



## *Stephen D. Starnes - Curriculum Vitae*

Chemistry Department  
East Texas A&M University  
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### *Education*

#### **The Scripps Research Institute, La Jolla, CA**

Postdoctoral Research Assistant (September 1998-August 2000)

Research area: Molecular recognition, self-assembly, porphyrin and phthalocyanine chemistry

Research Advisor: Julius Rebek, Jr.

#### **Texas Tech University, Lubbock, TX**

Ph.D., Organic Chemistry (June 1998)

Dissertation title: "Unnatural Amino Acids: Synthesis and Structure-Property Relationship Studies,"

Research Advisor: Professor Allan D. Headley

#### **Texas Tech University, Lubbock, TX**

B.S., Chemistry, *Magna Cum Laude*, GPA: 3.83/4.0 (May 1993)

### *Academic Positions & Teaching Experience*

#### **East Texas A&M University, Commerce, TX**

Associate Professor, Chemistry Department, September 2013-present

Interim Department Head, Chemistry Department, January 2010 – June 2010.

Assistant Professor, Chemistry Department, July 2005-August 2013

- Instructor for general and organic chemistry and graduate level organic chemistry
- Science Education
- Research interests in molecular recognition, sensor development, environmental remediation.

#### **New Mexico State University, Las Cruces, NM**

Assistant Professor, Department of Chemistry and Biochemistry, Aug. 2000-July 2005

#### **Texas Tech University, Lubbock, TX**

Instructor (Summer 1998)

- Instructed second semester undergraduate organic chemistry lecture course.

#### Lab and Lecture Teaching Assistant (1993-1998)

- Instructed recitation sessions for six semesters of organic chemistry and one semester of general chemistry laboratory courses. Four semesters experience instructing help sessions five times a week to supplement a lecture course.
- Assisted in the development, implementation, and publication of a combinatorial chemistry laboratory experiment for the second semester organic chemistry laboratory course.

**Professional Membership (current):**

American Chemical Society, Member 1994-present

***Research Interests & Experience***

**East Texas A&M University, Commerce, TX**

I have four main research interests.

1. The molecular recognition of anions of synthetic, biological, biomedical and environmental interest. I aim to develop synthetic anion receptors that will find use in environmental remediation efforts or in sensor design. I also aim to design anion receptors that serve as organocatalysts and therapeutic agents.
2. Chiral Recognition. My group is actively working to develop synthetic receptors for chiral molecules in order to better understand the requirements for enantioselective recognition.
3. Recognition of Perfluorinated compounds. Perfluorinated organic compounds pose an environmental and health hazard. My group is working to develop sensors and extraction agents for these types of compounds.
4. The development of perylene diimide compounds for use in organic photovoltaic cells.

**The Scripps Research Institute, La Jolla, CA**

Postdoctoral Research Assistant (September 1998-August 2000)

Research Advisor: Julius Rebek, Jr.

- Synthesized and characterized phthalocyanine compounds designed to self-assemble as discrete dimers. Investigated their molecular recognition properties.
- Synthesized novel porphyrin-resorcinarene hybrids for molecular recognition, catalysis and energy transfer applications.

**Texas Tech University, Lubbock, TX**

Graduate Research Assistant (May 1993-1998)

Research Advisor: Allan D. Headley

- Initiated a project for the asymmetric synthesis of conformationally constrained cysteine analogs.
- Analyzed the conformational potential energy surface of unnatural amino acids as a function of their substituents using *ab initio* techniques.
- Synthesized unnatural amino acids and examined their tautomerism, conformation, and aggregation in solution using spectroscopic techniques.

***Awards, Honors, & Scholarship***

- Alonzo Sosa Innovation in Teaching Award presented by the Texas Association of Black Personnel in Higher Education, Spring 2021
- Excellence in Teaching Award, presented by the student organization National Society of Leadership and Success. Fall 2019
- Texas A&M University-Commerce, Student Recognition Award for Teaching Excellence, Spring 2012
- Paul W. Barrus Distinguished Faculty Award for Teaching, Texas A&M University-Commerce, 2012
- Donald C. Roush Excellence in Teaching Award, New Mexico State University, 2004
- Patricia Christmore Faculty Teaching Award, New Mexico State University, 2003-2004
- Song Prize, award for best dissertation, Texas Tech University, 1998
- Outstanding Doctoral Teaching Assistant Award, Texas Tech University, 1996-1997
- Top Graduate in Chemistry, Texas Tech University, 1993

## *Service*

### **Conference Organization:**

1. Coordinating committee Pathways 2008 symposium (Spring 2008-Fall 2008)
2. ACS-Meeting-in-Miniature Co-coordinator, April 2013, Texas A&M University-Commerce (program coordinator, 108 presentations organized, abstract booklet organized).
3. Presider, Supramolecular Chemistry session at the 247th ACS National Meeting, Dallas, TX, March 16-20, 2014.

### **Committee Service Work**

#### **University Committees:**

President of the Faculty Senate, Fall 2014 – Summer 2014, Fall 2018-Summer 2020

Education Destination Committee (Fall 2007)

Strategic Enrollment Management Committee (Fall 2008 – Spring 2009)

Faculty Senate member (Fall 2007 – 2025), member of the Executive Committee Fall 2011-2025

Pre-professional Committee (Fall 2008 – present)

Greater Texas Foundation Proposal Committee, Spring 2008 (proposal aimed at acquiring a Master's of Science Education program for middle school teachers)

Recycling Committee, (Fall 2010 – 2012)

Athletic Council, (Fall 2010 – Spring 2011)

Academic Life subcommittee of the Faculty Senate (Fall 2012 – Summer 2014)

University Studies Committee (Fall 2012 – Summer 2023), Chair 2017-2018

Strategic Planning Task Force Committee – Spring 2014 – Fall 2014

Budget Review and Development Council, Fall 2014-spring 2017

University Executive Council, Fall 2014-spring 2015

Admissions and Retention Sub-committee of the faculty senate, Chair Fall 2013

Secretary of the Faculty Senate, Fall 2015-Spring 2016.

External reviewer for the A&M-Commerce Curriculum and Instruction Program review, spring 2016

Classroom technology committee (Tim Murphy chair), Spring 2016.

Signature course development committee and proposal review Sp2017-Fall 2017.

Graduate Council (Fall 2017-Spring 2020), Chair of the subcommittee Committee on Administration. Fall 2017-Spring 2018

Diversity and Inclusion Ad Hoc Committee – Fall 2018 – Spring 2020 (appointed by President Rudin)

Ad Hoc Committee to Update the Summer Business Model – Spring 2019

Core curriculum committee – Fall 2017- Summer 2022

University Recovery & Reconstitution Committee and Academic subcommittee Summer 2020

Strategic Enrollment Management Committee Fall 2020-Spring 2021

Onboarding/New Faculty Orientation Taskforce summer 2020

University Space and Facilities Advisory Committee (SFAC) – Spring 2023 – present

Summer Pay Model Targeted Working Group, fall 2024 – spring 2025

Strategic Enrollment Management Taskforce – Summer 2024 – 2025

Faculty Workload Policy Targeted Working Group, fall 2024 – spring 2025

COSE College Curriculum Committee Fall 2024-present

Honors Council, Fall 2024-present

### **Chemistry Department Committee Work:**

1. Participated in the ACS SEED program as a research mentor summer 2006 and 2007.
2. Chemistry department scholarship committee – member Fall 2010 – present, Chair of the committee Fall 2016-current
3. Chemistry Advisory Board – Spring 2018 – present. Organizer for CAB agenda and meetings Fall 2023-present.
4. Chemistry Program Review Committee – Fall 2021 – Spring 2022.

