



▶ **Open day**
Dottorato di Ricerca



UNIVERSITÀ
DEGLI STUDI
FIRENZE

► Open day

Dottorato di Ricerca



Corso di Dottorato:

International Doctorate in Structural Biology



Pagina Web Dottorato di Ricerca: <https://www.phdstructuralbiology.unifi.it>



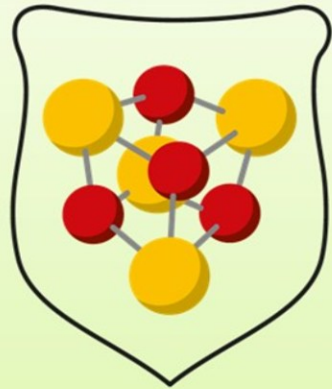
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International Doctorate in Structural Biology

Magnetic Resonance Center (CERM)
University of Florence

in collaboration with the University of
Frankfurt and the Utrecht University



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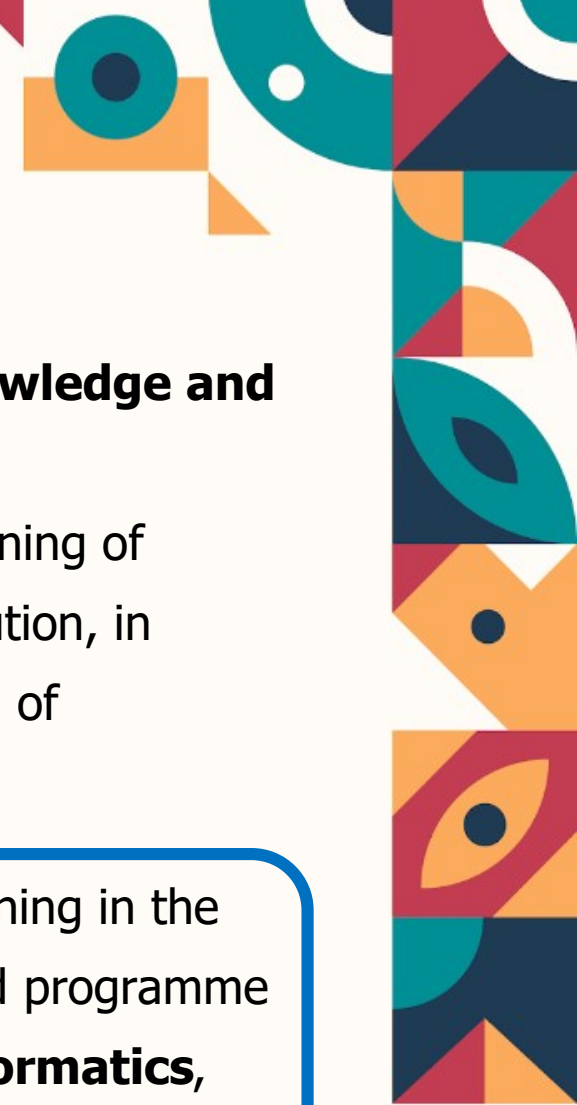
- ✓ Istituito nell'AA 2000/2001 con un accordo tra le Università di **Firenze**, **Utrecht** e **Francoforte**
- ✓ La **sede operativa** è il Centro Risonanze Magnetiche (**CERM**)
- ✓ La **sede amministrativa** è il Dipartimento di Chimica "Ugo Schiff" (**DICUS**)
- ✓ Ha formato oltre 100 dottori di ricerca
- ✓ Attualmente in Corso 25 studenti



