

# Andy A. Thomas, PhD

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## Appointment

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

## Education

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

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

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

## Research Experience

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

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

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

## Publications at TAMU

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- Arriaga, D. K.; Thomas, A. A., Constructive Ozonolysis: Capturing Primary Ozonides. ChemRxiv [Preprint]. October 10, 2022. Available from: DOI: 10.26434/chemrxiv-2022-hs9lp
- Crockett, M. P.; Piña, J.; Nguyen, A. V., Breaking the tert-Butyllithium Contact Ion Pair. ChemRxiv [Preprint]. September 12, 2022. Available from: DOI: 10.26434/chemrxiv-2022-z6c5h
- 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.
- Arriaga, D. K.; Thomas, A. A., Antibiotics the easy way. *Nat Synth.* **2022** (News & Views)

## Publications Prior to TAMU (Mentored)

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- Zhukhovitskiy, A.V.; Kobylanski, 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.
- 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.
- 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.

- 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.
- 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.
- Thomas, A.A.; Denmark, S.E. Pre-transmetalation intermediates in the Suzuki-Miyaura reaction revealed: The missing link. *Science*, **2016**, *352*, 329-332.
- Dale, J.E.; Vermeulen, N.A.; Thomas, A.A.; Barnes, J.C.; Juriček, 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.
- 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  $\pi$ - $\sigma$  Continuum. *Organometallics*. **2012**, *31*, 7827-7838.
- Bertz, S.H.; Browder, K.L.; Hardin, R.A.; Murphy, M.D., Ogle, C.A.; Thomas, A.A. Ligand Exchange in Mixed Organocuprate(I)  $\pi$ -Complexes. *Organometallics*. **2012**, *31*, 7809-7811.
- Bertz, S.H.; Hardin, R.A., Murphy, M.D., Ogle, C.A., Richter, J.D., Thomas, A.A. Rapid Injection NMR Reveals  $\eta^3$  ' $\pi$ -Allyl'  $\text{Cu}^{\text{III}}$  Intermediates in Addition Reactions of Organocuprate Reagents. *J. Am. Chem. Soc.* **2012**, *134*, 9557-9560.
- 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  $\pi$  Complexes. *Angew. Chem. Int. Ed.* **2012**, *51*, 2681-2685.
- 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:  $\sigma$  or  $\pi$  Bonding? *J. Am. Chem. Soc.* **2010**, *132*, 9549-9551.
- 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.
- 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.
- Monroe, T.B.; Thomas A.A.; Jones, D.S.; Ogle, C.A. Bis(2-naphthylmethyl)diphenylsilane. *Acta Cryst.* **2010**, *E66*, o132.
- Burnham, L.E.; Kachla, R.M.; Thomas A.A.; Jones, D.S.; Ogle, C.A. Tetrakis(4-tert-butyl benzyl)silane. *Acta Cryst.* **2010**, *E66*, o2442.

## Awards and Honors

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### Texas A&M University

2021 Ralph E. Powe Junior Faculty Enhancement Award (ORAU)

### Massachusetts Institute of Technology

2018 Kaufman Teaching Program Certificate (MIT Teaching and Learning Laboratory)

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

## Invited Presentations

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- California Northridge, Northridge, CA, March 2022  
*Mechanistic Insights Facilitate the Development of New Bond Forming Processes*  
Thomas, A.A.

- Texas State University, San Marcos, TX, February 2022  
*Mechanistic Insights Facilitate the Development of New Bond Forming Processes*  
Thomas, A.A.

## Presentations

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- Stereochemistry Gordon, Newport, RI, July 2022  
*Exploring New Avenues for Organolithium Reagents*  
Thomas, A.A.
- FloHet, Gainesville, FL, February 2022  
*Exploring New Avenues for Organolithium Reagents*  
Thomas, A.A.
- ACS National Meeting, Atlanta, GA, August 2021  
*Exploring New Avenues for Organolithium Reagents*  
Thomas, A.A.
- ACS Southwest Regional Meeting, Austin, TX, October 2021  
*Exploring New Avenues for Organolithium Reagents*  
Thomas, A.A.

## Teaching

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### *Texas A&M University*

2020-FALL	CHEM610 Organic Reactions (Graduate Level)
2021-FALL	CHEM610 Organic Reactions (Graduate Level)
2022-Spring	CHEM647 Organic Spectroscopy (Graduate Level)
2022-Fall	CHEM610 Organic Reactions (Graduate Level)