

# Curriculum Vitae

## Jorge Alegre-Cebollada, PhD

National Institute of Cardiovascular Research (CNIC)  
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### RESEARCHERID PROFILE

### LAB WEBSITE

### CURRENT POSITION

National Institute for Cardiovascular Research, CNIC-Carlos III (Madrid, Spain) from 2014  
**Assistant Professor - Group Leader**

Autonomous University of Madrid, Biochemistry Department (Madrid, Spain) from 2016  
**Honorary Professor**

### EDUCATION

**Complutense University, Department of Biochemistry and Molecular Biology (Madrid, Spain)** 2008  
**Ph. D. Biochemistry (Summa Cum Laude)**  
Emphasis in lipid-protein interactions by spectroscopy, calorimetry and molecular biology  
Dissertation Title: Mechanism of membrane pore formation by the actinoporin Sticholysin II  
Supervisors: **Prof. Álvaro Martínez del Pozo** and **Prof. José G. Gavilanes**

**Complutense University, Department of Biochemistry and Molecular Biology (Madrid, Spain)** 2003  
**M. Sc. Biochemistry (GPA: 3.86/4.00)**  
Thesis Title: Production of a strain of *L. lactis* expressing the ribotoxin  $\alpha$ -sarcin  
Supervisor: **Prof. Álvaro Martínez del Pozo**

**Complutense University, School of Chemistry (Madrid, Spain)** 2001  
**B. Sc. Chemistry (GPA: 3.67/4.00)**

### RESEARCH POSITIONS

**Columbia University, Department of Biological Sciences (New York, US)** 2013-2014  
*Associate Research Scientist*  
Topic: Single-molecule force-spectroscopy by Atomic Force Microscopy and Magnetic Tweezers  
Adviser: **Prof. Julio M. Fernández**

**Columbia University, Department of Biological Sciences (New York, US)** 2008-2013  
*Postdoctoral Research Scientist*  
Topic: Single-molecule force-spectroscopy by Atomic Force Microscopy  
Adviser: **Prof. Julio M. Fernández**

**Free University of Brussels, Department of Structure and Function of Biological Membranes (Belgium)** 2005  
*Visiting scholar* (3 months)  
Topic: ATR infrared spectroscopy applied to sticholysin II bound to lipids  
Supervisor: **Prof. Erik Goormaghtigh**

## RESEARCH INTERESTS

- Emergent mechanical properties of proteins in cardiac muscle
- Interplay between redox biochemistry and protein mechanics
- Intramolecular covalent bonds in proteins: mechanical stability, reactivity, biological role, biosynthesis
- Protein biomaterials

## GRANTS AWARDED AS PRINCIPAL INVESTIGATOR

- 1. Ministry of Economy and Competitiveness (Spain)** 2018-2020  
*Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia*  
Title: “Emergent mechanical properties of proteins in the myocardium and in biomaterials with biotechnological applications”  
Reference: BIO2017-83640-P
- 2. Ministry of Economy and Competitiveness (Spain)** 2019-2020  
*Redes de Excelencia*  
Title: “Network of excellence in Mechanobiology”  
Coordinated proposal (10 PIs)  
Reference: BFU2017-90692-REDT
- 3. Ministry of Economy and Competitiveness (Spain) – CNIC** 2017-2019  
Intramural Grants Program – Severo Ochoa  
Title: Immune – Mechanical Crosstalk in the Cardiomyopathic Heart  
Coordinated proposal (2 PIs, coordinator: Alegre-Cebollada)  
Reference: 03-2016 IGP
- 4. European Research Area Network on Cardiovascular Diseases – Horizon 2020** 2017-2019  
Joint Transnational Call 2016  
Title: Metabolic Therapy for Managing Diastolic Heart Failure (MINOTAUR)  
Coordinated proposal (5 PIs)  
Reference: AC16/00045
- 5. Regional Government of Madrid** 2017-2018  
*Ayudas para la promoción del empleo joven 2016*  
Reference: PEJ 16/MED/TL-1593
- 6. Ministry of Economy and Competitiveness (Spain)** 2015-2017  
*Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia*  
Title: “Mechanobiochemistry: from the regulation of muscle elasticity to the production of biomaterials with adjustable stiffness”  
Reference: BIO2014-54768-P
- 7. Ministry of Economy and Competitiveness (Spain)** 2015-2020  
*Ramón y Cajal Program (top candidate in the BFU section)*  
Reference: RYC-2014-16604
- 8. CNIC-IIF Marie Curie** 2014-2015  
International Incoming Fellowship for Young Group Leaders  
Reference: FP7-PEOPLE-2010-COFUND-267149

**9. National Institute of Allergy and Infectious Diseases (NIH, US)**

5/17/13 – 5/16/14

Pathway to Independence Award (K99/R00)

Title: Bacterial Attachment under Mechanical Perturbations

Reference: 1K99AI106072

Duration: K99 Mentored Phase (1 year) + R00 Independent Phase (2 years).

