

VITA

Alyx S. Frantzen
Professor of Chemistry

PERSONAL INFORMATION

Office Address:
Box 13006 SFA Station
Nacogdoches, TX 75962
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EDUCATION

New Mexico State University – Ph.D. – Physical Chemistry (1998)
“The Spectroscopic Effects of Intercalating Porphyrins into Layered Clays”
Dr. Antonio S. Lara (NMSU), advisor
Dr. John W. Kenny, III (ENMU), co-advisor
New Mexico State University – M.S. – Chemistry/Mathematics (1996)
Texas Lutheran University – B.S. *summa cum laude* – Mathematics/Chemistry (1991)

WORK EXPERIENCE

2021 – Present	Professor of Chemistry – Department of Chemistry and Biochemistry, Stephen F. Austin State University
2004 – 2021	Associate Professor of Chemistry – Department of Chemistry and Biochemistry, Stephen F. Austin State University
1998 – 2004	Assistant Professor of Chemistry – Department of Chemistry and Biochemistry, Stephen F. Austin State University

CURRENT PROFESSIONAL AFFILIATIONS

American Chemical Society
Clay Minerals Society
Texas Academy of Science, Current Academic Director, Past President

AWARDS

Undergraduate Faculty Mentor, Undergraduate Research Conference, April, 2015.
Spotlight Speaker, College of Sciences and Mathematics, Bright Ideas Conference, April, 2008.
Teaching Excellence, College of Sciences and Mathematics, April, 2007.
Advisor of the Year, Omicron Delta Kappa Leadership Society, April, 2007.

GRANTS

Summer Undergraduate Research Experience (SURE). “From Must to Glass”
with Kris Moyers. Funded, Summer, 2023.
Office of Research and Graduate Studies, CRP. “Purchase of Accessory and
Maintenance Kit for ICP-MS” Funded (\$6,000), Spring, 2023.
Center for Applied Research and Rural Innovation (CARRI). “SFASU
Fermentation Laboratory” Not Funded, Fall, 2022.
Summer Research Experience (SRE) for Undergraduates. “Packaged Beverage
Analysis” with Sadie Atkins. Funded, Summer II, 2022.
Center for Applied Research and Rural Innovation (CARRI). “SFASU
Fermentation Laboratory” Funded (\$35,000), Spring 2022.
Summer Research Experience (SRE) for Undergraduates. “Refinement of Clay
CEC Determination” with Trace Washburn. Funded, Summer I, 2021.

Summer Undergraduate Research Experience (SURE). “Refinement of Clay CEC Determination” with Trace Washburn. Funded, Summer, 2021.

Office of Research and Sponsored Programs, CRP. “Fermentation Science Research” Funded (\$55,000), Summer 2021.

Summer Research Experience (SRE) for Undergraduates. “Comparison of Methods for Measuring Cation Exchange Capacity in Clays” with Sarah Glaesemann. Funded, Summer I, 2020.

Summer Research Experience (SRE) for Undergraduates. “Measuring Binding Energies with Solution Calorimetry” with Jackson Ortiz. Funded, Summer I, 2020.

Summer Undergraduate Research Experience (SURE) Grant “Optimization of Solution Calorimeter” (Funded Summer II, 2018).

Office of Research and Sponsored Programs, Research Pilot Study (2016) (\$3,000) Frantzen, Alyx S, “Thermokinetic Study of Invasive Species”

Frantzen, Alyx S (Principal), "Electronic Notebooks" (Not Funded), Sponsored by STEM Center, SFASU, \$2,250.00. (April 15, 2015).

Frantzen, Alyx S (Principal), "Deconstructed Laboratories" (Not Funded), Sponsored By NSTA/Vernier, Private, \$5,500.00. (November 30, 2013).

University Faculty Research Grant with Dr. Kevin W. Stafford (2012-2013) (\$12,000) “Texas Hill Country Mineral Streams: Origins and Water Quality”

Faculty Research Engagement Grant, STEM Research and Learning Center (2012) (\$6,000) “The Development of Chemistry Experiments”

University Research Development Grant with Dr. Michele Harris (2006) (\$26,000) “Centrifuge Addition to the Department of Chemistry”

University Faculty Research Grant (2005-2006) (\$25,000) “Through the Looking Glass – Enantiomeric Separations Utilizing Tailored Smectite Clays”

NSF Equipment Grant (2004-2005) – Dr. Chunmei Li, Dr. Wayne Boring, Dr. Alyx S. Frantzen “Acquisition of a nuclear magnetic resonance spectrometer” – not funded