#### **Chemistry Department Service:**

1. Graduate advisor fall 2011 – Summer 2014
2. Undergraduate Advisor, Fall 2014- present
3. MS SLO assessment coordinator spring 2014 – summer 2022
4. Undergraduate SLO assessment coordinator Fall 2022 – present

#### **Professional Service:**

1. ACS-DFW member of the awards committee (Fall 2016-Summer 2020), Chair January 2018-December 2018.
2. Panelist for the NSF-GRFP (November 2013-February 2014)
3. Louisiana Board of Regents, Office of Sponsored Programs (December 2013). Reviewed one research proposal.
4. Panelist for the NSF-GRFP (November 2014-January 2015)
5. Panelist for the NSF-GRFP (November 2015-January 2016)

### ***Funding***

#### **Proposals Funded**

##### **External (PI)**

1. American Chemical Society Project SEED, which funds stipends for under-privileged high school students for summer research experience, \$7,963.00 for 7 students (only 5 students were accepted into the program), summer 2006.
2. Project SEED, American Chemical Society, Spring 2007, funded \$7500.00, accepted \$4500.00. I provided one research project for this grant. Drs. Jang and Whaley also provided a project.
3. Project director on a grant titled Operation Spark (three years, January 1, 2006 – December 31, 2008), \$192,941.00 direct costs.
4. Proposal Title: REU Site for Community College Students in Chemistry and Biochemistry at Texas A&M University-Commerce, Total Direct and Indirect Costs: \$501,233, PI: Dr. Stephen D. Starnes, Co-PI, Dr. Bukuo Ni, Project start: 9/1/24-Project end: 8/31/28

##### **Internal (PI)**

5. 2006-2007 TAMU-C Faculty Research Enhancement Grant, \$6,666.00, September 1, 2006 – August 31, 2007.
6. 2008-2009 TAMU-C Faculty Research Enhancement Grant, funded, \$7,320.00, September 1, 2008 – August 31, 2009.
7. Travel support request, Dean's Teaching Initiative, POGIL 3-day workshop at Linfield College, Oregon, June 20-22, 2008. \$500.00 submitted March 14, 2008.
8. Faculty Development Grant, \$700.00, to attend Chirality 2012 conference and 244<sup>th</sup> National ACS meeting in Philadelphia, PA. Funded Spring 2012.
9. Faculty Research Enhancement Proposal, submitted 2-23-14, \$4,000.00, "Chiral Porphyrins: Hosts and Molecular Switches."
10. A&M-Commerce, Faculty Research Enhancement Proposal, Title: Chiral Porphyrins: Hosts

and Molecular Switches, Award amount: \$3,500, Award period: 9/1/14 – 8/31/15, submitted: 2-23-14

### External (Co-PI)

11. Co-PI, NSF-MRI: Acquisition of a IM-Q-TOF Mass Spectrometer. Proposal number 0821247, submitted Jan. 24, 2008, awarded 8/15/08, \$342, 014.
12. NSF-CCLI, Proposal Number: 0837526, Proposal Title: Achieving Student Mastery of Chromatographic and Spectroscopic Methods in Organic Chemistry through a University/Community-College Partnership, Principal Investigator: Ben Jang, Co-PI (s): Stephen Starnes, William Whaley. June 1, 2009 - May 31, 2012. \$193,011.

This project involved bringing community college students onto the TAMU-C campus to do four research-based experiments with these students throughout an academic year with a goal of stimulating these students interest in pursuing a career in chemistry.

13. NSF-REU: Research Experience for 2-year College Undergraduates in Chemistry at Texas A&M University-Commerce, \$266,037, 3/15/09-2/28/12, PI: Ben Jang, Co-PI: Stephen Starnes.
14. NSF DUE-1136295, "Building the Capacity of STEM Teacher Preparation at Texas A&M University-Commerce," PI: Ben Jang, Co-PI Stephen Starnes, Co-PI Thomas Faulkenberry, \$174,020, September 1, 2011 - August 31, 2013.

This project involves the development of new courses to better prepare students for a career as a high school chemistry teacher. Part of the program includes a summer camp at TAMU-C for community college and high school chemistry students to foster their interest in teaching.

15. Co-PI: CHE - MPS/CHE - Undergraduate Programs in Chemistry: Community College REU Site at Texas A&M University-Commerce, National Science Foundation, \$301,002.00, April 1, 2017-March 31, 2020, (PI: Ben Jang)
16. Co-PI, Title: Preparing a Community of Outstanding STEM Teachers for Rural and Urban Northeast Texas, PI: William G. Newton, Co-PI with Professors Robynne Locke, Rebecca Dibbs, Melanie Fields, Johanna Delgado-Acevedo, Agency: National Science Foundation, Total Award Amt: \$1,199,157.00, Award Period: 07/01/2018 – 06/30/2023
17. NSF: REU Site: for Community College Students at TAMU-Commerce, \$357,301, 8/01/2021 – 7/31/2024

### *Presentations*

#### ETAMU (2005-present)

1. "Shape Selective Anion Recognition by Metalloporphyrin Hosts," 63<sup>rd</sup> Southwestern Regional Meeting of the American Chemical Society, November 4-7, 2007, Lubbock, TX.
2. "Anion Recognition by Meso- and  $\beta$ -Functionalized Metalloporphyrin Hosts," 3<sup>rd</sup> Joint International Symposium of Macrocyclic and Supramolecular Chemistry, Las Vegas, Nevada, July 13-18, 2008.
3. "Texas A&M University-Commerce/Community College Partnerships: Engaging Community College Organic Chemistry Students in Instrumentation and Research based Laboratories to Impact Their Career Choices," Stephen D. Starnes, Bukuo Ni, Ben Jang, Larry Brough, Fred Jury, 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.
4. "Click Chiral Porphyrins," Stephen D. Starnes, 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.

5. Stephen D. Starnes “Click Porphyrins: Hosts for Chiral and Non-Chiral Guests,” Texas A&M-Commerce Annual Research Symposium, April 5, 2012.
6. Stephen D. Starnes “Click Chiral Porphyrins: Hosts with Introverted Functionality,” The 24<sup>th</sup> International Conference on Chirality (Chirality 2012), Fort Worth, Texas, June 10-13, 2012.
7. Stephen D. Starnes “Porphyrins with Introverted Functionality: Hosts for Chiral and Non-chiral guests,” 244<sup>th</sup> National Meeting of the American Chemical Society, Philadelphia, PA, August 19-23, 2012.
8. Stephen D. Starnes “A university/community college collaboration in professional development experiences and sequential research-based laboratories to engage community college organic chemistry students,” 244<sup>th</sup> National Meeting of the American Chemical Society, Philadelphia, PA, August 19-23, 2012.
9. Stephen D. Starnes, “Chiral porphyrins and bis-porphyrins: Hosts with chiral walls, caps and corners,” 247<sup>th</sup> ACS National Meeting, Dallas, TX, March 16-20, 2014.
10. **Stephen D. Starnes**, Ben Jang “An REU Site Focusing on Regional 2-Year Community College Students,” ACS National Meeting, San Francisco, CA, 8-13-23 (presented by Stephen Starnes)

#### *Invited Lectures*

1. “Click Porphyrins: Hosts for Chiral and Non-Chiral Guests”, presented to Department of Chemistry, Texas Christian University, January 24, 2012.
2. “Click Porphyrins: Hosts for Chiral and Non-Chiral Guests”, presented to Department of Chemistry, Southern Methodist University, January 27, 2012.
3. “Click Porphyrins: Hosts for Chiral and Non-Chiral Guests”, presented to Department of Chemistry, Texas Wesleyan University, February 10, 2012.
4. “Click Porphyrins: Hosts for Chiral and Non-Chiral Guests”, presented to Department of Chemistry, University of Texas at Dallas, March 2, 2012.
5. “Click Porphyrins: Hosts for Chiral and Non-Chiral Guests”, presented to Department of Chemistry and Biochemistry, Texas Tech University, April 4, 2012.
6. “Porphyrin Hosts for Chiral and Non-Chiral Guests”, presented to Department of Chemistry and Physics, LeTourneau University, November 15, 2012.
7. “Click Porphyrins: Hosts for Chiral and Non-Chiral Guests”, presented to Department of Chemistry, Midwestern State University, January 24, 2014.

#### *Grant Panel Review Work*

1. NSF-CCLI grant review committee, Washington D.C., July 12-14 2009.
2. NSF-SSTEM Scholarships committee, Washington D.C., November 4-6 2009.
3. Exact Sciences and Engineering, FCT-Portugal – External Reviewer, September 2012.
4. Panelist for the NSF-GRFP (November 2013-February 2014)
5. Louisiana Board of Regents, Office of Sponsored Programs (December 2013). Research proposal review
6. Panelist for the NSF-GRFP (November 2014-January 2015)
7. Panelist for the NSF-GRFP (November 2015-January 2016)

#### *Editorial Work*

Editor, Chem Gems and Joules column for *The Southwest Retort*: Wrote a monthly column for *The Southwest Retort*, a publication serving part of the Texas chemical community. Fall 2005-Spring 2006.

