiome/Host-Health Interaction Knowledge Graph)
- Wrote and Released "MicrobiomeKG: Bridging Microbiome Research and Host Health Through Knowledge Graphs"
- Started Building MultiomicsKG (a Multiomics/Host-Health Interaction Knowledge Graph)

Summer Intern/Trainee (NFS REU) (Hood-Price Lab) **JUN 2024 - AUG 2024**

- NSF REU mentored by Dr. Gwênlyn Glusman
- Designed and Implimented a Prototype of MicrobiomeKG (a Microbiome/Host-Health Interaction Knowledge Graph)
- Created Tablassert, a tool that Algorithmically Generates Knowledge Assertions from Supplemental Data Supporting Published Papers

Student Researcher (Computational Subgroup) **San Luis Obispo, CA**
Ziegler-Haynes Lab **SEP 2024 - NOV 2024**

- Built OrcaFunctionalHub (a Julia App) to Automate Previously Time Consuming Dithiocarboxylate Quantum Mechanical Modeling and Visualization with User-Friendly YAML-based Configuration
- Used Docker Images To Distribute OrcaFunctionalHub Across Machines, Improving Research Collaboration

Student Researcher (PHOS and CRIAS Projects) **San Luis Obispo, CA**
CalPoly Water-Energy Sustainability Training Team (WESTT) **JAN 2024 - JUN 2024**

- Worked across lab, sterile, and field settings, collecting and analyzing data including microscopy, algal/media/wastewater chemistry, and optical density

SKILLS & INTERESTS

Languages Python, Julia, Unix, Scala, SQL, Clojure, Nim, and LaTeX

Libraries Pandas, Numpy, Spark, Pyspark, Matplotlib, Seaborn, Word2Vec, Tensorflow, Pytorch, RDKit, and Scikit-learn

Skills Scientific Computing, Research Collaboration, Scientific Writing, Data Analysis, Knowledge Graphs, Natural Language Processing, and Machine Learning

Interests Cooking, Gardening, Mycology, Hiking, Hot Springs, and Caving

PROJECTS

MicrobiomeKG | doi.org/10.1101/2024.10.10.617697 2024

Bridging Microbiome Research and Host Health Through Knowledge Graphs

- Python, Pandas, SQLite, Numpy, NLP, and YAML
- MicrobiomeKG, a Knowledge Graph for microbiome research, bridging various taxa and microbial pathways with host health. This novel knowledge graph derives algorithmically-generated knowledge assertions from the supplemental tables supporting published microbiome papers, and is deployed for integrative analysis and hypothesis generation via the Biomedical Data Translator ecosystem

OrcaFunctionalHub | github.com/SkyeAv/OrcaFunctionalHub 2024

- Julia, YAML, Docker, ORCA 6.0.1, RDKit
- Designed to facilitate molecular modeling and computational chemistry tasks using the Orca quantum chemistry package
- Converts SMILES representations to 3D coordinates, performs geometry optimizations, and executes time-dependent density functional theory (TDDFT) calculations