

CURRICULUM VITAE**Anna V. Shnyrova****(Anna Shnyrova Zhadan)**

Ramon y Cajal Researcher

Group Leader

@: <https://shnyrovalab.wixsite.com/website>**Contact information***Mechanisms of cellular membrane remodeling lab**Biofisika Institute**Department of Biochemistry and Molecular Biology**University of Basque Country**Barrio Sarriena s/n**Leioa, Bizkaia, 48940**Spain*

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|-----------------------------------|---|-------------|---|-------------|--|
| Biographical Data | <p>Born October 8, 1979 in Puschino, Moscow Region, Russia</p> <p>Citizen of Spain</p> <p>Married, two children (born 2011, 2016)</p> | | | | |
| Current Research Interests | <ul style="list-style-type: none"> • Molecular basis of cellular morphogenesis: Characterization of the role of protein and lipids in creation of membrane shape and topology • General mechanisms of formation of proteolipid domains and their implication in cellular shape • Division of mitochondrial double membrane | | | | |
| Degrees | <table border="1"> <tr> <td data-bbox="592 1594 778 1935">2008</td> <td data-bbox="778 1594 1345 1935"> PhD (<i>Cum Laude</i>) in Biochemistry and Molecular Biology at the University of Salamanca, Spain <i>Thesis entitled "Study of the interaction of the Matrix protein of the Newcastle Disease Virus with lipid bilayers: implications for the mechanism of viral budding"</i> </td> </tr> <tr> <td data-bbox="592 1935 778 2027">2005</td> <td data-bbox="778 1935 1345 2027"> Master of Science (<i>Cum Laude</i>) in Chemistry at the </td> </tr> </table> | 2008 | PhD (<i>Cum Laude</i>) in Biochemistry and Molecular Biology at the University of Salamanca, Spain <i>Thesis entitled "Study of the interaction of the Matrix protein of the Newcastle Disease Virus with lipid bilayers: implications for the mechanism of viral budding"</i> | 2005 | Master of Science (<i>Cum Laude</i>) in Chemistry at the |
| 2008 | PhD (<i>Cum Laude</i>) in Biochemistry and Molecular Biology at the University of Salamanca, Spain <i>Thesis entitled "Study of the interaction of the Matrix protein of the Newcastle Disease Virus with lipid bilayers: implications for the mechanism of viral budding"</i> | | | | |
| 2005 | Master of Science (<i>Cum Laude</i>) in Chemistry at the | | | | |

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| | | University of Salamanca, Spain. |
| Research Experience | 2016- present | Ramon y Cajal fellow, Group Leader Biofisika Institute, University of Basque Country, Spain |
| | 2009-2015 | Research Fellow Biophysics Unit, University of Basque Country, Spain. <i>Advisor: Vadim Frolov</i> |
| | 2008-2009 | Postdoctoral Fellow Program In Physical Biology, NICHD, National Institutes of Health, USA. <i>Advisor: Joshua Zimmerberg</i> |
| | 2005-2008 | Graduate Student Program In Physical Biology, NICHD, National Institutes of Health, USA. <i>Advisor: Joshua Zimmerberg</i> & Department of Biochemistry and Molecular Biology, Faculty of Biology, University of Salamanca, Spain. <i>Thesis Advisor: Enrique Villar</i> |
| | 2004-2005 | Master of Science Diploma project Department of Physical Chemistry, Faculty of Chemistry, University of Salamanca, Spain <i>Advisor: Manuel García Roig</i> |
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| Awards, Honors and Scholarships | | <p>2016: L'Oréal-UNESCO For Women in Science Spanish National fellowship</p> <p>2013: Young Scientist Award (below 33) from the Biophysical Society of Spain</p> <p>2012: CPOW travel award to attend the 56th USA Biophysical Society Meeting.</p> <p>2008: FEBS Youth Travel Fund (YTF) award to attend the Golgi</p> |

