

Curriculum Vitae

Russell J. Franks, Ph.D.

Assistant Professor of Chemistry
Department of Chemistry & Biochemistry
Stephen F. Austin State University

Contact Information:

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Education:

- B.S. Chemistry (1994), Stephen F. Austin State University
- M.S. Chemistry (1996), Stephen F. Austin State University
- Ph.D. Chemistry (2002), University of Oklahoma (Emphasis in Organic & Organometallic Chemistry)
Dissertation Title: *Palladium-Catalyzed Carboxylative Coupling Reactions of Allyltributylstannanes and Allyl Chloride*
Advisor: George Lynn Cross Research Professor Emeritus Kenneth M. Nicholas

Professional Experience:

July 2005-Present: Assistant Professor of Chemistry, Stephen F. Austin State University
Jan. 2003-May 2005: Visiting Assistant Professor of Chemistry & Biochemistry, University of Oklahoma
Aug. 1996-Dec. 2002: Graduate Assistant, Department of Chemistry & Biochemistry, University of Oklahoma
Aug. 1994-Aug. 1996: Graduate Assistant, Department of Chemistry, Stephen F. Austin State University

Publications:

- Darean A. Bague and **Russell J. Franks**, "Synthesis and Characterization of Fatty Acid Methyl Ester Mixtures Derived from Acorn Kernel Oil", accepted for publication in the *Texas Journal of Science* (Aug. 2019).
- Amanda L. Raley, Jenny P. Beldin, and Russell J. Franks, "Synthesis and Characterization of Fatty Acid Furfuryl Ester Mixtures: Biodiesel from Furfuryl Alcohol", *Journal of Chemistry and Biochemistry*, **2019**, 7, 1-8. DOI: 10.15640/jcb.v7n1a1
- **Russell J. Franks** and Kenneth M. Nicholas, "Palladium-Catalyzed Carboxylative Coupling Reactions of Allylstannanes and Allyl Halides", *Organometallics*, **2000**, 8, 1458.
- Min Shi, **Russell Franks**, and Kenneth M. Nicholas, "Palladium-catalyzed carboxylation of allyl stannanes and carboxylative coupling reactions of allyl stannanes and allyl halides", In *Advances in Chemical Conversions for Mitigating Carbon Dioxide*; Inui, T.; Anpo, M.; Izui, K.; Yanaguida, S.; Yamaguchi, T., Eds.; Elsevier: New York, NY, 1998; pp 165-170.

Presentations:

- Gillian Bustos and **Russell J. Franks*** "Conversion of Shellbark Hickory Kernel Oil (SLHKO) to Hickory Kernel Oil Methyl Esters (SLHKOME)" Oral presentation made at the 2022 Meeting of the Texas Academy of Science, Houston, Texas, February 2022.
- Elizabeth Gonzalez and **Russell J. Franks*** "Effects of an Ionic Liquid on the Synthesis of Biodiesel Fuels" Oral presentation made at the 2022 Meeting of the Texas Academy of Science, Houston, Texas, February 2022.
- Macayla E. Guerrero and **Russell J. Franks*** "Quantification of Hydrolyzable Tannins in Hickory Nuts Using the Prussian Blue Method" Oral presentation made at the 2022 Meeting of the Texas Academy of Science, Houston, Texas, February 2022.
- Alice Huang and **Russell J. Franks*** "Spectrophotometric Determination of Condensed Tannin Content of Acorns from *Quercus* Species Using Acid-Butanol Assay" Oral presentation made at the 2020 Meeting of the Texas Academy of Science, Nacogdoches, Texas, February 2020.
- Naidelyn A. Chicas and **Russell J. Franks*** "The Synthesis of Biodiesel Fuels from Transesterification of Shagbark & Mockernut Hickory Kernel Oil" Poster presentation made at the 2020 Meeting of the Texas Academy of Science, Nacogdoches, Texas, February 2020.