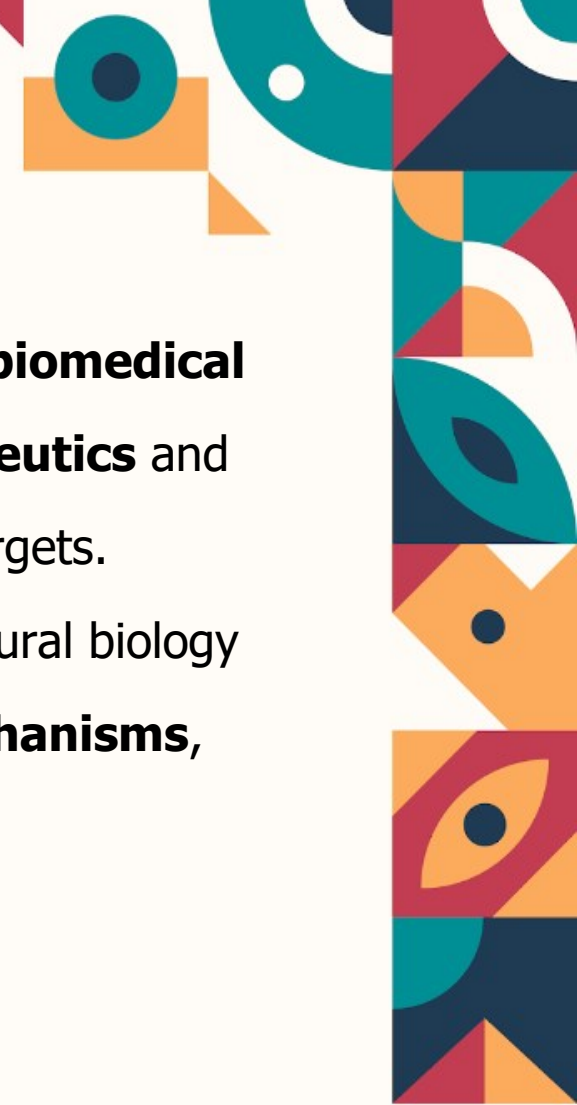
Mission

The doctorate course aims at the formation of PhDs who are at the **forefront of knowledge and education** in the field of modern investigation methodologies in **structural biology, biotechnology and systems biology**. It provides a wealth of knowledge to the training of experts in the field of structural chemistry applied to biological macromolecules in solution, in fibrils, in membranes or in cell, and in the field of molecular biology for the expression of isotopically enriched recombinant proteins

The **goal** of the course is to provide a high-quality and multi-disciplinary research training in the field of Structural Biology. To achieve this, the course includes a very broad integrated programme that encompasses expertise in **chemistry, biology, biophysics, medicine and informatics**, able to address the actual challenges in the field ranging from fundamental issues to applications

