

Benjamin M. Woolston, Ph.D.

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Education

Massachusetts Institute of Technology

Cambridge, MA

Thesis: Enabling C1-Based Bioconversion through Metabolic Engineering

Ph.D. in Chemical Engineering

2011–2017

The Pennsylvania State University

University Park, PA

High Distinction

B.Sc. in Chemical Engineering

2006–2011

Appointments

Northeastern University

Boston, MA

Assistant Professor of Chemical Engineering

2020–Present

Northeastern University

Boston, MA

Assistant Professor of Bioengineering (By courtesy)

2024–Present

Professional Preparation

Harvard University

Cambridge, MA

Advisor: Dr. Emily Balskus, Chemistry & Chemical Biology

Post-doctoral Fellow

2018–2019

Massachusetts Institute of Technology

Cambridge, MA

Advisor: Dr. Greg Stephanopoulos, Chemical Engineering

Post-doctoral Associate

2017–2018

Awards And Honors

2025: Society for Industrial Microbiology and Biotechnology Early Career Award

2025: NSF CAREER Award

2025: Northeastern College of Engineering Fostering Engineering Innovation in Education Award

2024: Office of Naval Research Young Investigator Award

2024: Northeastern College of Engineering Søren Buus Outstanding Research Award

2023: Northeastern Dept. of Chemical Engineering Dr. Richard H. Sioui Award for Excellence in Teaching

2022: NIH NIBIB Trailblazer Award

2021: Biotechnology and Bioengineering Daniel I.C. Wang Award

2020: International Metabolic Engineering Society Jay Bailey Young Investigator Award in Metabolic Engineering

2012: John C. Sluder (1941) Fellowship

2011: NSF Graduate Research Fellowship

2010: 1st Place in AIChE National Student Paper Competition

2010: Larry J. Duda Award Award for Undergraduate Research

Research and Scholarship

Full list of publications at: [Google Scholar Profile](#)

h-index: 18, Total Citations: 1775

* = Equal contribution

= Corresponding author

Red = Northeastern Graduate Student, Blue = Northeastern Undergraduate Student

Peer-Reviewed Journal Articles (At Northeastern).....

18. Hoyt KO, Gasparrini W, Hayes J, Woolston, BM#. ¹³C-Metabolic flux analysis reveals bottlenecks during methylotrophic growth in the acetogen *Eubacterium limosum*. *In preparation*.
17. Hoyt KO, Zhou G, Gasparrini W, Sliter P, Hart D, Khalil A, Woolston, BM#. Exploring C1 substrate co-feeding in *Eubacterium limosum* with AneVO, a low-cost anaerobic parallel bioreactor platform. *In revision at Trends in Biotechnology*. [bioRxiv Preprint](#)
16. Da Silva Lameira C, Flaiz M, Woolston BM, Soucaille P, Bengelsdorf FR#. Anaerobic microbial methanol utilization as a one-carbon feedstock. **Current Opinion in Biotechnology**. 94, 103322 (2025). IF = 9.7, *Invited review*
15. Fernez M, Hegde S, Hayes JA, Hoyt KO, Carrier RL, Woolston, BM#. Development of a transcriptional biosensor for hydrogen sulfide that functions under aerobic and anaerobic conditions. **ACS Synthetic Biology**. 14, 6, 2198-2207 (2025). IF = 4.2
14. Gasparrini W, Lee SH, Woolston, BM#. Pathways to sustainability: a quantitative comparison of aerobic and anaerobic C1 bioconversion routes. **Current Opinion in Biotechnology**. 93, 103310 (2025). IF = 9.7, *Invited review*
13. Ricci L, Cen X, Zu Y, Antonicelli G, Chen Z, Fino D, Pirri F, Stephanopoulos G#, Woolston BM# and Re A#. Metabolic engineering of *E. coli* for enhanced diols production from acetate. **ACS Synthetic Biology**. 14(4) 1204-1219 (2025). IF = 4.2
12. Sanford PA, Woolston, BM#. Development of a recombineering system for the acetogen *Eubacterium limosum* with Cas9 counterselection for markerless genome engineering. **ACS Synthetic Biology**, 13, 8, 2505-2514 (2024). IF = 4.2
11. Sanford PA, Blaby I, Yoshikuni Y, Woolston BM#. A highly efficient Cre-based Clostridial workflow for genomic integration and expression of large biosynthetic pathways. **Biotechnology and Bioengineering** 1-7 (2024) IF = 4.5
10. Pelayo P, Hussain FA, Werlang CA, Wu C, Woolston BM, Ribbeck K, Kwon DS, Balskus EP. *Prevotella* are major contributors of sialidases in the human vaginal microbiome. **Proceedings of the National Academy of Sciences**. 121(36), e2400341121. (2024). IF = 9.4
9. ZJ Rogers, TC Colombani, S Khan, K Bhatt, A Nukovic, G Zhou, BM Woolston, C Taylor, D Gilkes, N Slavov, SA Bencherif. Controlling pericellular oxygen tension in cell culture reveals distinct breast cancer responses to low oxygen tensions. **Advanced Science** 11, 30, 2402557 (2024) IF = 15.1
8. JA Hayes, AW Lunger, AS Sharma, MT Fernez, RL Carrier, AN Koppes, RA Koppes, BM Woolston#. Engineered bacteria titrate hydrogen sulfide and induce concentration-dependent effects on host in a gut microphysiological system. **Cell Reports**, 42(12) 113481. (2023) IF = 8.8
[Highlight](#) in *Trends in Biotechnology*
7. CM Wang, MT Fernez, BM Woolston, RL Carrier. Native gastrointestinal mucus: Model and techniques for studying interactions with drugs, drug carriers, and bacteria. **Advanced Drug Delivery Reviews**, 114966 (2023) IF = 17.9