R00 phase was cancelled due to international move.

**AWARDS AND ACHIEVEMENTS**

**Spanish Biophysical Society**

2014

Award to the Best Biophysicist under 33 years

**Complutense University (Madrid, Spain)**

2008

Annual Award for Best Dissertation in Biochemistry (*Premio Extraordinario Doctorado*)

**Spanish Ministry of Science**

2004

1<sup>st</sup> National Award on Biochemistry (*1<sup>er</sup> Premio Nacional Fin de Carrera*)

**Complutense University (Madrid, Spain)**

2003

Annual Award for Masters Students (*Premio Extraordinario Licenciatura*)

**FELLOWSHIPS**

**Fundación Ibercaja (Zaragoza, Spain)**

2011-2012

Postdoctoral Fellowship

**Fundación Alfonso Martín Escudero (Madrid, Spain)**

2008-2010

Postdoctoral Fellowship

**Fundación Caja Madrid (Madrid, Spain)**

2008

Postdoctoral Fellowship

**Spanish Ministry of Science**

2004-2008

Research Fellowship for Graduate Students (FPU program)

**Spanish Ministry of Education**

2002-2003

Research Fellowship for Undergraduate Students

**INSTITUTIONAL RESPONSIBILITIES**

**CNIC (Madrid, Spain)**

from 2017

Committee for the generation of an institutional repository ISCIH/CNIC/CNIO

**CNIC (Madrid, Spain)**

from 2016

Member of the editorial committee, [CNIC-Pulse Magazine](#)

**CNIC (Madrid, Spain)**

from 2015

Coordinator, Scientific Activities, Web and Library committee

**CNIC (Madrid, Spain)**

from 2015

Coordinator, Working Group – Proteomics Core Facility

CNIC (Madrid, Spain)

2015

Committee for the renewal of the institutional web site

**PROFESSIONAL MEMBERSHIPS**

<b>Member, Biophysical Society</b>	2009-present
<b>Member, Spanish Biophysical Society</b>	2007-present
<b>Member, Spanish Biochemical Society</b>	2004-present

**PUBLICATIONS****Positive Evaluation** Research Periods by Spanish Ministry of Education (“*Sexenios*”): 2004-2009

\* Shared authorship    # Corresponding author

**10 most relevant publications**

1. (Preprint) Carolina Pimenta-Lopes, Carmen Suay-Corredera, Diana Velázquez-Carreras, David Sánchez-Ortiz, Jorge Alegre-Cebollada<sup>#</sup> (2018). Orthogonal fingerprinting for accurate and fast single-molecule mechanical profiling of proteins. **BioRxiv** <https://doi.org/10.1101/293506>
2. David Giganti, Kevin Yan, Carmen L. Badilla, Julio M. Fernández, Jorge Alegre-Cebollada<sup>#</sup> (2018) Disulfide isomerization reactions in titin immunoglobulin domains enable a mode of protein elasticity. **Nature Communications** **9**:185.
3. Jorge Alegre-Cebollada<sup>\*,#</sup>, Pallav Kosuri\*, David Giganti, Edward Eckels, Jaime-Andrés Rivas-Pardo, Nazha Hamdani, Chad M. Warren, R. John Solaro, Wolfgang A. Linke, Julio M. Fernández<sup>#</sup> (2014). S-glutathionylation of cryptic cysteines enhances titin elasticity by blocking protein folding. **Cell**, **156**, 1235-1246. This article was chosen for the **cover** of the issue.
4. Jorge Alegre-Cebollada<sup>#</sup>, Pallav Kosuri, Jaime Andrés Rivas-Pardo, Julio M. Fernández<sup>#</sup> (2011). Direct observation of disulfide isomerization in a single protein. **Nature Chemistry**, **3**, 882-887. This article was highlighted in the **cover of Nature Chemistry** and in a **News and Views** article. The article was also featured in **Chemical and Engineering News**.
5. Daniel J. Echelman<sup>\*#</sup>, Jorge Alegre-Cebollada<sup>\*#</sup>, Carmen L. Badilla, Chungyu Chang, Hung Ton-That, Julio M. Fernández<sup>#</sup> (2016). CnaA domains in bacterial pili are efficient dissipaters of large mechanical shocks. **PNAS**, **113**, 2490-2495.
6. Pallav Kosuri, Jorge Alegre-Cebollada, Jason Feng, Anna Kaplan, Álvaro Inglés-Prieto, Carmen L. Badilla, Brent R. Stockwell, José M. Sánchez-Ruiz, Arne Holmgren, Julio M. Fernández (2012). Protein folding drives disulfide formation. **Cell**, **151**, 794-806.
7. Aitor Manteca, Jörg Schönfelder, Alvaro Alonso-Caballero, Marie J. Fertin, Nerea Barruetaña, Bruna F. Faria, Elias Herrero-Galán, Jorge Alegre-Cebollada, David De Sancho, Raul Perez-Jimenez (2017). Mechanochemical evolution of the giant muscle protein titin as inferred from resurrected proteins. **Nature Structural and Molecular Biology**, **24**, 652-657. This article was chosen for the **cover** of the issue.
8. Jorge Alegre-Cebollada<sup>#</sup>, Carmen L. Badilla, Julio M. Fernández<sup>#</sup> (2010). Isopeptide bonds block the mechanical extension of pili in pathogenic *Streptococcus pyogenes*. **Journal of Biological Chemistry**, **285**, 11235-11242.

