

# Thaddeus William Le-Vasicek

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## Professional Experiences

2024 – Present **Associate Professor of Analytical Chemistry**, The Citadel, Charleston, SC.

2019 – 2024 **Assistant Professor of Analytical Chemistry**, The Citadel, Charleston, SC.

Courses taught:

General chemistry I lecture and lab  
Chemistry for engineers lecture and lab  
Instrumental methods lecture and lab  
Quantitative analysis lecture and lab  
Current topics in chemistry  
Senior research I and II  
Undergraduate research in chemistry I and II

General chemistry II lecture and lab  
General chemistry I and II lab for majors  
Nanomedicine  
Biochemistry I lecture (½ semester)  
Applied topics in chemistry  
Methods and applications of science

Committees served:

Faculty awards committee, 2021 – Present

Student recruitment committee, 2019 – Present

Grants committee, 2019 – Present

Climate center faculty fellow, 2021 – Present

Student ACS club faculty member, 2023 – Present

Student awards and professional development committee, 2019 – 2025 (Chair 2020 – 2025)

Departmental post tenure review committee, 2024 – Present (Chair 2024 – 2025)

Facilities committee, 2022 – Present (Chair 2025 – Present)

Chemistry curriculum, 2019 – Present

Six unique search committees (Chair 2025)

Summer grants committee, 2021 – Present

Scholarship Committee, 2024 – Present

2017 – 2019 **Visiting Assistant Professor**, University of Arkansas Fort Smith, Fort Smith, AR.

Courses taught:

General chemistry I lecture and lab  
Chemical principles lecture and lab (GOB)

General chemistry II lecture and lab  
Physical science lecture and lab

## Education

2012 – 2017 **Ph.D. in Analytical Chemistry**, University of Arkansas, Fayetteville, AR. 72701

Dissertation: Exploring Thermoresponsive Affinity Agents to Enhance Microdialysis Sampling Efficiency of Proteins. Dissertation Adviser: Julie Stenken, PhD.

2010 B.S. in Chemistry, University of Arkansas, Fayetteville, AR 72701

## Areas of Specialization

My teaching experience encompasses mentoring undergraduate research students, teaching general chemistry, analytical chemistry, chemistry for health professions, and physical science.

## Publications

Undergraduate student researchers underlined

Angela; Snavey, C. D.; Adair-Hudson, B. M.; **Vasicek, T. W.**; Catalysts Immobilized to Magnetic Nanoparticles: Assessment of Particle and Activity Loss During Recycling. *The Chemist* **2023**, 94(2), 1-13

Swofford, D. R.; Guillermo, S.; **Vasicek, T. W.**; Surface Chemistry and Biomolecule Density Impact Adsorbed Cellulase Activity. *The Chemist* **2023**, 94(1), 27-38

**Vasicek, T. W.**; Guillermo, S.; Swofford, D. R.; Durchman, J.; Jenkins, S.;  $\beta$ -Glucosidase Immobilized on Magnetic Nanoparticles: Controlling Biomolecule Footprint and Particle Functional Group Density to Navigate the Activity-Stability Tradeoff. *ACS Applied Biomaterials* **2022**, 5, 5347-5355

Guillermo, S.; Swofford, D. R.; Coulter, G.; **Vasicek, T. W.**; Optimization of Enzyme Activity of Cellulases Immobilized to Magnetic Nanoparticles with varying Functional Group Densities. *Journal of Undergraduate Chemistry Research*. **2022**, 21(4). 96

**Vasicek, T. W.**; Kress, P. M.; and Jenkins, S. V., Optical properties of alloyed noble metal nanoparticles: Nanotechnology experiment for chemistry and engineering students. *Journal of Chemical Education* **2020**, 97, 3778-3783.

Diaz Perez, A.; Kougl, K.; **Vasicek, T. W.**; Liyanage, R.; Lay, J.; Stenken, J. A., Microdialysis Sampling of Quorum Sensing Homoserine Lactones during Biofilm Formation. *Anal Chem* **2019**, 91, 3694-3970.

**Vasicek, T. W.**; Jenkins, S. V.; Vaz, L.; Chen, J.; Stenken, J. A., Thermoresponsive nanoparticle agglomeration/aggregation in salt solutions: Dependence on graft density. *J. Colloid Interface Sci.* **2017**, 506, 338-345.

**Vasicek, T. W.**; Jackson, M. R.; Poseno, T. M.; Stenken, J. A., In Vivo Microdialysis Sampling of Cytokines from Rat Hippocampus: Comparison of Cannula Implantation Procedures. *ACS Chem Neurosci* **2013**, 4, 737-746.

