

# Michelle A. O'Malley

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## PRINCIPLE RESEARCH INTERESTS:

My research develops new technologies to genetically engineer non-model microbes and anaerobic consortia for sustainable chemical production, remediation, and natural product discovery. Our approach combines classical microbiology with cutting-edge tools (genome sequencing, RNA-Seq) to engineer the processes that underlie protein and enzyme production. Current efforts include discovery of novel enzymes from anaerobic gut fungi, metabolic engineering for enhanced anaerobic cooperation, engineering of synthetic enzyme complexes for consolidated bioprocessing, and deciphering the structure-function relationship of membrane proteins.

## EDUCATION AND TRAINING

**2009-2012 USDA-NIFA Postdoctoral Fellowship, MIT (Dept. of Biology)/Broad Institute**

Advisor: Chris A. Kaiser

**2009 Ph.D. Chemical Engineering University of Delaware**

Advisor: Anne Skaja Robinson

Thesis Project: *Expression, Purification, and Biophysical Characterization of G-Protein Coupled Receptors Expressed from Saccharomyces cerevisiae*

**2004 B.S. Chemical Engineering Carnegie Mellon University**

**B.S. Biomedical Engineering**

University Honors, College of Engineering Research Honors

## PROFESSIONAL EXPERIENCE

**2021 – Present** Associate Director, UC-Santa Barbara, Bioengineering Program  
**2020 – Present** Professor, UC-Santa Barbara, Dept. of Chemical Engineering  
**2018 – 2020** Associate Professor, UC-Santa Barbara, Dept. of Chemical Engineering  
**2017 – Present** Academic Research Member, Engineering Biology Research Consortium (EBRC)  
**2016 – Present** Visiting Professor, Harper Adams University (UK)  
**2015 – Present** Faculty Affiliate, Interdepartmental Graduate Program in Marine Sciences (IGPMS), University of California, Santa Barbara  
**2014 – Present** Faculty Affiliate, California NanoSystems Institute (CNSI)  
**2014 – Present** Faculty Affiliate, Center for Bioengineering, University of California, Santa Barbara  
**2012 – 2018** Assistant Professor, UC-Santa Barbara, Dept. of Chemical Engineering  
**2009 – 2012** USDA-NIFA Postdoctoral Fellow, MIT Dept. of Biology/Broad Institute  
**2004 – 2009** Graduate Fellow, University of Delaware Dept. of Chemical Engineering  
**2002 – 2004** Undergraduate Researcher, Carnegie Mellon, Dept. of Chemical Engineering  
**2003** REU Fellow, Case Western Reserve, Dept. of Macro. Science and Engineering  
**2001 – 2002** LERCIP Intern, NASA Glenn Research Center Polymers Division

## SELECTED HONORS AND AWARDS

**2021** AIChE Allan P. Colburn Award  
**2020** AIChE Food, Pharmaceutical, and Bioengineering Division Early Career Award  
**2020** American Institute of Medical and Biological Engineering (AIMBE) Fellow  
**2020** American Society of Microbiology Award for Early Career Applied and Biotech Research  
**2020** Lars G. Ljungdahl Lectureship, University of Georgia  
**2019** *Science News*' 2019 SN 10: Scientists to Watch  
**2019** ACS Division of Biochemical Technology (BIOT) Young Investigator Award  
**2018** National Academy of Engineering, US Frontiers of Engineering Symposium Invited Attendee  
**2018** Genewiz Award Recognizing Excellence in Genomics Research  
**2017** ACS Women Chemist Committee (WCC) Rising Star Award  
**2017** Camille Dreyfus Teacher-Scholar Award

2017	ACS Division of Polymeric Materials: Science and Engineering (PMSE) Young Investigator
2016	Visiting Professor, Harper Adams University, UK
2016	Gordon and Betty Moore Foundation Inventor Fellow (Finalist)
2016	<b>Presidential Early Career Award for Scientists and Engineers (PECASE)</b>
2016	Alan P. Colburn Memorial Lectureship, University of Delaware
2015	National Science Foundation (NSF) CAREER Award
2015	Cottage Health – UCSB Special Research Award
2015	MIT Technology Review Top 35 Innovators Under 35 (TR35)
2014	Hellman Faculty Fellowship
2014	TechConnect Innovation Award
2013	U.S. Department of Energy (DOE) Early Career Award
2011 – 2013	U.S. Department of Agriculture (USDA) ARS-NIFA Postdoctoral Fellowship
2011	Marion and Jasper Whiting Foundation Fellowship
2010	Company of Biologists Traveling Fellowship for International Research Training
2006 – 2009	NASA-Harriet G. Jenkins Predoctoral Fellowship (20 awarded nationally)
2009, 2007	American Institute of Chemical Engineers Women's Initiatives Committee Travel Award
2008	Biophysical Society Student Travel Grant
2007	Merck Award for Best Overall Poster, Biochemical Engineering Meeting XV
2007	American Chemical Society Leadership Development Award
2007	University of Delaware Department of Chemical Engineering Teaching Fellowship
2004 – 2006	Integrative Graduate Education Research Traineeship (IGERT) NSF Fellowship
2000 – 2004	University Athletic Association (UAA) Academic Honors
2000 – 2004	Presidential Scholarship, Carnegie Mellon University

## PUBLICATIONS

1. B. Fremin, GP-SmORF Consortium (including **M. A. O'Malley**), A. S. Bhatt, N. C. Krypides, "Revealing thousands of small, novel genes in global phage genomes," **Cell Reports**, *In press* (2022).
2. J. I. Yoo<sup>‡</sup>, T. Navaratna<sup>‡</sup>, P. Kolence, **M. A. O'Malley**, "GPCR-FEX: a fluoride-based selection system for rapid GPCR screening and engineering," **ACS Synthetic Biology**, 11: 39–45 (2022). <sup>‡</sup> equal author contributions. <https://doi.org/10.1021/acssynbio.1c00030>
3. J. L. Brown, C. L. Swift, S. Mondo, S. Seppälä, A. Salamov, V. Singan, B. Henrissat, J. K. Henske, S. Lee, K. LaButti, Guifen He, M. Yan, K. Barry, I. V. Grigoriev, **M. A. O'Malley**, "Co-cultivation of the anaerobic fungus *Caecomyces churrovis* with *Methanobacterium bryantii* enhances transcription of carbohydrate binding modules dockerins, and pyruvate formate lyases on specific substrates," **Biotechnology for Biofuels**, 14:234 (2021). <https://doi.org/10.1186/s13068-021-02083-w>
4. E. Blair, K. Dickson, **M. A. O'Malley**, "Microbial communities and their enzymes facilitate degradation of recalcitrant polymers in anaerobic digestion," **Current Opinion in Microbiology**, 64: 100-108 (2021). <https://doi.org/10.1016/j.mib.2021.09.008>
5. P. A. Leggieri, C. Kerdman-Andrade, T. S. Lankiewicz, M. T. Valentine, **M. A. O'Malley**, "Non-destructive quantification of anaerobic gut fungi and methanogens in co-culture reveals increased fungal growth rate and changes in metabolic flux relative to mono-culture," **Microbial Cell Factories**, 20: 199 (2021). <https://doi.org/10.1186/s12934-021-01684-2>
6. I. Podolsky, E. Schauer, S. Seppälä, **M. A. O'Malley**, "Identification of novel membrane proteins for improved lignocellulose conversion," **Current Opinion in Biotechnology**, 73: 198-204 (2022). <https://doi.org/10.1016/j.copbio.2021.08.010>
7. K. D. Q. Nguyen, M. Vigers, E. Sefah, S. Seppälä, J. P. Hoover, N. S. Schonenbach, B. Mertz, **M. A. O'Malley**, S. Han, "Homo-oligomerization of the human adenosine A<sub>2a</sub> receptor is driven by the intrinsically disordered C-terminus," **eLife**, 10:e66662 (2021). <https://doi.org/10.7554/eLife.66662>
8. C. L. Swift, K. B. Louie, B. P. Bowen, C. A. Hooker, K. V. Solomon, V. Singan, C. Daum, C. P. Pennachio, K. Barry, V. Shutthanandan, J. E. Evans, I. V. Grigoriev, T. R. Northen, **M. A. O'Malley**, "Co-cultivation of anaerobic fungi with rumen bacteria establishes an antagonistic relationship," **mBio**, 12: 4, e01442-21 (2021). <https://doi.org/10.1128/mBio.01442-21>

9. C. L. Swift, N. G. Malinov, S. J. Mondo, A. Salamov, I. V. Grigoriev, **M. A. O'Malley**, "A genomic catalog of stress response genes in anaerobic fungi for applications in bioproduction," **Frontiers in Fungal Biology**, Vol. 2, Article 708358 (2021). <https://doi.org/10.3389/ffunb.2021.708358>
10. S. P. Lillington, W. Chrisler, C. H. Haitjema, S. P. Gilmore, C. R. Smallwood, V. Shutthanandan, J. E. Evans, **M. A. O'Malley**, "Cellulosome localization patterns vary across life stages of anaerobic fungi," **mBio**, 12(3): e00832-21 (2021). <https://doi.org/10.1128/mBio.00832-21>
11. I. A. Podolsky, S. Seppälä, H. Xu, Y. S. Jin, **M. A. O'Malley**, "A SWEET surprise: anaerobic fungal sugar transporters and chimeras enhance sugar uptake in yeast," **Metabolic Engineering**, 66: 137-147 (2021). <https://doi.org/10.1016/j.ymben.2021.04.009>
12. C. L. Swift, K. Louie, B. Bowen, H. M. Olsen, S. O. Purvine, A. Salamov, S. J. Mondo, K. V. Solomon, A. T. Wright, T. R. Northen, I. V. Grigoriev, N. P. Keller, **M. A. O'Malley**, "Anaerobic gut fungi are an untapped reservoir of natural products," **PNAS**, 118 (18) e20198551118 (2021). <https://doi.org/10.1073/pnas.2019855118>
13. S. Roux, B. G. Paul, S. C. Bagby, S. Nayfach, M. A. Allen, G. Attwood, R. Cavicchioli, L. Chistoserdova, R. J. Gruninger, S. J. Hallam, M. E. Hernandez, M. Hess, W. Liu, T. A. McAllister, **M. A. O'Malley**, X. Peng, V. I. Rich, S. R. Saleska, E. A. Elie-Fadrosh, "Ecology and molecular targets of hypermutation in the global microbiome," **Nature Communications**, 12: 3076 (2021). <https://doi.org/10.1038/s41467-021-23402-7>
14. L. M. G. Saye, T. A. Navaratna, J. P. J. Chong, **M. A. O'Malley**, M. K. Theodorou, M. Reilly, "The anaerobic fungi: challenges and opportunities for industrial lignocellulosic biofuel production," **Microorganisms**, 9(4): 694 (2021). <https://doi.org/10.3390/microorganisms9040694>
15. P. A. Leggieri, Y. Liu, M. Hayes, B. A. Connors, S. Seppälä, **M. A. O'Malley**, O. S. Venturelli, "Integrating systems and synthetic biology to understand and engineer microbiomes," **Annual Reviews of Biomedical Engineering**, Vol. 23 (2021). <https://doi.org/10.1146/annurev-bioeng-082120-022836>
16. S. E. Wilken, J. M. Monk, P. A. Leggieri, C. A. Lawson, T. S. Lankiewicz, S. Seppälä, C. Daum, J. Jenkins, A. Lipzen, S. J. Mondo, K. W. Berry, I. V. Grigoriev, J. K. Henske, M. K. Theodorou, B. O. Palsson, L. R. Petzold, **M. A. O'Malley**, "Experimentally validated reconstruction and analysis of a genome-scale metabolic model of an anaerobic Neocallimastigomycota fungus," **mSystems**, 6(1): e00002-21 (2021). <http://dx.doi.org/10.1128/mSystems.00002-21>
17. X. Peng, S. E. Wilken, T. S. Lankiewicz, S. P. Gilmore, J. L. Brown, J. K. Henske, C. L. Swift, A. Salamov, K. Barry, I. V. Grigoriev, M. K. Theodorou, D. L. Valentine, **M. A. O'Malley**, "Genomic and functional analyses of fungal and bacterial consortia that enable lignocellulose breakdown in goat gut microbiomes," **Nature Microbiology**: 6(4): 499–511 (2021). (*Invited submission*) <http://dx.doi.org/10.1038/s41564-020-00861-0>
18. C. Wangsanuwat<sup>‡</sup>, K. Heom<sup>‡</sup>, E. Liu, **M. A. O'Malley**, S. S. Dey, "Efficient and cost-effective bacterial mRNA sequencing from low input samples through ribosomal RNA depletion," **BMC Genomics**, 21: 717 (2020). <sup>‡</sup> equal author contributions <http://dx.doi.org/10.1186/s12864-020-07134-4>
19. J. I. Yoo, S. Seppälä, **M. A. O'Malley**, "Engineered fluoride sensitivity enables biocontainment and selection of genetically-modified yeasts," **Nature Communications**, 11: 5459 (2020). <http://dx.doi.org/10.1038/s41467-020-19271-1>
20. GEM Consortium (252 authors, including X. Peng and **M. A. O'Malley**) "A genomic catalog of Earth's microbiomes," **Nature Biotechnology**, 39, 499-509 (2021). <http://dx.doi.org/10.1038/s41587-020-0718-6>
21. L. Hagen, C. G. Brooke, C. Shaw, A. D. Norbeck, H. Piao, M. O Arntzen, H. Brewer, A. Copeland, N. Isern, A. Shukla, S. Roux, V. Lombard, B. Henrissat, **M. A. O'Malley**, I. Grigoriev, S. Tringe, R. Mackie, L. Pasa-Tolic, P. B. Pope, M. Hess, "Proteome specialization of anaerobic fungi during ruminal degradation of recalcitrant plant fiber," **ISME Journal**, 15: 421–434 (2021). <http://dx.doi.org/10.1038/s41396-020-00769-x>
22. T. A. Rush, V. Puech-Pages, A. Bascaules, P. Jargeat, F. Maillat, A. Haouy, A. QuyManh Maës, M. Keller-Pearson, J. Tannous, K. R. Cope, K. Garcia, J. Maeda, C. Johnson, B. Kleven, Q. J. Choudhury, J.

