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**BIOGRAPHICAL SKETCH**

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NAME <b>Kristen Alanis</b>	
POSITION TITLE <b>Graduate Student</b>	
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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Texas A&M University at College Station	Ph.D.	Expected 2023	Analytical Chemistry
Indiana University, Bloomington	Ph.D.	2018-2021	Analytical Chemistry
University of Illinois at Urbana-Champaign	B.S.	12/17	Chemistry

**A. Personal Statement**

I received my bachelor's degree in chemistry from the University of Illinois at Urbana-Champaign. While I was there, I did undergraduate research for Dr. Mei Shen. Where I worked on detecting acetylcholine release at individual soma cells with nanoelectrodes and scanning electrochemical microscopy (SECM). Fall 2018, I began my Ph.D. in analytical chemistry at Indiana University Bloomington working in the Baker group. My research focus is on the fabrication of different features in silicon nitride membranes with a focused ion beam and investigating their ion transport properties with SICM. My main interest is utilizing various ligand-gated ion channels as probes for SICM to enable nanoscale mapping of their agonist.

**B. Positions****Professional Employment**

Fall 2018 - May 2019 Associate Instructor, Indiana University, Department of Chemistry

**Awards**

2019 - 2021 National Institutes of Health: Quantitative and Chemical Biology Fellowship

## C. Publications

6. Alanis, K.; Alden, S. E.; Baker, L. A.; Satheesan, A. E.; Jetmore, H. D.; Shen, M. Micro and Nanopipettes for Electrochemical Imaging and Measurement. In “**Scanning Electrochemical Microscope, Third Edition**”. Edited by Allen J Bard and Michael Mirkin. In Production, **2022**.
5. Zhu, C., Jagdale, G., Gandolfo, A., Alanis, K., Abney, R., Zhou, L., Bish, D., Raff, J. D., Baker, L. A. Surface Charge Measurements with Scanning Ion Conductance Microscopy Provide Insight into Nitrous Acid Speciation at the Kaolin Mineral-Air Interface. *Environ. Sci. Technol.* **2021**, *18*, 12233-12242. (<https://doi.org/10.1021/acs.est.1c03455>)
4. Zhu, C., Haung, K., Wang, Y., Alanis, K., Shi, W., Baker, L. A. Imaging with Ion Channels. *Anal. Chem.* **2021**, *93*, 5355-5359. (<https://doi.org/10.1021/acs.analchem.1c00224>)
3. Chen, R., Alanis, K., Welle, T. M., Shen, M. Nanoelectrochemistry in the Study of Single-Cell Signaling. *Anal Bioanal. Chem.* **2020**, *412*, 6121-6132. (<http://dx.doi.org/10.1007/s00216-020-02655-z>)
2. Huang, K., Zhou, L., Alanis, K., Hou, J., Baker, L. A. Imaging Effects of Hyperosmolality on Individual Tricellular Junctions. *Chem. Sci.* **2020**, Advance Article. (<https://doi.org/10.1039/C9SC05114G>)
1. Welle, T. M., Alanis, K., Colombo, M. L., Sweedler, J. V., Shen, M. High Spatiotemporal Study of Somatic Exocytosis with Scanning Electrochemical Microscopy and NanoITIES Electrodes. *Chem. Sci.* **2018**, *9*, 4937-4941. (<https://doi.org/10.1039/C8SC01131A>)

## D. Presentations

### Oral Presentations

1. Alanis, K., Zhu, C.; Lucas, R.; Siwy, Z. S.; Baker, L. A. “Modulation of Ion Transport Across Nanopores”. Pittcon Conference & Expo, Virtual, March 11, 2021

### Posters

4. Alanis, K., Zhu, C.; Lucas, R.; Siwy, Z. S.; Baker, L. A. “Development of Nanofluidic Devices for Iontronics”. Pittcon Conference & Expo, Chicago, IL, March 2020
3. Alanis, K.; Zhu, C.; Lucas, R.; Siwy, Z. S.; Baker, L. A. “Coupling Ion Channel Probes with Synthetic Nanodevices”. 10th Annual Watanabe Symposium, Indiana University Bloomington, October 2019.
2. Alanis, K.; Zhu, C.; Lucas, R.; Siwy, Z. S.; Baker, L. A. “Development of Synthetic Nanodevices for Iontronics”. Turkey Run Analytical Chemistry Conference, Marshall, IN, September 2019.
1. Alanis, K.; Zhu, C.; Lucas, R.; Siwy, Z. S.; Baker, L. A. “Development of Synthetic Nanodevices for Iontronics”. 6th Annual Materials Research Symposium, Indiana University Bloomington, July 2019.

## E. Activities

- 2021 – 2022 Vice President of Electrochemical Society Chapter at IU
- 2019 – 2021 Treasurer of Electrochemical Society Chapter at IU
- 2019 – Present Member – The Electrochemical Society