

Jerome M. Fox  
Associate Professor  
Department of Chemical and Biological Engineering  
University of Colorado, Boulder

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**Education**

- Harvard University 2013-2015  
Postdoctoral Fellow, Department of Chemistry and Chemical Biology
- University of California, Berkeley 2012  
Ph.D., Chemical Engineering
- Johns Hopkins University 2007  
B.S., Environmental Engineering (with honors)  
2<sup>nd</sup> Major: Natural Science (concentration in chemistry)  
Minor: Mathematics

**Research and Professional Experience**

- Associate Professor, University of Colorado, Boulder 2023-pres.  
Department of Chemical and Biological Engineering
- Assistant Professor, University of Colorado, Boulder 2016-2023  
Department of Chemical and Biological Engineering
- Postdoctoral Fellow, Harvard University 2013-2015  
Department of Chemistry and Chemical Biology  
Advisor: George Whitesides
- Ph.D. Student, University of California, Berkeley 2007-2012  
Department of Chemical and Biomolecular Engineering  
Advisors: Doug Clark and Harvey Blanch

**Honors and Awards**

- Presidential Early Career Awards for Scientists and Engineers (PECASE) 2025
- Senior Member, National Academy of Inventors 2024
- Dean's Performance Award – Teaching (awarded to one faculty each year 2023  
based on nominations across the College of Engineering and Applied Science)
- Outstanding Undergraduate Teaching Faculty Award, Department of Chemical 2020, 2022  
and Biological Engineering, CU Boulder (awarded by student vote)
- National Institutes of Health Maximizing Investigators' Research Award (MIRA) 2021
- Army Early Career Award for Scientists and Engineers (ECASE) 2018  
PECASE nomination pending (2018-pres.)
- Army Research Office Young Investigator Award 2018
- National Science Foundation CAREER Award 2018
- NSF Graduate Fellow 2008-2011
- Lucien Brush Award: Excellence in Environmental Engineering, Johns Hopkins 2007
- Certificate in the Arts (theater), Johns Hopkins University 2007
- Tau Beta Pi, Engineering Honor Society 2006
- Vredenburg Scholar, University of Sydney, Australia 2006

**Key for Publications:** \*, corresponding author; #, postdoctoral trainee in Fox Lab; †, graduate trainee in Fox Lab; ‡, undergraduate trainee in Fox Lab

### **Publications (CU Boulder) – Submitted**

- Andrzejewski SJ<sup>†</sup>, Friedman AJ, Mains K<sup>†</sup>, Thompson A<sup>†</sup>, Sankaran B, Shirts MR, and **Fox JM\*** (2025). Protein-protein interfacial stability controls substrate specificity in a  $\beta$ -ketoacyl-ACP reductase specific for medium chains. *Submitted*.
- Donovan G<sup>†</sup>, O'Connor N, Moravek AM, ‡Fox M, Markley AL, Foderaro T, Kralj J, and **Fox JM\*** (2025). Genetically encoded biosensors report on more than just their target analytes. *Submitted*.
- Hren AP<sup>†</sup>, Alexander WG, Abraham JP, Tumen-Velasquez MP, Vergara MM, Guss AM, Pfleger BF\*, **Fox JM\***, Eckert CA\* (2025). Harnessing the methylome of *Synechococcus* sp. PCC 7002 to improve transformation efficiency. *Submitted*.