#### *Publications*

#### From Undergraduate and Graduate Studies

1. Headley, A. D.; McMurry, M. E.; Starnes, S. D. "Effects of Substituents on the Acidity of Acetic Acids," *J. Org. Chem.* **1994**, 59, 7, 1863-1866.
2. Headley, A. D.; Starnes, S. D.; Wilson, L. Y.; Famini, G. R. "Analysis of Solute/Solvent Interactions for the Acidity of Acetic Acids by Theoretical Descriptors," *J. Org. Chem.*, **1994**, 59, 26, 8040-8046.
3. Headley, A. D.; Starnes, S. D.; Cheung, E. T.; Malone, P. L. "Solvation Effects on the Relative Basicity of Propylamines," *J. Phys. Org. Chem.*, **1995**, 8, 1, 26-30.
4. Headley, A. D.; Starnes, S. D. "The Effects of Branching on the Tautomeric Equilibrium of Amino Acids," *J. Am. Chem. Soc.*, **1995**, 117, 36, 9309-9313.
5. Headley, A. D.; Starnes, S. D. "Conformational Analysis of N-Methylglycine and N,N-Dimethylglycine by *ab Initio* Calculations," *J. Mol. Struct. (THEOCHEM)* **1996**, 370, 2-3, 147-155.
6. Headley, A. D.; Starnes, S. D. "Conformational Analysis of Amino Acid Tautomers," *Trends Org. Chem.*, **1998**, 7, 75-84.
7. Headley, A. D.; Starnes, S. D. "Theoretical Studies of the Gas Phase Tautomerization of N,N-Dimethylglycine," *J. Mol. Struct. (THEOCHEM)* **1998**, 453, 247-253.
8. Headley, A. D.; Starnes, S. D. "Theoretical Studies of the Gas Phase Tautomerization of Sarcosine," *J. Mol. Struct. (THEOCHEM)* **1999**, 467, 2, 95-101.
9. Headley, A. D.; Starnes, S. D. "Association of *p*-Toluyldimethylglycine in Water," *J. Phys. Org. Chem.* **1999**, 12, 290-292.
10. Birney, D. M.; Starnes, S. D. "Parallel Combinatorial Esterification: A Simple Experiment for Use in the Second Semester Organic Chemistry Laboratory," *J. Chem. Ed.*, **1999**, 76, 11, 1560-1561.
11. Headley, A. D.; Starnes, S. D. "Ab Initio Study of Anomeric Effect in 2,2-Difluoroglycine," *J. Mol. Struct. (THEOCHEM)* **2000**, 507, 281-287.
12. Headley, A. D.; Starnes, S. D. "Theoretical Analysis of Fluoroglycine Conformers," *J. Comput. Chem.*, **2000**, 21, 6, 426-431.
13. Headley, A. D.; Starnes, S. D., "Conformational Analysis of  $\alpha$ -Trifluoroalanine: A Theoretical Study," *J. Mol. Struct. (THEOCHEM)* 2001, 572, 1-3, 89-95.

#### **From Post-doctoral Studies**

14. Lützen, A.; Starnes, S. D.; Rudkevich, D.; Rebek, J., Jr. "A Self-Assembled Phthalocyanine Dimer," *Tetrahedron Lett.*, **2000**, 41, 20, 3777-3780.
15. Starnes, S. D.; Rudkevich, D. M.; Rebek, J., Jr. "A Cavitand-Porphyrin Hybrid," *Org. Lett.* **2000**, 2, 14, 1995-1998.
16. Starnes, S. D.; Rudkevich, D. M.; Rebek, J. Jr. "Cavitand-Porphyrins," *J. Am. Chem. Soc.* **2001**, 123, 4659-4669.

#### **NMSU (2000-2005)**

17. Starnes, S. D.; Arungundram, S.; Saunders, C. H. "Anion Sensors Based on  $\beta,\beta'$ -Disubstituted Porphyrin Derivatives," *Tetrahedron Lett.* **2002**, 43, 7785-7788.
18. Starnes, S. D.; Birney, D. M. "Parallel Combinatorial Esterification: An Experiment for the Second Semester Organic Chemistry Laboratory", accepted, Chemical Education Resources: Modular Laboratory Program in Chemistry.

#### **ETAMU (2006-present)**

19. Whaley, W. L.; Rummel, J. D.; Zemenu, E.; Li, W.; Yang, P.; Rodgers, B. C.; Bailey, J.; Moody, C. L.; Huhman, D. V.; Maier, C. G.-A.; Sumner, L. W.; Starnes, S. D.. Isolation and

- characterization of osajin and pomiferin: Discovery laboratory exercises for organic chemistry. *Chemical Educator*, **2007**, 12(3), 179-184.
- MariJo Wienkers, Josmalen Ramos, Hikma Jemal, Chaz Cardenas, Paul Wiget, Alfreda Nelson, Shiloh Free, Jun Wu, Rebecca Roach, Marius Vulcan, Kristopher Waynant, Kyle Fort, Anna Vladimirova, Jeffery Sun, Samuel Eli Hunt, Dmitry M. Rudkevich, Stephen D. Starnes "Enhanced Shape-Selective Recognition of Anion Guests through Complexation- Induced Organization of Porphyrin Hosts," *Org. Letters*, **2012**, 14, 6, 1370-1373.
  - Wu, Xiaowen; Starnes, Stephen D. "L-Nipecotic Acid-Porphyrin Derivative: A Chiral Host with Introverted Functionality for Chiral Recognition," *Org. Letters*, **2012**, 14, 14, 3652-3655.
  - Nandipati, V.; Akinapelli, K.; Koya, L.; Starnes, S.D. "Recognition of Mandelate Stereoisomers by Chiral Porphyrin Hosts: Prediction of Stereopreference in Guest Binding a Priori Using a Simple Binding Model?," *Tetrahedron Letters*, **2014**, 55, 985-991.

### **Advisory Work**

#### ***Undergraduate Honors Thesis***

Chair:

- Jeffery Sun, defended Honors Thesis April 27, 2012. Highest Honors. Thesis title: "The Synthesis and Recognition Properties of Zn-Tetraphenylporphyrin: (1S,2S)-1,2-Diaminocyclohexane Sulfonamide Derivative."
- John Naizer "Synthesis and Study of a Zinc-Porphyrin Host as a Selective Receptor for the Anion Recognition of Nitrate Guests for Environmental Applications," defended May 6, 2016. Graduated with Honors summer 2016.
- Lance Mwangi, "Anion Recognition of Porphyrin Calixarene Hybrids," defended 5-4-17, with Honors.
- Lisa Latta, defended November 16, 2018.
- Maggie Waites, "Computational Study of the Rotational Barrier in Indole-Benzene Derivatives: Isolation of Chiral Atropisomers," defended May 8, 2019.
- Ruth Gainzar, "Synthesis of a Porphyrin-Piperidine Hybrid Synthetic Host for the Recognition of Chiral Anions," defended November 19, 2019.
- \*\*Maleeha Ahmad, "Synthesis and Study of a Porphyrin Host for Perfluoroalkyl Contaminants," defended April 19, 2021.
- Symphony Hill, defended Honors thesis January 9, 2023. "Computational Investigation of Porphyrin-Based Host Design for Anions and Ion Pairs"
- Javaughn Martinez, defended Honors thesis May 3, 2023. "Computational Study of the Rotational Barrier in Indole Derivatives"
- Summer Hanson, defended Honors thesis May 3, 2023. "Substituent Effect Analysis on Halogen Bonding Interactions"
- Taylor Beaver, defended Honors thesis July 19, 2023. "A Computational Study on the Effects of Anion- $\pi$  Bonding on Host Binding of Anions."
- Alyson Cave, defended Honors thesis August 7, 2023. "Computational Study of Guest Binding Through Halogen and Hydrogen Bonding."

\*\*Maleeha Ahmad was awarded the Dennis Boe paper award in the over 60 credit hours category for paper entitled, "Synthesis and Study of a Porphyrin Host for Perfluoroalkyl Contaminants." Great Plains Honors Council (GPHC), March 11, 2021, Midwestern State University, Wichita Falls, TX.

#### ***Masters Theses Directed***

### **NMSU (2000 – 2005)**

1. Sailaja Arungundram, "Porphyrin-Appended Anion Sensors and Studies on Their Anion Recognition Properties," October 23, 2003.
2. MariJo Wienkers, "Meso Substituted Metallated Porphyrin Based Receptors for Anion Recognition," June 28, 2004.

