

Jaquesta Alexia Maxine Adams

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EDUCATION

Ph.D. Student in Chemistry, Specialization in Chemical Biology, Aug 2020—Present

University of California-Berkeley, Berkeley, CA

Advisor: Markita Landry

B.S. in Chemistry, Minors in Biology and Mathematics, Aug 2016—May 2020

Howard University, Washington, D.C.

Advisors: Andre Clayborne & Steven Cummings

Thesis: "The effect of size, shape, and surface chemistry on the optical and electronic properties of gold nanoparticles"

HONORS AND AWARDS

Path to the Professoriate Program , University of California-Berkeley	2020
Chancellor's Fellowship , University of California-Berkeley	2020
NSF Graduate Research Fellowship , National Science Foundation	2020
Barry Goldwater Scholarship , Barry Goldwater Scholarship and Excellence in Education Foundation	2019
Winifred Burks-Houck Undergraduate Leadership Award , NOBCCHE	2019
Harvard-Amgen Scholars Program , Harvard University	2019
ACS Bridge Travel Award , American Chemical Society	2019
ACS Scholars Program , American Chemical Society	2019
Dr. John V. Golding Award (outstanding performance as a junior chemistry major), Howard University	2019
Dr. Preston T. Talbert Memorial Award (best proficiency in elementary biochemistry), Howard University	2019
Instrumental Chemistry Laboratory Departmental Award , Howard University	2019
Advancing Science Conference Grant , NOBCCHE	2018
Organic Chemistry Laboratory Departmental Award , Howard University	2018
MIT Summer Research Program , Massachusetts Institute of Technology	2018
Chemistry, Mathematics, and Physics Scholarship , Howard University	2017
Global Education and Awareness Research Undergraduate Program , Howard University	2017
Gates Millennium Scholarship , Gates Millennium Scholars Program	2016
Ron Brown Scholarship , Ron Brown Scholars Program	2016
Founders Scholarship , Howard University	2016

RESEARCH EXPERIENCE

University of California-Berkeley, *Principal Investigator: Markita Landry*, May 2021—Present

- Developing single-walled carbon nanotubes optical sensors for neuropeptides.

University of California-Berkeley, *Rotation Student*, Aug 2020—Apr 2021

- Studied intrinsically disordered protein self-assembly under Matthew Francis. Investigated the role of plant cell porosity in internalization under Markita Landry. Synthesized halotag-copper sensing fluorescent probes under Christopher Chang.

Howard University, *Principal Investigator: Steven Cummings*, Jan 2020—May 2020

- Prepared gold nanoparticles and characterized nanoparticles via dynamic light scattering and ultraviolet-visible spectroscopy.

Howard University, *Principal Investigator: Andre Clayborne*, Nov 2017—May 2020

- Investigated the properties of molecular clusters, nanoparticles, and biomolecules using computational chemistry methods. Trained undergraduate students in high performance computing techniques.

Massachusetts Institute of Technology, *Principal Investigator: Mark Bathe*, Jun 2018—Aug 2018

- Designed novel DNA origami nanoparticle platform for targeted drug delivery. Synthesized and investigated the translational efficiency of an mRNA therapeutic upon capture by the DNA nanoparticle, employing computational and molecular biology techniques.

Howard University, *Principal Investigator: Dharmaraj Raghavan*, May 2017—July 2017

- Synthesized silver chloride nanoparticles with bovine serum albumin and encapsulated in PHBV polymer. Characterized bare and encapsulated nanoparticles with UV-vis, DLS, scanning electron microscopy, thermogravimetric analysis, and atomic absorption spectroscopy.

