

Maria Chatzifrangkeskou, Ph.D

mariachat@cing.ac.cy

EDUCATION

Sorbonne Université, Paris, France	Oct 2013-Oct 2016
Freie Universität (FU), Berlin, Germany PhD International Research Program in Cell Biology (Grade: with highest honors)	
Sorbonne Université, Paris, France	Dec 2014-Dec 2015
Université Aix-Marseille-II (AMU), Marseille, France Clinical Associate Diploma in Neuromuscular diseases	
University of York, UK MRes in Post-Genomic Biology (Grade: Distinction)	Oct 2012-Oct 2013
Democritus University of Thrace, Alexandroupolis, Greece BSc in Molecular Biology and Genetics (Grade 8.35 out of 10)	Oct 2008-Oct 2012

PROFESSIONAL EXPERIENCE AND RESEARCH PROJECTS

Head of Nuclear Envelopathies Group, Cyprus Institute of Neurology and Genetics, Cyprus

Postdoctoral Research Scientist, *University of Cyprus, Department of Biological Sciences, Cyprus* Apr 2020 –Present

- Role of ATR in nuclear mechanotransduction.
- Study of nuclear actin in *LMNA*-cardiomyopathy
- Supervising students (5 BSc and 2 MSc)

Postdoctoral Research Scientist, *University of Oxford, Department of Oncology, Oxford, UK* Nov 2017 – Apr 2020

- Effect of RASSF1A/Hippo signaling on nuclear actin levels and MRTF/SRF mechanotransduction pathway.
- Supervising students (1 BSc and 1 MSc)

Postdoctoral Research Scientist, *Institute of Myology, Paris, France* Oct 2016 – Oct 2017

- Studying the localization of the actin-binding protein, cofilin-1, upon cellular mechanical cyclic strain and its effect on MRTF/SRF mechanotransduction signalling pathway in the development of *LMNA*-dilated cardiomyopathy.
- Training students (1 PhD)

PhD candidate, *Sorbonne Université, Paris, France and Freie Universität (FU), Berlin, Germany* Oct 2013-Oct 2016

- Studying the involvement of TGF- β signalling pathway in the development of *LMNA*-dilated cardiomyopathy. Pharmacological intervention of TGF- β signalling in a mouse model of *LMNA*-dilated cardiomyopathy.
- Studying actin cytoskeleton dynamics in *LMNA*-dilated cardiomyopathy. Identification of a novel phosphorylation of an actin-binding protein, cofilin, by the ERK1/2 kinases.
- Effects of impaired mechanotransduction in the development of *LMNA*-dilated cardiomyopathy.
- Effects of ERK1/2 signalling pathway hyperactivation on the cardiac contractility in a mouse model of Emery-Dreifuss muscular dystrophy.
- Training students (2 MSc)

MRes Intern, *Cancer research Yorkshire Unit, UK* Apr 2013-Sep 2013

- Identification of CD44 isoforms expressed in malignant prostate cancer

MRes intern, *Hull York Medical School, UK* Nov 2012-Mar 2013

- ERK1/2 signalling in microRNA biogenesis in angiogenesis

Intern, *Democritus University of Thrace, Department of Molecular Biology, Greece* June 2010-July 2012

- Molecular analysis of the interaction between the ERK1/2 MAP kinase and the HIF-1 α
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TEACHING EXPERIENCE

December 2019-March 2020: Tutorial 'Molecular Biology', OPUS (Oxford Program for Undergraduate Students), Oxford, UK

November 2018: Lecture 'Tumour suppressors and cancer development' to postgraduate students, Department of Oncology, University of Oxford, UK.

October 2018: Lecture 'Oncogenes and Cell signalling' to postgraduate students, Department of Oncology, University of Oxford, UK.

February 2018: Tutorial 'Genetic therapies for neuromuscular diseases' to undergraduate students, University of Oxford, UK.

