

# Francesco Guidarelli Mattioli

*Ph.D. student in Physics*

## Research

- 2022-now **Winner of Ph.D. position**, *Department of Physics, University of Rome La Sapienza.*  
**Competitive selection - yes**  
**Research project**, three years.  
Project has to be defined on Multiscale Protein Dynamics Simulations with Neural Network Potentials.
- 2021-now **Scientific Collaboration**, *SISSA.*  
**Group of Alessandra Magistrato**  
**Research project.**  
Exploring ATP-hydrolysis in Brr2 protein via QM/MM simulations. Full-atoms molecular dynamics of Brr2Jab1 protein complex.
- 2021 **Research grant type B**, *Department of Physics, University of Rome La Sapienza.*  
**Competitive selection - yes**  
**Research project**, one year.  
Represent Effective interactions between proteins via Neural Network potential energy surface (NNPES)

## Education

- May 2022 **Selected for 5 days CECAM School**, *Hybrid QMMM Approaches to Biochemistry and Beyond, CECAM EPFL, Lausanne.*  
**Competitive selection - yes**
- 2018-2020 **Master's degree**, *Physics, University of Rome La Sapienza.*  
**Final grade - 110/110 with honors, Average exams score - 29,76/30, Number of honors - six**  
[Research Experience as graduate student](#)  
**Physics Laboratory**, *Experimental research*, one month, IIT@Sapienza laboratory.  
Measurement and Analysis of CARS peaks on Alzheimer nervous tissue  
**Thesis project**, *Computational research*, eight months, SISSA, prof.ssa Alessandra Magistrato.  
Molecular Dynamics Simulation and Analysis of a large protein: Molecular mechanism of Brr2 helicase investigated via molecular dynamics simulations
- 2013-2016 **Bachelor's degree**, *Biomedical engineering, University of Rome La Sapienza.*  
**Final grade - 110/110 with honors, Average exams score - 27,64/30, Number of honors - five**  
[Research Experience as undergraduate student](#)

**Thesis project**, *Experimental research*, six months, SBAI Acoustics laboratory, La Sapienza, Rome.

Deriving hydrodynamic properties of biological-like liquids by the use of quartz crystal microbalance (QCM).

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## Physics department scholarship

February  
2022 - June  
2022

**Physics Exercise Lectures for Aerospace Engineering**, *Department of Engineering, University of Rome La Sapienza.*

**Competitive selection - yes**

2019-2020 **Physics Exercise Lectures for Biological science faculty**, *Department of Physics, University of Rome La Sapienza.*

**Competitive selection - yes**

2018-2019 **Mechanics and Electromagnetism Laboratory assistant**, *Department of Physics, University of Rome La Sapienza.*

**Competitive selection - yes**

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## Awards

2016-2018 **Second Bachelor's degree**, *Physics, University of Rome La Sapienza.*

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## Software and Programming Skills

Programming Languages: C, FORTRAN, Python, MATLAB, Bash

Deep Learning Libraries: TensorFlow (C, C++ and Python), PyTorch (python)

Molecular Dynamics software: GROMACS, VMD, Amber Tools, LAMMPS

Parallel Computing: basics of CUDA, basics of openMP

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## Languages

Italian: Mother Tongue  
English: B2 Level

*Speaking, Listening, Writing, Reading*

## Beyond Academy

Beyond my scientific interests, I have loved doing sport. When I was little, I begun with swimming and next I played for many years in a waterpolo team at regional level. In 2013 I approached alpinism disciplines and I was so deeply involved and fascinated by this sport that from that moment I am regularly playing indoor and outdoor climbing as well as hiking. Dolomiti are my favorite Mountains and you could find there every summer!

## Contact

04/08/2022

F.to Francesco Guidarelli Mattioli