PUBLICATIONS

“Bringing the Dipole Moment Lab into the 21st Century,” N. A. C. Bohorquez[‡], B. M. Barngrover, A. S. Frantzen, The Chemical Educator, 28, 6-11 (2023).
doi: 10.133/s00897232940a

“Initial Investigation of Seasonal Flammability of three Invasive East Texas Forest Understory Fuels using Thermogravimetric Analysis,” M. B. Tiller, B. P. Oswald, A. S. Frantzen, W. C. Conway, I. Hung, Forest Research 9:230. (2020) doi; 10.35248/2168-9776.20.9.230

“Spatial and seasonal flammability comparisons of native and exotic plants in the Post Oak Savannah, Blackland Prairie, and Pineywoods ecoregions of Texas,” M. B. Tiller, B. P. Oswald, A. S. Frantzen, I. Hung, S. Jerez, Y. Weng, Submitted to Proceedings, 20th Biennial Southern Silviculture Research Conference, (August, 2020).

“Estimating foliage flammability of common California chaparral shrub species using thermogravimetric analysis” M. B. Tiller, B. P. Oswald, A.S. Frantzen, C.A. Dicus Submitted to International Journal of Wildland Fire (January 22, 2020).

“The Proposed U. S. – Mexico Border Barrier: The Writing is on the Wall,” T. J. LaDuc, M. Terry, M. May, J. E. Wolfe, S. K. Hill, K. H. Pannell, R. Gonzalez-Lima, A. S. Frantzen, The Texas Journal of Science, 71(1), (2019).

“Investigation of seasonal flammability parameters of three invasive East Texas forest understory fuels using thermogravimetric analysis.” M. B. Tiller, B.P. Oswald, A.S. Frantzen, W.C. Conway, and I. Hung, International Journal of Wildland Fire, Submitted (Nov 2017). While revisions were made on this paper, authors decided this was not the correct journal for publication and paper has been pulled (May 2018).

“Biomass estimations of invasives yaupon, Chinese privet and Chinese tallow in East Texas hardwood and pine ecosystems,” M.B. Tiller[†], B.P. Oswald, A.S. Frantzen, W.C. Conway, I. Hung, Forest Research, 6:2, (2017).

“A ‘Supplement’ for the Routine Laboratory Experience: Take Two or Three Capsules and go into the Lab,” Kathy Reese[‡], Alyx Frantzen, Michele Harris, The Chemical Educator, 16, 1-2, (2011).

“Dendritic Surfactants Show Evidence for Frustrated Intercalation: A New Organoclay Morphology,” Erick J. Acosta, Youjun Deng, G. Norman White, Joe B. Dixon, Kevin J. McInnes, Scott A. Senseman, Alyx S. Frantzen, Eric E. Simanek, Chemistry of Materials, 15 (15), 2903-2909, (2003).

“Dendrimers Based on Melamine,” Erick J. Acosta, Youjun Deng, G. Norman White, Joe B. Dixon, Kevin J. McInnes, Scott A. Senseman, Alyx S. Frantzen, Eric E. Simanek, Polymer Conference Proceedings, (2003).

PRESENTATIONS

Moyers, K.*[‡], Frantzen, A. S. “From Must to Glass” Stephen F. Austin State University, SURE, College of Sciences and Mathematics, Nacogdoches, Texas. (August, 2023).

Atkins, S.*[‡], Gibson, H. S.*[‡], Frantzen, A. S. “Beer We Go! A Study of Carbonated and Nitrogenated Beers” Stephen F. Austin State University, URC, College of Science and Mathematics, Nacogdoches, Texas. (April 11, 2023).

Swaim, A.*[‡], Frantzen, A. S. “Bomb Calorimetry as a Method for Determining the Cation-exchange Capacity of Smectite Clays” Stephen F. Austin State University, URC, College of Science and Mathematics, Nacogdoches, Texas. (April 11, 2023).

Gibson, H. S.*[‡], Frantzen, A. S. “To Beer or ‘Nitro’ Beer: A comparison of various nitro beers” 126th Annual Meeting of the Texas Academy of Science, San Angelo State University, San Angelo, TX, (March, 3, 2023). Recipient: Outstanding Oral Presentation, Chemistry and Biochemistry Section.

Swaim, A.*[‡], Frantzen, A. S. “Bomb calorimetry as a method for determining the cation-exchange capacity (CEC) of clays” 126th Annual Meeting of the Texas Academy of Science, San Angelo State University, San Angelo, TX, (March, 3, 2023).

