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Education and Postdoctoral Training

2010 - 2015	Postdoctoral position Projects: -Mobile genetic elements in sexual and ancient asexual taxa -Reverse transcriptase-related genes and their biological significance -Horizontal gene transfer as a source of evolutionary innovation in metazoans Advisor: Irina Arkhipova	Marine Biological Laboratory
2004 - 2009	PhD, Biology, Molecular Biology and Biochemistry Program Project: Phylogeography and evolutionary history in genus <i>Rupicapra</i> based on mitochondrial DNA Advisor: Ana Dominguez Sanjurjo and Trinidad Perez Mendez	Universidad de Oviedo (Spain)
1998 - 2002	BS, Biology	Universidad de Oviedo (Spain)

Professional Positions

2018 - 2018	Research Scientist	Josephine Bay Paul Center, MBL
2015 - 2018	Research Associate	Josephine Bay Paul Center, MBL
2010 - 2015	Postdoctoral position	Josephine Bay Paul Center, MBL
2004 - 2009	Research assistant	Universidad de Oviedo (Spain)

Teaching

- 2008 - Lecturer (invited speaker) in MSc Courses, Universidad de Oviedo
- 2005 - Summer Course "Conservation and genetic characterization of plant resources", Universidad de Oviedo
- 2010-2012 - Graduate student supervision. Anupriya Dutta, Brown University.
- 2013 - Undergraduate student supervision. Daniel DiCorpo, Brown University.
- 2014 - Undergraduate student supervision. Aubrey W. Kenefick, Williams College.
- 2015 - Undergraduate student supervision. Tatsiana Mello, Wellesley College.
- 2016 - Undergraduate student supervision. Samantha Spear, Brown University; Brandon M. Le, Brown University; Vishok Srikanth, University of Chicago.
- 2017 - Undergraduate student supervision. Jonathan N. Dow, Brown University; Brandon M. Le, Brown University; Katherine Dunham, Brown University; Laura Swain, University of Chicago.
- 2018 - Undergraduate student supervision. Bria Metzger, Brown University.

Training Record

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| 2010 - | Postdoctoral research position | Marine Biological Laboratory |
| 2015 | Projects:
-Mobile genetic elements in sexual and ancient asexual taxa
-Reverse transcriptase-related genes and their biological significance
-Horizontal gene transfer as a source of evolutionary innovation in metazoans | |
| 2004 - | Graduate Research Assistant | Universidad de Oviedo (Spain) |
| 2009 | Project: Ternera Asturiana Beef Traceability based on DNA fingerprinting | |
| 2004 - | PhD fellow | |
| 2009 | Project: Phylogeography and evolutionary history in genus <i>Rupicapra</i> based on mitochondrial DNA | Universidad de Oviedo (Spain) |
| 2002- | Msc in Biology | |
| 2004 | Project: Evolution of mitochondrial cytochrome b gene and its corresponding nuclear pseudogene in the chamois (<i>Rupicapra</i> spp.). | Universidad de Oviedo (Spain) |

Workshops attended

- 2013 - Writing about Science for the Public: A Hands-On Workshop for Scientists. Woods Hole, MA, USA.
- 2013 - 2013 GMOD Summer School. NESCent. Durham, NC, USA.

2013 - Statistical Analysis and Graphics with R. MBL. Woods Hole, MA, USA.
2011 - CCV Bioinformatics Workshop. Brown University, RI, USA.
2011 - Genome Assembly Special Forces Workshop. Brown University, RI, USA.
2010 - Next-Generation Sequencing Data Analysis. Brown University, RI, USA.
2010 - Programmatic Access to Biological Databases (Perl). EMBL-EBI. Hinxton, UK.

Publications

Original Research in Peer-Reviewed Journals

Artem V. Nedoluzhko, Fedor S. Sharko, Brandon M. Lê, Svetlana V. Tsygankova, Eugenia S. Boulygina, Sergey M. Rastorguev, Alexey S. Sokolov, **Fernando Rodriguez**, Alexander M. Mazur, Alexey A. Polilov, Richard Benton, Michael B. Evgen'ev, Irina R. Arkhipova, Egor B. Prokhortchouk, Konstantin G. Skryabin. (In review). Genomic signatures of miniaturization in the parasitoid wasp *Megaphragma amalphanum*.

Fernando Rodriguez and Irina R. Arkhipova. Transposable elements and polyploid evolution in animals. (2018). *Curr Opin Genet Dev.* 49:115-123. Pubmed.

Pérez T, **Rodriguez F**, Fernández M, Albornoz J, Domínguez A. Ancient mitochondrial pseudogenes reveal hybridization between distant lineages in the evolution of the *Rupicapra* genus. (2017). *Gene.* 1119(17):30546-2. Pubmed.

Arkhipova IR, Yushenova IA, **Rodriguez F**. (2017) Giant reverse transcriptase-encoding transposable elements at telomeres. *Mol Biol Evol.* 34(9):2245-2257. Pubmed.