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| | <p>Meeting 2008 Pavia, Italy.</p> <p>2005-2008: Graduate Program Scholarship from National Institutes of Health, USA.</p> <p>2003-2004: Fellowship for interdepartmental collaboration for last year graduates, Salamanca University, Department of Physical-Chemistry, Spain.</p> |
| <p>Invited Talks at international conferences</p> | <p><i>Molecular sensing with lipid nanotubes</i> Traslational Biophysics Session, 3rd symposium Euskampus-Bordeaux, Bordeaux, France, 2017</p> <p><i>Lipid nanotubes as a tool for studying nanoscale proteo-lipid domains</i> Membrane Structure & Assembly Subgroup Symposium, 58th Meeting of the Biophysical Society, San Francisco, California, USA, 2014</p> <p><i>Nanoscale Coordination of Dynamin and Lipids in Membrane Fission</i> SBE-33 Young Investigator Award, XIII Congress of the BSE, Valencia, Spain, 2013 (KEYNOTE)</p> |
| <p>Mentorship</p> | <ul style="list-style-type: none"> • PhD thesis advisor: <ul style="list-style-type: none"> ○ Eva Rodriguez Hortelano (Thesis defended “Cum Laude” on 26-03-2015 in the University of the Basque Country) ○ Ariana Velasco del Olmo (Thesis defended “Cum Laude” on 19-12-2018 in the University of the Basque Country) ○ Juan Manuel Martinez Galvez (thesis project started in 2017) ○ Javier Espadas Moreno (thesis project started in 2017) • Since 2012 lecturer at “Molecular and Cellular Biology of Membranes” Master course, University of the Basque Country, Spain |
| <p>Research Funding</p> | <ul style="list-style-type: none"> • Spanish Ministry of Economics and Competitiveness (MICINN) research grants: <ul style="list-style-type: none"> - PGC2018-099971-B-I00 (2019-2021) “Double membrane fission: from mechanics to organelle division” (PI, 105.875€) - BFU2015-70552-P (2016-2019) “Functional determinants of membrane fusion and fission phenotypes in dynamins” (coPI, 403.172€) • UNESCO-L’Oreal For Woman in Science research grant, (2016-2017, PI, 15000€) |

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| | <ul style="list-style-type: none"> • Startup for Ramon y Cajal fellowship (2016-2020, PI, 40.000€) |
| <p style="text-align: center;">Bibliography</p> | <ol style="list-style-type: none"> 1. "Combining patch-clamping and fluorescence microscopy for quantitative reconstitution of cellular membrane processes with Giant Suspended Bilayers" <i>Sci Rep</i> 9(1): 7255 (10 May 2019) doi: 10.1038/s41598-019-43561-4 Authors: Velasco-Olmo A, Ormaetxea Gisasola J, Martinez Galvez JM, Vera Lillo J, Shnyrova AV. 2. "Human ATG3 binding to lipid bilayers: role of lipid geometry, and electric charge" <i>Sci Rep</i> 7(1): 15614 (15 November 2017) doi: 10.1038/s41598-017-15057-6. Authors: Hervás JH, Landajuela A, Antón Z, Shnyrova AV, Goñi FM, Alonso A. 3. "Dynamin-catalyzed membrane fission occurs in two mechanistically distinct stages." <i>Nature</i> 524,109-113 (2015) doi: Authors: Juha-Pekka Mattila*, Anna V Shnyrova*, Anna S Sundborger, Eva Rodriguez Hortelano, Mark Fuhmans, Sylvia Neumann, Marcus Muller, Jenny E Hinshaw, Sandra L Schmid, Vadim A Frolov (*equal contribution) 4. "Stochastic transport through carbon nanotubes in lipid bilayers and live cell membranes" <i>Nature</i> 514, 612–615 (30 October 2014) doi:10.1038/nature13817 Authors: Jia Geng; Kyunghoon Kim; Jianfei Zhang; Artur Escalada; Ramya Tunuguntla; Luis R. Comolli; Frances I.Allen; Anna V. Shnyrova; Kang Rae Cho; Dayannara Munoz; Morris Wang; Costas P. Grigoropoulos; Caroline Ajo-Franklin; Vadim A. Frolov; Aleksandr Noy. 5. "Geometry of Membrane Fission" (review). <i>Chemistry and Physics of Lipids</i>. 10.1016/j.chemphysl. Elsevier, 22/07/2014. Authors: Vadim A. Frolov; Artur Escalada; Sergey A. Akimov; Anna V. Shnyrova 6. "Geometric catalysis of membrane fission driven by flexible dynamin rings." <i>Science</i>, 22 March 2013: Vol. 339 no. 6126 pp. 1433-1436 (DOI: 10.1126/science.1233920). Authors: Anna V. Shnyrova; Pavel. V. Bashkirov; Sergey A. Akimov; Thomas J. Pucadyil; Joshua Zimmerberg; Sandra L. Schmid; Vadim A. Frolov. 7. "Lipid Polymorphisms and Membrane Shape" (review). <i>Cold Spring Harbor Perspectives in Biology</i>. 3-11, 01/11/2011. Authors: Frolov, Vadim A.; Shnyrova, Anna V.; Zimmerberg, Joshua. 8. "Vesicle formation by self-assembly of membrane-bound matrix proteins into a fluidlike budding domain". <i>Journal of Cell Biology</i>.179 - 4,pp. 627- 633. 19/11/2009. Authors: Shnyrova, Anna V.; Ayllon, Juan; Mikhalyov, Ilya I.; Villar, Enrique; Zimmerberg, Joshua; Frolov, Vadim A. 9. "Domain-Driven Morphogenesis of Cellular Membranes" (review). <i>Current Biology</i>.19-17, pp. R772-R780. 15/09/2009 Authors: Shnyrova, Anna V.; Frolov, Vadim A.; Zimmerberg, Joshua. 10. "Reconstitution of viral budding with unilamellar vesicles" (book |