- Labbé, C. L. Swift, **M. A. O'Malley**, J. W. Bok, S. Cottaz, S. Fort, V. Poinso, M. R. Sussman, C. Lefort, J. Nett, N. P. Keller, G. Becard, J. M. Ané, "Lipo-chitooligosaccharides as regulatory signals of fungal growth and development," **Nature Communications**, 11: 3897 (2020). <http://dx.doi.org/10.1038/s41467-020-17615-5>
23. S. E. Wilken, P. A. Leggieri, C. Kerdman-Andrade, M. Reilly, M. K. Theodorou, **M. A. O'Malley**, "An Arduino based automatic pressure evaluation system (A-APES) to quantify growth of non-model anaerobes in culture," **AIChE Journal**, 66 (12): e16540 (2020). <http://dx.doi.org/10.1002/aic.16540>
24. S. P. Gilmore, S. Lillington, C. H. Haitjema, R. de Groot, **M. A. O'Malley**, "Designing chimeric enzymes for synthetic fungal cellulosomes," **Synthetic and Systems Biotechnology**, 5: 23-32 (2020). <http://dx.doi.org/doi.org/10.1016/j.synbio.2020.01.003>
25. J. I. Yoo, P. S. Daugherty, **M. A. O'Malley**, "Bridging non-overlapping reads illuminates high-order epistasis between distal protein sites in a GPCR," **Nature Communications**, 11, 690 (2020). <http://dx.doi.org/10.1038/s41467-020-14495-7>
26. S. E. Wilken, S. Seppälä, T. S. Lankiewicz, M. Saxena, J. K. Henske, A. A. Salamov, I. V. Grigoriev, **M. A. O'Malley**, "Genomic and proteomic biases inform metabolic engineering strategies for anaerobic fungi," **Metabolic Engineering Communications**, 10, e00107 (2020). (Invited submission) <http://dx.doi.org/10.1016/j.mec.2019.e00107>
27. S. Lillington, P. Leggieri, K. Heom, **M. A. O'Malley**, "Nature's recyclers: anaerobic microbial communities drive crude biomass deconstruction," **Current Opinion in Biotechnology**, 62: 38-47 (2020). (Invited submission) <http://dx.doi.org/10.1016/j.copbio.2019.08.015>
28. V. Dollhofer, D. Young, S. Seppälä, C. Hooker, N. Youssef, S. M. Podmirseg, M. Nagler, M. Reilly, Y. Li, K. Fliegerová, Y. Cheng, G. W. Griffith, M. Elshahed, K. V. Solomon, **M. A. O'Malley**, M. K. Theodorou, "The biotechnological potential of anaerobic gut fungi," *The Mycota Vol. II: Genetics and Biotechnology*, 3<sup>rd</sup> edition, edited By J. Philipp Benz and Kerstin Schipper (2020) (book chapter) (Invited Submission). [http://dx.doi.org/10.1007/978-3-030-49924-2\\_17](http://dx.doi.org/10.1007/978-3-030-49924-2_17)
29. C. E. Lawson, W. R. Harcombe, R. Hatzepichler, S. R. Lindemann, F. Löffler, **M. A. O'Malley**, H. Garcia-Martin, B. F. Pflieger, L. Raskin, O. S. Venturelli, D. G. Weissbrodt, D. R. Noguera, K. D. McMahon, "Common principles and best practices for engineering microbiomes." **Nature Reviews Microbiology**, 17: 725–741 (2019). <http://dx.doi.org/10.1038/s41579-019-0255-9>
30. C. L. Swift, J. L. Brown, S. Seppala, **M. A. O'Malley**, "Co-cultivation of the anaerobic fungus *Anaeromyces robustus* with *Methanobacterium bryantii* enhances transcription of carbohydrate active enzymes," **Journal of Industrial Microbiology**, 46(9):1427-1433 (2019). (Invited article) <http://dx.doi.org/10.1007/s10295-019-02188-0>
31. S. P. Gilmore<sup>‡</sup>, T. Lankiewicz<sup>‡</sup>, S. E. Wilken, J. L. Brown, J. A. Sexton, J. K. Henske, M. K. Theodorou, D. L. Valentine, **M. A. O'Malley**, "Top-down enrichment guides in formation of synthetic microbial consortia for biomass degradation," **ACS Synthetic Biology**, 8: 2174-2185 (2019). <sup>‡</sup> equal author contributions <http://dx.doi.org/10.1021/acssynbio.9b00271>
32. S. Seppälä<sup>‡</sup>, J. I. Yoo<sup>‡</sup>, D. Yur, **M. A. O'Malley**, "Heterologous transporters from anaerobic fungi bolster fluoride tolerance in *Saccharomyces cerevisiae*," **Metabolic Engineering Communications**, 9, e00091 (2019). <sup>‡</sup> equal author contributions <http://dx.doi.org/10.1016/j.mec.2019.e00091>
33. S. E. Wilken, C. L. Swift, I. A. Podolsky, T. S. Lankiewicz, J. L. Brown, S. Seppälä, **M. A. O'Malley**, "Linking "omics" to function unlocks the biotech potential of non-model fungi," **Current Opinion in Systems Biology**, 14: 9-17 (2019). (Invited Article) <http://dx.doi.org/10.1016/j.coisb.2019.02.001>
34. I. A. Podolsky<sup>‡</sup>, S. S. Seppälä<sup>‡</sup>, T. S. Lankiewicz, J. L. Brown, C. L. Swift, **M. A. O'Malley**, "Harnessing nature's anaerobes for biotechnology and bioprocessing," **Annual Reviews of Chemical & Biomolecular Engineering**, 10:105-128 (2019). (Invited Article) <sup>‡</sup> equal author contributions <http://dx.doi.org/10.1146/annurev-chembioeng-060718-030340>

35. K. V. Solomon, J. K. Henske, S. P. Gilmore, A. Lipzen, I. Grigoriev, D. A. Thompson, **M. A. O'Malley**, "Catabolic repression in early-diverging anaerobic fungi is partially mediated by natural antisense transcripts," **Fungal Genetics & Biology**, 121: 1-9 (2018). <http://dx.doi.org/10.1016/j.fgb.2018.09.004>
36. J. K. Henske, S. P. Gilmore, C. H. Haitjema, K. V. Solomon, **M. A. O'Malley**, "Biomass-degrading enzymes are catabolite repressed in anaerobic gut fungi," **AIChE Journal**, 64(12): 4263-4270 (2018). (Invited Article, Founders Issue Honoring Jay Bailey) <http://dx.doi.org/10.1002/aic.16395>
37. J. I. Yoo, **M. A. O'Malley**, "Tuning vector stability and integration frequency elevates functional GPCR production and homogeneity in *Saccharomyces cerevisiae*." **ACS Synthetic Biology**, 7(7): 1763-1772 (2018). <http://dx.doi.org/10.1021/acssynbio.8b00036>
38. S. E. Wilken, M. Saxena, L. R. Petzold, **M. A. O'Malley**, "In silico identification of microbial partners to form consortia with anaerobic fungi," **Processes**, 6(1), 7 (2018). (Invited Article) <http://dx.doi.org/10.3390/pr6010007>
39. J. K. Henske, S. E. Wilken, K. V. Solomon, C. E. Smallwood, V. Shutthanandan, J. E. Evans, M. K. Theodorou, **M. A. O'Malley**, "Metabolic characterization of anaerobic fungi provides a path forward for bioprocessing of crude lignocellulose," **Biotechnology & Bioengineering**, 115(4): 874-884 (2018). <http://dx.doi.org/10.1002/bit.26515>
40. J. K. Henske, S. P. Gilmore, D. Knop, F. J. Cunningham, J. Sexton, C. E. Smallwood, V. Shutthanandan, J. E. Evans, M. K. Theodorou, **M. A. O'Malley**, "Transcriptomic characterization of *Caecomyces churrovis*: a novel, non-rhizoid forming lignocellulolytic anaerobic fungus," **Biotechnology for Biofuels**, 10: 305 (2017). <http://dx.doi.org/10.1186/s13068-017-0997-4>
41. J. K. Henske<sup>‡</sup>, S. D. Springer<sup>‡</sup>, **M. A. O'Malley**, A. Butler, "Substrate based differential expression analysis reveals control of biomass degrading enzymes in *Pycnoporus cinnabarinus*," **Biochemical Engineering Journal**, 130: 83-89 (2018). <sup>‡</sup> equal author contributions <http://dx.doi.org/10.1016/j.bej.2017.11.015>
42. S. Seppälä<sup>‡</sup>, S. E. Wilken<sup>‡</sup>, D. Knop, K. V. Solomon, **M. A. O'Malley**, "The importance of sourcing enzymes from non-conventional fungi for metabolic engineering & biomass breakdown," **Metabolic Engineering**, 44: 45-59 (2017). <sup>‡</sup> equal author contributions <http://dx.doi.org/10.1016/j.ymben.2017.09.008> (Invited Submission)
43. J. E. Edwards, R. J. Forster, T. M. Callaghan, V. Dollhofer, S. S. Dagar, Y. Cheng, J. Chang, S. Kittelmann, K. Fliegerova, A. K. Puniya, J. K. Henske, S. P. Gilmore, **M. A. O'Malley**, G. W. Griffith, H. Smidt, "PCR and 'omics based techniques to study the diversity, ecology and biology of anaerobic fungi: insights, challenges and opportunities," **Frontiers in Microbiology**, 8:1657 (2017). <http://dx.doi.org/10.3389/fmicb.2017.01657>
44. S. P. Gilmore, J. K. Henske, J. A. Sexton, K. V. Solomon, S. Seppälä, J. I. Yoo, L. M. Huyett, A. Pressman, Z. Cogan, V. Kivenson, X. Peng, Y. Tan, D. L. Valentine, **M. A. O'Malley**, "Genomic analysis of methanogenic archaea reveals a shift towards energy conservation," **BMC Genomics**, 18:639 (2017). <http://dx.doi.org/10.1186/s12864-017-4036-4>
45. X. Peng, C. L. Swift, M. K. Theodorou, **M. A. O'Malley**, "Methods for genomic characterization & maintenance of anaerobic fungi," **Methods in Molecular Biology, Fungal Genomics, Springer Protocols Series**. pp 53-67 (2018). (Invited Submission) [http://dx.doi.org/10.1007/978-1-4939-7804-5\\_5](http://dx.doi.org/10.1007/978-1-4939-7804-5_5)
46. C. H. Haitjema<sup>‡</sup>, S. P. Gilmore<sup>‡</sup>, J. K. Henske, K. V. Solomon, R. deGroot, A. Kuo, S. Mondo, A. Kuo, S. J. Mondo, A. A. Salamov, K. LaButti, Z. Zhao, J. Chiniquy, K. Barry, H. M. Brewer, S. O. Purvine, A. T. Wright, M. Hainaut, B. Boxma, T. van Alen, J. H. P. Hackstein, B. Henrissat, S. E. Baker, I. V. Grigoriev, **M. A. O'Malley**, "A parts list for fungal cellulosomes revealed by comparative genomics," **Nature Microbiology**, 2(8): 17087 (2017). <sup>‡</sup> equal author contributions <http://dx.doi.org/10.1038/nmicrobiol.2017.87>
47. S. J. Mondo, R. O. Dannebaum, R. Kuo, K. LaButti, S. Haridas, A. Kuo, A. Salamov, S. R. Ahrendt, A. Lipzen, W. Sullivan, W. Andreopolous, A. Clum, E. Lindquist, C. Daum, G. Ramamoorthy, A. Gryganskyi, D. Dulle, J. Magnuson, T. Y. James, **M. A. O'Malley**, J. E. Stajich, J. W. Spatafora, A. Visel, I. V. Grigoriev,

"Widespread adenine N6-methylation of active genes in fungi", **Nature Genetics**, 49: 964-968 (2017). <http://dx.doi.org/10.1038/ng.3859>

