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Research interest

- Immunogenomics applied to human and animal health
- Human and Animal population genomics
- Farmacogenomics and personalised medicine
- Plant genomics

❖ **Undergraduate:** B.S.(*Licenciatura*) major: **Genetics**, 1987-1993.
FCEQ&N, Universidad Nacional de Misiones, Posadas, Mnes., Argentina.

❖ **Graduate:** **M Sc:** Dept. of Genetics, FMRP, **São Paulo University, SP, Brazil.** 03/1995 - 03/1998
→ *Thesis:* Genetic Variability at the *BoLA-DRB3.2* locus in Native and Exotic Cattle (*Bos taurus*)

PhD: Dept. of Genetics, FMRP, **São Paulo University, SP, Brazil.** 03/1998 - 07/2002.
→ *Thesis:* Mitochondrial DNA diversity and phylogeography of American native cattle (*Bos taurus*)

❖ **Appointments**

- 12/2008 - : Associate Professor, Immunogenetics, FCEQyN, UNaM, Pdas, Argentina
- 08/2008 - : Associate Investigator, CIC, CONICET, Argentina
- 08/2007 - 07/2008: Postdoctoral Research Associate, laboratory Prof. J. Trowsdale. CIMR, University of Cambridge, Addembrooke's Hospital, Hills Rd, CB22XY **Cambridge, UK.**
- 05/2003 - 07/2007: Sanger Postdoctoral Fellow, **Immunogenomics** Laboratory Lead by Dr. S. Beck, **Wellcome Trust Sanger Institute**, Hinxton, **Cambridge, UK.**

❖ **Communications:**

Publications (after 2004, selected)

- García M, Prinz K., Barrandeguy M., **Miretti M.**, Finkeldey R. 2014. A unifying study of phenotypic and molecular genetic variability in natural populations of *Anadenanthera colubrina* var. *cebil* from Yungas and Paranaense biogeographic provinces in Argentina. *JOURNAL OF GENETICS*.vol.92nº1.P.123-32issn0022-1333
- Lemnrau A., S.Cardoso, L.Creary, C.Brown, **M.Miretti**, J.Girdlestone, C.Navarrete. 2009. HPA typing of neonatal alloimmune thrombocytopenia (NAIT) patients using whole genome amplified DNA and a 5'-nuclease assay. *Transfusion*, 49(5):953-8.
- Carvalho Santos PS, Fust G, Prohaszka Z, Volz A, Horton R, **Miretti M**, Yu C, Beck S, Uchanska-Ziegler B, Ziegler A. 2008. Association of Smoking Behavior with an Odorant Receptor Allele Telomeric to the Human Major Histocompatibility Complex. *Genetic Testing*.12(4):1-6.
- Tomazou EM, Rakyan VK, Lefebvre G, Andrews R, Ellis P, Jackson DK, Langford C, Francis MD, Bäckdahl L, **Miretti M**, Coggill P, *et al.* 2008 Generation of a genomic tiling array of the human Major Histocompatibility Complex and its application for DNA methylation analysis. *BMC Medical Genomics* 30;1:19.
- T. Down, V. Rakyan, D. Turner, P. Flicek, H. Li, E. Kulesha, S. Gräf, N. Johnson, J. Herrero, E. Tomazou, N. Thorne, L. Bäckdahl, M. Herberth, K Howe, D.Jackson, **M. Miretti**, J. Marioni, E. Birney, T.Hubbard, R. Durbin, S. Tavaré & S. Beck. 2008 A Bayesian deconvolution strategy for immunoprecipitation-based DNA methylome analysis. *Nature Biotechnology* 26(7):779-785.
- Rakyan, V., Down t., Thorne N., Flicek P., Kulesha E., Graf S., Tomazou E., Backdahl L., Johnson N., Herberth M., Howe K., Jackson D., **Miretti M.**, Fiegler H., Marioni J., Birney E., Hubbard T., Carter N., Tavaré S., Beck S. 2008. An integrated resource for genome-wide identification and analysis of human tissue-specific differentially methylated regions (tDMRs). *Genome Research*. 18(9):1518-29.
- R.Horton, R.Gibson, P.Coggill, **M.Miretti**, K.Howe, *et al.* 2008. Variation Analysis and Gene Annotation of Eight MHC Haplotypes: The MHC Haplotype Project. *Immunogenetics* 60 (1):1-18.
- D.Turner, **M.Miretti**, D.Rajan, H.Fiegler, N.Carter, S.Beck and M.Hurles. 2007. The rates of *de novo* meiotic deletions and duplications causing genomic disorders in the male germline. *Nature Genetics* 40:90-95.
- R. Horton, P. Coggill, **M.M. Miretti**, J.G. Sambrook, J.A. Traherne, *et al.* 2006. The LRC haplotype project: A resource for KIR-linked association studies. *Tissue Antigens* 68, 450-2.

