

Ashley P. Saunders

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Education

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| Stanford University , Stanford, CA Ph.D. Candidate, Chemistry | 2020 - present |
| The Pennsylvania State University , University Park, PA B.S., Chemistry from the Eberly College of Science GPA: 3.64 | 2020 |

Honors & Awards

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| STAR Award - Safety in Training and Research (Stanford) | 2023 |
| Enhancing Diversity in Graduate Education (EDGE) Fellowship | 2020 |
| Peter Craig Breen Memorial Award for Excellence in Undergraduate Chemistry Research (Penn State) | 2020 |
| Millennium Scholars Program Pillars of Success Award | 2020 |
| Multicultural Resource Center Academic Achievement Award | 2020 |
| Eberly College of Science Chemistry Department Marion J. Eyster Scholarship Recipient | 2019 |
| American Chemical Society Scholars Program | 2018 |
| McNair Scholars Program | 2018 |
| Eberly College of Science Undergraduate Research Support Grant | 2017 |
| Millennium Scholars Program | 2016 |

Past Research Experience

The Pennsylvania State University, Department of Chemistry, University Park, PA
McNair Research Advisor: Dr. Lauren D. Zarzar Summer 2019
Developed sensing method to detect alpha-amylase concentration utilizing the structural coloration in complex emulsion droplets that dynamically reconfigure in response to changing interfacial tensions.

Purdue University, Department of Chemistry, Cambridge, MA
Research Experience for Undergraduates Advisor: Dr. Shelley Claridge Summer 2018
Investigated the phase segregation of mixed diyne amphiphiles during the process of Langmuir Schaefer for utilization in semiconducting lipid films.

Virginia Polytechnic Institute and State University, Materials Innovation Institute, Blacksburg, VA
Research Experiences for Undergraduates Advisor: Dr. Louis Madsen Summer 2017
Synthesized a polymer and ionic liquid composite material and investigated the source of its optical properties through UV-Visible and Fluorescence Spectroscopies.

The Pennsylvania State University, Department of Chemistry, University Park, PA
Undergraduate Research Advisor: Dr. Lauren D. Zarzar 2017 - 2020
Worked to characterize and utilize the optical properties of complex emulsion droplets that dynamically reconfigure between encapsulated and Janus morphologies based on changes in balancing interfacial tensions.

Publications

1. A. E. Goodling, S. Nagelberg, B. Kaehr, C. H. Meredith, S. Cheon, **A. P. Saunders**, M. Kolle, L. D. Zarzar, "Colouration by total internal reflection and interference at microscale concave interfaces." *Nature*, **2019**, 566, 523–52
 2. **A. P. Saunders** & L. D. Zarzar, "Controlling Optical Properties of Complex Emulsions via γ -cyclodextrin Degradation for Colorimetric Sensing Applications." *The Pennsylvania State University McNair Journal*, **2020**.
 3. N.S. Mueller, R. Arul, G. Kang, **A. P. Saunders**, A. C. Johnson, A. Sanchez-Iglesias, S. Hu, L. A. Jakob, J. Bar-David, B. de Nijs, L. M. Liz-Marzan, F. Liu, J. J. Bauberg, "Photoluminescence upconversion in monolayer WSe₂ activated by plasmonic cavities through resonant excitation of dark excitons." *Nat Communications*, **2023**, 14, 5726.
- Hidden Phonon Highways Promote Photoinduced Interlayer Energy Transfer in Twisted Transition Metal Dichalcogenide Heterostructures." *accepted*.

Conference Proceedings

A. P. Saunders & L. D. Zarzar, "Structural coloration from total internal reflection at microscale concave surfaces and use for sensing in complex droplets." *Proceedings of SPIE* 2020, 11292-32

Presentations

A. P. Saunders, F.Liu, "Exfoliation of 2D Nanoribbons for New Optical and Electronic Characterizations," National Organization for the Professional Advancement of Black Chemists and Chemical Engineers National Meeting, New Orleans, LA, September 11, 2023. (Oral Presentation)

A. P. Saunders, F. Liu, "Optical, Electrical, and Magnetic Properties of Exfoliated Transition Metal Dichalcogenide Nanoribbons" Materials Research Society National Meeting, San Francisco, CA, March 2023. (Poster)

A. P. Saunders, F.Liu, "Preparation and Characterization of Transition Metal Dichalcogenide Nanoribbons". Stanford Bruker AFM Workshop. August 25, 2022. (Oral Presentation)

A. P. Saunders, A. Goodling, L. D. Zarzar, "Colorimetric Sensing in Complex Emulsion Droplets," American Chemical Society National Meeting, Philadelphia, PA, March 2020. (Poster)

A. P. Saunders, L. D. Zarzar, "Controlling Optical Properties of Complex Emulsions via γ -cyclodextrin Degradation for Colorimetric Sensing Applications," McNair Scholars Conference, University of Maryland: Baltimore County, Baltimore, MD, September 2019. (Oral Presentation)

A. P. Saunders, L. D. Zarzar, "Controlling Optical Properties of Complex Emulsions via γ -cyclodextrin Degradation for Colorimetric Sensing Applications" OGEEP and McNair Scholars Summer Research Symposium, Penn State, University Park, PA, July 2019. (Oral Presentation)

A. P. Saunders, C. Zanelotti, L. Madsen, "Photoresponsiveness of Polymer Ionic Liquid Composites Analyzed Through UV-Vis and Fluorescence Spectroscopies," South Eastern Regional Meeting of the American Chemical Society, Charlotte, NC, November 2017. (Poster)

A. P. Saunders, C. Zanelotti, L. Madsen, "Photoresponsiveness of Polymer Ionic Liquid Composites Analyzed Through UV-Vis and Fluorescence Spectroscopies," Annual Biomedical Research Conference for Minority Students, Phoenix, AZ, November 2017. (Poster)

Work Experience

Senior Coordinator of Chemistry Teaching Assistant Training (May - October 2023)

Head Teaching Assistant for CHEM 31B (December 2022 - March 2023)

Head Chemistry Teaching Assistant Trainer (May - December 2022)

Atomic Force Microscopy Super User (2022 -)

Chemistry Teaching Assistant Trainer (June - December 2021)

Chemistry Grader (2021 -)

Center for Teaching and Learning Tutor (August 2020 - May 2021)

Millennium Scholars Tutor (August 2018 - May 2020)

Penn State Chemistry Department Proctor (January 2018 - May 2020)

Penn State Chemistry Department Grader (August 2017 - May 2020)

Affiliations

Member, American Chemical Society, Materials Research Society, National Organization for the Professional advancement of Black Chemists and Chemical Engineers, President of NOBCCHE@Stanford, outreach with nano@Stanford