Curriculum Vitae, **Jorge Alegre-Cebollada, PhD**

(updated on August 31st, 2026)

National Institute of Cardiovascular Research (CNIC) Phone: +34 914531200 Ext. 2021; Fax: +34 914531265
Cl. Melchor Fernández Almagro, 3, 28029 Madrid, SPAIN e-mail: jalegre@cnic.es

RESEARCHERID PROFILE LAB WEBSITE
X: @AlegreCebollada Linkedin

CURRENT POSITION

National Institute for Cardiovascular Research, CNIC (Madrid, Spain) since 2014
Group Leader. Full Professor (since 2026), Associate Professor (2020-2026); Assistant Professor (2014-2020)

Institute for Network Research in Cardiovascular Disease, CIBER-CV (Madrid, Spain) since 2026
Co – Principal Investigator

Complutense University of Madrid, Department of Biochemistry and Molecular Biology **(Madrid, Spain)** since 2020
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 α-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 and skeletal muscle
- Interplay between biochemistry and protein mechanics
- Intramolecular covalent bonds in proteins: mechanical stability, reactivity, biological role, biosynthesis
- Cardiomyopathy

GRANTS AWARDED AS PRINCIPAL INVESTIGATOR

1. Regional Government of Madrid (Spain) 2026-2029
Programas de Actividades de I+D
Title: "Programa integrado de investigación en miocardiopatía dilatada hereditaria"
Coordinated proposal – GENESatHEART-CM (5 PIs)
Reference: SAL-2025/SAL-GL-1164

2. European Federation for the Study of Diabetes 2026-2027
EFSD/LILLY Diabetes Research Programme 2025
Title: A new method to uncover crosslinking glycations as a therapeutic target in diabetic cardiomyopathy
Reference: EFSD08-EL25-1429-JA

3. Regional Government of Madrid (Spain) 2025-2028
Programas de Actividades de I+D
Title: "Multiscale technologies for the advancement of nanoscience applied to biological systems"
Coordinated proposal – TecNanoBio (7 PIs)
Reference: TEC-2024/TEC-158

4. Ministry of Science, Innovation and Universities (Spain) 2024-2027
Proyectos de Generación de Conocimiento
Title: Biochemical modulation of mechanical proteins of the sarcomere relevant for heart disease – mProHeart
Reference: PID2023-147683NB-I00

5. Ministry of Science and Innovation (Spain) 2023-2025
Proyectos de Líneas Estratégicas
Coordinated proposal – 9 PIs
Title: Mecanometabolismo de la insuficiencia cardiaca asociada a la edad – CardioAging
Reference: PLEC2022-009235

6. Ministry of Science and Innovation (Spain) 2023-2025
Redes de Excelencia
Title: "Spanish Network of Excellence in Mechanobiology"
Coordinated proposal (15 PIs)
Reference: RED2022-134242-T

7. Ministry of Science and Innovation (Spain) 2021-2024
Proyectos de I+D+i - PGC Tipo B
Title: Defining the crosstalk between heart pathophysiology and protein mechanics
Reference: PID2020-120426GB-I00

8. European Research Council 2021-2026
ERC-Consolidator
Title: "Uncovering Protein Mechanics in Physiology and Disease (ProtMechanics-Live)"
Reference: 101002927

9. Myokardia (California, US) 2020-2021
MyoSeeds Program
Title: "Titin Allelic Discrimination to Uncover Pathophysiology Mechanisms in DCM"

10. Ministry of Science, Innovation and Universities (Spain) 2019-2020
Europa Investigación
Title: "Towards the ERC-consolidator: Novel animal and cell models to probe protein nanomechanics in health and disease"
Reference: EIN2019-102966

11. Regional Government of Madrid (Spain) 2019-2023
Programas de Actividades de I+D
Title: "New technologies for the study of biological nanomachines"
Coordinated proposal –Tec4Bio (6 PIs)
Reference: P2018/NMT-4443

12. Ministry of Economy and Competitiveness (Spain) 2018-2021
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

13. 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

14. 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

15. European Research Area Network on Cardiovascular Diseases – Horizon 2020 2017-2020
Joint Transnational Call 2016
Title: Metabolic Therapy for Managing Diastolic Heart Failure (MINOTAUR)
Coordinated proposal (5 PIs)
Reference: AC16/00045

16. Regional Government of Madrid (Spain) 2017-2018
Ayudas para la promoción del empleo joven 2016
Reference: PEJ 16/MED/TL-1593

17. 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

18. Ministry of Economy and Competitiveness (Spain) 2015-2020
Ramón y Cajal Program (top candidate in the BFU section)
Reference: RYC-2014-16604

19. CNIC-IIF Marie Curie 2014-2015
International Incoming Fellowship for Young Group Leaders
Reference: FP7-PEOPLE-2010-COFUND-267149

20. 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 HONORS

Biophysical Society 2026
Michael and Kate Bárány Award

Spanish Young Academy 2021
Elected member

Biophysical Reviews 2021
Michèle Auger Award

Spanish Biochemical Society (SEBBM) 2019
Highlighted profile "*Acércate a nuestros científicos*"

General Military Hospital (Zaragoza, Spain) 2019
Plenary speaker – Commemorative Conference *N^a S^a del Perpetuo Socorro*

International Union for Pure and Applied Chemistry (IUPAC) 2018
Selected for the Periodic Table of Younger Chemists – Arsenic

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
1st National Award on Biochemistry (*1er 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

Autonomous University of Madrid – UAM (Madrid, Spain) since 2025
Member of Managing Board of PhD Studies

CNIC (Madrid, Spain) since 2025
Working Group Pluripotent Stem Cell Core Facility

CNIC (Madrid, Spain) since 2021
Coordinator, Predoctoral Affairs Office

CNIC (Madrid, Spain) 2020-2022
Coordinator, Cell and Developmental Biology Area

Spanish Society of Biochemistry and Molecular Biology (SEBBM) 2018-2022
Vocal, committee for selection of new members

CNIC (Madrid, Spain) 2017-2018
Committee for the generation of an institutional repository ISCIII/CNIC/CNIO (Repisalud)

CNIC (Madrid, Spain) since 2016
Member of the editorial committee, CNIC-Pulse Magazine

CNIC (Madrid, Spain) 2015-2022
Scientific Activities, Web and Library committee (Coordinator 2015-2019)

CNIC (Madrid, Spain) 2015-2023
Coordinator, Working Group – Proteomics Core Facility

CNIC (Madrid, Spain) 2015
Committee for the renewal of the institutional web site