**ETAMU (2005 – present)**

3. Josmalen Ramos, "Synthesis and Characterization of Face-To-Face Porphyrin in Anion Recognition," summer 2009.
4. Lakshmi Koya, "Porphyrin-Proline Hybrids: Hosts for Chiral Guest Recognition," November 3, 2011.
5. Himajarani Surapaneni, "4-Hydroxy proline-porphyrin hybrids: chiral porphyrins for anion recognition", November 4, 2011.
6. Prathima Kavuri, "1,2-Diamine and 1,2-Amine Alcohol-Porphyrin Hybrids: Chiral Recognition for Anion Recognition," March 30, 2012.
7. Lin Chen, "Chiral Nitrogen Heterocyclic Porphyrin Compounds for Chiral Recognition," August 2012.
8. Karthik Akinapelli, "Synthesis of Chiral Porphyrins and Structural Studies of their Host:Guest Complexes," September 14, 2012.
9. Vijay Nandipati, "3-Aminopyrrolidine-Porphyrin Receptors: Chiral Porphyrins for Anion Recognition," Masters candidate, defended October 19, 2012.
10. Anusha Bomiddi, "Synthesis and Study of Enhanced Shape Selective Anion Hosts," Masters candidate, defended October 24, 2012.
11. MingHsun Yang, "Proline Sulfonamide-Porphyrin Derivatives: <sup>19</sup>F-NMR and UV Detection of Chiral Recognition for Anions and Amines," Masters candidate, defended November 1, 2012.
12. Anvesh Dasari, "Chiral Porphyrin:Piperidine Hybrids for Chiral Guest Recognition," Masters candidate, defended May 6, 2013.
13. Xiaowen Wu, "Porphyrin Piperidine Hybrids: Hosts for Chiral Guest Recognition," Masters candidate, defended October 22, 2013.
14. Sirisha Makineni, "Structural Studies of Porphyrin Hosts for Anion Guests and Second Generation Receptors," June 17, 2014.
15. Elvis Boateng, "The Synthesis and Recognition Properties of Chiral Porphyrins and Chiral Bis-Porphyrins," June 25, 2014.
16. Maha Alqurafi, "Second Generation Chiral Porphyrins: Hosts with Chiral Centers Above the Porphyrin Plane for Chiral Recognition Studies," 10-23-14.
17. Khanh Truong, "Chiral Porphyrins with Chiral Caps; Synthesis and Chiral Recognition Studies," March 27, 2015.
18. Krishna Gangu, "Electronic Effects on the Chiral Recognition Properties of Chiral Porphyrin Hosts," October 26, 2016.
19. Sandhya Palo, "Porphyrin Biphenyl and Isonipecotic Acid Hybrid Hosts and Their Recognition of Anion Guests," June 12, 2017.
20. Apoorva Kasetti, "Synthesis and Study of the Recognition Properties of Non-Chiral and Chiral Porphyrin-Calixarene Hybrid Hosts," June 13, 2017.
21. Lisa Latta, "Anion Recognition Properties of Chiral Porphyrin Atropisomers," June 11, 2021.

**McNair scholars mentored:**

1. Janet Varela – Summer 2013

2. Vanessa Jackson – Summer 2013
3. Richard Carranza – Summer 2014
4. Nelson Feliciano – Fall 2015 – Spring 2018
5. Ruth Gainzar – Fall 2018 – Spring 2019
6. Justin Couch – Spring 2019 – Spring 2020
7. Javaughn Martinez – Summer 2022 – Spring 2023
8. Brandon Espinoza – Summer 2022 – Fall 2024
9. Erica Salinas – Summer 2024 – present

***Student Abstracts – Poster and Oral Presentations (presenter in bold)***

Presentations at local, regional, and national scientific conferences by students of Dr. Starnes' research group.

**ETAMU (2005 – present)**

1. Free, S., **Ramos, J.**, Carroll, K., Wienkers, M., Farrow, M., Roach, R., Nelson, A., Vulcan, M., Rudkevich, D., Starnes, S. D. "The Synthesis and Anion Recognition Properties of Meso-Functionalized Metalloporphyrins," 62nd Southwest Regional Meeting of the American Chemical Society, Houston, TX, October 19-22, 2006.
2. Bailey, Johnathan; **Fort, Kyle**; Starnes, Stephen "The Synthesis and Chiral Anion Recognition Properties of a Metalloporphyrin Host," 5<sup>th</sup> Annual Pathways to the Doctorate Student Research Symposium, November 2-3, 2007, Tarleton State University, Stephenville, TX.
3. **Kee, Carlos**; Foley, Meredith; Smith, Bradley; Starnes, Stephen "Fluorescence Sensing of Anion Binding to a  $\beta$ ,  $\beta$ -substituted Porphyrin Host," 5<sup>th</sup> Annual Pathways to the Doctorate Student Research Symposium, November 2-3, 2007, Tarleton State University, Stephenville, TX.
4. Roberts, Patrick; **von Ausdall, Alexandra**; Starnes, Stephen "Anion Recognition Properties of a Quaternary Ammonium Appended Metalloporphyrin Host," 5<sup>th</sup> Annual Pathways to the Doctorate Student Research Symposium, November 2-3, 2007, Tarleton State University, Stephenville, TX.
5. **Ramos, Joey**; Free, Shiloh; Wienkers, MariJo; Wu, Jun; Wiget, Paul; Nelson, Alfreda; Roach, Rebecca; Vulcan, Marius; Waynant, Kristopher; Carroll, Kellen; Rudkevich, Dmitry M; Starnes, Stephen "Shape Selective Anion Recognition by Metalloporphyrin Hosts," 5<sup>th</sup> Annual Pathways to the Doctorate Student Research Symposium, November 2-3, 2007, Tarleton State University, Stephenville, TX.
6. Bailey, Johnathan; **Fort, Kyle**; Starnes, Stephen "The Synthesis and Chiral Anion Recognition Properties of a Metalloporphyrin Host," 63<sup>rd</sup> Southwestern Regional Meeting of the American Chemical Society, November 4-7, 2007, Lubbock, TX.
7. **Kee, Carlos**; Foley, Meredith; Smith, Bradley; Starnes, Stephen "Fluorescence Sensing of Anion Binding to a  $\beta$ ,  $\beta$ -substituted Porphyrin Host," 63<sup>rd</sup> Southwestern Regional Meeting of the American Chemical Society, November 4-7, 2007, Lubbock, TX.
8. Roberts, Patrick; **von Ausdall, Alexandra**; Starnes, Stephen "Anion Recognition Properties of a Quaternary Ammonium Appended Metalloporphyrin Host," 63<sup>rd</sup> Southwestern Regional Meeting of the American Chemical Society, November 4-7, 2007, Lubbock, TX.
9. **Josmalen Ramos**, Shiloh Free, MariJo Wienkers, Jun Wu, Paul Wiget, Alfreda Nelson, Rebecca Roach, Marius Vulcan, Kristopher Waynant, Kellen Carroll, Dmitry M. Rudkevich, and Stephen D. Starnes "Shape Selective Anion Recognition by Metalloporphyrin Hosts," Dallas - Fort Worth Section of the American Chemical Society 41st Annual "Meeting-in-Miniature", April 19, 2008, Southern Methodist University, Dallas Texas.
10. **Josmalen Ramos**; Kyle Fort; Anna Vladimirova; Alexandra von Ausdall; Shiloh Free; Johnathan Bailey; Kellen Carroll; MariJo Wienkers; Jun Wu; Paul Wiget; Alfreda Nelson; Rebecca Roach;