- Hannah K. Trauger, Madilynn G. Dewell, Jahida A. Mendoza, and **Russell J. Franks*** “The Transesterification of Hickory Nuts into Biodiesel Fuel” Poster presentation made at the SFASU Undergraduate Research Conference, Nacogdoches, Texas, April 2019
- Sarah E. Browning, Marshall E. Woodruff, and **Russell J. Franks*** “Quantification of hydrolyzable tannins in acorns from different species of oak trees (*Quercus sp.*) in East Texas” Poster presentation made at the SFASU Undergraduate Research Conference, Nacogdoches, Texas, April 2019
- Sarah E. Browning, Marshall E. Woodruff, and **Russell J. Franks*** “Quantification of hydrolyzable tannins in acorns from different species of oak trees (*Quercus sp.*) in East Texas” Poster presentation made at the 2018 Meeting of the Texas Academy of Science, Brownwood, Texas, March 2019
- Darean A. Bague and **Russell J. Franks*** “Synthesis of Biodiesel Fuels via Transesterification Using Acorn (*Quercus sp.*) as an Alternative Triglyceride Source” Poster presentation made at the 2018 Spring Meeting of the American Chemical Society, New Orleans, Louisiana, March 2018
- Darean A. Bague and **Russell J. Franks*** “Synthesis of Biodiesel Fuels via Transesterification Using Acorn (*Quercus sp.*) as an Alternative Triglyceride Source” Oral presentation made at the 2018 Meeting of the Texas Academy of Science, Midland, Texas, March 2018
- Amanda L. Raley and **Russell J. Franks*** “The Synthesis of Fatty Acid Furfuryl Esters and Coffee-Derived Biodiesel” Poster presentation made at the 2018 Spring Meeting of the American Chemical Society, New Orleans, Louisiana, March 2018
- Amanda L. Raley and **Russell J. Franks*** “The Synthesis of Fatty Acid Furfuryl Esters and Coffee-Derived Biodiesel” Oral presentation made at the 2018 Meeting of the Texas Academy of Science, Midland, Texas, March 2018
- Jenny P. Beldin and **Russell J. Franks*** “Transesterification of ethyl acetate and furfuryl alcohol using base catalysis” Oral presentation made at the 2017 Meeting of the Texas Academy of Science, Belton, Texas, March 2017.
- Amanda L. Raley and **Russell J. Franks*** “The Synthesis of Fatty Acid Furfuryl Ester Mixtures” Oral presentation made at the 2016 Meeting of the Texas Academy of Science, Junction, Texas, March 2016
- Amanda L. Raley and **Russell J. Franks*** “The Use of Microwave Heating for Biodiesel Synthesis via K_2CO_3 -Catalyzed Transesterification” Poster presentation made at the 2015 Meeting of the Texas Academy of Science, San Antonio, Texas, March 2015.
- Lauren N. Williams, Alyx S. Frantzen, and **Russell J. Franks*** “Synthesis and Characterization of Biodiesel Fuels by Clay-Catalyzed Transesterifications” Poster presentation made at the 2015 Meeting of the Texas Academy of Science, San Antonio, Texas, March 2015.
- Daniel G. Kushaney and **Russell J. Franks*** “Microwave-Assisted Synthesis & Characterization of Fatty Acid Alkyl Esters using Base Catalyst Method” Poster presentation made at the 2015 Meeting of the Texas Academy of Science, San Antonio, Texas, March 2015.
- Amanda L. Raley and **Russell J. Franks*** “The Use of Microwave Heating for Biodiesel Synthesis via K_2CO_3 -Catalyzed Transesterification” Poster presentation made at the 2015 SFASU Undergraduate Research Conference, Stephen F. Austin State University, Nacogdoches, Texas, April 14, 2015.
- Lauren N. Williams, Alyx S. Frantzen, and **Russell J. Franks*** “Synthesis and Characterization of Biodiesel Fuels by Clay-Catalyzed Transesterifications” Poster presentation made at the 2015 SFASU Bright Ideas Conference, Stephen F. Austin State University, Nacogdoches, Texas, April 29, 2015.
- Daniel G. Kushaney and **Russell J. Franks*** “Microwave-Assisted Synthesis & Characterization of Fatty Acid Alkyl Esters using Base Catalyst Method” Poster presentation made at the 2015 SFASU Bright Ideas Conference, Stephen F. Austin State University, Nacogdoches, Texas, April 29, 2015.
- Jeffery D. Briggs and **Russell J. Franks*** “Comparison of Dynamic Viscosities of Fatty Acid Alkyl Ester Mixtures from Various Triglyceride Sources” Poster presentation made at the 2010 Meeting of the Texas Academy of Science, Stephenville, Texas March 2010.
- Roberto J. Molina, Alyx S. Frantzen, and **Russell J. Franks*** “Comparison of Combustion Energies of Fatty Acid Alkyl Ester Mixtures from Various Triglyceride Sources” Poster presentation made at the 2010 Meeting of the Texas Academy of Science, Stephenville, Texas, March 6, 2010.
- **Russell J. Franks** “Synthesis and Characterization of Fatty Acid Alkyl Ester Mixtures” Oral presentation made at the 2010 Meeting of the Texas Academy of Science, Stephenville, Texas March 2010.
- Jeffery D. Briggs and **Russell J. Franks*** “Comparison of Dynamic Viscosities of Fatty Acid Alkyl Ester Mixtures from Various Triglyceride Sources” Poster presentation made at the 2010 SFASU Undergraduate Research Conference, Stephen F. Austin State University, Nacogdoches, Texas, April 22, 2010.
- Roberto J. Molina, Alyx S. Frantzen, and **Russell J. Franks*** “Comparison of Combustion Energies of Fatty Acid Alkyl Ester Mixtures from Various Triglyceride Sources” Poster presentation made at the 2010 SFASU Bright Ideas Conference, Stephen F. Austin State University, Nacogdoches, Texas, April 8, 2010.

