

Matthew J. Rossi, Ph. D.  
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## Education and Training

Postdoctoral Training with B. Franklin Pugh	Jun 2011 – Present	Penn State U.
Doctor of Philosophy	Jun 2005 – Jun 2011	Drexel U. College of Med.
Master of Science	Aug 2003 – May 2005	East Stroudsburg U.
Bachelor of Science	Aug 1999 – May 2003	Bucknell U.

## Academic and Professional Honors

- Ruth L. Kirschstein National Research Service Award for Individual Postdoctoral Fellow. May 2012 to April 2015.
- American Heart Association, Great Rivers Affiliate, Postdoctoral Fellow. January 2012 to April 2012.
- Ruth L. Kirschstein National Research Service Award for Individual Predoctoral Fellow. November 2008 to October 2011.
- Amedeo Bondi Award Winner for Graduating Students. Drexel University College of Medicine. For excellence in research in Biomedical Graduate Studies. May 2011.
- Amedeo Bondi Fellowship Award Winner. Drexel University College of Medicine. For excellence in research in Biomedical Graduate Studies. Oct 2008.
- First Place Award for Poster Presentation by Junior Graduate Student. Drexel University College of Medicine Annual Research Day. Oct 2006.
- Bachelor of Science awarded with Magna Cum Laude from Bucknell University with GPA of 3.72. May 2003.

## Publications

### Research Papers

- Vinesh Vinayachandran, Rohit Reja, Bongsoo Park, **Matthew J. Rossi**, B. Franklin Pugh. Widespread and precise epigenomic reprogramming in response to heat shock. 2017. under preparation.
- **Matthew J. Rossi**, William K.M. Lai, B. Franklin Pugh. Development of a streamlined and robust ChIP-exo protocol. 2017. under preparation.
- **Matthew J. Rossi**, William K.M. Lai, B. Franklin Pugh. Genome-wide determinants of sequence-specific DNA binding of general regulatory factors. *Molecular Cell*. 2017. under second review.
- **Matthew J. Rossi**, William K.M. Lai, B. Franklin Pugh. DNA Shape is insufficient to explain binding. *Nature Communications*. 2017. in press.
- Olga M. Mazina, **Matthew J. Rossi**, Julianna S. Deakyne, Fei Huang, and Alexander V. Mazin. Polarity and bypass of DNA heterology during branch migration of Holiday junctions by human RAD54, BLM, and RECQ1. *Journal of Biological Chemistry*. v287 n15. pg 11820-11832. 2012.
- **Matthew J. Rossi**, Olga M. Mazina, Dmitry V. Bugreev, and Alexander V. Mazin. RecA/RAD51 drives migration of Holliday junctions via polymerization on DNA. *Proceedings of the National Academy of Sciences*. v108 n16. pg 6432-6437. 2011
- Dmitry V. Bugreev, **Matthew J. Rossi**, and Alexander V. Mazin. Cooperation of RAD51 and RAD54 in DNA lesion bypass via the template switch mechanism. *Nucleic Acids*

*Research*. v39 n6. pg 5134-5146. 2010.

\*This article was rated a "must read" by Faculty of 1000.

- L. Sangeetha Vedula, Grace Brannigan, Nicoleta J. Economou, Jin Xi, Michael A. Hall, Renyu Liu, **Matthew J. Rossi**, William P. Dailey, Kimberly C. Grasty, Michael L. Klein, Roderic G. Eckenhoff, Patrick J. Loll. A Unitary Anesthetic-Binding Site at High Resolution. *Journal of Biological Chemistry*. v284 n36. pg 24176-24184. 2009.
- **Matthew J. Rossi** and Alexander V. Mazin. Rad51 Protein Stimulates the Branch Migration Activity of Rad54 Protein. *Journal of Biological Chemistry*. v283 n36. pg 24698-24706. 2008.
- Olga M. Mazina, **Matthew J. Rossi**, Nicolas H. Thomä, and Alexander V. Mazin. Interactions of hRad54 protein with branched DNA molecules. *Journal of Biological Chemistry*. v282 n29. pg 21068-21080. 2007.
- Jin Xi, Renyu Liu, **Matthew J. Rossi**, Jay Yang, Patrick J. Loll, William P. Dailey, and Roderic G. Eckenhoff. Photoactive Analogues of the Haloether Anesthetics Provide High-Resolution Features from Low-Affinity Interactions. *ACS Chemical Biology*. v1 n6. pg 377-384. 2006.

#### Reviews

- **Matthew J. Rossi** and Alexander V. Mazin. DNA Repair and Recombination. *Encyclopedia of Biophysics*. In press. 2012.
- **Matthew J. Rossi**, Olga M. Mazina, Dmitry V. Bugreev, and Alexander V. Mazin. Analyzing the Branch Migration Activities of Eukaryotic Proteins. *Methods*. v51 pg 336-346. 2010.
- Alexander V. Mazin, Olga M. Mazina, Dmitry V. Bugreev, and **Matthew J. Rossi**. Rad54, the Motor of Homologous Recombination. *DNA Repair*. v9 n3. pg 286-302. 2010.

#### Book Chapters

- **Matthew J. Rossi**, Dmitry V. Bugreev, Olga M. Mazina, and Alexander V. Mazin. Reconstituting key steps of the DNA double-strand break repair in vitro. *Methods in Molecular Biology: DNA Recombination*. v745. pg 407-420. 2011.
- Dmitry V. Bugreev, **Matthew J. Rossi**, Olga M. Mazina, and Alexander V. Mazin. The Late Step of Homologous Recombination: Branch Migration of Holliday Junction. pg 141-158. *Bresler Memorial Lectures II Molecular Genetics Biophysics and Medicine Today*. Russian Academy of Sciences. St. Petersburg. 2007.

#### Meeting Abstracts

- **Matthew J. Rossi**, William K. M. Lai, B. Franklin Pugh. *In vitro* genomics reveal the intrinsic DNA sequence determinants of transcription factor binding in *S. cerevisiae*. Transcriptional Regulation: Chromatin and RNA polymerase II. Penn State Summer Symposium in Molecular Biology: Chromatin and Epigenetic Regulation of Transcription. 2015.
- **Matthew J. Rossi**, William K. M. Lai, B. Franklin Pugh. *In vitro* genomics reveal the intrinsic DNA sequence determinants of transcription factor binding in *S. cerevisiae*. Transcriptional Regulation: Chromatin and RNA polymerase II. American Society of Biochemistry and Molecular Biology. 2014.
- **Matthew J. Rossi**, B. Franklin Pugh. An *in vitro* genome-wide assay to study transcription factor binding. Mechanisms of Eukaryotic Transcription. Cold Spring Harbor Laboratory. 2013.

**Training**

- Creating a Business: A Bootcamp for Science Entrepreneurs. May 8-13, 2016.

**Volunteering**

- Judged during the poster session for the Penn State Undergraduate Exhibition. April 2015 - 2017.
- Lectured sixty high school students at the daylong Penn State Forensic Science Visit. May 2012.