- Marius Vulcan; Kristopher Waynant; Maribel Farrow; Dmitry M. Rudkevich; Stephen D. Starnes “Anion Recognition by Meso- and  $\beta$ -Functionalized Metalloporphyrin Hosts,” Annual Research Symposium 2008, TAMU-C, April 24, 2008.
11. **Ramos, Joey**; Starnes, Stephen “Anion Recognition Properties of a Bis-Metalloporphyrin Host,” 64th Southwestern Regional Meeting of the American Chemical Society, October 1-4, 2008, Little Rock, Arkansas, oral presentation.
  12. **Bailey, Johnathan**; Vladimirova, Anna; Starnes, Stephen “The Synthesis and Chiral Anion Recognition Properties of a Chiral Bis-Urea Metalloporphyrin Host,” 64th Southwestern Regional Meeting of the American Chemical Society, October 1-4, 2008, Little Rock, Arkansas.
  13. **Cardenas, Chaz**; Starnes, Stephen “Anion Recognition Properties of a Quaternary Ammonium Appended Metalloporphyrin Host,” 64th Southwestern Regional Meeting of the American Chemical Society, October 1-4, 2008, Little Rock, Arkansas.
  14. **Jemal, Hikma**; Starnes, Stephen, “Anion Recognition Properties of a Meso-Sulfonamide/urea Pair Functionalized Porphyrin Receptor,” 64th Southwestern Regional Meeting of the American Chemical Society, October 1-4, 2008, Little Rock, Arkansas.
  15. Ramos, Joey; **Fort, Kyle**; **Vladimirova, Anna**; Cardenas, Chaz; Jemal, Hikma; Free, Shiloh; Wienkers, MariJo; Wu, Jun; Wiget, Paul; Nelson Alfreda; Roach, Rebecca; Vulcan, Marius; Waynant, Kristopher; Carroll, Kellen; Rudkevich, Dmitry M; Starnes, Stephen “Shape Selective Anion Recognition by Metalloporphyrin Hosts,” 64th Southwestern Regional Meeting of the American Chemical Society, October 1-4, 2008, Little Rock, Arkansas.
  16. **Ramos, Joey**; Starnes, Stephen “Anion Recognition Properties of a Bis-Metalloporphyrin Host,” 6th Annual Pathways to the Doctorate Student Research Symposium, November 7-8, 2008, Texas A&M-Commerce, Commerce, Texas.
  17. **Bailey, Johnathan**; Vladimirova, Anna; Starnes, Stephen “The Synthesis and Chiral Anion Recognition Properties of a Chiral Bis-Urea Metalloporphyrin Host,” 6th Annual Pathways to the Doctorate Student Research Symposium, November 7-8, 2008, Texas A&M-Commerce, Commerce, Texas.
  18. **Cardenas, Chaz**; Starnes, Stephen “Anion Recognition Properties of a Quaternary Ammonium Appended Metalloporphyrin Host,” 6th Annual Pathways to the Doctorate Student Research Symposium, November 7-8, 2008, Texas A&M-Commerce, Commerce, Texas.
  19. **Jemal, Hikma**; Starnes, Stephen, “Anion Recognition Properties of a Meso-Sulfonamide/urea Pair Functionalized Porphyrin Receptor,” 6th Annual Pathways to the Doctorate Student Research Symposium, November 7-8, 2008, Texas A&M-Commerce, Commerce, Texas.
  20. Ramos, Joey; **Fort, Kyle**; **Vladimirova, Anna**; Cardenas, Chaz; Jemal, Hikma; Free, Shiloh; Wienkers, MariJo; Wu, Jun; Wiget, Paul; Nelson Alfreda; Roach, Rebecca; Vulcan, Marius; Waynant, Kristopher; Carroll, Kellen; Rudkevich, Dmitry M; Starnes, Stephen “Shape Selective Anion Recognition by Metalloporphyrin Hosts,” 6th Annual Pathways to the Doctorate Student Research Symposium, November 7-8, 2008, Texas A&M-Commerce, Commerce, Texas.
  21. **Vaz, Marc**; Waynant, Kris; Starnes, Stephen “Anion Recognition Properties of TREN Urea and Sulfonamide Derivatives and TREN's CH Analog,” 6th Annual Pathways to the Doctorate Student Research Symposium, November 7-8, 2008, Texas A&M-Commerce, Commerce, Texas.
  22. **Ramos, Joey**; Starnes, Stephen “Synthesis and Characterization of Novel Face-to-Face Porphyrin,” 65th Southwestern Regional Meeting of the American Chemical Society, November 4-6, 2009, El Paso, Texas, oral presentation.
  23. **Bailey, Johnathan**; Vladimirova, Anna; Starnes, Stephen “The Synthesis and Chiral Anion Recognition Properties of a Chiral Metalloporphyrin Host” 65th Southwestern Regional Meeting of the American Chemical Society, November 4-6, 2009, El Paso, Texas, oral presentation.

24. **Cardenas, Chaz**; Starnes, Stephen “Anion Recognition Properties of Metalloporphyrin Hosts Appended with Urea and Quaternary Ammonium Side-Arms” 65th Southwestern Regional Meeting of the American Chemical Society, November 4-6, 2009, El Paso, Texas, oral presentation.
25. **Jemal, Hikma**; **Hunt, Samuel Eli**; Starnes, Stephen, “Anion Recognition Properties of a Chiral Amino Acid Appended Porphyrin” 65th Southwestern Regional Meeting of the American Chemical Society, November 4-6, 2009, El Paso, Texas, oral presentation.
26. **Jemal, Hikma**; **Hunt, Samuel Eli**; Starnes, Stephen, “Anion Recognition Properties of a Chiral Amino Acid Appended Porphyrin” 7th Annual Pathways to the Doctorate Student Research Symposium, November 13-14, 2009, Texas A&M-International, Laredo, Texas.
27. **Surapaneni, Himajarani**; Frankson, Mae; Starnes, Stephen “The Synthesis and Recognition Properties of Zn-TPP-L-Isoleucine Derivative.” The Texas A&M University System 8<sup>th</sup> Annual Pathways Student Research Symposium, West Texas A&M, Canyon, Texas, October 22-23, 2010.
28. **Koya, Lakshmi**; Nguyen, Khoa; Starnes, Stephen “Chiral Recognition Properties of a Zn-TPP-L-Prolinamide Derivative” The Texas A&M University System 8<sup>th</sup> Annual Pathways Student Research Symposium, West Texas A&M, Canyon, Texas, October 22-23, 2010.
29. **Hunt, Eli**; **Jemal, Hikma**; Starnes, Stephen, “Anion Recognition Properties of a L-Phenylalanine Appended Zn-Porphyrin” The Texas A&M University System 8<sup>th</sup> Annual Pathways Student Research Symposium, West Texas A&M, Canyon, Texas, October 22-23, 2010.
30. **Sun, Jeffery**; Tovas, Carlos; Starnes, Stephen “Synthesis and Recognition Properties of Chiral Sulfonamide Zn-TPP Receptor.” The Texas A&M University System 8<sup>th</sup> Annual Pathways Student Research Symposium, West Texas A&M, Canyon, Texas, October 22-23, 2010.
31. **Castle, Christina**; Starnes, Stephen “The Synthesis and Recognition Properties of two Proline-Porphyrin Hybrids with Chiral Guests” The Texas A&M University System 8<sup>th</sup> Annual Pathways Student Research Symposium, West Texas A&M, Canyon, Texas, October 22-23, 2010.
32. **Surapaneni, Himajarani**; Frankson, Mae; Starnes, Stephen “The Synthesis and Recognition Properties of a Zn-Tetraphenylporphyrin-L-Isoleucine Derivative.” 62<sup>nd</sup> Southeastern / 66<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in New Orleans, LA November 30-December 4, 2010.
33. **Koya, Lakshmi**; Nguyen, Khoa; Starnes, Stephen “The Synthesis and Chiral Recognition Properties of a Zn-Tetraphenylporphyrin-L-Prolinamide Derivative.” 62<sup>nd</sup> Southeastern / 66<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in New Orleans, LA November 30-December 4, 2010.
34. **Hunt, Eli**; **Jemal, Hikma**; Starnes, Stephen, “Anion Recognition Properties of a L-Phenylalanine Appended Zn-Porphyrin” 62<sup>nd</sup> Southeastern / 66<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in New Orleans, LA November 30-December 4, 2010.
35. **Sun, Jeffery**; Tovas, Carlos; Starnes, Stephen “The Synthesis and Recognition Properties of a Zn-Tetraphenylporphyrin:(1R,2R)-1,2-Diaminocyclohexane Sulfonamide Derivative.” 62<sup>nd</sup> Southeastern / 66<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in New Orleans, LA November 30-December 4, 2010.
36. **Castle, Christina**; Starnes, Stephen “The Synthesis and Recognition Properties of two Proline-Porphyrin Hybrids with Chiral Guests” 62<sup>nd</sup> Southeastern / 66<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in New Orleans, LA November 30-December 4, 2010.
37. **Guess, Spencer**; Starnes, Stephen “SAMP and RAMP Porphyrin Derivatives: Chiral Anion Recognition,” 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.

