

Michelle M. Meyer

Boston College Dept. of Biology
Higgins 444A
140 Commonwealth Ave
Chestnut Hill, MA 02467

phone: 617-552-0735
e-mail: m.meyer@bc.edu
<https://www.meyerlabrna.org>

Education

California Institute of Technology, Pasadena, CA PhD in Biochemistry and Molecular Biophysics	2006
Rice University, Houston, TX BS Chemistry, BA Biochemistry, <i>cum laude</i>	2001

Academic/Research Positions

Boston College, Chestnut Hill, MA Professor, Department of Biology	2021-current
Associate Professor, Department of Biology	2016-2021
Assistant Professor, Department of Biology	2010-2016
Yale University, New Haven, CT	

Peer Reviewed Publications

At Boston College

- Ram-Mohan N and Meyer MM: Comparative metatranscriptomics of periodontitis supports a common polymicrobial shift in metabolic function and identifies novel putative disease-associated ncRNAs. 2020 *Front. Microbiol.* 11:482.
- Crum, M, Ram-Mohan N, Meyer MM: Regulatory context drives conservation of glycine riboswitch aptamers. *PloS Compt. Biol.* 2019: 15(12):e1007564.
- Warrier I, Ram Mohan N, Zhu Z, Hazery A, Echlin H, Rosch J, Meyer MM, van Opijnen T: The Transcriptional landscape of *Streptococcus pneumoniae* TIGR4 reveals a complex operon architecture and abundant riboregulation critical for growth and virulence. *PLoS Pathogens* 2018: 14(12):e1007461.
- Babina AM, Parke DJ, Li GW, Meyer MM: Fitness advantages conferred by the L20-interacting RNA cis-regulator of ribosomal protein synthesis in *Bacillus subtilis*. *RNA* 2018 **24**:11330-1143.

Graduate, and Postdoctoral Research:

- Meyer MM, Hammond MC, Salinas Y, Roth A, Sudarsan N, Breaker RR: Aspects of ligand identification of challenging riboswitch candidates. *RNA Biology* 2011, **8**:5-10.
- Weinberg Z, Perreault P, Meyer MM, Breaker RR: Exceptional Structured Non-coding RNAs Revealed by Bacterial Metagenome Analysis. *Nature* 2009, **462**:656-659.
- Poiata E, Meyer MM, Ames TD, Breaker RR: A variant riboswitch aptamer class of *S*-adenosylmethionine common in marine bacteria. *RNA* 2009, **15**:2046-2056.
- Meyer MM, Ames TD, Smith DP, Weinberg Z, Schwalbach MS, Giovannoni SJ, Breaker RR: Identification of candidate structured RNAs in the marine organism ‘*Candidatus Pelagibacter ubique*’. *BMC Genomics* 2009, **10**:268.
- Tripp HJ, Schwalbach MS, Meyer MM, Kitner JB, Breaker RR, Giovannoni SJ: ‘*Candidatus Pelagibacter ubique*’ is a functional glycine-serine auxotroph with a glycine riboswitch preceding malate synthase. *Environmental Microbiology* 2009, **11**:230-238.
- Meyer MM, Roth A, Chervin S, Garcia GA, Breaker RR: Confirmation of a second natural preQ₁-binding aptamer. *RNA* 2008 **14**:685-695.
- Meyer MM, Hochrein L, Arnold FH: Structure-Guided Recombination of Distantly Related beta-lactamases. *Prot. Eng. Des. Sel.* 2006, **19**:563-570.
- Drummond DA, Silberg JJ, Meyer MM, Wilke CO, Arnold FH: On the conservative nature of intragenic recombination. *Proc. Natl. Acad. Sci.* 2005, **102**:5380-5385.
- Meyer MM, Silberg JJ, Voigt CA, Endelman JB, Mayo SL, Wang ZG, Arnold FH: Library analysis of SCHEMA-guided protein recombination. *Protein Sci.* 2003, **12**:1686-1693.

Patents

- Riboswitches and methods and compositions for use of and with riboswitches. Inventors: RR Breaker, Z Weinberg, N Sudarsan, X Wang, MM Meyer, A Roth, EE Regulski. US 2010/0286082, EP 2164996 (2010/3/24)

Reviews/Book Chapters

- Meyer MM: Revisiting the Relationships Between Genomic G!+!C Content, RNA Secondary Structures, and Optimal Growth Temperature *J. Mol. Evol.* 2021 89(3): 165-171 -*invited review*
- Gray EC, Beringer DM, and Meyer MM: Siblings or Doppelgänger? Deciphering the evolution of structured cis-regulatory RNAs beyond homology *Biochem. Soc. Trans.* 2020 48:1941-1951 -*invited review*
- Meyer MM: Debating tRNA origins *J. Mol. Evol.* 2020 88:227. - *editorial*
- Liberles DA, Chang B, Geiler-Samerotte K, Goldman A, Hey J, Kacar B, Meyer M, Murphy W, Posada D, Storfer A: Emerging Frontiers in the Study of Molecular Evolution *J. Mol. Evol.* 2020 88:211-226. - *editorial*
- Meyer MM: “Ribosomal RNA Mimicry in RNA Regulation of Gene Expression” In *Regulating with RNA in Bacteria and Archaea*. ASMpress. 2018. -*invited book chapter (also cited as Microbiology Spectrum)*
- Meyer MM: The role of mRNA structure in bacterial translational regulation. *WIREs RNA* 2016 doi: 10.1002/wrna.1370. -*invited review*
- Saab-Rincon G, Li Y, Meyer MM, Carbone M, Landwehr M, Arnold FA: “Protein Engineering by Structure-Guided SCHEMA Recombination” In *Protein Engineering Handbook* 2009 Eds. Lutz S & Bornscheuer UT, pp. 481-492.
- Meyer, MM Hiraga K, Arnold FH: “Site-directed Recombination” In *Current Protocols in Protein Science* 2006 Eds. Coligan JE, Dunn BM, Speicher DW, Wingfield PT, pp. 26.2.1-26.2.17.
- Bloom JD, Meyer MM, Meinhold P, Otey CR, MacMillan D, Arnold FH: Evolving strategies for enzyme engineering. *Current Opinion. Struc. Biol.* 2005, **15**:447-452.

Professional Service

Professional Service:

Scientific Advisory Board:

European Bioinformatics Institute (EBI): Rfam and RNACentral Databases (2016-current)

Helmholtz Institute for RNA-based Infection Research (HIRI): Wurzburg Germany (2020-current)

Editorial Positions