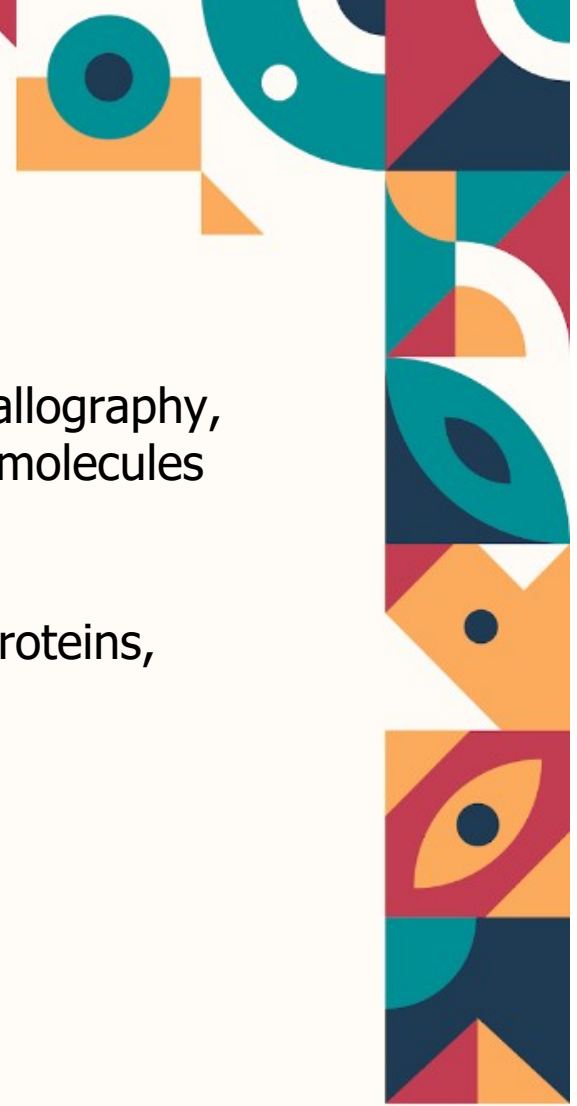


Structural Biology is **key to innovation in biotechnology, food technology and biomedical applications**. It plays a major role in understanding the **mode of action of therapeutics** and facilitated the design of innovative drugs and biologics acting on specific molecular targets. Starting with determining **three-dimensional structures** of macromolecules, structural biology has evolved to the study of **macromolecule dynamics** and **macromolecular mechanisms**, and putting them in cellular contexts. It provides an **atomic-level visualization of biomolecules and of their mode of function**



Research topics

- ✓ Nuclear magnetic resonance (in solution, in-cell, and in the solid state), X-ray crystallography, and cryo-EM for structural studies of the function and dynamics of biological macromolecules
- ✓ Protein–protein, protein–RNA/DNA, and protein–ligand interactions
- ✓ Molecular and cellular biology techniques for the preparation and manipulation of proteins, DNA, and bacterial consortia
- ✓ Biomaterials characterization
- ✓ Development of new drugs
- ✓ Molecular dynamics
- ✓ Bioinformatics
- ✓ Metabolomics



Training Objectives

- ✓ acquire a solid common scientific background in the Structural Biology area
- ✓ receive an advanced and focused infrastructure-based training-through-research in their research methodology
- ✓ participate and promote their research in international conferences
- ✓ communicate the results of their work in international publications
- ✓ broaden their horizons through a large variety of courses and seminars
- ✓ stimulate interdisciplinary collaborations
- ✓ stimulate mobility and transnational collaborations
- ✓ acquire non-science training for enhanced career perspectives
- ✓ develop themselves into skilled, open-minded, independent young researchers



Centro Risonanze Magnetiche



- ✓ Istituito nel **1999**
- ✓ Conta **25** unità di personale tra docenti, ricercatori e tecnici
- ✓ Centro di **eccellenza** per la spettroscopia **NMR**
- ✓ Con il CIRMMMP costituisce una **infrastruttura di ricerca** di rilevanza mondiale



Attività formative

Attività di Ricerca

Ogni studente deve svolgere il proprio progetto di ricerca, discusso con il proprio supervisore

Output → materiale per 3 pubblicazioni

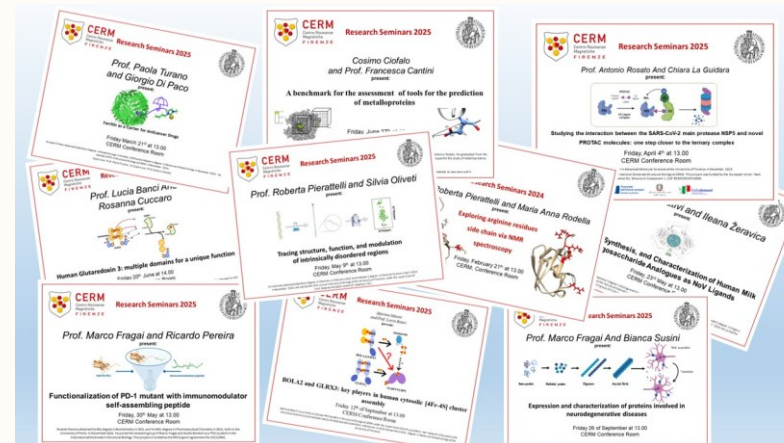
Tirocini

Ogni student svolge un periodo di ricerca di almeno 3 mesi in un laboratorio estero

