

Michael J. Akinyemi

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RESEARCH INTERESTS

Computational Biology, Biotechnology, Immune Engineering, Systems Biology/Immunology, Structural Biology, Molecular Biophysics, Autoimmune Disorders

EDUCATION

University of Central Florida

Orlando, FL

Biotechnology (B.S.) & Computer Science (B.S.)

Spring 2025

Genomics & Bioinformatics (Minor)

- Ronald E. McNair Scholar
- Relevant Coursework:
 - *CS: Discrete Structures I, Computer Science II, Computer Logic & Organization, Object Oriented Programming*
 - *Bio: Immunology, General Microbiology, Biochemistry I, Genetics I, Quantitative Biological Methods*

Tallahassee Community College

Tallahassee, FL

Associate of Arts (A.A.)

Summer 2022

- Phi Theta Kappa Honors Society

ACADEMIC EXPERIENCES

University of Central Florida

Orlando, FL

College of Medicine

December 2023 — Present

Research Assistant

Advisor: Dr. Hung Nguyen

- Independently developed immune cell datamining pipeline to analyze PBMC scRNA-Seq datasets to discover correlations between metabolic activity and the grafts vs leukemia (GvL) effect.
- Investigated correlation between gut microbiome and immune cell behavior using machine learning models to integrate 16S rRNA-Seq & various sc-Seq assays

Massachusetts Institute of Technology

Cambridge, MA

Department of Chemical Engineering

June 2023 — Present

Research Assistant (*MSRP General 2023 & 2024*)

Advisor: Dr. Brandon DeKosky

- Contributed to a project improving the efficiency of cell line generation for antibody library display systems.
- Successfully troubleshooted restriction cloning experiments for construction of donor plasmid for CRISPR/Cas9 system.
- Optimized clustering algorithms within bioinformatics pipelines to analyze BCR/TCR immune repertoire data collected through NGS.
- Developed automated data visualization tools capable of handling high-throughput sequence data.

PRESENTATIONS

Student Scholar Symposium

Orlando, FL

University of Central Florida

March 2024

Annual Biomedical Research Conference For Minoritized Scientists (ABRCMS)

Phoenix, AZ

American Society for Microbiology

November 2023

MSRP Fall Extension Research Showcase

Virtual

Massachusetts Institute of Technology

November 2023

MIT Summer Research Program Research Showcase

Cambridge, MA

Massachusetts Institute of Technology

July 2023

OTHER EXPERIENCES

Quantitative Methods Workshop Massachusetts Institute of Technology	Cambridge, MA January 2023
<ul style="list-style-type: none">• Employed principal component analysis (PCA) and k-means clustering to differentiate cells of a scRNA-Seq PBMC data set.• Used machine learning pipelines (CryoSPARC) to generate 3D protein structures from high-framerate movies of CryoEM data.	
Scripting Team Leader AvatarMC	Remote May 2017 — June 2022
<ul style="list-style-type: none">• Developed both command-line & GUI-based automation tools to assist workflows of other teams.• Designed quality assurance testing plans for experimental features.• Assisted in writing & maintaining documentation of in-house scripting language.• Wrote design documents for deliverable requests/feature improvement tasks.• Led projects using professional management software (Phabricator).• Directed team meetings & effectively delegated tasks.	

HONORS, AWARDS & SCHOLARSHIPS

McNair Summer Research Institute Scholarship <i>Ronald E. McNair Scholars Program</i>	Orlando, FL August 2023
Conference Presentation Travel Award <i>UCF Office of Undergraduate Research</i>	Orlando, FL November 2023
Florida Bright Futures Academic Scholars <i>Florida Department of Education</i>	Tallahassee, FL December 2020
President's List (3 Times) Dean's List (2 Times)	

KNOWLEDGE & SKILLS

🧪 Biological Research

Restriction Cloning, Electroporation, Polymerase Chain Reaction (PCR), Gel Electrophoresis, Agarose Gel Extraction, Immunoprecipitation, Cell Culture, Murine Model Handling, Miniprep, Maxiprep, Autoclave Handling, Centrifuge Handling, Pipette Handling, Petri Dish Handling

🔗 Programming Languages

Python	
Professional.	
Bash/Shell	Advanced.
R	
Intermediate.	
C++	
Intermediate.	
Java	
Intermediate.	
RegEx	Elementary.

📄 Document Composition

LaTeX	Advanced.
Word	Advanced.
Power-Point	Advanced.

🔌 Microcontroller Development

Arduino	Elementary.
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📦 Software

Git	Advanced.
Jupyter	
Intermediate	
PyMol	
Intermediate	
Slurm	
Intermediate	
Docker	Elementary.

💻 Operating Systems

Windows	Advanced.
Linux/UNIX	Advanced.
HPC-Clusters	
Intermediate.	

📖 Natural Languages

English	C2 level.
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COMMUNITY INVOLVEMENT

SACNAS — *Vice President*
University of Central Florida

Orlando, FL
April 2024 — Present

Active Minds — *Secretary*
University of Central Florida

Orlando, FL
December 2023 — Present

- Advocated for mental health and the importance of fighting against the negative stigmas associated with them.
- Organized club records, took meeting minutes & performed general administrative duties.