Andy A. Thomas, PhD

Texas A&M University
College Station, TX 77843-3255
Phone: 979-845-8160
andythomas@tamu.edu

Appointment

August 2020 – **Texas A&M University**
Assistant Professor, Department of Chemistry

Education

August 2011 – May 2017 **University of Illinois at Urbana-Champaign**
Ph. D. in Chemistry
Thesis: *Pre-transmetalation intermediates in the Suzuki-Miyaura reaction revealed: The missing link*
Advisor: Prof. Scott E. Denmark

May 2010 – August 2011 **University of North Carolina at Charlotte**
Masters of Science in Chemistry
Thesis: *Investigations of Mixed Organocuprates*
Advisor: Prof. Craig A. Ogle

August 2006 – May 2010 **University of North Carolina at Charlotte**
Bachelors of Science in Chemistry
Thesis: *Investigations of Lithium Tetramethylcuprate*
Advisor: Prof. Craig A. Ogle

Research Experience

June 2017 – June 2020 **Massachusetts Institute of Technology**
NIH Postdoctoral Fellow (Advisor: Prof. Stephen L. Buchwald)

August 2011 – May 2017 **University of Illinois at Urbana-Champaign**
Graduate Research Assistant (Advisor: Prof. Scott E. Denmark)

May 2008 – August 2011 **University of North Carolina at Charlotte**
Graduate / Undergraduate Research Assistant (Advisor: Prof. Craig A. Ogle)

Research Articles at TAMU

(Undergraduate co-authors are underlined)

In Preparation

33. Kang, S.; Piña, J.; Ho, D. B.; Cen, W.; Ramirez, F.; **Thomas, A. A.*** Phosphine Ligand Effects on the Rate of Transmetalation in Palladium-Catalyzed Kumada Cross-Coupling Reactions: A Rapid Injection NMR Study. *Manuscript In Preparation*

Submitted

32. Aguirre, L. S.; Piña, J.; Gonzalez, R.; Ho, D. B.; **Thomas, A. A.***, Design of a Gas Rapid Injection NMR System for Structure Elucidations and Kinetic Analyses. *Submitted.*

31. Arriaga, D. K.; Kaur, R.; **Thomas, A. A.***, Design of a LED Rapid Injection NMR System for Structure Elucidations and Kinetic Analyses. *Submitted.*

Published

30. Piña, J.; Aguirre, L. S.; Litwiller, L.; Ly, H.; Crockett, M. C.; **Thomas, A. A.***, Development of a Direct and Highly Selective Synthesis of 4-Substituted Tetrahydroquinolines: Substrate Scope and Mechanistic Study. *Chem. Eur. J.* **2025**, e202500353
29. Hsu, H.-H.; Kang, S.; Chen, C-C.; Sk, M. R.; **Thomas, A. A.***; Functionalization of Pyridines at the C4 Position *via* Metalation and Capture *Angew Chem. Int. Ed.* **2025**, e202424172
28. Gonzalez, R.; Hsu, H.-H.; **Thomas, A. A.***, Improved Synthesis of Lithium Dendrites for the Synthesis of (Trimethylsilyl)methyllithium. *Org. Synth.* **2024**, *101*, 342.
27. Wu, D.; Martin, R. T.; Piña, J.; Kwon, J.; Crockett, M. P.; **Thomas, A. A.**; Gutierrez, O.; Park, H. H.; Hedrick, J. L.; Campos*, L. M., A Generalized Approach to Activate CO_2 for Carbonation Polymerization and Functional Transformations. *Angew. Chem. Int. Ed.,* **2024**, *63*, e20240128
26. Aguirre, L. S.; Litwiller, L; Lugo, A.; **Thomas, A. A.***, Phosphine Urea Ligands for Mild Cross-Coupling Reactions. *Helv. Chim. Acta.* **2024**, e202300244.

    (Special issue honoring Prof Scott E. Denmark 70th Birthday)
25. Arriaga, D. K.; Kang, S.; **Thomas, A. A.***, Solvent Effects on the Rate of Olefin Ozonolysis: Development of a Homogeneous Flow Ozonolysis Protocol. *J. Org. Chem.* **2023,** *88*, 13720-13726.

    (Highlighted in *Org. Process Res. Dev.* **2023**, *11*, 1848-1857)
24. Arriaga, D. K.; **Thomas, A. A.***, Capturing Primary Ozonides for a *syn*-dihydroxylation of olefins. *Nat. Chem.* **2023**, *15*, 1262-1266.

