

Alexandra Mims Pike

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CURRENT POSITION

Oberlin College
Visiting Assistant Professor

Oberlin, OH
January 2023-present

EDUCATION

Massachusetts Institute of Technology/HHMI
Postdoctoral Fellow

Cambridge MA
2018-2022

Johns Hopkins University School of Medicine
Ph.D., Cellular and Molecular Medicine
Dissertation: Multiple expressed isoforms of TIN2 cooperate
with TPP1/POT1 to stimulate telomerase processivity in human cells

Baltimore, MD
2017

Indiana University, Bloomington, IN
B.S., Biochemistry; **Minors**, Biology, Studio Art
Hutton Honors College, Phi Beta Kappa

Bloomington, IN
2011

RESEARCH EXPERIENCE

Postdoctoral Fellow, Massachusetts Institute of Technology, Cambridge, MA. Research in the laboratory of Dr. Stephen P. Bell focused on molecular mechanisms of DNA replication in yeast.

Graduate Student, Johns Hopkins University, Baltimore, MD. Thesis research in the laboratory of Dr. Carol Greider focused on the role of telomere protein TIN2 in telomere maintenance and the functional consequences of TIN2 gene mutations from patients with short telomeres.

Undergraduate Student, Indiana University, Bloomington IN. Working in the laboratory of Dr. Martha Oakley using specific point mutagenesis and disulfide crosslinking to map the structure of the conserved coiled-coil domain in SMC proteins.

PUBLICATIONS

Pike, A.M., Friend, C. M. and Bell, S.P. Distinct RPA functions promote eukaryotic DNA replication initiation and elongation. *Under Revision*. preprint: <https://doi.org/10.1101/2022.09.30.510360>

Pike, A.M., Strong, M.A., Ouyang, J.P.O., Greider, C.W. TIN2 functions with TPP1/POT1 to stimulate telomerase processivity. *Molecular and Cellular Biology*. 2019 Aug 5; 39(21): e00593-18.

Wang, S., **Pike, A.M.**, Lee, S.S., Strong, M.A., Connelly, C. J., Greider, C.W. BRD4 inhibitors block telomere elongation. *Nucleic Acids Research*. 2017 Aug 21; 45(14):8403-8410.

Lee, S.L., Bohrsen, C., **Pike, A.M.**, Wheelan, S.J., and Greider, C.W. ATM kinase is required for telomere elongation in mouse and human cells. *Cell Reports*. 2015 Nov 24;13(8):1623-32.

Waldman, V. M., Stanage, T. H., **Mims, A.**, Norden, I. S. and Oakley, M. G. (2015), Structural mapping of the coiled-coil domain of a bacterial condensin and comparative analyses across all domains of life suggest conserved features of SMC proteins. *Proteins*. 2015 Jun;83: 1027–1045.

Harris, D. R., **Mims, A.**, and Bunz, F. Genetic disruption of USP9X sensitizes colorectal cancer cells to 5-fluorouracil. *Cancer Biology and Therapy*. 2012 Nov;13(13):1319-24.

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CONFERENCE PRESENTATIONS

Pike, A.M., Friend, C.M., Bell, S.P. “Distinct Requirements for RPA in Eukaryotic DNA replication initiation and elongation,” Poster presentation at the HHMI Science Meeting, Ashburn, VA 2-4 November 2022.

Pike, A.M., Friend, C.M., Bell, S.P. “Distinct Requirements for RPA in Eukaryotic DNA replication initiation and elongation,” Poster presentation and Flash Talk at the FASEB Yeast Chromosome Biology and Cell Cycle Conference, Southbridge, MA 17-21 July 2022.

Pike, A.M., Friend, C.M., Bell, S.P. “Dissecting the roles of single-stranded binding proteins in eukaryotic DNA replication,” Poster presentation at the Eukaryotic DNA Replication and Genome Maintenance Cold Spring Harbor Laboratory meeting, virtual, 8-12 September 2021.

Pike, A.M., “Multiple expressed isoforms of TIN2 stimulate human telomerase,” Oral presentation at the PacBio User Group Meeting, Newark, DE, 25-26 September 2019.