48. J. Niu, D. J. Lunn, A. Pusuluri, J. I. Yoo, **M. A. O'Malley**, S. Mitragotri, H. T. Soh, C. J. Hawker, "Engineering live cell surfaces with functional polymers via cytocompatible controlled radical polymerization," **Nature Chemistry**, 9: 537-545 (2017). <http://dx.doi.org/10.1038/nchem.2713>

49. S. Seppälä, K. V. Solomon, S. P. Gilmore, J. K. Henske, **M. A. O'Malley**, "Mapping the membrane proteome of anaerobic fungi identifies a wealth of carbohydrate binding proteins and transporters", **Microbial Cell Factories**, 15(1): 2012 (2016). <http://dx.doi.org/10.1186/s12934-016-0611-7>

50. X. Peng, S. P. Gilmore, **M. A. O'Malley**, "Microbial communities for bioprocessing: lessons learned from nature," **Current Opinion in Chemical Engineering**, 14: 103-109 (2016). (*Invited Article*) <http://dx.doi.org/10.1016/j.coche.2016.09.003>

51. J. L. Guerrero, P. S. Daugherty, **M. A. O'Malley**, "Emerging technologies for protease engineering: new tools to clear out disease," **Biotechnology & Bioengineering**, 114(1): 33-38 (2017). (*Invited Article*) <http://dx.doi.org/10.1002/bit.26066>

52. N. S. Schonenbach, M. D. Rieth, S. Han, **M. A. O'Malley**, "Adenosine A2a receptors form distinct oligomers in protein detergent complexes," **FEBS Letters**, 590: 3295-3306 (2016). <http://dx.doi.org/10.1002/1873-3468.12367>

53. G. J. Li, et al (+134 additional authors including K. V. Solomon, J. K. Henske, C. H. Haitjema, S. P. Gilmore, M. K. Theodorou, and **M. A. O'Malley**), "Fungal diversity notes 253-366: taxonomic and phylogenetic contributions to fungal taxa," **Fungal Diversity**, 78(1): 1-237 (2016). <http://dx.doi.org/10.1007/s13225-016-0366-9>

54. K. V. Solomon, E. Ovadia, F. Yu, W. Mizunashi, **M. A. O'Malley**, "Mitochondrial targeting increases specific activity of a heterologous valine assimilation pathway in *Saccharomyces cerevisiae*," **Metabolic Engineering Communications**, 3: 68-75 (2016). (*Most Accessed Article*) <http://dx.doi.org/10.1016/j.meteno.2016.03.004>

55. K. V. Solomon, C. H. Haitjema, J. K. Henske, S. P. Gilmore, D. Borges-Rivera, A. Lipzen, H. M. Brewer, S. O. Purvine, A. T. Wright, M. K. Theodorou, I. Grigoriev, A. Regev, D. A. Thompson, **M. A. O'Malley**, "Early-branching gut fungi possess a large, comprehensive array of biomass-degrading enzymes," **Science**, 351: 1192-1195 (2016). <http://dx.doi.org/10.1126/science.aad1431>

**Highlighted ahead of print as a First Release; featured in BBC News, Newsweek, CNBC News, Forbes, and radio interview on the BBC Newshour. Featured in Trends in Biochemical Sciences in a commentary by N. Louise Glass.**

56. J. L. Guerrero, **M. A. O'Malley**, P. S. Daugherty, "Intracellular FRET-based screen for redesigning the specificity of secreted proteases," **ACS-Chemical Biology**, 11(4): 961-970 (2016). <http://dx.doi.org/10.1021/acscchembio.5b01051>

57. K. V. Solomon<sup>‡</sup>, J. K. Henske<sup>‡</sup>, M. K. Theodorou, **M. A. O'Malley**, "Robust and effective methodologies for cryopreservation and DNA extraction from anaerobic gut fungi," **Anaerobe**, 38: 39-46 (2016). <sup>‡</sup> equal author contributions (*Most Accessed Article*) <http://dx.doi.org/10.1016/j.anaerobe.2015.11.008>

58. S. P. Gilmore, J. K. Henske, **M. A. O'Malley**, "Driving biomass breakdown through engineered cellulosomes," **Bioengineered**, 6:4, 204-208 (2015). (*Invited Article, Most Accessed Article*) <http://dx.doi.org/10.1080/21655979.2015.1060379>

59. N. S. Schonenbach, S. Hussain, **M. A. O'Malley**, "Structure and function of G-protein coupled receptor oligomers: implications for drug discovery," **WIREs: Nanomedicine and Nanobiotechnology**, 7: 408-427 (2015). (*Invited Article*) <http://dx.doi.org/10.1002/wnan.1319>

60. C. Haitjema, K. V. Solomon, J. K. Henske, M. K. Theodorou, **M. A. O'Malley**, "Anaerobic gut fungi: advances in isolation, culture, and cellulolytic enzyme discovery for biofuel production," **Biotechnology & Bioengineering**, 111(8): 1471-1482 (2014). (*Invited Article*) <http://dx.doi.org/10.1002/bit.25264>

61. K. V. Solomon, C. H. Haitjema, D. A. Thompson, **M. A. O'Malley**, "Extracting data from the muck: deriving biological insight from complex microbial communities and non-model organisms with next-generation sequencing," **Current Opinion in Biotechnology**, 28: 103-110 (2014). (*Invited Article*) <http://dx.doi.org/10.1016/j.copbio.2014.01.007>
62. **M. A. O'Malley**, M. K. Theodorou, C. A. Kaiser, "Evaluating expression and catalytic activity of anaerobic fungal fibrolytic enzymes native to *Piromyces* sp *E2* in *Saccharomyces cerevisiae*," **Environmental Progress and Sustainable Energy**, 31(1): 37-46 (2012). (*Most Accessed Article*) <http://dx.doi.org/10.1002/ep.10614>
63. **M. A. O'Malley**. "Neuromethods, Vol. 60: Methods for the Discovery and Characterization of G Protein-Coupled Receptors, edited by Craig W. Stevens", **ChemBioChem**, 13(6): 905-906 (2012). (Book Review) <http://dx.doi.org/10.1002/cbic.201100751>
64. **M. A. O'Malley**, M. E. Helgeson, N. J. Wagner, A. S. Robinson, "Toward rational design of protein detergent complexes: determinants of mixed micelles that are critical for the *in vitro* stabilization of a G-protein coupled receptor," **Biophysical Journal**, 101(8): 1938-1948 (2011). <http://dx.doi.org/10.1016/j.bpj.2011.09.018>
65. **M. A. O'Malley**, M. E. Helgeson, N. J. Wagner, A. S. Robinson, "The morphology and composition of cholesterol-rich micellar nanostructures determine transmembrane protein (GPCR) activity," **Biophysical Journal**, 100(2):L11-L13 (2011). (*Featured Article, Most Accessed Article*) <http://dx.doi.org/10.1016/j.bpj.2010.12.3698>
66. **M. A. O'Malley**, A. N. Naranjo, T. Lazarova, A. S. Robinson, "Analysis of adenosine A<sub>2a</sub> receptor stability: effects of ligands and disulfide bonds," **Biochemistry**, 49: 9181-9189 (2010). <http://dx.doi.org/10.1021/bi101155r>
67. **M. A. O'Malley**, J. D. Mancini, C. L. Young, E. C. McCusker, D. Raden, A. S. Robinson, "Progress towards heterologous expression of active G-protein coupled receptors in *Saccharomyces cerevisiae*: linking cellular stress responses with translocation and trafficking," **Protein Science**, 18(11):2356-2370 (2009). <http://dx.doi.org/10.1002/pro.246>
68. **M. A. O'Malley**, T. Lazarova, Z. T. Britton, A. S. Robinson, "High-level expression in *Saccharomyces cerevisiae* enables isolation and spectroscopic characterization of functional human adenosine A<sub>2a</sub> receptor," **Journal of Structural Biology**, 159:166-178 (2007). (*Invited Article*) <http://dx.doi.org/10.1016/j.jsb.2007.05.001>
69. E. C. McCusker, S. E. Bane, **M. A. O'Malley**, A. S. Robinson, "Heterologous GPCR expression: a bottleneck to obtaining crystal structures," **Biotechnology Progress**, 23(3):540-547 (2007). (*Invited Article*) <http://dx.doi.org/10.1021/bp060349b>
70. A. Wedekind, **M. A. O'Malley**, R. T. Niebauer, A. S. Robinson, "Optimization of the human adenosine A<sub>2a</sub> receptor yields in *Saccharomyces cerevisiae*," **Biotechnology Progress**, 22(5):1249-1255 (2006). <http://dx.doi.org/10.1021/bp050431r>

## PUBLICATIONS IN REVIEW

1. N. S. Schonenbach, A. M. Duran, J. I. Yoo, K. D. Q. Nguyen, J. Meiler, S. Han, **M. A. O'Malley**, "Towards engineering GPCR variants devoid of free cysteines via molecular modeling and combinatorial mutagenesis," *Submitted. (Journal of Molecular Biology)*.
2. T. S. Lankiewicz, D. L. Valentine, **M. A. O'Malley**, "An argument for using anaerobes to advance biomanufacturing and synthetic biology," *Submitted (mSystems)*.
3. M. S. Elshahed, R. A. Hanafy, Y. Cheng, S. S. Dagar, J. Edwards, V. Flad, K. O. Fliegerová, G. W. Griffith, S. Kittelmann, M. Lebuhn, **M. A. O'Malley**, S. Podmirseg, K. V. Solomon, J. Vinzelj, D. Young, N. Yousef, "On the characterization and rank assignment criteria for the anaerobic fungi (Neocallimastigomycota)," *Submitted (International Journal of Systematic and Evolutionary Microbiology)*

4. T. S. Lankiewicz, S. P. Lillington, **M. A. O'Malley**, "Lignocellulosic enzyme discovery in anaerobic fungi (Neocallimastigomycetes) enables biorefinery innovation," *Submitted*. (Invited, *Microbiology and Molecular Biology Reviews*)
5. P. A. Leggieri, M. T. Valentine, **M. A. O'Malley**, "Biofilm disruption enhances growth rate and carbohydrate active enzyme production in anaerobic fungi," *Submitted*. (*Bioresource Technology*)
6. T. S. Lankiewicz, H. Choudhary, Y. Gao, B. Amer, S. P. Lillington, P. A. Leggieri, J. L. Brown, C. L. Swift, A. Lipzen, H. Na, M. Amirebrahimi, M. K. Theodorou, E. E.K. Baidoo, K. Barry, I. V. Grigoriev, V. I. Tomhokin, J. Gladden, S. Singh, J. C. Mortimer, J. Ralph, B. A. Simmons, S. W. Singer, **M. A. O'Malley**, "Lignin deconstruction by anaerobic fungi," *Submitted* (*Science*)

## INTELLECTUAL PROPERTY

U.S. Patent, Patent Number: 10676766 – Inventors: Michelle A. O'Malley, Kevin V. Solomon, Wataru Mizunashi, Fujio Yu, "Biological Production of Methyl Methacrylate," (Issued 6/9/2020) (Licensed by Mitsubishi-Rayon)

U.S. Patent, Patent Number: 10717768 – Inventors: Michelle A. O'Malley, Kevin V. Solomon, Charles H. Haitjema, "Proteins from Anaerobic Fungi and Uses Thereof," (Issued 9/24/2020) (Licensed by Cognitek)

Invention Disclosure and Provisional Patent Application – Inventors: Igor Podolsky, Susanna Seppala, Michelle A. O'Malley. "Construction and engineering of novel membrane protein transporters for bioproduction," Assignee: The Regents of the University of California; UC CASE NUMBER: UCSB 2021-856.

Invention Disclosure and Provisional Patent Application – Inventors: Justin Yoo, Michelle A. O'Malley. "Fluoride tolerance as a selection mechanism in yeast," Assignee: The Regents of the University of California; UC CASE NUMBER: UCSB 2018-421-1.

Invention Disclosure and Provisional Patent Application – Inventors: Jennifer Guerrero, Michelle A. O'Malley, Patrick S. Daugherty. "Methods and compositions for redesigning secreted proteases for therapeutic use," Assignee: The Regents of the University of California; UC CASE NUMBER: UCSB 2016-011

## SELECTED PUBLICITY, QUOTES, AND FEATURED ARTICLES

Natural Products in Unexpected Places, UCSB Current, June 24, 2021

<https://www.news.ucsb.edu/2021/020340/natural-products-unexpected-places>

Gut fungi: Unexpected source of novel chemicals, DOE Joint Genome Institute, April 18, 2021

<https://jgi.doe.gov/gut-fungi-unexpected-source-of-novel-chemicals/>

Wonder Fungi: From biofuels and other commodity chemicals to methane production, genomic study peers into the mysteries of a goat's gut, **UCSB Current**, February 1, 2021

<https://www.news.ucsb.edu/2021/020165/wonder-fungi>

How Goat Poop Illuminates the Future of Biotechnology, **Modern Farmer**, February 21, 2021

<https://modernfarmer.com/2021/02/how-goat-poop-illuminates-the-future-of-biotechnology/>

Faculty open up about the mental health under the COVID-19 pandemic, **Chemical & Engineering News**, May 18, 2020.