### **Publications (CU Boulder)**

- Hren AP<sup>†</sup>, Lollini N<sup>‡</sup>, Carper DL, Abraham PE, Cameron JC, **Fox JM\***, Eckert C.\* (2025). High-density CRISPRi screens reveal diverse routes to improved acclimation in cyanobacteria. *Proceedings of the National Academy of Sciences*, 122 (12), e2412625122.
- Friedman AJ, Padgett HM, Kramer L<sup>#</sup>, Liechty ET<sup>†</sup>, Donovan GW<sup>†</sup>, **Fox JM\***, and Shirts MR\* (2023). A biophysical rationale for the selective inhibition of PTP1B over TCPTP by nonpolar terpenoids. *Journal of Physical Chemistry B*, 127 (39), 8305–8316.
- Liechty ET<sup>†</sup>, Hren A<sup>†</sup>, Kramer L<sup>#</sup>, Donovan G<sup>†</sup>, Friedman A, Shirts MR, and **Fox JM\*** (2023). Analysis of Neutral Mutational Drift in an Allosteric Enzyme. *Protein Science*, 32 (8), e4719.
- Mains K<sup>†</sup> and **Fox JM\*** (2023). Ketosynthase Mutants Enable Short-Chain Fatty Acid Biosynthesis in *E. coli*. *Metabolic Engineering*, 77, 118–127.
- Kramer L<sup>#</sup>, Sarkar A<sup>†</sup>, Foderaro T, Markley A, Lee J, Edstrom H<sup>†</sup>, Gill E<sup>‡</sup>, Traylor M, and **Fox JM\*** (2023). Genetically Encoded Detection of Biosynthetic Protease Inhibitors. *ACS Synthetic Biology*, 12 (1), 83–94.
- Friedman AJ, Liechty ET<sup>†</sup>, Kramer L<sup>#</sup>, Sarkar A<sup>†</sup>, **Fox JM\***, and Shirts MR\* (2022). Allosteric inhibition of PTP1B by a nonpolar terpene. *Journal of Physical Chemistry B*, 126 (42), 8427–8438.
- Peoples J<sup>‡</sup>, Ruppe S<sup>†</sup>, Mains K<sup>†</sup>, and **Fox JM\*** (2022). A Kinetic Framework for Modeling Oleochemical Biosynthesis in *E. coli*. *Biotechnology and Bioengineering*, 119 (11), 3149–3161.
- Sarkar A<sup>†</sup>, Foderaro T, Kramer L<sup>#</sup>, Markley AL, Lee J, Traylor MJ, and **Fox JM\*** (2022). Evolution-Guided Biosynthesis of Terpene Inhibitors. *ACS Synthetic Biology*, 11(9), 3015–3027.
- Mains KM<sup>†</sup>, Peoples J<sup>‡</sup>, and **Fox JM\*** (2022). Kinetically Guided, Ratiometric Tuning of Fatty Acid Biosynthesis. *Metabolic Engineering*, 69, 209–220.
- Hongdusit A<sup>†</sup>, Liechty ET<sup>†</sup>, and **Fox JM\*** (2022). Analysis of Three Architectures for Controlling PTP1B with Light. *ACS Synthetic Biology*, 11 (1), 61–68.