PROFESSIONAL MEMBERSHIPS

Member, Spanish Biophysical Society 2007-present

Member, Spanish Biochemical Society 2004-present

PUBLICATIONS

***Positive Evaluation* 3 Research Periods** by Spanish Ministry of Education ("*Sexenios"*): 2004-2009; 2010-2015; 2016-2021
***Positive Evaluation* I3 Program** by Spanish Ministry of Science, Education and Universities (2016-2019)

* Shared authorship # Corresponding author

Manuscripts submitted for publication and/or uploaded to preprint repositories:

1. Miguel A. López-Unzu*,#, Maria Rosaria Pricolo*, Roberto Silva-Rojas, Alejandro Clemente-Manteca, Natalia Vicente, Diana Velázquez-Carreras, Cristina Morales, Manuel Gavilán-Herrera, Ángel Fernández-Trasancos, Laura Sen-Martín, Verónica Labrador-Cantero, Lucia Sánchez-García, Carlos Relaño-Rupérez, Fátima Sánchez-Cabo, Laura Lalaguna, Joan Isern, Pura Muñoz-Cánoves, Guadalupe Sabio, Enrique Lara-Pezzi, Elías Herrero-Galán, Jorge Alegre-Cebollada# (2025) Titin cleavage is a driver of cardiomyocyte disengagement and reactive myocardial fibrosis. bioRxiv 2025.04.22.645683.

2. Agata Bak*, Andra C. Dumitru*,#, Alejandro Clemente-Manteca, Enrique Calvo, Roberto Silva-Rojas, Natalia Vicente, David Sánchez-Ortiz, Inés Martínez-Martín, Diana Velázquez-Carreras, Maria Rosaria Pricolo, Francisco M. Espinosa, João Almeida-Coelho, Carlos Pérez-Medina, Ricardo Garcia, Jesús Vázquez, Inês Falcão-Pires, Elías Herrero-Galán, Miquel Adrover#, Jorge Alegre-Cebollada# (2026) Pathological stiffening by crosslinking glycation of titin. bioRxiv 2026.02.13.705744.

H-index: 30 (WoS); 34 (Google Scholar), 30 (Scopus) (August 2026)

10 most relevant publications

1. Laura Sen-Martín, Ángel Fernández-Trasancos, Miguel Á López-Unzu, Agata Bak, Magdalena Zafra-Castellano, Rajiven Srikantharajah , Divya Pathak, Annika Klotz, Michel N Kuehn, Alessia Ferrarini, Verónica Labrador-Cantarero, David Sánchez-Ortiz, María Rosaria Pricolo, Natalia Vicente, Diana Velázquez-Carreras, Lucía Sánchez-García, Jon Sicilia, José Ángel Nicolás-Ávila, María Sánchez-Díaz, Saskia Schlossarek, Lorena Cussó, Manuel Desco, María Villalba-Orero, Gabriela Guzmán-Martínez, Enrique Calvo, Roberto Barriales-Villa, Jesús Vázquez, Fátima Sánchez-Cabo, Andrés Hidalgo, Pieter P de Tombe, Lucie Carrier, James A Spudich, Kathleen M Ruppel, Florian Weinberger, Olivier Cazorla, Anthony L Hessel, Jorge Alegre-Cebollada# (2026). Mavacamten shows broad benefit in human and mouse models of MYBPC3-related hypertrophic cardiomyopathy. **Nature Cardiovascular Research 5**, 638. Selected as paper of the month by the Spanish Biophysical Society. Highlighted by >25 news outlets. This article was chosen for the **cover** of the issue.

2. Roberto Silva-Rojas#, Natalia Vicente, Manuel Gavilán-Herrera, Verónica Labrador-Cantarero, Jon Sicilia, Olga Giménez-Sáez, Andra C. Dumitru, Mateo I. Sánchez, Mara Gato-Vilaseca, Diana Velázquez-Carreras, Juan Antonio López, Jesús Vázquez, Elías Herrero-Galán, Miguel A. López-Unzu, Maria Rosaria Pricolo, Jorge Alegre-Cebollada# (2025) Mechanically knocking out titin reveals protein tension loss as a trigger of muscle disease. **Nature Biomedical Engineering 9**, 1758. Selected as paper of the month by the Spanish Biophysical Society and by the Spanish Society for Biochemistry and Molecular Biology. Highlighted by >10 news outlets. This article was chosen for the **cover** of the issue.

3. Carla Huerta-López, Alejandro Clemente-Manteca, Diana Velázquez-Carreras, Francisco M. Espinosa, Juan G. Sanchez, Álvaro Martínez-del-Pozo, María García-García, Sara Martín-Colomo, Andrea Rodríguez-Blanco, Ricardo Esteban-González, Francisco M. Martín-Zamora, Luis I. Gutierrez-Rus, Ricardo Garcia, Pere Roca-Cusachs, Alberto Elosegui-Artola, Miguel A. del Pozo, Elías Herrero-Galán, Pablo Sáez, Gustavo R. Plaza, Jorge Alegre-Cebollada# (2024) Cell response to extracellular matrix viscous energy dissipation outweighs high-rigidity sensing. **Science Advances 10**, eadf9758. Selected as paper of the month by the Spanish Biophysical Society and by the Spanish Society for Biochemistry and Molecular Biology. Highlighted by >10 news outlets.

4. Inés Martínez-Martín[#], Audrey Crousilles, Juan Pablo Ochoa, Diana Velázquez-Carreras, Simon A. Mortensen, Elías Herrero-Galán, Javier Delgado, Fernando Domínguez, Pablo García-Pavía, David de Sancho, Matthias Wilmanns, Jorge Alegre-Cebollada[#] (2023). Titin domains with reduced core hydrophobicity cause dilated cardiomyopathy. **Cell Reports 42**, 113490.

5. Jaime Andrés Rivas-Pardo, Yong Li, Zsolt Mártonfalvi, Rafael Tapia-Rojo, Andreas Unger, Ángel Fernández-Trasancos, Elías Herrero-Galán, Diana Velázquez-Carreras, Julio M. Fernández, Wolfgang A. Linke[#], Jorge Alegre-Cebollada[#] (2020). A HaloTag-TEV genetic cassette for mechanical phenotyping of proteins from tissues. **Nature Communications 11**, 2060**.** Selected as paper of the month by the Spanish Biophysical Society. Highlighted by >30 news outlets.