Atkins, S.*[‡], Frantzen, A. S. “None the ‘Weiser’: A study of the effects of temperature, time, and storage on beer” 126th Annual Meeting of the Texas Academy of Science, San Angelo State University, San Angelo, TX, (March, 3, 2023).

Atkins, S.*[‡], Frantzen, A. S. “Longitudinal Study of Budweiser” Stephen F. Austin State University, SRE, Nacogdoches, Texas. (August 4, 2022)

Washburn, T.*[‡], Frantzen, A. S. “Bomb Calorimetry: A New Method of CEC Determination” Stephen F. Austin State University, URC, College of Sciences and Mathematics, Nacogdoches, Texas. (April 12, 2022).

Smith, H.*[‡], Frantzen, A. S. “pH Analysis and Comparison of Cola Products” 125th Annual Meeting of the Texas Academy of Science, University of Houston, Clear Lake, Houston, TX, (February, 26, 2022). Recipient: Best Oral Presentation, STEM Education Section.

Washburn, T.*[‡], Frantzen, A. S. “Bomb Calorimetry: A New Method of CEC Determination” Stephen F. Austin State University, SURE, College of Sciences and Mathematics, Nacogdoches, Texas. (August, 2021).

Glaesemann, S.*[‡], Frantzen, A. S. “Comparison of Methods for Measuring Cation Exchange Capacity in Clays” Stephen F. Austin State University, URC, College of Science and Mathematics, Nacogdoches, Texas. (April, 2021).

Barnes, B., Washburn, T., Ortiz, J. T.*[‡], Frantzen, A. S. “Longitudinal Study of Lanana Creek” Stephen F. Austin State University URC, College of Sciences and Mathematics, Nacogdoches, Texas. (April, 2019). Recipient: Best Freshman Paper.

Tiller, M. B. *[†], Oswald, B. P., Frantzen, A. S., Hung, I., Weng, Y., Jerez, S. “Spatial and Seasonal Flammability Comparisons of Endemic and Exotic Plants in the Post Oak Savannah, Blackland Prairie, and Piney Woods Ecoregions of Texas.” Stephen F. Austin State University Graduate Research Conference. Nacogdoches, TX. (March 28, 2019). (Poster)

Tiller, M. B. *[†], Oswald, B. P., Frantzen, A. S., Hung, I., Weng, Y., Jerez, S. “Spatial and Seasonal Flammability Comparisons of Endemic and Exotic Plants in the Post Oak Savannah, Blackland Prairie, and Piney Woods Ecoregions of Texas.” 20th Biennial Southern Silvicultural Research Conference, LA Tech, Shreveport, LA. (March 12, 2019). (Oral)

Harris, C.*[‡], Frantzen, A. S. “Applications of STA” 122nd Annual Meeting of the Texas Academy of Science, Howard Payne University, Brownwood, TX, March 1, 2019.

Camacho, Jr., P.*[‡], Frantzen, A. S. “Optimization of a Solution Calorimeter” 122nd Annual Meeting of the Texas Academy of Science, Howard Payne University, Brownwood, TX, March 1, 2019. Recipient: Best Oral Presentation, Chemistry/Biochemistry Section.

Tiller, M. B. *[†], Oswald, B. P., Frantzen, A. S., Hung, I., Weng, Y., Jerez, S. “Spatial and Seasonal Flammability Comparisons of Endemic and Exotic Plants in the Post Oak Savannah, Blackland Prairie, and Piney Woods Ecoregions of Texas.” Stephen F. Austin State University Graduate Research Conference. Nacogdoches, TX. (April 23, 2018).

Keith, C. A. *[†], Frantzen, A. S. “Method of CEC determination using alkyl ammonium exchanged smectite clays,” Stephen F. Austin State University Graduate Research Conference. Nacogdoches, TX. (April 23, 2018).

Trevino, A. D.*[†], Frantzen, A. S., Oswald, B., P. “Novel RSIT determination using STA/IR” Stephen F. Austin State University Graduate Research Conference. Nacogdoches, TX. (April 23, 2018).

Frantzen, A. S.* “The Greening of Physical Chemistry Experiments” Symposium on Arts and Research, Stephen F. Austin State University, Nacogdoches, TX. (March 27, 2018)

Zech, L. A. *‡, Frantzen, A. S. “Cation Exchange Capacity Determination: Comparative Study of Three Methods” Stephen F. Austin State University URC, College of Sciences and Mathematics, Nacogdoches, Texas. (April 17, 2018).