- Sarkar A<sup>†</sup>, Kim EY<sup>#</sup>, Jang T, Hongdusit A<sup>†</sup>, Kim H, Choi JM, and **Fox JM**<sup>\*</sup> (2021). Microbially guided discovery and biosynthesis of biologically active natural products. *ACS Synthetic Biology*, 10 (6), 1505-1519.
- Hongdusit A<sup>†</sup> and **Fox JM**<sup>\*</sup> (2021). Optogenetic Analysis of Allosteric Control in Protein Tyrosine Phosphatases. *Biochemistry*, 60 (4), 254-258.
- Ruppe A<sup>†</sup>, Mains K<sup>†</sup>, and **Fox JM**<sup>\*</sup> (2020). A Kinetic Rationale for Functional Redundancy in Fatty Acid Biosynthesis. *Proceedings of the National Academy of Sciences*, 117 (38), 23557-23564
- Hongdusit A<sup>†</sup>, Liechty ET<sup>†</sup>, and **Fox JM**<sup>\*</sup> (2020). Optogenetic interrogation and control of cell signaling. *Current Opinion in Biotechnology*, 66, 195-206.
- Hongdusit A<sup>†</sup>, Zwart PH, Sankaran B, and **Fox JM**<sup>\*</sup> (2020). Minimally Disruptive Optical Control of Protein Tyrosine Phosphatase 1B. *Nature Communications*, 11 (1), 1-11.
- Ruppe A<sup>†</sup> and **Fox JM**<sup>\*</sup> (2018). Analysis of Interdependent Kinetic Controls of Fatty Acid Synthases. *ACS Catalysis*, 8, 11722-11734.
- Hjortness MK<sup>†</sup>, Riccardi L, Hongdusit A<sup>†</sup>, Zwart PH, Sankaran B, De Vivo M, and **Fox JM**<sup>\*</sup> (2018). Evolutionarily Conserved Allosteric Communication in Protein Tyrosine Phosphatases. *Biochemistry*, 57 (45), 6443-6451.
- Hjortness MK<sup>†</sup>, Riccardi L, Hongdusit A<sup>†</sup>, Ruppe A<sup>†</sup>, Zhao M, Kim EY<sup>#</sup>, Zwart P, Sankaran B, Arthanari H, Sousa MC, De Vivo M, and **Fox JM**<sup>\*</sup> (2018). Abietane-Type Diterpenoids Inhibit Protein Tyrosine Phosphatases by Stabilizing an Inactive Enzyme Conformation. *Biochemistry*, 57 (40), 5886-5896.
- **Fox JM**, Zhao M., Fink MJ, Kang K, and Whitesides GM (2018). The Molecular Origin of Enthalpy/Entropy Compensation in Biomolecular Recognition. *Annual Review of Biophysics*, 47 (1). Note: This journal does not designate correspond authors.

#### **Publications (Berkeley and Harvard)**

- **Fox JM**, Kang K, Sastry, M, Sherman W, Sankaran B, Zwart P, and Whitesides GM<sup>\*</sup> (2017). Water-Restructuring Mutations Can Reverse the Thermodynamic Signature of Ligand Binding to Human Carbonic Anhydrase. *Angewandte Chemie International Edition*, 56 (14), 3833-3837.
- Semenov SN, Kraft LJ, Ainla A, Zhao M, Baghbanzadeh M, Campbell VE, Kang K, **Fox JM**, and Whitesides GM<sup>\*</sup> (2016). Autocatalytic, Bistable, Oscillatory Networks of Biologically Relevant Organic Reactions. *Nature*, 537 (7622), 656-660.
- Kang K, Choi J-M, **Fox JM**, Snyder PW, Moustakas DT, and Whitesides GM<sup>\*</sup> (2016). Acetylation of Surface Lysine Groups of a Protein Alters the Organization and Composition of Its Crystal Contacts. *Journal of Physical Chemistry B*, 120 (27), 6461-6468.
- **Fox JM**, Kang K, Lockett MR, Baghbanzadeh M, Sherman W, Héroux A, Sastry M, Whitesides GM<sup>\*</sup> (2015). Interactions between Hofmeister Anions and the Binding Pocket of a Protein. *Journal of the American Chemical Society*, 137 (11), 3859-3866.
- **Fox JM** and Whitesides GM<sup>\*</sup> (2015). Warning Signals for Eruptive Events in Spreading Fires. *Proceedings of the National Academy of Sciences*, 112 (8), 2378-2383.

