

# Megan M. Korn

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## EDUCATION

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### University of Michigan

*Chemistry PhD Student*

GPA: 4.0/4.0

**Relevant Courses:** Chemical Biology I, Methods in Biophysics

**Ann Arbor, MI**

Aug. 2020 – Present

### Emory University

*Chemistry Bachelor of Science, Summa Cum Laude and Mathematics Minor*

Thesis Advisor: Prof. Jennifer Heemstra

Thesis Title: Synthesis of a Click-Compatible Phenylacrylamide to Probe A-to-I RNA Editing

GPA: 3.878/4.0

**Relevant Courses:** Introduction to Ecology with Lab, Ecology of Invasions, Earth Systems Science, Field Botany with Lab, Organic Chemistry I & II with Lab, Biochemistry, Physical Chemistry I & II with Lab, Analytical Chemistry with Lab, Inorganic Chemistry, Ordinary & Partial Differential Equations, Linear Algebra, and Multivariable Calculus

**Atlanta, GA**

Aug. 2016 – May 2020

### Lehigh University

**Relevant Courses:** Calculus-Based Physics I & II with Lab

**Bethlehem, PA**

May 2017 – Aug. 2017

## RESEARCH EXPERIENCE

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### Impact of Pseudouridine Synthases on Translational Gene Regulation in *S. cerevisiae*

*Koutmou Lab, University of Michigan*

**Ann Arbor, MI**

Sep. 2020 – Dec. 2020

- Designed spot plating and growth curve experiments to probe growth phenotypes of *S. cerevisiae* under various stress conditions
- Prepared *S. cerevisiae* samples for ribosome profiling experiments
- Obtained skills in media and agar plate preparation, inoculation of *S. cerevisiae*, spot plating, growth curve analysis, and harvesting and lysis of yeast cells
- Presented findings in formalized talks during groups meetings

### Acrylamide and Carbodiimide Derivatives for Chemical Profiling of the Epitranscriptome

*Heemstra Lab, Emory University*

**Atlanta, GA**

Aug. 2018 – Apr. 2020

- Designed and conducted organic syntheses of an acrylamide derivative and carbodiimide derivatives for inosine base and pseudouridine base labeling for a click-compatible system
- Obtained skills in gel electrophoresis, nanodrop, gel imaging, and ethanol precipitation of oligonucleotides
- Characterized small molecules using NMR and mass spectrometry
- Presented findings in formalized talks during group meetings
- Designed and presented a poster of the project for the CHEM 499RW course
- Compiled findings into an honors thesis and publicly defended the work

### Summer Undergraduate Research at Emory (SURE) Fellow

*Heemstra Lab, Emory University*

**Atlanta, GA**

May 2019 – Aug. 2019

- Selected from a highly competitive field of applicants
- Designed an independent research project and presented findings at a research symposium
- Participated in weekly professional development and research ethics seminars

### Synthesis of Threose Nucleic Acid Monomers

*Heemstra Lab, Emory University*

**Atlanta, GA**

Jan. 2018 – Feb. 2019

- Conducted complete organic synthesis of adenine phosphoramidite monomer; obtained skills of column chromatography, NMR spectroscopy, mass spectrometry, prep-TLC chromatography
- Presented findings in formalized talks during group meetings

## PRESENTATIONS

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Megan Korn, Steve Knutson, and Jennifer Heemstra. Acrylamide and Carbodiimide Derivatives for Chemical Profiling of the Epitranscriptome. Gordon Research Conference, Nucleosides, Nucleotides, and Oligonucleotides. Salve Regina University, RI, June 22<sup>nd</sup>-28<sup>th</sup>, 2019. (*Poster Presentation*)

Megan Korn, Steve Knutson, and Jennifer Heemstra. Acrylamide and Carbodiimide Derivatives for Chemical Profiling of the Epitranscriptome. SURE Research Symposium. Emory University, GA, August 1<sup>st</sup>, 2019. (*Poster Presentation*)

## PUBLICATIONS

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Knutson, S. D., Sanford, A. A., Swenson, C. S., **Korn, M. M.**, Manuel, B. A., & Heemstra, J. M. (2020). Thermoreversible Control of Nucleic Acid Structure and Function with Glyoxal Caging. *Journal of the American Chemical Society*, jacs.0c08996. <https://doi.org/10.1021/jacs.0c08996>

Knutson, S. D., **Korn, M. M.**, Johnson, R. P., Monteleone, L. R., Dailey, D. M., Swenson, C. S., ... Heemstra, J. M. (2020). Chemical Profiling of A-to-I RNA Editing Using a Click-Compatible Phenylacrylamide. *Chemistry – A European Journal*, 26(44), 9874–9878. <https://doi.org/10.1002/chem.202001667>

## AWARDS

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- Undergraduate Research Program Conference Travel Grant, Emory University Jun. 2019
- Dean's List, Emory University May 2017 & May 2018

## LEADERSHIP & TEACHING EXPERIENCE

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**Investigations in Chemistry (Organic Chemistry I Lab), Graduate Student Instructor** **Ann Arbor, MI**  
Aug. 2020 – Dec. 2020

- Taught two sections of an in-person lab during a hybrid-teaching semester, overseeing the work of 35 undergraduate students
- Responsibilities included grading assignments, creating rubrics, holding virtual office hours, 1-on-1 meetings with students, guiding 3-hour lab experiments, and grading organic chemistry midterm exams
- Managed a diverse group of students during a COVID-19 hybrid semester and helped students adapt to changing lab circumstances and an unprecedented virtual completion of the course

**Emory Running Club, Co-President** **Atlanta, GA**  
Aug. 2018 – Apr. 2020

- Organized and led group runs four times a week, culminating in four off-campus races per semester
- Improved club-wide communication for 140 members
- Developed relationships with Atlanta Track Club, Big Peach Running Stores, and Fleet Feet Running Stores
- Organized and conducted an on-campus race that benefitted the Best Buddies club—an organization that seeks to improve the lives of those living with intellectual and developmental disabilities

**Organic Chemistry I & II Studio Session, Session Leader** **Atlanta, GA**  
Sep. 2017 – May 2018

- Met once a month with 10 organic chemistry students to lead them through problem sets, including mechanisms, synthesis, and kinetics questions
- Fielded questions and reviewed in-class material
- Developed and fostered a collaborative learning environment by allowing students to drive the topics of each session

## ADDITIONAL INFORMATION

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**Skills:** German (Intermediate), Basic website design, Basic podcasting, Proficiency in Audacity, Proficiency in Tableau, Proficiency in MATLAB, ImageJ, and PyMOL, Basic skills in R and Chimera.

**Interests:** Long-distance running, Hiking, Backpacking, Birding, Botany