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| | <p>chapter). <i>Methods in Enzymology</i> 464, pp. 55 - 75. 2009. Authors: Shnyrova, A.V. and Zimmerberg, J.</p> <p>11. "ER biogenesis: Self-assembly of tubular topology by protein hairpins" (review). <i>Current Biology</i> 18 - 11, pp. R474 - R476. 03/06/2008 Authors: Shnyrova, Anna; Frolov, Vadim A.; Zimmerberg, Joshua.</p> <p>12. "Effect of acetonitrile on <i>Cynara cardunculus</i> L. cardosin A stability." <i>International Journal of Biological Macromolecules</i> 39 - 4-5, pp. 273 – 279. 15/11/2006 Authors: Anna Shnyrova; CS Oliveira; AC Sarmiento; MT Barros; GG Zhadan; MG Roig; VL Shnyrov.</p> <p>13. "Thermally induced conformational changes in horseradish peroxidase" <i>Eur J Biochem.</i> 268-1, pp.120-126.01/2001. Authors: D Pina; AV Shnyrova; F Gavilanes; A Rodriguez; F Leal; M Roig; IY Sakharov; GG Zhadan; E Villar; V. Shnyrov.</p> |
| Oral presentations at international conferences | <p>2014 Oral presentation: "TRANSLATION OF MOLECULAR GEOMETRY INTO MEMBRANE FISSION" presented at the <i>XXXVII Congress of the Spanish Biochemistry and Molecular Biology Society</i>, Granada, Spain.</p> |
| Membership of scientific societies | <ul style="list-style-type: none"> • Biophysical Society of Spain, since 2013 • Spanish Society of Biochemistry and Molecular Biology (FEBS), since 2008 • Biophysical Society of USA, since 2006 |
| Reviewer | <p>Journal of Cell Science</p> <p>European Research Commission</p> |
| ORCID ID | 0000-0002-5329-348X |
| Scopus ID | 6504269355 |
| Impactstory.org overview (as on May 20, 2019) | <p>Open Access: 75% (Top 10%)</p> <p>Global Reach: 26 countries (Top 50%)</p> <p>37 online mentions over 6 years</p> |