

## EDUCATION

UNIVERSITÉ NICE SOPHIA ANTIPOLIS NICE - FRANCE  
**Ph.D. LIFE AND HEALTH SCIENCES** November 16, 2020

Specialty Molecular and Cellular Interactions.

Thesis : Functioning of phosphatidylserine / phosphatidylinositol 4-phosphate exchanger at the interface between the endoplasmic reticulum and the plasma membrane.

UNIVERSITÉ NICE SOPHIA ANTIPOLIS NICE - FRANCE  
**M.Sc. LIFE AND HEALTH SCIENCES** 2017

Specialty Genetics, Immunity and Developmental Biology, with merits

UNIVERSITÉ NICE SOPHIA ANTIPOLIS NICE - FRANCE  
**B.Sc. LIFE AND HEALTH SCIENCES** 2015

Specialty Molecular Biology and Genetics, with honors

## RESEARCH EXPERIENCE

UNIVERSITY OF CALIFORNIA - SAN DIEGO LA JOLLA, CA, USA  
*Department of Chemistry and Biochemistry* Starting on June, 2021

**POSTDOCTORAL RESEARCH FELLOW** - SUPERVISOR: DR. ITAY BUDIN

Laboratory of Synthetic Membrane Biology

Evolution of lipid transport in eukaryotic cells, project funded by the Gordon & Betty Moore Foundation

CENTRE DE RECHERCHE EN BIOLOGIE CELLULAIRE (CRBM) MONTPELLIER - FRANCE  
*Université de Montpellier, CNRS* March - May, 2021

**INVITED VISITING RESEARCHER** - SUPERVISOR: DR. ALENKA COPIC

Laboratory of Cell Biology of Lipid Storage and Transfer

In silico analysis of long non-globular proteins implied in the lipid distribution management of eukaryotic cells

INSTITUT DE PHARMACOLOGIE MOLÉCULAIRE ET CELLULAIRE VALBONNE - FRANCE  
*Université Côte d'Azur, CNRS* 2017 - 2020

**Ph.D. STUDENT** - SUPERVISOR: DR. GUILLAUME DRIN

Mode of action of the phosphatidylserine / phosphatidylinositol 4-phosphate exchangers in eukaryotic cells.

INSTITUT SOPHIA AGROBIOTECH BIOT - FRANCE  
*Université Côte d'Azur, INRAE, CNRS* 2017

**POSTGRADUATE INTERN** - SUPERVISOR: DR. ALEXANDRE BOSCARI

Biochemical characterization of nitrate reductase isoforms in *Medicago truncatula*

INSTITUT DE PHARMACOLOGIE MOLÉCULAIRE ET CELLULAIRE VALBONNE - FRANCE  
*Université Côte d'Azur, CNRS* 2016

**POSTGRADUATE INTERN** - SUPERVISOR: DR. GUILLAUME DRIN

Functional and structural dissection of Osh6p: a lipid exchanger in *Saccharomyces cerevisiae*

INSTITUT SOPHIA AGROBIOTECH BIOT - FRANCE

**UNDERGRADUATE VOLUNTEER** - SUPERVISOR: DR. ALEXANDRE BOSCARI 2015

Genetic response to nitric oxide and hypoxia in *Medicago truncatula* - *Sinorhizobium meliloti* symbiosis

LABORATOIRE SYMBIOSE MARINE, UNS, UPMC, CNRS NICE - FRANCE

**UNDERGRADUATE VOLUNTEER** - SUPERVISOR: PR. PAOLA FURLA 2014

Biochemical effect of ocean acidification on *Anemonia viridis* - *Symbiodinium sp.* Symbiosis

## TEACHING EXPERIENCE

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UNIVERSITÉ CÔTE D'AZUR

NICE - France

**TEACHING FELLOW** AT THE LIFE AND HEALTH SCIENCE DEPARTEMENT

2017 - 2020

Chairperson: Pr. René GARCIA Advisors: Dr. Isabelle GARCIA, Dr. Anne-Violette LAVOIR

I dispensed practical courses for undergraduates in biochemistry, biotechnology, plant physiology and mycology

I attended several training courses in learning theory

ACADOMIA

CANNES - FRANCE

**HIGH SCHOOL TUTORING** (PREPARE STUDENTS FOR BACCALAURÉAT)

2016 - 2017

Physics and Chemistry, Biology and Geology, Mathematics

## PUBLICATIONS

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IKHLEF, S., LIPP, NF., MAGDELEINE, M., DRIN, G. (2021).