38. **Truong, Khanh**; Kavuri, Prathima; Starnes, Stephen, “Zn-Porphyrin N-Tosyl-1,2-diphenylethylene Diamine Hybrids: Chiral Anion Recognition,” 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.
39. **Kavuri, Prathima**; Sun, Jeffery; Tovias, Carlos; Truong, Khanh; Starnes, Stephen “The Synthesis and Recognition Properties of a Zn-Tetraphenylporphyrin: Chiral 1,2-Diamines and 2-Aminoalcohol Derivatives,” 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.
40. **Karimi, Ava**; Koya, Lakshmi; Wilson, Helen; Truong, Khanh; Starnes, Stephen “The Synthesis and Recognition Properties of Zn-Tetraphenylporphyrin: Proline derivatives,” 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.
41. **Surapaneni, Himaja**; Starnes, Stephen “The Synthesis and Recognition Properties of Zn-Tetraphenylporphyrin: 4-Hydroxy-proline Derivatives,” 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.
42. **Chen, Lin**; Starnes, Stephen “The Synthesis and Recognition Properties of Zn-Tetraphenylporphyrin: 2,2,3-Trimethyl-5-benzyl-4-imidazolidinone Derivatives,” 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.
43. von Ausdall, Alexandra S.; Baxter, Kim; Crittenden, Andrew; Pena, Luis; Bradley, Terrence; **Kolawole, Elizabeth**; Kennard, Brandi; **Bell, Yonwi**; Brandt, Erica, Jang, Ben, Starnes, Stephen ““Who Is Chemistry?” a Celebration of Diversity,”<sup>[SEP]</sup> 67<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, Austin TX, November 9-12, 2011.
44. **Truong, Khanh**; Kavuri, Prathima; Starnes, Stephen, “Zn-Porphyrin N-Tosyl-1,2-diphenylethylene Diamine Hybrids: Chiral Anion Recognition,” 9<sup>th</sup> Annual Pathways Student Research Symposium, College Station, TX, November 11, 2011.
45. **Kavuri, Prathima**; Sun, Jeffery; Tovias, Carlos; Truong, Khanh; Starnes, Stephen “The Synthesis and Recognition Properties of a Zn-Tetraphenylporphyrin: Chiral 1,2-Diamines and 2-Aminoalcohol Derivatives,” 9<sup>th</sup> Annual Pathways Student Research Symposium, College Station, TX, November 11, 2011.
46. **Karimi, Ava**; Koya, Lakshmi; Wilson, Helen; Truong, Khanh; Starnes, Stephen “The Synthesis and Recognition Properties of Zn-Tetraphenylporphyrin: Proline derivatives,” 9<sup>th</sup> Annual Pathways Student Research Symposium, College Station, TX, November 11, 2011.
47. **Surapaneni, Himaja**; Starnes, Stephen “The Synthesis and Recognition Properties of Zn-Tetraphenylporphyrin: 4-Hydroxy-proline Derivatives,” 9<sup>th</sup> Annual Pathways Student Research Symposium, College Station, TX, November 11, 2011.
48. **Chen, Lin**; Starnes, Stephen “The Synthesis and Recognition Properties of Zn-Tetraphenylporphyrin: 2,2,3-Trimethyl-5-benzyl-4-imidazolidinone Derivatives,” 9<sup>th</sup> Annual Pathways Student Research Symposium, College Station, TX, November 11, 2011.
49. **Xiaowen Wu**, Stephen D. Starnes “Nipecotic Acid-Porphyrin Derivatives: Chiral Anion Recognition,” Texas A&M-Commerce Annual Research Symposium, April 5, 2012.
50. **Anusha Bommedi**, Stephen D. Starnes “Porphyrin Hosts for the Shape-Selective Recognition of Anion Guests,” Texas A&M-Commerce Annual Research Symposium, April 5, 2012.
51. **Karthik Akinapelli**, Stephen D. Starnes “Synthesis of Chiral Porphyrins and Structural Studies of their Host:Guest Complexes,” Texas A&M-Commerce Annual Research Symposium, April 5, 2012.
52. **Xiaowen Wu**, Stephen D. Starnes “Nipecotic Acid-Porphyrin Derivatives: Chiral Anion Recognition,” The 24<sup>th</sup> International Conference on Chirality (Chirality 2012), Fort Worth, Texas, June 10-13, 2012.

53. **Khanh Truong**, Stephen D. Starnes “Synthesis of Chiral Porphyrins and Structural Studies of their Host:Guest Complexes,” 244<sup>th</sup> National Meeting of the American Chemical Society, Philadelphia, PA, August 19-23, 2012.
54. **Karthik Akinapelli**, Stephen D. Starnes “Synthesis of Chiral Porphyrins: Stereoselective Recognition of Mandelate Isomers,” North Texas Life Science Research Symposium, UNT Health Science Center, Fort Worth, TX, Nov. 3, 2012.
55. **Anusha Bommidi**, Stephen D. Starnes “Enhanced Shape-Selective Recognition of Anion Guests by Porphyrin Hosts,” North Texas Life Science Research Symposium, UNT Health Science Center, Fort Worth, TX, Nov. 3, 2012.
56. **Vijay Nandipati**, Stephen D. Starnes “Chiral Pyrrolidine-Porphyrin Hybrids: Prediction of Enantioselectivity in Guest Binding a Priori Based on Host Design,” North Texas Life Science Research Symposium, UNT Health Science Center, Fort Worth, TX, Nov. 3, 2012.
57. **Karthik Akinapelli**, Stephen D. Starnes “Synthesis of Chiral Porphyrins: Stereoselective Recognition of Mandelate Isomers,” 10th Annual Pathways Student Research Symposium, Galveston, TX, November 9-10, 2012.
58. **Anusha Bommidi**, Stephen D. Starnes “Enhanced Shape-Selective Recognition of Anion Guests by Porphyrin Hosts,” 10th Annual Pathways Student Research Symposium, Galveston, TX, November 9-10, 2012.
59. **Vijay Nandipati**, Stephen D. Starnes “Chiral Pyrrolidine-Porphyrin Hybrids: Prediction of Enantioselectivity in Guest Binding a Priori Based on Host Design,” 10th Annual Pathways Student Research Symposium, Galveston, TX, November 9-10, 2012.
60. **Elvis Boateng**, MingHsun Yang, Caramy Spencer, Stephen D. Starnes, “Chiral Bis-Porphyrin Hosts: Chiral Corners,” Texas A&M-Commerce Annual Research Symposium, Commerce, TX, April 4, 2013.
61. **Maha Alqurafi**, Stephen D. Starnes, “Chiral Capped-Porphyrins: Chiral Anion Recognition,” Texas A&M-Commerce Annual Research Symposium, Commerce, TX, April 4, 2013.
62. **Paul Battles**, Stephen D. Starnes, “1D and 2D-NMR Spectroscopy at A&M-Commerce and Chiral Capped-Zn-Tetraphenylporphyrin: Proline Derivatives,” Texas A&M-Commerce Annual Research Symposium, Commerce, TX, April 4, 2013.
63. **Anvesh Dasari**, Vijay Nandipati, Stephen D. Starnes, “Synthesis of Chiral Porphyrin:Piperidine Derivatives and their Chiral Recognition Properties,” Texas A&M-Commerce Annual Research Symposium, Commerce, TX, April 4, 2013.
64. **Anvesh Dasari**, Vijay Nandipati, Stephen D. Starnes, “Synthesis of Chiral Porphyrin:Piperidine Derivatives and their Chiral Recognition Properties,” 46th ACS DFW Meeting-in-Miniature, Commerce, TX, April 27, 2013.
65. **Xiaowen Wu**, Stephen D. Starnes, “Nipecotic Acid-Porphyrin Derivatives: Chiral Anion Recognition,” 46th ACS DFW Meeting-in-Miniature, Commerce, TX, April 27, 2013.
66. **Maha Alqurafi**, Stephen D. Starnes, “Chiral Capped-Porphyrins: Chiral Anion Recognition,” 46th ACS DFW Meeting-in-Miniature, Commerce, TX, April 27, 2013.
67. **Sirisha Makineni**, Anusha Bommidi, Vanessa Jackson, Mary Golleher, Stephen D. Starnes, “Porphyrin Hosts for the Shape-Selective Recognition of Anion Guests,” 46th ACS DFW Meeting-in-Miniature, Commerce, TX, April 27, 2013.
68. **Paul Battles**, Stephen D. Starnes, “The Synthesis of Chiral Capped-Zn-Tetraphenylporphyrin: Proline Derivatives and a Study of their Chiral Recognition Properties”, 46th ACS DFW Meeting-in-Miniature, Commerce, TX, April 27, 2013.
69. **Elvis Boateng**, MingHsun Yang, Caramy Spencer, Stephen D. Starnes, “Chiral Bis-Porphyrin Hosts: Chiral Corners,” 46th ACS DFW Meeting-in-Miniature, Commerce, TX, April 27, 2013.