- **Roberto J. Molina, Racheal A. Persaud, and Russell J. Franks*** “Biodiesel: Tomorrow’s Fuel, Today’s Solution” Poster presentation made at the 2009 SFASU Undergraduate Research Conference, Stephen F. Austin State University, Nacogdoches, Texas, March 2009.
- **Schultz, Brenda L., Nicholas, Kenneth M. *, and Russell J. Franks** “Carbon Dioxide Activation by Metal Complexes” Presentation made at the National Meeting of the American Chemical Society, San Francisco, California, March 2000.
- **Franks, Russell J.** and Nicholas, Kenneth M. * “Mechanistic studies of palladium-catalyzed carboxylative coupling reactions of allyl stannanes and allyl halides” Presentation made at the National Meeting of the American Chemical Society, New Orleans, Louisiana, August 1999.
- **Franks, Russell J.** and Nicholas, Kenneth M. * “Palladium-catalyzed carboxylative coupling reactions of allyl stannanes and allyl halides” Poster presentation made at the National Meeting of the American Chemical Society, Dallas, Texas, March 1998.

Honors and Awards:

- C.A. Baumberger Foundation Scholarship 1988-1992
- R.A. Welch Foundation Research Scholarship 1993-1996
- Phillips Petroleum Scholarship 1996
- Outstanding Graduate Teaching Assistant Award, University of Oklahoma, Department of Chemistry & Biochemistry 2002
- Alpha Epsilon Delta Pre Health-Professions Outstanding Professor Award, Stephen F. Austin State University 2009

Professional Affiliations and Memberships:

- American Chemical Society
- American Oil Chemists Society
- Council on Undergraduate Research
- Texas Academy of Science

Research Funding:

- 2009: SFASU Faculty Research Grant “Study of chemical and physical properties of poultry fat-derived biodiesel mixtures” (Partially funded), Co-PI with Dr. Alyx S. Frantzen (SFASU Dept. of Chemistry). Funds were used to purchase calorimetry and viscometry equipment for the project.

Courses Taught:

At Stephen F. Austin State University:

- CHE 111 (Introductory Chemistry I)
- CHE 112 (Introductory Chemistry II)
- CHE 133 (General Chemistry I)
- CHE 133L (General Chemistry I Laboratory)
- CHE 134 (General Chemistry II)
- CHE 134L (General Chemistry II Laboratory)
- CHE 330 (Fundamentals of Organic Chemistry)
- CHE 330L (Fundamentals of Organic Chemistry Laboratory)
- CHE 331 (Organic Chemistry I)
- CHE 331L (Organic Chemistry I Laboratory)
- CHE 332 (Organic Chemistry II)
- CHE 332L (Organic Chemistry II Laboratory)
- CHE 470 (Seminar)
- CHE 516 (Organic Spectroscopy)
- CHE 516 (Organic Reaction Mechanisms)
- CHE 516 (Organometallic Chemistry)

At the University of Oklahoma:

- CHE 1315 (General Chemistry I)
- CHE 3013 (Fundamentals of Organic Chemistry)
- CHE 3053 (Organic Chemistry I)
- CHE 3153 (Organic Chemistry II)
- CHE 3153H (Honors Organic Chemistry II)
- CHE 3423 (Physical Chemistry I)

Completed SFASU Online Instructor Certification in July 2020

Research Students Supervised:

At the University of Oklahoma:

- Masuomi Matsumoto (Undergraduate Student: 1998)
- Brenda L. Schultz (Undergraduate Student: 1999)
- Marty L. Skrapka (Undergraduate Student: 2003-2004)

At Stephen F. Austin State University:

- Charles D. Varnado, Jr. (Undergraduate Student: 2005-2006)
- Ivette G. Chicas (Undergraduate Student: 2008-2009)
- Amanda E. Coussens (Undergraduate Student: 2008)
- Jennifer Perry (Graduate Student: 2008)
- Roberto J. Molina (Graduate Student: 2008-2011)
- Jeffery D. Briggs (Undergraduate Student: 2009-2011)
- Racheal A. Persaud (Undergraduate Student: 2008)
- Elton I. Polvadore III (Undergraduate Student: 2009-2010)
- Scott A. Morris (Undergraduate Student: 2009-2010)
- Jessica R. Johnson (Undergraduate Student: 2009-2010)
- Collette M. Midkiff (Undergraduate Student: 2010-2011)
- Daniel G. Kushaney (Undergraduate Student: 2011-2013, Graduate Student: 2013-2015)
- Samantha E. Hernandez (Undergraduate Student: 2011)

- Lauren N. Williams (Undergraduate Student: 2011-2013, Graduate Student: 2013-2015)
- Amanda L. Bohanon (Undergraduate Student: 2012-2014)
- Kayla A. Robinson (Undergraduate Student: 2012)
- Shayla R. Robinson (Undergraduate Student: 2012-2013)
- Shelby F. Payne (Undergraduate Student: 2012-2013)
- Jean Meneses (Undergraduate Student: 2013)
- Tyler R. Orn (Undergraduate Student: 2012-2013)
- Amanda L. Raley (Undergraduate Student: 2014-2015, Graduate Student: 2016-2018)
- Jenny P. Beldin (Undergraduate Student: 2015-2017)
- Olivia B. Britton (Undergraduate Student: 2015-2016)
- Sydney R. Thompson (Undergraduate Student: 2015-2016)
- Chamila N. Meetiyagoda (Graduate Student: 2015-2016)
- Sarah E. Browning (Undergraduate Student: 2016-2019)
- Shawn A. Shah (Undergraduate Student: 2016-2018)
- Darean A. Bague (Graduate Student: 2016-2018)
- Naidelyn A. Chicas (Undergraduate Student: 2017-2021)
- Alice Huang (Undergraduate Student: 2019-2020)
- Gillian Bustos (Undergraduate Student: 2019-2022)
- Elizabeth Gonzalez (Undergraduate Student: 2020-2023)
- Holly Gibson (Undergraduate Student: 2020-2022)
- Macayla Guerrero (Undergraduate Student: 2020-2022)
- Allison Swaim (Undergraduate Student: 2020-2022)
- Sydni T. Sheffield (Undergraduate Student: 2021-present)
- Carolina R. Gonzalez (Undergraduate Student: 2022-present)
- Maci B. Hale (Undergraduate Student: 2022-present)
- Alyson A. Grow (Undergraduate Student: 2022-present)

Master's Thesis Committees:

- Roberto J. Molina (SFASU Dept. of Chemistry, Thesis Director, completed August 2011)
 - Thesis title: *Synthesis and Characterization of Biodiesel Fuels from Plant Oils and Animal Fats*
- Jason N. Perrin (SFASU Dept. of Chemistry, Committee Member, May 2009)
- Elizabeth B. High (SFASU Dept. of Environmental Science, Committee Member, August 2009)
- Hafiza Rahman (SFASU Dept. of Biology, Committee Member, May 2012)
- Emrys Smith (SFASU Dept. of Chemistry, Committee Member, December 2012)
- Lauren N. Williams (SFASU Dept. of Chemistry & Biochemistry, Thesis Director, completed May 2015)
 - Thesis title: *Synthesis and Characterization of Biodiesel Fuels by Clay-Catalyzed Transesterifications*
- Daniel G. Kushaney (SFASU Dept. of Chemistry & Biochemistry, Thesis Director, completed May 2015)
 - Thesis title: *Microwave-Assisted Synthesis & Characterization of Fatty Acid Alkyl Esters using Base Catalyst Method*
- Jorge J. Ojeda (SFASU Dept. of Chemistry & Biochemistry, Committee Member, August 2015)
- Chamila N. Meetiayagoda (SFASU Dept. of Chemistry & Biochemistry, Thesis Director, completed August 2016)
 - Thesis title: *Microwave-Assisted Acid-Catalyzed Synthesis and Analysis of Biodiesel Using Multiple Feedstocks*
- Amanda L. Raley (SFASU Dept. of Chemistry & Biochemistry, Thesis Director, completed May 2018)
 - Thesis title: *Synthesis and Characterization of Biodiesel Fuels from Furfuryl Alcohol and Spent Coffee Grounds*
- Darean A. Bague (SFASU Dept. of Chemistry & Biochemistry, Thesis Director, completed May 2018)
 - Thesis title: *Synthesis of Biodiesel Fuels via Transesterification Using Acorn (*Quercus sp.*) as an Alternative Triglyceride Source*
- Celeste A. Keith (SFASU Dept. of Chemistry & Biochemistry, Committee Member, August 2018)
- Phillip B. Sharp (SFASU Dept. of Chemistry & Biochemistry, Committee Member, December 2018)
- Elizabeth G. Milem (SFASU Dept. of Chemistry & Biochemistry, Committee Member, May 2022)
- Cole B. Donald (SFASU Dept. of Chemistry & Biochemistry, Committee Member, November 2022)