Research Seminar Series

Seminari Dipartimentali

Conferenze e scuole tematiche



Attività formative per il 2026/2027

Subject-specific courses

Basics of molecular biology – addressed to first year students (3 CFU)

Basics of NMR – addressed to first year students (3 CFU)

Bioinformatics – 2 CFU

Metabolomics – 2 CFU

Drug Discovery – 2 CFU

In-cell NMR – 2 CFU

Cryo-EM – 2 CFU

Advanced NMR – 2 CFU

Soft skills (topics)

Projects and grants writing

Language skills; Mathematical skills and skills in science and technology; Digital skills; Personal, social and learning skills; Civic Skills; Entrepreneurial skills; Skills in cultural awareness and expression



Attività formative per il 2025/2026

Subject-specific courses

Basics of molecular biology – addressed to first year students (3 CFU)

Basics of NMR – addressed to first year students (3 CFU)

X-ray crystallography – 2 CFU

Advanced Molecular Biology – 2 CFU

Structure determination by NMR – 2 CFU

NMR, EPR and DNP – 2 CFU

Computational tools in structural biology – 2 CFU

Soft skills (topics)

Language skills; Mathematical skills and skills in science and technology; Digital skills; Personal, social and learning skills; Civic Skills; Entrepreneurial skills; Skills in cultural awareness and expression



Posti disponibili per il prossimo bando

Al momento sono disponibili 3 borse



Sbocchi occupazionali del Corso

- ✓ Carriera accademica nei migliori laboratori del mondo
- ✓ Attività di ricerca e management in laboratori di enti pubblici e privati
- ✓ Attività R&S in industrie che operano nel settore biotecnologico e farmaceutico

Impiego dei Dottori negli ultimi 3 cicli conclusi

XXXVII Cycle

- 1 postdoc at University of Leichester (UK)
- 1 postdoc at ETH Zurich (CH)
- 1 postdoc at Max-Planck, Mülheim an der Ruhr (DE)
- 2 postdoc at University of Florence
- 1 technician at University of Florence
- 1 employed at Menarini Ricerche SPA
- 1 employed at Merck Group
- 1 employed at Teva Pharmaceuticals

XXXVI Cycle

- 1 Postdoc at University of Florence
- 1 Postdoc at University of Padova
- 1 Postdoc at ENS, Paris (FR)
- 1 Postdoc at Cleveland Clinic, Ohio (USA)

XXXV Cycle

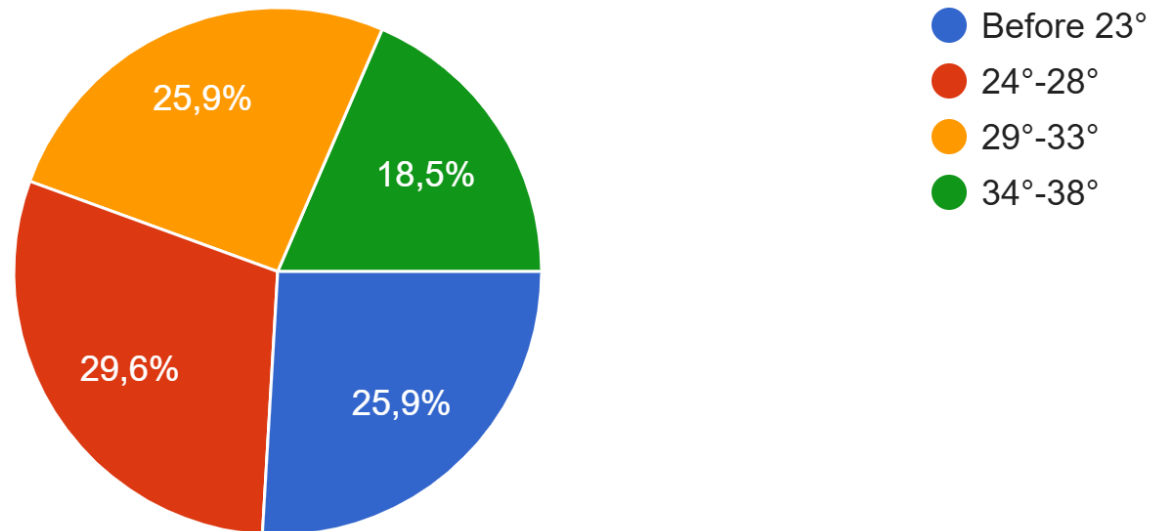
- 1 Research Fellow at University of Bologna
- 2 Postdoc at University of Florence
- 1 Research assistant, University of Dundee (UK)
- 1 Researcher at NIH, Delaware (USA)