6. Maria Rosaria Pricolo[#], Miguel A. López-Unzu, Natalia Vicente, Cristina Morales-López, Carla Huerta-López, Wendy Pérez-Franco, Andra C. Dumitru, Jorge Peña-Peña, Francisco M. Espinosa, Mateo I. Sanchez, Ricardo Garcia, Roberto Silva-Rojas, Miguel Torres, Elías Herrero-Galán, Jorge Alegre-Cebollada[#] (2026) Titin cleavage in living cardiomyocytes induces sarcomere disassembly but does not trigger cell proliferation. **Journal of Biological Chemistry in press. 10.1016/j.jbc.2026.113167.**

7. Elías Herrero-Galán[#], Inés Martínez-Martín, Cristina Sánchez-González, Natalia Vicente, Elena Bonzón-Kulichenko, Enrique Calvo, Carmen Suay-Corredera, Maria Rosaria Pricolo, Ángel Fernández-Trasancos, Diana Velázquez-Carreras, Claudio Badía Careaga, Mahmoud Abdellatif, Simon Sedej, Peter P. Rainer, David Giganti, Raúl Pérez-Jiménez, Jesús Vázquez, Jorge Alegre-Cebollada[#] (2022). Basal oxidation of conserved cysteines modulates cardiac titin stiffness and dynamics. **Redox Biology 52**, 102306. Highlighted by >10 news outlets. Highlighted by the Spanish Society for Biochemistry and Molecular Biology and selected as paper of the month by the Spanish Biophysical Society.

8. David Giganti, Kevin Yan, Carmen L. Badilla, Julio M. Fernández, Jorge Alegre-Cebollada[#] (2018). Disulfide isomerization reactions in titin immunoglobulin domains enable a mode of protein elasticity. **Nature Communications 9**:185. Selected as paper of the month by the Spanish Biophysical Society.

9. *(Review)* Inés Martínez-Martin, Roberto Silva-Rojas Jorge Alegre-Cebollada[#] (2026) Mending the Achilles heels of titin in cardiac and musculoskeletal disease. **Biophysical Reviews in press**.

10. Jorge Alegre-Cebollada*[,#], Pallav Kosuri*, David Giganti, Edward Eckels, Jaime-Andrés Rivas-Pardo, Nazha Hamdani, Chad M. Warren, R. John Solaro, Wolfgang A. Linke, Julio M. Fernández[#] (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.

Additional publications (reverse chronological order):

11. Iván Alarcón-Ruiz, María Jesús Ruiz-Rodríguez, Sara Martínez-Martínez, Marta Toral, Noelia Martín-Bermejo, Sergio Mateos-García, Teresa Gil-Ruiz, Elías Herrero-Galán, María José Méndez-Olivares, Dolores López-Maderuelo, Carolina Gutiérrez-Martínez, Cristina Clemente, Alejandro Clemente-Manteca, Alberto H-Alcántara, Andrea Guala, Arturo Evangelista, Gisela Teixido-Tura, Diego Rodríguez-Puyol, Juan Francisco Nistal, Jorge Alegre-Cebollada, Jesús Vázquez, Juan Duarte, Juan Miguel Redondo & Miguel R. Campanero (2026) Fibronectin-induced overactivation of $\alpha_V\beta_3$-PI3K-PIP3-PDK1-ILK signaling drives aortic disease in Marfan syndrome. **Nature Communications 17**, 5631.

12. Tommaso Vicanolo, Alaz Özcan, Jackson LiangYao Li, Carla Huerta-López, Iván Ballesteros, Andrea Rubio-Ponce, Andra C. Dumitru, Jose Ángel Nicolás-Ávila, Miguel Molina-Moreno, Pablo Reyes-Gutierrez, Andrew D. Johnston, Catherine Martone, Eric Greto, Antonio Quílez-Alvarez, Enrique Calvo, Elena Bonzon-Kulichenko, Rebeca Álvarez-Velez, Ming Yao Chooi, Immanuel Kwok, Blanca González-Bermúdez, Benoit Malleret, Francisco M. Espinosa, Ming Zhang, Yu-Long Wang, Dasheng Sun, Shu Zhen Chong, Ali El-Armouche, Kevin K. Kim, Irina A. Udalova, Valentina Greco, Ricardo Garcia, Jesús Vázquez, Ana Dopazo, Gustavo R. Plaza, Jorge Alegre-Cebollada, Stefan Uderhardt, Lai Guan Ng, and Andrés Hidalgo (2025) Matrix-Producing Neutrophils Populate and Shield the Skin. **Nature 641**, 740-748.

13. Mario Ruiz, Juan Pablo Ochoa, Candela Migoyo-Bettoni, Jorge de la Barrera, Alba del Rio, Manuel A. Fernandez-Rojo, Ines Martinez-Martin, Jorge Alegre-Cebollada, Enrique Lara-Pezzi, Fatima Sanchez-Cabo, Pablo Garcia-Pavia (2025) Performance of AlphaMissense and other in-silico predictors to determine pathogenicity of missense variants in sarcomeric genes. **Circulation: Genomic and Precision Medicine 18**:e004922.

14. Christopher T. A. Lewis, Roger Moreno-Justicia, Lola Savoure, Enrique Calvo, Agata Bak, Jenni Laitila, Robert A. E. Seaborne, Steen Larsen, Hiroyuki Iwamoto, Marina Cefis, Jose A. Morais, Gilles Gouspillou, Jorge Alegre-Cebollada, Thomas J. Hawke, Jesús Vazquez, Miquel Adrover, Vincent Marcangeli, Rami Hammad, Jordan Granet, Pierrette Gaudreau, Mylène Aubertin-Leheudre, Marc Bélanger, Richard Robitaille, Atul S. Deshmukh, Julien Ochala (2025) Dysregulated skeletal muscle myosin super-relaxation and energetics in male participants with type 2 diabetes mellitus. **Diabetologia 68**, 1836-1850.

15. Pablo Saez, Pallavi U. Shirke, Jyoti R. Seth, Jorge Alegre-Cebollada, Abhijit Majumderc (2025) Competing elastic and viscous gradients determine directional cell migration. **Mathematical Biosciences 380**, 109362.

16. Guy Douvdevany, Itai Erlich, Lilac Haimovich-Caspi, Tomer Mashiah, Maksymilian Prondzynski, Maria Rosaria Pricolo, Jorge Alegre-Cebollada, Wolfgang A. Linke, Lucie Carrier, Izhak Kehat (2024). Imaging of Existing and Newly Translated Proteins Elucidates Mechanisms of Sarcomere Turnover. **Circulation Research 135**, 474-487.

17. Fernando Domínguez, Laura Lalaguna, Inés Martínez-Martín, Jesús Piqueras-Flores, Torsten B. Rasmussen, Esther Zorio, Giovanna Giovinazzo, Belén Prados, Juan P. Ochoa, Belén Bornstein, Esther González-López, Diana Velázquez-Carreras, Maria R. Pricolo, Francisco Gutiérrez-Agüera, Juan A. Bernal, Elías Herrero-Galán, Jorge Alegre-Cebollada, Enrique Lara-Pezzi and Pablo García-Pavía (2023). Titin Missense Variants as a Cause of Familial Dilated Cardiomyopathy. **Circulation 147**, 1711-1713.