9. Farees Saqlain, Ionel Popa, Julio M. Fernández<sup>#</sup>, Jorge Alegre-Cebollada<sup>#</sup> (2015). A novel strategy for utilizing voice coil servoactuators in tensile tests of low volume protein hydrogels. **Macromolecular Materials and Engineering**, **300**, 369-376.
10. Carles Solsona, Thomas B. Kahn, Carmen L. Badilla, Cristina Álvarez-Zaldiernas, Juan Blasi, Julio M. Fernandez, Jorge Alegre-Cebollada (2014). Altered thiol chemistry in human amyotrophic lateral sclerosis-linked mutants of superoxide dismutase 1. **Journal of Biological Chemistry**, **289**, 26722-26732.

**Additional publications:**

11. Ionel Popa, Ronen Berkovich, Jorge Alegre-Cebollada, Carmen L. Badilla, Jaime Andres Rivas-Pardo, Yukinori Taniguchi, Masaru Kawakami, Julio M. Fernández (2013). Nanomechanics of HaloTag Tethers. **Journal of the American Chemical Society**, **135**, 12762-12771.
12. Esperanza Rivera-de-Torre, Sara García-Linares, Jorge Alegre-Cebollada, Javier Lacadena, José G. Gavilanes and Álvaro Martínez-del-Pozo (2016) Synergistic action of actinoporin isoforms from the same sea anemone species assembled into functionally active heteropores. **Journal of Biological Chemistry**, **291**, 14109-14119.
13. Jaime Andrés Rivas-Pardo, Jorge Alegre-Cebollada, César A. Ramírez-Sarmiento, Julio M. Fernández, Victoria Guixé (2015) Identifying sequential substrate binding at the single-molecule level by enzyme mechanical stabilization. **ACS Nano**, **9**, 3996-4005.
14. Ionel Popa, Pallav Kosuri, Jorge Alegre-Cebollada, Sergi Garcia-Manyes, Julio M. Fernandez (2013). Force dependency of biochemical reactions measured by single molecule force-clamp spectroscopy. **Nature Protocols**, **8**, 1261-76.
15. David Giganti, Jorge Alegre-Cebollada, Saioa Urresti, David Albesa-Jové, Ane Rodrigo-Unzueta, Natalia Comino, Michael Kachala, Sonia López-Fernández, Dmitri I. Svergun, Julio M. Fernández, Marcelo E. Guerin (2013). Conformational plasticity of the essential membrane-associated mannosyltransferase PimA from Mycobacteria. **Journal of Biological Chemistry**, **288**, 29797-29808.
16. Sara García-Linares, Inés Castrillo, Marta Bruix, Margarita Menéndez, Jorge Alegre-Cebollada; Alvaro Martinez-del-Pozo, José G Gavilanes (2013). Three-dimensional structure of the actinoporin sticholysin I. Influence of long-distance effects on protein function. **Archives of Biochemistry and Biophysics**, **532**, 39-45. This article was chosen for the cover of the issue.
17. (*Book chapter*) Raul Perez-Jimenez, Jorge Alegre-Cebollada (2013). **Enzyme catalysis at the single-molecule level**, in “Single-molecule Studies of Proteins” (Ed. Andres F. Oberhauser), Springer, New York, US.
18. Sergi Garcia-Manyes, Carmen L. Badilla, Jorge Alegre-Cebollada, Yalda Javadi, Julio M. Fernández (2012). Spontaneous dimerization of the titin Z1-Z2 domains induces a strong nano-mechanical anchoring. **Journal of Biological Chemistry**, **287**, 20240-20247.
19. (*Preview*) Jorge Alegre-Cebollada, Pallav Kosuri, Julio M. Fernández (2011). Protease power strokes force proteins to unfold. **Cell**, **145**, 339-340.
20. Raúl Perez-Jimenez, Álvaro Inglés-Prieto, Ziming Zhao, Inmaculada Sanchez-Romero, Jorge Alegre-Cebollada, Pallav Kosuri, Sergi Garcia-Manyes, Arne Holmgren, José Manuel Sanchez-Ruiz, Erik A. Gaucher, Julio M. Fernandez (2011). Single-molecule paleoenzymology probes the chemistry of resurrected enzymes. **Nature Structural and Molecular Biology**, **18**, 592-596.
21. (*Review*) Lucía García-Ortega, Jorge Alegre-Cebollada, Sara García-Linares, Marta Bruix, Álvaro Martínez del Pozo, José G. Gavilanes (2011). The behaviour of sea anemone actinoporins at the water-membrane interface. **BBA-Biomembranes**, **1808**:2275-2288.

