Curriculum Vitae

Dr. Camilo Guzmán
University of Turku
Åbo Akademi University
Centre for Biotechnology Turku
Turku, Finland

e-mail: camilo.guzman@inl.int
Born: 1979
Colombian
Married, 2 children

PROFESSIONAL EXPERIENCE

Since Nov 2018	**Facility Manager - Advanced Microscopy and Bioimaging** International Iberian Nanotechnology Laboratory Braga, Portugal
2016-2018 (50%)	**Manager of the Finnish Advanced Light Microscopy Node Candidate of Euro-BioImaging** – Multi-modal and multi-sited Node formed by partners in Helsinki, Oulu and Turku. Åbo Akademi University. Turku, Finland.
2015-2018 (50%)	**Postdoctoral Position –** Professor Johanna Ivaska. Adhesion Modulation and Regulation of Adhesion Strength in Cancer Cells. Centre for Biotechnology Turku, University of Turku. Turku, Finland.
2015 -2016 (50%)	**Microscopy and Data Analysis Specialist –** Cell Imaging Core. Application of advanced fluoresce dynamics techniques: FLIM/FRET, FRAP, FCS, RICS and others. Centre for Biotechnology Turku, University of Turku. Turku, Finland.
2011 - 2015	**Postdoctoral Position –** Dr. Daniel Abankwa. Mechanisms and Biosensors of GTPases. Centre for Biotechnology Turku, Åbo Akademi, University of Turku. Turku, Finland.
2010 - 2011	**Postdoctoral Position -** Dr. Hazel Chapman. Ecology and Conservation: Nigerian Montane Forest Project. University of Canterbury, School of Biological Sciences. Christchurch, New Zealand.

AWARDS

2006	**Award for Teaching Excellence:** Award based on student survey and received while supervising undergraduate physics students. École Polytechnique Fédérale de Lausanne - Switzerland.
2005	**SSOM 2005 prize:** Prize of the Swiss Society for Optics and Microscopy received

as a member of Dr. Silvia Jeney's team of researchers.

EDUCATION

2004 - 2008	**PhD (in Physics),** Doctoral Thesis: *Nanomechanical Properties of Biopolymers: Development of New Experimental Tools* Prof. László Forró. Institute of Physics of Complex Matter. École Polytechnique Fédérale de Lausanne. Lausanne, Switzerland.
1996 - 2003	**Biology Degree (Dipl. Biol.)**, Diploma Thesis: *Local Distribution of Ephemeroptera in a River of the Colombian Andean Mountains* Prof. Emilio Realpe Universidad de los Andes. Bogotá, Colombia
1996 - 2003	**Physics Degree (Dipl. Phys.)**, Diploma Thesis: *Transport of Information in Microtubules* Prof. Carlos Avila Universidad de los Andes. Bogotá, Colombia

MICROSCOPY TECHNIQUES

High experience:

Confocal microscopy with both single and multiphoton excitation; stimulated emission depletion microscopy (STED); fluorescence correlation spectroscopy (FCS); fluorescence lifetime imaging (FLIM); Förster resonance energy transfer (FRET); raster imaging correlation spectroscopy (RICS); fluorescence recovery after photobleaching (FRAP); atomic force microscopy (AFM); optical tweezers, anisotropy, traction force microscopy (TFM), interferometric photoactivation and localization microscopy (iPALM), total internal reflection fluorescence microscopy (TIRF), structured illumination microscopy (SIM)

SOFTWARE AND DATA ANALYSIS

Software:

Strong knowledge on specialized imaging and data analysis programs like FIJI/ImageJ, Imaris, Igor Pro, LabVIEW, MatLab, Imaris and R, same as imaging software from different microscope manufacturers like Zeiss, Leica, Nikon, Abberior, 3I, GE Healthcare and PicoQuant.

Data analysis:

Using the software mentioned above, I have created extensive procedures for data analysis (Igor Pro), plugins for image analysis (FIJI/ImageJ) and extensive computer simulations to answer some of my research questions (R)

PUBLICATIONS

2018 A. Stubb*, C. Guzmán*, E. Närvä, J. Aaron, T.-L. Chew, M. Saari, M. Miihkinen, G. Jacquemet, and J. Ivaska. 2018. Superresolution architecture of pluripotency guarding adhesions. bioRxiv. 402305. doi:10.1101/402305. *Equal contribution

2018 L. Hakanpää, E. Kiss, G. Jacquemet, I. Miinalainen, M. Lerche, C. Guzmán, E. Mervaala, L. Eklund, J. Ivaska and P. Saharinen. *"Targeting β1-integrin inhibits vascular leakage in endotoxemia".* Proc. Natl. Acad. Sci. USA, 115(28) pp E6467-E6476.