- Nemiroski A, Gonidec M, **Fox JM**, Jean-Remy P, Turnage E, and Whitesides GM\* (2014). Engineering Shadows to Fabricate Optical Metasurfaces. *ACS Nano*, 8 (11), 11061-11070.
- **Fox JM**, Jess P, Jambusaria RB, Moo GM, Liphardt J\*, Clark DS\*, Blanch HW\* (2013). A Single-Molecule Analysis Reveals Morphological Targets for Cellulase Synergy. *Nature Chemical Biology*, 9 (6), 356-61.
- **Fox JM**, Levine SE, Blanch HW\*, and Clark DS\* (2012). An Evaluation of Cellulose Saccharification and Fermentation with an Engineered *Saccharomyces cerevisiae* Capable of Cellobiose and Xylose Utilization. *Biotechnology Journal*, 7 (3), 351-373.
- **Fox JM**, Levine SE, Clark DS\*, and Blanch HW\* (2012). Initial- and Processive-Cut Products Reveal Cellobiohydrolase Rate Limitations and Role of Companion Enzymes. *Biochemistry*, 51 (1), 442-452.
- Levine SE, **Fox JM**, Clark DS\*, and Blanch HW\* (2011). A Mechanistic Model for the Rational Design of Optimal Cellulase Mixtures. *Biotechnology and Bioengineering*, 108 (11), 2561-2570.
- Levine SE, **Fox JM**, Blanch HW\*, and Clark DS\* (2010). A Mechanistic Kinetic Model of the Enzymatic Hydrolysis of Cellulose. *Biotechnology and Bioengineering*, 107 (1), 37-51.

#### **Licensed Intellectual Property (University of Colorado, Boulder)**

Licensee: Think Bioscience has taken over patent prosecution for all three patent families.

- **Fox JM**, Sarkar A, Hongdusit A, and Kim EY. A Genetically Encoded System for Constructing and Detecting Biologically Active Agents. US/17/141,321
- **Fox JM** and Sarkar A. Discovery and Evolution of Biologically Active Metabolites. PCT/US2021/012621.
- **Fox JM**, Sarkar A, Kramer L, Foderaro T, Traylor M, and Donovan G. Methods and Systems for High-Throughput Biochemical Screens. PCT/US2022/79253

#### **Research Support: > \$5.9M (Fox Lab); > \$4.7M (as PI)**

- NSF CBET 2402636 Fox (PI) 08/2024 – 07/2027  
National Science Foundation  
Fox Lab: \$454,056 (total)  
NSF-BSF: Design of Batch Biochemical Oscillators
- DE-SC0023142 Edgar Cahoon (PI, UN-Lincoln) 09/2022 – 08/2027  
Department of Energy  
Fox Lab: \$1,128,427 (total) Fox (Co-PI)  
B5: Bigger Better Brassicaceae Biofuels and Bioproducts
- OEDIT APP-386842 Fox (PI) 07/2022 – 06/2023  
Colorado Office of Economic Development and International Trade  
Fox Lab: \$56,250 (total)  
A Class-Wide Screen for Biosynthetic Inhibitors with Therapeutic Applications: Part B

- TB 000004 Fox (PI) 04/2022 – 04/2023  
Think Bioscience and CU Boulder  
Fox Lab: \$64,980 (total from Think Bioscience) \$41,521 (CU Boulder Licensing Incentive)  
Genetically Encoded Detection of Modulators of the Ubiquitin-Proteasome System
- NIH 1R35GM143089-01 Fox (PI) 07/2021 – 04/2026  
National Institute of General Medical Sciences  
Fox Lab: \$1,763,162 (total)  
Microbially Guided Discovery and Biosynthesis of Biologically Active Natural Products
- TB 000002 Fox (PI) 04/2021-04/2022  
Think Bioscience  
Fox Lab: \$47,748 (total)  
Personnel Support for Microbial Discovery and Biosynthesis of Targeted Protease Inhibitors (COVID-19)
- NSF STTR Kramer (PI), Kaar (Co-PI) 12/2020 – 11/2021  
National Science Foundation  
Fox Lab: \$81,534  
Microbial Discovery and Biosynthesis of Targeted Protease Inhibitors (COVID-19)  
\*Prof. Fox wrote this proposal, but NSF rules precluded him from serving as PI or Co-PI.
- OEDIT DO 2021-2417 Fox (PI) 03/2021 - 02/2022  
Colorado Office of Economic Development and International Trade  
Fox Lab: \$100,000 (total)  
Awardee, CU Venture Challenge  
A Class-Wide Screen for Biosynthetic Inhibitors with Therapeutic Applications
- DOD W911NF1910135 Fox (PI) 03/2019-02/2020  
Army Research Office  
Fox Lab: \$256,770 (total)  
DURIP: Instrumentation for the Analysis and Design of Tunable, Stimuli-Responsive Biocatalytic Systems
- DOD ECASE W911NF1810159 Fox (PI) 12/2018-12/2023  
Army Research Office  
Fox Lab: \$999,575 (total)  
Analysis and Design of Nonlinear Processing and Emergent Dynamics in Biocatalytic Networks
- NSF CBET 1804897 Fox (PI) 07/2018-09/2021  
National Science Foundation  
Fox Lab: \$357,613 (total)  
Minimally Disruptive Optical Interrogation of Intracellular Signaling Networks