- P.de Bakker*, G. McVean*, P. Sabeti*, **M. Miretti***, Green T, *et al.* 2006. A high resolution HLA and SNP haplotype map for disease association studies in the extended human MHC. **Nature Genetics**, Oct;38(10):1166-1172. (**joint first authors*).
- **M.M Miretti** and S. Beck. 2006. Immunogenomics: Molecular Hide & Seek. **Human Genomics** 2(4) 244:252
- J. Traherne*, R.Horton*, A. Roberts*, **M. Miretti***, M. Hurles, *et al.* 2006. Comparative Analysis of Ancestral MHC Haplotypes Associated with Common Disease. **PLoS Genetics** 2(1). (**joint first authors*)
- X Ke, **M. Miretti**, Broxholme J, Hunt S, Beck S, Bentley DR, P. Deloukas and L. Cardon. 2005. A Comparison of tagging methods and their tagging space 2005 **Hum. Mol. Genet.** 14(18):2757-67
- **M. Miretti**, E.Walsh, X.Ke, M.Delgado, M.Griffiths, S.Hunt, J.Morrison, P.Whittaker, E.Lander, L.Cardon, D. Bentley, J.Rioux, S.Beck, P.Deloukas 2005. A high-resolution linkage-disequilibrium map of the human major histocompatibility complex and first generation of tag SNPs. **Am J Hum Genet.** 2005 76, 634-46.
- **M. Miretti**, S. Dunner, M. Naves, E.P. Contel and J.A.Ferro. 2004. Predominant African-derived mtDNA in Caribbean and Brazilian Creole cattle is also found in Spanish cattle (*Bos taurus*). **J Heredity**, 95, 5,450-453

Abstract in congress / conference / seminars / workshops (after 2004, selected)

- J. Fay, L. Talavera, C. Percuoco C. Rojas, C. Argüelles, **M. Miretti**. Metabolismo de polifenoles en yerba mate: identificación de genes de la familia PAL. Abstract. XLIII Congreso Sociedad Argentina de Genética. Bariloche, **Argentina** 2014. *JBAG vol. 25, Suppl 2014.* ISSN: 1852-6233
- Carignano H., Raschia Ma., Beribe Mj, Amadio A., **Miretti M.**, Poli M., Roldán D. Estudio de la estructura poblacional de un rodeo lechero usando un microarreglo denso de SNPs. XLII Congreso Sociedad Argentina de Genética. Salta, **Argentina** 2013. *JBAG vol. 24, Suppl 2012.* ISSN: 1852-6233
- Espínola S., Percuoco C., Argüelles C., **Miretti M.** Filogeografía de bovinos nativos americanos: inferencias basadas en ADN mitocondrial. XV Congreso Latinoamericano de Genética, Rosario **Argentina**. 2012. *JBAG vol. 23, Suppl 2012.*
- Carignano, H, Beribe, M, Raschia, M, Gutierrez, G, Alvarez, I, Amadio, A, Roldán, D, Trono, K, **Miretti, M** y Poli, M. Asociación entre SNPs de genes candidatos y recuento leucocitario en bovinos infectados por BLV. XV Congreso Latinoamericano de Genética, Rosario **Argentina** 2012. *JBAG vol. 23, Suppl 2012.* ISSN: 1852-6233
- Carignano, H., Roldán, D.1, Trono, K., **Miretti, M.** y Poli, M. Distribución de frecuencias alélicas del gen *BOLA-DRB3* en animales BLV(-) y BLV(+) de baja carga. proviral, pertenecientes a un rodeo comercial de raza Holstein y Holstein x Jersey. Jornadas Latinoamericanas sobre Leucosis Bovina, Soc. Arg. de Virología. Buenos Aires **Argentina** 2012
- **Invited Speaker** 'Predicting HLA alleles based on a high resolution haplotype map of the human MHC'. Symposium 'Practical application of MHC studies', 57th Brazilian Congress of Genetics, Sept. 1st 2011, A. Lindoia,SP, **Brazil**
- **Invited Senior Course Staff, Oral presentation and Chair Session** at *International Theoretical Course on Viral Hepatitis & the Human Host*, Feb.22nd-25th, 2010, Sao Paulo **Brazil**. *Rev.Inst.Med.Trop. Sao Paulo* 52, suppl.16p.7-8,2010
- **Invited Speaker**, 2nd Immunogenetics Symposium, October 8th-9th, 2009, Dept. of Genetics, Universidade Federal de Parana, Curitiba, **Brazil**. **Oral presentation.**
- M Miretti, *et al.* Haplotype-specific recombination shapes the genealogy of ancestral European haplotypes. *15th International Histocompatibility and Immunogenetics Workshop and Conference*, Rio de Janeiro, **Brazil** Sept.18-20, 2008. **Oral Presentation. Tissue Antigens** 72, p.234, 2008.
- **Invited Seminar** 'MHC haplotype project: Mapping the linkage disequilibrium landscape'. Histocompatibility and Immunogenetics Research Dept., National Blood Service, NHS, Colindale, **London**. 21/11/2006.
- *Bloodomics workshop*. Invited participant group 7 'HLA tagging'. Nov. 6th 2006 Wellcome Trust Sanger Institute, Hinxton
- R. Horton & M.Miretti for the Human LRC consortium. The Human LRC Project. *KIR polymorphism workshop*. 8 -10 Oct. 2006, Dusseldorf, Heinrich-Heine University, **Germany**. **Oral Presentation.**
- **Keynote speaker.** 'The MHC haplotype project: LD patterns and recombination rates in the Human MHC'. 17th Conference of the British Society for Histocompatibility and Immunogenetics (**BSHI**), 13-15 Sept 2006, **Sheffield, UK**
- M. Miretti. 'Human Diversity, Autoimmunity and Infectious Diseases: The shuffling genomic landscape'. **Britain's top younger researchers** in UK Bioscience, **The House of Commons, London**, May 8, 2006. Poster www.setforeurope.org/bioscience/img/BIOSCIENCE_HIGH.pdf
- M. Miretti, MHC consortium. 'Genetic architecture of the extended MHC in multiple populations based on a high resolution SNP map'. 55th Annual meeting American Society for Human Genetics, Salt Lake City, **USA**, 10/2005. p.66 **Oral Present.**
- M. Miretti & S. Beck. Recombination within an LD-block? Interpretations from haplotype-groups showing distinct genealogies. *SNP and complex Genome Analysis*. September 22nd-24th2005. Hinckley, **Leicestershire, UK** **Poster**
- M. Miretti *et al*: A High Resolution LD Map of the Human MHC in caucasians and first generation of tag SNPs. *Genome Studies and The HapMap*. March 15-18, 2005. **University of Oxford, Oxford, UK. Poster**
- Invited Seminar 'Recombination patterns in the MHC'. **King's College Hospital, London** 14/10/2004.