HONORS AND AWARDS

- **Early-career researcher award 2019** from University of Oxford, Department of Oncology.
- **4 Honorary Scholarships:** academic scholarships by the Cyprus State Scholarships Foundation (IKYK) for excellent performance and merit throughout the duration of undergraduate studies (2008-2012)

- **Award for the best academic performance** from University of Thrace (2011-2012)

GRANTS

- **OPPTY-ERC/0524/0002- Mech-NUC**
(€100,000) | 2026–2027 | Research and Innovation Foundation
Awarded as Coordinator. Secured funding to further develop and strengthen a high-quality ERC proposal that was positively evaluated but did not reach the funding threshold
- **EXCELLENCE/0524/0224 – NuMech**
(€200,000) | 2025–2027 | Research and Innovation Foundation
Successfully wrote the grant proposal, which was awarded under the name of Prof. Skourides, as regulations restricted multiple applications under my name. Played a lead role in conceptualizing and drafting the proposal.
- **SMALL SCALE INFRASTRUCTURES/1222/0186 – XenopusCy**
(€700,000) | 2023–2026 | Research and Innovation Foundation
Awarded as coordinator. Secured funding for the establishment of small-scale infrastructures to support the upgrade of the Xenopus facility at the University of Cyprus.
- **Marie Curie Individual Fellowship – MechanoATR**
(€146, 000) | 2021–2023 | Grant No. 101029626
Awarded as coordinator. Conducted cutting-edge research on nuclear mechanotransduction.
- **EMBO Short-Term Fellowship**
(€1000) | 2020 | Grant No. 8583
Supported a collaborative research project in the lab of Prof. Jan Brábek (Department of Cell Biology, Faculty of Science, Charles University).

PROFESSIONAL MEMBERSHIPS

- βίος-SBSCy
- FEBS, French Society for Biochemistry and Molecular Biology
- Cancer Centre, UK

PUBLICATIONS

Lead author manuscripts:

1. **Chatzifrangkeskou M**, Perdiou A, Kreouzou R, Zissimou GA, Flesariu DA, Koutentis P, Skourides P., Reversible Modulation of Motile Cilia by a Benzo[e][1,2,4]triazinone: A Potential Non-Hormonal Approach to Male Contraception (2025), *Cells*
2. **Chatzifrangkeskou M., Stanly T., Könnig D. Campos L., Eyres M., Hasson A., Perdiou A., Das S., Gardner S., Skourides P., Szele F., O'Neill E.**, “ATR-hippo drives force signaling to nuclear f-actin and links mechanotransduction to neurological disorders” (2025), *Science Advances*
3. **Chatzifrangkeskou M*, Kouis P., Skourides P.**, “JNK is a novel ciliogenesis regulator controlling actin driven processes” (2023), *Journal of Cell Biology*
This work is currently responsible for 1 out of a total of 1.2 fractional count points attributed to Cyprus in the Biological Sciences in the Nature Index.
4. **Chatzifrangkeskou M*, Le Dur C., Muchir A.**, “Modulation of cytoskeleton in cardiomyopathy caused by mutation in LMNA gene” (2023), *American Journal of Cell Physiology*
5. **Chatzifrangkeskou M***, Le Dur C.*, Macquart C.*, Magiera MM., Peccate C., Jouve C., Virtanen L., Heliö T., Aalto-Setälä K., Crasto S., Cadot B., Cardoso D., Marjault E., Mougénot N., Adesse D., Di Pascale E., Taimen P., Hulot JB., Janke C., Muchir A., “Actin-microtubule cytoskeletal crosstalk mediated by serum response factor promotes dilated cardiomyopathy caused by LMNA mutations” (2022), *Nature Communications*
6. **Chatzifrangkeskou M***, Skourides P.*, “The apical ciliary adhesion complex is established at the basal foot of motile cilia and depends on the microtubule network” (2022), *Scientific reports*
7. **Chatzifrangkeskou M.***, Vignier N.*, Pinton L., Wioland H., Marais T, Lemaitre M., Le Dur C., Peccate C., Cardoso D. Schmitt A., Naouar N., Macquart C., Beuvin M., Decostre V., Ferry A., Bonne G., Muchir A. “The non-muscle ADF/cofilin-1 controls sarcomeric actin filament integrity and force production in striated muscle laminopathies” (2021): *Cell Reports*
8. **Chatzifrangkeskou M.**, Kah D. Langer R.J., Goldmann H.W., Muchir A. “Mutated lamin A modulates stiffness” (2020) *Biochem Biophys Res Comm.*
9. **Chatzifrangkeskou M.** and O'Neill E. “When Hippo meets actin in the nucleus” (2019) *Molecular & Cellular Oncology*: 1- 3
10. **Chatzifrangkeskou M.**, Pefani D.E., Eyres M., Vendrell I., Fischer R., Pankova D., O'Neill E., “RASSF1A is required for the maintenance of nuclear actin levels” (2019): *The EMBO Journal* 38(16): e101168 (featured on cover page)
11. **Chatzifrangkeskou M.** and O'Neill E., “Nuclear/cytoplasmic fractionation to study Hippo effectors, The Hippo pathway- Methods and protocols” (2019); Hergovich A. (Ed), *Methods of Molecular Biology*; 1893:115-116
12. **Chatzifrangkeskou M.**, Yadin D., Tanguy Y., Marais T., Chardonnet S., Mougénot N., Schmitt A., Macquart C., Goldmann H.W., Knaus P., Bonne G., Worman J.H., Muchir A. “Cofilin-1 phosphorylation catalyzed by ERK1/2 alters cardiac actin dynamics in dilated cardiomyopathy caused by lamin A/C gene mutation” (2018): *Human*