18. Ángela Pérez-Benito, Carla Huerta-López, Jorge Alegre-Cebollada, José Manuel García-Aznar, Silvia Hervas-Raluy (2023) Computational modelling of the mechanical behaviour of protein-based hydrogels. **Journal of the Mechanical Behavior of Biomedical Materials 138**, 105661.

19. (*Review*) Carmen Suay-Corredera[#], Jorge Alegre-Cebollada[#] (2022). The mechanics of the heart: zooming in on hypertrophic cardiomyopathy and cMyBP-C. **FEBS Letters 596**, 703-706.

20. Carmen Suay-Corredera, Maria Rosaria Pricolo, Diana Velázquez-Carreras, Divya Pathak, Neha Nandwani, Carolina Pimenta-Lopes, David Sánchez-Ortiz, Iñigo Urrutia-Irazabal, Silvia Vilches, Fernando Dominguez, Giulia Frisso, Lorenzo Monserrat, Pablo García-Pavía, David de Sancho, James A. Spudich, Kathleen M. Ruppel, Elías Herrero-Galán, Jorge Alegre-Cebollada[#] (2021). Nanomechanical phenotypes in cardiac myosin-binding protein C mutants that cause hypertrophic cardiomyopathy. **ACS Nano 15**, 10203-10216. Selected as paper of the month by the Spanish Biophysical Society. Highlighted by 10 news outlets.

21. Carmen Suay-Corredera, Maria Rosaria Pricolo, Elías Herrero-Galán, Diana Velázquez-Carreras, David Sánchez-Ortiz, Diego García-Giustiniani, Javier Delgado, Juan José Galano-Frutos, Helena García-Cebollada, Silvia Vilches, Fernando Domínguez, María Sabater Molina, Roberto Barriales-Villa, Giulia Frisso, Javier Sancho, Luis Serrano, Pablo García-Pavía, Lorenzo Monserrat, Jorge Alegre-Cebollada[#] (2021) Protein haploinsufficiency drivers identify *MYBPC3* variants that cause hypertrophic cardiomyopathy. **Journal of Biological Chemistry 297**, 100854. This article was selected as **Editors' Pick**.

22. *(Review)* Jorge Alegre-Cebollada[#] (2021) Protein nanomechanics in biological context. **Biophysical Reviews 13**, 435.

23. *(Commentary)* Carmen Suay-Corredera, Jorge Alegre-Cebollada[#] (2021). Correspondence on "Computational prediction of protein subdomain stability in MYBPC3 enables clinical risk stratification in hypertrophic cardiomyopathy and enhances variant interpretation" by Thompson et al. **Genetics in Medicine 23**, 2009-2010.

24. *(Review)* Carla Huerta-López[#], Jorge Alegre-Cebollada[#] (2021). Protein Hydrogels: The Swiss Army Knife for Enhanced Mechanical and Bioactive Properties of Biomaterials. **Nanomaterials 11**, 1656.

25. Carlos del Fresno, Juan García-Arriaza, Sarai Martínez-Cano, Ignacio Heras-Murillo, Aitor Jarit-Cabanillas, Joaquín Amores-Iniesta, Paola Brandi, Gillian Dunphy, Carmen Suay-Corredera, Maria Rosaria Pricolo, Natalia Vicente, Andrés López-Perrote, Sofía Cabezudo, Ana González-Corpas, Oscar Llorca, Jorge Alegre-Cebollada, Urtzi Garaigorta, Pablo Gastaminza, Mariano Esteban and David Sancho (2021) The Bacterial Mucosal Immunotherapy MV130 Protects Against SARS-CoV-2 Infection and Improves COVID-19 Vaccines Immunogenicity. **Frontiers in Immunology 12** https://doi.org/10.3389/fimmu.2021.748103

26. Mahmoud Abdellatif, Viktoria Trummer-Herbst, Franziska Koser, Sylvère Durand , Rui Adão, Francisco Vasques-Nóvoa, Johanna K Freundt, Julia Voglhuber, Maria-Rosaria Pricolo, Michael Kasa, Clara Türk , Fanny Aprahamian, Elías Herrero-Galán, Sebastian J Hofer, Tobias Pendl, Lavinia Rech, Julia Kargl, Nathaly Anto-Michel, Senka Ljubojevic-Holzer, Julia Schipke, Christina Brandenberger , Martina Auer , Renate Schreiber , Chintan N Koyani, Akos Heinemann, Andreas Zirlik, Albrecht Schmidt, Dirk von Lewinski, Daniel Scherr, Peter P Rainer, Julia von Maltzahn, Christian Mühlfeld, Marcus Krüger, Saša Frank, Frank Madeo, Tobias Eisenberg, Andreas Prokesch, Adelino F Leite-Moreira, André P Lourenço, Jorge Alegre-Cebollada, Stefan Kiechl, Wolfgang A Linke, Guido Kroemer, Simon Sedej. (2021) Nicotinamide for the treatment of heart failure with preserved ejection fraction. **Science Translational Medicine 13**, eabd7064.

27. Maria Rosaria Pricolo, Elías Herrero-Galán, Cristina Mazzaccara, Maria Angela Losi, Jorge Alegre-Cebollada[#], Giulia Frisso (2020). Protein Thermodynamic Destabilization in the Assessment of Pathogenicity of a Variant of Uncertain Significance in Cardiac Myosin Binding Protein C. **Journal of Cardiovascular Translational Research 13**, 867-877.

28. José A. Nicolás-Ávila, Ana V. Lechuga-Vieco, Lorena Esteban-Martínez, María Sánchez-Díaz, Elena Díaz-García, Demetrio J. Santiago, Andrea Rubio-Ponce, Jackson LiangYao Li, Akhila Balachander, Juan A. Quintana, Raquel Martínez-de-Mena, Beatriz Castejón-Vega, Andrés Pun-García, Paqui G.Través, Elena Bonzón-Kulichenko, Fernando García-Marqués, Lorena Cussó, Noelia A-González, Andrés González-Guerra, Marta Roche-Molina, Sandra Martin-Salamanca, Georgiana Crainiciuc, Gabriela Guzmán, Jagoba Larrazabal, Elías Herrero-Galán, Jorge Alegre-Cebollada, Greg Lemke, Carla V. Rothlin, Luis Jesús Jimenez-Borreguero, Guillermo Reyes, Antonio Castrillo, Manuel Desco, Pura Muñoz-Cánoves, Borja Ibáñez, Miguel Torres, Lai Guan Ng, Silvia G. Priori, Héctor Bueno, Jesús Vázquez, Mario D. Cordero, Juan A.Bernal, José A. Enríquez, Andrés Hidalgo (2020). A Network of Macrophages Supports Mitochondrial Homeostasis in the Heart. **Cell 183**, 94-109.