Rodriguez F, Kenefick AW, Arkhipova IR. LTR-Retrotransposons from Bdelloid Rotifers Capture Additional ORFs Shared between Highly Diverse Retroelement Types.(2017). *Viruses.* 11;9(4). Pubmed.

Rodriguez F, Arkhipova I. (2016). Multitasking of the piRNA Silencing Machinery: Targeting Transposable Elements and Foreign Genes in the Bdelloid Rotifer *Adineta vaga*. *Genetics.* 203(1):255-268. Pubmed. Selected article in *Genetics Spotlight 2016*.

Arkhipova IR, Yushenova IA, **Rodriguez F**. (2013). Endonuclease-containing Penelope retrotransposons in the bdelloid rotifer *Adineta vaga* exhibit unusual structural features and play a role in expansion of host gene families. *Mobile DNA.* 4:19. Pubmed.

Flot JF, Hespeels B, Li X, Noel B, Arkhipova I, Danchin EG, Hejnol A, Henrissat B, Koszul R, Aury JM, Barbe V, Barthélémy RM, Bast J, Bazykin GA, Chabrol O, Couloux A, Da Rocha M, Da Silva C, Gladyshev E, Gouret P, Hallatschek O, Hecox-Lea B, Labadie K, Lejeune B, Piskurek O, Poulain J, **Rodriguez F**, Ryan JF, Vakhrusheva OA, Wajnberg E, Wirth B, Yushenova I, Kellis M, Kondrashov AS, Mark Welch DB, Pontarotti P, Weissenbach J, Wincker P, Jaillon O, Van Doninck K.(2013). Genomic evidence for ameiotic evolution in the bdelloid rotifer *Adineta vaga*. *Nature.* 500:453-457. Pubmed.

Arkhipova IR, **Rodríguez F.** (2013). Genetic and epigenetic changes involving (retro)transposons in animal hybrids and polyploids. *Cytogenet Genome Res.* 140: 295-311. Pubmed.

Rodríguez F, Pérez T, Hammer S, Albornoz J, Domínguez A. (2010). Integrating phylogeographic patterns of microsatellite and mtDNA divergence to infer the evolutionary history of chamois (genus *Rupicapra*). *BMC Evolutionary Biology.* 10:222. Pubmed.

Rodríguez F, Hammer S, Pérez T, Suchentrunk F, Lorenzini R, Michallet J, Martinkova N, Albornoz J, Domínguez A. (2009). Cytochrome b phylogeography of chamois (*Rupicapra* spp.). Population contractions, expansions and hybridizations governed the diversification of the genus. *Journal of heredity.* 100: 47-55. Pubmed.

Rodríguez F, Albornoz J, Domínguez A. (2007). Cytochrome b pseudogene originated from a highly divergent mitochondrial lineage in genus *Rupicapra*. *Journal of Heredity.* 98: 243-249. Pubmed.

Reviews, Articles, Books, Book Chapters

Rodríguez F, Arkhipova I. Multitasking of the piRNA Silencing Machinery: Targeting Transposable Elements and Foreign Genes in the Bdelloid Rotifer *Adineta vaga*. *Genetics Spotlight* 2016.

Ana Domínguez Sanjurjo , **Fernando Rodríguez Vazquez,** Jesús Albornoz Pons, Trinidad Pérez Méndez. Book Chapter: El rebeco cantábrico, filogeografía e historia evolutiva. In: *El Rebeco Cantábrico (Rupicapra pyrenaica parva)*, "Conservación y gestión de sus poblaciones". Edited by Pérez-Barbería, F.J. & Palacios, B. Colección Naturaleza y Parques Nacionales. Serie Técnica. 2009.

Rodríguez F, Hammer S, Pérez T, Suchentrunk F, Lorenzini R, Michallet J, Martinkova N, Albornoz J, Domínguez A. (2008). Cytochrome b phylogeography of chamois (*Rupicapra* spp.): Population contractions, expansions and hybridizations characterize the diversification of the genus. 82nd Annual Meeting of the German Society of Mammalogy. Vienna, 14-18 September 2008. *Mammalian Biology.* 73 [Suppl. 1]: 16.

Domínguez, A. and **Rodríguez, F.** (2004). Beef traceability based on DNA fingerprinting. *Feedinfo News Service.*

Meetings and Conferences Presentations (summary)

TITLE: Evolución del gen citocromo b y su correspondiente pseudogen nuclear en el rebeco (*Rupicapra* spp.).

AUTHORS: **Rodríguez F,** Albornoz J, Domínguez A.

XXXV Congreso de la Sociedad Española de genética, Almería, Spain, 2005.

TITLE: Mitochondrial Phylogeography of chamois (*Rupicapra* spp.) based on cytb.

AUTHORS: **Rodríguez F**, Hammer S Pérez T, Suchentrunk F, Lorenzini R, Michallet J, Albornoz J, Domínguez A.

XI Congress European Society for Evolutionary Biology, Uppsala, Sweden, 2007

TITLE: Filogeografía mitocondrial del rebeco (*Rupicapra* spp.) basada en el citocromo b.