Fluorescence-Based Measurements of Phosphatidylserine/Phosphatidylinositol 4-Phosphate Exchange Between Membranes. Journal of Visualized Experiments, vol 160, e62177. <https://dx.doi.org/10.3791/62177>

LIPP, NF., IKHLEF, S., MILANINI, J., DRIN, G. (2020).

Lipid exchangers: Cellular functions and mechanistic links with phosphoinositide metabolism. Frontiers in Cell and Developmental Biology vol 8, p663. <https://doi.org/10.3389/fcell.2020.00663>

D'AMBROSIO, J.M., ALBANÈSE V., LIPP, NF., FLEURIOT, L., DEBAYLE, D., DRIN, G., ČOPIČ, A. (2020).

Osh6 requires Ist2 for localization to the ER-PM contacts and efficient phosphatidylserine transport in budding yeast. Journal of Cell Science vol. 133 no.11. <https://doi.org/10.1242/jcs.243733>

LIPP, NF., GAUTIER, R., MAGDELEINE, M., RENARD, M., ALBANÈSE V., ČOPIČ, A., DRIN, G. (2019).

An electrostatic switching mechanism to control the lipid transfer activity of Osh6p. Nature communications vol 10, p 3926. <https://doi.org/10.1038/s41467-019-11780-y>

LIPP, NF., DRIN, G. (2019).

In Vitro Strategy to Measure Sterol/Phosphatidylinositol-4-Phosphate Exchange Between Membranes. In: Drin G. (eds) Intracellular Lipid Transport. Methods in Molecular Biology, vol 1949. Humana Press, New York, NY. [https://doi.org/10.1007/978-1-4939-9136-5\\_19](https://doi.org/10.1007/978-1-4939-9136-5_19)

## GRANTS

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Ph.D. fellowship from the French Ministry of Higher Education, Research and Innovation (2017 - 2020)

Travelling grant from the Institut de Pharmacologie Moléculaire et Cellulaire - 2019

## CONFERENCE PRESENTATION

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LIPP, NF., IKHLEF, S., MAGDELEINE, M., ČOPIČ, A., DRIN, G.,

Acyl chain selectivity of Phosphatidylserine/ Phosphatidylinositol-4-phosphate exchanger (2019).

**Poster** to be delivered at the Gordon Research Conference, Molecular and Cellular Biology of Lipids Waterville Valley, NH, USA

LIPP, NF., GAUTIER, R., MAGDELEINE, M., RENARD, M., ALBANÈSE V., ČOPIČ, A., DRIN, G

An electrostatic switching mechanism to control the activity of PS/PI<sub>4</sub>P exchanger (2019).

**Poster** to be delivered at the Joint Meeting Club ExoEndo & GEM and the Italian Societies of Biophysics, Biochemistry and Chemistry. Mandelieu, France

LIPP, NF., GAUTIER, R., MAGDELEINE, M., RENARD, M., ALBANÈSE V., ČOPIČ, A., DRIN, G

An electrostatic switch controls the lipid exchange mechanism in yeast Osh6p — a phosphatidylserine story. (2018).

**Poster** to be delivered at the Summer School: "Computational principles to organize complexity: success stories in quantitative biology" Nice, France

## MEETING ATTENDANCE

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**Gordon Research Conference. July 28 - August 2, 2019, Waterville Valley, NH, USA**

***Molecular and Cellular Biology of Lipid: Spatiotemporal Regulation of the Lipidome.***

Chair: Todd R. GRAHAM (Vanderbilt University, TX, USA) Vice Chair: Daniel M. RABEN. (The Johns Hopkins University, Baltimore, MD, USA).