29. Carolina Pimenta-Lopes, Carmen Suay-Corredera, Diana Velázquez-Carreras, David Sánchez-Ortiz, Jorge Alegre-Cebollada[#] (2019). Concurrent Atomic Force Spectroscopy. **Communications Physics 2,** 91. Selected as paper of the month by the Spanish Biophysical Society.

30. Asier Echarri, Dácil M. Pavón, Sara Sánchez, María García-García, Enrique Calvo, Carla Huerta-López, Diana Velázquez-Carreras, Christine De Viaris, Nicholas Ariotti, Ana Lázaro-Carrillo, Raffaele Strippoli, David De Sancho, Jorge Alegre-Cebollada, Christophe Lamaze, Robert G. Parton and Miguel A. Del Pozo (2019). An Abl-FPB17 mechanosensing system couples local plasma membrane curvature and stress fiber remodeling during mechanoadaptation. **Nature Communications 10**, 5828.

31. (*Review*) Elías Herrero-Galán[#], Inés Martínez-Martín, Jorge Alegre-Cebollada[#] (2019) Redox regulation of protein nanomechanics in health and disease: Lessons from titin. **Redox Biology 21**, 101074.

32. Aitor Manteca, Jörg Schönfelder, Alvaro Alonso-Caballero, Marie J. Fertin, Nerea Barruetabeña, 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.

33. Daniel J. Echelman*#, Jorge Alegre-Cebollada*#, Carmen L. Badilla, Chungyu Chang, Hung Ton-That, Julio M. Fernández# (2016). CnaA domains in bacterial pili are efficient dissipaters of large mechanical shocks. **PNAS 113,** 2490-2495.

34. 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.

35. Farees Saqlain, Ionel Popa, Julio M. Fernández#, Jorge Alegre-Cebollada# (2015). A novel strategy for utilizing voice coil servoactuators in tensile tests of low volume protein hydrogels. **Macromolecular Materials and Engineering, 300**, 369-376.

36. 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.

37. 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.

38. 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.

39. 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.

40. 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.

41. 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.

42. (*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.

43. 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.

44. 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.

45. Jorge Alegre-Cebollada#, Pallav Kosuri, Jaime Andrés Rivas-Pardo, Julio M. Fernández# (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.**

46. (*Preview*) Jorge Alegre-Cebollada, Pallav Kosuri, Julio M. Fernández (2011). Protease power strokes force proteins to unfold. **Cell**, **145**, 339-340.

47. 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.

48. (*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.

49. Miguel A. Pardo-Cea, Inés Castrillo; Jorge Alegre-Cebollada, Álvaro Martinez-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.

50. Jorge Alegre-Cebollada[#], Carmen L. Badilla, Julio M. Fernández[#] (2010). Isopeptide bonds block the mechanical extension of pili in pathogenic *Streptococcus pyogenes*. **Journal of Biological Chemistry 285**, 11235-11242**.**

51. (*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**.**

52. 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.

53. Miguel A. Pardo-Cea, Jorge Alegre-Cebollada, Álvaro Martínez-del-Pozo, José G. Gavilanes, Marta Bruix (2010). 1H, 13C, and 15N NMR assignments of StnII-Y111N, a highly impaired mutant of the sea anemone actinoporin Sticholysin II. **Biomolecular NMR Assignments 4**, 69-72.

54. Inés Castrillo, Jorge Alegre-Cebollada, Álvaro Martínez del Pozo, José G. Gavilanes, Jorge Santoro and Marta Bruix (2009**).** ^{1}H, ^{13}C, and ^{15}N NMR resonance assignments of the actinoporin Sticholysin I. **Biomolecular NMR Assignments 3**, 5-7.

55. Inés Castrillo, Jorge Alegre-Cebollada, Álvaro Martínez del Pozo, José G. Gavilanes, Marta Bruix (2009). **(**1)H, (13)C, and (15)N NMR assignments of StnII-R29Q, a defective lipid binding mutant of the sea anemone actinoporin Sticholysin II. **Biomolecular NMR Assignments 3**, 239-241.

56. 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**.**

57. (*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.

58. (*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.

59. 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.

60. 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.

61. (*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.

62. Jorge Alegre-Cebollada[#], Álvaro Martínez del Pozo, José G. Gavilanes[#] 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.

63. (*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**.**

64. 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.

65. 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 online presentation** 2026
American Chemical Society Fall 2026 Digital Meeting "Single-Molecule Forces: From Physics to Biology'

2. **Invited seminar** 2026
Department of Experimental Biology, Universidad de Jaén, Spain

3. **Invited presentation** 2026
Tucson Myofilament Meeting, US

4. **Invited presentation** 2026
Department of Physics, University of Wisconsin – Milwaukee, US

5. **Invited presentation, Michael and Kate Bárány Award** 2026
BPS2026 Annual Meeting, San Francisco, US (pre-recorded, available online)

6. **Invited presentation** 2025
52nd European Muscle Conference, Amsterdam, The Netherlands

7. **Invited presentation** 2025
10th Multifrequency AFM Conference, Madrid, Spain

8. **Invited seminar** 2025
Louvain Institute of Biomolecular Science and Technology, UCLouvain, Louvain-la-Neuve, Belgium

9. **Invited presentation** 2025
9th Annual Cardiovascular Bioengineering Symposium - CBVE 2025, CNIC, Madrid, Spain

10. **Invited presentation** 2025
Departamento de Bioquímica y Biología Molecular, Universidad Complutense de Madrid, Spain

11. **Invited presentation** 2024
XIII Jornada de Cardiogenética, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain

12. **Invited seminar** 2024
National Institute of Chemistry, Ljubljana, Slovenia

13. **Invited presentation** 2024
VIII Aula de Verano Blas Cabrera, Universidad Internacional Menéndez Pelayo, Santander, Spain

14. **Invited presentation** 2023
9th Multifrequency AFM Conference, Madrid, Spain

15. **Invited seminar** 2023
Instituto de Química Física Blas Cabrera – CSIC, Madrid, Spain

16. **Invited seminar** 2023
Bristol Myers Squibb, Cardiovascular Drug Discovery and Development teams, California (online)

17. **Invited seminar** 2023
CIC Biomagune, San Sebastián, Spain

18. **Invited presentation** 2023
Bits of Advanced Nanobiosicence Symposium. Centro Nacional de Biotecnología, Madrid, Spain

19. **Invited presentation** 2022
XI Jornada de Cardiogenética, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain

20. **Invited presentation** 2022
Heart Failure Conflux 2022 online meeting, Centre for Advanced Research and Excellence in Heart Failure, India