6. DJ Jenkins*, **BM Woolston***, MI Hood, P Pelayo, AN Konopaski, MQ Peters, MT France, J Ravel, CM Mitchell, S Rakoff-Nahoum, C Whidbey, EP Balskus. Bacterial amylases enable glycogen degradation by the vaginal microbiome. **Nature Microbiology** 8, 1641-1652 (2023) IF = 28.3
5. **PA Sanford**, **KA Miller**, **KO Hoyt** and **BM Woolston#**. Deletion of biofilm synthesis in *Eubacterium limosum* ATCC 8486 improves handling and transformation efficiency. **FEMS Microbiology Letters**. 370, fnad030 (2023) IF = 2.1
4. **PA Sanford** and **BM Woolston#**. Expanding the genetic engineering toolbox for the metabolically flexible acetogen *Eubacterium limosum*. **Journal of Industrial Biotechnology and Microbiology**. 49(5) (2022) IF = 3.3
3. **KO Hoyt** and **BM Woolston#**. Adapting isotopic tracer and metabolic flux analysis approaches to study C1 metabolism. **Current Opinion in Biotechnology** 75, 102695 (2022) IF = 9.7, *Invited review*
2. **PA Sanford** and **BM Woolston#**. "Synthetic or natural? Metabolic engineering for assimilation and valorization of methanol. **Current Opinion in Biotechnology** 74, 171-179 (2022) IF = 9.7, *Invited review*
1. SM Bloom, NA Mafunda, **BM Woolston**, MR Hayward, JF Frempong, AB Abai, J Xu, AJ Mitchell, X Westergaard, FA HUSSAIN, N Xulu, M Dong, KL Dong, T Gumbi, X Ceasar, JK Rice, N Choksi, N Ismail, T Ndung'u, MS Ghebremichael, EP Balskus, CM Mitchell, DS Kwon. "Cysteine dependence in *Lactobacillus iners* constitutes a novel therapeutic target for vaginal microbiota modulation" **Nature Microbiology**. 7 (3) 434-450 (2022) IF = 21.0

Peer-Reviewed Journal Articles (Prior to Northeastern).....

13. T Roth#, **BM Woolston#**, G Stephanopoulos, and DR Liu. Phage-Assisted Evolution of *Bacillus methanolicus* Methanol Dehydrogenase 2. **ACS Synthetic Biology**. 8 (4), 796-806 (2019)
12. JO Park, N Liu, KM Holinski, DF Emerson, K Qiao, **BM Woolston**, J Xu, Z Lazar, M Ashanul Islam, C Vidoudez, PR Girguis, and G Stephanopoulos. Synergistic substrate cofeeding stimulates reductive metabolism. **Nature Metabolism** 1 (6), 643-651 (2019).
11. B Uranukul, **BM Woolston**, GR Fink, G Stephanopoulos. Biosynthesis of monoethylene glycol in *Saccharomyces cerevisiae* utilizing native glycolytic enzymes. **Metabolic Engineering**. 51, 20-31 (2019)
10. DF Emerson, **BM Woolston**, DH Currie, N Liu, and G Stephanopoulos. Enhancing H₂-dependent growth of and CO₂ fixation by *Clostridium ljungdahlii* through nitrate supplementation. **Biotechnology and Bioengineering** 116 (2), 294-306 (2019)
9. **BM Woolston**, DF Emerson, DH Currie, and G Stephanopoulos. Rediverting carbon flux in *Clostridium ljungdahlii* using CRISPRi. **Metabolic Engineering**. 48, 243-253 (2018)
8. **BM Woolston**, JR King, M Reiter, B Van Hove, and G Stephanopoulos. Improving formaldehyde consumption drives methanol assimilation in engineered *E. coli*. **Nature Communications**. 9, 2387 (2018)
7. **BM Woolston#**, T Roth#, I Kohale, DR Liu, and G Stephanopoulos. Development of a formaldehyde biosensor with application to synthetic methylotrophy. **Biotechnology and Bioengineering** 115, 206-215 (2017). DOI:10.1002/bit.26455
6. JR King, **BM Woolston**, and G Stephanopoulos. Designing a new entry point into isoprenoid metabolism by exploiting fructose-6-phosphate aldolase side-reactivity of *Escherichia coli*. **ACS Synthetic Biology** 6(7), 1416-1426 (2017)
5. DF Emerson, A Al Ghatta, **BM Woolston**, A Fay, A Kumar, and G Stephanopoulos. Theoretical analysis of natural gas recovery from marginal wells with a deep well reactor. **AIChE Journal** 63(9) 3642-3650 (2017)

4. P Hu, S Chakraborty, A Kumar, **BM Woolston**, H Liu, DF Emerson, and G Stephanopoulos. Integrated bioprocess for conversion of gaseous substrates to liquids. **Proceedings of the National Academies of Science** 113(14), 3773-3778 (2016)
3. SE Nybo, NE Khan, **BM Woolston**, WR Curtis. Metabolic engineering in chemolithoautotrophic hosts for the production of fuels and chemicals. **Metabolic Engineering** (30) 105-120 (2015)
2. **BM Woolston**#, S Edgar#, and G Stephanopoulos. Metabolic Engineering: Past and Future **Annual review of chemical and biomolecular engineering** (4) 259-288 (2013)
1. **BM Woolston**, C Schlagnhauer, J Wilkinson, J Larsen, Z Shi, KM Mayer, DS Walters, WR Curtis, and CP Romaine. Long-distance translocation of protein during morphogenesis of the fruiting body in the filamentous fungus, *Agaricus bisporus*. **PLoS One** 6(12):e28412 (2011)

Non-Reviewed Articles.....

3. **BM Woolston**# Engineering bacteria for production of sustainable polycyclopropanated jet fuel alternatives. **Trends in Biotechnology** 40 (12), 1399-1400 (2022) *Invited spotlight*
2. **BM Woolston**# and G Stephanopoulos. Engineering *E. coli* to Grow on Methanol. **Joule** 4 (10), 2070-2072 (2020) *Invited spotlight*
1. **BM Woolston**#. Efficient C1 Elongation by Reversing α -Oxidation. **Trends in Biotechnology** 37 (12), 1273-1276 (2019) *Invited spotlight*

Patents.....

3. **BM Woolston**, R Koppes and **JA Hayes**. International Patent Application No. PCT/US24/49315: Methods to Modulate in vivo Levels of Hydrogen Sulfide by Engineered Organism
2. **BM Woolston** and **A Stohr**. U.S. Patent Application No. 17/718,927: Co-Culture Method for Biofuel and Biochemical Production from Untreated Syngas.
1. CP Romaine, CD Schlagnhauer, and **BM Woolston**. US Patent 8,686,218: Strategies for the transgenic manipulation of filamentous fungi.

Invited Talks (At Northeastern).....

