

Curriculum vitae

Félix RICO

Born: 2 November 1976, Barcelona, Spain

Current position: **Maître de Conférences (Assistant professor) 2022 Hors Classe and Director**
Aix-Marseille Université (AMU)– INSERM, DyNaMo, U1325
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ORCID: [0000-0002-7757-8340](https://orcid.org/0000-0002-7757-8340), **ResearcherID:** [K-6505-2012](https://publons.com/urn:li:member:K-6505-2012)

Work experience

- Oct 2013-Dec 2023* Assistant professor at INSERM, AMU, BioAFMLab, U1006 and from 2018 AMU, CNRS, INSERM, LAI, U1067
- Jan 2017-Jan 2018* Interim director of **U1006 INSERM & AMU**, Marseille, France
- Jan 2012-Sep 2013* Postdoc at **U1006 INSERM & AMU**, Marseille, France
- Jan 2009-Dec 2011* Marie Curie Postdoctoral Fellow at **UMR168**, Institut Curie, Paris, France
- May 2006-Dec 2008* Fulbright Postdoctoral Fellow at **Vincent T. Moy's lab**, Department of Physiology and Biophysics, University of Miami Miller School of Medicine, Miami, FL, USA

Education

- Jan 2017* **Habilitation à diriger les recherches** (AMU)
Manuscript title : Molecular to cellular mechanics. Insights from atomic force microscopy.
- Oct 2001-Jan 2006* **PhD in Biophysics** by the University of Barcelona (UB), Spain
Thesis title: Study of viscoelasticity and adhesion of human alveolar epithelial cells by atomic force microscopy. The importance of probe geometry. [URL](#) Thesis director: Prof. Daniel Navajas. Mention: *Suma cum laude*
- Sep 2000-Jun 2001* **MA in Scientific Communication**, Pompeu Fabra University, Spain
- Sep 1999-Jun 2000* PhD courses in High Energy Physics at U. Autònoma of Barcelona, Spain
- Sep 1994-Jun 1999* **BS in Physics**, U. Autònoma of Barcelona, Spain

Funding, Awards and Fellowships

- 2023-2026* ANR XXL (700 k€, PI: M. Modesi, co-PI: F. Rico)
- 2023-2026* ANR/NSF BIOHETER (299 k€, PI: F. Rico)
- 2023-2026* CEFIPRA project collaboration India/France (97k€, PI for France)
- 2023-2025* **A*Midex Equipement Raamp** (420k€, PIs: F. Rico and C Valotteau)
- 2021-2024* ANR GOLIGO (550 k€, co-PI: F. Rico. PI: P. Durbec, IBDML)
- 2020-2022* **H2020-MSCA-IF-2019** (184 k€, PI, fellowship to Claire VALOTTEAU)
- 2019-2023* **H2020-MSCA-ITN-2018** (4,9 M€, co-PI, PI: Alessandro PODESTÀ)
- 2018-2021* **HFSP** (900 k\$US, with Marcos SOTOMAYOR and Vincent LYNCH)
- 2018-2023* **ERC Consolidator award** (2 M€, PI)
- 2017-2019* CNRS interdisciplinary project osez l'Interdisciplinarité (107 k€, co-PI. PI: Cécile BARON)
- 2017* PACA Regional equipment grant (40 k€, PI)
- 2017-2020* Project A*Midex (500 k€, co-PI. PI : André Le Bivic, IBDML)
- 2015-2018* **ANR JCJC young investigator award** (262 k€, PI)
- 2013-2018* **Chaire Mixte** INSERM & Aix-Marseille Université (50 k€)

- 2009-2011 **Marie Curie Intra European Fellowship** from the European Community
 2009 Beatriu de Pinós Postdoctoral Fellowship from the Catalan Government (declined)
 2007 Medical Faculty Association Margaret Whelan Fund Award
 2006-2007 **Fulbright/Generalitat de Catalunya** Postdoctoral Fellowship
 2006 *Summa cum laude*, University of Barcelona
 2001-2006 **Research and Education Graduate Fellowship** from the University of Barcelona
 1997-1998 ERASMUS fellowship from the European Community at the University of Pisa (Italy)

Teaching experience

- 2018-2020 Physics of living systems I (M1), Soft Matter (M2), *Aix-Marseille Université*
 2011-2019 AFMBioMed Summer School, France and Poland
 Feb 2018 Qualification as *Professeur des universités* by the French Ministry of Education (section 28)
 2016-2018 *Physique Gastronomique – Découverte du Monde Scientifique, Physics undergraduate L1*
 2014-2016 *Labex INFORM/Biotrail PhD course*
 2013-2016 *Math pour biologie, Biology undergraduate L1, Aix-Marseille Université*
 2013-2016 *Physique pour biologie, Biology undergraduate L1, Aix-Marseille Université*
 2013-2014 *Labex INFORM PhD course*
 Nov 2012 *Nanophysics of Health - Ecole thématique du CNRS, Mittelwhir, France*
 2012-2016 *Méthodes d'analyse structurale 1, Master 1 – Bioinformatique, Biochimie Structurale & Génomique, Aix-Marseille Université*
 Feb 2012 Qualification as *Maître de conférences* by the French Ministry of Education (sections 28 and 31)
 2010 *Binôme Apprentis chercheurs*, association APSR et Institut Curie, Paris
 2008 Accreditation as lecturer (*professor lector*, equivalent to *Maître de conférences*) from the Catalan Agency for University Quality Assurance (AQU Catalunya)
 Sept 2007 Graduate teaching assistant: *Respiratory Physiology* University of Miami School of Medicine, Miami, FL, USA
 2003- 2006 Graduate teaching assistant: *Bioengineering* U. Politècnica de Catalunya/U. of Barcelona
 2001-2006 Undergraduate teaching assistant: *Biophysics* U. of Barcelona School of Medicine