13. **Chatzifrangkeskou M.** Le Dour C., Wu W., Morrow J.P., Joseph L.C, Sera F., Homma S., Vignier N., Mougnot N., Bonne G., Lipson K.E., Worman H.J, Muchir A., "ERK1/2 directly acts on CTGF/CCN2 expression to mediate myocardial fibrosis in cardiomyopathy caused by mutations in the lamin A/C gene" (2016): *Human Molecular Genetics* 25 (11): 2220-2233
14. **Chatzifrangkeskou M.**, Bonne G., and Muchir A. "Nuclear envelope and striated muscle diseases" *Current opinion in cell biology* 32 (2015): 1-6.
15. **Chatzifrangkeskou M.**, and Muchir A. "Extracellular signal-Regulated Kinases 1/2 and their role in cardiac diseases." *Science Proceedings* 2.1 (2014): 10-14.

Co-Authored Manuscripts:

1. Antoniadou I.*, Koule A. *, **Chatzifrangkeskou M.**, Konstantinou T., Skourides P., "Development of a Xenopus-based assay for high-throughput evaluation of mucociliary flow" (2023), *In revision*
2. Tsaridou S., Velimezi G., Willenbrock FR., **Chatzifrangkeskou M.**, Elsayed W., Panagoropoulos A., Karamitros D., Gorgoulis V., Lygerou Z., Roukos V., O'Neill E. and Pefani D., "RASSF1A facilitates 53BP1 in nucleolar ATM signal amplification during ribosomal DNA break repair" (2022), *EMBO Reports*
3. Angelini A., Gorey MA, Dumont F., Mougnot N., **Chatzifrangkeskou M.**, Muchir M., Li Z., Mericskay M., Decaux JF. "Cardioprotective effects of cardiac actin on oxidative stress in a dilated cardiomyopathy mouse model" (2020): *The FASEB Journal*.
4. Pankova D., Jiang Y. **Chatzifrangkeskou M.** Vendrell I., Buzzelli N.J., Ryan A., Brown C., O'Neill, "Hippo Pathway Deregulation Drives Tissue Stiffness and Cancer Stem-like Cells in Lung Adenocarcinoma" (2019), *EMBO Journal* 38(13):e100532
5. Vignier N., **Chatzifrangkeskou M.**, Rodriguez M.B., Mougnot M., Mericskay M., Wahbi K., Bonne G., Muchir A. "Rescue of biosynthesis of nicotinamide adenine dinucleotide protects the heart in cardiomyopathy caused by lamin A/C gene mutation" (2018) : *Human Molecular Genetics* 27(22): 3870-3880
6. Macquart C., Juttner R., Le Dour C., **Chatzifrangkeskou M.**, Schmitt A., Gotthardt M., Bonne G., Muchir A. "Microtubule cytoskeleton regulates connexin 43 localization and cardiac conduction in cardiomyopathy caused by mutation in A-type lamins gene" (2018): *Human Molecular Genetics*: ddy227
7. Warner M.J., Bridge K.S., Hewitson J.P., Hodgkinson M.R., Heyam A., Massa B.C., Haslam J.C., **Chatzifrangkeskou M.**, Evans G.J., Plevin M.J., Sharp T.V. "S6K2-mediated regulation of TRBP as a determinant of miRNA expression in human primary lymphatic endothelial cells" (2016) *Nucleic Acids Research*, gkw631.

