Marco Dalla Vecchia

📞 +32 483 562 664
✉ marcodv93@gmail.com
🏛 KUL website
🖥 biologist's adventures
○ marcodallavecchia
in marco-dalla-vecchia

EDUCATION

2015 – 2017	**Master of Biology** MOLECULAR AND PHYSIOLOGICAL BIOLOGY KU Leuven *Leuven, Belgium*
2012 – 2015	**Bachelor of Molecular Biology** Università degli studi di Padova *Padova, Italy*
2007 – 2012	**Diploma Liceo Scientifico Tecnologico** Istituto Leonardo Da Vinci *Arzignano, Italy*

WORK EXPERIENCE

PART-TIME

GoStudent.org
Tutor

Private tutor online at high-school, university and adult level. Subjects taught: english, informatics, statistics and biology

JAN 2018 – CURRENT

Lab for Nanobiology, KUL
Ph.D. student

Study protein kinases regulation and interaction in cell death, using correlation microscopy. Currently developing new tools for the study and detection of intracellular signalling, in form of FRET biosensors with more desirable properties. Main focus on fluorescence microscopy, combining many different techniques, from widefield FRET imaging to super-resolution optical fluctuation imaging (SOFI).

SEPT 2016 – AUG 2017

Lab for Nanobiology, KUL
Master student

Characterization of different FRET PKA biosensors, in their cellular targeting and in their fluorescent proteins composition. Development of an analysis pipeline to evaluate the efficiency of these biosensors and evaluation of the spatio-temporal activity of PKA activation using FRET imaging.

JUN – SEP 2016

Luc De Meester Laboratory, KUL
Master Internship

Assistance with the culturing, genome extraction and sequencing of many different bacteria strains, sampled from ponds around Belgium, with the objective of studying their metacommunity evolution.

JAN – MAY 2016

Koen Geuten Laboratory, KUL
Student project

Optimizaton of protocol for obtaining plant protoplasts from WT and

AWARDS

2019-2021	**Winner Ph.D. project design contest** *Lab for Nanobiology, KUL*
JAN 2018	**Ph.D. Fellowship strategic basic research** *FWO-SB, Belgium*
2017	**Magna Cum Laude** *Master of Biology*

PUBLICATIONS

M. Dalla Vecchia, A. Conte-Daban, B. Cappe, W. Vandenberg, P. Vandenabeele, F. B. Riquet, P. Dedecker. Spectrally tunable FRET-based biosensors using organic dye grafting *ACS Sensors, in revision* (2022)

A. Pancho, M. Mitsogiannis, T. Aerts, M. Dalla Vecchia, L. K. Ebert, L. Geenen, L. Noterdaeme, R. Vanlaer, A. Stulens, P. Hulpiau, K. Staes, F. Van Roy, P. Dedecker, B. Schermer and E. Seuntjens. Modifying PCDH19 levels affects cortical interneuron migration *Frontiers, in submission* (2022)

M. Dalla Vecchia, W. Vandenberg, P. Dedecker. Detecting FRET activity at super-resolution using FRET-SOFI *in preparation* (2022)

OPEN-SOURCE PROJECTS

SCI-COMM	Version control workshop Discussion on p-value Discussion on reproducibility Personal Blog
SCIENTIFIC	Guide to quantitative FRET Segmentation and tracking pipeline

LANGUAGES

NATIVE	Italian
C2	English
FLUENT	Spanish (self-taught)
B1	Dutch

INTERESTS

MICROSCOPY	Live-cell fluorescence microscopy image analysis & statistics advanced imaging development
BIOLOGY	Cell signalling regulation

mutant *A. thaliana*, with the ultimate goal of detecting new mRNA molecules.

Fondazione Città della Speranza
Neuroblastoma Foundation
Bachelor Internship

Assistance in several projects revolving around detection of rare mutations in pedriatic patients neuroblastoma. Contribution to an *in silico* bioinformatics project to identify new mutations in sequenced patient samples.

MICROSCOPY EXPERIENCE

TECHNIQUES	FRET imaging, smFRET, TIRF, SOFI, FCS, RICS, FLIM, anisotropy
MICROSCOPES USED	Widefield (Olympus, Nikon) Confocal (Leica, Zeiss) AiryScan (Zeiss) Custom built setups
RESPONSIBILE FOR	Widefield microscope with custom components
EXPERIENCE WITH OPTICS	Assembled widefield microscope for live-cells imaging Optical components alignment Polarizers installation

DATA ANALYSIS EXPERIENCE

TECHNIQUE-SPECIFIC	FCS and RICS curve fitting N&B analysis Burst and Peak identification Photoswitching & blinking characterization IMD FRET visualization
GENERAL	Molecule and cell tracking 2D and 3D image segmentation Multiple image and movie types handling GUI software development
PYTHON FOR IMAGE ANALYSIS	scikit-learn, napari, cellpose, opencv2, pandas numpy, matplotlib, seaborn, cellpose, stardist Google colab, jupyter notebook
OTHERS FOR IMAGE ANALYSIS	Igor Pro: Localizer, Sensor, coding ilastik Cellprofiler ImageJ/FiJi SymphoTime SimFCS (Gratton) PAM and MIA (Matlab)

	fundamental cell biology gene expression and regulation
SCIENCE & TEACHING	Science communication reproducibility and replicability open-source and open-science workshop organization class teaching
PROGRAMMING	Python, IgorPro, ImageJ, R, Git, some HTML/CSS

HOBBIES

Scientific

Science communication through online media (YouTube, Social Media and blogging).
Popular science books reading.
Microscope observation and study of self-gathered samples.
Independent class teaching and workshop organization.

Leisure

Role-play games, both in person and online.
Social media experienced user and manager.
Exotic and home cooking.
Hiking and traveling.