

Curriculum Vitae

FERNANDO MORENO-HERRERO (10/2016)

Personal information

Name: Fernando Moreno Herrero
Date and place of birth: March 5, 1976 in Oviedo (Spain)
Nationality: Spanish
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Education

Sept 1998 – March 2003: Ph.D in Physics (Cum Laude), Univ. Autónoma de Madrid, Spain
Ph.D. extraordinary prize by Univ. Autónoma de Madrid.
Thesis supervisor: Prof. Dr. Arturo M. Baró Vidal
Topic: Applications of the Atomic Force Microscopy to investigation of biological systems

Sept 1994 – July 1998: Physics degree by Univ. Oviedo, Spain (#2 of promotion)

Employment

Sept 09 - Present Científico Titular CSIC (Spanish National Research Council)
National Center of Biotechnology

Dec 06 – Sept 09: Ramon y Cajal program contracted.
Institut Catalá de Nanotecnología, Spain

Sept 05 – Sept 06: Post-doctoral contracted by FOM (Fundamenteel Onderzoek Materie).
Delft Univ. of Technology, The Netherlands

Sept 03 – Sept 05: Post-doctoral Ramón Areces Foundation Fellow.
Delft Univ. of Technology, The Netherlands

Sept 1999 – Sept 2003: Ph.D Comunidad de Madrid fellow.
Univ. Autónoma de Madrid, Spain

Nov 1997 – June 1998: Collaboration fellow, Spanish Ministry of Science.
Univ. Oviedo, Spain

Research

- High-resolution AFM imaging of DNA-protein interactions in air and in buffer
- Single-molecule biophysics on molecular motors using AFM, Magnetic Tweezers, and biochemical techniques
- Mechanical properties of nucleic acids.

5 Selected Recent Publications

B. Gollnick, C. Carrasco, F. Zuttion, N. S. Gilhooly, M. S. Dillingham and F. Moreno-Herrero*. *Probing DNA Helicase Kinetics with Temperature-Controlled Magnetic Tweezers* (cover Article). *Small* (2015) 11(11), 1273-128, first published 14 Nov 2014.

J. A. Taylor, C.L Pastrana, A. Butterer, C. Pernstich, E. J. Gwynn, F. Sobott, F. Moreno-Herrero*, and M.S. Dillingham*. *Specific and non-specific interactions of ParB with DNA: implications for chromosome segregation*. *Nucleic Acids Research* (2015) 43(2):719-731. (* corresponding authors)

C. Carrasco, N.S. Gilhooly, M.S. Dillingham*, and F. Moreno-Herrero* "On the mechanism of recombination hotspot scanning during double-stranded DNA break resection" *Proc. of the National Academy of Sciences USA*, Early Edition (Epub ahead of print) (2013) (* corresponding authors)

E. Herrero-Galán, M. E. Fuentes-Perez, C. Carrasco, J. M. Valpuesta, J. L. Carrascosa, F. Moreno-Herrero*, J. R. Arias-Gonzalez*. "Mechanical identities of RNA and DNA double helices unveiled at the single-molecule level" *Journal of the American Chemical Society* 135(1), 122-131 (2013). (*corresponding authors).

J.T. Yeeles, K. van Aelst, M.S. Dillingham* and F. Moreno-Herrero* "Recombination hotspots and single-stranded DNA binding proteins couple DNA translocation to DNA unwinding by the AddAB helicase-nuclease" *Molecular Cell* 42, 806-816 (2011) (* corresponding authors)

Awards and Honors

- "Miguel Catalan" Prize for Young Researchers under 40. Autonomous Community of Madrid. 2015
- ERC Consolidator Grant 2015
- ERC Proof of Concept Grant 2014
- SBE-40 "Perez-Payá" Prize for Young Investigators. Spanish Biophysical Society. 2014
- IZASA-WERFEN prize for Young Investigators. Spanish Biochemical and Molecular Biology Soc. 2012
- ERC Starting Grant 2007
- Ramón y Cajal awardee. Number 1 position. Spanish Ministry of Science
- Ph.D Extraordinary Prize, Univ. Autónoma de Madrid
- Ramón Areces Postdoc fellowship, Ramón Areces Foundation
- Ph.D. Cum Laude, Univ. Autónoma de Madrid
- CAM Ph.D. Fellowship, Comunidad de Madrid Government
- Collaboration Fellowship, Spanish Ministry of Science

Other activities and membership

- Frequent reviewer: Nucleic Acids Research, European Biophysical Journal, FEBS letters, Biophysical Journal, Journal of Microscopy and European Polymer Journal, Methods.
- Member of Royal Spanish Physical Society.
- Member of Spanish Biochemical and Molecular Biology Society.
- Member of the Spanish Biophysical Society.
- Member of the American Biophysical Society.

Ten most-relevant invited presentations at conferences

Condensation of DNA by the bacterial centromere binding protein Spo0J/ParB.
10th European Biophysics Congress. July 18-22, 2015, Dresden, Germany

Recognition and resection of double-stranded DNA breaks: a single-molecule approach
SBE-40 Young Investigator award. XIVth Congress of the SBE. Alcalá de Henares, Spain, 2014 (KEYNOTE)

AFM volumetric methods and characterization of Rep - DNA interactions in the plasmid replication origin.
IVth Euro AFM forum, 17-19 March, 2014, Göttingen, Germany.

Single molecule approaches to study double-stranded DNA break resection.
Vth Grisbi Meeting. 14-15 October ,2013, Montpellier, France.

Watching and manipulating single molecules involved in DNA repair
22nd IUBMB, 37th FEBS, 35th SEBBM Conference, 4-9 September 2012, Sevilla, Spain.

Manipulating DNA molecules and studying DNA-protein interactions with Magnetic Tweezers and AFM
3rd European Nanomanipulation Workshop, 25-27 April 2012, Madrid, Spain.

Single-molecule approaches to study the AddAB helicase-nuclease
XI Congress of the Spanish Biophysical Society, 1-4 March 2011, Murcia, Spain.

Using the Atomic Force Microscope to study DNA break repair.
1st winter workshop on Functional SPM in Bio and Chemical Physics. Modena, Italy, 2009.

Single-molecule techniques for the study of DNA repair nanomachines.
XXXI Conference of the Spanish Biochemistry and Molecular Biology Society (SEBBM). Bilbao, Spain, 2008.

High flexibility of DNA at short length scales probed with the atomic force microscopy.
Internacional Conference in Trends in Nanotechnology (TNT) 2007. San Sebastian, Spain, 2007. (KEYNOTE)

Contributed talks, Publications and Funded Projects

- 60 Contributed talks in national and international conferences 18 invited (2 Keynote).
- 60 ISI Web of Science ranked publications including 13 conference proceedings
- First/Corresponding author in 40, and second author in 8

- >1720 times cited, H=21. Average JCR impact of publications 7.45.
- Participated in 16 funded Research Projects. 9 as Principal Investigator.