    (Highlighted in *Org. Process Res. Dev.* **2023**, *9*, 1535-1545)
23. Crockett, M. P.; Piña, J.; Gogoi, A. R.; Lalisse, R. F.; Nguyen, A. V.; Gutierrez, O.; **Thomas, A. A.***, Breaking the tert-Butyllithium Contact Ion Pair: A Gateway to Alternate Selectivity in Lithiation Reactions. *J. Am. Chem. Soc.* **2023**, *145*, 10743-10755.
22. Crockett, M. P.; Aguirre, L. S.; Jimenez, L. B.; Hsu, H.-H.; **Thomas, A. A.***, Preparation of Highly Reactive Lithium Metal Dendrites for the Synthesis of Organolithium Reagents. *J. Am. Chem. Soc.* **2022**, *144*, 16631-16637.

    (Highlighted in C&EN News, Science Magazine, Spotlights in JACS)

Book Chapters and Reviews at TAMU

21. Crockett, M. P.; Aguirre, L. S.; Chen, S.-K.; Sk, M. R.; **Thomas, A. A.***, Practical Advances in the Activation and Uses of Lithium Metal in Organic Synthesis. *Sci. Synth., Knowl. Updates* **2025**, *1,* 57
20. Arriaga, D. K.; **Thomas, A. A.***, Antibiotics the easy way. Nat Synth. **2022** (News & Views)

Patents at TAMU

19. Arriaga, D. K.; **Thomas, A. A.*** Design of an LED RI-NMR System *Submitted*
18. Crockett, M. P.; Aguirre, L. S.; Jimenez, L. B.; Hsu, H.-H.; **Thomas, A. A.*** Systems and methods for preparation of highly reactive alkali metal dendrites for the synthesis of organolithium reagent. US2023-18224207. Filed July, 20th 2023
17. Litwiller, L; **Thomas, A. A.*,** Aguirre, L. S.; Ly, H. T. Phosphine-urea ligands for transition metal catalyzed cross-coupling reactions. US20240218002. Filed July, 7th 2024

Publications Prior to TAMU (Mentored)

16. Zhukhovitskiy, A.V.; Kobylianskii, I.J.; **Thomas, A.A**.; Evans, A.M.; Delaney, C.P.; Flanders, N.C.; Denmark, S.E.; Dichtel, W.R.; Toste, F.D.* A Dinuclear Mechanism Implicated in Controlled Carbene Polymerization. *J. Am. Chem. Soc.* **2019**, *141*, 6473-6478.

15. **Thomas, A.A**.; Speck, K.; Kevlishvili, I.; Lu, Z.; Liu, P.*; Buchwald, S.L.* Mechanistically Guided Design of Ligands That Significantly Improve the Efficiency of CuH-Catalyzed Hydroamination Reactions. *J. Am. Chem. Soc.* **2018**, *140*, 13976-13984.

14. **Thomas, A.A**.; Zahrt, A.F.; Delaney, C.P.; Denmark, S.E.* Elucidating the Role of the Boronic Esters in the Suzuki-Miyaura Reaction: Structural, Kinetic, and Computational Investigations. *J. Am. Chem. Soc.* **2018**, *140*, 4401-4416.

13. **Thomas, A. A.**; Denmark, S. E.* Ernest L. Eliel, a Physical Organic Chemist with the Right Tool for the Job: Rapid Injection Nuclear Magnetic Resonance. In Stereochemistry and Global Connectivity: The Legacy of Ernest Eliel; Cheng, H. N., Ed.; ACS Symposium Series; American Chemical Society: Washington, DC, 2017; Vol. 2, pp 105-134.

12. **Thomas, A.A.**; Wang, H.; Zahrt, A.F.; Denmark, S.E.* Structural, Kinetic, and Computational Characterization of the Elusive Arylpalladium(II)boronate Complexes in the Suzuki-Miyaura Reaction. *J. Am. Chem. Soc.* **2017**, *139*, 3805-3821.

11. **Thomas, A.A.**; Denmark, S.E.* Pre-transmetalation intermediates in the Suzuki-Miyaura reaction revealed: The missing link. *Science*, **2016**, *352,* 329-332.

10. Dale, J.E.; Vermeulen, N.A.; **Thomas, A.A.**; Barnes, J.C.; Juríček, M.; Blackburn, A.K.; Strutt, N.L.; Sarjeant, A.A.; Stern, C.L.; Denmark, S.E.; Stoddart, J.F.* ExCage. *J. Am. Chem. Soc.* **2014**, *136*, 10669-10682.

