

JACOB S. TRACY (He/Him)

University of West Florida, Department of Chemistry
11000 University Parkway, Pensacola, FL 32514
Building 058, Room 002
JTRACY@UWF.EDU • 850.474.2948

◆ EDUCATION

- Stanford University**, Stanford, CA **Graduation: January 2020**
• Doctor of Philosophy (PhD) in organic chemistry with advisor Professor Barry M. Trost
- Swarthmore College**, Swarthmore, PA **Graduation: May 2013**
• Bachelor of Arts: *Highest Honors*, major in Chemistry and minor in Engineering

◆ ACADEMIC APPOINTMENTS

- Assistant Professor**, Department of Chemistry **August 2023-Present**
University of West Florida
- Postdoctoral Scholar**, Laboratory of Prof. F. Dean Toste **January 2020-May 2023**
Lawrence Berkeley National Laboratory and by courtesy at *University of California, Berkeley*
- Lecturer**, Department of Chemistry **Fall 2020 (August 2020 – December 2020)**
University of California, Berkeley

◆ AWARDS

- The Franklin Veatch Memorial Award** **2018**
• Stanford Department of Chemistry award that "...recognizes the outstanding progress you have made since joining Professor Trost's research group." Awarded fellowship that provides one academic quarter of standard support, salary, and tuition.
- The John Stauffer Memorial Award** **2016**
• Stanford Department of Chemistry award that "...recognizes your academic achievement as well as the outstanding progress made since joining Professor Trost's research group." Awarded fellowship that provides one academic quarter of standard support, salary, and tuition.
- The American Chemical Society Scholastic Achievement Award** **2013**
• Swarthmore College Chemistry Department award "...given to the student whom the Department of Chemistry and Biochemistry judges to have the best performance in chemistry and overall academic achievement."
- The American Chemical Society Undergraduate Award in Analytical Chemistry** **2012**
• Swarthmore College Chemistry Department distinction "...awarded annually to the student whom the Chemistry and Biochemistry Department judges to have the best academic performance in analytical chemistry and instrumental methods"
- Howard Hughes Medical Institute Research Fellowship** **Summer 2012**
• Awarded a stipend of \$4350 plus \$500 for supplies to perform 10 weeks of summer research in the Paley Laboratory at Swarthmore College

◆ Courses Taught (Instructor of Record)

University of West Florida, Department of Chemistry

CHM 2210: Organic Chemistry I (Fall 2023)

CHM 2210L: Organic Chemistry I Laboratory (Fall 2023)

University of California, Berkeley, Department of Chemistry

CHEM 115: Organic Chemistry – Advanced Laboratory Methods (Fall 2020)

◆ **PUBLICATIONS – Undergraduate and master student mentees with co-first author contributions are underlined.**

Accepted for Publication:

18. Zhang, W.; Walser-Kuntz, R.; **Tracy, J. S.**; Schramm, T.; Shee, J.; Head-Gordon, M.; Chen, G.; Helms, B.; Sanford, M.; Toste, F. D. “Indolo[2,3-b]quinoxaline as a low reduction potential and high stability anolyte scaffold for non-aqueous redox flow battery” *J. Am. Chem. Soc.*

Publications:

17. **Tracy, J. S.** “2,6-bis((2-(hydroxydiphenylmethyl)-1-pyrrolidinylmethyl)-4-methylphenol (ProPhenol) – First Update” *Encyclopedia of Reagents for Organic Synthesis (EROS)* [Online], John Wiley & Sons Ltd, 2022. DOI: 10.1002/047084289X.rn00919.pub2
• Invited contribution
16. †**Tracy, J. S.**; †Horst, E. S.; Roytman, V. A.; Toste, D. F. “Development of High-voltage Bipolar Redox-active Organic Molecules Through the Electronic Coupling of Catholyte and Anolyte Structures” *Chem. Sci.* **2022**, DOI: 10.1039/d2sc03450f.
†Equal contributions
15. Trost, B. M.; Taft, B. R.; **Tracy, J. S.**; Stivala, C. E. “Catalytic Asymmetric Synthesis of the Pentacyclic Core of (+)-Citridin A” *Org. Lett.* **2021**, *23*, 4981-4985.
14. **Tracy, J. S.**; Kalnmals, C. A.; Toste, F. D. “Beyond Allylic Alkylation: Applications of Trost Chemistry in Complex Molecule Synthesis” *Isr. J. Chem.* **2021**, *61*, 340-366.
13. Trost, B. M.; **Tracy, J. S.** “Catalytically Generated Vanadium Enolates Formed via Interruption of the Meyer-Schuster Rearrangement as Useful Reactive Intermediates” *Acc. Chem. Res.* **2020**, *53*, 1568-1579.
12. Trost, B. M.; Cregg, J. J.; Hohn, C.; Bai, W.-J.; Zhang, G.; **Tracy, J. S.** “Ruthenium-catalyzed Multicomponent Synthesis of the 1,3-Dienyl-6-oxo Polyketide Motif” *Nature Chem.* **2020**, *12*, 629-637.
11. Trost, B. M.; †**Tracy, J. S.**; †Yusoontorn, T.; Hung, C.-I. “Acyclic Branched α -Fluoro Ketones as Nucleophiles in the Catalytic Asymmetric Mannich Reaction” *Angew. Chem. Int. Ed.* **2020**, *59*, 2370-2374. *Angew. Chem.* **2020**, *132*, 2390-2394.
†Equal contributions
10. Trost, B. M.; †**Tracy, J. S.**; †Lin, E. L. “Asymmetric Amination of Acyclic α -Branched Ketones for the Formation of α -Tertiary Amines and Hydrazines” *ACS Catal.* **2019**, *9*, 11082-11087.
†Equal contributions
9. Trost, B. M.; Gnanamani, E.; Kalnmals, C. A.; Hung, C.-I.; **Tracy, J. S.** “Direct Enantio- and Diastereoselective Vinylogous Addition of Butenolides to Chromones Catalyzed by Zn-ProPhenol” *J. Am. Chem. Soc.* **2019**, *141*, 1489-1493.
8. Trost, B. M.; †**Tracy, J. S.**; †Yusoontorn, T. “Vanadium-catalyzed Coupling of Allenols with Electrophilic Halide Sources for the Formation of α -Halo- α,β -unsaturated Ketones” *Org. Lett.* **2019**, *21*, 1207-1211.
†Equal contributions

