

Mark Mimeo

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ACADEMIC APPOINTMENTS

Assistant Professor **Fall 2019-Present**
Department of Microbiology
Pritzker School of Molecular Engineering
University of Chicago, Chicago, IL, USA

EDUCATION

Doctor of Philosophy: Microbiology **2011-2018**
Massachusetts Institute of Technology, Cambridge, MA

- Thesis Title: "Genetic Technologies to Engineer and Understand the Microbiome"
- Thesis Advisor: Dr. Timothy K. Lu

Bachelor of Science: Microbiology & Immunology **2008-2011**
McGill University, Montreal, Québec

- First Class Honours

RESEARCH EXPERIENCE

Postdoctoral Associate – Group Leader **2018-2019**
Advisor: Dr. Timothy K. Lu
Synthetic Biology Center, Massachusetts Institute of Technology, Cambridge, Massachusetts

Microbiology PhD Thesis **2011-2018**
Advisor: Dr. Timothy K. Lu
Synthetic Biology Center, Massachusetts Institute of Technology, Cambridge, Massachusetts

Honour's Microbiology Research **2009-2011**
Advisor: Dr. Samantha Gruenheid
McGill Life Sciences Complex, McGill University, Montreal, Quebec

HONOURS AND AWARDS

2013-2016 HHMI International Student Research Fellowship
2015 OneStart Americas Semi-Finalist – Enterosense
2014 Qualcomm Innovation Fellowship
2011-2013 Master's Training Award from les Fonds de recherche du Québec - Santé (FRQS)
2011 Dean's Convocation Prize
2011 Dean's Multidisciplinary Undergraduate Research List
2010 McGill FRQS Undergraduate Summer Research Award
2009 CAG/CCFC/CIHR Summer Studentship for Research in Gastroenterology
2008-2011 Bourse d'études Hydro Québec en Science Major Entrance Scholarship

PUBLICATIONS

1. Inda ME, **Mimeo M****, Lu TK. Cell-Based Biosensors for Immunology, Inflammation, and Allergy. *J. Allergy Clin. Immunol.* *In press.*
2. **Mimeo M***, Nadeau P*, Hayward A, Carim S, Flanagan S, Jerger L, Collins J, McDonnell S, Swartwout R, Citorik RJ, Bulović V, Langer R, Traverso G, Chandrakasan AP, Lu TK: An Ingestible Bacterial-Electronic System to Monitor Gastrointestinal Health. *Science*. 2018, 360 (6391): 915-918.

3. Nadeau P, **Mimee M**, Carim S, Lu TK, Chandrakasan AP: Nanowatt Circuit Interface to Whole-Cell Bacterial Sensors. *ISSCC*. 2017, 352-354.
4. **Mimee M**, Citorik RJ, Lu TK: Microbiome therapeutics – Advances and challenges. *Adv. Drug Deliv. Rev.* 2016, 105: 44-54.
5. **Mimee M***, Tucker AC*, Voigt CA, Lu TK: Programming a Human Commensal Bacterium, *Bacteroides thetaiotaomicron*, to Sense and Respond to Stimuli in the Murine Gut Microbiota. *Cell Systems*. 2015, 1: 1-10.
6. Citorik RJ*, **Mimee M***, Lu TK: Sequence-specific antimicrobials using efficiently delivered RNA-guided nucleases. *Nat. Biotechnol.* 2014, 32 (11): 1141-5.
7. Ando H, Citorik R, Cleto S, Lemire S, **Mimee M**, Lu T: Synthetic Biology and Therapies for Infectious Diseases. In *Novel Antimicrobials Agents and Strategies*. Edited by Phoenix D, Harris F, Dennison S. Wiley; 2014:109–180.
8. Citorik RJ*, **Mimee M***, Lu TK: Bacteriophage-based synthetic biology for the study of infectious diseases. *Curr. Opin. Microbiol.* 2014, 19:59–69.
9. Thanabalasuriar A, Bergeron J, Gillingham A, **Mimee M**, Thomassin JL, Strynadka N, Kim J, Gruenheid S. Sec24 interaction is essential for localization and virulence-associated function of the bacterial effector protein NleA. 2012. *Cell Microbiol.* 14(8):1206-18.
10. Thanabalasuriar A, Koutsouris A, Weflen A, **Mimee M**, Hecht G, Gruenheid S. The bacterial virulence factor NleA is required for the disruption of intestinal tight junctions by enteropathogenic *Escherichia coli*. *Cell Microbiol.* 2010. 12(1):31-41.