Supervision

Supervised: 4 postdoctoral researchers, 5 PhD students and over 30 master students

Under supervision: 2 postdoctoral researchers, 4 PhD students, 1 Engineer

Jury member in 14 PhD thesis and 2 *habilitation à diriger des recherches* (HDR).

Publications (*corresponding author, †equal contribution)

1. Mesbah, I., B. Habermann, and **F. Rico***. 2024. MechanoProDB: a web-based database for exploring the mechanical properties of proteins. *Database*. 2024:[baae047](https://doi.org/10.1093/database/baac047)
2. Uchihashi, T., F. Rico, and J.-L. Pellequer. 2024. Tenth International AFMBioMed Conference on AFM in Life Sciences and Medicine, August 30–September 2, 2022, Nagoya □ Okasaki, Japan. *Journal of Molecular Recognition*. [e3077](https://doi.org/10.1002/jmr.202400037).
3. López-Alonso*, J., M. Eroles, S. Janel, M. Berardi, J. Pellequer, V. Dupres, F. Lafont, and **F. Rico***. 2023. PyFMLab: Open-source software for atomic force microscopy microrheology data analysis [version 1; peer review: 2 approved with reservations]. *Open Research Europe*. 3. [doi:10.12688/openreseurope.16550.1](https://doi.org/10.12688/openreseurope.16550.1)
4. Picas, L., C. André-Arpin, F. Comunale, H. Bousquet, F.-C. Tsai, **F. Rico**, P. Maiuri, J. Pernier, S. Bodin, A.-S. Nicot, J. Laporte, P. Bassereau, B. Goud, C. Gauthier-Rouvière, and S. Miserey. 2024.