22. Miguel A. Pardo-Cea, Inés Castrillo; Jorge Alegre-Cebollada, Álvaro Martínez-del-Pozo, José G. Gavilanes, Marta Bruix (2011). Intrinsic local disorder and a network of charge-charge interactions are key to actinoporin membrane disruption and cytotoxicity. **FEBS Journal**, **278**, 2080-2089.
23. (Review) Jorge Alegre-Cebollada, Raúl Pérez-Jiménez, Pallav Kosuri, Julio M. Fernández (2010). Single-molecule force spectroscopy approach to enzyme catalysis. **Journal of Biological Chemistry**, **285**, 18961-18966.
24. Inés Castrillo, Nelson A. Araujo, Jorge Alegre-Cebollada, José G. Gavilanes, Álvaro Martínez del Pozo, Marta Bruix (2010). Specific interactions of sticholysin I with model membranes: an NMR study. **PROTEINS: Structure, Function, and Bioinformatics**, **78**, 1959-1970.
25. Miguel A. Pardo-Cea, Jorge Alegre-Cebollada, Álvaro Martínez-del-Pozo, José G. Gavilanes, Marta Bruix (2010). <sup>1</sup>H, <sup>13</sup>C, and <sup>15</sup>N NMR assignments of StnII-Y111N, a highly impaired mutant of the sea anemone actinoporin Sticholysin II. **Biomolecular NMR Assignments**, **4**, 69-72.
26. Inés Castrillo, Jorge Alegre-Cebollada, Álvaro Martínez del Pozo, José G. Gavilanes, Jorge Santoro and Marta Bruix (2009). <sup>1</sup>H, <sup>13</sup>C, and <sup>15</sup>N NMR resonance assignments of the actinoporin Sticholysin I. **Biomolecular NMR Assignments**, **3**, 5-7.
27. Inés Castrillo, Jorge Alegre-Cebollada, Álvaro Martínez del Pozo, José G. Gavilanes, Marta Bruix (2009). (<sup>1</sup>H), (<sup>13</sup>C), and (<sup>15</sup>N) NMR assignments of StnII-R29Q, a defective lipid binding mutant of the sea anemone actinoporin Sticholysin II. **Biomolecular NMR Assignments**, **3**, 239-241.
28. Elisa Álvarez-García, Jorge Alegre-Cebollada, Eva Batanero, Vicente Monedero, Gaspar Pérez-Martínez, Rosa García-Fernández, José G. Gavilanes and Álvaro Martínez del Pozo (2008). *Lactococcus lactis* as a vehicle for the heterologous expression of fungal ribotoxin variants with reduced IgE-binding affinity. **Journal of Biotechnology**, **134**, 1-8.
29. (Review) Nelson Carreras-Sangrà, Elisa Álvarez-García, Elías Herrero-Galán, Jaime Tomé, Javier Lacadena, Jorge Alegre-Cebollada, Mercedes Oñaderra, José G. Gavilanes and Álvaro Martínez del Pozo (2008). The therapeutic potential of fungal ribotoxins. **Current Pharmaceutical Biotechnology**, **9**, 153-160.
30. (Book chapter) Elías Herrero-Galán, Elisa Álvarez-García, Nelson Carreras-Sangrà, Javier Lacadena, Jorge Alegre-Cebollada, Álvaro Martínez del Pozo, Mercedes Oñaderra and José G. Gavilanes (2008). **Fungal ribotoxins: structure, function and evolution**, in “Microbial toxins: current research and future trends” (Ed. Thomas Proft). Horizon Bioscience, Norwich, UK.
31. Jorge Alegre-Cebollada, Michela Cunietti, Elías Herrero-Galán, José G. Gavilanes and Álvaro Martínez del Pozo (2008). Calorimetric scrutiny of lipid binding by sticholysin II toxin mutants. **Journal of Molecular Biology**, **382**, 920-930.
32. Jorge Alegre-Cebollada, Giorgia Clementi, Michela Cunietti, Christian Porres, Mercedes Oñaderra, José G. Gavilanes and Álvaro Martínez del Pozo (2007). Silent mutations at the 5'-end of the cDNA of actinoporins from the sea anemone *Stichodactyla helianthus* allow their heterologous overproduction in *E. coli*. **Journal of Biotechnology**, **127**, 211-221.
33. (Review) Javier Lacadena, Elisa Álvarez-García, Nelson Carreras-Sangrà, Elías Herrero-Galán, Jorge Alegre-Cebollada, Lucía García-Ortega, Mercedes Oñaderra, José G. Gavilanes and Álvaro Martínez del Pozo (2007). Fungal ribotoxins: molecular dissection of a family of natural killers. **FEMS Microbiology Reviews**, **31**, 212-237.

