



Gerstner Sloan Kettering
Graduate School of Biomedical Sciences

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Research

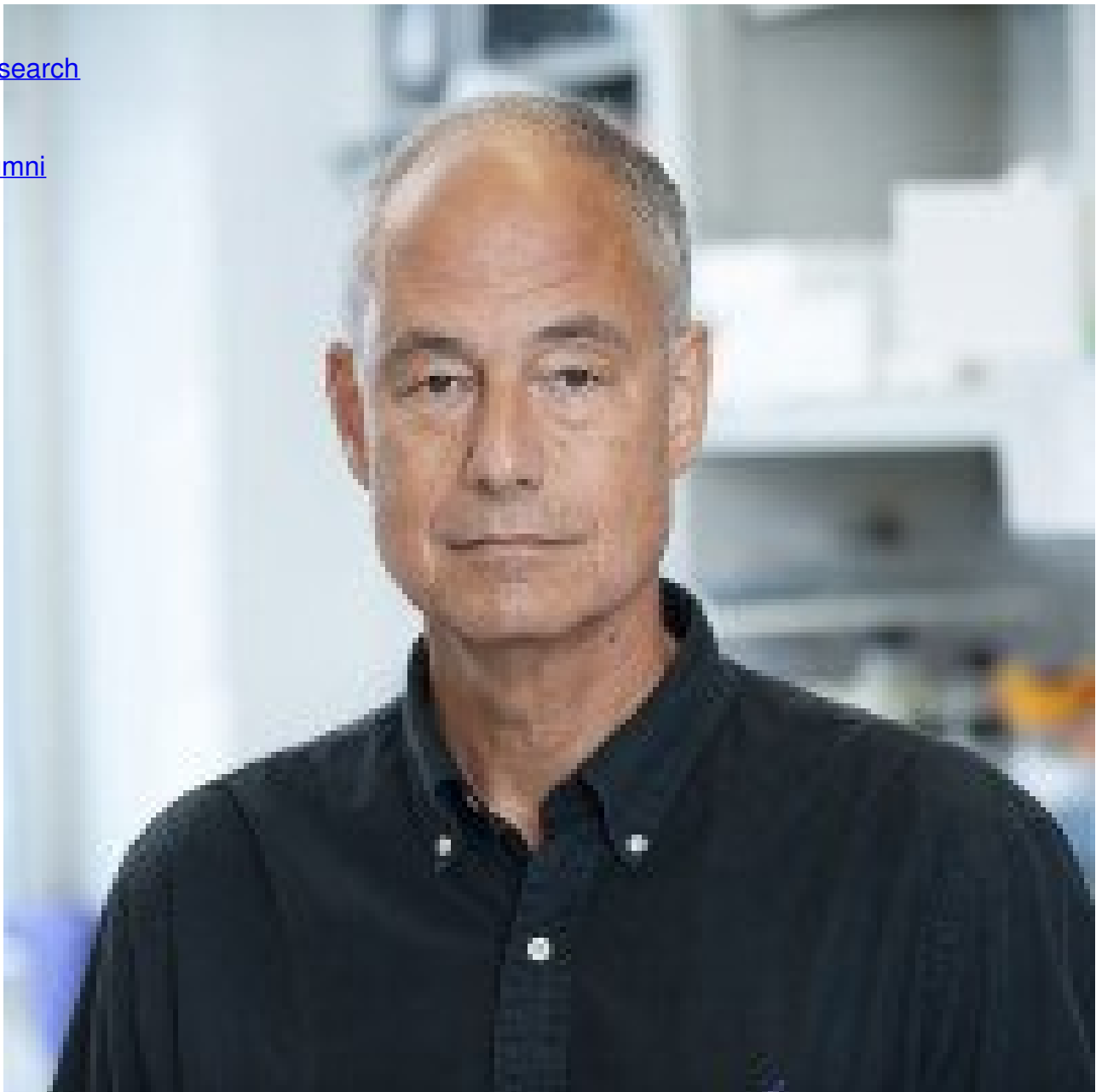
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MOLECULAR BIOLOGY PROGRAM

The Stewart Shuman Lab

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[Alumni](#)



Stewart Shuman, MD, PhD

The goal of my research is to understand the mechanisms and structures of enzymes that perform and regulate essential nucleic acid transactions. My research integrates diverse experimental approaches (including virology, biochemistry, structural biology, and genetics) and applies them to model systems ranging from viruses to bacteria to fungi to mammalian cells. An explicit aim is to identify novel enzymatic targets for treatment of human diseases.