- ARO W911NF1810159 Fox (PI) Original: 05/2018-04/2021  
Army Research Office  
Fox Lab: \$359,999 (original total) Revised: 05/2018-12/2018  
\$60,000 total (revised total, replaced with ECASE)  
YIP: Analysis and Design of Nonlinear Processing and Emergent Dynamics in Biocatalytic Networks
- NSF CBET 1750244 Fox (PI) 04/2018-04/2023  
National Science Foundation  
Fox Lab: \$618,105 (total)  
CAREER: Biosynthesis and Evolution of Pharmaceutical Leads

#### **Invited Presentations (University of Colorado, Boulder)**

- Bond Life Sciences Center, University of Missouri 11/2024  
Columbia, Missouri.
- ACS National Meeting. New Orleans, LA. 04/2024
- Discovery on Target. Boston, Massachusetts. 09/2023
- Society of Industrial Microbiology and Biotechnology Annual Meeting. 07/2023  
Minneapolis, Minnesota.
- Department of Chemical and Biological Engineering. Colorado State University 11/2022
- Department of Chemical and Biological Engineering. University of New 11/2022  
Mexico. Albuquerque, New Mexico.
- School of Chemical and Biomolecular Engineering, Georgia Institute of 03/2022  
Technology. Atlanta, GA.
- Department of Chemical and Biomolecular Engineering, University of California, 03/2022  
Berkeley. Berkeley, CA.
- Department of Chemical and Biomolecular Engineering, Tulane University. New 12/2021  
Orleans, LA.
- Molecular Engineering and Sciences Institute (MoES), UW Seattle. Seattle, WA. 12/2021
- Dissipation in Open Material Systems, Virtual Research Seminar Series on 07/2021  
Complex Active and Adaptive Material Systems.
- Department of Molecular Biology & Biophysics, University of Connecticut 04/2021  
Health Center. Farmington, Connecticut.
- Army Research Lab: ECASE Symposium. Adelphi, MD. 04/2019
- Department of Biochemistry. University of Nebraska, Lincoln. Lincoln, NE 02/2019
- Department of Chemical and Environmental Engineering. University of 11/2018  
California, Riverside. Riverside, CA

#### **Invited Presentations (Harvard University and University of California, Berkeley)**

- Rowland Institute, Harvard University. Cambridge, MA. 05/2015
- Department of Chemical Engineering, Columbia University. New York, NY. 02/2015
- Department of Biochemistry and Department of Chemical and Biological 02/2015  
Engineering, University of Wisconsin, Madison. Madison, WI.