26. **National Renewable Energy Labs Seminar Series**. Anaerobic C1 fermentation for sustainable production of fuels and chemicals. Golden, CO. August 19, 2025
25. **LanzaTech Process Engineering and Synthetic Biology Group Meeting**. Harnessing Acetogenic Bacteria for Sustainable Chemical Production from C1 Feedstocks. Skokie, IL. August 12, 2025
24. **Biocatalyst Interactions with Gases (BIG) Symposium**. Gas fermentation for sustainable production of fuels and chemicals. Raleigh, NC. May 15, 2025
23. **University of Minnesota Chemical Engineering Seminar Series**. Engineering bacteria to solve problems in renewable chemical production and human health. Minneapolis, MN. April 15, 2025
22. **Texas A&M University Chemical Engineering Seminar Series**. Engineering bacteria to solve problems in renewable chemical production and human health. College Station, TX. February 28, 2025
21. **Worcester Polytechnic Institute Life Sciences Seminar Series**. Engineering bacteria to solve problems in renewable chemical production and human health. Worcester, MA. February 25, 2025
20. **University of Washington Molecular Engineering and Sciences Institute Seminar Series**. Engineering bacteria to solve problems in renewable chemical production and human health. Seattle, WA. January 14, 2025
19. **American Institute of Chemical Engineering Annual Meeting**. Harnessing Acetogenic Bacteria for Sustainable Chemical Production from C1 Feedstocks. San Diego, CA. October 28, 2024

18. **Gordon Research Conference: Molecular Basis of Microbial One-Carbon Metabolism.** Harnessing Acetogenic Bacteria for Sustainable Chemical Production from C1 Feedstocks. Waterville Valley, NH. August 14, 2024
17. **Society of Industrial Microbiology and Biotechnology Annual Meeting.** Harnessing Acetogenic Bacteria for Sustainable Chemical Production from C1 Feedstocks. Boston, MA. August 5, 2024
16. **ECI Biochemical and Molecular Engineering XXIII.** Harnessing Acetogenic Bacteria for Sustainable Chemical Production from C1 Feedstocks. Dublin, July 22, 2024
15. **Novozymes Science Seminar.** Harnessing Acetogenic Bacteria for Sustainable Chemical Production from C1 Feedstocks. Franklinton, NC. May 30, 2024
14. **NC State BIG Science Seminar.** Harnessing Acetogenic Bacteria for Sustainable Chemical Production. Virtual. May 21, 2024
13. **Tri-Service Microbiome Consortium Meeting.** Combining Engineered Microbes with Gut-on-a-Chip Systems to Elucidate Disease-Associated Metabolism. Virtual. April 18, 2024
12. **University of Minnesota Institute for Biotechnology Seminar Series.** Engineering bacteria to solve problems in renewable chemical production and human health. Minneapolis, MN. March 28, 2024
11. **Gas Fermentation Conference.** Exploring and exploiting microaerobic co-culture for carbon-negative bioproduction via gas fermentation. Heron Island, Australia. February 28, 2024
10. **Alternative Fuels & Chemicals Coalition Conference.** C1 Substrates are Sustainable Alternatives to Food Crops for Biomanufacturing. Washington, DC. November 13, 2023.
9. **UCSB Department of Chemical Engineering Seminar Series.** Engineering bacteria to solve problems in renewable chemical production and human health. Santa Barbara, CA. October 25, 2023
8. **Michigan State University Department of Biochemistry & Molecular Biology Seminar Series.** Engineering bacteria to solve problems in renewable chemical production and human health. East Lansing, MI. October 12, 2023
7. **SIMB Annual Conference.** Exploring and exploiting microaerobic co-culture for carbon-negative bioproduction via gas fermentation. Minneapolis, MN. August 1, 2023
6. **Harvard Medical School SynBio HIVE Seminar** Production of biofuels and biochemicals from renewable single-carbon substrates. Boston, MA. May 19, 2023.
5. **Ghent University Center for Synthetic Biology Seminar.** Metabolic Engineering for Production of Biofuels and Bioproducts from Methanol. Ghent, Belgium. September 20, 2022
4. **SIMB Annual Conference.** Investigating the metabolic flexibility of the methylotrophic acetogen *Eubacterium limosum*. San Francisco, CA. August 9, 2022.
3. **European Society of Applied Biocatalysis Seminar Series.** Metabolic Engineering for Production of Biofuels and Bioproducts from Methanol. October 22, 2021. Virtual.
2. **ACS Annual Conference - Bioengineering Award Session.** Metabolic Engineering for Production of Biofuels and Bioproducts from Methanol. August 25, 2021. Virtual.
1. **43rd Annual SIMB Symposium on Biomaterials, Fuels, and Chemicals.** Establishing *Eubacterium limosum* as a model methylotrophic acetogen. April 26, 2021. Virtual Conference.

Invited Talks (Prior to Northeastern).....

10. **Clostridium XV.** Redirecting carbon flux in *Clostridium ljungdahlii* using CRISPR Interference (CRISPRi). Freising, Germany. September 18, 2018

9. **Gordon Research Conference on C1 Metabolism.** Biochemical Production from C1 Feedstocks Through Metabolic Engineering. Newry, ME. August 2, 2018.
8. **NRL/ARPA-E Microbial Electrosynthesis Workshop.** Indirect microbial electrosynthesis using reducing gases. Washington, DC. November 4, 2016.
7. **Gordon Research Seminar on C1 Metabolism.** Heterologous Production of 3-Hydroxybutyric Acid in *Clostridium ljungdahlii*. Waterville Valley, NH. July 30, 2016.
6. **MIT iGEM Team Seminar.** Enabling the Utilization of Non-traditional C1 Feedstocks for Fuel and Chemical Bioproduction via Metabolic Engineering. Cambridge, MA. July 17, 2015.
5. **MIT Energy Club: BioEnergy Seminar.** Metabolic Engineering for Biofuels using Alternative Substrates. Cambridge, MA. November 18, 2014.
4. **HHMI Summer Workshop for High School Science Teachers.** Advanced Biofuels and Non-traditional Feedstocks. Cambridge, MA. July 24, 2014.
3. **AIChE National Student Paper Competition.** Development of a Mushroom-Based Platform for Large-Scale Production of Heterologous Proteins. Salt Lake City, UT. November 8, 2010.
2. **Plant Pathology Departmental Seminar.** Long-Distance Movement of Protein in *Agaricus bisporus*. University Park, PA. October 11, 2010.
1. **52nd Annual Mushroom Industry Conference.** Spawn vs CI: Battle for Control of Mushroom Formation. University Park, PA. June 14, 2010.

Conference Talks from Submitted Abstracts (At Northeastern).....