## Presented Papers

Ghanat, S.; Hefner, M.; Batouli, M.; Shetty, N.; Laughton, S.; **Le-Vasicek, T.**; Wittman, T., Investigating Undergraduate Researchers' Perception of Mentoring Relationship. *ASEE* **2023**

Ghanat, S.; Garner, D.; Wittman, T.; Hefner, M.; Ragan, D.; **Le-Vasicek, T.**; Bierman, E.; Adair-Hudson, B.; Arslaner, E.; Assessing Students' Metacognitive Skills in a Summer Undergraduate Research Program. *ASEE* **2022**

## Presentations

- 2025 Magnetic nanoparticle functional group density affects the performance of immobilized cellulase American Chemical Society Spring 2025 National Meeting and Expo
- 2023 Cellulase immobilized to magnetic nanoparticles: Comparison of adsorption and covalent attachment. Southeast regional ACS meeting
- 2022 Optimization of catalyst immobilization for bioethanol production. The Near Center for Climate Studies Advisory Board Meeting
- 2022  $\beta$ -glucosidase immobilized on iron oxide nanoparticle: Impacts of enzyme load and functional group density on specific activity and storage stability. American Chemical Society Spring 2022 National Meeting and Expo
- 2020 Optical properties of alloyed noble metal nanoparticles: Nanotechnology experiment for chemistry and engineering students. American Chemical Society Spring 2020 National Meeting and Expo

## Submitted Proposals

DOE LEDP Awards 89461932680033 and 89461932680034  
Submitted fall 2023 to the DOE  
\$5,000 value. Status: **Awarded**

American Chemical Society “Minigrant”  
Submitted spring 2022 to ACS  
\$2,000 requested. Status: **Awarded**

“Increasing the Efficiency and Lifetime of Reusable Catalysts for Biofuel Production”  
Submitted fall 2021 to The Near Center for Climate Studies  
\$11,917 requested. Status: **Awarded**

American Chemical Society “Minigrant”  
Submitted fall 2021 to ACS  
\$2,000 requested. Status: **Rejected**

## Undergraduate student research projects

Conversion of campus waste into ethanol: Steps towards a sustainable campus  
2025-2026

- Mackenzie Lakowski

PEGylating insulin to increase the storage stability of commercial insulin  
2025 – 2026 (The Citadel)

- Elisa Texaj-Fuentes

Immobilized cellulase performance: comparison of spherical to octahedral nanoparticle platforms  
2025 – 2026 (The Citadel)

- Trey Piwowar
- Roberto MendezGarcia

Assessment of fermentation reproducibility in an ultralow volume container  
2024 – 2025 (The Citadel)

- Gregory Addison
- Joe Farrell
- William Walker

Linker length affects immobilized enzyme activity and stability  
2024 – 2025 (The Citadel)

- Angela
- Sarah Fink
- Elisa Texaj-Fuentes
- Gavin Coulter

Drug encapsulation in PLGA nanoparticles  
2023 – 2026 (The Citadel)

- Jessica Bailey

Comparison of immobilized cellulase activity and stability: covalent attachment and nonspecific adsorption

2022 – 2024 (The Citadel)

- Corbin Snavely
- Gavin Coulter
- Trey Piwowar
- Angela
- Sarah Fink

Activity of cellulase immobilized to magnetic nanoparticles

2020 – 2022 (The Citadel)

- Sylvester Guillermo
- Danny Swofford

Optical properties of alloyed noble metal nanoparticles

2019 – 2020 (The Citadel)

- Patrick M. Kress

Synthesis and characterization of nanogels for glucose production from cellulose

2018 – 2019 (University of Arkansas Fort-Smith)

- Bailey Gossett
- Madison Landers
- Fernando Lopez
- Ashlynn Misener
- Maraam Zonfully
- Kamsy Sheets
- Diana Garcia

Evaluating theoretical characterization methods for gold-silver alloyed nanoparticles

2017 – 2018 (University of Arkansas Fort-Smith)

- Fernando Lopez
- Ethan Brooks
- Connor Catron

Graft density of thermoresponsive gold nanoparticles determines colloidal stability

2017 (University of Arkansas)

- Leticia Vaz

## Mentored Undergraduate Student Panel Presentations

Underline indicates undergraduate student presenter

1. Corbin Snavelly, Sarah Fink and **Thaddeus Le-Vasicek** “Cellulase Immobilized to Magnetic Nanoparticles: Comparison of Adsorption vs Covalent Attachment” Presented on 4-7-24 at the 2024 Southern Regional Honors Council Conference.