Sbocchi occupazionali del Corso: un sondaggio

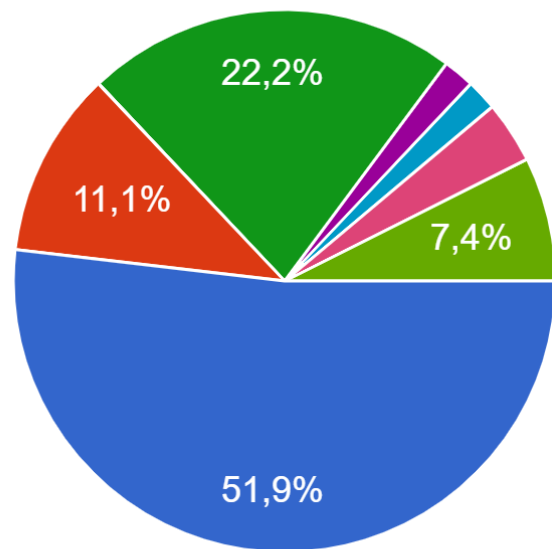
- ✓ We collected email address by various sources (personal contacts, linkedin, other social)
- ✓ The questionnaire was administered to 91 PhD holders
- ✓ 54 responded (59%)

Which PhD cycle have you attended?



Sbocchi occupazionali del Corso: un sondaggio

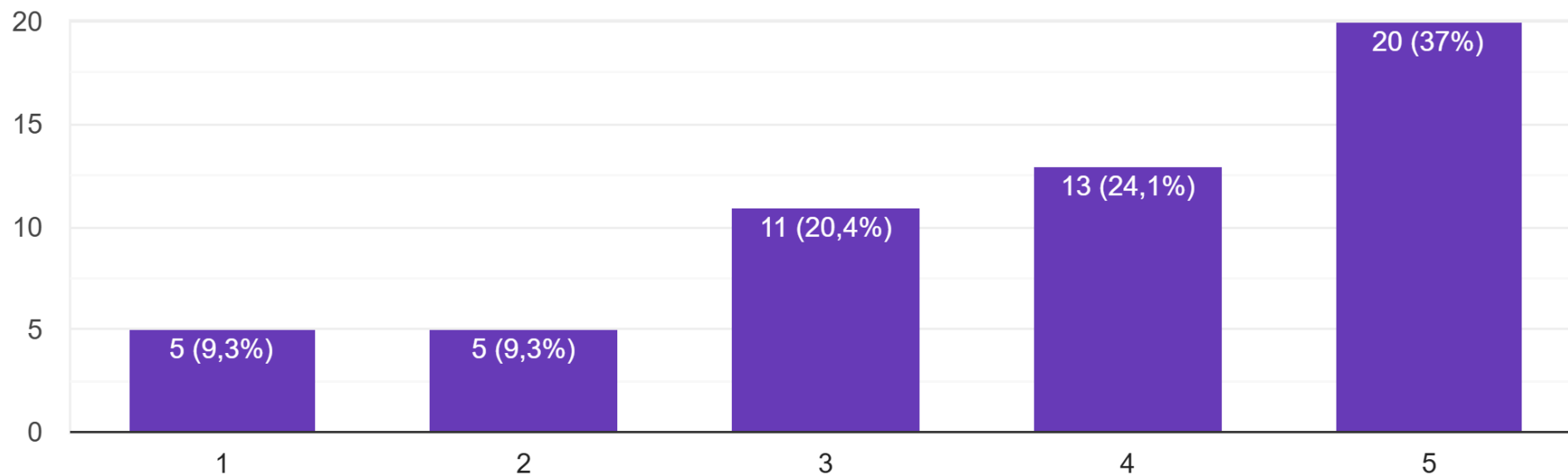
In which sector do you currently work?