<https://cen.acs.org/careers/diversity/Faculty-open-mental-health-under/98/i19>

Innovation for Humanity: Chemical Engineering Professor Michelle O'Malley Recognized for Work in Medical, Biological Fields, **UCSB Current**: April 2, 2020.

<https://www.news.ucsb.edu/2020/019846/innovation-humanity>

Michelle O'Malley Seeks Greener Chemistry through Elusive Fungi, **Science News**: October 2, 2019.

<https://www.sciencenews.org/article/michelle-omalley-sn-10-scientists-to-watch>

Betting on Waste, **UC-Santa Barbara Current**: September 10, 2019.

<https://www.news.ucsb.edu/2019/019618/betting-waste>

Engineers embrace microbiome messiness, **Nature Methods**: June 19, 2019.

<https://www.nature.com/articles/s41592-019-0460-5>

A Dung Detective Hunts for Rare Microbes, **NPR Science Friday (national radio interview)**: March 23, 2018



<https://www.sciencefriday.com/segments/a-dung-detective-hunts-for-rare-microbes/>

Scientists are Learning Exciting New Things from S\*\*\*holes: **Mother Jones**: January 15, 2018  
<https://www.motherjones.com/environment/2018/01/scientists-are-learning-exciting-new-things-from-shitholes/>

How Fungal Enzymes Break Down Cell Walls, **DOE Office of Science**: November 14, 2017  
<https://science.energy.gov/ber/highlights/2017/ber-2017-11-d/>

Driving Better Biofuels, **Academic Minute** (NPR Radio Interview): November 2, 2017.  
<https://academicminute.org/2017/11/michelle-omalley-university-of-california-santa-barbara-biofuels/>

Fungal Enzymes Team Up to More Efficiently Break Down Cellulose, **DOE JGI**: May 26, 2017.  
<http://jgi.doe.gov/fungal-enzymes-team-up-efficiently-break-down-cellulose/>

Yes, you can have a life outside the lab, **Science**: May 24, 2017.  
<http://www.sciencemag.org/careers/2017/05/yes-you-can-have-life-outside-lab>

Getting the Most Out of Your Postdoc, **Science**: September 19, 2016.  
<http://www.sciencemag.org/careers/2016/09/getting-most-out-your-postdoc>

Female Researchers Highlighted as Biofuel Innovators, **Laboratory Equipment**: August, 2016.  
<http://science.energy.gov/news/featured-articles/2016/05-11-16/>

What Biofuel Production Can Learn from the Zoo, **Department of Energy**: May 11, 2016.  
<http://science.energy.gov/news/featured-articles/2016/05-11-16/>

Can Goat Poop Overpower Fossil Fuels, **Forbes**: February 26, 2016.  
<http://www.forbes.com/sites/jamesconca/2016/02/26/can-goat-poop-overpower-fossil-fuels/#a76c71d7c76f>

Gut Feeling: How Animals Can Transform Renewables, **CNBC**: February 23, 2016.  
<http://www.cnn.com/2016/02/23/gut-feeling-how-animals-can-transform-renewables.html>

Fungi from goats' guts could lead to better biofuels, **BBC News (Accompanying radio interview on BBC Newshour)**: February 19, 2016.  
<http://www.bbc.com/news/science-environment-35612554>

Biofuel from Fungi: barnyard poop has potential to be broken down and turned into energy, **Newsweek**: February 19, 2016.  
<http://www.newsweek.com/biofuel-fungi-farm-animal-poop-energy-428623>

Biofuel Tech Straight from the Farm, **PNNL**: February 18, 2016.  
<https://www.pnnl.gov/science/highlights/highlight.asp?id=4203>

35 Innovators Under 35, 2015, **MIT Technology Review**: August 18, 2015  
<http://www.technologyreview.com/lists/innovators-under-35/2015/pioneer/michelle-omalley/>

Engineering a new chemical communication system into bacteria, **Chemical & Engineering (C&E) News**: August 10, 2015.  
<http://cen.acs.org/articles/93/web/2015/08/Engineering-New-Chemical-Communication-System.html>

Why the Biofuels Industry Needs New Technology, **MIT Technology Review**: June 29, 2015.  
<http://www.technologyreview.com/news/538876/at-a-crossroads-biofuels-seek-a-new-path-forward/>

It Takes Teamwork, Environmental Molecular Science Laboratory (EMSL) **Molecular Bond**: August 1, 2014.  
[http://www.emsl.pnnl.gov/emslweb/sites/default/files/TMB\\_August\\_2014\\_WEB.pdf](http://www.emsl.pnnl.gov/emslweb/sites/default/files/TMB_August_2014_WEB.pdf)

Just Horsing Around, **Institution of Chemical Engineering Blog**: September 24, 2014.  
<http://ichemeblog.org/2014/09/24/just-horsing-around-day-120/comment-page-1/>

Brewing Biofuel, **The Why Files**: January 31, 2014.  
<http://whyfiles.org/2014/brewing-biofuel/>

Enzymes from horse feces could hold secret to streamlining biofuel production, **American Chemical Society (ACS)**: April 11, 2013.

[http://portal.acs.org/portal/acs/corg/content?\\_nfpb=true&\\_pageLabel=PP\\_ARTICLEMAIN&node\\_id=222&content\\_id=CNBP\\_032591&use\\_sec=true&sec\\_url\\_var=region1&\\_uid=52def8c3-abcf-4a47-b22a-1de81f3cbaa8](http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=222&content_id=CNBP_032591&use_sec=true&sec_url_var=region1&_uid=52def8c3-abcf-4a47-b22a-1de81f3cbaa8)

Biofuel: What's new to make you go vroom!, **Huffingtonpost**: April 30, 2013.  
[http://www.huffingtonpost.ca/jason-tetro/biofuel\\_b\\_3127654.html](http://www.huffingtonpost.ca/jason-tetro/biofuel_b_3127654.html)

The secret to biofuels might be hidden in poop, **Smithsonian.com**: April 16, 2013.  
<http://blogs.smithsonianmag.com/smartnews/2013/04/the-secret-to-biofuels-might-be-hidden-in-poop/>

Horse poop fungi hold secret to cheaper biofuels, **Discovery News**: April 11, 2013.  
<http://news.discovery.com/tech/alternative-power-sources/horse-poop-fungi-biofuel-130411.htm>

Horse manure yields secret to ethanol fuel, **Los Angeles Times**: April 11, 2013.  
<http://articles.latimes.com/2013/apr/11/science/la-sci-sn-horse-manure-fuel-20130409>

## INVITED SEMINARS

"Unlocking the Biotech Potential of Anaerobic Gut Fungi," Chemical Engineering Department, **European Cooperation in Science & Technology (COS) 4<sup>th</sup> NC Yeast Series**, May 2022. (virtual)

"Unlocking the Biotech Potential of Anaerobic Gut Fungi," Chemical Engineering Department, **University of Houston**, April 2022.

"Unlocking the Biotech Potential of Anaerobic Gut Fungi," Chemical and Biological Engineering Department, **University of Wisconsin-Madison**, February 2022.

"Unlocking the Biotech Potential of Anaerobic Gut Fungi," Chemical Engineering Program, **Arizona State University**, February 2022.

"Unlocking the Biotech Potential of Anaerobic Gut Fungi," Department of Civil and Environmental Engineering, **Rice University**, October 2021.

"Unlocking the Biotech Potential of Anaerobic Gut Fungi," Department of Chemical Engineering, **Caltech**, October 2021.

"Unlocking the Biotech Potential of Anaerobic Gut Fungi," Department of Chemical and Biomolecular Engineering, **Georgia Tech**, September 2021.

"Deciphering the Structure and Function of CAZymes and Cellulosomes from Anaerobic Gut Fungi," **UCLA-DOE Institute for Genomics and Proteomics**, August 2021.

"Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry", Department of Bioengineering, **EPFL**, February 2021.

"Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry", Department of Bioengineering, **UC-San Diego**, October 2020.

"From Trash to Treasure via Microbiome Engineering", Department of Chemical Engineering, **UC-Santa Barbara**, August 2020.

"Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry", Department of Bioengineering, **UC-Riverside**, June 2020.

"Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry", Department of Molecular, Cell, and Developmental Biology, **UCSB**, January 2020.

"Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry", **Lars G. Ljungdahl Lectureship**, Department of Biochemistry, **University of Georgia**, January 2020.

"Harnessing Gut Microbes to Turn Waste into Energy," **Santa Barbara Science and Engineering Council**, December 2019.

"Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry", Department of Chemical Engineering, **Worcester Polytechnic University**, November 2019.

“Harnessing Gut Microbes to Turn Waste into Energy,” Department of Medical Microbiology & Immunology, **University of Wisconsin**, September 2019.

“Harnessing Gut Microbes to Turn Waste into Energy,” **Natick Soldier Center Sigma Xi Seminar**, July 2019.

“Harnessing Gut Microbes to Turn Waste into Energy,” **Santa Barbara Natural History Museum**, June 2019.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical and Biological Engineering, **Northwestern University**, April 2019.

“Synthetic Anaerobic Consortia for Bioproduction and Model Development,” Advances in Biotechnology Seminar Series, **Northwestern University**, April 2019.

“Engineering Synthetic Microbial Consortia Inspired by the Herbivore Rumen,” MIT Microbiome Club, **MIT**, Cambridge, MA, November 2018.

“Exploiting Anaerobes for Biomass Breakdown & Sustainable Chemistry,” **BASF**, San Diego, CA, October 2018.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical and Biological Engineering, **University of Wisconsin-Madison**, Madison, WI, September 2018.

“Engineering Synthetic Microbial Consortia Inspired by the Rumen Microbiome,” **BASF**, Company Webinar, August 2018.

“Engineering Synthetic Microbial Consortia Inspired by the Rumen Microbiome,” **Cold Spring Harbor Laboratory Synthetic Biology Course**, Cold Spring Harbor, NY, July 2018.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical and Biological Engineering, **Princeton University**, Princeton, NJ, April 2018.

“Unlocking the Potential of Early-Branching Fungi for Biomass Breakdown & Conversion” **Lawrence Berkeley National Laboratory**, Division of Life Sciences, Berkeley, CA, March 2017.

“Unlocking the Potential of Early-Branching Fungi for Biomass Breakdown & Conversion” **Carnegie Mellon University**, Department of Chemical Engineering, Pittsburgh, PA, March 2017.

“Unlocking the Potential of Early-Branching Fungi for Biomass Breakdown & Conversion” **U.S. Department of Energy**, Division of Biological and Environmental Research, Arlington, VA, February 2017.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical and Biomolecular Engineering, **Cornell University**, Ithaca, NY, December 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical Engineering, **Stanford University**, Palo Alto, CA, October 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” **SLAC National Accelerator Laboratory**, Palo Alto, CA, August 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” **Argonne National Laboratory**, Chicago, IL, July 2016.

“What Gut Microbes Can Teach us about Sustainability,” **UCSB GRIT Talks**, Santa Barbara, CA, June 2016.

“Microbial Allies to Promote Coastal Health”, University of California Global Health Institute (UCGHI) Silicon Valley Venture Partners, **UC San Francisco**, CA, May 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical and Biomolecular Engineering **Alan P. Colburn Memorial Lecture**, **University of Delaware**, Newark, DE, May 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical Engineering, **MIT**, Cambridge, MA, April 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Botany, **University of British Columbia**, Vancouver, Canada, February 2016.

“Engineering Anaerobes for Value-added Bioproduction,” **US Army Research Laboratory (ARL)**, Adelphi, MD, February 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” **DuPont Experimental Station**, Wilmington, DE, February 2016.

“Engineering Membrane Proteins: The Gatekeepers of the Cell”, UCSB Department of Psychology and Brain Sciences, **UC-Santa Barbara**, CA, December 2015.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” **DuPont Industrial Biosciences Division**, Palo Alto, CA, November 2015.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” **Joint BioEnergy Institute (JBEI)**, Emeryville, CA, October 2015.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical and Biomolecular Engineering, **Tulane University**, New Orleans, LA, October 2015.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Department of Chemical and Biomolecular Engineering, **Georgia Tech**, Atlanta, GA, August 2015.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” MIT Microbial Systems Seminar, **MIT**, June 2015.

“New Enzymes from Old Microbes: Exploiting Anaerobic Gut Fungi for Biomass Breakdown,” **UC-Riverside**, Department of Chemical and Environmental Engineering, Riverside, CA, May 2015.

“New Enzymes from Old Microbes: Exploiting Anaerobic Gut Fungi for Biomass Breakdown,” **National Renewable Energy Laboratory (NREL)**, Golden, CO, March 2015.

“New Enzymes from Old Microbes: Exploiting Anaerobic Gut Fungi for Biomass Breakdown,” **U.S. Department of Energy**, Division of Biological and Environmental Research, Arlington, VA, February 2015.

“Transcriptomic and Proteomic Characterization of Anaerobic Gut Fungi,” **Environmental Molecular Sciences Laboratory (EMSL)**, PNNL, Richland, WA, September 2014.