21. **Invited presentation** 2021
Meeting of the Spanish Society of Cardiology, Zaragoza, Spain (online)

22. **Invited presentation** 2021
International Cardiovascular Symposium at King's College London-BHF Centre of Research Excellence (online)

23. **Invited presentation** 2021
7th International Iberian Biophysics Congress, Coimbra, Portugal (online)

24. **Invited seminar** 2021
EMBL-Hamburg, Germany (online)

25. **Invited seminar** 2021
Center of Biological Research (CIB), Madrid, Spain (online)

26. **Oral presentation** 2020
64th Biophysical Society meeting, San Diego, CA

27. **Invited lecture** 2019
Chemistry Day (*Foro Química y Sociedad*), Palma de Mallorca, Spain

28. **Keynote lecture** 2019
Symposium celebrating the 250th anniversary of Semmelweis University, Budapest, Hungary

29. **Invited talk** 2019
Meeting of the National Mechanobiology Network, Zaragoza, Spain

30. **Invited seminar** 2019
Department of Molecular Medicine and Medical Biotechnology, University of Naples Federico II, Italy

31. **Invited talk** 2018
XII Course on Cardiovascular Pathophysiology, CNIC, Madrid, Spain

32. **Invited talk** 2018
41st Congress of the Spanish Society of Biochemistry and Molecular Biology, Santander, Spain

33. **Oral presentation** 2018
47th European Muscle Conference, Budapest, Hungary

34. **Invited talk** 2018
2nd ELECMI International Workshop, Universidad de Zaragoza, Spain

35. **Invited seminar** 2018
IQFR-CIB Hub on Integrative Structural Biochemistry (V), Madrid, Spain

36. **Invited seminar** 2018
Biodonostia Health Research Institute, San Sebastian, Spain

37. **Invited talk** 2018
Summer School "Mechanobiology of polarised cells", Les Houches, France

38. **Invited talk** 2018
7th Multifrequency AFM Conference, Madrid, Spain

39. **Invited talk** 2017
FEBS3+ 1st Joint Meeting of the French-Portuguese-Spanish Biochemical and Molecular Biology Societies
Barcelona, Spain

40. **Oral presentation** 2017
46th European Muscle Conference, Potsdam, Germany

41. **Invited seminar** 2017
Department of Cell Biology and Immunology, Center for Molecular Biology (CBM-Severo Ochoa), Madrid, Spain

42. **Invited seminar** 2017
IMDEA – Nanoscience, Madrid, Spain

43. **Invited seminar** 2017
Department of Structural and Computational Biology, University of Vienna & Max Perutz Laboratories, Austria

44. **Invited seminar** 2017
Institute of Science and Technology, Austria

45. **Invited seminar** 2017
Institute of Biomedicine of Seville, Spain

46. **Oral presentation and co-chair of the platform "Cardiac Muscle Mechanics and Structure"** 2017
61st Biophysical Society meeting, New Orleans, LA

47. **Invited talk** 2016
Mechanobiology across Networks Conference, Barcelona, Spain

48. **Invited seminar** 2016
Department of Condensed Matter Physics, University of Barcelona, Spain

49. **Oral presentation** 2016
39th Congress of the Spanish Society of Biochemistry and Molecular Biology, Salamanca, Spain
1st Workshop of the Emerging Investigator

50. **Oral presentation** 2016
5th International Iberian Biophysics Congress, Porto, Portugal

51. **Invited Seminar** 2016
Department of Physiology and Cardiothoracic Surgery, University of Porto, Portugal

52. **Invited Seminar** 2015
Institute of Materials Science of Madrid (ICMM-CSIC), Madrid, Spain

53. **Invited seminar** 2015
Department of Biochemistry and Molecular Biology I, Complutense University, Madrid, Spain

54. **Invited seminar** 2015
Medical Research Institute, Hospital Universitario de La Princesa, Madrid, Spain

55. **Oral presentation** 2014
Health in Code, A Coruña, Spain

56. **Invited seminar** 2014
Spanish National Center of Biotechnology (CNB-CSIC), Madrid, Spain

57. **Invited talk** 2014
XIV International Congress of the Spanish Biophysical Society, Alcalá de Henares, Spain

58. **Oral presentation and co-chair of the platform "Fiber & Molecular Mechanics & Structure"** 2014
58th Biophysical Society meeting, San Francisco, CA

59. **Oral presentation** 2014
Department of Physiology and Biophysics, University of Washington, Seattle, WA

60. **Oral presentation** 2014
Earl Stadtman Symposium on Molecular Biology and Biochemistry, NIH, Bethesda, MD

61. **Oral presentation** 2013
Department of Biochemistry, UNAM, Mexico City, Mexico

62. **Invited speaker** 2013
3rd USA-Mexico Workshop in Biological Chemistry. Guanajuato, Mexico

63. **Oral presentation** 2013
Department of Cardiovascular Physiology, Ruhr University Bochum, Germany

64. **Oral presentation** 2013
Department of Medicine, Microbiology Section, Imperial College London, UK

65. **Oral presentation** 2013
Department of Molecular Biology and Biotechnology, University of Sheffield, UK

66. **Oral presentation** 2013
National Institute of Cardiovascular Research (CNIC), Madrid, Spain

67. **Oral presentation** 2013
Department of Biochemistry, University of Oxford, UK

68. **Oral presentation** 2012
Gordon Research Seminar, "Thiol-Based Redox Regulation & Signalling", Lewiston, ME

69. **Oral presentation and co-chair of the platform "Molecular Mechanics & Force Spectroscopy"** 2012
56th Biophysical Society meeting, San Diego, CA

70. **Oral presentation** 2012
Physical Chemistry Seminar Series, Department of Chemistry, Columbia University, NY

71. **Oral presentation** 2011
Departmental Retreat, Department of Biological Sciences, Columbia University, NY

72. **Oral presentation** 2011
XI Spanish Biophysical Society meeting, Murcia, Spain

73. **Oral presentation** 2004
27th Congress of the Spanish Society of Biochemistry and Molecular Biology, Lleida, Spain

ORGANIZATION OF SCIENTIFIC EVENTS

50th European Muscle conference (Florence, Italy) 2023
Co-chair of session *Young Researchers*

XVII International Congress of the Spanish Biophysical Society (Castelldefels, Spain) 2023
Co-chair of session *Cell and Tissue Biophysics*

42th SEBBM conference (Madrid, Spain) 2019
Scientific Committee

Joint 12th EBSA and 10th ICBP-IUPAP Biophysics Congress (Madrid, Spain) 2019
Organizing Committee

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) 2014-2020
Co-organizer of the "Mechanobiology" series of Seminars

TEACHING EXPERIENCE

University Alfonso X El Sabio (Villanueva de la Cañada, Spain) 2023
Guest lecturer
Topic: "Leadership in the scientific career"

CIC Biomagune (San Sebastian, Spain) 2023
Guest lecturer in the soft skills program
Topic: "Moral dilemmas in scientific research"

Autonomous University, Master in Biomolecules and Cell Dynamics (Madrid, Spain) 2021-2022
Guest lecturer in the course "Understanding biomolecules"
Topic: "Single-molecule methods"

Complutense University, Degree in Biochemistry since 2020
Guest lecturer in the course "Biophysics and Bioinformatics". Topic: "Single-molecule biophysics"

University of Zaragoza, Master in Biomedical Engineering (Zaragoza, Spain) 2020
Guest lecturer in the course "Cell Mechanobiology". Topic: "Protein mechanics".

