

## CURRICULUM VITAE

### NIKLAS B. THOMPSON

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#### INSTITUTIONAL CONTACT

Massachusetts Institute of Technology  
Department of Chemistry  
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Cambridge, MA 02139

#### ADDITIONAL CONTACT

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#### EDUCATION

##### **California Institute of Technology**, Pasadena, CA

Ph.D. in Chemistry, June, 2018  
Cumulative GPA: 4.10/4.00

##### **University of Chicago**, Chicago, IL

B.S. in Chemistry with Honors, June 2013  
Cumulative GPA: 3.97/4.00

##### **University of Chicago**, Chicago, IL

B.S. in Mathematics, June 2013  
Cumulative GPA: 3.97/4.00

#### RESEARCH EXPERIENCE

##### **Postdoctoral Fellow**, Massachusetts Institute of Technology, August 2018–Present

Advisor: Professor Daniel L. M. Suess, Department of Chemistry

##### **Graduate Research**, California Institute of Technology, November 2013–June 2018

Advisor: Professor Jonas C. Peters, Division of Chemistry and Chemical Engineering

Thesis: *A Synthetic Nitrogenase: Insights into the Mechanism of Nitrogen Fixation by a Single-Site Fe Catalyst*

##### **Undergraduate Research**, University of Chicago, June 2011–June 2013

Advisor: Professor Gregory L. Hillhouse, Department of Chemistry

Honors Thesis: *The Coordination Chemistry of Pd with an Extremely Bulky N-Heterocyclic Carbene*

#### PROFESSIONAL AND ACADEMIC HONORS

Selected Lecturer for the Gray-Hill Chemistry Seminar Series (2017)

Grand Prize, Dow Sustainability Innovation Student Challenge Award (2015)

Dow-Resnick Graduate Fellowship (2014–17)

California Institute of Technology Graduate Fellowship (2013–14)

NSF GRFP Honorable Mention (2013, 2014, 2015)

Francis E. Knock Prize for Outstanding Academic Achievement in Chemistry (2013)

Phi Beta Kappa (Elected 2012)

Goldwater Scholar (2012)

Sigma Xi Grant-in-Aid of Research (2012)

University of Chicago Dept. of Chemistry Fellowship for Summer Research (2010, 2011, 2012)

University of Chicago Dean's List (2009–10, 2010–11, 2011–12, 2012–13)

#### TEACHING EXPERIENCE

Teaching Assistant, Ch. 153b, "Advanced Inorganic Chemistry".

California Institute of Technology, Spring, 2017.

Teaching Assistant, Ch. 154a, "Organometallic Chemistry".

California Institute of Technology, Winter, 2015.