Bold text = Speaker

= Senior author

Red = Northeastern Graduate Contribution

Blue = Northeastern Undergraduate Contribution

14. **JA Hayes**, **MT Fernz**, **B Buchinger**, AN Koppes, R Koppes, and BM Woolston#. Engineering Intestinal Sulfur Metabolism for Understanding Host-Microbiome Interactions and Therapeutics Development. **Boston Bacterial Meeting**. Boston, MA. June 9, 2025.
13. **G Zhou**, **D Jatkar**, **W Gasparrini**, **A Stohr**, and BM Woolston#. A Synthetic Symbiotic Co-Culture of Aerobes and Anaerobes for Bioproduction from CO₂ and H₂. **Synthetic Biology: Engineering, Evolution, & Design (SEED) Meeting**. Houston, TX. Jun. 23, 2025
12. **KO Hoyt**, LJ Sánchez, **W Gasparrini**, **M Nyadeva**, and BM Woolston#. ¹³C-Metabolic Flux Analysis in the Methanol-Consuming Acetogen Eubacterium limosum. **Engineering Biology Research Consortium Annual Meeting**. Seattle, WA. May 1, 2025.
11. **MT Fernz**, **S Hegde**, RL Carrier, and BM Woolston#. Development of a Transcriptional Hydrogen Sulfide Biosensor to Function in the Anaerobic Gut Microenvironment. **AIChE Annual Meeting**. San Diego, CA. Oct. 29, 2024.
10. **JA Hayes**, **A Lunger**, **A Sharma**, **MT Fernz**, AN Koppes, R Koppes, and BM Woolston#. Engineering Intestinal Sulfur Metabolism for Understanding Host-Microbiome Interactions. **AIChE Annual Meeting**. San Diego, CA. Oct. 29, 2024.
9. **MT Fernz**, **JA Hayes**, AN Koppes, R Koppes, and **BM Woolston#**. Combining Engineered Microbes with Gut-on-a-Chip Systems to Elucidate Disease-Associated Metabolism. **6th International Conference on Microbiome Engineering**. Berkeley, CA. Dec. 10, 2023.

8. **BM Woolston**. Production of biofuels and biochemicals from renewable single-carbon substrates. **Metabolic Engineering 15**. Singapore, June 12, 2023.
7. **KO Hoyt** and **BM Woolston**#. Investigating methanol-glucose metabolism in *Eubacterium limosum*. **SIMB Symposium on Biofuels, Materials and Chemicals**. Portland, OR. May 3, 2023.
6. **KO Hoyt**, **PA Sanford**, and **BM Woolston**#. Investigating the metabolic flexibility of the methylotrophic acetogen *Eubacterium limosum*. **Clostridium XVI** Toulouse, France. Sep. 15, 2022.
5. **KO Hoyt** and **BM Woolston**#. Cofeeding *Eubacterium limosum* with labelled substrates to understand methanol-glucose co-metabolism. **Microbial One-Carbon Metabolism GRS**. Southbridge, MA. Aug. 6, 2022.
4. **PA Sanford**, J Ruth and **BM Woolston**#. Zero-Carbon Biofuels: An Optimized Two-Stage System for High Productivity Conversion of CO to Liquid Fuels. **ARPA-E ECOSynBio Kickoff Meeting**. San Francisco, Apr. 12, 2022.
3. **A Stohr** and **BM Woolston**#. Syntrophic Consortia Enables *Clostridium ljungdahlii* Growth under Microaerobic Conditions. **AICHE Annual Meeting**. Boston. Nov. 11, 2021
2. **PA Sanford**, **KO Hoyt** and **BM Woolston**. Establishing *Eubacterium limosum* as a Model Methylotrophic Acetogen **AICHE Annual Meeting**. Boston. Nov. 8, 2021
1. **SM Bloom**, NA Mafunda, **BM Woolston**, MR Hayward, JF Frempong, J Xu, A Mitchell, X Westergaard, JK Rice, N Choksi, EP Balskus, CM Mitchell, DS Kwon. Combining standard bacterial vaginosis treatment with cystine uptake inhibitors to block growth of *Lactobacillus iners* is a potential a target for shifting the cervicovaginal microbiota towards health-associated *Lactobacillus crispatus*-dominant communities. **IDWeek**. Virtual Conference. October 21-25, 2020

Conference Talks from Submitted Abstracts (Prior to Northeastern).....

9. **BM Woolston** DF Emerson, DH Currie, and G Stephanopoulos. Development and Application of a CRISPRi System for the Syngas-Fermenting Microbe *Clostridium ljungdahlii*. **AICHE Annual Meeting**. October 30, 2017
8. **BM Woolston**, T Roth, I Kohale, DR Liu, and G Stephanopoulos. Development of a Formaldehyde Biosensor and its Application to Engineering of Methanol Metabolism in *E. coli*. **AICHE Annual Meeting**. October 31, 2017
7. **BM Woolston**, JR King, M Reiter, B Van Hove, and G Stephanopoulos. Engineering *E. coli* to consume methanol. **AICHE Annual Meeting**. November 2, 2017
6. **BM Woolston** and G Stephanopoulos. Synthetic Methylotrophy: Understanding the bottlenecks. **ARPA-E REMOTE Meeting**. February 15, 2017. Houston, TX.
5. **BM Woolston**, DF Emerson, DH Currie, and G Stephanopoulos. Using *Clostridium ljungdahlii* to enhance heterotrophic carbon yields. **AICHE Annual Meeting**. November 15, 2016. San Francisco, CA.
4. **BM Woolston** and G Stephanopoulos. Engineering *C. ljungdahlii* for Fuels and Chemicals Production. **ARPA-E REMOTE Meeting**. January 21, 2016. LaJolla, CA.
3. **BM Woolston**, DF Emerson, and G Stephanopoulos. Methane-Derived Biofuels: Choosing Among Options. **AICHE Annual Meeting**. November 8, 2013. San Francisco, CA.
2. **BM Woolston**, H Rismani, E Vasile, and G Stephanopoulos. A Flow Cytometry Method for Optimizing Transformation Conditions and Assessing Nuclease Activity in Bacteria. **AICHE Annual Meeting**. November 6, 2013. San Francisco, CA.
1. **BM Woolston**, C Schlagnhauser, WR Curtis, and CP Romaine. Toward the Development of a Mushroom-Based Platform for Large-Scale Production of Heterologous Protein. **AICHE Regional Student Conference Paper Competition**. April 7, 2010. Baltimore, MD.