- BIN1 regulates actin-membrane interactions during IRSp53-dependent filopodia formation. *Commun Biol.* 7:1–15. <https://doi.org/10.1038/s42003-024-06168-8>
5. Pérez-Domínguez, S., S.G. Kulkarni, J. Pabijan, K. Gnanachandran, H. Holuigue, M. Eroles, E. Lorenc, M. Berardi, N. Antonovaite, M.L. Marini, J.L. Alonso, L. Redonto-Morata, V. Dupres, S. Janel, S. Acharya, J. Otero, D. Navajas, K. Bielawski, H. Schillers, F. Lafont, **F. Rico**, A. Podestà, M. Radmacher, and M. Lekka. **2023**. Reliable, standardized measurements for cell mechanical properties. 2023.06.14.544753. *Nanoscale*. [doi:10.1101/2023.06.14.544753](https://doi.org/10.1101/2023.06.14.544753)
 6. Y. J. Wang, C. Valotteau, A. Aimard, L. Villanueva, D. Kostrz, M. Follenfant, T. Strick, P. Chames, F. Rico, C. Gosse, L. Limozin, **2023** Combining DNA scaffolds and acoustic force spectroscopy to characterize individual protein bonds. *Biophys J* **122**, 2518–2530 [HAL](#)
 7. Eroles, M., J. Lopez-Alonso, A. Ortega, T. Boudier, K. Gharzeddine, F. Lafont, C.M. Franz, A. Millet, C. Valotteau, and **F. Rico***. **2023**. Coupled mechanical mapping and interference contrast microscopy reveal viscoelastic and adhesion hallmarks of monocyte differentiation into macrophages. *Nanoscale*. **15**:12255–12269. [doi:10.1039/D3NR00757J](https://doi.org/10.1039/D3NR00757J)
 8. Eroles*, M., and **F. Rico***. **2023**. Advances in mechanical biomarkers. *Journal of Molecular Recognition*. n/a:e3022. [doi:10.1002/jmr.3022](https://doi.org/10.1002/jmr.3022)
 9. Júnior, C., A. Ulldemolins, M. Narciso, I. Almendros, R. Farré, D. Navajas, J. López, M. Eroles, **F. Rico**, and N. Gavara. **2023**. Multi-Step Extracellular Matrix Remodelling and Stiffening in the Development of Idiopathic Pulmonary Fibrosis. *Int J Mol Sci*. 24:1708. **2023** [doi:10.3390/ijms24021708](https://doi.org/10.3390/ijms24021708)
 10. Martins, C.S., C. Taveneau, G. Castro-Linares, M. Baibakov, N. Buzhinsky, M. Eroles, V. Milanović, S. Omi, J.-D. Pedelacq, F. Iv, L. Bouillard, A. Llewellyn, M. Gomes, M. Belhabib, M. Kuzmić, P. Verdier-Pinard, S. Lee, A. Badache, S. Kumar, C. Chandre, S. Brasselet, **F. Rico**, O. Rossier, G.H. Koenderink, J. Wenger, S. Cabantous, and M. Mavrakakis. **2022**. Human septins organize as octamer-based filaments and mediate actin-membrane anchoring in cells. *Journal of Cell Biology*. **222**:e202203016. [doi:10.1083/jcb.202203016](https://doi.org/10.1083/jcb.202203016)
 11. Gerum, R., E. Mirzahosseini, M. Eroles, J. Elsterer, A. Mainka, A. Bauer, S. Sonntag, A. Winterl, J. Bartl, L. Fischer, S. Abuhattum, R. Goswami, S. Girardo, J. Guck, S. Schrüfer, N. Ströhlein, M. Nosratlo, H. Herrmann, D. Schultheis, **F. Rico**, S.J. Müller, S. Gekle, and B. Fabry. **2022**. Viscoelastic properties of suspended cells measured with shear flow deformation cytometry. *eLife*. 11:e78823.
 12. Majnooni, M., P. Lasaygues, V. Long, J.-C. Scimeca, D. Momier, **F. Rico**, N. Buzhinsky, C. Guivier-Curien, and C. Baron. **2022**. Monitoring of in-vitro ultrasonic stimulation of cells by numerical modeling. *Ultrasonics*. 124:106714 [hal-03629272](https://hal.archives-ouvertes.fr/hal-03629272)
 13. Ilić K, L Krce, J Rodriguez-Ramos, **F Rico**, N Kalčec, I Aviani, P Turčić, I Pavičić, I Vinković Vrček. Cytotoxicity of nanomixture: combined action of silver and plastic nanoparticles on immortalized human lymphocytes. *J Trace Elem Med Biol*, 73, 127004 **2022** [10.1016/j.jtemb.2022.127004](https://doi.org/10.1016/j.jtemb.2022.127004)
 14. Rodriguez-Ramos, J., and **Rico, F.** Determination of calibration parameters of cantilevers of arbitrary shape by finite element analysis. *Rev Sci Instrum* 92, 045001 **2021**. [hal-03207488](https://hal.archives-ouvertes.fr/hal-03207488)
 15. Casuso, I, L Redondo-Morata and **F Rico***. Biological physics by high-speed atomic force microscopy. *Phil Trans Royal Society A*, **378**, 20190604, **2020** [10.1098/rsta.2019.06](https://doi.org/10.1098/rsta.2019.06)
 16. Sumbul, F., Rodriguez Ramos, J., Hassanpour, N., **Rico, F***. One-step calibration of AFM in liquid. *Front. Phys.* 8. **2020** [10.3389/fphy.2020.00301](https://doi.org/10.3389/fphy.2020.00301)
 17. Lacaria, L., Lange, J.R., Goldmann, W.H., **Rico, F.**, and Alonso, J.L. $\alpha\beta3$ integrin expression increases elasticity in human melanoma cells. *Biochem. Biophys. Res. Commun.* 525, 836–840. **2020** [hal-02505792v1](https://hal.archives-ouvertes.fr/hal-02505792v1)
 18. Zhang, C., Grossier, R., Lacaria, L., **Rico, F.**, Candoni, N., and Veessler, S. A microfluidic method generating monodispersed microparticles with controllable sizes and mechanical properties. *Chemical Engineering Science* 211, 115322. **2020** [hal-02179400v3](https://hal.archives-ouvertes.fr/hal-02179400v3)