Professional Service:*SFASU Department of Chemistry:*

- Safety Committee: Member (2009-2021)
- Graduate & Undergraduate Research Student Safety Training Coordinator: (2010-present)
- Welch Committee: Member (2009-2013, 2021-present)
- Recruiting & Newsletter Committee: Member (2006-2008)
- Recruiting & Newsletter Committee: Chair (2008-2012)
- Organic Faculty Search Committee: Chair (2007)
- Organic Faculty Search Committee: Member (2014)
- General Chemistry Textbook Selection Committee: Chair (2007)
- Introductory Chemistry Textbook Selection Committee: Member (2006)
- CHE 133 Assessment Committee: Member (2006-2008)
- Graduate Teaching Assistant Coordinator: (2008-present)
- Alumni Scholarship Committee: Member (2005-2008)
- Building Committee: Member (2006-2008)
- Assessment Coordinator: (2015-present)
- Graduate Committee: (2015-present)
- Capstone Committee: (2018-present)
- Fermentation Science Curriculum Track Committee: Member (2019-present)
 - Worked to develop curriculum for new Fermentation Science Track
 - Developed curriculum for CHEM 3365 (Introduction to Fermentation Science)
- Future of the Department Committee: (2020-present)

SFASU College of Science & Mathematics:

- CSM Development Committee: Member (2009-2010)
- CSM Undergraduate Advising Committee: Member (2006-2008)
- CSM Council: Member (2011-2012, 2014-2016)
- CSM Assessment Committee: Departmental Representative (2015-present)
- Hispanic Scholars Initiative Committee: Member (2018-present)

SFASU University-Wide Committees:

- Honors Council: Member (2006-present)
- Program Review Committee: Member (2008)
- SACS Accreditation Sub-Committee on Research (2009)
- AARC SI Program Director Search Committee (2009)
- Showcase Saturday: Participant (Various times between 2007-2010)
- Moving in the Dorms: Participant (Various times from 2006-2009)
- Core Curriculum Assessment: Critical Thinking Skills Scorer (2015-2016)

Community Service Activities:

- Volunteer youth soccer coach (Nacogdoches Youth Soccer Association: Spring 2014-Spring 2016)
- Chemistry activities for children at the Nacogdoches Public Library: Presenter (2006)
- Chemistry activities for children at the Right Step Daycare Pre-K class: Presenter (2009)
- Chemistry activities for Kindergarten class at SFA Charter School: Presenter (2011)
- Federal Grand Juror (Eastern District of Texas): (June 2015-November 2015)
- Various volunteer activities at the Nacogdoches Public Library: (2007-Present)
- McMichael Middle School Parent-Teacher Organization: Secretary (2018-2019)

Professional Interests:

- Development of organic chemistry teaching methodology
- Development of problem solving and critical thinking skills in undergraduate organic chemistry students
- Development of professional skills and ethics training for chemistry majors
- Development of oral and written communication skills for chemistry majors
- Organometallic chemistry & homogeneous catalysis
- Synthesis and characterization of biodiesel fuels made from various alcohol & triglyceride sources
- Synthesis of biodiesel fuels made from non-food triglyceride feedstocks
- Determination of tannin content in acorns and other sources
- Use of microwave ovens to facilitate biodiesel synthesis
- Use of undergraduate research as a vehicle for professional training and development for undergraduate chemistry majors
- Development of a 1D- & 2D-NMR spectral database of a variety of organic compounds for use in teaching spectroscopic structural elucidation principles

Professional Skills:

- Fluency (oral, reading, written, and aural) in Spanish
- Some rudimentary reading abilities in French, Italian, Portuguese, and Catalan
- Manipulation & safe handling of air-sensitive reagents (glove box techniques, Schlenk techniques)
- Use of NMR spectrometers & NMR spectral processing software (ACD & SpinWorks)
- Experienced in the use of ChemDrawTM molecular structure drawing program
- Experienced in the use of Blackboard/WebCT and D2L course management programs
- Completed SFASU Online Instructor Certification in July of 2020
- Use & maintenance of gas chromatographs