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## The Kenneth Marians Lab

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[Molecular Biology Program](#)  
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**Research**  
[Open Positions](#)



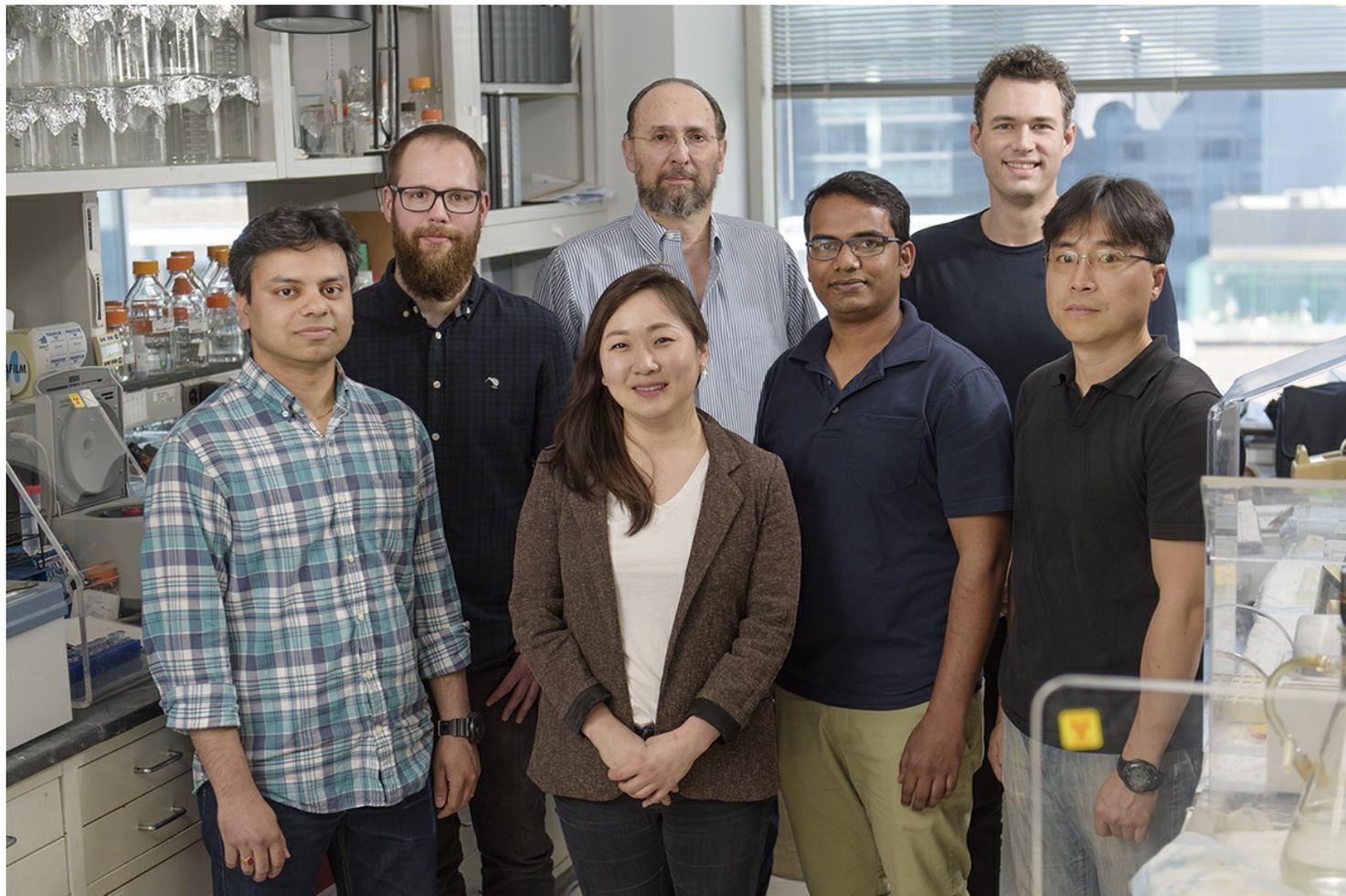
Kenneth J. Marians, PhD  
William E. Snee Chair

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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,  
Replication Fork Stalling, Lesion Bypass, and Replication Restart](#)



## Featured News

FEATURE



### [Remembering Jerard Hurwitz, a Giant of Molecular Biology](#)

MSK colleagues pay tribute to molecular biologist Jerard Hurwitz's scientific accomplishments and passion for discovery.

Q&A



## [Reflecting on 15 Years of Leadership: An Interview with Outgoing GSK Dean Ken Marians](#)

Meet the man who helped make the Gerstner Sloan Kettering Graduate School of Biomedical Sciences a reality.

### IN THE NEWS



## [MSK's Graduate School Welcomes New Dean, Bids Farewell to Its First](#)

Cell biologist Michael Overholtzer will succeed DNA replication expert Ken Marians.