MAJOR COLLABORATIONS

Paris Skourides: Cell and Developmental Biology lab, University of Cyprus.

Antoine Muchir: Laminopathies-LMNA cardiomyopathy, Sorbonne University (Research Center in Myology), France.

Gisele Bonne: Laminopathies, Sorbonne University (Research Center in Myology), France.

Stephane Vasilopoulos: Cytoskeleton/Myopathies, INSERM-Sorbonne University, France.

Eric O' Neill: Hippo pathway and mechanotransduction in cancer, Department of Oncology, University of Oxford, UK.

Wolfgang Goldmann: Cell biomechanics group, Friedrich-Alexander-Universität Erlangen-Nürnberg, Center for Medical Physics and Technology.

Roman Fischer: Mass Spectrometry, Target Discovery Institute, University of Oxford, UK.

Bruno Cadot: Cytoskeleton/Skeletal myopathies, Sorbonne University (Research Center in Myology), France.

Petra Knaus: Signal transduction group, Freie Universität Berlin, Germany

Eric Schirmer: Nuclear envelope biology in laminopathies, University of Edinburgh, UK.

Daniela Pankova: ECM and cancer research lab, Biocev, Charles University, Czech Republic

Jan Brábek: Molecular and Cellular Mechanisms of Invasiveness of Tumour Cells Group, Biocev, Czech Republic

CONFERENCE PRESENTATIONS

Oral presentations:

- **International ERN-LUNG PCD Meeting 2024**, Apr 10-12, Nicosia, Cyprus
- **Bioç-SBSCy National Conference 2022**, Oct 22-23, Nicosia, Cyprus
- **French Society of Myology 2016**, Nov 23-25, Bordeaux, France
- **Pathologies de l'enveloppe nucléaire 2016**, Nov 4th, Paris, France
- **International Society in Heart Research 2016**, April 18-21, Buenos Aires, Argentina
- **Muscle meeting 2016**, Mar 9th, Paris, France
- **KFO 192 (Klinische Forschergruppe) seminar 2013**, Dec 14 -16, Schwanenwerder, Germany

Poster presentations:

- **American Society in Cell Biology 2022**, December 3-7, Washington DC, USA
- **Myology 2017**, March 14-18 Lyon, France
- **American Society in Cell Biology 2015**, December 12-16 San Diego 2015, California, USA
- **5th Summer School of Myology 2014**, June 2-6, Berlin, Germany

ORGANIZATION OF SCIENTIFIC MEETINGS

Member of the committee for the weekly organization of Myograd Journal club between Paris-Berlin from January 2014- June 2016

LANGUAGES

Greek: Native language

English: IELTS, Certificate in English language teaching, TEFL/TESOL Teacher training

French: in French-speaking city for >2 years

German: Zertifikat Deutsch B2 awarded from Greek Republic, 2011, Zertifikat Deutsch B1 awarded from Goethe-Institut in 2011