Funded by the travelling fellowship from the IPMC.

**Gordon Research Seminar. July 27-28, 2019, Waterville Valley, NH, USA**

***Lipid remodeling: From Molecular Mechanisms to Biological Functions.***

Organizers: M. ALVES-BEZERRA (Baylor College of Medicine, Houston, TX, USA) & Mike RENNE (Utrecht University, Netherland)

Personal subscription and gracefully refunded later by the committee

**Joint Meeting Club ExoEndo & GEM and the Italian Societies of Biophysics. April 3-6, 2019, Mandelieu, France**

***Biochemistry and Chemistry: Membrane Biophysics of Exo-Endocytosis. From Model Systems to Cells.***

Organizers: L. JOHANNES, S. MISEREY-LENKEI, C. DELEVOYE (Institut Curie, Paris, France), I. MUS-VETEAU, G. DRIN (UCA, IPMC, Sophia Antipolis, France), D. MURIAUX (IRIM, Montpellier, France), V. RONDELLI (University of Milan, Italy), L. STELLA (University of Rome Tor Vergata, Italy), V. De Pinto (University of Catania, Italy), G. D'ERRICO (University of Naples Federico II, Italy)

**International Summer School: Computational principles to organize complexity: success stories in quantitative biology. June 25-29, 2018, Nice, France**

Organizers: A. SEMINARA & M. NERI (CNRS, IPHYNI, UCA Nice), C. RYCROFT & T. FAI (Harvard University), <http://sites.unice.fr/site/aseminara/qbio/index.html>

## SCIENCE DISSEMINATION

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Annual participation to "Fête de la Science" (French Science Festival)

- Scientific workshop for kids
- Poster exhibition: "« Science contrefaites ? » - N'attrapons pas tous l'infox"

I advised the general public about fake news, fact checking, scientific methods and publication processes.

Wikipedia contribution: Regular addition of peer-reviewed references and enrichment of contents.

Social media: scientific trends audit, fact-checking, sharing serious contents.

## MAIN LAB SKILLS

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**Molecular Biology:** Site-directed mutagenesis, molecular cloning, PCR, protein induction and production in E. coli strains, gel electrophoresis analyses (DNA or denatured protein)

**Biochemistry:** Globular protein production, extraction and purification, GST-tag and His-tag affinity separation followed by proteolytic cleavage or competitive elution, FPLC on ÄKTA system (Cytiva), buffer exchange, dialysis, click-chemistry adapted to fluorescent protein labeling, protein-protein interaction assay, liposomes preparation, protein - lipid interaction methods, in vitro lipid transfer assays, kinetic analyses, fluorescence spectroscopy.

**Core facilities collaboration:** Sanger analyses, mass spectrometry, microscopy (photonic or electronic).

## BIOINFORMATICS

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**Data mining:** Strong ability to explore databases (NCBI, UNIPROT, PFAM, INTERPRO, EXPASY, PDB, EGGNOG, GENE ONTOLOGY, GWAS, PTM databases and interaction networks, among many others)

**Sequence analyses:** BLAST, Multiple Sequence Alignment (MAFFT, Clustal, Muscle, T-Coffee)

**Phylogenetics:** Distance matrix method, Neighbor Joining, Maximum Likelihood, Tree construction, Taxonomy

**Structural analyses:** Structural alignment, Electrostatic analyses (APBS), Structure prediction, Pymol expertise

**Statistical analyses:** R (basic level), Prism – Graphpad

**Image analyses:** ImageJ

**Graphic design:** Canvas Draw, Adobe Illustrator and Photoshop

## LANGUAGES

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**French** (Native), **English** (C1 – Advanced), **Italian** (B1 – Intermediate)

## HOBBIES

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Museum, zoology and botany, astronomy, biking and hiking, snorkeling and diving, Sci-Fi cinematography, emerging technologies, videogames, board games and chess, dessert cooking.

## REFERENCES

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