19. Valotteau, C, F. Sumbul, **F. Rico***. High-speed force spectroscopy: microsecond force measurements using ultrashort cantilevers. *Biophysical reviews*, **11**, 689–699 **2019** doi.org/10.1007/s12551-019-00585-4
20. Karageorgi, M., Groen, S.C., Sumbul, F., Pelaez, J.N., Verster, K.I., Aguilar, J.M., Hastings, A.P., Bernstein, S.L., Matsunaga, T., Astourian, M., Guerra, G., **Rico, F.**, Dobler, S., Agrawal, A.A., and Whiteman, N.K. Genome editing retraces the evolution of toxin resistance in the monarch butterfly. *Nature* **574**, 409–412. **2019** <https://doi.org/10.1038/s41586-019-1610-8>
21. Pellequer, J-L, P. Parot, D. Navajas, S. Kumar, V. Svetličić, S. Scheuring, J. Hu, B. Li, A. Engler, S. Sousa, M. Lekka, M. Szymoński, H. Schillers, M. Odorico, F. Lafont, S. Janel, **F. Rico**. Fifteen years of *Servitute ets Grandeur* to the application of a biophysical technique in medicine: The tale of AFMBioMed. *J Molec Recog* **32**, e2773 **2019** <https://doi.org/10.1002/jmr.2773>
22. **Rico, F***[¶], A Russek[¶], L González, H Grubmüller*, and S Scheuring*. Heterogeneous and Rate-Dependent Streptavidin–Biotin Unbinding Revealed by High-Speed Force Spectroscopy and Atomistic Simulations. *PNAS* **116**, 14, 6594–6601 **2019** <https://doi.org/10.1073/pnas.1816909116>
23. Herrada, I., Barthe, P., Vanheusden, M., DeGuillen, K., Mammri, L., Delbecq, S., **Rico, F.**, and Roumestand, C. Monitoring Unfolding of Titin I27 Single and Bi Domain with High-Pressure NMR Spectroscopy. *Biophys J* **115**, 341–352 **2018** [hal-01842448v1](https://doi.org/10.10842448v1)
24. F Sumbul, A Marchesi, **F Rico***. History, Rare And Multiple Events Of Mechanical Unfolding Of Repeat Proteins. *J Chem Phys.* **148**(12), 123335 **2018** [hal-01838371v1](https://doi.org/10.1063/1.5000000)
25. H Takahashi[¶], **F Rico**[¶], C Chipot , and S Scheuring. α -Helix Unwinding as Force Buffer in Spectrins. *ACS Nano*, **2** (3), 2719–2727 **2018** [hal-02106340](https://doi.org/10.1021/acsnano.7b04000)
26. Schillers, H.; Rianna, C.; Schäpe, J.; Luque, T.; Doschke, H.; Wälte, M.; Uriarte, J. J.; Campillo, N.; Michanetzis, G. P. A.; Bobrowska, J.; Dumitru, A.; Herruzo, E. T.; Bovio, S.; Parot, P.; Galluzzi, M.; Podestà, A.; Puricelli, L.; Scheuring, S.; Missirlis, Y.; Garcia, R.; Odorico, M.; Teulon, J.-M.; Lafont, F.; Lekka, M.; **Rico, F.**; Rigato, A.; Pellequer, J.-L.; Oberleithner, H.; Navajas, D.; Radmacher, M. Standardized Nanomechanical Atomic Force Microscopy Procedure (SNAP) for Measuring Soft and Biological Samples. *Scientific Reports*, **7** (1), 5117 **2017** [hal-01575563](https://doi.org/10.1038/s41598-017-05563-2)
27. Even C, G Abramovici, F Delort, A Rigato, V Bailleux, A Moreira, P Vicart, **F Rico**, S Battonnet-Pichon F Briki. Mutation in the Core Structure of Desmin Intermediate Filaments Affects Myoblast Elasticity. *Biophys J* **113** (3), 627–636 **2017** [hal-01765097](https://doi.org/10.10842448v1)
28. Rigato A, Miyagi A, Scheuring S, **Rico F***. High-frequency microrheology reveals cytoskeleton dynamics in living cells. *Nat Phys*, **13**(8): 771-775 **2017** [hal-01764684v1](https://doi.org/10.1038/nphys4141)
29. Munguira I, I Casuso, H Takahashi, **F Rico**, A Miyagi, M Chami, and S Scheuring. Glasslike Membrane Protein Diffusion in a Crowded Membrane. *ACS Nano* **10**:2584-2590 **2016** [hal-01285787](https://doi.org/10.1021/acsnano.6b02584)
30. Rigato A, **F Rico**, F Eghiaian, M Piel, S Scheuring, Atomic Force Microscopy Mechanical Mapping of Micropatterned Cells Shows Adhesion Geometry-Dependent Mechanical Response on Local and Global Scales. *ACS Nano*, **9**, 5846-5856 **2015** [hal-01159354](https://doi.org/10.1021/acsnano.5b01593)
31. Eghiaian F, **F Rico**, A Colom, I Casuso, S Scheuring, High-speed atomic force microscopy: Imaging and force spectroscopy. *FEBS Lett.* **588**, 3631 **2014** [hal-01360861](https://doi.org/10.1016/j.febslet.2014.05.011)
32. A. B. Roland et al., Cannabinoid-induced actomyosin contractility shapes neuronal morphology and growth. *eLife* **3**, 03159 **2014** [hal-01356874](https://doi.org/10.1016/j.eLife.2014.05.011)
33. **Rico F**, L González, I Casuso, M Puig, and S Scheuring. High-speed force spectroscopy unfolds titin at the velocity of molecular dynamics simulations. *Science*, **342** (6159), 741-743 **2013** [hal-01309044](https://doi.org/10.1126/science.1240044)
34. Alessandri, K., et al. Cellular capsules as a tool for multicellular spheroid production and for investigating the mechanics of tumor progression in vitro. *PNAS*, **110**(37): 14843-14848 **2013** [hal-00989115](https://doi.org/10.1073/pnas.1308911110)
35. **Rico F**, L Picas, A Colom, N Buzhynskyy, and S Scheuring. The mechanics of membrane proteins is a

