# Katarzyna Drewniak

Ph.D Student in Materials Science and Engineering at the University of Texas, Austin |Phone 469-579-9557| kasiadrewniak@gmail.com| Linkedin-Katarzyna Drewniak

## Education

***Ph.D in Materials Science and Engineering, GPA: 4.0***| The University of Texas at Austin |2025 UT Austin Cockrell School of Engineering Fellowship

***Bachelor of Science, Major: Chemistry GPA 3.896***|The University of Texas at Dallas |*Academic Excellence Scholar |Fall 2022 /Spring 2022/Spring 2024 Deans list |August 2021- May 2025*

## Research Experience:

**Graduate Research| Mangolini Laboratory for Applied Surface Science |** Austin, TX| August 2025- Present

- Investigating ionic liquids phase changes under high pressure

**Student Researcher |Smaldone Chemistry Lab at the UT Dallas |** Richardson, TX| Oct 2023- May 2025|

- Created novel 2D covalent organic frameworks (COFs). Used in the adsorption of radioactive iodine, for vaccine platforms, and other applications
- Analyzed and characterized 2D covalent organic frameworks using PXRD, NMR, FTIR, and UV-vis to determine structural and functional properties
- Won the Summer 2024 Undergraduate Research Symposium for Best Chemistry Poster
- Awarded semi-finalist in Undergraduate Research Scholar Awards (URSA)

**Student Researcher |Pain Stress Lab at the UT Dallas** |Richardson, TX, | May 2023- Jan 2024

- Led an experiment testing cyclophosphamide (CYP) induced bladder cystitis model in mice. To determine if CYP would be able to induce urinary tract infection in mice and delirium symptoms in elderly mice
- A participant in the University of Texas at Dallas Undergraduate Research Apprenticeship Program (URAP)
- Won the Summer 2023 Award Undergraduate Research Symposium from the School of Behavioral and Brain Sciences for best poster.

**Lab Assistant |NCH Corporation|** Irving, TX, August 2021- May 2023

- Performed comprehensive analysis of water and glycol samples, evaluating turbidity, fluorescent tracers, and metal content to gather data for customers
- Collaborated with laboratory teams to develop actionable plans for addressing substandard samples

## Publications

- Arora N, Arcudia J, Bandara C, **Drewniak K**, Chakrabarty S, Johnson R, et al. Biomimetic Pore Engineering in Two-Dimensional Covalent Organic Frameworks. ChemRxiv. 2025; doi:10.26434/chemrxiv-2025-6ql5w This content is a preprint and has not been peer-reviewed.

- Y. H. Wijesundara, N. Arora, R. N. Ehrman, T. S. Howlett, T.M. Weyman, I. Trashi, O. Trashi, S. Kumari, S. D. Diwakara,W. Tang, M. C. Senarathna, **K. H. Drewniak**, Z. Wang, R. A.Smaldone, J. J. Gassensmith, Angew. Chem. Int. Ed. 2025, 64,e202413020

## Presentations

**Drewniak, Katarzyna**, Arora Niyati, Al-Khajri Noora, Ronald A., Smldone **"** *Iodine Adsorption from Aqueous Environment with Amide Functionalized Covalent Organic Frameworks"* August 2, 2024

- Presented at the UT Dallas Summer Presentation of Undergraduate Research(SPUR)
- Awarded best Chemistry poster.

**Drewniak, Katarzyna**, Baute, Edward, Christina Thompson, Ronald A., Smaldone "*Exploring Polycyclic Aromatic Hydrocarbons in Porous Organic Materials."* April 16, 2024

- Presented at the Undergraduate Research Scholar Awards (URSA)
- Awarded semi-finalist

**Drewniak, Katarzyna**, Trail Alexis, Rade Avanessh, Kolber, Benedict J. *"An Examination of Visceral Pain-Like symptoms across age, sexes, and bladder injury."* July 25, 2023

- Presented at the UT Dallas Summer Presentation of Undergraduate Research (SPUR)
- Awarded best neuroscience poster.

## Lab Techniques/ Valuable Skills

- Lab Skills: Synthesis and Product Purification, Nuclear Magnetic Resonance, Powder X-ray Diffraction, Ultraviolet-Visible Spectroscopy, Fourier Transform Infrared(FTIR), Variable-Temperature FTIR, Thin Layer Chromatography, Turbidity, Fluorescent tracing (PTSA), Metal Deposition, Inductively Coupled Plasma (ICP), Corrosion Coupons testing. Mouse handling, Behavioral testing,
- Clinical skills: CPR and BLS certified.
- Tools: Microsoft Suites of Products, Adobe, Prism Data analysis software

## Relevant Course work

- Advanced Polymer Science & Engineering
- Materials Processing
- Advanced Chemical Synthesis
- Analytical Chemistry
- Physical Chemistry 1&2
- Biochemistry
- General Chemistry 1&2 and Lab
- Organic Chemistry 1&2 and Lab

- Quantitative Methods in Chemistry

## Work Experience

**Soccer Referee, North Texas Soccer Association**, Frisco, TX January 2016- Present

- Worked with kids of all ages, managing the field and ensuring safety.
- Communicated and worked with various people to ensure fun and fair matches

**Mentor, Telementor** Carrollton, TX August 2020 – January 2022

- Provided online tutoring for children.
- Worked with a diverse range of children ages 5-10, helping them with math and reading.

## Organizations

- Service Coordinator- Chemistry Student Association at the University of Texas at Dallas |August 2022- Current
- Freshman Mentor program at the University of Texas at Dallas| August 2022-Current
- Volunteering at the Boys and Girls Club of Richardson (20 hours)
- Volunteering Candance Valenzuela for Congress June 2020 (90 hours).

## Honors/Awards:

**Basic Life Support |2023-Current**

- Certification in Basic lifesaving emergency practices

**Academic Excellence Scholar| 2021-2025**

- Awarded to students with outstanding academic achievements.