- Institute for Molecular Engineering and Institute for Genomics and Systems Biology, University of Chicago. Chicago, IL. 02/2015
- Department of Chemical Engineering, MIT. Cambridge, MA. 01/2015
- Department of Chemical and Biological Engineering, University of Colorado, Boulder. Boulder, CO. 01/2015
- Biotechnology Institute and Department of Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Twin Cities. Minneapolis, MN. 01/2015
- School of Chemical Engineering, Purdue University. West Lafayette, IN. 03/2014
- School of Chemical and Biomolecular Engineering, Georgia Institute of Technology. Atlanta, GA. 01/2014
- Genencor, Inc. (now Dupont Industrial Biosciences). Palo Alto, CA. 06/2012

**Contributed Presentations (University of Colorado, Boulder; \*, presenter)**

- Hren A, **Fox JM\***, and Eckert C\*. Subtle multiplex transcriptional adjustments Improve environmental adaptation in energy-stressed cyanobacteria. SIMB: oral presentation 2024
- **Fox JM\***. Turning Cryptic Pockets into Drugs: Using (Bio)Synthetic Probes to Land in Drug-Like Chemical Space. Drug Discovery Chemistry 2024: oral presentation. 2024
- Mains K, Andrzejewski S, Friedman A, Shirts M, and **Fox JM\***. Metabolic crosstalk in an influential soil microbe: Discovery of a 3-oxoacyl-ACP reductase that bridges fatty acid synthesis to the production of a bioactive polyketide. ACS Spring National Meeting: oral presentation. 2024
- Hren A, Cameron J, Eckert C, and **Fox JM\***. Highly redundant CRISRPi screens reveal intermediate, adaptation-improving transcriptional changes in cyanobacteria. ACS Spring National Meeting: oral presentation. 2024
- **Fox JM\***. Bringing Synthetic Biology to Bear on the Protein Tyrosine Phosphatome. EMBO Signal Regulation by Protein Phosphatases 2023
- Mains K, Ruppe S, Peoples J, and **Fox JM\***. Kinetically Guided Rewiring of Fatty Acid Biosynthesis. SIMB Annual Meeting: oral presentation. 2023
- Mains K and **Fox JM\***. Decoupling Fatty Acid Synthesis from Microbial Growth Enables the Production of Short-Chain Fatty Acids by Ketosynthase Mutants. Gordon Conference on Plant Lipids: Structure, Metabolism and Function: poster. 2023
- Mains K and **Fox JM\***. \* Dynamic replacement of ketoacyl synthases for the production of short and medium chain fatty acids in *Escherichia coli*. SIMB 72nd Annual Meeting: poster 2022
- Mains K, Peoples J\*, and **Fox JM**. Comprehensive kinetic framework for controlling fatty acid biosynthesis in *E. coli*. ACS National Meeting 2022: poster 2022
- Sarkar A, Edstrom H\*, Foderaro T, and **Fox JM**. Evolution-guided biosynthesis of biologically active terpenoids. ACS Spring 2022 National Meeting: poster. 2022
- Mains K\* and **Fox JM**. Changes in intracellular enzyme ratios enable fine-tuning of fatty acid profiles in *Escherichia coli*. ACS Fall 2021 Meeting: oral presentation 2021