- signature of biological function. *Soft Matter*, 9 (32), 7866-7873 **2013** [hal-01309103](#)
36. **Rico F***, A Rigato, L Picas, and S Scheuring. Mechanics of proteins with a focus on atomic force microscopy. *J Nanobiotechnology* 11, S3 **2013** [hal-00916507](#)
 37. Colom A, I Casuso, **F Rico**, and S Scheuring. Single membrane proteins on eukaryotic cells visualized with a hybrid high-speed AFM - optical microscope. *Nat Commun*, 4:2155 **2013** [hal-01357292](#)
 38. Chu C, **F Rico**, E Celik, and VT Moy. Elongated membrane tethers, individually anchored by high affinity $\alpha 4\beta 1$ /VCAM-1 complexes, are the quantal units of monocyte arrests. *PLOS One* 8(5) e64187 **2013**
 39. Picas L, **F Rico**, M Deforet, and S Scheuring. Structural and mechanical heterogeneity of the erythrocyte membrane reveals hallmarks of membrane stability. *ACS Nano* 7 (2) 1054–1063 **2013** [hal-01309087](#)
 40. Hozic A[¶], **F Rico[¶], A Colom, N Buzhynskyy and S Scheuring. Nanomechanical characterization of the stiffness of eye lens cells: a pilot study. *Invest Opth Vis Sci* 53 (4) **2012** (cover story)**
 41. Picas L, **F Rico** and S Scheuring. Direct measurement of the mechanical properties of lipid phases in supported bilayers. *Biophys J* 102 (1) L01-L03 **2012**
 42. Casuso I, **F Rico** and S Scheuring. High-Speed Atomic Force Microscopy : Structure and Dynamics of Single Proteins. *Current Opinion In Chemical Biology* 15 (5) 704-709 **2011**
 43. **Rico F**, C. Su and S Scheuring. Mechanical mapping of single proteins at the submolecular level *Nano Letters* 11 (9) 3983-6 2011
 44. **Rico F**, A Oshima, P Hinterdorfer, Y Fujiyoshi and S Scheuring. Two-dimensional kinetics of interconnexin interactions from single molecule force spectroscopy. *J Mol Biol* 412 72-79 **2011**
 45. Casuso[¶] I, **F Rico[¶] and S Scheuring. Biological AFM: Where we come from – where we are – where we may go. *J Mol Recognit* 24 (3) 406–413 **2011****
 46. Casuso I, P Sens, **F Rico** and S Scheuring. Experimental evidence for membrane-mediated protein-protein interaction. *Biophys J* 99 (7) L47-L49 **2010**
 47. **Rico F***, C Chu, MH Abdulreda, Y Qin and VT Moy. Temperature dependence of integrin-mediated cell adhesion. *Biophys J* 99 (5) 1387-1396 **2010**
 48. Abdulreda MH, A Bhalla, **F Rico**, P-O Berggren, ER Chapman and VT Moy. Pulling force generated by interacting SNAREs facilitates membrane hemifusion. *Integr Biol* 1 301 - 310 **2009**
 49. **Rico F*** and VT Moy. Energy landscape roughness of the streptavidin-biotin interaction. *J Mol Recognit* 20 (6) 495-501 **2007**
 50. **Rico F**, P Roca-Cusachs, R Sunyer, R Farré and D Navajas. Cell dynamic adhesion and elastic properties probed with cylindrical atomic force microscopy cantilever tips. *J Mol Recognit* 20 (6) 459-66 **2007**
 51. Puig F, **F Rico**, I Almendros, JM Montserrat, D Navajas and R Farré. Vibration Enhances Interleukin-8 Release In A Cell Model Of Snoring-Induced Airway Inflammation. *Sleep* 28 (10) 1312-1316 **2005**
 52. **Rico F**, P Roca-Cusachs, N Gavara, R Farré, M Rotger and D Navajas. Probing Mechanical Properties of Living Cells by Atomic Force Microscopy with Blunted Pyramidal Cantilever Tips. *Phys Rev E* 72 (2) 021914 **2005**
 53. Roca-Cusachs P, **F Rico**, E Martínez, J Tuset, R Farré and D Navajas. Stability of Microfabricated High Aspect Ratio Structures in Poly(dimethylsiloxane). *Langmuir* 21 (12), 5542-5548 **2005**
 54. **Rico F**, J Alcaraz, JJ Fredberg and D Navajas. Nanomechanics of Lung Epithelial Cells. *Int J Nanotechnol* 2 (1/2) 180–194 **2005**
 55. Trepát X, M Grabulosa, L Buscemi, **F Rico**, R Farré and D Navajas. Thrombin and histamine induce stiffening of alveolar epithelial cells. *J Appl Physiol* 98 1567-1574, **2005**.
 56. Trepát X, M Grabulosa, L Buscemi, **F Rico**, B Fabry, JJ Fredberg and R Farre. Oscillatory Magnetic Tweezers Based On Ferromagnetic Beads and Simple Coaxial Coils. *Rev Sci Instrum* 74 (9) 4012-20