Poster Presentations (At Northeastern)

24. **KO Hoyt, W Gasparrini, G Zhou**, and BM Woolston#. "13C Metabolic Flux Analysis of C1 Substrate Co-feeding in the Acetogen *Eubacterium limosum*" *Metabolic Engineering 16*. Copenhagen, Denmark. June 16, 2025.
Poster Award Winner
23. **D Jatkar, G Zhou**, A Stohr, **W Gasparrini**, E Sontag, and BM Woolston#. "Engineering Syntrophy in an Anaerobe-Aerobe Co-culture for Waste Gas Valorization" Society for Industrial Microbiology and Biotechnology 2024 Annual Meeting. Boston, MA. August 5, 2024.
22. **G Zhou, W Gasparrini, D Jatkar**, A Stohr, and BM Woolston#. "A symbiotic engineered co-culture of aerobes and anaerobes for bioproduction from CO₂ and H₂." Society for Industrial Microbiology and Biotechnology 2024 Annual Meeting. Boston, MA. August 5, 2024.
21. **W Gasparrini, G Zhou, D Jatkar, A Stohr**, and BM Woolston#. "Building a Synthetic Microaerobic Co-Culture for Upgrading C1 Substrates Using a High Throughput Bioreactor Platform." *SIMB Annual Meeting*. Boston, MA. August 5, 2024.
20. **MT Fernez**, RL Carrier, and BM Woolston#. "Investigating the Impact of Hydrogen Sulfide on the Mucosal Barrier through Development of a Hydrogen Sulfide Biosensor and Multiple Particle Tracking." *6th International Conference on Microbiome Engineering*. Berkeley, CA. December 2023
19. **W Gasparrini, G Zhou, D Jatkar, A Stohr**, and BM Woolston#. "Building a Synthetic Microaerobic Co-Culture for Upgrading C1 Substrates Using a High Throughput Bioreactor Platform." *6th International Conference on Microbiome Engineering*. Berkeley, CA. December 2023
18. **JA Hayes, A Lunger, A Sharma**, AN Koppes, R Koppes, and BM Woolston#. "Leveraging Synthetic Biology and Gut-on-a-Chip Systems to Study Gut Metabolite-Host Interactions: A Case Study in H₂S." *6th International Conference on Microbiome Engineering*. Berkeley, CA. December 2023
17. **JA Hayes**, AN Koppes, R Koppes, and BM Woolston#. "Leveraging Metabolic Engineering and Gut-on-a-Chip Systems to Investigate the Causal Role of Hydrogen Sulfide in the Gut" *Metabolic Engineering 15*. Singapore, June 2023
16. **KO Hoyt**, BM Woolston#. "Investigating methanol-glucose co-metabolism in *Eubacterium limosum*." *SBFC 2023*. Portland, OR. April 30, 2023
15. **G Zhou, D Jhatkar, AM Stohr**, BM Woolston#. "A symbiotic engineered co-culture of aerobes and anaerobes for bioproduction from C1 substrates." *SBFC 2023*. Portland, OR. April 30, 2023
14. **A Lunger, JA Hayes**, and BM Woolston#. "Modulating Gut H₂S Levels Through Glutathione Biosynthesis." *Northeastern RISE*. Boston, MA. Apr. 2023.
13. **M Weisman, JA Hayes**, and BM Woolston#. "Controlling Gut H₂S Concentration Through Microbial Cysteine Biosynthesis." *Northeastern RISE*. Boston, MA. Apr. 2023.
12. **A Sharma, JA Hayes**, R Koppes and BM Woolston#. "A Gut-On-Chip Model for Studying the Effect of H₂S on Epithelial Cells " *Northeastern RISE*. Boston, MA. Apr. 2023.
11. **SMH De Jesus, JA Hayes** and BM Woolston#. "Engineering *E. coli* for Cysteine Biosynthesis" *Northeastern RISE*. Boston, MA. Apr. 2023.
10. **D Jatkar, G Zhou** and BM Woolston#. "Elucidating Interactions in Engineered Microbial Communities Towards Renewable Bio-Fuel Production" *Northeastern RISE*. Boston, MA. Apr. 2023.
9. **G Zhou, D Jatkar, A Stohr**, and BM Woolston#. "A symbiotic engineered co-culture of aerobes and anaerobes for bioproduction from C1 substrates." *Northeastern COE PhD Research Expo*. Boston, MA. Feb. 2023.

8. **JA Hayes**, AN Koppes, R Koppes, and BM Woolston#. "Leveraging Synthetic Biology and Gut-on-a-Chip Systems to Investigate the Mechanistic Role of H₂S in the Gut." *International Conference on Microbiome Engineering*. Boston, MA. Dec. 2022.
7. **MT Fernez**, **CM Wang**, **S Hegde**, RL Carrier and BM Woolston#. "Development of a Hydrogen Sulfide Biosensor to Investigate the Effect on Mucus Barriers In Gut-on-a-Chip Settings. *International Conference on Microbiome Engineering*. Boston, MA. Dec. 2022.
6. **JA Hayes**, AN Koppes, R Koppes, and BM Woolston#. "Leveraging Synthetic Biology and Gut-on-a-Chip Systems to Investigate the Mechanistic Role of H₂S in the Gut" *AIChE Annual Meeting*. Nov. 2022. **Poster Award Winner**.
5. **AW Lunger**, **JA Hayes**, and BM Woolston#. "Hydrogen Sulfide Production via Metabolic Engineering: A New Approach to Gut Health Research." *NU CHME Departmental Poster Competition*. Boston, MA. September 2022. **Poster Award Winner**.
4. **PA Sanford** and BM Woolston#. "Expanding the genetic engineering toolbox for the metabolically flexible acetogen *Eubacterium limosum*." *SIMB Annual Meeting*. Aug. 2022.
3. **KO Hoyt** and BM Woolston#. "Investigation of Co-Substrate Utilization by *Eubacterium limosum* for Biofuel Applications" *AIChE Annual Meeting*. Nov. 8, 2021. Boston, MA.
2. **MT Fernez** and BM Woolston#. "Development of a Transcriptional Biosensor for Interrogating the Role of Hydrogen Sulfide in IBD Onset" *AIChE*. Nov. 8, 2021. Boston, MA.
1. **BM Woolston#** "Clostridium ljungdahlii as a Platform for Syngas Bioconversion." *CCNET*. February 11-12, 2020. Nottingham, UK.

Poster Presentations (Prior to Northeastern).....