## Mentored Undergraduate Student Poster Presentations: National and Regional

1. Gavin Coulter and **Thaddeus Le-Vasicek** “Effect of Linker Length and Linker Density on Enzyme Attachment to Magnetic Nanoparticles” Presented on 3-23-25 at the Spring ACS 2025
2. Sarah Fink and **Thaddeus Le-Vasicek** “Towards quantifying desorbed enzymes” Presented on 3-23-25 at the Spring ACS 2025
3. Angela and **Thaddeus Le-Vasicek** “Cellulase Immobilized to Iron Magnetic nanoparticles (MNP): Enzyme Stability Due to Function and Group Length” Presented on 3-23-25 at the Spring ACS 2025.
4. Angela and **Thaddeus Le-Vasicek** “Effect of Immobilization pH on Adsorbed Cellulase” Presented on 10-26-23 at the South East Regional ACS Conference 2023.
5. Jessica Bailey and **Thaddeus Le-Vasicek** “Preparation of PLGA Drug Delivery and Capture Efficiency” Presented on 10-27-23 at the South East Regional ACS Conference 2023.
6. Corbin Snavelly and **Thaddeus Le-Vasicek** “Comparison of Adsorbed vs. Covalently-Bound Immobilized Cellulase to Magnetic Nanoparticles” Presented on 10-27-23 at the South East Regional ACS Conference 2023.
7. Sarah Fink and **Thaddeus Le-Vasicek** “Desorption of Immobilized Catalysts: Comparison of Two Immobilization Methods” Presented on 10-27-23 at the South East Regional ACS Conference 2023.
8. Gavin Coulter and **Thaddeus Le-Vasicek** “Catalyst Lasso Length: How Linker Length Effects the Production of Biofuel” Presented on 10-27-23 at the South East Regional ACS Conference 2023.
9. Danny Swofford and **Thaddeus Le-Vasicek** “Temporal stability of immobilized cellulases: Functional group density dependence Presented at the SEA Grant Consortium on 5-12-22.
10. Sylvester Guillermo and **Thaddeus Le-Vasicek** “Specific Activity of Enzymes Immobilized to Magnetic Nanoparticles: Dependence on Functional Group Density and Enzyme Density” Presented on 3-20-22 at Spring ACS 2022.
11. Danny Swofford and **Thaddeus Le-Vasicek** “Temporal stability of immobilized cellulases: Functional group density dependence” Presented on 3-21-22. Danny Swofford presented during the prestigious Sci-Mix session at Spring ACS 2022.

## Mentored Undergraduate Student Poster Presentations: Local

1. Timothy Piwowar and **Thaddeus Le-Vasicek** “Comparison of Enzyme Immobilization Efficiency on Spherical and Cubic Magnetic Nanoparticles” Presented on 8-25-25 at The Citadel Summer Undergraduate Research Session
2. Roberto Mendez-Garcia and **Thaddeus Le-Vasicek** “Comparing Immobilized Enzyme Performance on Spherical and Cubic Magnetic Nanoparticles” Presented on 8-25-25 at The Citadel Summer Undergraduate Research Session
3. Sarah Fink and **Thaddeus Le-Vasicek** “Towards quantifying desorbed enzymes” Presented on 4-4-25 at The Citadel student excellence day poster session. *Sarah won second place of the 84 poster presentations.*
4. Elisa Texaj Fuentes, Angela, Gavin Coulter and **Thaddeus Le-Vasicek** “Immobilized catalyst stabilized by extended linker molecules” Presented on 3-23-25 at the Swain Family School of Science and Mathematics Banquet 2025
5. Angela and **Thaddeus Le-Vasicek** “Effect of Immobilization pH on Adsorbed Cellulase” Presented on 4-5-24 at the Citadel’s Student Excellence Day.
6. Jessica Bailey and **Thaddeus Le-Vasicek** “Preparation of PLGA Drug Delivery: Capture and Release Efficiency” Presented on 3-24-24 at the Swain Family School of Science and Mathematics Banquet 2024.
7. Corbin Snavelly and **Thaddeus Le-Vasicek** “Comparison of Adsorbed vs. Covalently-Bound Immobilized Cellulase to Magnetic Nanoparticles” Presented on 3-24-24 at the Swain Family School of Science and Mathematics Banquet 2024.
8. Angela and **Thaddeus Le-Vasicek** “Effect of Immobilization pH on Adsorbed Cellulase” Presented on 3-24-24 at the Swain Family School of Science and Mathematics Banquet 2024
9. Jessica Bailey and **Thaddeus Le-Vasicek** “Preparation of PLGA Drug Delivery and Capture Efficiency” Presented on 8-14-23 at the SURE 2023 presentations.
10. Corbin Snavelly and **Thaddeus Le-Vasicek** “Comparison of Adsorbed vs. Covalently-Bound Immobilized Cellulase to Magnetic Nanoparticles” Presented on 8-14-23 at the SURE 2023 presentations.
11. Gavin Coulter and **Thaddeus Le-Vasicek** “Catalyst Lasso Length: How Linker Length Effects the Production of Biofuel” Presented on 8-14-23 at the SURE 2023 presentations.
12. Gavin Coulter and **Thaddeus Le-Vasicek** “Immobilized catalyst performance: comparison of adsorption and covalent attachment” Presented on 4-7-23 at Student Excellence day. *Gavin was awarded **second** place of the presented posters in the science category.*
13. Corbin Snavelly and **Thaddeus Le-Vasicek** “Validation of BCA Assay in denaturing solutions.” Presented on 4-7-23 at Student Excellence day.
14. Sarah Fink and **Thaddeus Le-Vasicek** “Desorption of Immobilized Catalysts” Presented on 4-7-23 at Student Excellence day.
15. Gavin Coulter and **Thaddeus Le-Vasicek** “Immobilized catalyst performance: comparison of adsorption and covalent attachment” Presented on 3-23-23 at the Citadel Academy of Science and Mathematics annual banquet.
16. Sarah Fink and **Thaddeus Le-Vasicek** “Desorption of Immobilized Catalysts” Presented on 3-23-23 at the Citadel Academy of Science and Mathematics annual banquet.
17. Angela and **Thaddeus Le-Vasicek** “Modified magnetic nanoparticle recovery” Presented on 3-23-23 at the Citadel Academy of Science and Mathematics annual banquet.