2003

Book chapters

- i. Lacaria, L, M. Radmacher, A. Podesta, **F. Rico***. Contact mechanics.
- ii. **Rico, F***, I. Casuso, M. Radmacher. AFM Instrumentation
- iii. Lorenc, E, H Holuigue, **F Rico**, A Podesta. AFM Cantilevers and Tips
- iv. Chighizola, M, J Rodriguez-Ramos, **F Rico**, M Radmacher, A Podesta. Calibration Issues
In Lekka, Malgorzata, Daniel Navajas, Manfred Radmacher, and Alessandro Podesta, eds. n.d. *Mechanics of Diseases: Biomedical Aspects of the Mechanical Properties of Cells and Tissues*. De Gruyter. **2023**
- v. Sumbul F and **F Rico***. Single-Molecule Force Spectroscopy: Experiments, Analysis and Simulations, in *Nanoscale Imaging: Methods and Protocols*. N. Santos and F. Carvalho Eds, Springer, **2019**
- vi. Sumbul F, A Marchesi, H Takahashi, S Scheuring and **F Rico***. High-speed force spectroscopy for single protein unfolding, in *Atomic force microscopy: Methods and Protocols*. Y. Lyubchenko Ed., **2018**
- vii. **Rico F**, X Zhang and VT Moy. Probing cellular adhesion at the single molecule level, in *Life at the Nanoscale: Atomic Force Microscopy of Live Cells*. Y Dufrêne Ed., Pan Stanford Publishing **2011**
- viii. **Rico F**, C Chu and VT Moy. Force-clamp measurements of receptor-ligand interactions, *Methods Molecular Biology*. 736 331-53 **2011**
- ix. Moy VT, **F Rico** and N Ziebarth. Structural and Mechanical Mechanisms of Ocular Tissues Probed by AFM, in *Applied Scanning Probe Methods Vol. 14*, B Bhushan Ed., Springer-Verlag, Heidelberg, **2010**
- x. Zhang X, **F Rico**, AJ Xu and VT Moy. Atomic force microscopy of protein-protein interactions, in *Handbook of Single-Molecule Biophysics*, P Hinterdorfer and A Oijen Eds., Springer New York **2009**
- xi. **Rico F**, EP Wojcikiewicz and VT Moy. Atomic force microscopy studies of the mechanical properties of living cells, in *Applied Scanning Probe Methods IX*, B. Bhushan, H. Fuchs, M. Tomitori Eds., Springer, New York, **2008**
- xii. **Rico F**, X Fernández-Busquets and G Gomila. Applications of Atomic Force Microscopy in Biology in Phantoms Report on Scanning Probe Microscopy, in *Phantoms Report 2* 83-87 **2003**
- xiii. Grabulosa M, L Buscemi, J Alcaraz, X Trepac, **F Rico** and D Navajas. Nanotecnologies en mecànica molecular i cel·lular. Biofísica molecular, in *Treballs de la Societat Catalana de Biologia*, 53 91-99 **2002**

Other publications

1. Eroles, M, C. Valotteau, A. Podesta, F. Rico. The rise of nanomechanical biomarkers: how cell and tissue mechanics can help medicine?, January 2024, Project repository journal (in press)
2. Rico, F. Nanotechnology to better understand immune response. July 2020. [Project repository journal](#)
3. Valotteau, C., and F. Rico. Le microscope à force atomique, cet outil qui touche les cellules... et le cœur des chercheurs. 2021. The Conversation. [Link to article](#)
4. Valotteau, C., and F. Rico.. Paroles de chercheurs : Les émotions permettent aussi de comprendre les choix des chercheurs. 2021. The Conversation. [Link to podcast](#).
5. Plateau démo, vidéo créée en collaboration avec la cellule de culture scientifique et technique d'AMU dans le cadre de la Nuit Européenne des Chercheur·e·s en 2020 (événement en distanciel en raison de la crise sanitaire). [Link to video](#).
6. Translation: Chiara, M.L.D., G.T. di Francia. Translation: F. Rico. 2001. *Confines: Introducción a la Filosofía de la Ciencia*. Critica Editorial.

Congress contributions

1. ConForce meeting – July 2024 – IISER Pune, India (invited speaker)
2. Physics of cells and tissues 2.0 Workshop – June 2024 – IISC Bangalore, India (invited speaker)
3. European South Atlantic Biophysics meeting – June 2024 – San Sebastian (invited speaker)