- University or Public Research Institution
- Private Research Company or Organization
- Private Laboratory
- Pharmaceutical or Biotechnology Company
- Manufacturing Company
- Government or Public Agency
- Non-profit Organization or Research F...
- Other

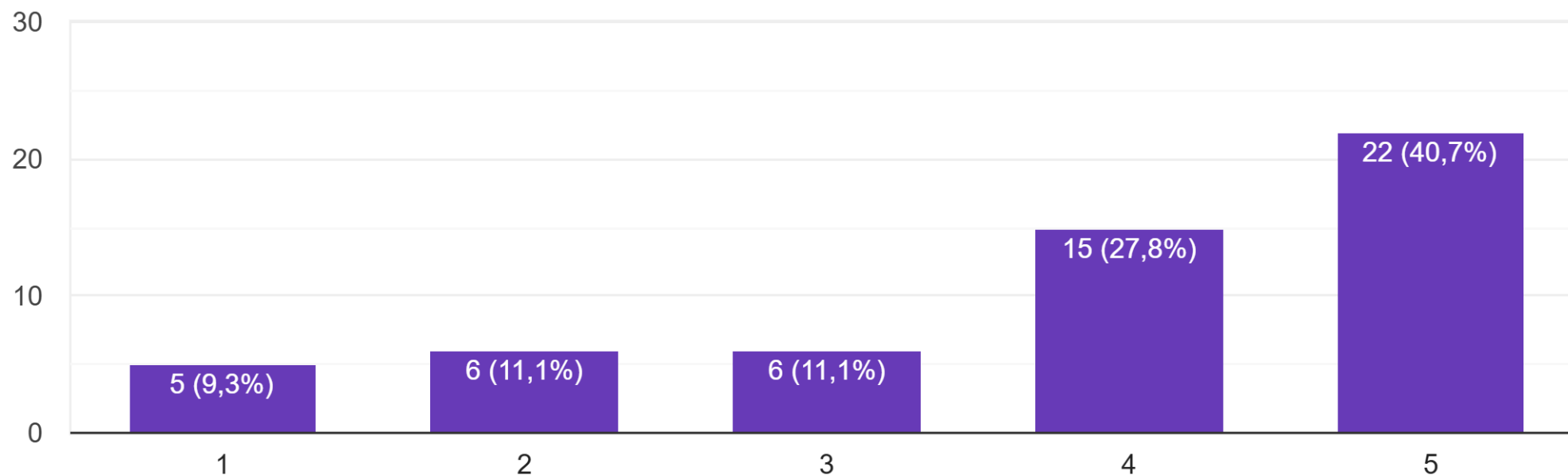
Sbocchi occupazionali del Corso: un sondaggio

To what extent is the PhD you attended aligned with your current position?



Sbocchi occupazionali del Corso: un sondaggio

To what extent did the PhD facilitate your transition into the following position?



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www.phdstructuralbiology.unifi.it

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UNIVERSITÀ DEGLI STUDI FIRENZE Dipartimento di Chimica "Ugo Schiff" Eccellenza 2023-2027 cerca nel sito ITA | ENG

International Doctorate in Structural Biology

International Doctorate in Structural Biology

In collaboration with Biozentrum at the University of Frankfurt and the Bijvoet Center at the Utrecht University

The International Doctorate in Structural Biology is an international doctorate in collaboration with the Universities of Frankfurt and Utrecht. The doctorate course aims at the formation of PhDs who are at

Home Doctorate

General Information

PhD students

Teaching activities



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