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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.](#)

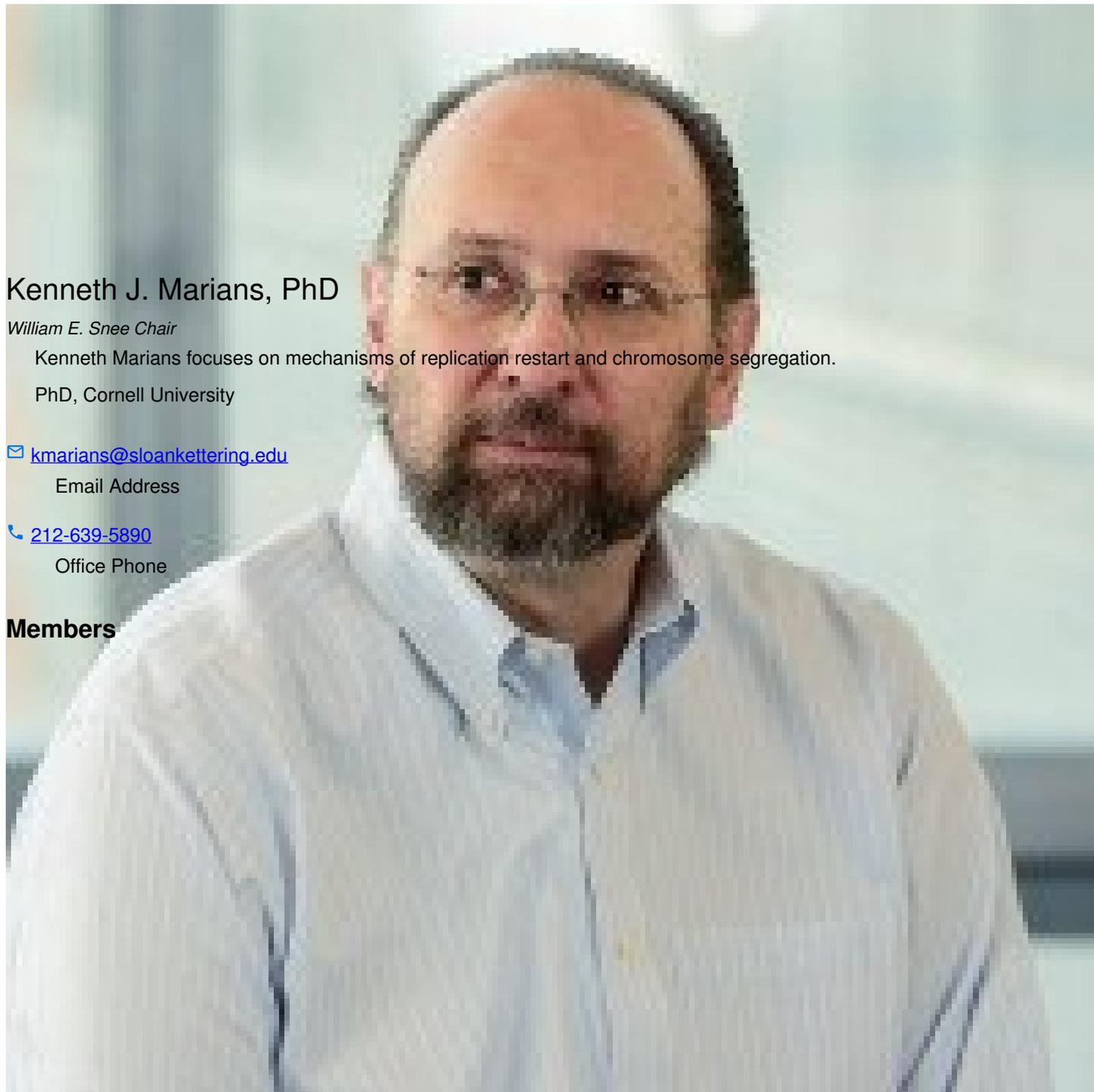
[J. T. P. Yeeles and K. J. Marians, Dynamics of Leading-strand Lesion Skipping by the Replisome, \*Mol. Cell\*, 52, 855-865 \(2013\). PMID: PMC3877186.](#)

[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



### Kenneth J. Mariani, PhD

*William E. Snee Chair*

Kenneth Mariani focuses on mechanisms of replication restart and chromosome segregation.

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## Members

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## Get in Touch

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Doctors and faculty members often work with pharmaceutical, device, biotechnology, and life sciences companies, and other organizations outside of MSK, to find safe and effective cancer treatments, to improve patient care, and to educate the health care community.

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*

The information published here is for a specific annual disclosure period. There may be differences between information on this and other public sites as a result of different reporting periods and/or the various ways relationships and financial interests are categorized by organizations that publish such data.

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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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[Research labs](#)

[Core facilities & resources](#)

## ▾ Education & Training

[Overview](#)

[Postdoctoral training](#)

[Gerstner Sloan Kettering Graduate School](#)

[Joint graduate programs](#)

[Programs for college & high school students](#)

## ▾ News & Events

[Overview](#)

[Seminars & events](#)

## ▾ Open Positions

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[Postdoctoral positions](#)

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