- Sarkar A<sup>\*</sup>, Kim EY, Jang T, Hongdusit A, Kim H, Choi JM, and **Fox JM**. 2021  
Microbially Guided Discovery and Biosynthesis of Allosteric Inhibitors of  
PTP1B. ACS Fall 2021 National Meeting: oral presentation.
- **Fox JM**<sup>\*</sup>. Microbially Guided Discovery and Biosynthesis of Biologically Active 2021  
Natural Products. International Conference on Biomolecular Engineering: oral  
presentation.
- Mains K<sup>\*</sup>, Ruppe S, and **Fox JM**. Ratiometric Tuning of Fatty Acid Biosynthesis. 2020  
AIChE Annual Meeting: oral presentation.
- Liechty E<sup>\*</sup>, Hongdusit A, Sarkar A, and **Fox JM**. Directed Evolution of 2020  
Photoswitchable Enzymes. AIChE Annual Meeting: oral presentation.
- Sarkar A, Kim E, Hongdusit A, and **Fox JM**<sup>\*</sup>. Evolution-guided design of 2020  
pharmaceutical leads. ACS Fall 2020 National Meeting: oral presentation.
- Ruppe S, Mains K, and **Fox JM**<sup>\*</sup>. Kinetic rationale for functional redundancy in 2020  
fatty acid biosynthesis. ACS Fall 2020 National Meeting: oral presentation.
- Sarkar A<sup>\*</sup> and **Fox JM**. Microbial synthesis and evolution of pharmaceutical 2019  
leads. Gordon Research Conference on Natural Products and Bioactive  
Compounds: oral presentation and poster.
- Ruppe A and **Fox JM**<sup>\*</sup>. Kinetically Guided, Ratiometric Tuning of Fatty Acid 2019  
Biosynthesis. ACS Spring 2019 National Meeting: oral presentation.
- Hongdusit A, Zwart P, Sankaran B, and **Fox JM**<sup>\*</sup>. Minimally Disruptive Optical 2019  
Control of PTPs. ACS Spring 2019 National Meeting: oral presentation.
- Hjortness M, Riccardi L, Hongdusit A, Ruppe A, Kim E, Zhao M, Zwart P, 2019  
Sankaran B, Arthanari H, Sousa M, DeVivo M, and **Fox JM**<sup>\*</sup>. Evolution-Guided  
Design of Phosphatase Inhibitors. ACS Spring 2019 National Meeting: oral  
presentation.
- Hjortness M<sup>\*</sup>, Riccardi L, Hongdusit A, Ruppe A, Kim E, Zhao M, Zwart P, 2018  
Sankaran B, Arthanari H, Sousa M, DeVivo M, and **Fox JM**. Evolution-Guided  
Design of Phosphatase Inhibitors. AIChE Annual National Meeting: oral presentation.
- Ruppe A<sup>\*</sup> and **Fox JM**. Analysis and Design of Kinetic Controls of Fatty 2018  
Acid Synthesis. AIChE Annual National Meeting: oral presentation.
- **Fox JM**<sup>\*</sup>. Analysis and Design of Tunable, Stimuli-Responsive Biocatalytic 2018  
Systems. Gordon Conference on Biocatalysis: poster.

#### **Contributed Presentations (Harvard University and University of California, Berkeley)**

- **Fox JM**<sup>\*</sup>, Kang K, Sastry, M, Sherman W, Sankaran B, Zwart P, and Whitesides 2016  
GM. (2017). Water-Restructuring Mutations Can Reverse the Thermodynamic  
Signature of Protein-Ligand Association. AIChE Annual Meeting: oral presentation
- **Fox JM**<sup>\*</sup>, Kang K, Lockett MR, Sherman W, Héroux A, Sastry M, Baghbanzadeh 2014  
M, and Whitesides GM. AIChE Annual Meeting: oral presentation.
- **Fox JM**<sup>\*</sup> and Whitesides GM. Slow Dynamics as a Warning Signal for 2014  
Eruptive Events in Spreading Fires. AIChE Annual Meeting: oral presentation.



- **Fox JM\***, Jess P, Jambusaria RB, Moo GM Liphardt J, Clark DS, Blanch HW. 2013  
A Single-Molecule Analysis Reveals Morphological Targets for Cellulase Synergy. AIChE Annual Meeting: oral presentation.
- **Fox JM\***. Initial- and Processive-Cut Products from Cellobiohydrolase-Catalyzed Hydrolysis of Cellulose Reveal Rate-Limiting Steps and Role of Companion Enzymes. Society for Industrial Microbiology and Biotechnology (SIMB): Symposium on Biotechnology for Fuels and Chemicals (SBFC): oral presentation. 2012
- **Fox JM\***, Jess P, Liphardt J, Clark DS, and Blanch HW. Characterization of Cellulase-cellulose Interactions with Photoactivation Localization Microscopy (PALM). Gordon Conference on Cellulases, Cellulosomes, and Other Carbohydrate Modifying Enzymes: poster. 2011
- **Fox JM\***, Levine SE, Clark DS, and Blanch HW. Investigation of Cellobiohydrolase Complexation Behavior. SIMB SBFC: poster. 2011
- **Fox JM\***, Levine SE, Clark DS, and Blanch HW. Assessment of the Influence of Surface Area..... Enzymatic Cellulose Hydrolysis Rates. SIMB SBFC: poster 2010

