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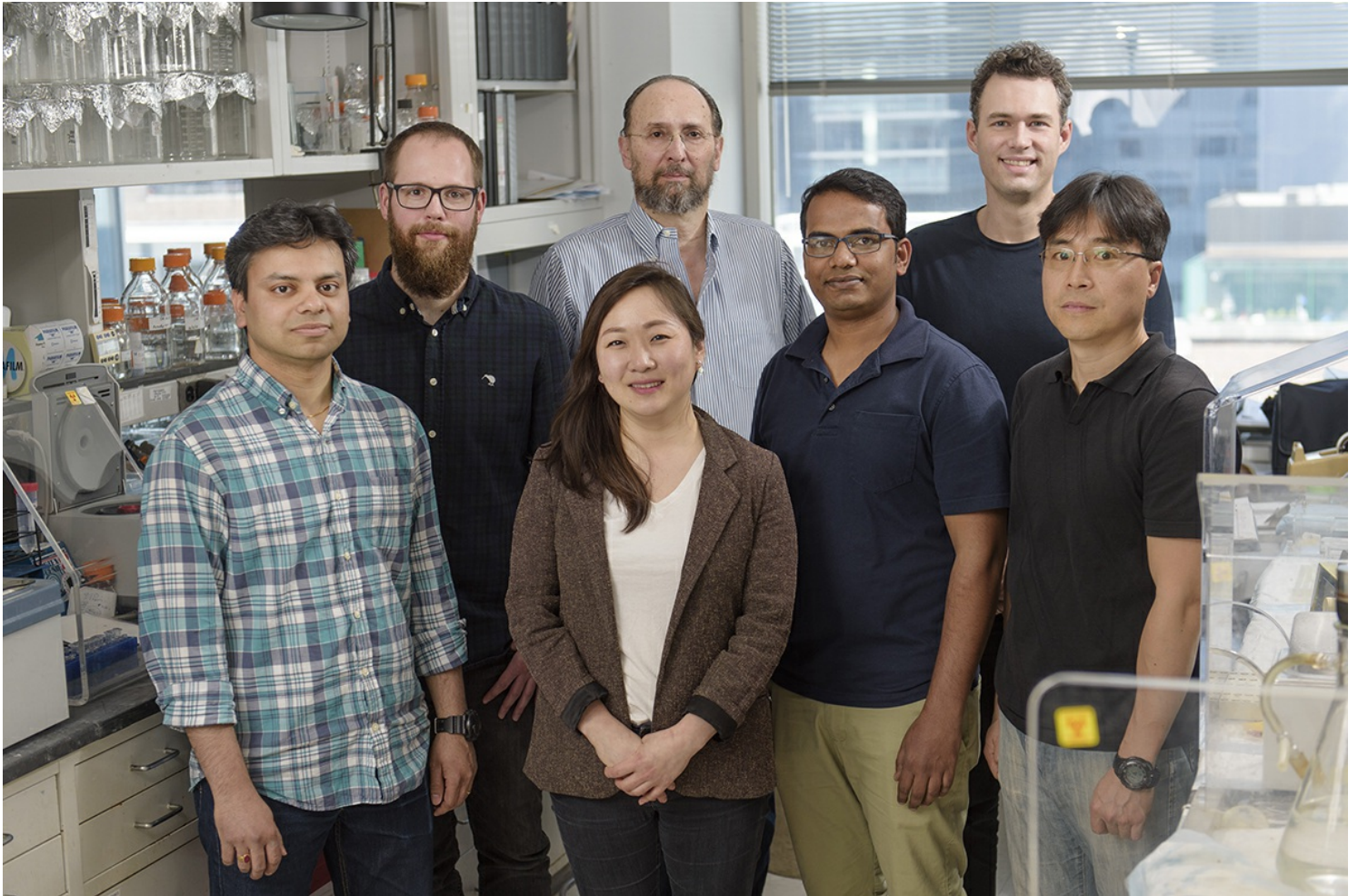


Kenneth J. Marians, PhD
William E. Snee Chair

Research in my laboratory centers on: (i) the events that occur when the replisome (the multi-component enzyme machine that replicates chromosomal DNA) encounters blockages to replication fork progression, and (ii) the mechanisms by which chromosomes are condensed and separated during cell division. Our studies on the consequences of replication fork blockage and restart utilize purified replication, recombination, and transcription proteins in various well-defined systems reconstituted *in vitro* that model all steps of these events. Our studies on chromosome condensation and segregation utilize a combination of biochemical, cell biological, and molecular genetic approaches.

Research Projects

[Mechanisms of Chromosome Compaction and Chromosome Unlinking](#)
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Publications Highlights

[M. K. Gupta, C. P. Guy, J. T. P. Yeeles, J. Atkinson, H. Bell, R. G. Lloyd, K. J. Marians, and P. McGlynn, Protein-DNA Complexes Are the Primary Source of Replication Fork Pausing in *Escherichia coli*. *Proc. Nat'l. Acad. Sci. U. S. A.*, 110, 7252-7257 \(2013\). PMID: PMC3645559.](#)

[J. T. P. Yeeles and K. J. Marians, Dynamics of Leading-strand Lesion Skipping by the Replisome, *Mol. Cell*, 52, 855-865 \(2013\). PMID: PMC3877186.](#)

[S. Gupta, J. T. P. Yeeles, and K. J. Marians, Regression of Replication Forks Stalled by Leading-strand Template Damage I. Both RecG and RuvAB Catalyze Regression, but RuvC Cleaves the Holliday Junctions Formed by RecG Preferentially. *J. Biol. Chem.* 289, 28376-28387 \(2014\). PMID: PMC4192490.](#)

[C. B. Gabbai, J. T. P. Yeeles, and K. J. Marians, Replisome-mediated Trans-lesion Synthesis and Leading-strand Lesion Skipping are Competing Bypass Mechanisms. *J. Biol. Chem.* 289, 32811-32823 \(2014\). PMID: PMC4239630.](#)

[J. E. Graham, K. J. Marians*, and S. C. Kowalczykowski*, Independent and Stochastic Action of DNA Polymerases in the Replisome. *Cell*, 169, 1201-1213 \(2017\). *Co-corresponding authors. PMID: PMC5548433](#)

People



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Disclosures

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MSK requires doctors and faculty members to report (“disclose”) the relationships and financial interests they have with external entities. As a commitment to transparency with our community, we make that information available to the public.

Kenneth J. Marians discloses the following relationships and financial interests:

No disclosures meeting criteria for time period

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This page and data include information for a specific MSK annual disclosure period (January 1, 2022 through disclosure submission in spring 2023). This data reflects interests that may or may not still exist. This data is updated annually.

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