9. Bertz, S.H.*; Cope, S.K.; Hardin, R.A.; Murphy, M.D.; Ogle, C.A.*; Smith, D.T.; **Thomas, A.A.**; Whaley, T.N. Complexes of the Gilman Reagent with Double Bonds across the π−σ Continuum. *Organometallics.* **2012**, *31*, 7827-7838.

8. Bertz, S.H.*; Browder, K.L.; Hardin, R.A.; Murphy M.D., Ogle, C.A.*; **Thomas, A.A**. Ligand Exchange in Mixed Organocuprate(I) π-Complexes. *Organometallics.* **2012**, *31*, 7809-7811.

7. Bertz, S.H.*; Hardin, R.A., Murphy, M.D., Ogle, C.A.*, Richter, J.D., **Thomas, A.A**. Rapid Injection NMR Reveals η^3 'π−Allyl' Cu^{III} Intermediates in Addition Reactions of Organocuprate Reagents. *J. Am. Chem. Soc.* **2012**. *134*, 9557-9560.

6. Bertz, S.H.*; Hardin, H.A.; Murphy, M.D.; Ogle, C.A.*; Richter, J.D.; **Thomas, A.A**. Minimization of Organocuprate Complexity through Self-Organization: Remarkable Orientation Effect in Mixed Cuprate π Complexes. *Angew. Chem. Int. Ed.* **2012**, *51*, 2681-2685.

5. Bertz, S.H.*; Moazami, Y.; Murphy, M.D.; Ogle, C.A.*; Richter, J.D.; **Thomas, A.A**. Complexes of Gilman Reagents with C−S and C−N Double Bonds: σ or π Bonding? *J. Am. Chem. Soc*. **2010**, *132*, 9549-9551.

4. Bertz, S. H.*; Murphy, M.D.; Ogle, C.A.*; **Thomas, A.A**. Organocuprate(III) chemistry: synthesis and reactivity of amido, cyano, phosphido and thiolato ate complexes of copper(III). *Chem. Commun.* **2010**, *46*, 1255-1256.

3. Bartholomew, E.R.; Bertz, S.H.*; Cope, S.K.; Murphy, M.D.; Ogle, C.A.*; **Thomas, A.A.** Serendipity strikes again–efficient preparation of lithium tetramethylcuprate(III) via rapid injection NMR. *Chem. Commun.* **2010**, *46*, 1253-1254.

2. Monroe, T.B.; **Thomas A.A**.; Jones, D.S.*; Ogle, C.A.* Bis(2-naphthylmethyl)diphenylsilane. *Acta Cryst.* **2010**, E*66,* o132.

1. Burnham, L.E.; Kachla, R.M.; **Thomas A.A.**; Jones, D.S.*; Ogle, C.A.* Tetrakis(4-tert-butyl benzyl)silane. *Acta Cryst.* **2010**, E*66,* o2442.

Awards, Honors and Selected Service

Texas A&M University

2025 Early Career Teaching Award – College of Arts and Sciences at TAMU
2024 Welch Foundation Research Grant (A–2081–20240404)
2023 NIH-NIGMS MIRA Award (R35GM151018)
2023 ACS-PRF Doctoral New Investigator Grant (66745–DNI1)
2023 NSF-CAREER Award (CAREER–2238881)
2022 Science of Synthesis Early Career Advisory Board Elect
2021 Welch Foundation Research Grant (A–2081–20210327)
2021 Ralph E. Powe Junior Faculty Enhancement Award (ORAU)

Massachusetts Institute of Technology

2018 Kaufman Teaching Program Certificate
2017 Ruth L. Kirschstein NIH Postdoctoral Fellowship (3 years of funding)

University of Illinois at Urbana-Champaign

2018 Reaxys PhD Prize Finalist
2016 Eli Lilly Graduate Fellowship
2015 Division of Organic Chemistry ACS Travel Award
2015 R.C. Fuson Travel Award
2015 Pines Travel Award
2014 C.S. Marvel Fellowship
2013 Dr. Harold R. Snyder Fellowship
2012 Dow Chemical Fellowship

University of North Carolina at Charlotte

2010 Research Award, Carolina-Piedmont Section of the ACS
2010 McKernan Research Scholarship Award, Carolina Chemical Club
2009 Second Place, Undergraduate Research Competition at UNC–Charlotte
2008 Third Place, Undergraduate Research Competition at UNC–Charlotte

Awards and Distinguished Lectureships

2025 Amgen / MIT Lectureship, Cambridge, MA
2024 Young Investigators Award Symposium, National ACS, Denver, CO
2024 GSK / UChicago Symposium, Chicago, IL, (Inaugural / keynote)