7. Trost, B. M.; **Tracy, J. S.** “Vanadium-catalyzed Synthesis of Geometrically Defined Acyclic Tri- and Tetrasubstituted Olefins from Propargyl Alcohols” *ACS Catal.* **2019**, *9*, 1584-1594.
6. Trost, B. M.; †Kalnmals, C. A.; †**Tracy, J. S.**; Bai, W. “Highly Chemoselective Deprotection of the 2,2,2-Trichloroethoxycarbonyl (Troc) Protecting Group” *Org. Lett.* **2018**, *20*, 8043-8046.
†Equal contributions
5. Trost, B. M.; **Tracy, J. S.**; Saget, T. “Direct Catalytic Enantioselective Amination of Ketones for the Formation of Tri- and Tetrasubstituted Stereocenters” *Chem. Sci.* **2018**, *9*, 2975-2980.
• Highlighted in *Synfacts*, **2018**, *14*, 487.
4. Trost, B. M.; Gnanamani, E.; **Tracy, J. S.**; Kalnmals, C. A. “Zn-ProPhenol Catalyzed Enantio- and Diastereoselective Direct Vinylogous Mannich Reactions between α,β - and β,γ -Butenolides and Aldimines” *J. Am. Chem. Soc.* **2017**, *139*, 18198-18201.
• Highlighted in *Synfacts*, **2018**, *14*, 268.
3. Trost, B. M.; **Tracy, J. S.** “Organic Synthesis. Use of Alkynes as a Key to Innovation in Designing Structure for Function” *Isr. J. Chem.* **2017**, *58*, 18-27.
2. Trost, B. M.; **Tracy, J. S.** “Carbon-Nitrogen Bond Formation via the Vanadium Oxo Catalyzed Sigmatropic Functionalization of Allenols” *Org. Lett.* **2017**, *19*, 2630-2633.
1. Trost, B. M.; **Tracy, J. S.** “Contemporaneous Dual Catalysis: Aldol Products from Non-carbonyl Substrates” *Chem. Eur. J.* **2015**, *21*, 15108-15122.
• Highlighted in *Synfacts*, **2016**, *12*, 48.
• Highlighted in *ChemInform*, **2016**, *47*, 10.

Undergraduate Thesis

Tracy, J. S. “Studies on the Diastereoselective Synthesis of Spiroketal and *Bis*-Spiroketal Utilizing a Planar Chiral Sulfinyl Diene Iron (0) Tricarbonyl Scaffold”, Advisor Professor Robert S. Paley, Senior Honors Thesis, Swarthmore College, Swarthmore, PA, 2013.

◆ **STUDENT MENTEES**

University of California, Berkeley

Conor Brokerick, Graduate Student Researcher
Elena Horst, Master’s Student Researcher

September 2022-August 2023
November 2021-April 2022

Stanford University

Tas Yusoontorn, Undergraduate Researcher
Eric Lin, Undergraduate Researcher

September 2015-July 2019
September 2017-July 2019

◆ **PRESENTATIONS**

Research Presentations - presenter denoted by star

9. **Tracy, J. S.***; Toste, F. D. “Organic Chemists – Unlikely Heroes in the Development of an Alternative Energy Economy” *invited talk* San José State University, San José, CA. November 17, 2022.
8. **Tracy, J. S.***; Toste, F. D. “Organic Chemists – Unlikely Heroes in the Development of an Alternative Energy Economy” *invited talk* Hampden-Sydney College, Hampden Sydney, VA. November 14, 2022.