Frantzen, A. S.* “Exaltation of physical chemistry: Reversing the stigma” 255th American Chemical Society National Meeting, New Orleans, Louisiana, March 21, 2018.

Frantzen, A. S.* “Modernization of traditional physical chemistry experiments” 255th American Chemical Society National Meeting, New Orleans, Louisiana, March 18, 2018.

Keith, C. A. *†, Frantzen, A. S. “Development of a new method for CEC determination of clays” 255th American Chemical Society National Meeting, New Orleans, Louisiana, March 21, 2018.

Trevino, A. D. *†, Frantzen, A. S., Tiller, M. B. †, Oswald, B. P. “Evolved gas analysis of the preignition stage of invasive plants of East Texas” 255th American Chemical Society National Meeting, New Orleans, Louisiana, March 21, 2018.

Thompson, S. R. *‡, Frantzen, A. S., Tiller, M. B., Oswald, B. P. “Refinement of the RSIT method” 255th American Chemical Society National Meeting, New Orleans, Louisiana, March 19, 2018.

Zech, L. A. *‡, Frantzen, A. S. “Cation exchange capacity determination: Comparison of three different methods” 121st Annual Meeting of the Texas Academy of Science, Midland College, Midland, TX, March 2018.

Keith, C. A.*†, Frantzen, A. S. “CEC determination of alkyl ammonium exchanged smectite clays using combustion methods” 121st Annual Meeting of the Texas Academy of Science, Midland College, Midland, TX, March 2018.

Trevino, A. D. *†, Frantzen, A. S., Tiller, M. B. †, Oswald, B. P. “Evolved-gas analysis of the pre-ignition stage of invasive plants of East Texas with STA-IR” 121st Annual Meeting of the Texas Academy of Science, Midland College, Midland, TX, March 2018.

Thompson, S. R.*‡, Frantzen, A. S., Tiller, M. B., Oswald, B. P. “Optimizing the RSIT value technique for invasive plant species” 121st Annual Meeting of the Texas Academy of Science, Midland College, Midland, TX, March 2018. Recipient: Best Oral Presentation, Chemistry/Biochemistry Section.

Frantzen, A. S.* “Classic physical chemistry experiments: They ain’t broke but we’re fixin’ ‘em anyway” 121st Annual Meeting of the Texas Academy of Science, Midland College, Midland, TX, March 2018.

Tiller, M.B.*†, Trevino, A. *†, Frantzen, A.S., Oswald, B.P., “Spatial and seasonal flammability and smoke emission comparisons of endemic and exotic invasive plants in the Post Oak Savannah and Blackland Prairie ecoregions of Texas” 2017 Graduate Research Conference, Stephen F. Austin State University, Nacogdoches, TX. (April 20, 2017)

Frantzen, A.S.* “SMASHing it at SFASU,” Symposium on Arts and Research, Stephen F. Austin State University, Nacogdoches, TX. (April 19, 2017)

Zech, L.*‡, Frantzen, A.S., "Comparison of cation exchange capacity determination methods" 120th Annual Meeting of the Texas Academy of Science, University of Mary Hardin-Baylor, Belton, TX, March 2017.

Barngrover, B. *, Frantzen, A. S., "Theoretical calculations of dipole moments of mono, meta, and ortho halobenzenes 120th Annual Meeting of the Texas Academy of Science, University of Mary Hardin-Baylor, Belton, TX, March 2017.

Frantzen, A. S. *, Barngrover, B., "The pchem projects: 10 years and going strong" 120th Annual Meeting of the Texas Academy of Science, University of Mary Hardin-Baylor, Belton, TX, March 2017.

Orr, C*‡, Frantzen, A. S., 72nd Southwest Regional Meeting, "Effects of structure, temperature, and solvent on dipole moment," American Chemical Society, Galveston, Texas. (November 12, 2016)

Keith, C. A.*†, Frantzen, A. S., 72nd Southwest Regional Meeting, "Bomb calorimetry of alkyl ammonium smectites" American Chemical Society, Galveston, Texas. (November 13, 2016)

Turner, T.*‡, Frantzen, A. S., 119th Annual Meeting, "Analysis of vapors released by the heating of e-liquids," Texas Academy of Science, Junction, Texas. (March 4, 2016).

Hauer, D.*‡, Frantzen, A. S., 119th Annual Meeting, "Anion analysis of the mineral springs of Lampasas, Texas," Texas Academy of Science, Junction, Texas. (March 4, 2016).

Jenkins, M.*‡, Frantzen, A. S., 119th Annual Meeting, "Metal analysis of the mineral springs of Lampasas, Texas," Texas Academy of Science, Junction, Texas. (March 4, 2016).