Invited Presentations

33. Telluride Meeting on Accelerating Reaction Discovery, Telluride, CO, July 2025
32. California Institute of Technology, Pasadena, CA, May 2025
31. University of Illinois at Urbana-Champaign, Urbana, IL, April 2025
30. Scripps Research, San Diego, CA, April 2025
29. University of Texas at Austin, Austin, TX, February 2025
28. University of North Carolina at Chapel Hill, Chapel Hill, NC, February 2025
27. Cornell University, Ithaca, NY, February 2025
26. University of Michigan, Ann Arbor, MI, February 2025
25. University of Georgia, Athens, GA, February 2025

24. Emory University, Atlanta, GA, February 2025
23. Georgia Institute of Technology, Atlanta, GA, February 2025
22. Boston College, Boston, MA, January 2025
21. University of Pennsylvania, Philadelphia, PA, December 2024
20. Stanford University, Stanford, CA, November 2024
19. Cope Scholar Symposium ACS SWRM, Waco, TX, October 2024
18. University of California, Berkeley, Berkeley, CA, October 2024
17. Rice University, Houston, TX, September 2024
16. Austin College, Sherman, TX, September 2024
15. University of Kansas, Lawrence, KS, September 2024
14. Young Investigators Award Symposium National ACS, Denver, CO, August 2024
13. Texas Synthesis Conference TexSyn, College Station, TX, June 2024
12. University of California at Los Angeles, Los Angeles, CA, May 2024
11. University of California at Riverside, Riverside, CA, May 2024
10. University of North Carolina at Charlotte, Charlotte, NC, April 2024
9. Emerging Trends in Catalysis & Synthesis – IC-ETCS, Kharagpur, India, March 2024
8. Aspects of Catalysis– IACS, Kolkata, India, March, 2024
7. University of Massachusetts at Lowell, Boston, MA, February 2024
6. Catalysis and Chemical Engineering, Boston, MA, February 2024
5. Cope Scholar Symposium ACS SWRM, Oklahoma City, OK, November 2023
4. Vanderbilt University, Memphis, TN, November 2022
3. University of North Carolina at Wilmington, Wilmington, NC, October 2022
2. California Northridge, Northridge, CA, March 2022
1. Texas State University, San Marcos, TX, February 2022

Contributed Presentations (Independent)

8. Thieme Cheminar Rising Stars
7. ACS National Meeting, New Orleans, LA, March 2024
6. Organic Reactions and Processes Gordon, Bryan, RI, July 2023
5. ACS National Meeting, Indianapolis, IN, March 2023
4. ACS National Meeting, Indianapolis, IN, March 2023
3. Stereochemistry Gordon, Newport, RI, July 2022
2. FloHet, Gainesville, Fl, February 2022
1. ACS Southwest Regional Meeting, Austin, TX, October 2021

Workshops (Independent)

3. WelchX Conference – Chemical Research for Grand Challenges Houston, TX, June 2025
2. Navy 2024 Code 35 Focus Area Forum, Arlington, VA, July 2024
1. NSF Early Career Workshop, Arlington, VA, June 2022

Contributed Presentations (Mentored)

7. Merck, Rahway, NJ, October 2016
6. ACS Graduate Research Symposium, Bryn Mawr, PA, July 2016
5. University of North Carolina at Charlotte, Charlotte, NC, February 2016
4. Allerton Conference, University of Illinois at Urbana Champaign, November 2015
3. ACS National Meeting, Anaheim, CA, March 2011
2. ACS National Meeting, Boston, MA, August 2010

1. Southeast Regional Meeting ACS, San Juan, Puerto Rico, October 2009.

Teaching Experience

Texas A&M University

2026 – Spring CHEM647 Organic Spectroscopy (Graduate Level)
2025 – Fall CHEM646 Physical Organic Chemistry (Graduate Level)
2025 – Spring Teaching Release
2024 – Fall CHEM231 Organic Chemistry Lab (Undergraduate Level)
2024 – Spring CHEM647 Organic Spectroscopy (Graduate Level)
2023 – Fall CHEM227 Organic Chemistry (Undergraduate Level)
2023 – Spring CHEM647 Organic Spectroscopy (Graduate Level)
2022 – Fall CHEM610 Organic Reactions (Graduate Level)
2022 – Spring CHEM647 Organic Spectroscopy (Graduate Level)
2021 – Fall CHEM610 Organic Reactions (Graduate Level)
2021 – Spring Teaching Release
2020 – Fall CHEM610 Organic Reactions (Graduate Level)