## Curriculum Vitae – Jorge Alegre-Cebollada, PhD

34. Jorge Alegre-Cebollada<sup>#</sup>, Álvaro Martínez del Pozo, José G. Gavilanes<sup>#</sup> and Erik Goormaghtigh (2007). Infrared spectroscopy study on the conformational changes leading to pore formation of the toxin sticholysin II. **Biophysical Journal**, **93**, 3191-3201.
35. (*Review*) Jorge Alegre-Cebollada, Mercedes Oñaderra, José G. Gavilanes and Álvaro Martínez del Pozo (2007). Sea anemone actinoporins: The transition from a folded soluble state to a functionally active membrane-bound oligomeric pore. **Current Protein and Peptide Science**, **8**, 558-572.
36. Jorge Alegre-Cebollada, Ignacio Rodríguez-Crespo, José G. Gavilanes and Álvaro Martínez del Pozo (2006). Detergent-resistant membranes are platforms for actinoporin pore-forming activity on intact cells. **The FEBS Journal**, **273**, 863-871.
37. Jorge Alegre-Cebollada, Valle Lacadena, Mercedes Oñaderra, José M. Mancheño, José G. Gavilanes and Álvaro Martínez del Pozo (2004). Phenotypic selection and characterization of randomly produced non-haemolytic mutants of the toxic sea anemone protein sticholysin II. **FEBS Letters**, **575**, 14-18.

## ORAL PRESENTATIONS AND INVITED TALKS

1. **Invited talk** 2018  
Summer School “Mechanobiology of polarised cells”, Les Houches, France
2. **Invited talk** 2018  
7<sup>th</sup> Multifrequency AFM Conference, Madrid, Spain
3. **Invited talk** 2017  
FEBS3+ 1<sup>st</sup> Joint Meeting of the French-Portuguese-Spanish Biochemical and Molecular Biology Societies
4. **Oral presentation** 2017  
46<sup>th</sup> European Muscle Conference, Potsdam, Germany
5. **Invited seminar** 2017  
Department of Cell Biology and Immunology, Center for Molecular Biology (CBM-Severo Ochoa), Madrid, Spain
6. **Invited seminar** 2017  
IMDEA – Nanoscience, Madrid, Spain
7. **Invited seminar** 2017  
Department of Structural and Computational Biology, University of Vienna & Max Perutz Laboratories, Austria
8. **Invited seminar** 2017  
Institute of Science and Technology, Austria
9. **Invited seminar** 2017  
Institute of Biomedicine of Seville, Spain
10. **Oral presentation and co-chair of the platform “Cardiac Muscle Mechanics and Structure”** 2017  
61<sup>st</sup> Biophysical Society meeting, New Orleans, LA
11. **Invited talk** 2016  
Mechanobiology across Networks Conference, Barcelona, Spain
12. **Invited seminar** 2016