PUBLICATIONS

*Denotes equal contribution ‡Denotes corresponding author

2. Kelich, P.*, Jeong, S.*, Navarro, N.*, **Adams, J.A.M.**, Sun, X., Zhao, Huanhuan, Z., Landry, M.‡, Vuković, L.‡ Machine learning and near-infrared fluorescence spectroscopy for discovery of DNA-carbon nanotube sensors of serotonin. *bioRxiv.* (2021)

1. **Adams, J.A.M.**, Suh, K-S., Guirgis, G., Metz, C., and Clayborne, A.‡ Quantum Chemical and Spectroscopic Investigations of $Si_3(NH)_3X_6$ and $Si_3(NH)_3R_6$ ($X = F, Cl, NH_3$; $R = H, CH_3, CH_2CH_3$) Cyclic Clusters. *Front. Chem. Conference Abstract: National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) 45th Annual Conference.* (2019) doi: 10.3389/conf.fchem.2018.01.00033

PRESENTATIONS

11. **Atomically Precise Nanochemistry Gordon Research Conference.** Galveston, TX. *Interfacial Chemistry of Atomically Precise Nanoparticles for Biological Applications* (Poster). Feb 2020.

10. **National Organization of Black Chemists and Chemical Engineers Conference.** St. Louis, MO. *Interfacial Chemistry of Atomically Precise Nanoparticles for Biological Applications* (Poster). Nov 2019. **Received Colgate Poster Competition Award.**

9. **Gulf Coast Undergraduate Research Symposium.** Houston, TX. *Messenger RNA Capture with Designer DNA Nanoparticles* (Invited Oral). Nov 2019. **Received Outstanding Presentation in Nanoscience Award.**

8. **National Organization of Black Chemists and Chemical Engineers Conference.** Orlando, FL. *Quantum Chemical and Spectroscopic Investigations of $Si_3(NH)_3X_6$ and $Si_3(NH)_3R_6$ ($X = F, Cl, NH_3$; $R = H, CH_3, CH_2CH_3$) Cyclic Clusters* (Poster). Sep 2018.

7. **Annual Biomedical Research Conference for Minority Students.** Indianapolis, IN. *Messenger RNA Capture with Designer DNA Nanoparticles* (Poster). Nov 2018

6. **Minority Access National Student Researchers Competition.** National Harbor, MD. Sep 2018. *Messenger RNA Capture with Designer DNA Nanoparticles* (Oral). **Received 1st Place in Public Health and Disease.**

5. **Minority Access National Student Researchers Competition.** National Harbor, MD. Oct 2017. *Synthesis and Characterization of PHBV-Encapsulated AgCl-BSA Nanoparticles* (Oral). **Received 2nd Place in Biomedical Sciences.**

4. **Howard University Research Week.** Washington, DC. *Messenger RNA Capture with Designer DNA Nanoparticles* (Oral). Apr 2019.

3. **Howard University Research Week.** Washington, DC. *Quantum Chemical and Spectroscopic Investigations of $Si_3(NH)_3L_6$ Cyclic Clusters* (Poster). Apr 2018.

2. **Louis Stokes Midwest Center of Excellence Conference.** Indianapolis, IN. *Synthesis and Characterization of PHBV-Encapsulated AgCl-BSA Nanoparticles* (Poster). Oct 2017.

1. **Washington-Baltimore-Hampton Roads-Louis Stokes Alliance for Minority Participation Annual Summer Research Symposium.** *Synthesis and Characterization of PHBV-Encapsulated AgCl-BSA Nanoparticles* (Poster). Baltimore, MD. Jul 2017. **Received 1st Place in Physical Sciences.**

INVITED TALKS

NSF-GRFP Informational Session , Howard University	Jun 2021
Research Experience for Undergraduates Panel , Howard University	Jan 2019
Alumni College Forum , Hialeah-Miami Lakes Senior High School	Dec 2017, Dec 2018
What is Your Legacy? Panel , Howard University	Aug 2017
HBCU Experience Student Panel , Howard University	Mar 2017

TEACHING EXPERIENCE

Graduate Student Instructor, CHEM 4A: General Chemistry and Quantitative Analysis Fall 2020

LEADERSHIP AND SERVICE

Volunteer, Bay Area Scientists in Schools Fall 2021

- Conducting hands-on science demonstration about density for elementary students.

Designer, Berkeley Science Review Fall 2021

- Illustrating a feature article in the 41st Issue of the BSR.