18. Corbin Snavelly and **Thaddeus Le-Vasicek** “Validation of BCA Assay in denaturing solutions.” Presented on 3-23-23 at the Citadel Academy of Science and Mathematics annual banquet.
19. Gavin Coulter and **Thaddeus Le-Vasicek** “Recycling and Stability Study of Non-Specifically Attached Cellulase on Magnetic Nanoparticles.” Presented on 8-22-22 at the Discover your library event.
20. Angela and **Thaddeus Le-Vasicek** “Drug Encapsulation in Poly(lactic-co-glycolic acid) [PLGA] particles” Presented on 8-22-22 at the Discover your library event..
21. Sylvester Guillermo and **Thaddeus Le-Vasicek** “Specific Activity of Enzymes Immobilized to Magnetic Nanoparticles: Dependence on Functional Group Density and Enzyme Density” Presented on 3-24-22 at Spring CASM Banquet
22. Danny Swofford and **Thaddeus Le-Vasicek** “Temporal stability of immobilized cellulases: Functional group density dependence”. Presented on 3-24-22 at Spring CASM Banquet
23. Sylvester Danny Swofford and **Thaddeus Le-Vasicek** “Identifying Optimal Reaction Times to Maximize Protein Attachment and Minimize Detachment from Iron Nanoparticles” Presented on 8-23-21 at Discover your Library Event.
24. Sylvester Guillermo and **Thaddeus Le-Vasicek** “Immobilized Enzyme Activity as a Function of Coupling Time and Operating Temperature” Presented on 8-23-21 at Discover your Library Event.
25. Sylvester Guillermo and **Thaddeus Le-Vasicek** “Quantification of Bovine Serum Albumin Adsorbed on Iron Oxide Nanoparticles Utilizing a Bicinchoninic Acid Assay” Presented on 4-23-21 at the Citadel Chemistry poster session.
26. Danny Swofford and **Thaddeus Le-Vasicek** “Towards Quantification of Hydrolysis of APTES Attached to Silica Coated Nanoparticles” Presented on 4-23-21 at the Citadel Chemistry poster session.

### **Previous Experience**

2012 – 2017 **Teaching Assistant**, University of Arkansas, Fayetteville, AR.

Courses taught:

Instrumental analysis lab

Analytical chemistry lab

General chemistry I recitation

### **Awards and Honors**

- 2024 Excellence in Undergraduate Research Faculty Mentoring Award
- 2023 Recipient of the Medbery Award from The Citadel for impacts on freshman-level programs
- 2009 Participated in Research Experience for Undergraduates at the University of Arkansas
- 2008 Recipient of the Samuel and Betty Siegel Scholarship from the University of Arkansas
- 2006 Recipient of the Jacob and Wilma Sacks Scholarship from the University of Arkansas

## **Certifications Earned**

- 2019 Darkness to Light: Online training to prevent child abuse  
2016 Responsible Conduct of Research from Collaborative Institutional Training Initiative.

## **Professional Memberships**

- 2025 – Present Reviewer for *ACS Applied Nano Materials*  
2023 – Present Reviewer for *The Chemist*  
2022 – Present Fellow of the American Institute of Chemists (AIC)  
2016 – Present American Chemical Society (ACS) National Member