9. **BM Woolston**, M Reiter, JR King, and G Stephanopoulos. "Engineering *Escherichia coli* to Consume Methanol." *AIChE Annual Meeting*. November 15, 2016. San Francisco, CA.
8. DF Emerson, **BM Woolston**, DH Currie, and G Stephanopoulos. "Nitrate reduction occurs simultaneously to growth of *Clostridium ljungdahlii* on CO₂ and H₂." *Clostridium XIV*. August 29. Hanover, NH.
7. **BM Woolston**, DF Emerson, DH Currie, and G Stephanopoulos. "Toward high-yield production of 3-hydroxybutyric acid (3HB) in the acetogen *Clostridium ljungdahlii*." *Gordon Research Conference on C1 Metabolism*. August 4, 2016. Waterville Valley, NH.
6. JR King, **BM Woolston**, and G Stephanopoulos. "Plasmid transfer and genetic engineering in *Thiobacillus denitrificans*". *Gordon Research Conference on C1 Metabolism*. August 4, 2016. Waterville Valley, NH.
5. **BM Woolston** and G Stephanopoulos. "Evaluation of MCR-Based Methane Bioconversion." *ARPA-E REMOTE Meeting*. January 21, 2016. LaJolla, CA.
4. **BM Woolston**, DH Currie, and G Stephanopoulos. "Engineering *C. ljungdahlii* for Fuels and Chemical Production." *ARPA-E REMOTE Meeting*. January 21, 2016. LaJolla, CA.
3. **BM Woolston**, DF Emerson, A Kumar, and G Stephanopoulos. "Evaluation of Biosynthetic Pathways for Conversion of Natural Gas to Liquid Fuels". *Metabolic Engineering X*. June 17, 2014. Vancouver, CA.
2. **BM Woolston**, DH Currie, H Rismeni, DF Emerson, and G Stephanopoulos. "Development of Genetic Tools for the Metabolic Engineering of the Thermophilic Acetogen *Moorella thermoacetica*". *Metabolic Engineering X*. June 16, 2014. Vancouver, CA.
1. S Chakraborty, P Hu, H Rismai, A Silverman, **BM Woolston**, and G Stephanopoulos. "Gas-To-Liquid Biofuels using a Two-Stage Fermentation System". *MIT Energy Night*. October 19, 2012. Cambridge, MA.

Grants and Research Support

Total funds raised (my share only): \$3.7M

= Direct Costs Only

Awarded External Grants.....

12. **NSF CAREER Award** **Total: \$575,765**
PI: BM Woolston *B. Woolston: \$357,886#*
CAREER: Metabolic 'doping' to enhance production of biochemicals from sustainable C1 feedstocks
July 2025 - June 2030
11. **DOE JGI Community Science Program** **In-Kind, ≈\$50,000**
PI: BM Woolston
Expanding the product range of anaerobic methanol fermentation
July 2025. This competitive grant provides 500,000 bp of custom-synthesized DNA
10. **Propel a Cure Foundation** **Total: \$100,000**
PI: BM Woolston, Co-I: R Koppes *B. Woolston: \$50,000#*
Defining the role of microbial hydrogen sulfide in intestinal inflammation
March 2025 - February 2027
9. **ONR Young Investigator Award** **Total: \$750,000**
PI: BM Woolston *B. Woolston: \$468,750#*
Expanding The Product Range of Anaerobic Methanol Fermentation
Award announced October 2024. Contracting in progress
8. **NSF EDGE Functional Genomics** **Total: \$1,271,828**
PI: BM Woolston, Co-I: N Sandoval (Tulane), A Shen (Tufts) *B. Woolston: \$474,700#*
EDGE FGT: New approaches to rapidly domesticate non-model Clostridia for applications in sustainability and human health
Sep 2024 - Aug 2027
7. **NSF BIO/MCB Systems and Synthetic Biology** **Total: \$900,000**
PI: BM Woolston, Co-I: A Khalil (BU) *B. Woolston: \$390,508#*
Synthetic ecology of mixed aerobic/anaerobic microbial consortia
July 2024 - June 2027
6. **MassCEC Catalyst Program** **Total: \$75,000**
PI: BM Woolston *B. Woolston: \$75,000#*
A Co-Culture Method for Enhanced Biofuel and Biochemical Production from Untreated Waste Gases
Jul. 2023 - Jun. 2024
5. **NIH NIBIB Trailblazer R21** **Total: \$637,000**
PI: BM Woolston; Co-I's: R Koppes, AN Koppes, RL Carrier *B. Woolston: \$314,000#*
Engineered Probiotics for Closed-Loop Control of Disease-Associated Gut Metabolites in Gut-On-Chip Models
Sep. 2022 - Jun. 2025 (No cost extension until June 2026)
4. **NIST NIMBL** **Total: \$183,692**
PI: W. Xie; Co-I's: BM Woolston, J. Auclair *B. Woolston: \$17,550#*
Advanced Bioprocess Sensor and Analytical Technologies for Induced Pluripotent Stem Cell Culture Online Monitoring and Automation
Sep. 2022 - Feb. 2024
3. **DOE ARPA-E ECOSynBio** **Total: \$2.1M**
PI: G Stephanopoulos; Co-PI: BM Woolston *B. Woolston: \$468,975#*
Zero-Carbon Biofuels: An Optimized Two-Stage System for High Productivity Conversion of CO₂ to Liquid Fuels
Sep. 2021 - Mar. 2024

2. **MassVentures Acorn Innovation Program** **Total: \$15,000**
PI: BM Woolston *B. Woolston: \$15,000#*
 A Co-Culture Method for Enhanced Biofuel and Biochemical Production from Untreated Waste Gases
 May. 2021 - Oct. 2021
1. **DOE JGI Community Science Program** **In-Kind, ≈\$50,000**
PI: BM Woolston
 Development of a Robust Genome Engineering Toolbox for the Model Acetogen, *Eubacterium limosum*
 November 2021. This competitive grant provides 500,000 bp of custom-synthesized DNA

Internal Grants.....

3. **CRI SPARK Fund** **Total: \$50,000**
PI: BM Woolston *B. Woolston: \$50,000**
 A Co-Culture Method for Enhanced Biofuel and Biochemical Production from Untreated Waste Gases
 Jan. 2022 - Dec. 2022
2. **Northeastern ADVANCE Mutual Mentoring Program** **Total: \$3,000**
PI: BM Woolston; Co-I's: E Libby, J Li, N Joshi, E Sonntag, E Levine *B. Woolston: \$3,000**
 NUSYNBIO: A Research Community to Promote Faculty, Student and Institutional Leadership in Synthetic Biology
 Jan. 2022 - Dec. 2022
1. **URF PEAK Awards** **Total: \$23,389**
PI: BM Woolston *Spring 2020-Present*
 Competitive internal funding from Undergraduate Research Fellowship office to support 12 undergraduate researchers in my lab

Pending and Non-Funded Grants.....

A full list of pending and non-funded grants is provided in Appendix B

Teaching and Advising

New Course Development.....

Pharmaceutical Engineering MS

CHME 7600, 7601, 7602

2022

As part of a new MS program in Pharmaceutical Engineering, I developed three new courses: CHME 7601 and CHME 7602 are a two-semester lecture-based track in pharmaceutical engineering, designed to teach core chemical engineering principles and Python programming in the context of biopharmaceutical manufacturing. The third is a lab-based course designed to reinforce the theoretical principles from the first two courses in a bioprocess lab, providing students hands-on experience in cell culture, bioreactor operation, and downstream purification.