Complutense University, Summer School (El Escorial, Spain) 2019
Lecturer in course "2019: international year of the periodic table. The impact of Chemistry in Society"

Complutense University of Madrid, Master in Biomedical Physics (Madrid, Spain) 2018-2019
Guest lecturer in the course "Molecular Biophysics"
Topic: "Protein Mechanics by Single-Molecule Methods"

Complutense University, Summer School (El Escorial, Spain) 2017
Lecturer in course "New manners of dissemination of research in health: beyond classical scientific publications"

Autonomous University, Master in Biomolecules and Cell Dynamics (Madrid, Spain) since 2017
Guest lecturer in the course "Biomolecular nanomachines"
Topic: "The machinery of muscle contraction"

Autonomous University (Madrid, Spain) since 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) 2017-2020
Coordinator of the course "Insight into cardiovascular pathology research"

CNIC and Autonomous University of Madrid, Master in Molecular Biomedicine (Madrid, Spain) since 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, yearly since 2018
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
Elías Herrero-Galán (since 2014)
Roberto Silva-Rojas (since 2022)
Agata Bak (since 2023, a PhD Student since 2019)

Current PhD students
Laura Sen (since 2020. 2020 MSc in Biochemistry, Molecular Biology and Biomedicine)
Manuel Gavilán Herrera (since 2021. 2021 MSc in Biochemistry, Molecular Biology and Biomedicine)
Alejandro Clemente Manteca (since 2021. 2022 BSc in Biomedical Engineering. 2023 MSc in Biomedical Technology)
Sofía Vallepuga Merino (since 2025. MSc in Biotechnology)

Current technicians
Diana Velázquez-Carreras (since 2014)
Natalia Vicente (since 2021)

Current Undergraduate and Master students
Paula Trinidad (since 2025)

Advisor of PhD thesis
1. Maria Rosaria Pricolo (PhD 2019, summa cum laude, co-supervised with Giulia Frisso, U. Naples Federico II, Italy)
2. Carla Huerta-López (PhD 2021, summa cum laude, moved to Stanford University for postdoc in 2022)
3. Carmen Suay-Corredera (PhD 2022, summa cum laude, moved to University of Pennsylvania for postdoc in 2023)
4. Agata Bak (PhD 2023, summa cum laude, now a postdoctoral scientist at CNIC)
5. María Sánchez Díaz (PhD 2024, summa cum laude, co-supervised by Andrés Hidalgo, transitioning towards industry)
6. Inés Martínez Martín (PhD 2024, summa cum laude, moved to King's College for postdoc in 2024)

Former postdoctoral trainees
1. Angel Fernández-Trasancos (2018-2020). Currently a program manager at *Instituto de Salud Carlos III*
2. Andra Dumitru (2021-2023). Currently a Group Leader at UCLouvain, Belgium.
3. Miguel López-Unzu (2022-2025).
4. Maria Rosaria Pricolo (2019-2025).

Member of MSc/PhD Thesis Committees:

National: 1. Benjamin Gollnick (UAM, 2014); 2. Andrés Manuel Vera Gómez (U. Sevilla, 2015); 3. Jörg Schönfelder (UAM, 2016); 4. Albert Galera (UAM, 2016); 5. César López Pastrana (UAM, 2017); 6. Minerva Bosch Fortea (UAM, 2018); 7. Roberto Moreno Vicente (UAM, 2018); 8. María del Carmen Fernández Ramírez (UAM, 2019); Pablo David García López (UAM, 2019); 10. Antonio Quílez Álvarez (UAM, 2020); 11. Adrián del Valle García (UAM, 2020); 12. Master Theses Program in Biochemistry, Molecular Biology and Biomedicine (UCM, 2021); 13. Cristina Márquez (UAM, 2021); 14. Blanca González Bermúdez (UPM, 2021); 15. Giulio Fulgoni (UAM, 2021); 16. Maria Jesús Ruiz Rodríguez (UAM, 2022); 17. María García García (UAM, 2022); 18. Juan García (UAM, 2023); 19. Laura Sotodosos (UAM, 2024); 20. María Jesús Rodríguez Espinosa (UAM, 2024); 21. Daniel Corregidor Ortiz (UPM, 2024); 22. Jorge González-Rico Iriarte (UC3M, 2025)

International: 1. Amy E. M. Beedle (King's College London, 2018); 2. PhD Theses from the Department of Molecular Medicine and Medical Biotechnology (U. Naples II, 2019); 3. Zhaowei Liu (U. Basel, 2021); 4. Fani Panagaki (King's College London, 2022); 5. Sean Boult (ETH, 2024-2026); 6. Devam Purohit (U. Marseille, 2025)

Autonomous University of Madrid (Spain) 2025
Degree Thesis (Ana Moreno)

Autonomous University of Madrid (Spain) 2025
Msc Thesis (Irene Corchero)

Polytechnic University of Madrid (Spain) 2024
Degree Thesis (Rubén Rojas)

Autonomous University of Madrid (Spain) 2023
Degree Thesis (Juan Barquillo)

University Carlos III of Madrid (Spain) 2023
Master Thesis (Alejandro Clemente Manteca)

Polytechnic University of Madrid (Spain) 2022
Degree Thesis (Alejandro Clemente Manteca)

Autonomous University of Madrid (Spain) 2022
Degree Thesis (Leila Zafra)

Universidad Carlos III de Madrid (Spain) 2021
Degree Thesis (Irene Medrano)

Autonomous University of Madrid (Spain) 2021
Degree Thesis (Iván Zumeta)

Complutense University (Spain) 2020
Master Thesis (Laura Sen)

University of Alcalá de Henares (Spain) 2020
Master Thesis (Nallely Nava)

Autonomous University of Madrid (Spain) 2020
Degree Thesis (Francisco Martín Zamora)

