

# rui pires martins

*curriculum vitae* | january.2007

## personal information

Date of Birth 1973.02.23  
Place of Birth Hamilton, Ontario, Canada  
Residence 481 Giles Boulevard West  
Windsor, Ontario, N9A6H7, Canada  
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## education

Wayne State University School of Medicine, Center for Molecular Medicine and Genetics, Detroit, Michigan, USA.  
2000-2007 Ph. D.: Molecular Biology and Genetics  
Thesis: Toward an Understanding of the Molecular Events that Precede Transcription of the Protamine Cluster  
University of Toronto, Department of Zoology, Toronto, Ontario, Canada.  
1998-1999 Post Graduate Research and re-specialisation: Developmental Genetics  
University of Guelph, Guelph, Ontario, Canada.  
1992-1997 Honours B.Sc.: Zoology/ Marine Biology

## postdoctoral training

Wayne State University School of Medicine, Department of Obstetrics and Gynecology, Detroit, Michigan, USA.  
01/2007-08/2007 Postdoctoral Research Associate  
Project: Studying histone to protamine transition in mammalian spermatozoa

## awards

Outstanding Graduate Student of the year. Wayne State University School of Medicine Honours Day, December 2005  
1<sup>st</sup> place oral presentation, Travel Grant Award. Wayne State University 8<sup>th</sup> Annual Graduate Student Research Day, September 2004  
Trainee Travel Awards: Canadian Institute of Human Development and Child/Youth Health (Canadian Institutes of Health Research) and British Columbia Research Institute for Children's and Women's Health; to participate in the 37<sup>th</sup> annual meeting for the Society for the Study of Reproduction, Vancouver, BC, August, 2004  
Outstanding Graduate Student of the Year, 2003. C.S. Mott Center for Human Growth and Development, Department of Obstetrics and Gynaecology, Wayne State University School of Medicine, Detroit, MI 48201  
Interdisciplinary Biomedical Sciences Pre-doctoral Fellow at Wayne State University School of Medicine, Detroit, Michigan, USA, 2000-2002  
Summer undergraduate research programme, summer internship at Center for Molecular Medicine and Genetics, Wayne State University School of Medicine, Detroit, MI, USA. 1999

## other research experience

Albert Einstein College of Medicine, Bronx, New York, USA. Course in Mouse Developmental Genetics, 2002.

Director: Dr. Jeffrey W. Pollard. *Comprehensive course in the production of transgenic and knockout mice: mouse handling and surgical techniques, inbred strains, embryo recovery and manipulation, ES cell culture and manipulation, blastocyst and pronuclear injection, targeting vector construction, regulated and inducible expression systems, whole mount in situ hybridisation, in vitro fertilisation, tetraploid and morula aggregations*

Wayne State University School of Medicine, Centre for Molecular Medicine and Genetics, Detroit, Michigan, USA. Research Assistant, Dr. Stephen A. Krawetz, 1999-2000

Huntsman Marine Sciences Centre, St. Andrews, New Brunswick, Canada. Marine Biology and Oceanography field course. 1996. *Course in open water (benthic and pelagic) and intertidal field biology. Research study in littorine population genetics completed while in attendance*

Grand Manan Whale and Seabird Research Station, Grand Manan Island, New Brunswick, Canada. Research Internship, 1995-1996

University of Guelph, Department of Zoology, Guelph, Ontario, Canada. Work Study Internships: 1995, Marine mammal histology/physiology; 1996, Bluefin tuna haematology and physiology

McMaster University School of Medicine, Department of Physiology and Pharmacology, Hamilton, Ontario, Canada. Co-operative Education Placement, 1991

## committee involvement

Graduate Student Research Day Organisational Committee, 2001-2004

Discussions of Noteworthy Achievements in Science Organisational Committee, 2001-2003; symposium series that brought internationally recognised scientists to speak at Wayne State University

## languages (other than english)

Portuguese and French, written and spoken

## meeting abstracts

**Martins RP**, Krawetz SA. 2006. Nuclear matrix interactions at the mouse protamine cluster. 26<sup>th</sup> Annual Great Lakes Mammalian Development Meeting, Toronto, Ontario, Canada (oral presentation)

**Martins RP**, Platts A, Krawetz SA. 2005. Chromatin dynamics of the mouse protamine domain. 15<sup>th</sup> International Society of Developmental Biologists Congress, Sydney, New South Wales, Australia

**Martins RP**, Ostermeier GC, Krawetz SA. 2005. Nuclear matrix association mitigates chromatin structure and the regulation of the protamine domain. 25<sup>th</sup> Annual Great Lakes Mammalian Development Meeting, Toronto, Ontario, Canada