Graduate Student Committee Service

Kaleb Reid	Sam Kempel	Lupita Aguirre
Arpan Paikar	Ashley Braaksma	Deepta Chattapadyay
Connor Allen	Danniel Arriaga	Han-Hsiang Hsu
Siddhesh Borkar	Nico Havenner	Bailey Jameson
Jeanette Piña	Evan Fox	Han-Hsiang Hsu
Shao-Jiun Yang	Achyut Gogoi	Krista Schoonover
Cassandra Youshaw	Jake Nicholson	Jacob Grygus
An Tran	Autumn Andras	Shuai Yin
Houston Smith	Seokmin Kang	Shu Kai Chen
Lauv Patel	Uddalak Sengupta	Cheng-Chun Chen
Suraj Panicker	Wentao Cen	Daniel Sarna
Macayla Guerrero		

University of Illinois at Urbana Champaign

2012 – Fall CHEM 534 Organic Synthesis Course
2012 – Spring CHEM 437 Advanced Undergraduate Organic lab
2011 – Fall CHEM 233 Elementary Undergraduate Organic lab

Research Group (Current 30 members)

Visiting Scholars (-)	**Status**	**Placement**
Seung Hoon Lee	GS- POSTECH	NA (Former)
Post-Doctoral Associates (1)	Total mentored 3	
Ravinder Kaur	August 2024	NA
Md Raja Sk	April 2023	Columbia (L. Campos)
Michael Crockett	Former	Snapdragon, MA

Graduate Students (13)	Total mentored 18	
Lupita Aguirre	Current (G5)	UCLA-PD (Summer 2025)
Danniel Arriaga	Current (G5)	UW-Madison-PD (Fall 2025)
Han-Hsiang Hsu	Current (G4)	NA
Jacob Grygus	Current (G4)	NA
Seokmin Kang	Current (G3)	NA
Cheng-Chun Chen	Current (G3)	NA
Wentao Cen	Current (G2)	NA
Benjamin Brekke	Current (G1)	NA
Chung-En Su	Current (G1)	NA
Diego Segovia	Current (G1)	NA
Kyangzi Cerquera	Current (G1)	NA
Griffen Batson	Current (G1)	NA
Nilay Patel	Current (G1)	NA
Levi Litwiller	Former (MS)	Dept. of Environmental Management Indianapolis
Leonel Jimenez	Former	Graduate Student UCSD
Jeanette Piña	Former (PhD)	SRNL (Spring 2025)

Undergraduate Students (7)	Total mentored 16	
Austin Coleman	Current	NA
Michelle Dickey	Current	NA
Leia Bowden	Current	NA
Emma Conrey	Current	NA
Fernando Ramirez	Current	NA
Austin Colman	Current	NA
Raquel Gonzalez	Current	NA
Andrew Nguyen	Former	Amgen, MA
Ryan Grove	Former	GS - TEES
Miguel Garcia	Former	Exxon Mobile, TX
Desirée Young	Former	Framergy, TX
Jonathan Cobb	Former	Unknown
Alex Sung	Former	GS – Vanderbilt
Alexis Lugo	Former	GS – Vanderbilt
Hai Ly	Former	GS – UC-Riverside
Nicole Adams	Former	Unknown

Service at Texas A&M University

Departmental Level

2023 – present	Organic Seminar Coordinator
2022	Panel Speaker for Harthcock Graduate Professional Development Symposium
2022 – present	Graduate Admissions Committee Member
2021 – present	Undergraduate Chemistry Curriculum Committee
2020 – present	NMR User Group – Initiated and wrote funded proposal to obtain new 500 MHZ NMR
2020 – present	Proactive Recruitment Operations (PROps) Committee Member

National

2023 – reviewer	National Science Foundation Review Panel
2022 – present	Secretary ACS – Texas A&M Local Section
2022	Judge US-Crystal Growing Competition
2022 – 2023	Science of Synthesis Early Career Advisory Board Member
2022 – present	Alliance for Diversity in Science and Engineering (ADSE) Faculty Advisor
2022	Co-organizer for Diversity in Science and Engineering (ADSE) TAMU Symposium
2022	Poster Judge at FloHet, Gainesville, Fl
2022	Presider ACS Southwest Regional Meeting, Austin TX, October 2021
2020 – 2021	Judge for Reaxys PhD
2015 – present	ACS PRF Reviewer; regular reviewer for multiple journals such as JACS, ACS Catalysis, NatChem etc.