70. **Katrina Schoenfeld**, Joey Ramos, Stephen D. Starnes, "The Recognition Properties of a Zinc-Metallated Face-to-Face Porphyrin Host," 46th ACS DFW Meeting-in-Miniature, Commerce, TX, April 27, 2013.
71. **Maha Atyah Alqurafi**, Vijay Nandipati, Xiaowen Wu, Anvesh Dasari, Lakshmi Koya, MingHsun Yang, Lin Chen, Stephen D. Starnes, "Chiral Porphyrins: Hosts with Chiral Walls and Caps," 8<sup>th</sup> International Symposium of Macrocyclic and Supramolecular Chemistry, Arlington, VA, JULY 7-11, 2013.
72. **Elvis Boateng**, MingHsun Yang, Janet Varela, Caramy Spencer, Stephen D. Starnes "Chiral Bis-Porphyrin Hosts: Chiral Corners," The Texas A&M System 11<sup>th</sup> Annual Pathways Student Research Symposium, November 8, 2013, Kingsville, Texas.
73. **Maha Alqurafi**, Paul Battles, Stephen D. Starnes "Chiral Capped-Porphyrins: Chiral Anion Recognition," The Texas A&M System 11<sup>th</sup> Annual Pathways Student Research Symposium, November 8, 2013, Kingsville, Texas.
74. **Paul Battles**, "The Synthesis of Chiral Capped-Zn-Tetraphenylporphyrin: Proline Derivatives and a Study of their Chiral Recognition Properties," The Texas A&M System 11<sup>th</sup> Annual Pathways Student Research Symposium, November 8, 2013, Kingsville, Texas.
75. **Sirisha Makineni**, Anusha Bommidi, Kiran Nalla, Vanessa Jackson, Laurence Angel, Stephen D. Starnes "Enhanced Selectivity in Anion Recognition Through Hosts That Complement the Shape of the Target Guest: A UV/Vis, NMR and Computational Study," The Texas A&M System 11<sup>th</sup> Annual Pathways Student Research Symposium, November 8, 2013, Kingsville, Texas.
76. **Vanessa Jackson**, Paul Battles, Sirisha Makineni, Anusha Bommidi, Stephen D. Starnes "Modification of Known Porphyrin Hosts to Improve the Receptor Design for the Recognition of Trigonal Planar Anions," The Texas A&M System 11<sup>th</sup> Annual Pathways Student Research Symposium, November 8, 2013, Kingsville, Texas.
77. **Elvis Boateng**, MingHsun Yang, Janet Varela, Caramy Spencer, Stephen D. Starnes "Chiral Bis Porphyrin Hosts: Chiral Corners," 69<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, November 16-19, 2013, Waco Texas.
78. **Maha Alqurafi**, Paul Battles, Stephen D. Starnes "Chiral Capped-Porphyrins: Chiral Anion Recognition," 69<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, November 16-19, 2013, Waco Texas.
79. **Paul Battles**, "The Synthesis of Chiral Capped-Zn-Tetraphenylporphyrin: Proline Derivatives and a Study of their Chiral Recognition Properties," 69<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, November 16-19, 2013, Waco Texas.
80. **Sirisha Makineni**, Anusha Bommidi, Kiran Nalla, Vanessa Jackson, Laurence Angel, Stephen D. Starnes "Enhanced Selectivity in Anion Recognition Through Hosts That Complement the Shape of the Target Guest: A UV/Vis, NMR and Computational Study," 69<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, November 16-19, 2013, Waco Texas.
81. **Vanessa Jackson**, Paul Battles, Sirisha Makineni, Anusha Bommidi, Stephen D. Starnes "Modification of Known Porphyrin Hosts to Improve the Receptor Design for the Recognition of Trigonal Planar Anions," 69<sup>th</sup> Southwest Regional Meeting of the American Chemical Society, November 16-19, 2013, Waco Texas.
82. **Elvis Boateng**, MingHsun Yang, Janet Varela, Stephen D. Starnes "Chiral Bis-Porphyrin Hosts: Chiral Corners," 247<sup>th</sup> ACS National Meeting, Dallas, TX, March 16-20, 2014.
83. **Maha Alqurafi**, Paul Battles, Shaquala Quigley, Seung Kim, Stephen D Starnes, "Chiral Capped Porphyrins: Chiral Anion Recognition," 247<sup>th</sup> ACS National Meeting, Dallas, TX, March 16-20, 2014.
84. **Sirisha Makineni**, Vanessa Jackson, Paul Battles, Anusha Bommidi, Maritza Ramos, Stephen D.

- Starnes, "Porphyrin-Based Hosts That Complement the Shape of the Target Guest Show Enhanced Selectivity in Anion Recognition: A UV/Vis, NMR and Computational Study," 247th ACS National Meeting, Dallas, TX, March 16-20, 2014.
85. **Khanh Truong**, Camille K. Aben, Enrique A. Alvarez-Ventura, Haley N. Brenchley, Bethany L. Davidson, Kyle L. Elliott, Mehrnoosh Kohansal, Katharina Wijono, Stephen D. Starnes, "The Synthesis of Chiral Porphyrins with Chiral Caps: A Collaborative Effort between One Graduate Student and Seven First-Year Chemistry Students," Annual Research Symposium, Texas A&M Commerce, Commerce, TX, April 3, 2014.
  86. **Khanh Truong**, Camille K. Aben, Enrique A. Alvarez-Ventura, Haley N. Brenchley, Bethany L. Davidson, Kyle L. Elliott, Mehrnoosh Kohansal, Katharina Wijono, Stephen D. Starnes, "The Synthesis of Chiral Porphyrins with Chiral Caps: A Collaborative Effort between One Graduate Student and Seven First-Year Chemistry Students," 47<sup>th</sup> ACS DFW Meeting in Miniature, Texas Wesleyan University, Fort Worth, Texas Saturday, April 26, 2014
  87. **John Naizer**, Stephen D. Starnes, "Porphyrin-Based Chiral Imidazolidinone for Chiral Recognition Applications," 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, Texas Saturday, November 19-23, 2014.
  88. **Khanh Truong**, Paul Battles, Stephen D. Starnes, "Proline-Based Chiral Organocatalysts for Chiral Recognition Applications," 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, Texas Saturday, November 19-23, 2014.
  89. **Maha Atyah Alqurafi** and Stephen D. Starnes, "Modular Approach to Chiral Porphyrin Host Design," 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, Texas Saturday, November 19-23, 2014.
  90. **Enrique Alvarez-Ventura**, Haley Brenchley, Khanh Truong, Stephen D. Starnes, "Synthesis of a Chiral Porphyrin: Phenylalanine Derivative and Its Chiral Recognition Properties," 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, Texas Saturday, November 19-23, 2014.
  91. **Mehrnoosh Kohansal**, Camille Aben, Khanh Truong, Stephen D. Starnes, "An Amino-Acid Porphyrin Hybrid for Chiral Recognition Applications," 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, Texas Saturday, November 19-23, 2014.
  92. **Amber Ly**, Maha Alqurafi, Stephen D. Starnes, "Induced Fit Binding of Chiral Guests to Chiral Porphyrin Hosts," 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, Texas Saturday, November 19-23, 2014.
  93. **John Naizer**, Maha Atyah Alqurafi, Paul Battles, Lance Mwangi, Khanh Truong, Stephen Starnes, "Chiral Auxiliary/Organocatalyst Porphyrin Hybrids: Modular Hosts for Chiral Recognition," 249th American Chemical Society National Meeting & Exposition, Denver Colorado, March 22-26, 2015.
  94. **Khanh Truong**, "Chiral Porphyrins with Chiral Caps: Synthesis and Chiral Recognition Studies," A&M-Commerce Annual Research Symposium, April 2, 2015
  95. **Khanh Truong**, "Chiral Porphyrins with Chiral Caps: Synthesis and Chiral Recognition Studies," Meeting-in-Miniature, Dallas-Fort Worth Section of the American Chemical Society, The University of Texas at Arlington, Arlington, Texas, April 25, 2015.
  96. **Maha Alqurafi**, "Chiral Capped Porphyrins with Chiral Centers Above the Porphyrin Plane For Chiral Recognition Studies," Meeting-in-Miniature, Dallas-Fort Worth Section of the American Chemical Society, The University of Texas at Arlington, Arlington, Texas, April 25, 2015.
  97. \***John Naizer**, Lance Mwangi, Paul Battles, and Stephen D. Starnes, "Porphyrin Based Chiral Imidazolidinone for Chiral Recognition Applications," 12th Annual Pathways Student Research Symposium, Corpus Christi, TX, October 22-23, 2015.