Keith, C.*‡, Frantzen, A. S., 119th Annual Meeting, "The influence of structure on combustion of organoclays," Texas Academy of Science, Junction, Texas. (March 4, 2016).

Zvonkovic, M.*‡, Oswald, B., Weng, J., Frantzen, A. S., SFA Undergraduate Research Conference, "Effects of particle size on heat released from combustion of Yaupon," Stephen F. Austin State University URC, Arthur Temple College of Forestry and Agriculture, Nacogdoches, Texas. (April 18, 2016).

Turner, T.*‡, Frantzen, A. S., SFA Undergraduate Research Conference, "Electronic cigarettes: truth or toxic?," Stephen F. Austin State University URC, College of Sciences and Mathematics, Nacogdoches, Texas. (April 18, 2016).

Turner, T.*‡, Frantzen A. S., 71st SWRM/67th SERMACS, "Analysis of e-liquids," ACS, Memphis, TN. (November 7, 2015).

Jenkins, M.*‡, Frantzen A. S., 71st SWRM/67th SERMACS, "Mineralized springs of Lampasas, Texas," ACS, Memphis, TN. (November 7, 2015).

Tiller, M.*†, Oswald, B. P. , Frantzen, A. S., Conway, W., Hung, I.-K., 6th West Gulf Coastal Plain and Big Thicket Conference, "Effects of yaupon, Chinese privet, and Chinese tallow on understory fuel flammability in east Texas hardwood and pine ecosystems," Big Thicket Association and USFS, Nacogdoches, TX. (April 18, 2015).

Frantzen, A. S., Jenkins, M. ^{*‡}, SFA Undergraduate Research Conference, "The Origin of Sulfur Content in the Mineral Springs of Lampasas Texas," Stephen F. Austin State University URC, Top Scholar, SFASU. (April 14, 2015).

Frantzen, A. S., Goodrum, E. J. ^{*‡}, 247th American Chemical Society National Meeting and Exposition, "Calorimetric Contributions to the East Texas Fire Model," ACS, Dallas, Texas. (March 18, 2014).

Frantzen, A. S. ^{*}, Stafford, K., Hauer, D. [‡], 247th American Chemical Society National Meeting and Exposition, "Texas Hill Country Mineral Springs: Origins and Water Quality," ACS, Dallas, Texas. (March 18, 2014).

Stafford, K. ^{*}, Frantzen, A. S., Shaw, M. G., South Central Geological Society of America Annual Meeting, "Mineralized karst springs of central Texas: Lampasas and San Saba counties," Geological Society of America, Fayetteville, AR. (March 18, 2014).

*presenter †graduate student ‡undergraduate student

CONTINUING EDUCATION

Online Instructor Certification Course, Center for Teaching and Learning, Stephen F. Austin State University. (September 9-December 7, 2020).

Training Course, "ICP/MS with ELAN and DRC Accessory", Perkin Elmer. (November 10-14, 2014).

RESEARCH STUDENTS SUPERVISED

Graduate (2004-current):

Tania Benavides, (MSNS non-thesis 2020)

Michelle Huskey, (MSNS non-thesis 2020)

Michael Tiller (MS 2015/PhD 2021, Forestry)

Antonio Trevino (MSNS 2018)

Celeste Keith (MSNS 2018)

Emrys Smith (MS 2013)

Joshua Perry (MS non-thesis 2012)

Amy Rich (MS 2009)

Jason Perrin (MS 2009)

Jason Cole (MS 2006)

Phillip Walker (MS 2004)

Undergraduate (2004-current):

Sadie Atkins

Gabrielle Johnson

Grant Saracene

Heather Smith

Troy Ortiz
Sarah Glaesemann
Trace Washburn
Kyla Santana
Bethany Craft
Lillie Zech
Sydney Thompson
Nelly Carrasco-Bohorquez
Celeste Keith
David Hauer
Marisol Gomez
Timothy Turner
Akeira Warner
Megan Jenkins
Garret Grannon
Michelle Huskey
Peyton Cox
K. C. Joel
EJ Goodrum
Jonathan Martinez
Lucas Baralt
Kayla Fry
Maria Acosta
Stephen Sartin
Catelyn Cash
Joshua Perry
Francisco Limma
Faith Ekwueme
Jessica Allen
Thao Hoang
Chaky Maunkaew
Charlotte Poe
Jennifer Perry
Natalie Gonsior
Kristen Baugh
Crystal Chang
Katie Clark
Kira Smith