

# Ashley P. Saunders

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## Education

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

## Honors & Awards

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Enhancing Diversity in Graduate Education (EDGE) Fellowship (Stanford)	2020
Peter Craig Breen Memorial Award for Excellence in Undergraduate Chemistry Research	2020
Millennium Scholars Program Pillars of Success Award	2020
Multicultural Resource Center Academic Achievement Award (Penn State)	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

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**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, West Lafayette, IN  
*Research Experience for Undergraduates Advisor: Dr. Shelley Claridge* Summer 2018  
Investigated the phase segregation of mixed diene 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

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2. **A. P. Saunders** & L. D. Zarzar, "Controlling Optical Properties of Complex Emulsions via  $\gamma$ -cyclodextrin Degradation for Colorimetric Sensing Applications." *The Pennsylvania State University McNair Journal*, accepted.
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

## **Conference Proceedings**

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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**

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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  $\gamma$ -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  $\gamma$ -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)

## **Affiliations**

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**Member**, American Chemical Society, NOBCChE