98. **Sulihat Mudasiru**, Stephen Starnes “Porphyrin Binaphthyl Chiral Porphyrin Hybrids for Chiral Recognition,” 12th Annual Pathways Student Research Symposium, Corpus Christi, TX, October 22-23, 2015.
99. **Sulihat Mudasiru**, Stephen Starnes “Synthesis of Chiral Porphyrins Diamino-1,1-Binaphthalene Hybrids,” Summer Research Day at Richland College, Dallas, TX, March, 4, 2016.
100. **Sulihat Mudasiru**, Stephen Starnes “Synthesis of Chiral Porphyrins Diamino-1,1-Binaphthalene Hybrids,” Texas A&M-Commerce Annual Student Research Symposium, Commerce, TX, April 7, 2016.
101. **Sulihat Mudasiru**, Stephen Starnes “Synthesis of Chiral Porphyrins Diamino-1,1-Binaphthalene Hybrids,” Federation of North Texas Area Universities Graduate Student Research Symposium, Texas Woman’s University, Denton, TX, April 8, 2016.
102. **\*Sulihat Mudasiru**, Stephen Starnes “Enantioselective Recognition of Chiral Porphyrins Diamino 1,1-Binaphthalene Hybrids,” STEM Research and Career Symposium, Emory University, Atlanta, Georgia, September 18-20, 2016.
103. **Krishna Gangu**, “Electronic Effects on the Chiral Recognition Properties of Chiral Porphyrin Hosts,” 13th Annual Texas A&M University System Pathways Student Research Symposium, November 3-4, 2016, Prairie View A&M-University, Prairie View, Texas.
104. **\*\* Sulihat Mudasiru**, Stephen Starnes “Synthesis of Chiral Porphyrins Diamino-1,1 Binaphthalene Hybrids,” 13th Annual Texas A&M University System Pathways Student Research Symposium, November 3-4, 2016, Prairie View A&M-University, Prairie View, Texas.
105. **\*Sulihat Mudasiru**, Stephen D. Starnes, “Enantioselective Recognition of Chiral Porphyrins Diamino-1, 1-Binaphthalene Hybrids,” Emerging Researchers National (ERN) Conference in STEM, Washington Marriott Wardman Park Hotel, Washington D.C., March 2-4, 2017.
106. **Sulihat Mudasiru**, Stephen Starnes “Enantioselective Recognition of Chiral Porphyrins Diamino-1, 1-Binaphthalene Hybrids,” Annual Research Symposium, Texas A&M-Commerce, April 6, 2017
107. **Sulihat Mudasiru**, Stephen D. Starnes, “Enantioselective Recognition of Chiral Porphyrins Diamino-1, 1-Binaphthalene Hybrids,” Meeting in Miniature, TCU, Fort Worth Texas, April 29, 2017.
108. **\*\*Shiraz Khan**; Sandhya Pola; John G. Naizer; Magnolia Byrne; Stephen D. Starnes, “Biphenyl-, isonipecotic acid-, pyrrole-porphyrin hybrid hosts for anion recognition,” Texas A&M System 14th Annual Pathways Student Research Symposium, Tarleton State University, November 2-3, 2017.
109. **Sofia Gonzalez Higgins**, Stephen D. Starnes “Chiral Porphyrin: Piperidine Hybrid with a Pi stacking Moiety for Chiral Guest Recognition Applications,” 74<sup>th</sup> Annual Southwest Regional Meeting of the American Chemical Society, Little Rock, Arkansas, November 7-10, 2018.
110. **Karen C. Mejia**, Stephen D. Starnes “The Synthesis and Study of a Chiral Porphyrin: Naphthyl Piperidine Amide Hybrid for Chiral Guest Recognition Applications,” 74<sup>th</sup> Annual Southwest Regional Meeting of the American Chemical Society, Little Rock, Arkansas, November 7-10, 2018.
111. **Abdy Shamaa**, Karen Mejia, Stephen Starnes” Texas A&M-Commerce Annual Research Symposium, April 9, 2019
112. **Ruth Gainzar**, Lisa Latta, Maleeha Ahmad, Stephen Starnes “Analyzing the Properties of a Novel Porphyrin-Based Synthetic Host for the Recognition of Chiral Anions,” Texas A&M-Commerce Annual Research Symposium, April 9, 2019.

113. **Lisa Latta**, Chaz Cardenas, Hikma Jemal, Stephen D. Starnes, "Shape selective anion recognition: the rational design of receptors for trigonal planar anions," Texas A&M-Commerce Annual Research Symposium, April 9, 2019.
114. **Alexandrea Bass**, Lisa Latta, Hannah Story, Hikma Jemal, Chaz Cardenas, Stephen D. Starnes, "Anion recognition properties of sulfonamide capped porphyrins," Midwest Regional Meeting of the American Chemical Society, Wichita, Kansas, October 16-19, 2019.
115. **Ruth Gainzer**, Abdul-Aziz Shammaa, Sofia Gonzalez, Karen Mejia, Shiraz Khan, Stephen D. Starnes, "Chiral recognition properties of chiral piperidine capped porphyrins," Midwest Regional Meeting of the American Chemical Society, Wichita, Kansas, October 16-19, 2019.
116. **Lisa Latta**, Asiel Salazar, Jacque Lemieux, Jorge Ahumada Gonzalez, William Morrison, Alexandrea Bass, Maggie Waites, Stephen D. Starnes, "Anion recognition properties of chiral porphyrin atropisomers – chiral switches?" Midwest Regional Meeting of the American Chemical Society, Wichita, Kansas, October 16-19, 2019.
117. **Asiel Salazar**, Lisa Latta, William Morrison, Jorge Ahumada Gonzalez, Alexandrea Bass, Jacque Lemieux, Stephen D. Starnes, "Porphyrin flanked phenyl-indole derivatives: atropisomers for chiral recognition applications and the development of chiral switches," Midwest Regional Meeting of the American Chemical Society, Wichita, Kansas, October 16-19, 2019.
118. **Hannah Story**, Nelson Feliciano, Apoorva Kasetti, Lance Mwangi, Stephen D. Starnes, "Synthesis and study of the recognition properties of non-chiral- and chiral porphyrin-calixarene hybrid hosts," Midwest Regional Meeting of the American Chemical Society, Wichita, Kansas, October 16-19, 2019.
119. **Shea Garland**, Stephen Starnes, "Synthesis and anion recognition properties of a carbazole capped porphyrin," Southwest Regional Meeting of the American Chemical Society, Oct. 31- Nov. 4 2021, Austin TX.
120. **Shea Garland**, Stephen Starnes "Carbazole-Porphyrin Hybrid: A Synthetic Host for Anion Recognition Applications," 17<sup>th</sup> Annual Pathways Student Research Symposium, March 3-4, 2022, Texas A&M University – College Station.
121. **Shea Garland**, Stephen Starnes "Carbazole-Porphyrin Hybrid: A Synthetic Host for Anion Recognition Applications," Texas A&M-Commerce Annual Research Symposium, April 19, 2022, Commerce, TX.
122. **Shea Garland**, Stephen Starnes "Carbazole-Porphyrin Hybrid: A Synthetic Host for Anion Recognition Applications," ACS DFW Meeting in Miniature, April 23, 2022, UT-Dallas, Richardson, TX.
123. **Symphony Hill**, Stephen D. Starnes, "Computational Investigation of Porphyrin-Based Host Design for Anions and Ion Pairs," A&M-Commerce Annual Research Symposium, April 11, 2023.
124. **Javaughn Martinez**, Stephen D. Starnes, "Computational Study of the Rotational Barrier in Indole Derivates," A&M-Commerce Annual Research Symposium, April 11, 2023.
125. **Erica Salinas**, Stephen Starnes "Synthesis and Study of Perylene Diimide Derivatives," McNair Scholars Program Undergraduate Research Symposium at the University of Cincinnati: Future Leaders in Innovation November 1 - 3, 2024.
126. **Stanley Dugbartey**, Samantha Bullock, Stephen Starnes, "Recognition of Perfluoroalkyl Substances Via Synthetic Porphyrin Compound," 57<sup>th</sup> ACS-DFW Meeting in Miniature, Commerce, TX, April 26, 2025.

### *Awards Received by my Research Students*

#### **Presentation Awards**

1. Joey Ramos, Discipline winner, graduate 2<sup>nd</sup> place in the physical sciences at the 2007 Pathways symposium (abstract 5 above).

2. Joey Ramos, graduate 1<sup>st</sup> place overall winner in the Masters student division at the 2008 Pathways symposium (abstract 16 above).
3. Jeffery Sun, Discipline winner, undergraduate, 2<sup>nd</sup> place in the physical sciences at the 2010 Pathways symposium (abstract 30 above).
4. Jeffery Sun selected to present a poster over his research in Austin, February 14, 2011 at the Undergraduate Research Day at the Capitol: Transforming Texas Through Undergraduate Research.
5. Xiaowen Wu, Best graduate presentation in the College of Science, Agriculture and Engineering, 2012 Annual Research Symposium, Texas A&M-University Commerce (abstract 49 above).
6. Karthik Akinapelli, 3<sup>rd</sup> place in graduate presentation in the North Texas Life Science Research Symposium, UNT Health Science Center, Fort Worth, TX, Nov. 3, 2012. (abstract 54 above).
7. Paul Battles, 2<sup>nd</sup> Place, Undergraduate Presentation in the College of Science, Agriculture and Engineering, 2013 Annual Research Symposium, Texas A&M-University Commerce (abstract 74 above).
8. Paul Battles, 2<sup>nd</sup> place undergraduate division poster presentation, Fall 2013 Regional ACS conference, \$75.00 cash prize (abstract 79 above).
9. John Naizer, 1<sup>st</sup> place undergraduate division physical science poster presentation, 12th Annual Pathways Student Research Symposium, Corpus Christi, TX, October 22-23, 2015. (student presentation #97 above)
10. John Naizer, Best overall undergraduate poster presentation, 12th Annual Pathways Student Research Symposium, Corpus Christi, TX, October 22-23, 2015. (student presentation #97 above)
11. Sulihat was fully funded by the symposium to present her work (lodging, registration, travel). Abstract #102 above.
12. Sulihat was awarded the 2<sup>nd</sup> place poster presentation in the MS physical science division. Abstract #104 above.
13. Sulihat was fully funded by the conference to provide an oral presentation over her work. Abstract #105 above.
14. Shiraz was awarded the 1<sup>st</sup> place presentation in the Graduate Physical Sciences presentation. Abstract #108 above.
15. Student award: Shea Garland, Outstanding undergraduate poster presentation in Organic Chemistry during SWRM2021. Abstract #119 above.
16. Symphony received a presentation award for abstract #123 above.