* Indicates co-authorship.

** Indicates corresponding authorship.

INVITED CONFERENCE PRESENTATIONS

1. “Genetic Technologies to Engineer and Understand the Microbiome.”
ASM Microbe 2019, June 2019.
2. “An ingestible bacterial-electronic system to monitor gastrointestinal health.”
Gordon Reference Conference – Bioelectronics, June 2018
3. “An ingestible bacterial-electronic system to monitor gastrointestinal health.”
Workshop on Bacterial-Material Interactions and Communication, UMass Amherst, May 2019.
4. “Genetic Technologies to Engineer and Understand the Microbiome.”
International Conference on Microbiome Engineering, November 2018.
5. “An ingestible bacterial-electronic system to monitor gastrointestinal health.”
Controlled Release Society Annual Meeting, July 2018.
6. “Hybrid Bacterial-Electronic Gastrointestinal Sensors and Engineered Commensals for Microbiome Therapeutics.”
EBRC Symposium on Engineering Biology, Northwestern University, March 2017.
7. “Programming *Bacteroides thetaiotaomicron* for Microbiota Engineering.”
Broad Infectious Disease and Microbiome Program, November 2015.
8. “Engineering Probiotic Bacteria to Sense, Diagnose, and Treat Inflammation.”
Center for the Study of Inflammation Bowel Disease Annual Symposium, Massachusetts General Hospital, November 2015.
9. “Sequence-specific antimicrobials using efficiently delivered RNA-guided nucleases.” *McGill University Infection and Immunity Seminar Series*, March 2015.
10. “Engineering Microbiomes.”
Center for Microbiome Informatics and Therapeutics, MIT. January 2015.
11. “Transduction of Programmable RNA-Guided Nucleases Enables Sequence-Specific Toxicity in Antibiotic-Resistant and Enterohemorrhagic *Escherichia coli*.”
Young Investigator Oral Abstract Presentation at the American Society for Microbiology General Meeting, May 2014.

PATENT APPLICATIONS

1. An Ingestible System to Monitor Gastrointestinal Health *In Situ*. Timothy K. Lu, Mark K. Mimee, Phillip Nadeau, Anantha P. Chandrakasan. 2018-04-17. PCT/US2018/027904
2. Engineered *Bacteroides* outer membrane vesicles. Timothy K. Lu, Mark K. Mimee, Juliane F. Ripka. 2017-05-26. WO2017087811A1
3. Genetically engineered sensors for *in vivo* detection of bleeding. Mark K. Mimee, Timothy K. Lu. 2017-03-02. US15205625
4. Gene expression in *Bacteroides*. Timothy K. Lu, Mark K. Mimee, Alex C. Tucker, Christopher Voigt. 2016-12-15. WO2016201174A3
5. Tuning microbial populations with programmable nucleases. Robert J. Citorik, Timothy K. Lu, Mark K. Mimee. 2015-03-12. PCT/US2014/053800

TEACHING EXPERIENCE

- Project consultant for Biological Engineering Design (MIT 20.280) (2018)
- Teaching assistant Laboratory Fundamentals in Biological Engineering (MIT 20.109) (2013)
- MIT Kaufman Teaching Certificate Program (2012)

COMMUNITY OUTREACH

- Invited speaker at public event discussing the ethical implications of genetic engineering and synthetic biology, organized by the Connecticut Institute for Clinical and Translational Science (2018)
- Panelist in 'Synthetic Biology and Social Justice,' organized by the Diversity Committee at iGEM (2018)
- Organizational Committee of Boston Bacterial Meeting (2016)
- Panelist in 'The Future of Phage and Synthetic Biology' outreach meeting at Tufts University (2014)