4. Single molecule biophysics meeting – Jan 2024 – École de Physique Les Houches, France (selected talk)
5. Congrès de la Société Française de Physique – July 2024 – Paris, France
6. Mechanics in biology FEBS advanced course – June 2023 – Glasgow, UK (invited lecturer)
7. Symposium in honour of Daniel Navajas. Before mechanobiology had a name. – April 2023 – Barcelona
8. Deutschen Physikalischen Gesellschaft – Mar 26 – 31 2023, Dresden, Germany (Invited talk)
9. AFMBioMed meeting – Aug 30 – Sep 2, 2022, Nagoya, Japan (Invited chairperson)
10. Journées Surfaces & Interfaces – online 2022 (Invited talk)
11. Bruker high-speed AFM symposium – Online, Berlin, March 2021 (Invited talk)
12. Biophysical Society 65th Annual Meeting – Online, USA, Feb 22-26, 2021 (Invited talk)
13. 8th Multifrequency AFM Conference – Online, Spain, Oct 27-30, 2018 (Expert talk)
14. Biophysical Society 64th Annual Meeting. San Diego, CA, USA, Feb 15-19, 2020
15. Bruker high-speed AFM day – Lille, December 2019 (Invited talk)
16. Royal Society – London, UK, October 2019 (Invited talk)
17. HFSP awardees meeting, Tsukuba, Japan, July 2019 (Poster)
18. EBSA and IUPAP conference, Madrid, July 2019 (Invited talk)
19. Société Française de microscopie (SF μ) – Poitiers, July 2–5, 2019 (Symposium organizer)
20. MMC, Royal microscopy society meeting, Manchester, UK, July 1–4, 2019 (Invited talk)
21. ISPM, May, Louvain-la-Neuve, Belgium, May 26–29, 2019 (Invited talk)
22. Immuno-Mechanics Day, Paris, France, May 20, 2019. (Invited talk)
23. Nanoengineering for mechanotransduction (N4M) Conference, Camogli, Italy, March 24–27, 2019 (Invited talk)
24. XXI Linz Winter Workshop, Linz, Austria, February 1-4, 2019. (Invited talk)
25. Molecular Biophysics conference of the SFB and DGfB, Hünfeld, Germany, February 14–16 2019 (Invited talk)
26. Single Molecule Biophysics Workshop, Aspen, CO, USA, Jan 7-11, 2019 (Selected talk)
27. Jülich Soft Matter Days 2018, Jülich, Germany, Nov 20–23, 2018 (Invited talk)
28. 19th International Microscopy Congress, Sydney, Australia, Sept 9-14, 2018 (Invited talk)
29. 14th International School of Biophysics Greta Pifat Mrzljak, Split, Croatia, Aug 23-Sept 01, 2018, (Invited talk)
30. TSRC Workshop on Protein Dynamics, Les Houches, France, May 27–Jun 1, 2018 (Invited talk)
31. 7th Multifrequency AFM Conference, Madrid, Spain, Apr 18-20, 2018 (Invited talk)
32. Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, Apr 2-6, 2018 (Invited talk)
33. 3rd International Symposium on Mechanobiology (ISMB 2017), Singapore, Dec 11 – 14 (Invited talk)
34. AFM BioMed, Krakow Conference, Poland, Sept 4 – 8 2017 (Invited talk)
35. Société française des microscopies, Bordeaux, France, Jul 4 – 7, 2017 (Invited talk)
36. Single Molecule Biophysics Workshop, Aspen, CO, USA, Jan 8-14, 2017
37. Physics of Development and Disease, Aspen, CO, USA, 27 Mar – 1 Apr, 2016 (Selected talk A. Rigato)
38. MechanoBiology Meeting, Amsterdam, Netherlands, 22-24 Mar, 2016 (Selected talk)
39. Biophysical Society 60th Annual Meeting. Los Angeles, CA, USA, Feb 27- Mar 2, 2016
40. 6th European CellMech Meeting, Barcelona, Spain, 13-15 May, 2015 (Selected talk A. Rigato)
41. Biophysical Society 59th Annual Meeting. Baltimore, MD, USA, Feb 7-11, 2015. (Platform session co-chairman and talk)
42. Single Molecule Biophysics Workshop, Aspen, CO, USA, Jan 4-9, 2015 (Selected talk)
43. Physics Meets Biology, Institute of Physics, Oxford, UK, Sept 3-5, 2014 (Invited talk)
44. 248th American Chemical Society Meeting, San Francisco, CA, USA, Aug 10-14, 2014 (Invited talk)
45. Single Molecule Approaches to Biology, Gordon Research Conference and Seminar, Lucca, Italy, July 13-18, 2014 (Selected talk)
46. 5th Multifrequency Conference. Madrid, Spain, June 16-18, 2014 (Selected talk)
47. Biophysical Society 58th Annual Meeting. San Francisco, CA, USA, Feb 15-19, 2014
48. AFM BioMed. Shanghai, China, May 7-11, 2013. (Session talk)
49. Biophysical Society 57th Annual Meeting. Baltimore, MD, USA, Feb 2-6, 2013. (Platform session talk)
50. PhysCell2012, Hyères, France, September 2-8, 2012 (Short lecture)
51. 62nd Lindau Nobel Laureate Meeting dedicated to Physics, Lindau, Germany, July 1-6, 2012
52. Biophysical Society 56th Annual Meeting, Baltimore, MD, USA, Feb 25-29, 2012

53. XIV Linz Winter Workshop, Linz, Austria, February 3-7, 2012. (Selected talk)
54. AFM BioMed. Paris, France, Aug 23-27, 2011. (Session talk)
55. Congrès Général de la Société Française de Physique. Bordeaux, France, July 4-8, 2011
56. Biophysical Society 55th Annual Meeting. Baltimore, MD, USA, Mar 5-9, 2011. (Platform talk and poster)
57. 8es Journées Scientifiques et Médicales (JSM) de l'Institut Curie, Paris, Feb 9-10, 2011
58. 7es Journées Scientifiques et Médicales (JSM) de l'Institut Curie, Paris, Feb 10-11, 2010
59. 3ème Colloque du Club Adhérence Intercellulaire, Paris, May 6-7, 2010
60. 1st Winter Workshop on Functional SPM in Bio- and Chemical Physics, Italy, Dec 10-12, 2009
61. Physics of cells Conference, PhysCell2009, Primosten, Croatia, Sept 6-13, 2009 (Short lecture)
62. American Society of Cell Biology 48th Annual Meeting, San Francisco, CA, USA, Dec 13-17, 2008
63. Frontiers in Microrheology Workshop, CNSI, UCLA, Los Angeles, CA, USA, Feb 6-9, 2008
64. Biophysical Society 52st Annual Meeting. Long Beach, CA, USA, Feb 2-6, 2008
65. AFMBiomed Conference, Barcelona, Spain, April 19-21, 2007
66. Biophysical Society 51st Annual Meeting. Baltimore, MD, USA, March 3-7, 2007
67. Miami Nature Biotechnology Winter Symposium, Miami, FL, USA, 27-31 Jan, 2007
68. International Conference American Thoracic Society, San Diego, CA, USA, May, 2005
69. 2nd NanoSpain Workshop, Barcelona, Spain, 14-17 March, 2005
70. 1st NanoSpain Workshop, San Sebastián, Spain, 10-12 March, 2004
71. 4th European Biophysics Congress. Alacant, Spain, July 5-9, 2003
72. Experimental Biology 2003 (FASEB). San Diego, CA, USA, 11-15 April, 2003
73. Biophysical Society 47th Annual Meeting. San Antonio, CA, USA, March 1-5, 2003