[View Lab Overview](https://www.sloankettering.edu/research-areas/labs/stewart-shuman/overview) (<https://www.sloankettering.edu/research-areas/labs/stewart-shuman/overview>)

Research Projects

- [RNA ligases and RNA repair](#)
- [DNA Damage Recognition and Repair by DNA Ligases](#)
- [Deciphering the RNA Polymerase II CTD Code](#)



Publications Highlights

Schwer, B., Bitton, D.A., Sanchez, A.M., Bähler, J., and Shuman, S. (2014) Individual letters of the RNA polymerase II CTD code govern distinct gene expression programs in fission yeast. *Proc. Natl. Acad. Sci. USA* 111, 4185-4190.

Chakravarty, A.K., Smith, P., Jalan, R., and Shuman, S. (2014) Structure, mechanism, and specificity of a eukaryal tRNA restriction enzyme involved in self-nonsel discrimination. *Cell Reports* 7, 339-347.

Das, U., Chauleau, M., Ordonez, H., and Shuman, S. (2014) Impact of DNA 3'pp₅G capping on repair reactions at DNA 3' ends. *Proc. Natl. Acad. Sci. USA* 111, 11317-11322.

Unciuleac, M.C., Goldgur, Y., and Shuman, S. (2015) Structure and two-metal mechanism of a eukaryal nick-sealing RNA ligase. *Proc. Natl. Acad. Sci. USA* 112, 13868-13873.

Unciuleac, M.C., Goldgur, Y., and Shuman, S. (2017) Two-metal versus one-metal mechanisms of lysine adenylylation by ATP-dependent and NAD⁺-dependent polynucleotide ligases. *Proc. Natl. Acad. Sci. USA* 114, 2592-2597.

[View All Publications](#)

People



Stewart Shuman, MD, PhD

Simon H. Rifkind Chair

American Cancer Society Research Professor; Professor

- The goal of my research is to understand the mechanisms and structures of enzymes that perform and regulate essential nucleic acid transactions.
- B.A. Biology (1976) Wesleyan University
- Ph.D. Molecular Biology (1983) Albert Einstein College of Medicine
- M.D. (1981) Albert Einstein College of Medicine

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📄 [Download CV](#)

PDF File

Members



Lab Affiliations

Achievements

- Member of the American Academy of Arts and Sciences (2015)
- Fellow of the American Academy of

Jill Babor



Aleksei Innokentev
Research Scholar



Apurba Sarkar
Research Scholar

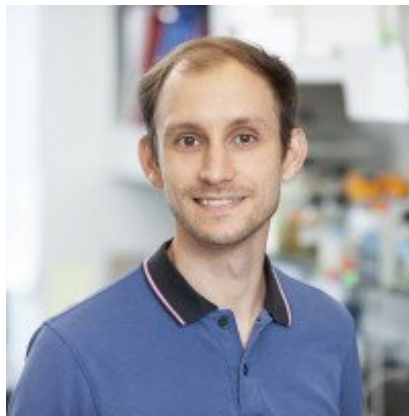


Stewart Shuman
Member

Shreya Ghosh
Senior Research Scientist




Ana M. Sanchez
GSK Graduate Student



Garrett Warren
Research Scholar

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Microbiology (2013)

- NIH MERIT Award (2007)
- American Cancer Society Research Professor (2005 -)
- American Society for Virology, Wolfgang Joklik Lectureship (2004)

Open Positions

To learn more about available postdoctoral opportunities, please visit our [Career Center](#)

To learn more about compensation and benefits for postdoctoral researchers at MSK, please visit [Resources for Postdocs](#)

Get in Touch

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Lab Head Email

Disclosures

Members of the MSK Community 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. These activities outside of MSK further our mission, provide productive collaborations, and promote the practical application of scientific discoveries.

MSK requires doctors, faculty members, and leaders 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. Not all disclosed interests and relationships present conflicts of interest. MSK reviews all disclosed interests and relationships to assess whether a conflict of interest exists and whether formal COI management is needed.

Stewart Shuman discloses the following relationships and financial interests:

- Cymba X, LLC
Equity; Professional Services and Activities (Uncompensated)
- Thermo Fisher Scientific, Inc
Intellectual Property Rights

The information published here is a complement to other publicly reported data and 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.

This page and data include information for a specific MSK annual disclosure period (January 1, 2024 through disclosure submission in spring 2025). This data reflects interests that may or may not still exist. This data is updated annually.

Learn more about MSK's COI policies [here](#) . For questions regarding MSK's COI-related policies and procedures, email MSK's Compliance Office at ecoi@mskcc.org .

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