Pike, A. M., Strong, M.A., Glustrom, L.W., Wuttke, D.S, and Greider, C.W. “Characterization of multiple TIN2 isoforms and their effect on telomerase activity,” Poster presentation at the Nucleic Acids Gordon Conference, Biddeford, ME, 4-8 June 2017.

Pike, A. M., Strong, M.A., Glustrom, L.W., Wuttke, D.S, and Greider, C.W. “Characterization of multiple TIN2 isoforms and their effect on telomerase activity,” Oral presentation at the Telomeres and Telomerase meeting at Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 2-6 May 2017.

Mims, A. and C.W. Greider. “Testing the Role of TIN2 in Telomerase Activity and Processivity,” poster presented at the Telomeres and Telomerase meeting at Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 28 April-2 May 2015.

TEACHING EXPERIENCE

Oberlin College

Spring 2023

BIOL 340 - Eukaryotic Cell Culture Laboratory

BIOL 417 - Seminar: Why Humans Aren't Immortal: Molecular Mechanisms of Aging

BIOL 213 - Molecular Biology, Cell Biology, and Biochemistry Lab

Massachusetts Institute of Technology

7.343 Advanced Undergraduate Seminar

2022

- Designed and taught an undergraduate seminar course focused on reading and critically evaluating primary literature on the topic “Why Humans Aren't Immortal: Molecular Mechanisms of Aging and Age-related disorders”

Kaufman Teaching Certificate Program

2021

- Participated in an interactive workshop series focused on evidence-based learning techniques, assessing and providing feedback, and creating a warm and welcoming environment
- Developed a course syllabus and practiced lesson planning through “microteaching” workshops

7.014 Introductory Biology

2021

Teaching Assistant

- Led recitation sections twice weekly, prepared recitation materials and handouts, and co-wrote examinations for introductory biology

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- Participated in semester long pedagogical training for Biology teaching assistants, focused on evidence-based research on active learning and inclusive teaching, among other topics

Johns Hopkins School of Medicine

Project EVOLVE

2017

Biological Node (Biode) developer

- created an online interactive lecture (Biode) for flipped classroom learning in the Genetics course in collaboration with Project EVOLVE

Pollard Scholar for Genetics

2012

- nominated to lead tutorials for first year Cellular and Molecular Medicine students taking Genetics after outstanding performance in core coursework

DIVERSITY, EQUITY, and INCLUSION

MIT Biology DEI Council, MIT Biology Department, appointed to represent the interests of postdoctoral fellows and associates in the department of biology, December 2020-August 2022

MIT Biology Diversity Community, Diversity Seminar Series organizer, July 2020-August 2021

MIT Postdoctoral Association DEI Committee, participant, December 2020-August 2022

HONORS AND AWARDS

Biology Poster Prize, awarded after nomination by peers for outstanding poster presentation at the MIT Biology Building 68 retreat, 2022

Infinite Expansion Award, recognizing contributions not only to research but also teaching, community, and improving diversity, equity, and inclusion; Massachusetts Institute of Technology School of Science, 2022

MIT Biology Department Travel Grant, 2019

Turock Scholar, Stipend support for graduate researchers in the Institute for Basic Biomedical Sciences, 2016-2018

Student Group Leader of the Year, for leadership of the Hopkins LIFE graduate student group; Johns Hopkins Graduate Student Association, 2017

Above and Beyond Award, for leadership and impact on sustainability initiatives at the School of Medicine; Johns Hopkins Office of Sustainability, 2017

Spider Plant Award, recognizing leadership and activism in sustainability; Johns Hopkins Office of Sustainability, 2014

Merck Index Award, Indiana University Department of Chemistry, 2011

Harry G. Day Summer Scholarship, for undergraduate summer research; Indiana University Department of Chemistry, 2010

Hutton Honors College Research Grant, for undergraduate research; Indiana University Hutton Honors College, 2010

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OTHER EXPERIENCE

Building 68 Postdoctoral Association, an MIT Biology-sponsored group connecting postdocs through scientific discourse, career development, and social events. *Co-chair*, 2021-2022

Hopkins Leadership Initiative for the Environment, Johns Hopkins Graduate Student Group focused on environmental sustainability on campus. *President*, 2015-2017; *Secretary*, 2014-2015; *Member*, 2011-2017