## Curriculum Vitae – Jorge Alegre-Cebollada, PhD

Department of Condensed Matter Physics, University of Barcelona, Spain

13. **Oral presentation** 2016  
39<sup>th</sup> Congress of the Spanish Society of Biochemistry and Molecular Biology, Salamanca, Spain  
*1<sup>st</sup> Workshop of the Emerging Investigator*
14. **Oral presentation** 2016  
5th International Iberian Biophysics Congress, Porto, Portugal
15. **Invited Seminar** 2016  
Department of Physiology and Cardiothoracic Surgery, University of Porto, Portugal
16. **Invited Seminar** 2015  
Institute of Material Science of Madrid (ICMM-CSIC), Madrid, Spain
17. **Invited seminar** 2015  
Department of Biochemistry and Molecular Biology I, Complutense University, Madrid, Spain
18. **Invited seminar** 2015  
Medical Research Institute, Hospital Universitario de La Princesa, Madrid, Spain
19. **Oral presentation** 2014  
Health in Code, A Coruña, Spain
20. **Invited seminar** 2014  
Spanish National Center of Biotechnology (CNB-CSIC), Madrid, Spain
21. **Oral presentation** 2014  
XIV International Congress of the Spanish Biophysical Society, Alcalá de Henares, Spain
22. **Oral presentation and co-chair of the platform “Fiber & Molecular Mechanics & Structure”** 2014  
58<sup>th</sup> Biophysical Society meeting, San Francisco, CA
23. **Oral presentation** 2014  
Department of Physiology and Biophysics, University of Washington, Seattle, WA
24. **Oral presentation** 2014  
Earl Stadtman Symposium on Molecular Biology and Biochemistry, NIH, Bethesda, MD
25. **Oral presentation** 2013  
Department of Biochemistry, UNAM, Mexico City, Mexico
26. **Invited speaker** 2013  
3<sup>rd</sup> USA-Mexico Workshop in Biological Chemistry. Guanajuato, Mexico
27. **Oral presentation** 2013  
Department of Cardiovascular Physiology, Ruhr University Bochum, Germany
28. **Oral presentation** 2013  
Department of Medicine, Microbiology Section, Imperial College London, UK
29. **Oral presentation** 2013  
Department of Molecular Biology and Biotechnology, University of Sheffield, UK



30. **Oral presentation** 2013  
National Institute of Cardiovascular Research (CNIC), Madrid, Spain
31. **Oral presentation** 2013  
Department of Biochemistry, University of Oxford, UK
32. **Oral presentation** 2012  
Gordon Research Seminar, “Thiol-Based Redox Regulation & Signalling”, Lewiston, ME
33. **Oral presentation and co-chair of the platform “Molecular Mechanics & Force Spectroscopy”** 2012  
56<sup>th</sup> Biophysical Society meeting, San Diego, CA
34. **Oral presentation** 2012  
Physical Chemistry Seminar Series, Department of Chemistry, Columbia University, NY
35. **Oral presentation** 2011  
Departmental Retreat, Department of Biological Sciences, Columbia University, NY
36. **Oral presentation** 2011  
XI Spanish Biophysical Society meeting, Murcia, Spain
37. **Oral presentation** 2004  
27<sup>th</sup> Congress of the Spanish Society of Biochemistry and Molecular Biology, Lleida, Spain

## ORGANIZATION OF SCIENTIFIC EVENTS

- CNIC (Madrid, Spain)** 2016  
Co-organizer of the VI CNIC conference “Mechanical forces in physiology and disease”  
Competitive funding obtained: EMBO Keynote Lecture (1000 EUR), EMBO Young Investigator Lecture (800 EUR), Company of Biologists (£2000), SBE (600 EUR), SEBBM (1000 EUR)
- CNIC (Madrid, Spain)** from 2014  
Co-organizer of the “Mechanobiology” series of Seminars

## TEACHING EXPERIENCE

- Complutense University, Summer School (El Escorial, Spain)** 2017  
Participation in course “New manners of dissemination of research in health: beyond classical scientific publications”
- Autonomous University, Master in Biomolecules and Cell Dynamics (Madrid, Spain)** from 2017  
*Guest lecturer* in the course “Biomolecular nanomachines”  
Topic: “The machinery of muscle contraction”
- Autonomous University (Madrid, Spain)** from 2016  
*Guest lecturer* in the Masters Program in Molecular Biosciences  
Topic: “Moral dilemmas in scientific research”
- CNIC and Autonomous University of Madrid, Master in Molecular Biomedicine (Madrid, Spain)** from 2017  
*Coordinator* of the course “Insight into cardiovascular pathology research”