Seminars and invited talks

1. Department of Developmental Biology and Genetics, IISC Bangalore, India, 2024
2. Centre of research in cancerology of Marseille (CRCM), France, 2024
3. Department of Physics, Università degli studi di Milano, Italy, 2023
4. Ramray Baht lab, IISC, Bangalore, India, online 2022
5. Department of Physics, IISER Kolkata, India, online 2022
6. ANR Nonstops meeting, online 2022
7. Biological Physics Physical Biology seminar series, online 2022
8. Queen Mary University, London, UK - online 2022
9. Institut Pasteur, Paris, France, 2020
10. Chemistry and Biochemistry department, Ohio State University, Columbus, OH, USA, 2020
11. Centre de Physique Théorique (CPT), Marseille, France, 2019
12. Soft Matter Group, Laboratoire Charles Coulomb (LC2), Montpellier, France, 2019
13. Mechanobiochemistry lab, Max Planck Institute of Colloids and Interfaces, Potsdam, 2019
14. Daniel Müller's lab – Biophysics group, ETHZ, Basel, Switzerland, 2018
15. Institute de Biochimie Structurale (IBS), Grenoble, France, 2018
16. Laboratoire de Physique Théorique et Modèles Statistiques (LPTMS), Orsay, France, 2017
17. Architecture et Fonction des Macromolécules Biologiques (AFMB), Marseille, France, 2017
18. Centre Interdisciplinaire de Nanoscience de Marseille (CINaM), Marseille, France, 2016
19. Mosaic group, Institut Fresnel, Marseille, France, 2016
20. Institut of Molecular and Cellular Pharmacology (IPMC), Nice, France, 2016
21. Séminaire de l'Institut Jacques Monod, Paris, France, 2016
22. Roos group, Molecular Biophysics, University of Groningen, Netherlands, 2016
23. Centre de Biochimie Structurale, Montpellier, France, 2015
24. Physics Meets Biology, Institute of Physics, Oxford, UK, 2014
25. Asylum Research, Santa Barbara, CA, USA, 2014
26. Carlos Bustamante Lab, University of California, Berkeley, CA, USA, 2014
27. Institute of Physics, Chinese Academy of Sciences, Beijing, China, 2013
28. Department of Mechanical Engineering & Mechanics, Lehigh University, Bethlehem, PA, USA, 2013
29. CNRS School, Nanophysics of health, Mittelwhir, France, 2012
30. 3ème réunion plénière GdR 3334, Fournols, France, 2012
31. COST Action Meeting Work Group 2. Linz, Austria, 2012

32. LadHyX, École Polytechnique, France, 2011
33. Soft matter and physics-biology interface, LPS, Université Paris-Sud, France, 2011
34. Soft Condensed Matter Theory Group, Institute for Theoretical Physics, U. of Leipzig, 2010
35. AFM group, Biophysics Institute, University of Linz, Linz, Austria, 2009
36. Matière et Systèmes Complexes UMR 7057, Université Paris - Diderot, Paris, France, 2008
37. Center for Nonlinear Dynamics, University of Texas at Austin, TX, USA, 2008
38. Biophysics group, Department of Physics, University of Texas at Austin, TX, USA, 2007
39. Department of Physiology and Biophysics, University of Miami, Miami, FL, USA 2005
40. I Jornada de la Societat Catalana de Biofísica, Barcelona, Spain, 2005
41. IV Jornades de Recerca en Enginyeria Biomèdica, Barcelona, Spain, 2004
42. Nanobiotechnology platform meeting, CREBEC, Barcelona, Spain 2004
43. II Workshop of the European Network PHYNECS, Sant Feliu de Guíxols, Spain 2003
44. I Workshop of the European Network PHYNECS, Peyresq, France 2002

Related experience

Member of the Commission Scientifique Spécialisée 1 (CSS 1) INSERM. National organism in charge of evaluating researchers career and recruitment for INSERM.

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Reviewer for *Biophysical Journal*, *Soft Matter*, *eLife*, *Physical Review X*, *European Biophysics Journal*, *Nanoscale*, *Nature Nanotechnology*, *Nature Physics*, *Journal of Physics D*, *Angewandte Chemie International Edition*, *ACS Applied Materials & Interfaces*, *Nature Protocols*, *Nature Chemistry*, *Scientific Data*, *Scanning*, *Nano Letters*, *Nanotechnology*, *Physical Biology*, *Journal of Molecular Recognition*, *Beilstein Journal of Nanotechnology*, *Biochemistry*, *Scientific Reports*, *Analytical Chemistry* and *Medical Engineering & Physics* (former *Journal of Biomedical Engineering*).

Reviewer for research funding agencies ANR, ERC, European Commission, Israel Science Foundation, the Belgium Fund for Scientific Research–FNRS, Spanish Agencia Estatal de Investigación, Netherlands Organisation for Scientific Research, Austrian Science Fund (FWF).

Local organizer of the AFM BioMed Summer School in Marseille, July 2016, 2018, 2020 and 2022; and of the AFM BioMed Conference in Paris, August 23-27, 2011.

Languages: Spanish and Catalan (proficient), English, French and Italian (fluent)