## CURRICULUM VITAE

### PUBLICATIONS

1. Mengshan, Y.; Thompson, N. B.; Brown, A. C.; Suess, D. L. M. A Synthetic Model of Enzymatic  $[\text{Fe}_4\text{S}_4]$ -Alkyl Intermediates. *Submitted*.
2. Nance, P. J.; Thompson, N. B.; Oyala, P. H.; Peters, J. C. Zerovalent Rhodium and Iridium Silatranes Featuring Two-Center, Three-Electron Polar  $\sigma$  Bonds. *Angew. Chem. Int. Ed.* **2019**, *58*, 6220–6224.
3. Thompson, N. B.; Oyala, P. H.; Dong, H. T.; Chalkley, M. J.; Zhao, J.; Alp, E. E.; Hu, M.; Lehnert, N.; Peters, J. C. The Electronic Structures of a  $[\text{Fe}(\text{NNR}_2)]^{1+/0/1-}$  Redox Series: Ligand Non-Innocence and Implications for Catalytic Nitrogen Fixation. *Inorg. Chem.* **2019**, *58*, 3535–3549.
4. Hunter, B. M.; Thompson, N. B.; Müller, A. M.; Rossman, G. R.; Hill, M. G.; Winkler, J. R.; Gray, H. B. Trapping an Iron(VI) Water-Splitting Intermediate in Nonaqueous Media. *Joule* **2018**, *2*, 747–763. (Paper highlighted here: *Chem.* **2018**, *4*, 668–670.)
5. Chang, A. B.; Lin, T.-P.; Thompson, N. B.; Luo, S.-X.; Liberman-Martin, A. L.; Chen, H.-Y.; Lee, B.; Grubbs, R. H. Design, Synthesis, and Self-Assembly of Polymers with Tailored Graft Distributions *J. Am. Chem. Soc.* **2017**, *139*, 17683–17693.
6. Thompson, N. B.; Green, M. T.; Peters, J. C. Nitrogen Fixation via a Terminal Fe(IV) Nitride. *J. Am. Chem. Soc.* **2017**, *139*, 15312–15315. (Paper selected for a JACS Spotlight: *J. Am. Chem. Soc.* **2017**, *139*, 16023.)
7. de Ruiter, G.; Carsch, K. M.; Gul, S.; Chatterjee, R.; Thompson, N. B.; Takase, M. K.; Yano, J.; Agapie, T. Accelerated Oxygen Atom Transfer and C–H Bond Oxygenation by Remote Redox Changes in  $\text{Fe}_3\text{Mn}$ -Iodosobenzene Adducts. *Angew. Chem. Int. Ed.* **2017**, *56*, 4772–4776.
8. Del Castillo, T. J.<sup>†</sup>; Thompson, N. B.<sup>†</sup>; Peters, J. C. A Synthetic Single-Site Fe Nitrogenase: High Turnover, Freeze-Quench  $^{57}\text{Fe}$  Mössbauer Data, and a Hydride Resting State. *J. Am. Chem. Soc.* **2016**, *138*, 5341–5350. (Paper selected for a JACS Spotlight: *J. Am. Chem. Soc.* **2016**, *138*, 5171.)
9. de Ruiter, G.; Thompson, N. B.; Takase, M. K.; Agapie, T. Intramolecular CH and CF Bond Oxygenation Mediated by a Putative Terminal Oxo Species in Tetranuclear Iron Complexes. *J. Am. Chem. Soc.* **2016**, *138*, 1486–1489.
10. de Ruiter, G.; Thompson, N. B.; Lionetti, D.; Agapie, T. Nitric Oxide Activation by Distal Redox Modulation in Tetranuclear Iron Nitrosyl Complexes. *J. Am. Chem. Soc.* **2015**, *137*, 14094–14106.
11. Del Castillo, T. J.; Thompson, N. B.; Suess, D. L. M.; Ung, G.; Peters, J. C. Evaluating Molecular Cobalt Complexes for the Conversion of  $\text{N}_2$  to  $\text{NH}_3$ . *Inorg. Chem.* **2015**, *54*, 9256–9262.

<sup>†</sup> Denotes equal contribution.

## CURRICULUM VITAE

### PRESENTATIONS

1. *Nitrogen Fixation via an Fe(IV) Nitride: The Mechanism of N–N Bond Cleavage*. Talk presented at the SoCal Bioinorganic Meeting, UC Irvine, Irvine, California, December 2, 2017.
2. *Cleaving the Strongest Bond in Nature: Nitrogen Fixation with Iron Catalysis*. Invited talk presented at the Gray-Hill Chemistry Seminar Series, Occidental College, Los Angeles, California, June 22, 2017.
3. *The mechanism of N≡N bond cleavage in a phosphine-supported Fe-N<sub>2</sub> complex*. Talk presented at the SoCal Organometallics Meeting XVII, UCLA, Los Angeles, California, December 4, 2016.
4. Thompson, N. B.; Creutz, S. E.; Matson, B. D.; Peters, J. C. *Design Principles for Synthetic Single-Site Fe and Co Nitrogenases*. Poster presented at the Metallocofactors Gordon Research Conference, Stonehill College, Massachusetts, June 12–17, 2016.
5. Thompson, N. B.<sup>†</sup>; Del Castillo, T. J.<sup>†</sup>; Peters, J. C. *New Insights into the Catalytic Reduction of N<sub>2</sub> by Fe Model Complexes*. Poster presented at the 19th International Congress on Nitrogen Fixation, Pacific Grove, California, October 4–9, 2015.