“Fueling Sustainability: Engineering Anaerobic Gut Fungi for Biomass Breakdown,” **UC-Irvine**, Department of Chemical Engineering, Irvine, CA, May 2014.

“Fueling Sustainability: Engineering Microbial Systems for Lignocellulose Breakdown,” Department of Chemical and Biomolecular Engineering, **UCLA**, Los Angeles, CA, October 2013.

“Fueling Sustainability: Engineering Microbial Systems for Lignocellulose Breakdown,” UCSB Biomolecular Science and Engineering (BMSE) Program, **UC-Santa Barbara**, CA, November 2012.

“Transcriptomic Analysis Reveals Novel Enzymes from Anaerobic Fungi,” **U.S. Department of Agriculture** National Institute of Food and Agriculture (NIFA), Washington, DC, August 2012.

“Engineering the Yeast *Saccharomyces cerevisiae* for Drug Discovery and Bioenergy Applications”, **UC-Santa Barbara**, Dept. of Chemical Engineering, Santa Barbara, CA, April 2011.

“Engineering the Yeast *Saccharomyces cerevisiae* for Drug Discovery and Bioenergy Applications”, **Case Western Reserve University**, Department of Chemical Engineering, Cleveland, OH, March 2011.

“Engineering the Yeast *Saccharomyces cerevisiae* for Drug Discovery and Bioenergy Applications”, **University of Notre Dame**, Dept. of Chemical and Biomolecular Engineering, South Bend, IN, March 2011.

“Engineering the Yeast *Saccharomyces cerevisiae* for Drug Discovery and Bioenergy Applications”, **University of Maryland**, Fischell Department of Bioengineering, College Park, MD, March 2011.

“Engineering the Yeast *Saccharomyces cerevisiae* for Drug Discovery and Bioenergy Applications”, **UC-Riverside**, Dept. of Chemical and Environmental Engineering, Riverside, CA, March 2011.

“Engineering the Yeast *Saccharomyces cerevisiae* for Drug Discovery and Bioenergy Applications”, **University of Texas at Austin**, Department of Chemical Engineering, Austin, TX, March 2011.

“Towards Rational Drug Design: Engineering Yeast for the Over-expression and Characterization of Membrane Proteins”, **Cornell**, Dept. of Chemical and Biomolecular Engineering, Ithaca, NY, March 2010.

“Surfactant Effects on Activity and Structure of the Human Adenosine A<sub>2a</sub> G-Protein Coupled Receptor”, **NIST** Center for Neutron Research, Gaithersburg, MD, June 2008.

## INVITED CONFERENCE PRESENTATIONS

“Unlocking the Biotech Potential of Anaerobic Fungi from Ruminant Herbivores,” California Animal Nutrition Conference (**Keynote Presentation**), Sacramento, CA, May 2022.

“Enrichment of Gut Microbiomes from Herbivores: Engineering Carbon Flux Through Microbial Diversity and Selection,” 2022 Congress on Gastrointestinal Function (**Keynote Presentation**), April 2022 (virtual).

“Towards a Genetic Toolbox to Reprogram Anaerobic Fungi,” DoD Tri-Service Microbiome Consortium (TSMC) Meeting, April 2022 (virtual).

“Engineering Microbial Consortia from the Herbivore Rumen for Waste Valorization,” European Microbiology Society Annual Conference, Belfast, UK, April 2022.

“Unlocking the Biotech Potential of Anaerobic Gut Fungi,” Genetics Society of America Fungal Genetics Conference (**Plenary Talk**), Asilomar, CA, March 2022.

“Tracking Lignocellulose Breakdown by Anaerobic Fungi and Fungal Cellulosomes,” Department of Energy Bioimaging Science Program Contractor Meeting, March, 2022.

“Engineering Synthetic Anaerobic Consortia Inspired by the Rumen for Biomass Breakdown and Conversion,” Department of Energy Genomic Sciences Program Contractor Meeting, March, 2022.

“Unlocking the Biotech Potential of Anaerobic Gut Fungi,” AIChE Annual Meeting (**Keynote Presentation**), Boston, MA, November 2021.

“Engineering Microbial Consortia from Herbivores for Biomass Breakdown,” 4<sup>th</sup> International Conference on Microbiome Engineering (ICME), Virtual Conference, October 2021.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” Carbohydrate Bioengineering Meeting 14 (CBM14), Virtual Conference, May 2021.

“Engineering Microbial Consortia from the Herbivore Rumen for Waste Valorization,” 43rd Symposium on Biomaterials, Fuels and Chemicals, Society for Industrial Microbiology (SIMB), Virtual Conference, April 2021.

“Anaerobic Fungi: New Platforms for Biotechnology & Synthetic Biology,” Anaerobic Fungal Network Seminar Series, Webinar, April 2021.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” National Academy of Sciences: Quantum Concepts in Enhancing Sensing and Imaging Technologies: Applications for Biology, Washington, DC, March 2021.

“Tracking lignocellulose breakdown by anaerobic fungi and fungal cellulosomes,” DOE Biomaging Contractor Meeting, Washington, DC, February 2021.

“Harnessing gut microbes to turn waste into energy,” Synthetic Biology Approaches to Improve Human and Environment, New York Academy of Sciences, New York, NY, November 2020.

“Engineering synthetic microbial communities inspired by the herbivore rumen,” **Division 15 Early Career Award**, AIChE Annual Meeting, San Francisco, CA, November 2020.

“An Arduino based automatic pressure evaluation system (A-APES) to quantify growth of non-model anaerobes in culture,” AIChE Annual Meeting, San Francisco, CA, November 2020.

“Comparative genomics of early-branching anaerobic fungi reveals novel enzymes, transporters, and biosynthetic potential,” Biodiversity Genomics 2020, Cambridge, UK, September 2020.

“Exploiting Nature’s Anaerobes to Accelerate Biomass Breakdown and Sustainable Chemistry,” American Society of Microbiology Annual Meeting, **ASM Award for Early Career Applied and Biotechnological Research**, Chicago, IL, July 2020.

“Engineering synthetic microbial communities inspired by the herbivore rumen,” American Society of Microbiology Annual Meeting, Chicago, IL, July 2020.

“Exploiting Nature’s Anaerobes to Accelerate Biomass Breakdown and Sustainable Chemistry,” AIChE Annual Meeting (**Keynote Presentation**), Orlando, FL, November 2019.

“Harnessing Gut Microbes to Turn Waste into Energy,” 3<sup>rd</sup> Annual DoD Tri-Service Microbiome Consortium Meeting (TSMC), Wright Patterson Airforce Base, Dayton, OH, October 2019.

“Mining Microbiomes for Nature’s CAZymes” Gordon Conference on Carbohydrate-Active Enzymes for Glycan Conversions (**Keynote Presentation**), Andover, NH, July 2019.

“Exploiting Anaerobic Consortia as New Tools for Biomass Breakdown and Sustainable Chemistry,” Cold Spring Harbor Microbiome Meeting, Cold Spring Harbor, NY, July 2019.

“Exploiting Anaerobic Consortia as New Tools for Biomass Breakdown and Sustainable Chemistry,” Biochemical Engineering XXI Meeting, Mont Tremblant, Canada, July 2019.

“Comparative genomics of early-branching anaerobic fungi reveals novel enzymes and biosynthetic potential,” American Society for Microbiology (ASM) Microbe Annual Meeting, San Francisco, CA, June 2019.

“Designing Microbial Consortia for Conversion of Wet Waste to Commodity Chemicals,” NASA/ARO Contractor Meeting, Houston, TX, June 2019.

“Engineering Synthetic Microbial Consortia Inspired by Nature,” Oxford Global SynGen Series US: 2<sup>nd</sup> Annual Synthetic Biology USA Congress, Boston, MA, May 2019.

“Horizontal Gene Transfer in the Rumen Microbiome,” Accelerated Protein Evolution in Microbial Systems Workshop, Santa Barbara, CA, April 2019.

“Engineering Synthetic Microbial Consortia Inspired by the Herbivore Rumen,” American Chemical Society Annual Meeting, **BIOT Young Investigator Award**, Orlando, FL, April 2019.

“Exploiting Anaerobic Fungi within Microbial Consortia for Biomass Breakdown and Sustainable Chemistry,” Fungal Genetics Conference, Asilomar, CA, March 2019.

“Engineering Synthetic Microbial Consortia Inspired by the Herbivore Rumen,” International Conference on Microbiome Engineering, Boston, MA, November 2018.

“Deconstructing Microbial Consortia for Sustainable Chemistry,” Dreyfus Foundation Teacher-Scholar Symposium, New York, NY, October 2018.

“Engineering Synthetic Consortia Inspired by the Rumen Microbiome,” Engineering Biology Research Consortium (EBRC) Fall Retreat, Fort Collins, CO, September 2018.

“From “Omics” to Function: Deciphering Poorly Annotated Genomes with Structural Biology,” MX APS-U Workshop, Argonne National Laboratory, IL, August 2018.

“Engineering Synthetic Consortia Inspired by the Rumen Microbiome,” Society for Industrial Microbiology (SIMB), Chicago, IL, August 2018  
“Towards a Genetic Toolbox to Reprogram Anaerobic Fungi,” Society for Industrial Microbiology (SIMB), Chicago, IL, August 2018.

“Deciphering the Behavior of Anaerobic Gut Fungi (Neocallimastigales) for Biomass Conversion,” Gordon Research Conference on Cellular & Molecular Fungal Biology, Holderness, NH, June 2018.

“Building Synthetic Consortia through Interwoven Metabolism,” Madison Microbiome Engineering Workshop, Madison, WI, April 2018.

“Engineering Synthetic Consortia Inspired by the Rumen Microbiome,” Madison Microbiome Meeting (M3), Madison, WI, April 2018.

“Engineering Synthetic Consortia Inspired by the Rumen Microbiome,” American Chemical Society Annual Meeting, New Orleans, LA, March 2018.

“Unlocking the Biotech Potential of Gut Microbes from Herbivores” **American Chemical Society Women Chemists Committee (WCC) Rising Star Symposium**, New Orleans, LA, March 2018.

“Transcriptomic Characterization of *Caecomyces churrovis*: a Non-rhizoid Forming Anaerobic Fungus,” Joint Genome Institute (JGI) User Meeting: Fungal Genomics Workshop, San Francisco, CA, March 2018.

“Can Chemistry Help Build a Sustainable Future?” Carlyle Impact Summit, Montecito, CA, September 2017.

“Deciphering the Role of Fungal Secondary Metabolites within Anaerobic Microbial Communities,” Microbial and Plant Systems Modulated by Secondary Metabolites Meeting, Walnut Creek, CA, July 2017.

“A Parts List for Fungal Cellulosomes Revealed by Comparative Genomics,” Gordon Research Conference on Cellulases, Cellulosomes, and Other Carbohydrate Modifying Enzymes (**Keynote Presentation**), Andover, NH, July 2017.

“Selective Enrichment of Syntrophic Anaerobic Communities Enables Rapid Conversion of Biomass,” Society for Industrial Microbiology (SIMB) Annual Meeting, Denver, CO, July 2017.

“Exploiting Anaerobes for Biomass Breakdown & Sustainable Chemistry,” Novo Nordisk Copenhagen Bioscience Conference: Data-driven Biotechnology – Bench, Bioreactor, & Bedside, Copenhagen, Denmark, May 2017.

“Engineering Early-Branching Anaerobic Gut Fungi for Lignocellulose Breakdown and Bioproduction,” **American Chemical Society Presidential Symposium**, San Francisco, CA, April 2017.

“Novel Carbohydrate Active Enzymes from Anaerobic Fungi and Anaerobic Communities,” **American Chemical Society PMSE Young Investigator Award**, San Francisco, CA, April 2017.

“Building Synthetic Anaerobic Consortia from the Bottom-Up,” U.S. Army Workshop on Microbial Consortia & Biofilms, Santa Barbara, CA, March 2017.

“Unlocking the Secondary Metabolites of Early-Branching Anaerobic Fungi”, Joint Genome Institute (JGI) User Meeting: Metabolomics Workshop, Walnut Creek, CA, March 2017.

“Unlocking the Potential of Neocallimastigomycota for Biomass Breakdown”, Joint Genome Institute (JGI) User Meeting: Fungal Genomics Workshop, Walnut Creek, CA, March 2017.

“Bottom-up Construction of Microbial Consortia Inspired by Nature,” International Conference on Biomolecular Engineering (ICBE), San Diego, CA, January 2017.

“Young Faculty Forum: How to Start a Research Group,” American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemistry,” DOE-BER Workshop on Molecular to Mesoscale Technologies, Rockville, MD, September 2016.

“Engineering Early-Branching Anaerobic Gut Fungi for Lignocellulose Breakdown and Bioproduction,” Society for Industrial Microbiology (SIMB), New Orleans, LA, July 2016.

“Novel Carbohydrate Active Enzymes from Anaerobic Fungi and Anaerobic Communities,” FASEB Conference on Microbial Glycobiology, West Palm Beach, FL, June 2016.

“Deciphering the Biomass-degrading Abilities of Anaerobic Gut Fungi (Neocallimastigales),” 13<sup>th</sup> European Congress on Fungal Genetics, Paris, France, April 2016.