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- CNIC and Autonomous University of Madrid, Master in Molecular Biomedicine (Madrid, Spain)** from 2016  
*Guest lecturer* in the course “Insight into cardiovascular pathology research”  
Topic: “From single molecules to heart disease”
- Complutense University, Degree in Biology (Madrid, Spain)** 2016  
*Guest lecturer* in the course “Biotechnology of Enzymes”, invited by Jesús Pérez-Gil  
Topic: “Single-molecule enzymology”
- Complutense University, Degree in Biochemistry (Madrid, Spain)** 2016, 2018  
*Guest lecturer* in the course “Enzymology”, invited by Jesús Pérez-Gil  
Topic: “Single-molecule enzymology”
- Complutense University (Madrid, Spain)** 2015  
*Guest lecturer* in the opening session of the Masters Program in Biochemistry, Molecular Biology and Biomedicine  
Topic: “Moral dilemmas in scientific research”
- Autonomous University of Madrid – UAM (Madrid, Spain)** 2015  
*Guest lecturer* in the course of Contemporary Humanities: “What do I do now? Problem solving in different situations”  
Coordinated by Teresa Sanz García and Félix García Moriyón  
Topic: “Moral dilemmas in scientific research”
- Complutense University, Master in Biochemistry, Molecular Biology and Biomedicine (Madrid, Spain)** 2014  
*Guest lecturer* in the course “Protein structure and function and proteomics”, coordinated by Oscar Palomares  
Topic: Application of single-molecule techniques to the study of proteins
- Columbia University, Department of Biological Sciences (New York, NY)** 2011, 2013  
*Guest lecturer* in the course “Single-molecule Approaches to Biology”, coordinated by Prof. Julio M. Fernández  
1 class per year. An introductory lecture is followed by discussion of recent single-molecule publications
- Spanish Government, ANECA** 2011  
*Certification to teach at the Assistant Professor level (Spanish equivalent, Profesor Contratado Doctor)*  
This teaching certification is required to become Assistant Professor at any Spanish University
- Complutense University, Department of Biochemistry and Molecular Biology (Madrid, Spain)** 2003-2008  
*Teaching Assistant* in the Biochemistry Laboratory for Undergraduates  
5 Academic Years  
20-30 students perform under my guidance basic experiments such as isolation of DNA, determination of kinetic parameters of enzymes, and separation of proteins by chromatography and electrophoresis
- Complutense University, Graduate Program in Biochemistry and Molecular Biology (Madrid, Spain)** 2008  
*Guest lecturer* in the course for graduate students “Structure of Proteins”, coordinated by Prof. Rosalía Rodríguez  
Topic: Application of infrared spectroscopy to the study of proteins
- Milan-Bicocca University (Milan, Italy) & Complutense University (Madrid, Spain)** 2005  
*Co-supervisor* of the Thesis work of Masters student Giorgia Clementi  
Thesis Title: Heterologous expression and purification of the cytolytic protein Sticholysin I from cytolytic sea anemone *Stichodactyla helianthus*

## SUPERVISION AND MENTORING ACTIVITIES

### Current postdoctoral scientists

Ángel Fernández-Trasancos (since 2018)

## Curriculum Vitae – Jorge Alegre-Cebollada, PhD

Elías Herrero-Galán (since 2014)

### Current PhD students

María Sánchez Díaz (since 2017, co-supervised by Andrés Hidalgo, CNIC)

Maria Rosaria Pricolo (since 2017, in collaboration with University of Naples Federico II, Italy)

Carmen Suay-Corredera (since 2017, awarded a competitive PhD Fellowship – FPI-SO program BES-2016-076638)

Carla Huerta-López (since 2015, awarded a competitive EMBO-short term fellowship)

### Current technicians

Natalia Vicente (since 2017)

Diana Velázquez-Carreras (since 2014)

### Current Master students

Andrea Rodríguez Blanco (2018, University of León, MSc in Biomedicine)

### Current Undergraduate students

Inés Martínez Martín (since 2017, Autonomous University of Madrid, Degree in Biochemistry)

David Sánchez Ortiz (since 2017, Autonomous University of Madrid, Degree in Medicine)

### Autonomous University of Madrid-UAM (Spain)

Member of Thesis Committee, Minerva Bosch Fortea

2017

### King's College London (UK)

Member of Thesis Committee, Amy E. M. Beedle

2018

### Autonomous University of Madrid-UAM (Spain)

#### Condensed Matter Physics, Nanoscience, and Biophysics Program

Member of Thesis Committee, César López Pastrana

2017

### University of Barcelona (Spain)

Masters Thesis work (Carolina Lopes)

2017

### CNIC

Member of Thesis Committee, Giulio Fulgoni, María García-García

2016

### CNIC, European Commission International Training Network “BIOPOL” (Madrid, Spain)

Secondary co-supervisor of PhD students Víctor Jiménez, Antonio Quílez

2016-2018

### Complutense University (Madrid, Spain)

Masters Thesis work (Cristina Sánchez, Carmen Suay)

2016

### Autonomous University of Madrid-UAM, Molecular Biology PhD Program (Spain)

Member of Thesis Committee, Albert Galera

2016

### CNIC (Madrid, Spain)

Laboratory rotation for MDs who are doing their residency in cardiology (Res@CNIC program)