2018 I. Paatero, L. Sauteur, M. Lee, A. K. Lagendijk, D. Heutschi, C. Wiesner1, C. Guzmán, D Bieli, B. M. Hogan, M. Affolter and H-G. Belting. *"Junction-based lamellipodia drive endothelial cell rearrangements in vivo via a VE-cadherin/F-actin based oscillatory ratchet mechanism".* Nat. Comms. #NCOMMS-17-08495C

2017 E. Närvä, A. Stubb, C. Guzmán, M. Blomqvist, M. Lerche, M. Saari, T. Otonkoski and J. Ivaska. *"Strong contractile actin ring and large adhesions direct human pluripotent colony morphology and adhesion".* Stem Cell Reports, 1–10. http://doi.org/10.1016/j.stemcr.2017.05.021.

2017 M. Georgiadou, J. Lilja, G. Jacquemet, C. Guzmán, M. Rafaeva, C. Alibert, Y. Yan, P. Sahgal, M. Lerche, J.-B. Manneville, T. Mäkelä and J. Ivaska. *"AMPK negatively regulates tensin-dependent integrin activity".* Journal of Cell Biology 109 DOI:10.1083/jcb.201609066.

2016 E. Peuhu, R. Kaukonen, M. Saari, C. Guzmán, P. Rantakari, H. Sihto, N. D. Franceshi, A. Wärri, E. Mattila, R. Virtakoivu, Y. Liu, M. Lerche, Y. Attie, T. Betz, D. Vignjevic, M. Salmi, M.-A. Deugnier, K. W. Eliceiri and J. Ivaska. "*SHARPIN regulates collagen architecture and ductal invasion in the developing mouse mammary gland"*. EMBO J., DOI:10.15252/embj.201694387.

2016 R. Barrow-McGee, N. Kishi, C. Joffre, L. Ménard, A. Hervieu, B. A. Bakhouche, A. J. Noval, A. Mai, C. Guzmán, L. Robbez-Masson, X. Iturrioz, J. Hulit, C. H. Brennan, I. R. Hart, P. J. Parker, J. Ivaska and S. Kermorgant. *"Beta 1-integrin-c-Met cooperation reveals an inside-in survival signalling on autophagy-related endomembranes"*. Nat. Comms. **7**, DOI:10.1038/ncomms11942.

2016 A. K. Najumudeen, A. Jaiswal, B. Lectez, C. Oetken-Lindholm, C. Guzmán, E. Siljamäki, I. M. D. Posada, E. Lacey, T. Aittokallio, and D. Abankwa. *"Cancer stem cell drugs target K-ras signaling in a stemness context"*. Oncogene. DOI:10.1038/onc.2016.59.

2015 M. Šolman, A. Ligabue, O. Blaževitš, A. Jaiswal, Y. Zhou, H. Liang, B. Lectez, K. Kopra, C. Guzmán, H. Härmä, J. F. Hancock, T. Aittokallio, and D. Abankwa. "*Specific cancer associated mutations in the switch III-region of Ras increase tumorigenicity by nanocluster augmentation"* eLife **4**.

2015 C. Guzmán, C. Oetken-Lindholm and D. Abankwa. "*Automated High-Throughput Fluorescence Lifetime Imaging Microscopy to Detect Protein-Protein Interactions.*" J. Lab. Autom. DOI: 10.1177/2211068215606048.

2015 A. K. Najumudeen, C. Guzmán, I. M. D. Posada and D. Abankwa. "*Rab-NANOPS: FRET-biosensors for Rab membrane nanoclustering and prenylation detection in mammalian cells*" Methods Mol. Biol. **1298,** 29–45.

2014 C. Guzmán, M. Šolman, A. Ligabue, O. Blaževitš, D. M. Andrade, L. Reymond, C. Eggeling and D. Abankwa. "*The efficacy of Raf-recruitment to H-ras depends on H-ras membrane conformer specific nanoclustering*" J. Biol. Chem. DOI: 10.1074/jbc.M113.537001.

2014 C. Guzmán, M. Šolman and D. Abankwa. "*Nanoclustering and heterogeneous membrane diffusion of Ras studied by FRAP and RICS analysis*" Methods Mol. Biol. **1120**, 307–326.

2014 C. Guzmán, M. Bagga, A. Kaur, J. Westermarck and D. Abankwa. ***"****ColonyArea: An ImageJ Plugin to Automatically Quantify Colony Formation in Clonogenic Assays"* PLoS ONE 9, e92444.

2009 S. Jeney, B. Lukic, C. Guzmán and L. Forró. *"Probing hydrodynamic fluctuations with a Brownian particle"* Book Chapter in Nanotechnology: Volume 6: Nanoprobes edited by Harald Fuchs. Wiley-VCH. Pages 89-119.

2008 C. Guzmán, H. Flyvbjerg, R. Köszali, C. Ecoffet, L. Forró, and S. Jeney. ,*"In situ viscosimetry by optical trapping interferometry"* Applied Physics Letters 93, 184102.

2006 C. Guzmán, S. Jeney, L. Kreplak, S. Kasas, A. J. Kulik, U. Aebi, and L. Forró. *"Exploring the mechanical properties of single vimentin intermediate filaments by atomic force microscopy"* Journal of Molecular Biology. 360(3): 623-630.

LANGUAGE PROFICIENCIES

Spanish, native; **English**, fluent; **French**, fluent; **Italian**, basic; **Finnish**, basic; **Portuguese**, basic

REFERENCES

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