“Deciphering the Biomass-degrading Abilities of Anaerobic Gut Fungi,” Joint Genome Institute (JGI) User Meeting: Genomics of Energy & Environment, Walnut Creek, CA, March 2016.

“Exploiting Anaerobes for Biomass Breakdown and Bioproduction,” Materials Research Outreach Program (MROP), Santa Barbara, CA, February 2016.

“Understanding Microbes Can Advance Biofuels,” MIT Emerging Technology (EmTech) Conference, Cambridge, MA, November 2015.

“New Enzymes from Old Microbes: Exploiting Anaerobic Gut Fungi for Biomass Breakdown,” Gordon Research Conference on Cellulases, Cellulosomes, and Other Carbohydrate Modifying Enzymes, Andover, NH, August 2015.

“Designing Synthetic Anaerobic Communities Based on Syntrophy,” Biochemical & Molecular Engineering XIX, Puerto Vallarta, Mexico, July 2015.

“Reconstructing Anaerobic Microbiomes from the Bottom-up: New Techniques to Decipher Interwoven Metabolism,” Synthetic, Evolution, Engineering & Design (SEED) Conference, Boston, MA, June 2015.

“Engineering Synthetic Cellulose-degrading Complexes Inspired by Gut Fungi,” ICB-Army Systems & Synthetic Biology Meeting, Pasadena, CA, April 2015.

“Exploiting Anaerobes for Biomass Breakdown and Sustainable Chemical Production,” Engineering Strategies for a Sustainable Food Supply Chain AIChE Workshop, Princeton, NJ, March 2015.

“Lignocellulose Breakdown by Anaerobic Microbial Communities,” UCSB Center for Sustainable Use of Renewable Feedstocks (CenSURF), Santa Barbara, CA, August 2014.

“Identification and Regulation of Novel Cellulases within Anaerobic Gut Fungi,” American Chemical Society Fall Meeting, San Francisco, CA, August 2014.

“Fueling Sustainability: Engineering Anaerobic Microbes for Biomass Breakdown and Biofuel Production,” Chalmers-UCSB Workshop on Advanced Materials, Gothenburg, Sweden, June 2014.

“Fueling Sustainability: Turning Marine Pests into Commodity Chemicals,” University of California Systemwide Bioengineering Meeting, Irvine, CA, June 2014.

“Engineering Anaerobic Gut Fungi for Lignocellulose Breakdown,” U.S. Department of Energy, Division of Biological and Environmental Research (BER), Arlington, VA, February 2014.

“Fueling Sustainability: Engineering Anaerobic Gut Fungi for Lignocellulose Breakdown,” Southern California Systems Biology Conference, Irvine, CA, January 2014.

## UNIVERSITY SERVICE

<b>2021 – present</b>	Associate Director, Bioengineering Program
<b>2021 – present</b>	Vice Chair, UCSB, Graduate Council
<b>2021 – present</b>	Member, College of Engineering DEI Committee
<b>2021 – present</b>	Member, UCSB CNSI Advisory Committee
<b>2021 – present</b>	Co-lead, BioPACIFIC MIP Bionderived Materials Thrust
<b>2020 – 2021</b>	Member, UCSB Graduate Council
<b>2019 – present</b>	Representative, UCSB College of Engineering Faculty Executive Committee
<b>2019 – 2020</b>	Mentor, UCSB College of Engineering Advancing Faculty Diversity Program
<b>2019</b>	Hellman Fellowship Selection Committee



**2019** UCSB Tenure Workshop Participant  
**2018, 2019** UCSB Internal Selection Committee, Pew Scholars Program  
**2018** Member, College of Engineering Search Committee for Director of Communications  
**2016 – present** Member, College Lectureship Advisory Committee, College of Engineering  
**2015 – present** Faculty Advisor, Biological Nanostructures Laboratory (BNL), CNSI  
**2015 – present** Task Order Leader, Systems & Synthetic Biology, Institute for Collaborative Biotechnologies (ICB)  
**2014 – present** Chair, Undergraduate Bioengineering Committee

**Establishing a New Undergraduate Bioengineering Major:** Leading a team of faculty to design curricula and refine a campus proposal that will establish an undergraduate B.S. Bioengineering degree through the College of Engineering (CoE) on the UCSB campus.

**Increasing Genomics Capabilities on the UCSB Campus:** As faculty advisor to the Biological Nanostructures Laboratory (BNL) at the CNSI, led successful grant writing efforts to secure Illumina NextSeq & MiSeq instruments (with supporting instrumentation) and a Sony MA-900 FACS that were installed in the BNL facility for common core use.

## DEPARTMENTAL SERVICE

**2021 – present** Chair, Graduate Admissions Committee (Bioengineering)  
**2021 – present** Chair, Targeted Open-level Search Committee  
**2021 – present** Member, Junior Faculty Search Committee  
**2021 – present** Chair, Diversity Equity and Inclusion Committee  
**2018 – 2020** Co-chair, Open Level Faculty Search Committee (Biomol. Eng.)  
**2018 – 2020** Chair, Graduate Admissions Committee  
**2018 – 2019** Chair, Diversity Committee  
**2018 – present** Mentor, Graduate Scholars Program  
**2015 – 2017** Chair, Graduate Admissions Committee  
**2014 – present** Member, Graduate Admissions Committee  
**2014 – 2017** Member, Diversity Committee  
**2012 – 2015** Member, Graduate Affairs Committee  
**2012 – 2018** Member, Undergraduate Laboratory Committee  
**2012 – 2014** Advisor, AIChE Student Chapter

**Curriculum Development for Undergraduate Laboratories:** Designing new biological laboratory experiments, rehabilitating existing experiments, and modifying course materials and teaching/grading methodology to enhance the student experience in the 180A and 180B undergraduate Chemical Engineering laboratories.

**Active Participant in K-12 and Graduate Outreach:** Santa Barbara Zoo Summer Camp, ARC Summer Scholar Program, UCSB Summer Institute in Math and Science (SIMS) Program, INSET Program, Materials Research Laboratory Future Faculty Program, AIChE Women's Initiatives Committee Future Faculty Panelist, UCSB Research Experience for Teachers (RET) Program, UCSB SABRE Program, UCSB ICB-URAP Program, Invited Speaker at STEM Night (Bishop Diego Garcia High School), STEM Speaker (Magnificat High School)

**Broadening Participation of Women:** Founded a new Diversity Committee within the Department of Chemical Engineering at UCSB, aimed at increasing the enrollment and retention of women and minorities at the graduate and post-graduate levels. To date, Prof. O'Malley has trained 35+ undergraduate students in her laboratory, including 14 women. Served as a keynote speaker for the 2016 Society of Women Engineering (SWE) Industrial Networking Evening, and donated time to speaking at high schools to encourage participation in STEM (Bishop Diego Garcia High School, Magnificat High School).

## SERVICE TO THE COMMUNITY & PROFESSIONAL MEMBERSHIPS

**Editorial Positions:** *Scientific Reports*, Editorial Board (2021 – present); *Applied and Environmental Microbiology*, Editorial Board (2021 – present); *Integrative Biology*, Editorial Board (2021 – present); *AIChE Journal*, Consulting Editors Board (2019-present); *Biochemical Engineering Journal*, Editorial Board (2020-present); *Frontiers in Fungal Biology – Fungal Secondary Metabolite and Mycotoxins*, Associate Editor (2020-present); *Frontiers in Fungal Biology – Fungal Biotechnology*, Associate Editor (2022-present); *Frontiers in Fungal Biology – Fungal Biotechnology*, Review Editor (2020-2022); *Fungal Genetics & Biology*, Guest Editor (2019-2021)

**Reviewer:** *PNAS*, *Nature Microbiology*, *Nature Communications*, *Communications Biology*, *Scientific Reports*, *Metabolic Engineering*, *Applied and Environmental Microbiology*, *ACS-Nano*, *ACS-Synthetic Biology*, *Biotechnology for Biofuels*, *mSystems*, *Journal of Biological Chemistry*, *Microbial Cell Factories*, *Biotechnology & Bioengineering*, *PloS One*, *Biotechnology & Applied Biochemistry*, *Nucleic Acids Research*, *FEMS Microbiology Letters*, *Biotechnology Journal*, *BBA-Biomembranes*, *Biotechnology Advances*, *Applied Microbiology and Biotechnology*, *Biochemical Engineering Journal*, *Environmental Progress and Sustainable Energy*, *RSC-Advances*, *Hormone and Metabolic Research*, *ChemBioChem*, *Journal of Applied Microbiology*, *Journal of Molecular Microbiology and Biotechnology*, *Frontiers in Fungal Biology*

**Review Panelist:** NIH NIA Study Section (2021); NSF CBET CAREER Panel (2020); NIH SCORE Panel (2020); NSF SBIR Panel (2020, 2021); NSF EFRI Panel (2020); NIH SBCB Study Section (2019); NSF MCB/CBET CAREER Panel (2021); NSF MCB CAREER Panel (2019, 2020); NSF EPSCoR Panel (2018); NSF-CBET Biochemical Bioengineering Unsolicited Proposals Panels (2012-2014, 2018); NSF-MCB Systems & Synthetic Biology Panels (2016, 2021); ACS-BIOT Young Investigator Award Selection Committee (2021-2022); AIChE Division 15 Award Selection Committee (2021-2022); NSF-CBET Biomass and Biofuels Panel (2014); DOE BES Panel (2015); DOE Biological and Environmental Research Panel (2014); EMSL Proposal Panels (2013-2016, 2018-2019, 2021); Oak Ridge National Lab Fellowship Program (2014); DOE-JGI Community Science Program (2014, 2015, 2016); DOE-BER Bioenergy Planning Workshop (2014); DOE-JGI-EMSL Collaborative Proposals (2015); USDA NIFA (2015); NASA Synthetic Biology (2015); Errett Fisher Discovery Fellowship (2016; 2021); Genome Canada (2016, 2017, 2018, 2019); Christian Doppler Research Association (2016); Austrian Science Fund (2016); Department of Energy, Experimental Program to Stimulate Competitive Research (EPSCoR) (2016); Thiel Foundation (2018); French Research Agency (2021)

**Advisory Boards & Leadership in Professional Societies:** ACS BIOT Division Chair-Elect (2021-present); Native Microbials (formerly Ascus Biosciences) Scientific Advisory Board (2019-present); Carnegie Mellon University Department of Biomedical Engineering Alumni Advisory Council (2020-present); Department of Energy Joint Genome Institute (JGI) User Executive Committee (2019-present); EMSL User Community Advisory Board (Biosciences Representative), PNNL (2019-present); DOE JGI Fungal User Committee Advisory Board (2016-present); DOE-BER Biological Systems Science Advisory Committee; JGI User Meeting External Advisory Board; Genome Canada Research Oversight Committee (ROC) (2018-2020); Society of Biological Engineering Young Professionals Advisory Group

**Professional Outreach:** Santa Barbara Science and Engineering Council (2020); Santa Barbara Natural History Museum Science Pub Night (2019); AIChE Future Faculty Forum (2016); CNSI Academic Advisory Panel for Students & Postdocs (2015); AIChE Women's Initiatives Committee Assistant Professor Panel (2013, 2016); AIChE Women's Initiative's Committee Communication Committee (2012-2013); AIChE Women's Initiative's Committee (WIC) K-12 Outreach (2011-2012); AIChE WIC Executive Committee (2012-2013), Santa Barbara Zoo Conservation Program and Research Discovery Activities for children and families (*Species Feces Night*, *At the Watering Hole* Lecture Series, etc.) (2013-present), SWE Industrial Networking Evening (keynote speaker) (2016); Featured STEM Speaker at High Schools (Bishop Diego Garcia High School, Magnificat High School) (2015-2016)

### **Professional Memberships:**

American Institute of Chemical Engineers (AIChE)  
Society of Biological Engineering (SBE)  
American Chemical Society (ACS)  
International Metabolic Engineering Society (IMES)  
Biophysical Society (BPS)

American Heart Association (AHA)  
Society for Industrial Microbiology (SIMB)  
American Association for the Advancement of Science (AAAS)  
Genetics Society of America (GSM)  
American Society of Microbiology (ASM)

