

# 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).

## Physics department scholarship

- February 2022 - June 2022 **Physics Exercise Lectures for Aerospace Engineering**, *Department of Engineering, University of Rome La Sapienza.*  
2022 **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**

## Awards

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

## 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

## 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

Email [francesco.guidarellimattioli@uniroma1.it](mailto:francesco.guidarellimattioli@uniroma1.it)