7. **Tracy, J. S.***; Toste, F. D. "Organic Chemists – Unlikely Heroes in the Development of an Alternative Energy Economy" *invited talk* Lawrence University, Appleton, WI. November 7, 2022.
6. **Tracy, J. S.***; Toste, F. D. "Organic Chemists – Unlikely Heroes in the Development of an Alternative Energy Economy" *invited talk* University of West Florida, Pensacola, FL. October 27, 2022.
5. **Tracy, J. S.***; Toste, F. D. "Leveraging Structure-Property Understanding of the Phthalimide Scaffold for the Development of Multielectron Anolytes," *invited talk* Joint Center for Energy Storage Research Scientific Webinar (Virtual). August 25, 2021.
4. **Tracy, J. S.***; Toste, F. D. "Leveraging the Modular Nature of the Phthalimide Scaffold for the Development of High Energy Density and Multielectron Anolytes," *invited talk* Joint Center for Energy Storage Research Full Program National Meeting (Virtual) April 28, 2021.
3. Wuttig, A.*; **Tracy, J. S.***; Zhang, W.*; Toste, F. D. "Identifying and Building Redoxmer Libraries Amenable to Automated Synthesis," *invited talk* Joint Center for Energy Storage Research Full Program National Meeting (Virtual). March 31, 2020.
2. **Tracy, J. S.***; Paley, R. "Methods for the Diastereoselective Synthesis of Bis-Spiroketals Using a Planar Chiral Scaffold," Swarthmore College Department of Chemistry Senior Honors Thesis Presentation in Swarthmore, PA. April 11, 2013.
1. **Tracy, J. S.***; Paley, R. "Diastereoselective Synthesis of Spiroketals," Swarthmore College Engineering Department Summer Research Presentations in Swarthmore, PA. July 5, 2012.

Poster Presentations - presenter denoted by star

8. **Tracy, J. S.***; Horst, E. S.; Roytman, V. A.; Toste, F. D. "Development of High-voltage Bipolar Redox-active Organic Molecules Through the Electronic Coupling of Catholyte and Anolyte Structures" Toste 20th Anniversary Symposium Poster Session in Berkeley, CA. August 6, 2022.
7. Trost B. M.; **Tracy, J. S.*** "Synthesis of Geometrically Defined Acyclic Tri- and Tetrasubstituted Olefins from Propargyl Alcohols" 2018 Johnson Symposium Poster Session in Stanford, CA. October 12, 2018.
6. Trost B. M.; **Tracy, J. S.*** "Synthesis of Geometrically Defined Acyclic Tri- and Tetrasubstituted Olefins from Propargyl Alcohols" Center for Molecular Analysis and Design 2018 Symposium Poster Session in Stanford, CA. September 14, 2018.
5. Trost, B. M.; **Tracy, J. S.***; Saget, T. "Direct Catalytic Enantioselective Amination of Ketones," 2017 Merck Poster Session in Stanford, CA. October 23, 2017.
4. Trost, B. M.; **Tracy, J. S.***; Saget, T. "Direct Catalytic Asymmetric Amination of Vinyl and Aryl Ketones for the Formation of Tri- and Tetrasubstituted Stereocenters" 2017 Johnson Symposium Poster Session in Stanford, CA. October 13, 2017.
3. Trost, B. M.; **Tracy, J. S.*** "Vanadium-catalyzed Synthesis of Geometrically Defined (*E*)- and (*Z*)- α -Haloenones from Propargyl Alcohols" 2016 Johnson Symposium Poster Session in Stanford, CA. October 14, 2016.

2. Trost, B. M.; **Tracy, J. S.*** "Catalytic Generation of Vanadium Enolates for the Formation of C-C and C-N Bonds" TrostCon 75 Poster Session in Stanford, CA. May 21, 2016.
1. **Tracy, J. S.***; Paley, R. "Planar Chiral Sulfinyl Diene Iron(0) Tricarbonyl Scaffolding for the Diastereoselective Synthesis of a [6,6,6]-Bis-Spiroketal" Swarthmore College Sigma Xi Fall Poster Session in Swarthmore, PA. October 26-27, 2012.

◆ **OUTREACH/SERVICE**

Stanford University

Student Hosted Colloquia, Senator

March 2016-December 2019

- Nominated, discussed, voted on, and invited eight speakers per year to provide seminars with broad appeal to the chemistry community.

Director of TrostCon 75

October 2015-May 2016

- Initiated, fundraised over \$30,000, and planned a chemistry symposium in honor of Professor Trost's 75th birthday. Featured 8 speakers, 21 posters, and 150 attendees representing 33 universities and 20 companies.

Inspiring Future Scientists Through Shadowing (IFSS)

August 2014

- Mentored a high school student through a two-week shadowing program. Introduced the student to all components of synthetic organic chemistry research. Guided the student on a 10-minute cumulative presentation on the experience.

◆ **PROFESSIONAL ASSOCIATIONS**

Sigma Xi, Member

Phi Beta Kappa, Member