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Tahoe Andrew Fiala

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Education

Bachelor of Science, Chemistry — Aug. 2015 — May 2019
University of California, Berkeley, College of Chemistry
GPA 3.615 with Honors in Research

Fulbright Research Fellowship — Sept. 2019 — July 2020

Leibniz Research Institute for Molecular Pharmacology under **Dr. Leif Schröder**
Project: *Hyper-CEST Spectroscopy and Imaging of Functionalized Xenon-129 Host Guest Systems*
—> Used home-built Xenon gas polarizer to take NMR/MRI of CB[n] systems

Research Experience at UC Berkeley in Professor Matthew B. Francis' Lab

Publications

- (1) Klass, S. H.; Truxal, A. E.; **Fiala, T. A.**; Kelly, J.; Nguyen, D.; Finbloom, J. A.; Wemmer, D. E.; Pines, A.; Francis, M. B. Rotaxane Probes for the Detection of Hydrogen Peroxide by 129Xe HyperCEST NMR Spectroscopy., *Angew. Chem. Int. Ed.,* **2019**, 58 (29), 9948–9953. https://doi.org/10.1002/anie.201903045.
- (2) Klass, S. H.; Smith, M. J.; **Fiala, T. A.**; Lee, J. P.; Omole, A. O.; Han, B.-G.; Downing, K. H.; Kumar, S.; Francis, M. B. Self-Assembling Micelles Based on an Intrinsically Disordered Protein Domain., *J. A. C. S.*, **2019**, 141 (10), 4291–4299. https://doi.org/10.1021/jacs.8b10688.

Undergraduate Research with **Sarah Klass** — Apr. 2017 — May 2019

- Used sterile and recombinant DNA tech. to create new plasmids for expression and purification of novel proteins
- Characterized proteins with LC-MS/TOF, UV-Vis spectroscopy, and dynamic light scattering (DLS)
- Used Transmission Electron Microscopy (TEM) and Uranyl Acetate Stain to visualize individual particles
- Small molecule synthesis of mechanically interlocking CB[6]-rotaxane
- Computational modeling of threading the supramolecular rotaxane using Schrödinger's Maestro
- Purification through liquid-liquid extraction, recrystallization, column chromatography, and HPLC
- Characterization through ^{1}H, ^{13}C NMR, LC-MS, & MALDI

Undergraduate Research with **Emily Hartman** — Aug. 2016 — Dec. 2016

- Evaluation of point mutations on the phenotype of virus like particles MS2, Prr1, Fr, Qbeta, and GA Bacteriophage

Teaching Experience

Chem. 3A/L Teaching Assistant under **Dr. Peter Marsden** — June 2019 — Aug. 2019

- Laboratory instructor, 1st semester organic chemistry for non-majors
- Full teaching responsibilities of a Graduate Student including grading and proctoring

Chem. 12A/B Chemistry Scholar under **Prof. Anne Baranger** and **Prof. Felix Fischer** — Aug. 2018 — May 2019

- Undergraduate student instructor for advanced organic chemistry for majors
- Led three hours of supplementary discussion and held office hours each week
- Designed weekly quizzes and review materials
- Encouraged the retention of underrepresented student groups

Chem. 3A/L Teaching Assistant under **Prof. Steven Pedersen** — June 2018 — Aug. 2018

- Laboratory instructor, 1st semester organic chemistry for non-majors

Chem. 12A Teacher-Scholar under **Prof. Anne Baranger** — Aug. 2017 — Dec. 2017

- Assistant laboratory instructor, 1st semester organic chemistry for majors
- Acted as group leader during weekly pedagogical seminars
- Held weekly office hours through Peer Advising Program

Chem. 3B/L Teaching Assistant under **Dr. Peter Marsden** — June 2017 — Aug. 2017

- Laboratory instructor, 2nd semester organic chemistry for non-majors

Chem. 4A Teacher-Scholar — Aug. 2016 — Dec. 2016

- Assistant laboratory instructor, general chemistry for majors.

Odyssey Learning Company STEM Tutor — *Fresno, CA* — June 2015 — Aug. 2016

- Tutored Middle and Elementary school students in Algebra, English, and the SAT

Presentations

Saegebarth Undergraduate Research Fair — The College of Chemistry's Annual Poster Presentation
"Engineering Self-assembling Instrinsically Disordered Proteins" — April 26th, 2019
"Rotaxane Probes for Small Molecule Detection Via ^{129}Xe hyperCEST NMR" — April 20th, 2018

Awards and Scholarships

The Stanley G. Thompson Memorial Scholarship Fund — Summer 2018 & 2017
Berkeley Leadership Award by the Berkeley Alumni Association — For 2015 — 2016
Cold War Veterans Scholarship by the Marines' Memorial Association — For 2015 — 2016

Affiliations

Alpha Chi Sigma, Sigma Chapter, *The Professional Chemistry Fraternity* — Jan. 2017 — Present
College of Chemistry Peer Student Services — Aug. 2017 — Present
American Chemical Society — Aug. 2016 — Present
Residential Hall Association — *Elected President* — Aug. 2015 — May 2016

Language Familiarity

German — 4 years in high school, 1 year abroad; Japanese — 1 year in college; Python — basic knowledge