### **Conference Programming:**

*Organizing Committee*, Biochemical and Molecular Engineering XXII, 2022  
*Steering Committee Member*, PNNL Microbial Molecular Phenotyping Capability Workshop, 2021  
*Organizing Committee*, 4<sup>th</sup> International Conference on Microbiome Engineering, 2021  
*Convener*, SBFC Symposium on Biomaterials, Fuels, and Chemicals, 2021  
*Advisory Board*, International Mycological Congress, 2022  
*Discussion Leader*, Gordon Conference on Carbohydrate Active Enzymes, 2021  
*Organizing Committee*, International Conference on Biomolecular Eng., 2021  
*Organizing Committee*, 3<sup>rd</sup> International Conference on Microbiome Engineering, 2020  
*Area Coordinator*, Upstream Processes, ACS, 2020  
*Organizing Committee*, 2<sup>nd</sup> International Conference on Microbiome Engineering, 2019  
*Convener*, Society for Industrial Microbiology Meeting, 2019  
*Discussion Leader*, Cold Spring Harbor Laboratory Conference on Microbiomes, 2019  
*Concurrent Session Chair*, Systems Biology & Biotechnology, Fungal Genetics Conference, 2019  
*Organizing Committee & Session Chair*, International Conference on Biomolecular Eng., 2019  
**Programming Chair, ACS-BIOT Division, ACS National Meeting, 2016-2017**  
*Academic co-chair in charge of technical program for 3,000+ BIOT members.*  
*Organizing Committee*, International Conference on Biomolecular Engineering, 2017  
*Convener*, Society for Industrial Microbiology Meeting, 2016  
*Area Coordinator*, Biofuels and Biobased Chemicals, ACS, 2016  
*Session Chair*, Gene Regulation Engineering, AIChE, 2015  
*Session Chair*, Emerging Frontiers in Systems and Synthetic Biology, AIChE, 2015  
*Session Chair*, Protein Engineering, Biochemical and Molecular Engineering, 2015  
*Session Chair*, Biomass Pretreatment and Hydrolysis, ACS-BIOT, 2015  
*Session Chair*, Metabolic Engineering of Photosynthetic and Non-model Organisms, AIChE, 2014  
*Session Chair*, Protein Expression and Post-translational Modification, AIChE, 2014  
*Area Coordinator*, Upstream Processes, ACS-BIOT Division, 2013-2014  
*Session Chair*, Protein Structure, Function, and Stability, AIChE, 2013  
*Session Chair*, Bionanotechnology, ACS-Biotechnology Division, ACS, 2013  
*Session Chair*, Protein Structure, Function, and Stability, AIChE, 2012  
*Session Chair*, Protein Expression and Post-translational Modification, AIChE, 2012

## **FUNDING AND SUPPORT (\$19+ million in active & completed support at UCSB)**

### **Active Support**

**2021 – 2023** BASF, “Biodegradable Polyacrylates Based on Radical Copolymerization,” C. Bates (PI), J. Read de Alaniz, M. A. O’Malley, and P. Holden (coPIs) (\$300,000)

**2021 – 2022** U.S. Army, DURIP program, “Acquisition of Advanced Cytometry Tools for DoD Supported Research at UC-Santa Barbara,” M. A. O’Malley (PI), A. Mukherjee and E. Yeung (coPIs) (\$260,000)

**2021 – 2024** National Science Foundation, “Collaborative Research: EDGE FGT: Establishing Functional Genomics in Anaerobic Fungi for Applications in Agriculture, Sustainability, and Carbon Cycling,” M. A. O’Malley (PI), K. V. Solomon (coPI) (\$1,000,000 total, \$480,000 to UCSB)

**2021 – 2024** Department of Energy, “Engineering Synthetic Anaerobic Consortia Inspired by the Rumen for Biomass Breakdown and Conversion,” M. A. O’Malley (PI), C. Lawson and S. Baker (coPIs) (\$1,500,000 total, \$600,015 to UCSB)

**2020 – 2022** U.S. Army, Institute for Collaborative Biotechnologies, “Engineering Sense-and-Respond Enzyme Complexes for Bioproduction” M. A. O’Malley (PI), M. S. Shell (coPI) (\$350,750)

- 2020 – 2022** U.S. Army, “Harnessing Rapid Evolution to Advance the Synthetic Biology Toolbox for Wild Microbes,” M. A. O’Malley (PI), D. Valentine, E. Wilbanks, H. Moeller (coPIs) (\$436,500)
- 2020 – 2022** U.S. Army, “Determining Fundamental Mechanisms of Bio-Silicification for Advanced Materials,” M. Brzezinski (PI), M. A. O’Malley and B. Chemelka (coPIs) (\$873,000)
- 2020 – 2022** EMSL Community Science User Program, “Connecting Structure and Function in Anaerobic Fungal Cellulosomes,” M. A. O’Malley (PI); allocation of spectroscopy and microscopy resources (\$76,120 in-kind support)
- 2020 – 2022** University of California Faculty Research Grant, “Identifying and Culturing Anaerobic Fungi from the Primate Microbiome” M. A. O’Malley (PI) (\$13,736)
- 2019 – 2022** Department of Energy, “Tracking Lignocellulosic Breakdown by Anaerobic Fungi and Fungal Cellulosomes” M. A. O’Malley (PI), J. Evans and S. Baker (coPIs) (\$2,250,000 total, \$1,509,000 to UCSB)
- 2019 – 2022** National Institutes of Health and National Science Foundation (Joint Program) “From specialist to generalist: a multidisciplinary approach to broadening our understanding of biotic and abiotic reservoirs of emerging fungal pathogens,” C. Briggs (PI), M. A. O’Malley, G. DiRenzo, P. Johnson, T. McMahon (coPIs) (\$1,502,376)
- 2019 – 2022** U.S. Army, “Establishing and Exploiting Biosynthetic Mechanisms of Silicification” M. Brzezinski (PI), B. Chmelka & M.A. O’Malley (coPIs) (\$330,000)
- 2018 – 2022** U.S. Army, “Designing Microbial Consortia for Conversion of Wet Waste to Commodity Chemicals” M. A. O’Malley (PI), D. Valentine (coPI) (\$600,000)
- 2018 – 2022** Department of Energy, Bioenergy Research Centers, “Joint BioEnergy Institute (JBEI)”, J. Keasling (PI), ~40+ coPIs including M. A. O’Malley (O’Malley portion \$1,400,000)
- 2017 – 2022** Camille & Henry Dreyfus Foundation, “Deconstructing Microbial Consortia for Sustainable Chemistry,” M.A. O’Malley (PI), (\$75,000)
- 2016 – 2023** National Science Foundation (NSF), “CAREER: Designing Synthetic Anaerobic Consortia for Bioproduction” M. A. O’Malley (PI) (\$853,101)

## Completed Support

- 2020 – 2021** Mitsubishi, “Characterizing Microbial Bioremediation of Environmental Plastics,” M. A. O’Malley and P. Holden (coPIs) (\$200,000)
- 2021** National Science Foundation, 4<sup>th</sup> International Conference on Microbiome Engineering (ICME) Conference Grant, M. A. O’Malley (PI), Izabela Balicka (coPI) (\$12,525 to AIChE)
- 2019 – 2021** National Institutes of Health (SBIR) “SHG based screening assay for detecting effectors of brain localized GPCRs that can be used to probe mental illness related phenotypes,” M. A. O’Malley (PI), S. Han (coPI), Bodesy (coPI) (\$387,541)
- 2019 – 2021** California Nanosystems Institute, “Deciphering the Material Design Rules of Biofilms,” M. A. O’Malley (PI), M. Valentine (coPI) (\$50,000)
- 2018 – 2021** FICUS (JGI/EMSL) User Program, “Deciphering the Structure & Function of Secondary Metabolites from Anaerobic Fungi” M. A. O’Malley (PI); allocation of sequencing, metabolomics, spectroscopy, NMR, & proteomics resources (\$85,364 in-kind support)
- 2015 – 2019** EMSL Community Science User Program, “Characterizing the Cellular Envelope and Secreted Compounds of Anaerobic Gut Fungi” M. A. O’Malley (PI); allocation of spectroscopy and microscopy resources (\$108,221 in-kind support)
- 2019 – 2020** Mitsubishi, “Characterizing Microbial Bioremediation of Environmental Plastics,” M. A. O’Malley and P. Holden (coPIs) (\$150,000)
- 2018 – 2020** U.S. Army, Institute for Collaborative Biotechnologies, “Programming and Tracking Microbial Consortia” M. A. O’Malley (PI), Kris L.J. Prather (coPI) (\$500,000)
- 2018 – 2020** National Science Foundation (NSF), “EAGER: Does host specificity drive species diversification of fungal endophytes?” R. Oono (PI), K. Seltmann & M. A. O’Malley (coPIs) (\$199,779)
- 2017 – 2019** California Nanosystems Institute, “Bio-Building Blocks for Advanced Materials” R. Segalman (PI), M. Doherty (coPI), G. Fredrickson (coPI), C. Hawker (coPI), M.A. O’Malley (coPI) (\$150,000)
- 2018 – 2019** U.S. Army, Institute for Collaborative Biotechnologies, “Engineering Sense-and-Respond Enzyme Complexes for Bioproduction” M. A. O’Malley (PI), M. S. Shell (coPI) (\$157,000)

**2018 – 2019** University of California Faculty Research Grant, “Assessing the Potential for Anaerobic Microbial Communities in Wastewater Treatment to Biodegrade Synthetic Textile Microfibers” P. A. Holden (PI); M. A. O’Malley (coPI) (\$12,548)

**2017 – 2019** EMSL Community Science User Program, “Comprehensive Characterization of the Cellulosomes from Anaerobic Gut Fungi” M. A. O’Malley (PI); allocation of spectroscopy, NMR, & microscopy resources (estimated \$138,100 in-kind support)

**2017 – 2018** U.S. Army, Institute for Collaborative Biotechnologies (ICB) “Engineering Synthetic Cellulose-degrading Complexes from Gut Fungi in *S. cerevisiae*” M. A. O’Malley (PI) (\$161,800)

**2017 – 2018** California Nanosystems Institute, “Identifying & Characterizing Novel Uncultivable Microbial Species Using Single Cell Genomics” S. Dey (PI), M.A. O’Malley (coPI) (\$50,000)

**2015 – 2018** National Institutes of Health (R01), “Role of Lipid Membrane and Hydration on the Oligomerization and Function of Proteorhodopsin and A<sub>2a</sub>R” S. Han (PI), M. A. O’Malley (coPI), M. Sherwin (coPI) (\$1,333,472)

**2015 – 2018** U.S. Army, Institute for Collaborative Biotechnologies, “Engineering Stable Anaerobic Consortia for Bioproduction” M. A. O’Malley (PI), Kris L.J. Prather (coPI) (\$675,000)

**2013 – 2018** Department of Energy (DOE) Early Career Program “Engineering Anaerobic Gut Fungi for Lignocellulose Breakdown” M. A. O’Malley (PI) (\$750,000)

**2012 – 2017** U.S. Army, Institute for Collaborative Biotechnologies (ICB) “Engineering Synthetic Cellulose-degrading Complexes from Gut Fungi in *S. cerevisiae*” M. A. O’Malley (PI) (\$848,007)

**2017** U.S. Army, Instrumentation Grant (Illumina MiSeq & Biomek 4000 Liquid Handling Robot) M.A. O’Malley (PI), I. Chen (coPI), G. Bazan (coPI) (\$228,000)

**2017** US Army, “Microbial Consortia & Biofilm Workshop” M.A. O’Malley (PI) (\$30,000)

**2016** Gordon and Betty Moore Foundation, “Better Together: Revolutionizing Biomanufacturing with Microbial Consortia” M.A. O’Malley (PI) (\$25,000)

**2015 – 2016** Cottage Hospital, “Identification of Novel Bioactive Compounds from Anaerobic Gut Fungi” M. A. O’Malley (PI) (\$25,000)

**2014 – 2016** University of California Faculty Research Grant, “Isolating Biomass-degrading Fungi from Wild Herbivores” M. A. O’Malley (PI) (\$10,000)

**2014 – 2016** California Nanosystems Institute, “Engineering Anaerobic Consortia for Sustainable Chemical Production” M. A. O’Malley (PI), T. M. Squires (co-PI), D. Valentine (co-PI), M. K. Theodorou (co-PI) (\$150,000)

**2014 – 2016** University of California Cancer Research Coordinating Committee (CRCC), “A Novel Microbial System to Screen GPCR Crosstalk During Cancer Proliferation” M. A. O’Malley (PI) (\$50,000)

**2014 – 2015** Hellman Faculty Fellowship, “A Yeast Microbial Sensor to Detect Aerosolized Bioweapons” M. A. O’Malley (PI) (\$44,100)

**2012 – 2015** Mitsubishi-Rayon, “Bio-based Production of Methacrylic Acid (MAA) and Methyl Methacrylate (MMA)” M. A. O’Malley (PI) (\$270,000)

**2013 – 2015** American Heart Association, “Mechanistic Insight into the Oligomerization of Human Adenosine Receptors” M. A. O’Malley (PI) (\$140,000)

**2013 – 2014** DOE-JGI/EMSL Community Science User Program, “Identification and Regulation of Novel Cellulases within Anaerobic Gut Fungi” M. A. O’Malley (PI); allocation for novel gut fungal genomes/transcriptomes/secretomes (\$180,000 in-kind support)

**2014** Amgen Sponsored Undergraduate Fellowship for Dept. Chemical Engineering (\$4,250)

**2013** Amgen Sponsored Undergraduate Fellowship for Dept. Chemical Engineering (\$4,000)

**2011 – 2013** U. S. Department of Agriculture (USDA) ARS-NIFA, “Genetic Identification and Characterization of Cellulases and Cellulolytic Complexes from Fungi” M. A. O’Malley (PI) (\$120,000)