**Martins RP**, Ostermeier GC, Krawetz SA. 2004. Nuclear matrix association and the establishment of a potentiated chromatin domain at the human protamine gene cluster. 8<sup>th</sup> Annual Graduate Student Research Day, Wayne State University, Detroit, USA (oral presentation)

**Martins RP**, Ostermeier GC, Krawetz SA. 2004. Nuclear matrix association in establishing a potentiated chromatin domain at the human protamine gene cluster. 37<sup>th</sup> Annual Meeting of the Society for the Study of Reproduction, Vancouver, British Columbia, Canada (oral presentation)

**Martins RP**, Ostermeier GC, Liu Z, Bharadwaj RB, Ellis J, Draghici S, Krawetz SA. 2003. Nuclear matrix association of the LCR of the human  $\beta$ -globin locus. 7<sup>th</sup> Annual Graduate Student Research Day, Wayne State University, Detroit, Michigan, USA

**Martins RP, Krawetz SA.** 2000. Characterization of the human lysyl oxidase domain: a model to study how chromatin structure mediates gene expression. 19th Annual Great Lakes Mammalian Development Meeting, Toronto, Ontario, Canada

## publications

**Martins RP, Krawetz SA.** 2007. Decondensing the protamine domain for transcription. Proceedings of the National Academy of Science, USA, *under review*.

**Martins RP, Platts AE, Krawetz SA.** 2007. Tracking chromatin states using controlled DNase I treatment and real-time PCR. Analytical Biochemistry, *under review*.

**Martins RP, Krawetz SA.** 2006. Nuclear organization of the protamine locus. Proceedings from the 7th International Ruminant Reproduction Symposium, pp 65-77

**Martins RP, Krawetz SA.** 2005. Towards understanding the epigenetics of transcription by chromatin structure and the nuclear matrix. Gene Therapy and Molecular Biology, 9: 229-246

**Martins RP, Krawetz SA.** 2005. RNA in human sperm. Asian Journal of Andrology. 7: 115-120

**Martins RP, Ostermeier GC, Krawetz SA.** 2004. Nuclear matrix interactions at the human protamine domain: A working model of potentiation. Journal of Biological Chemistry, 279: 51862-51868

**Martins RP, Krawetz SA.** 2004. Using multiplexed real-time polymerase chain reaction to rapidly identify single-copy transgenic animals. Analytical Biochemistry, 329: 337-339

Ostermeier GC, Liu Z, **Martins RP**, Bharadwaj RR, Ellis J, Draghici S, Krawetz SA. 2003. Nuclear matrix association of the human beta-globin locus utilizing a novel approach to quantitative real-time PCR. Nucleic Acids Research. 31: 3257-3266

Draghici S, Khatri P, **Martins RP**, Ostermeier GC, Krawetz SA. 2003. Global functional profiling of gene expression. Genomics, 81: 98-104

**Martins RP, Ujfalusi AA, Csiszar K, Krawetz SA.** 2001. Characterization of the region encompassing the human lysyl oxidase locus. DNA Sequence, 12: 215-227

Draghici S, **Martins RP**, Leach RE, Krawetz SA. 2001. Expressed Sequenced Tag Data Mining: The Reality of Virtual Gene Expression. Proceedings of the Atlantic Symposium on Computational Biology, and Genome Information Systems & Technology, pp 39 - 41

**Martins RP, Leach RE, Krawetz SA.** 2001. Whole body gene expression by data mining. Genomics, 72: 34-42

**Martins RP, Krawetz SA.** 2000. Characterizing a human lysyl oxidase chromosomal domain. Molecular Biotechnology, 15: 225-235

## familiar laboratory techniques

nucleic acid isolation and purification, molecular cloning and sub-cloning, cycle-based DNA sequencing, polymerase chain reaction (PCR), probe and Sybr-green based real time PCR, reverse-transcriptase PCR, ligation-mediated PCR, nucleic acid blotting and hybridisation, ribonuclease protection assay, primary cell and cell line culture, cell transfection (electroporation), luciferase and CAT-based reporter assays, nuclease-sensitivity assay, unit-gravity sedimentation-based cell separation, nuclear matrix-isolation, *in situ* hybridisation, fluorescent *in situ* hybridisation, immuno-histochemistry, immunoprecipitation, chromatin immunoprecipitation, transgenic mouse technology (colony maintenance, husbandry, construct and targeting vector preparation), embryo isolation and culture, pronuclear injection, blastocyst microinjection

## professional affiliations

Society for the Study of Reproduction, 2004-2005

## consultantships

2002-2003. Open Channel Software, Chicago, Illinois, USA

## references

available upon request