

# OLUREMI G.A. AKINDELE

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## EDUCATION

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**Ph.D. Student in Biological Engineering**, Massachusetts Institute of Technology Expected 2026

**B.S in Bioengineering**, Stanford University June 2021  
GPA: 3.949/4.0

## RESEARCH EXPERIENCE

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**Undergraduate Research Assistant** Oct 2019 - Present  
Abu-Remaileh Lab, Dept. of Chemical Engineering *Stanford University*

- Using novel lysosomal immunoprecipitation methods, metabolomics, and pathway analysis techniques to identify changes in lysosomal concentration of metabolite groups.
- Defining biochemical pathways perturbed in the lysosomes of Parkinson's Disease cells in order to uncover novel metabolic pathways that underlie the disease pathophysiology.

**Undergraduate Research Assistant** Dec 2018 - Dec 2019  
Jarosz Lab, Dept. of Chemical and Systems Biology *Stanford University*

- Investigated the reach of epigenetic inheritance mediated by intrinsically disordered proteins under the mentorship of Anupam Chakravarty, Ph.D.
- Used a novel high throughput screening method to uncover and characterize novel prions and prion-like proteins in the human genome.

**Undergraduate Clinical Research Assistant** Jul 2018 - May 2019  
Systems Neuroscience and Pain Lab (SNAPL) *Stanford University*

- Assisted with investigation of the effects on Transcranial Magnetic Stimulation (TMS) on pain in patients with Chronic Regional Pain Syndrome (CRPS) through a clinical study, under the mentorship of Kristen Scherrer, Ph.D.
- Assisted with patient recruitment and screening, administering TMS to patients in clinic, and data analysis at the completion of the study.
- Gained experience in basic data analysis for clinical research, REDCap project management, TMS clinical administration, and patient interaction.

**Undergraduate Research Assisant** Feb 2018 - Sept 2018  
Khavari Lab, Dept. of Dermatology *Stanford University*

- Investigated head and neck squamous cell carcinoma tumor heterogeneity through single cell and bulk RNA sequencing data analysis, under the mentorship of Andrew Ji, M.D.

**UPCI Summer Scholar** Jun 2016 - Aug 2016  
Lee Lab and Faeder Lab, Dept. of Systems and Computational Biology *University of Pittsburgh*

- Studied IKK regulation of the NF- $\kappa$ B transcriptional system, specifically with the role of ubiquitin through IKK over-expression models.
- Created a rule-based computational model of IKK's role in the NF- $\kappa$ B signaling pathway based on experimental observations.
- Trained in basic cell culture for cancer cell lines, immunofluorescence, image analysis, and computational modeling using BioNetGen language.

## SELECT ADDITIONAL PROJECTS

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**"A Shocked Expression"**. Designed a temperature-sensitive, colorimetric bacterial thermometer, intended to be used as a drug storage tool for low-resource environments.

**A PROTAC-based therapeutic for Crohn's disease, targeting LRRK2**. Conceptualized a novel therapeutic that would utilize novel proteolytic degradation technology to treat Crohn's disease for competition as part of the Stanford ChEM-H Undergraduate Entrepreneurship program.

**Transvaginal Bladder Injection Needle Guide for Interstitial Cystitis/Bladder Pain Syndrome**. Designed and developed a prototype for a device designed to facilitate delivery of medication to the bladder trigone via injection through the anterior vaginal wall to improve the standard of care for patients with bladder pain syndrome. Developed as part of Stanford BioE Capstone and continued to bring to clinical application

## SELECT ACTIVITIES AND VOLUNTEER EXPERIENCE

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- **Stanford BioE JEDI Committee** - Undergraduate Representative (2020 - Present)
- **Stanford Bioengineering - Peer Advisor** (2019-Present)
- **Vice Provost of Undergraduate Education, Center for Teaching and Learning** - Peer Appointment Tutor (2019-Present), **Lead Biology/BioE Tutor** (2020-Present)
- **Stanford Undergraduate Research Journal** - Associate Editor (2017-2018), Humanities and Social Sciences Section Editor-in-Chief (2018-2019) **Editor-in-Chief** (2019 - 2020).
- **Stanford Health Advocacy and Research in the Emergency Department [SHAR(ED)]** - Health Advocate (2017-2021), **Student Manager** (2018-2021)
- **Stanford Biomedical Engineering Society** - Vice President of Finance (2018-2019) **Vice President of Academia and Advising** (2019-2020)
- **Cardinal Free Clinics** - Lab Assistant (2017-2020), Preclinical Volunteer (2019-2021)
- **Society for Black Scientists and Engineers/National Society for Black Engineers** - General Member (2017-2021), NSBE Intern (2018-2019)
- **Stanford Kids With Dreams** - Buddy Program Intern (2017-2018), Sibling Program Coordinator (2018-2019)

## POSTER AND ORAL PRESENTATIONS

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- **Implementation of a Virtual Social Needs Screening Program for Emergency Department Visits During the COVID19 Epidemic** - SAEM Innovations Oral Presentation, May 2021
- **Integrating Social Determinants of Health into Undergraduate Education Using An Emergency Department Help Desk** - SAEM Innovations Oral Presentation, May 2020
- **Defining the Molecular Basis for Common Hallmarks of Neurodegeneration in Lysosomal Storage Disorders and Age-Associated Neurodegenerative Diseases** - Stanford Bio-X Undergraduate Summer Research Oral Presentation August 2020
- **High-throughput Human Proteome-wide Screen For Proteins That Can Transition to a Prion-Like Conformer Resistant to Proteasomal Degradation** - Symposium for Undergraduate Research and Public Service Stanford University, October 2019 (Poster Presentation)
- **High-throughput Human Proteome-wide Screen For Proteins That Can Transition to a Prion-Like Conformer Resistant to Proteasomal Degradation** - Stanford ChEM-H Undergraduate Scholars Research Poster Symposium October 2019
- **IKK expression fine-tunes NF-kappaB expression in response to cytokines** - Science 2016 Game Changers Conference, Poster Symposium, University of Pittsburgh, October 2016
- **IKK expression fine-tunes NF-kappaB expression in response to cytokines** - University of Pittsburgh Cancer Institute Summer Research Poster Symposium, June 2016

## **RELEVANT HONORS AND AWARDS**

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- Alfred P. Sloan Scholar, MIT UCEM (September 2021)
- Tau Beta Pi (Winter 2020)
- 2020 Undergraduate Bio-X Summer Research Grant Award
- 2019 ChEM-H Undergraduate Scholar
- Dean's Award for Academic Excellence (consecutively from Fall 2017 - Spring 2020)
- 2016 University of Pittsburgh Cancer Institute Scholar

## **OTHER RELEVANT SKILLS**

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- Experience with mammalian, yeast, and bacterial cell culture, immunofluorescence, immunoprecipitation, mass spectrometry, confocal microscopy, cloning, high-throughput screening methods, protein and nucleic acid extraction, purification, and detection methods, image analysis, and other relevant lab methods
- Proficient with the GraphPad Prism software suite
- Proficient in MS Word, MS Excel, and MS Powerpoint
- Proficient in Python, MATLAB, and R
- Experience with several biological data analysis and modeling packages in R and Python