AUTHORS: **Rodríguez F**, Hammer S, Pérez T, Suchentrunk F, Lorenzini R, Michallet J, Albornoz J, Domínguez A.

XXXVI Congreso de la Sociedad Española de genética, León, Spain, 2007.

TITLE: Cytochrome b Phylogeography of Chamois (*Rupicapra* spp.): Population Contractions, Expansions and Hybridizations characterize the Diversification of the Genus.

AUTHORS: **Rodríguez F**, Hammer S, Pérez T, Suchentrunk F, Lorenzini R, Michallet J, Albornoz J, Domínguez A.

82nd Annual meeting of the German Society of Mammalogy, Vienna, Austria, 2008.

TITLE: Filogeografía y diversificación del género *Rupicapra*.

AUTHORS: **Rodríguez F**, Hammer S, Pérez T, Suchentrunk F, Lorenzini R, Michallet J, Martinkova N, Albornoz J, Domínguez A.

XVII Seminario de Genética de Poblaciones y Evolución, Ribadesella, Spain, 2008.

TITLE: Diversification of the chamois (genus *Rupicapra*). Discordance between microsatellite and mt-DNA phylogenies.

AUTHORS: **Rodríguez F**, Pérez T, Hammer S, Albornoz J, Domínguez A.

XII Congress European Society for Evolutionary Biology, Turin, Italy, 2009

TITLE: Microsatellite and mt-DNA phylogenies of the chamois (genus *Rupicapra*) and taxonomic implications.

AUTHORS: **Rodríguez F**, Pérez T, Hammer S, Albornoz J, Domínguez A.

V World Conference on Mountain Ungulates, Granada, Spain, 2009.

TITLE: Initial characterization of PIWI-interacting RNAs in *Adineta vaga*.

AUTHORS: **Rodríguez F**, Arkhipova I.

North East Mobile Genetic Element Meeting, Woods Hole, MA, USA, 2011.

TITLE: An increase in relative abundance of pi-like RNAs in response to ionizing radiation in the bdelloid rotifer *Adineta vaga*.

AUTHORS: **Rodríguez F**, Arkhipova I.

Genomic Impact of Eukaryotic Transposable Elements, Asilomar, CA, USA, 2012.

TITLE: Use of phylogenetic approaches to study horizontal gene transfer and evolutionary history of gene families.

AUTHORS: Gladyshev EA, **Rodriguez F**, Yushenova IA, Arkhipova IR.

3rd Moscow International Conference Molecular Phylogenetics, Moscow, Russia, 2012.

TITLE: Loss of let-7 and miR-100 and possible compensation through editing of miR-125.

AUTHORS: Dutta A, **Rodriguez F**, Sperling EA, Peterson KJ, Mark Welch DB.

The Biology of Post-Transcriptional Gene Regulation, Gordon Research Conference, Newport, RI, USA, 2012.

TITLE: piRNA-mediated silencing in the bdelloid rotifer *Adineta vaga* targets transposons as well as genes of foreign origin.

AUTHORS: **Rodriguez F**, Arkhipova I.

Regional Meeting on Mobile Genetic Elements, CSHL, Cold Spring Harbor, NY, USA, 2013.

TITLE: Diversified coding potential of retroelements from bdelloid rotifers reveals multiple links to the viral world.

AUTHORS: Arkhipova IR, Yushenova IA, **Rodriguez F**.

Abstracts, Keystone Symposium "Mobile Genetic Elements and Genome Evolution", Santa Fe, NM, USA, 2014.

TITLE: Phylogenetic relationships in diverse superfamilies of eukaryotic transposable elements.

AUTHORS: Arkhipova IR, Yushenova IA, **Rodriguez F**.

Contributions to the 4th Moscow International Conference "Molecular Phylogenetics" (MolPhy-4). Moscow, Russia, 2014.

TITLE: Transposable elements in the bdelloid rotifer *Adineta vaga*: how to invite them to a party but not let them spoil it.

AUTHORS: **Rodriguez F**, Arkhipova I.

Mobile Genetic Elements in Woods Hole, MA, USA, 2015.

TITLE: N6-methyladenine and N4-methylcytosine base modifications are broadly distributed in the bdelloid rotifer *Adineta*.

AUTHORS: **Rodriguez F**, Arkhipova I.

Transposable Elements, CSHL, Cold Spring Harbor, NY, USA, 2016.

TITLE: *N6-methyladenine and N4-methylcytosine: amino-methylation as an epigenetic mark in rotifers.*

AUTHORS: **Rodriguez F**, Arkhipova I.

Mobile Genetic Elements in Woods Hole, MA, USA, 2017.

Professional Service and Memberships

Invited Reviewer for:

BMC Plant Biology journal, PeerJ, Molecular Biology and Evolution (<https://publons.com/a/1320478>).

Memberships:

2010- The Genetics Society of America

2015- AAAS/Science memberships. Full membership in AAAS (the American Association for the Advancement of Science) sponsored by AAAS/Science Program for Excellence in Science (2 years full membership).