**2011** Marion and Jasper Whiting Foundation Fellowship, “Towards Sustainable Energy: Developing Biofuels from Plants” M. A. O’Malley (PI) (\$6,000)

**2010** Company of Biologists-JCS Fellowship for International Study, “Isolation and Culture of Anaerobic Gut Fungi” M. A. O’Malley (PI), written with M. K. Theodorou (\$2,500)

**2009 – 2011** MIT Energy Initiative Seed Grant Program, “Genetic Identification and Expression of Efficient Cellulose Degrading Complexes from Fungi” C. A. Kaiser (PI), (\$150,000)

2006 – 2009 NASA-Harriet G. Jenkins Predoctoral Fellowship, “Expression, Purification, and Characterization of Human GPCRs in Yeast” for M. A. O’Malley (\$93,000)

## TEACHING

**Spring 2022** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 180A – Junior Undergraduate Chemical Engineering Laboratory  
*Co-Instructor: Joe Chada*

**Winter 2022** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 107 – Intro to Bioprocessing (Undergraduate)

**Fall 2021** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 272 – Omics-enabled Biotechnology (Graduate)

**Spring 2021** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 173 – Omics-enabled Biotechnology (Undergraduate)

**Winter 2020** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 107 – Intro to Bioprocessing (Undergraduate)

**Spring 2019** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 173/273 – Omics-enabled Biotechnology (Undergraduate/Graduate)

**Winter 2019** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 107 – Intro to Bioprocessing (Undergraduate)

**Fall 2018** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 170 – Molecular and Cellular Biology for Engineers (Undergraduate)

**Winter 2017** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 107 – Intro to Bioprocessing (Undergraduate)

**Spring 2017** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 173/273 – Omics-enabled Biotechnology (Undergraduate/Graduate)

**Winter 2017** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 120B – Heat Transfer (Undergraduate)

**Fall 2016** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 170 - Molecular and Cellular Biology for Engineers (Undergraduate)

**Spring 2016** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 171 – Biochemical Engineering

**Winter 2016** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 180B – Senior Undergraduate Chemical Engineering Laboratory  
*Co-Instructor: Mike Gordon*

**Fall 2015** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 170 - Molecular and Cellular Biology for Engineers (Undergraduate)

**Spring 2015** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 272 – ‘Omics’-Enabled Biotechnology (Graduate)

**Winter 2015** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 180B – Senior Undergraduate Chemical Engineering Laboratory  
*Co-Instructor: Songji Han*

**Fall 2014** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 170 - Molecular and Cellular Biology for Engineers (Undergraduate)

**Spring 2014** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 180A – Junior Undergraduate Chemical Engineering Laboratory  
*Co-Instructors: Mike Gordon and Matt Helgeson*

**Winter 2014** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 180B – Senior Undergraduate Chemical Engineering Laboratory  
*Co-Instructor: Songji Han*

**Fall 2013** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 170 - Molecular and Cellular Biology for Engineers (Undergraduate)

**Spring 2013** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 171 - Biochemical Engineering (Undergraduate)

**Fall 2012** **Instructor, UCSB, Dept. of Chemical Engineering**  
Course: ChE 170 - Molecular and Cellular Biology for Engineers (Undergraduate)

- Spring 2012** **Instructor, UCSB, Dept. of Chemical Engineering**  
*Course:* ChE 180A - Junior Undergraduate Chemical Engineering Laboratory  
*Co-Instructors:* Samir Mitragotri and Jacob Israelachvili
- Spring 2011** **Instructor, Massachusetts Institute of Technology, Dept. of Biology**  
*Course:* Fueling Sustainability: Engineering Microbial Systems for Biofuel Production  
*Published and Available on MIT's Open Course Ware (<http://ocw.mit.edu/index.htm>)*
- Spring 2007** **Teaching Fellow and Co-Instructor, University of Delaware, Dept. of Chemical Engineering**  
*Course:* Fundamentals of Mass and Heat Transfer (Undergraduate)  
*Co-Instructors:* T. W. Fraser Russell and Chris Roberts
- Fall 2006** **Teaching Assistant, University of Delaware, Dept. of Chemical Engineering**  
*Course:* Biochemical Engineering (Undergraduate/Graduate)  
*Instructors:* Anne Robinson and Millicent Sullivan
- Spring 2004** **Supplemental Instructor, Carnegie Mellon University, Dept. of Biology**  
*Course:* Biochemistry (Undergraduate)
- Fall 2003** **Supplemental Instructor, Carnegie Mellon University, Dept. of Chemistry**  
*Course:* Modern Chemistry I (Undergraduate)
- 2001 – 2004** **Peer Tutor, Carnegie Mellon University, Academic Development Office**

## STUDENTS AND MENTORSHIP (UCSB)

### Postdoctoral Scholars (past)

- Kevin V. Solomon, 2012-2015; currently Assistant Professor, University of Delaware
- Jessica Sexton, 2014-2015; currently Microbiology Scientist, Apeel Sciences
- Charles Haitjema, 2012-2016; currently Research Area Manager, Bio-technie
- Monica Rieth, 2014-2016; currently Assistant Professor, Southern Illinois University (Edwardsville)
- Doriv Knop (Ellings Fellow), 2016-2018
- Xuefeng “Nick” Peng (Simons Foundation Fellow), currently Assistant Professor, University of South Carolina, 2015-2020
- Chris Lawson, 2019-2021; currently Assistant Professor, University of Toronto

### Graduate Students (past)

- Jennifer L. Guerrero (NSF Graduate Research Fellow), 2010-2016 (w/ Patrick Daugherty), Amgen 2016-present
- Nicole S. Schonenbach (NSF Graduate Research Fellow), 2011-2017 (w/ Songi Han), Pfizer 2018-present
- John K. Henske (Mellichamp Sustainability Fellow), 2012-2017, Finch Therapeutics 2017-present
- Sean Gilmore (NSF Graduate Research Fellow), 2013-2018, Ascus Biosciences 2018-present
- Justin Yoo (NSF Graduate Research Fellow, Philip and Aida Siff Educational Foundation Fellow, Dissertation Fellow), 2014-2019, Bluebird Bio 2019-present
- St. Elmo Wilken (Dow Discovery Fellow), 2015-2020 (w/ Linda Petzold), Currently Postdoctoral Fellow, Heinrich-Heine University, Germany (Ebenhöh lab)
- Candice Swift (NSF Graduate Research Fellow, Connie Frank Fellow, Graduate Dissertation Fellow), 2015-2020, Currently Postdoctoral Fellow, University of South Carolina
- Khan (Kendrick) Nguyen, 2016-2021 (w/ Songi Han), Currently Scientist, Quantum-Si

### Postdoctoral Scholars & Specialists (current)

- Susanna Seppälä (VILLUM Fellow), 2014-present
- Tejas Navaratna, 2020-present
- Amy Rose Eisenburg, 2020-present
- Hugh Purdy, 2021-present

### Graduate students (current)

- Igor Podolsky, 2015-present
- Jennifer Brown (Graduate Opportunity Fellow), 2016-present

- Michael Vigers, 2016-present (w/ Songi Han)
- Tom Lankiewicz, 2018-present
- Stephen Lillington, 2019 – present (w/ Scott Shell)
- Patrick Leggeri (Graduate Research Mentorship Program Fellow), 2019 – present
- Emily Sun, 2019 – present (w/ Arnab Mukherjee)
- Kellie Heom, 2019 – present (w/ Sid Dey)
- Katharine Dickson, 2019 – present (w/ David Low)
- Lazarina Butkovich, 2019 – present
- Elaina Blair, 2019 – present
- Colleen Ahern, 2020 – present
- Elizabeth Schauer (Graduate Division Fellow), 2020– present
- Ramya Rangunathan, 2021 – present (w/ Brad Chmelka and Mark Brzezinski)
- Shirley Jin, 2021 – present

#### Undergraduate & postbach students (current)

- Michael Dong Dong, 2021 – present
- Thea Zalunardo, 2021 – present
- Kerrie Latrell, NSF postbach fellow, 2021 - present
- Scott Tam, Edison Fellow, 2021 - present
- Miguel Castenada, EUREKA Scholar, 2020 - present
- Jessy Gonzales, EUREKA Scholar, 2020 - present
- Taylor Gierke, EUREKA Scholar, MARC Scholar, 2020 – present
- Johanna Blackmore, 2022 – present

#### Undergraduate students and external visitors (past)

- Corey Kerdman-Andrade, Gorman Scholar, 2019 – 2021
- Nikola Malinov, Gorman Scholar, SABRE Scholar, 2018-2021, currently PhD Student, Chemical & Biomolecular Engineering, University of Delaware
- Derek Tang, 2019 – 2020
- Freda Lababidi, Edison Scholar, 2019 – 2020
- Mason Gatz, SABRE Scholar, 2019
- Jenna Hoover, 2018 – 2019, currently Amgen
- Alex Smith, 2018 – 2019
- Mohan Saxena, 2017-2019
- Patrick Kolence, 2017-2019
- Teagan Pado, 2018-2019
- Julia Bryne, 2016-2018
- Samantha Lee, 2015-2018
- Zach Cogan, 2015-2017, currently lab technician, Jonathan Weissman Lab, UCSF
- Winston Hsu, 2016-2017, currently OSIssoft
- Jessica Hauk, 2015-2017, currently Chemetry
- Randall DeGroot, 2015-2017, currently Zymergen
- Francis Cunningham, RISE fellow, 2016-2017, currently PhD Student Chemical & Biomolecular Engineering, UC-Berkeley
- Charlotte Abrahamson, Amgen Fellow, 2014-2016, currently PhD Student, Chemical and Biomolecular Engineering, Northwestern University
- Herman Ching, 2015-2016, currently PhD Student, Chemical Engineering, UC-Irvine
- Ricardo Andres Parra, ICB SABRE, 2014-2016, currently PhD Student, Bioengineering, Stanford University
- Daniel Yur, ICB URAP, 2014-2016; currently PhD Student, Chemical and Biomolecular Engineering, University of Delaware
- Sarah Maxel, 2013-2015, currently PhD Student, Chemical Engineering, UC-Irvine
- Natalie Banakis, 2012-2015, currently Patagonia
- Wen-Kang Chou, ICB URAP, 2014-2015, currently PhD Student, Chemical and Biological Engineering Princeton University
- Erich Brodbeck, Amgen Fellow, ICB URAP, 2013-2014, currently Amryis
- Chris Euchus (UC-Irvine), INSET Fellow, summer 2014
- Marla Nyamdorj, 2013-2014
- David Chau, 2013-2014, currently Eurofins Advantar Labs
- Josie Tressel, 2012-2013, currently Boehringer Ingelheim
- Brian Owens, 2012-2013, currently Energy Transfer
- Brianne Kiliman, McNair Scholar, 2012-2013, currently Intel



- Elisa Ovadia, 2012-2013, currently PhD Student Chemical & Biomolecular Engineering University of Delaware
- Meredith Green, 2012-2013, currently Merck
- Jessica O'Day, 2012-2013, currently Kite Pharma
- Kane Nania (UCLA), summer 2013, currently PhD Student Chemical Engineering UCLA
- Jiehao (CJ) Chen (UC-Berkeley), INSET Fellow, summer 2013, Currently Genentech
- Megan Cottage (middle school faculty), summer 2013, currently La Colina Jr. High

#### Thesis Committees (completed)

- Sunyia Hussain (Han), currently Research Scientist, TetraGenetics
- Peter St. John (Doyle), currently Researcher, NREL
- Kelsey Dean (Doyle), currently Scientist, Integral Health
- John Abel (Doyle/Petzold), currently Postdoc, MGH
- Zachary Oberholzer, currently Regeneron Pharmaceuticals
- Alex Thomas (Bazan), currently Senior Product Engineer, Apeel Sciences
- Kathryn Camacho (Mitragotri), currently Kite Pharma
- Michael Zakrewsky (Mitragotri), currently Scientist, Gilead Sciences
- Joon Bok Lee (Doyle), currently Analytics Algorithms Engineer, Insulet Corporation
- Lauren Huyett (Doyle), currently Clinical Affairs Specialist, Agilent Technologies
- Max Nowak (Helgeson/Mitragotri), currently PhD Student Systems Biology, Harvard Medical School
- Joel Bozekowski (Daugherty), currently Serimmune
- Michael Paul (Daugherty)
- Anusha Pusuluri (Mitragotri/Soh), currently Kala Pharmaceuticals
- Abe Pressman (Chen), currently NRC Postdoctoral Fellow, NIST
- Veronika Kivenson (Valentine), currently Postdoctoral Fellow, Oregon State University
- Jonathan Tarn (Valentine)
- Chung-Ta Han (Han)
- Kang-Ching Fan (Mukherjee)
- Chad Wangsanuwat (Dey), currently Moderna

#### Thesis Committees (current)

- Alex Chialastri (Dey)
- Alec Vallota-Eastman (D. Valentine)
- Nolan Anderson (Mukherjee)
- Asish Ninan Chacko (Mukherjee)
- David Podorefsky (Dey)
- Austin Miller (Mukherjee)
- Sevan Esaian (Wilbanks)
- Taruna Schuelke (Wilbanks)