❖ **Assistantships / visiting** (*selected*)

- The Wellcome Trust Centre for Human Genetics, **University of Oxford**, August 31st-September 3rd 2004, visiting **L. Cardon** and X. Ke. Recombination rates and SNP tagging within the MHC
- Mathematisches Seminar, **Universität Hamburg, Hamburg, Germany**, August 6-10, 2002; visiting **Dr. Hans-Jürgen Bandelt**. Discuss cattle phylogeography based on mtDNA employing NETWORK analy

❖ **Mentoring / Supervising**

- Co-supervisor Research Associate, CIC CONICET, Dr. M.V. Garcia 2008 -
- Supervisor Postdoctoral Fellowship CONICET, Dr. Carola Cheroki, 2009 - 2011
- Co-Supervisor Postdoctoral Fellowship CONICET, Dr. Cecilia Percuoco, 2014 - 2016
- Supervisor Doctoral Fellowship, PFDT ANPCyT, Lic. Hugo Carignano, 2010 -
- Supervisor Doctoral Fellowship, PFDT ANPCyT, Lic. Jéssica Fay, 2011 -
- Supervisor Undergraduate thesis, B.S. Genetics at FCEQyN, UNaM, Sergio Espínola, 2012
- Co-supervisor Undergrad. thesis, B.S. Genetics, and Research Initiation Fellowship, Anibal Depasquino, 2013-2015
- Supervisor Undergraduate thesis, B.S. Genetics at FCEQyN, UNaM, Sergio Litwiniuk 2014

❖ **Other activities**

DNA sequence submissions to GenBank

- NC_005971. **Bos indicus mitochondrial genome Reference Sequence**. Miretti M, Pereira H, Greggio C, Suzuki J, Ferro J, Ferro M, Meirelles F, Garcia J. and Smith L. (Ref derived from AY126697)
- gi:27451267. Mitochondrial DNA control region sequences (*Bos taurus*), population set www.ncbi.nlm.nih.gov/entrez/batchseq.cgi?db=popset&view=ps&val=27451267
- AY426319 - AY426325, Mitochondrial DNA control region sequences (*Bos taurus*)

Manuscript revision for: *American Journal of Human Genetics*, *DNA Sequence*, *European Journal of Human Genetics*, *Gene*, *Genetica*, *Human Mutation*, *Immunogenetics*, *Molecular Phylogenetics and Evolution*, *Journal of Dairy Science*, *Molecular Ecology*, *PLoS ONE*, *Respiration*, *Tissue Antigens*.