### Teaching Experience

- Instructor, General Chemistry for Engineers 1 (CHEN 1201, fall) 2024
- Instructor, Chemical Engineering Thermodynamics (CHEN 3320, Jan short) 2023
- Instructor, General Chemistry for Engineers 1 (CHEN 1201, fall) 2022
- Instructor, General Chemistry for Engineers 1 (CHEN 1201, spring) 2021
- Instructor, Chemical Engineering Thermodynamics (CHEN 3320, fall) 2016-2021
- Instructor, General Chemistry for Engineers (CHEN 1210, spring) 2019
- Instructor, Synthetic Biology and Biological Control (CHEN 5838, spring) 2018
- Instructor, Biochemical Engineering Fundamentals (CHEN 6820, spring) 2016
- Mentor (while at CU Boulder): 4 high school students, 18 undergraduates, 10 graduate students, and 2 postdoctoral researchers 2016-pres.

### Professional Service

- Co-Chair, *Protein Engineering for Therapeutic, Diagnostic, and Sensor Applications*, ACS National Meeting 2023
- Co-Chair, *Advances in Biocatalysts and Biocatalytic Processes*, AIChE Annual Meeting 2022
- Co-Chair, *Enzyme Engineering for Biocatalysis*, ACS National Meeting 2022
- Co-Chair, *Biocatalysis and Biobased Products*, AIChE Annual Meeting 2021
- Co-Chair, *Enzyme Engineering & Biocatalysis*, ACS National Meeting 2021
- Session Chair, *Dissipation in Open Material Systems*, Virtual Research Seminar Series on Complex Active and Adaptive Material Systems 2021
- Co-Chair, *Engineering Protein Therapeutics*, AIChE Annual Meeting 2020
- Co-Chair, *Protein Engineering, Bispecifics & Conjugates*, ACS Fall National Meeting. 2020
- Co-Chair, *Biomolecular Engineering*, AIChE Annual Meeting 2019
- Co-Chair, *Computational Approaches to Protein Engineering*, AIChE Annual Meeting 2019

- Instructor, *Synthetic Biology, EngiNearMe, University of Colorado Boulder (hands-on educational initiative for high school students underrepresented in STEM)* 2018
- Co-Chair, *Combinatorial Techniques in Protein Engineering*, AIChE Annual Meeting 2018
- Co-Chair, *Big Data and Biomanufacturing*, ACS National Meeting 2017
- Grant Review: 2016-pres.
  - NSF Panel (2021)
  - NSF CBET Panel: CAREER (2019)
  - NSF CBET Panel: Reaction Networks (2018)
  - NSF CBET: Ad hoc (2017)
  - Kentucky Science and Engineering Foundation (2016)
- Member, American Chemical Society 2015-pres.
- Member, American Institute of Chemical Engineers 2013-pres.
- Editorial Board: *Synthetic and Systems Biotechnology* 2021-pres.
- Journal Review (5-8/year): *PNAS, ACS Catalysis, Metabolic Engineering, Biochemistry, J. Phys. Chem. B., J. Med. Chem., Biotechnology and Bioengineering, Biochemical Engineering Journal, Mathematical Biosciences, FEBS Letters Annual Review of Chemical and Biomolecular Engineering, PLOS ONE, Bioprocess and Biosystems Engineering, Advanced Functional Materials, Nature Communications, Nature Chemical Biology, Angewandte Chemie, Science Advances* 2008-pres.