Autonomous University of Madrid 2019
Master Thesis (Niels Groenewegen)

CNIC 2019
Laboratory rotation – technical personnel (Israel Anguiano)

University of León 2018
Master Thesis (Andrea Rodríguez Blanco)

CNIC 2017-2019
Laboratory rotation – technical personnel (Natalia Vicente)

University of Barcelona (Spain) 2017
Masters Thesis work (Carolina Lopes)

CNIC 2016
Member of Advisory Thesis Committee, Giulio Fulgoni, María García-García

CNIC, European Commission International Training Network "BIOPOL" (Madrid, Spain) 2016-2018
Secondary co-supervisor of PhD students Víctor Jiménez, Antonio Quílez

Complutense University (Madrid, Spain) 2016
Masters Thesis work (Cristina Sánchez, Carmen Suay)

CNIC (Madrid, Spain) since 2016
Laboratory rotation for MDs who are doing their residency in cardiology (Res@CNIC program)
María Plaza (2016), Andrés Escudero (2017), Josu Erquicia (2021)

University of Alcalá de Henares (Spain) 2015
Undergraduate Thesis work (Cristina Sánchez)

CNIC (Madrid, Spain) since 2014
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, 2018), Manuel Mayo (2018), Luis Gutiérrez (2018)

Columbia University, Department of Biological Sciences (New York, NY) 2010-2013
Laboratory rotation (graduate students)
Daniel Echelman (MD/PhD, 2013), Edward Eckels (MD/PhD, 2012), Kausik Regunath (PhD-Biology, 2010)

Columbia University, Department of Biological Sciences (New York, NY) 2012
Thesis work (Pallav Kosuri)

Columbia University, Department of Biological Sciences (New York, NY) 2012, 2013
Summer rotation program for undergraduate students (SURF program)
Farees Saqlain (2013), Ido Haimi (2012)

Complutense University, Department of Biochemistry and Molecular Biology (Madrid, Spain) 2004-2006
Rotation program for international undergraduate students (ERASMUS)
Michela Cunietti (Italy, 2006), Giorgia Clementi (Italy, 2005), Christian Porres (Germany, 2004)

SERVICE AND OUTREACH

Ad hoc reviewer

Scientific Journals: Nature Nanotechnology, Nature Structural and Molecular Biology, Nature Communications, eLife, PNAS, JACS, ACS Nano, Redox Biology, Journal of Physiology, PLOS-One, Biophysical Journal, BBA-Biomembranes, BBA-Molecular Cell Research, Scientific Reports, Protein Science, FEBS Letters, Biochemical and Biophysical Research Communications, Journal of Chemical Physics, Frontiers Molecular Biosciences, Frontiers in Cardiovascular Medicine, Stem Cell Research, Current Research in Structural Biology, ACS Biomaterials Science & Engineering, JACS Au, Gels, Nucleus, Annals of Biomedical Engineering, Food Science and Technology, Revista Española de Cardiología, Chemistry and Physics of Lipids

Funding agencies: H2020, Wellcome, UKRI, Human Frontier Science Program, Spanish National Agency of Evaluation (ANEP), International Foundation for Science, Slovenian Research Agency (ARRS), AFM Telethon (France), ANR (France), ProteoRed

Promotion committees: University of Oxford

Member of award committees: Top ten emerging technologies (IUPAC, 2021-), Michèle Auger Award (Biophysical Reviews, 2024), IUPAC-SOLVAY International Award for Young Chemists (2024-)

Spanish Biophysical Society since 2025
Member of council

COSCE (Spanish Federation of Scientific Societies) 2025
Presentation about Professional Codes in Scientific Research

NIAIA Journal (in Spanish) 2025
Article about Professional Codes in Scientific Research (in Spanish)

NIAIA – *Seminario permanente* 2024
Presentation about Professional Codes in Scientific Research (in Spanish)

Bertelsmann Foundation – *Empresas que inspiran* 2024
Vocations in science seminars (x2)

Spanish Ministry of Science and Innovation 2023
Member of the evaluation committee of national grants – Cellular and Molecular Biology section

IES Principe Felipe (Secondary School, Madrid, Spain) since 2023
Vocations in science seminars (x2)

Article - Federation of European Biochemical Societies (FEBS) Network 2022
Multidisciplinary research for early-career scientists

Young Academy of Spain 2022-2025
Mentoring Working Group – co-coordinator

Spanish Foundation for Science and Technology (FECYT) 2022
Invited presentation – ERC Reading Days

Spanish Ministry of Science and Innovation 2022
Member of the evaluation committee of national grants – Cellular and Molecular Biology section

Young Academy of Spain 2022
Invited presentation II Workshop "Crafting a Winning ERC-CoG" Proposal

Outreach Video – Spanish Association for the Advancement of Science 2021
https://aeac.science/actividad/dr-jorge-alegre-cebollada/

Biophysical Reviews since 2020
Member of the Editorial Board

Opinion Article – SBE's Newsletter (*http://biofisica.info/*) 2020
Seeing the science glass half full

Outreach yearly
Organization of practical workshops during Madrid's Science week at CNIC and at local schools

Opinion Article – NIAIA website 2019
Who does Science belong to? (in Spanish, *¿A quién pertenece la ciencia?*)

Outreach, ISCIII 2018
Presentation of the National Catalogue in Health Science

Opinion Article – NIAIA website 2018
Moral dilemmas in research (in Spanish, *Los dilemas morales en la investigación científica*)

Outreach, CNIC since 2018
Organization of activity "Meet research groups" within the "Acércate" program for High School students

ERA-CVD Minotaur project 2017-2019
Dissemination Manager

Spanish Foundation for Science and Technology *(*FECYT) 2017
Coordinator of CNIC's stand "*Tu sistema cardiovascular al descubierto"* in the Science Fair "*Finde Científico*"

Spanish National Agency of Evaluation (ANEP) 2017
Selection committee Ramón y Cajal Program (Biomedicine)

Popular science, SBE's Newsletter 2017
Eric Betzig "super resolves" the way to ground-breaking science

Spanish National Agency of Evaluation (ANEP) 2016
Selection committee Ramón y Cajal Program (Medicine)

Nanotechnology 2016
Guest editor of a focus issue on Protein Folding

NIAIA group – Training and research in solving moral problems since 2015
Member

Spanish Society of Biochemistry and Molecular Biology (SEBBM) since 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) 2014-2020
Editorial Committee, SBE's Newsletter
http://biofisica.info/

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

El País 2018
Interview (Sep 28th) – Back Page

Diario Médico 2017

La Razón 2015
Interview (May 17th)

Heraldo de Aragón – Tercer Milenio 2014
Interview (November 25th)

Aragon TV 2014
Featured in the Evening News (July 29th)

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