Courses Taught at Northeastern

Semester	Course Number	Title	Enrollment	Instructor Effectiveness ¹	Student Learning ²
Fall 2024	CHME 7600	Pharmaceutical Engineering I	11	5.0 (4.6/4.5)	4.9 (4.5/4.3)
Spring 2024	CHME 7601	Pharmaceutical Engineering II	8	4.9 (4.6/4.5)	4.8 (4.5/4.3)
Fall 2023	CHME 7600	Pharmaceutical Engineering I	11	4.8 (4.5/4.4)	4.9 (4.5/4.5)
Fall 2022	CHME 5630	Biochemical Engineering	15	5.0 (4.3/4.0)	4.8 (4.3/4.3)
Spring 2022	CHME 5630	Biochemical Engineering	20	4.7 (4.4/4.5)	4.7 (4.3/4.3)
Fall 2021	CHME 5630	Biochemical Engineering	15	4.7 (4.2/4.4)	4.7 (4.2/4.3)
Spring 2021	CHME 5630	Biochemical Engineering	24	4.7 (4.5/4.5)	4.8 (4.5/4.4)
Summer 2020	CHME 7340	Chemical Engineering Kinetics & Reactor Design	11	4.8 (4.7/4.5)	5.0 (4.7/4.3)
Spring 2020	CHME 5630	Biochemical Engineering	18	4.9 (4.6/4.5)	4.8 (4.4/4.3)

1: "What is your overall rating of this instructor's teaching effectiveness?" Almost always effective = 5; Never effective = 1

2: "I learned a lot in this course". Strongly agree = 5; Strongly disagree = 1

Numbers in parentheses show ChemE Department and University mean scores: (ChemE/University)

Guest Lectures at Northeastern

○ CHME 4510 Kinetics (Prof. Debra Auguste - 1 Lecture, Prof. Richard West - 2 Lectures)

Graduate Supervision

* = Graduated

- | | | |
|----|---|--|
| 1. | Katie Hoyt*
<i>Investigating substrate co-metabolism by Eubacterium limosum</i>
Job: Advisor at Tora Consulting (Columbia, NC) | ChemE Ph.D.
2019-2025 |
| 2. | Matt Fernez* (Co-Advisor: R. Carrier)
<i>Development of a Biosensor for Hydrogen Sulfide</i> | ChemE Ph.D.
2019-2025 |
| 3. | Patrick Sanford*
<i>Developing Eubacterium limosum as a platform for anaerobic natural product biosynthesis</i>
Job: Metabolic Engineering Scientist at Terragia Biofuels (Hannover, NH) | ChemE Ph.D.
2020-2024 |
| 4. | Justin Hayes (NSF Fellow, Co-Advisor: R. Koppes)
<i>Combining synthetic biology and microphysiological models</i> | ChemE Ph.D. Candidate
2021-Present |
| 5. | Guanyu Zhou
<i>A synthetic engineered microbial community for enhanced gas fermentation</i> | ChemE Ph.D. Candidate
2022-Present |
| 6. | William Gasparrini
<i>Expanding ¹³C Metabolic Flux Analysis to Synthetic Microbial Consortia</i> | ChemE Ph.D. Candidate
2023-Present |
| 7. | Maxwell Nyadeva
TBD | ChemE Ph.D. Student
2024-Present |
| 8. | Paul Carter
TBD | ChemE Ph.D. Student
2024-Present |
| 9. | Louis Moon
TBD | BioE Ph.D. Student
2025-Present |

- | | | |
|-----|---|---|
| 10. | Eric Johnson (Co-Advisor: A. Koppes)
<i>TBD</i> | BioE Ph.D. Student
<i>2025-Present</i> |
| 11. | Hanna White
<i>TBD</i> | ChemE Ph.D. Student
<i>2025-Present</i> |

Thesis Committee Membership.....

- | | | |
|-----|---|---|
| 1. | Alexa Van Voorhis
<i>ChemE Ph.D.</i> | Advisor: R. Sherbo
<i>Ongoing</i> |
| 2. | Julie McDonal
<i>Biology Ph.D.</i> | Advisor: M. Shoulders, MIT
<i>Ongoing</i> |
| 3. | Noam Grunfeld
<i>BioE Ph.D.</i> | Advisor: E. Libby
<i>Ongoing</i> |
| 4. | Vy Nguyen
<i>BioE Ph.D.</i> | Advisor: E. Levine
<i>Ongoing</i> |
| 5. | Emma Meehan
<i>ChemE Ph.D.</i> | Advisor: C. Lee-Parsons
<i>Ongoing</i> |
| 6. | Ray Li
<i>ChemE Ph.D.</i> | Advisor: M. Su
<i>Ongoing</i> |
| 7. | Ted Raymond
<i>ChemE Ph.D.</i> | Advisor: R. West
<i>Ongoing</i> |
| 8. | Hui Yan Kuang
<i>Chemistry Ph.D.</i> | Advisor: N. Joshi
<i>Ongoing</i> |
| 9. | Luca Ricci
<i>ChemE Ph.D.</i> | Advisor: D. Fino, Politecnico di Torino, Italy
<i>Defended 2023</i> |
| 10. | Zach Rogers
<i>ChemE Ph.D.</i> | Advisor: S. Bencherif
<i>Defended 2023</i> |
| 11. | Bill Doherty
<i>ChemE Ph.D.</i> | Advisor: R. Koppes
<i>Ongoing</i> |
| 12. | Rudolph Abdelmessih
<i>ChemE Ph.D.</i> | Advisor: D. Augustine
<i>Defended 2024</i> |
| 13. | Guillaume Pregnon
<i>Ph.D.</i> | Advisor: P. Soucaille, INSTA-Toulouse, France
<i>Defended 2022</i> |
| 14. | Clara Romero Santiveri
<i>ChemE Ph.D.</i> | Advisor: E. Goluch
<i>Defended 2021</i> |
| 15. | Michael Galletti
<i>ChemE M.S.</i> | Advisor: S. Lustig
<i>Defended 2021</i> |
| 16. | Kian Mehrabani
<i>ChemE M.S.</i> | Advisor: West
<i>Defended 2021</i> |
| 17. | Bob Van Hove
<i>Bioscience Ph.D.</i> | Advisor: M. De May, Gent University, Belgium
<i>Defended 2020</i> |
| 18. | Chao Xu
<i>ChemE M.S.</i> | Advisor: R. West
<i>Defended 2020</i> |
| 19. | Shenghui Qin
<i>ChemE M.S.</i> | Advisor: R. West
<i>Defended 2020</i> |

Undergraduate Students Supervised for Research.....

