

Jingzhe Cao

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Education

Princeton University, Princeton NJ

Anticipated Graduation: May 2023

- Ph.D in Chemistry, *Research Advisor*: Todd Hyster

Cornell University, Ithaca NY

Nondegree Scholar

- *Research Advisor*: Todd Hyster

Princeton University, Princeton NJ

Sept 2018 – May 2020

- Master of Science in Chemistry, *Research Advisor*: Todd Hyster

Boston University, Boston MA

Sept 2014 – May 2018

- B.A. cum laude with honors in Chemistry: Biochemistry
- Minor: Computer Science
- *Research Advisor*: James Panek, Tom Tullius

Publications

Princeton University

4) “An Photoenzymatic Asymmetric Reductive sp^3 – sp^3 Cross-Electrophile Couplings” Haigen Fu.; **Jingzhe Cao.**; Tianzhang Qiao.; Yuyin Qi.; Simon J. Charnock.; Samuel Garfinkle.; Todd K. Hyster. *Manuscript under revision. ChemRxiv (2022)*. Targeted Journal: *Nature*.

- In collaboration with *Prozomix*.

3) “Using Enzymes to Tame Nitrogen-Centered Radicals for Enantioselective Hydroamination” Yuxuan Ye.; **Jingzhe Cao.**; Daniel G. Oblinsky.; Deeptak Verma.; Christopher K. Prier.; Gregory D. Scholes.; Todd K. Hyster. *Nature Chemistry*. **2022**, Accepted.

- In collaboration with *Merck&Co*.

2) “Pyridoxal-Catalyzed Racemization of α -Aminoketones Enables the Stereodivergent Synthesis of 1,2-Amino Alcohols Using Ketoreductases” **Jingzhe Cao.**; Todd K. Hyster. *ACS Catal.* **2020**, *10*, *11*, 6171–6175.

Boston University

1) “Adopted daughters and adopted daughters-in-law in Taiwan: a mortality analysis” Edmond Seabright.; Adam Z. Reynolds.; **Jingzhe Cao.**; Melissa J. Brown.; Marcus W. Feldman.; Siobhán M. Mattison. *R. Soc. Open sci.* **2018**, *5*, 171745.

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Fellowship and Awards

Edward C. Taylor Graduate Fellowship in Chemistry	2020
Princeton University Chemistry Department First Year Fellowship	2018
Boston University College of Arts&Science Dean's list	2016
Boston University Undergraduate Research Opportunity Program (UROP) Stipend Award	2015

Scientific Research Experiences:

Princeton University, Cornell University

Graduate Research Assistant (Advisor: Prof. Todd K. Hyster)

Development and application of keto-reductase enzyme and pyridoxal racemization for dynamic kinetic resolution enables synthesis of 1,2-aminoalcohols. Intermolecular and intramolecular asymmetric radical hydroamination catalyzed via ene-reductase and photocatalyst. Photoenzymatic asymmetric reductive sp^3-sp^3 cross-electrophile couplings

Boston University

Undergraduate Research Assistant (Advisor: Prof. James Panek)

Application and convergent synthesis of novel muramyl dipeptide (MDP) analogues and chiral allenylsilane with Titanium Alkoxide-Mediated Reductive Coupling Bond Construction

Undergraduate Research Assistant (Advisor: Prof. Tom Tullius)

Application of hydroxyl radical foot printing investigated the connection between structural properties of DNA and genomics, including evolutionary selection for DNA structure in the human genome.

Undergraduate Research Assistant (Advisor: Prof. Siobhan M. Mattison)

Computational analysis for comparing characteristics among natal and adoptive household in the context of minor marriage in historical Taiwan.

Teaching Experience:

Princeton University , Graduate Teaching Assistant	Sept – Dec 2019
Teaching Assistant for CHM 301: Organic Chemistry I: Biological Emphasis Laboratory	
Princeton University , Graduate Teaching Assistant	Jan – May 2020
Teaching Assistant for CHM 302: Organic Chemistry II: Biological Emphasis Laboratory	

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Affiliations

Bioinspired Light-Escalated Chemistry (BioLec) Energy Frontier Research Center (EFRC) Jan 2022 – present
American Chemical Society (ACS) Jan 2022 – present

Presentations

- 3) “A Photoenzymatic Platform for Taming Nitrogen-Centered Radicals” Graduate Postdoctoral Seminar – Ithaca, NY 2021
- 2) “Dynamic Kinetic Resolution of α -Aminoketones Mediated by Pyridoxal-5-phosphate” Eli -Lilly Edward C. Taylor Third Year Seminar – Princeton, NJ 2021
- 1) “Adopted daughters and adopted daughters-in-law in Taiwan: a mortality analysis” Boston University Undergraduate Research Opportunity Program (UROP) Symposium – Boston, MA 2017