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Professional Preparation

2004-2006	Postdoc, Molecular Biology	Northwestern University; Advisor: Prof. Jonathan Widom
2002-2004	Postdoc, Biophysics	Université Louis Pasteur; Advisor: Dr. Didier Chatenay
2002	Ph.D., Physics	University of Illinois, Chicago; Advisor: Prof. John F. Marko
1997	M.S., Physics	University of Illinois, Chicago
1995	B.S., Physics	Truman State University

Appointments

2009-present Assistant Professor (by courtesy), Department of Molecular Virology, Immunology and Medical Genetics, The Ohio State University Medical Center.

2008-present Assistant Professor (by courtesy), Department of Biochemistry, The Ohio State University.

2006-present Faculty Member of the Ohio State University Biochemistry Graduate Program.

2006-present Faculty Member of the Ohio State University Biophysics Graduate Program.

2006-present Assistant Professor, Department of Physics, The Ohio State University.

2004-2006 Postdoctoral Fellow, Department of Biochemistry, Molecular Biology and Cell Biology, Northwestern University.

2002-2004 Postdoctoral Researcher, Laboratoire de Dynamique des Fluides Complexes, Université Louis Pasteur.

1997-2002 Research Assistant, Department of Physics, University of Illinois, Chicago.

1995-1997 Teaching Assistant, Department of Physics, University of Illinois, Chicago.

Honors

2005 Burroughs Wellcome Fund Career Award in Basic Biomedical Sciences

2004 Ruth L. Kirschstein NRSA, Individual Fellowship, National Institutes of Health.

2003 Postdoctoral Award from Le Centre National de Recherche Scientifique, France.

2002 Postdoctoral Award from Le Ministre de la Recherche, France.

1994 Dr. Robert Peavler Memorial Endowed Physics Scholarship.

1991-1995 Truman State University President's Honorary and Combined Scholarship.

Publications

1. J. Wong, M.G. Poirier, D. Chatenay, and J. Robert. Plasmid copy number noise in monoclonal populations of bacteria. (2010) *Phys Rev E*. (In press)
2. S. Javid, M. Manohar, N. Punja, A. Mooney, J.J. Ottesen, M.G. Poirier, and R. Fishel, Nucleosome remodeling by hMSH2-hMSH6. (2009) *Mol Cell*. 2009 Dec 24;36(6):1086-94.
3. M.G. Poirier, E. Oh, H. Tims, and J. Widom (2009) Dynamics and function of compact nucleosome arrays. *Nat Struct Mol Bio*. Sep;16(9):938-44.
4. M. Manohar, A.M. Mooney, J.A. North, R.J. Nakkula, J.W. Picking, A. Edon, R. Fishel, M.G. Poirier and J.J. Ottesen (2009) Acetylation of histone H3 at the nucleosome dyad alters DNA-histone binding. *J Biol Chem*. Aug 28;284(35):23312-21.
5. R.A. Forties, R. Bundschuh, M.G. Poirier (2009) The flexibility of locally melted DNA. *Nucleic Acids Res*. Aug;37(14):4580-6.
6. H.M. Shen, M.G. Poirier, M.J. Allen, J. North, R. Lai, J. Widom, U. Storb (2009) The Activation Induced Cytidine Deaminase (AID) efficiently targets DNA in nucleosomes, but only during transcription. *J Exp Med*. May 11;206(5):1057-71
7. M.G. Poirier, M. Bussiek, J. Langowski, J. Widom (2008) Spontaneous access to DNA target sites in folded chromatin fibers. *J Mol Biol*. Jun 13;379(4):772-86.
8. M.G. Poirier and J.F. Marko, Micromechanical studies of mitotic chromosomes. (2003) *Curr Top Dev Biol*. 55:75-141.

9. M.G. Poirier and J.F. Marko, Micromechanics of chromatin and chromosomes (2003) *Biochem Cell Biol.* Jun;81(3):209-20.
10. M.G. Poirier and J.F. Marko, Micromechanical properties of mitotic chromosomes. (2003) *J Musc Res Cell Motil.* 23, 409-431.
11. M.G. Poirier and J.F. Marko, Mitotic chromosomes are chromatin networks without an internal protein scaffold. (2002) *Proc Natl Acad Sci USA* 99, 15393-15397.
Commented on by Belmont, A. (2002) *Proc Natl Acad Sci U S A.* 99, 15855-7.
12. A. Sarkar, S. Eroglu, M.G. Poirier, A. Nemani, P. Gupta and J.F. Marko, Dynamics of chromosome compaction during mitosis, *Exp Cell Res.* (2002) Jul 1;277(1):48-56.
13. M.G. Poirier and J.F. Marko, Effect of internal friction on biofilament dynamics (2002) *Phys Rev Lett.* 88(22):228103.
14. M.G. Poirier, S. Eroglu and J.F. Marko, The bending rigidity of mitotic chromosomes (2002) *Mol Biol Cell.* 13:2170-2179.
15. M.G. Poirier, T. Monhait and J.F. Marko, Reversible hypercondensation and decondensation of mitotic chromosomes studied using combined chemical-micromechanical techniques. (2002) *J Cell Biochem.* 85:422-424.
16. M.G. Poirier, A. Nemani, P. Gupta, S. Eroglu and J.F. Marko, Probing chromosome structure with dynamic force relaxation (2001) *Phys Rev Lett.* 86, 360-363.
17. M. Poirier, S. Eroglu, D. Chatenay, and J.F. Marko, Reversible and irreversible unfolding of mitotic newt chromosomes by applied force (2000) *Mol Biol Cell.* 11, 269-276.

Submitted Manuscripts

1. J.C. Shimko, J.A. North, M.G. Poirier and J.J. Ottesen. Assembly and Analysis of Fully Synthetic Histone H3 containing Acetyl-Lysine 56 within Nucleosomes Submitted to *Nat Struct Mol Bio.*

Research Support.

Ongoing Research Support

- 02/01/2009-01/31/2010 National Science Foundation
Seed Funding from The Center for Emergent Materials, an NSF funded Materials Research Science and Engineering Center,
“Heterogeneous Magnetic Particles for Force and Torque Sensing: A New Approach for Single Molecule Biology.”
Principal Investigator: Michael G Poirier
Amount Funded: \$49,125
Goal: This project will develop new magnetic nanoparticles for single molecule torque measurements.
- 07/01/2008-06/30/2010 American Heart Association
“A study of the molecular mechanisms by which histone modifications in the nucleosome dyad symmetry axis function.”
Principal Investigator: Michael G Poirier
Amount Funded: \$42,000 plus tuition waiver
Goal: Provide Pre-doctoral training for Mr. Justin North, a second year graduate student working in my laboratory.
- 02/01/2008-03/31/2013 National Institutes of Health, R01 GM083055
“Characterization of Four Histone H3 Modifications in the DNA-Histone Interface.”
Principal investigator: Michael G Poirier
Amount Funded: \$1,425,000
Goal: This project aims to investigate the function of post-translational modifications in the DNA-histone interface of the nucleosome with biochemical and biophysical experiments.
- 09/01/2005 - 08/31/2013 Burroughs Wellcome Fund, Career Award in Basic Biomedical Research
“A study of DNA accessibility within nucleosome arrays.”
Principal investigator: Michael G Poirier
Amount Funded: \$457,960
Goal: This award funds the person not a specific project.