María Plaza (2016), Andrés Escudero (2017)

from 2016

### Autonomous University of Madrid-UAM, Biophysics PhD Program (Spain)

Member of Thesis Committee, Jörg Schönfelder

2015

### University of Seville, Department of Vegetal Biochemistry and Molecular Biology (Spain)

Member of Thesis Committee, Andrés Manuel Vera Gómez

2015

<b>University of Alcalá de Henares (Spain)</b> Undergraduate Thesis work (Cristina Sánchez)	2015
<b>Autonomous University of Madrid-UAM, Department of Condensed Matter (Spain)</b> Member of Thesis Committee, Benjamin Gollnick	2014
<b>CNIC (Madrid, Spain)</b> Laboratory rotation for undergraduate students (CICERONE program) Carmen Suay (2014, 2015), Carla Huerta (2015), Ricardo Esteban (2016), Íñigo Urrutia (2016), Inés Martínez (2017) David Sánchez (2017)	from 2014
<b>Columbia University, Department of Biological Sciences (New York, NY)</b> Laboratory rotation (graduate students) Daniel Echelman (MD/PhD, 2013), Edward Eckels (MD/PhD, 2012), Kausik Regunath (PhD-Biology, 2010)	2010-2013
<b>Columbia University, Department of Biological Sciences (New York, NY)</b> Thesis work (Pallav Kosuri)	2012
<b>Columbia University, Department of Biological Sciences (New York, NY)</b> Summer rotation program for undergraduate students (SURF program) Farees Saqlain (2013), Ido Haimi (2012)	2012, 2013
<b>Complutense University, Department of Biochemistry and Molecular Biology (Madrid, Spain)</b> Rotation program for international undergraduate students (ERASMUS) Michela Cunietti (Italy, 2006), Giorgia Clementi (Italy, 2005), Christian Porres (Germany, 2004)	2004-2006

### SERVICE AND OUTREACH

**Reviewer**

H2020, PNAS, JACS, Redox Biology, PLOS-One, Biophysical Journal, BBA-Biomembranes, Scientific Reports, Protein Science, Journal of Chemical Physics, Nucleus, Annals of Biomedical Engineering

**Outreach**

Organization of practical workshops during Madrid’s Science week at CNIC and at local schools

**ERA-CVD Minotaur project**

Dissemination Manager

2017-2019

**Spanish Foundation for Science and Technology (FECYT)**

Coordinator of CNIC’s stand “*Tu sistema cardiovascular al descubierto*” in the Science Fair “*Finde Científico*”

2017

**Spanish National Agency of Evaluation (ANEP)**

*Selection committee Ramón y Cajal Program (Biomedicine)*

2017

**Popular science, SBE’s Newsletter**

Title of the article: Eric Betzig “super resolves” the way to ground-breaking science

2017

**Spanish National Agency of Evaluation (ANEP)**

*Selection committee Ramón y Cajal Program (Medicine)*

2016

**Nanotechnology**

2016

*Guest editor of a focus issue on Protein Folding*

**NIAIA group – Training and research in how to solve moral problems** from 2015  
*Member*

**Spanish Society of Biochemistry and Molecular Biology (SEBBM)** from 2015  
*Junior representative at CNIC*

**Popular science, SBE's Newsletter** (in Spanish) 2015  
Title of the article: *La Medicina y la Biofísica. (Medicine and Biophysics)*

**Spanish Biophysical Society (SBE)** from 2014  
*Editorial Committee, SBE's Newsletter*  
<http://biofisica.info/>

**Spanish National Agency of Evaluation (ANEP)** from 2014  
*Reviewer*

**Scientific Adviser, International Foundation for Science** (Stockholm, Sweden) from 2012

**Popular science, website of the Spanish Society of Biochemistry and Molecular Biology** (in Spanish) 2011  
Title of the article: *Jugando en el laboratorio con moléculas únicas* (Playing with single-molecules)

**Popular science article, *Investigación y Ciencia* journal** (in Spanish) 2011  
Title of the article: *Viaje molecular al pasado* (Molecular travel to the past)  
Co-authors: Raúl Pérez-Jiménez, Jorge Alegre-Cebollada, Julio M. Fernández.

**Workshop for the General Public, 7th Science Week, Madrid, Spain** 2007  
*Co-organizer*  
Topic: Introduction to protein separation techniques: chromatography and ultracentrifugation

## APPEARANCES IN THE MEDIA

**La Razón** 2015  
Interview (May 17<sup>th</sup>)

**Heraldo de Aragón – Tercer Milenio** 2014  
Interview (November 25<sup>th</sup>)

**Aragon TV** 2014  
Featured in the Evening News (July 29<sup>th</sup>)

**Spanish National Radio (RNE)** 2014  
Interview (In Spanish) – A Hombros de Gigantes (June 30<sup>th</sup>)  
<http://www.rtve.es/alacarta/audios/a-hombros-de-gigantes/hombros-gigantes-estudiar-proteinas-para-prevenir-enfermedades-cardiacas-30-07-2014/2638179/>