* indicates student has graduated

Student	Class	Type	Project
Amy Crook	2028	Volunteer	<i>E. limosum</i> metabolic engineering
Shuran Chen	2027	Volunteer	Sulfide biosensor
Ella Sweet	2027	Volunteer	Sensing of hydrogen sulfide
Zachary Harrington	2027	Volunteer	TBD
Briella Quigley	2027	Volunteer	Anaerobic sensing of hydrogen sulfide
Aayushi Sharma	2026	Fellowship	Verifying bacterial strains in gut-on-a-chip models
Sofia De Jesus	2026	Fellowship	Sequestration of hydrogen sulfide through cysteine
Dhruv Jatkar	2026	Fellowship	Computational modeling of aerobic-anaerobic co-culture
Shanthi Hegde	2026	Fellowship	Engineering anaerobic sulfide oxidation for microbial biosensing
Mia Weisman*	2025	Fellowship	Cysteine synthesis from hydrogen sulfide
Anna Lunger*	2024	Fellowship	Hydrogen sulfide sequestration via glutathione synthesis
Katherine Miller*	2023	Fellowship	Investigation of EPS synthesis in <i>Eubacterium limosum</i>
Patrick Sliter*	2023	Fellowship	A DIY spectrophotometer for online cell density measurements
Garrett Hull*	2021	Volunteer	Impact of electron mediators on <i>C. ljungdahlii</i> metabolism
Anthony Stohr*	2021	Fellowship	Nanaerobic co-culture for syngas fermentation
James Siniomeri*	2020	Volunteer	Investigating formate metabolism in <i>C. ljungdahlii</i>

Service

Service to the Department of Chemical Engineering.....

Chemical Engineering Dept. Graduate Committee 2020-Present

Assistant Chair of Graduate Admissions (2021)

Chemical Engineering Graduate Student Council 2020-Present

Co-Advisor

Admitted PhD Students LGBTQ+ Discussion Session 2021-Present

Organize and lead discussion during admitted students' visit

Service to the College of Engineering.....

PharmEng M.S. Program Development and Launch 2022-Present

ChemE Lead

Worked with stakeholders in College of Engineering and College of Health Sciences to develop curriculum and get approval for new M.S. program in pharmaceutical engineering. Conducted webinars and open-houses for recruiting, as well as application review

NU SynBio 2022-Present

Founder

I lead and organize a cross-departmental seminar series and yearly symposium to enhance campus synthetic biology community and educational opportunities for trainees

COE Virtual Open House 2020

ChemE representative

Service to the University.....

International Genetically Engineered Machine (iGEM) Competition 2023-Present

Founder and Faculty Advisor

Club provides undergraduate synthetic biology research experience through participation an internationally recognized competition. I restarted the club, recruited and coached students through project selection, fundraising, and wet-lab work. Trainees from my lab provide hands-on instruction to the 15-member team, and one of my NSF grants provides substantial financial support. Team members presented their project at the annual jamboree in Paris, France in Fall 2024.

CCB/ChemE Faculty Search Committee

2021

Successful search (2 hires: Magda Barecka and Rebecca Sherbo)

Service to the Discipline.....

Conference and Workshop Chairing:

47th SIMB Symposium on Biofuels and Chemicals (SBFC)

2025

Conference Chair

Milwaukee, WI

I was responsible for planning the technical program for an international two-track meeting with approximately 200 attendees from across academia, the National labs, and industry.

CASA-Bio Workshop: Unleashing the Power of Biology for Carbon Capture and Utilization

2024

Workshop Co-Chair

Virtual

Co-led a 3-day workshop sponsored by several U.S funding agencies and OSTP to collect input from the research community that was synthesized into an Initiative Proposal for 'future R&D initiatives with high potential to produce meaningful outcomes for the bioeconomy', in response to the Biden administration Executive Order on Advancing Biotechnology and Biomanufacturing. [CASA-Bio](#)

2024 SIMB Symposium on Biofuels and Chemicals (SBFC)

2024

Conference Co-Chair

Alexandria, VA

AIChE Microbiome Engineering Conference

2023

Organizing Committee

Berkeley, CA

IMES Metabolic Engineering 15 Conference

2023

Organizing Committee; Session Chair

Singapore

Grant Review:

NIH Study Section: Chemical Synthesis and Biosynthesis (CSB)

February 2025

Ad-Hoc Reviewer

NIH Study Section: Prokaryotic Cell and Molecular Biology (PCMB)

October 2024

Ad-Hoc Reviewer

Ad-Hoc Proposal Panel Review

2021-Present

Reviewer & Panelist for multiple NSF, DOE, and USDA programs

Session Chairing:

AIChE Annual Meeting

2022-2024

Area 15c Topic Chair: Metabolic Engineering

Multiple locations

AIChE Annual Meeting

2021-2024

Session Chair

Multiple locations

Metabolic Engineering 15

2023

Session Chair

Singapore

2023 SIMB Symposium on Biofuels and Chemicals (SBFC)

2023

Topic Area Chair: Alternative Feedstocks and Biosynthetic Materials

Portland, OR

2022 SIMB Symposium on Biofuels and Chemicals (SBFC)

2022

Convener (Session Chair)

New Orleans, LA

Editorial Board Membership and Guest Editorship:

Systems and Synthetic Biology

2023-2024

Guest Editor

Special Issue: Synthetic biotechnology for C1 bio-refinery

Journal of Industrial Microbiology and Biotechnology

2023

Guest Editor

Special Issue: Frontiers in Industrial Microbiology and Biotechnology: 2023

Synthetic and Systems Biotechnology <i>Editorial Board Member</i>	2023-Present
Journal of Industrial Microbiology and Biotechnology <i>Editorial Board Member</i>	2021-Present
Metabolic Engineering Communications <i>Editorial Board Member</i>	2018-Present
<u>Committee Membership:</u>	
IMES Jay Bailey Young Investigator Award Committee <i>Committee Member</i>	2023-Present
AIChE LGBTQ+ Programming Committee <i>Committee Member</i>	2022-Present

Peer Review:
 Over 50 manuscripts in: Science, Nature Biotechnology, Nature Chemical Biology, Nature Chemical Engineering, PNAS, Metabolic Engineering, ACS Synthetic Biology, Synthetic and Systems Biology, Frontiers in Microbiology, and others

Professional Development

Teaching Practice Development.....

Kaufman Teaching Certificate Program
MIT Teaching and Learning Lab 2017
 The [KTCP](#) is a series of 8 interactive workshops intended for late-program graduate students and postdocs interested in academic careers or developing skills to support their teaching. Topics include designing a course, preparing a lesson plan, assessing and providing feedback to students, creating an effective and welcoming classroom climate, along with others.

Professional Membership.....

- Society for Industrial Microbiology and Biotechnology (SIMB)
- American Institute of Chemical Engineers (AIChE)