



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

# Department of Pharmacy and Biotechnology

Barbara Monti



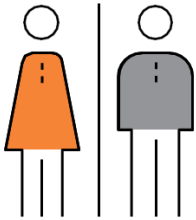
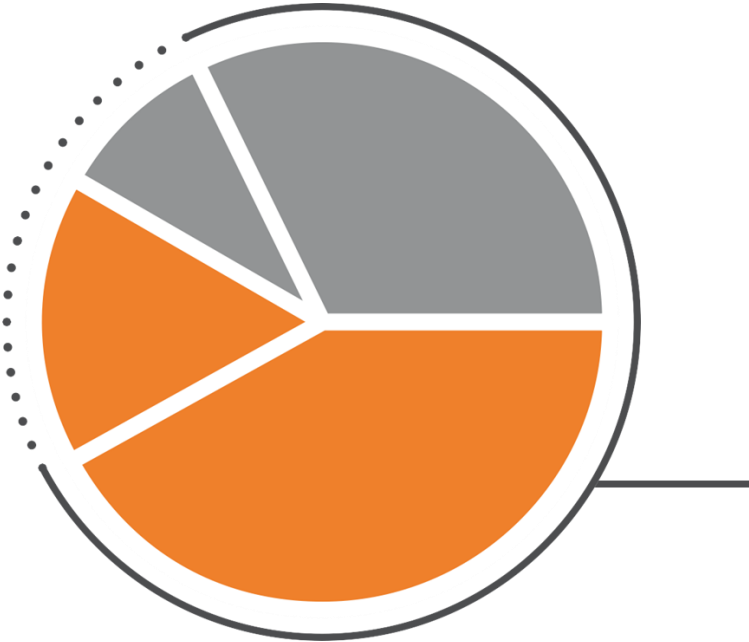
# Brief background

- The Department of Pharmacy and Biotechnology - FaBiT was **born on October 16<sup>th</sup>, 2012**, following the reform of Italian University introduced by law 240 (October 12<sup>th</sup>, 2010).
- It was established on the initiative of some Professors and Researchers of the University, **based on the need to bring together teachers and researchers with common research and teaching interests in the chemical-pharmaceutical-technological, biomedical and molecular biology fields** in a single Department.
- The **mission of the Department**, as declared in the founding document, is divided into two sectors:
  - ✓ *"the study of biological systems and molecular mechanisms underlying physiological and pathological processes in prokaryotes and eukaryotes and the development of innovative biotechnologies"*
  - ✓ *"the study and development of drugs and health products in their biochemical, physiological, pharmacotoxicological, chemical and technological components".*
- Given its composition and following the project that led to its birth, FaBiT stands out for its **strong multidisciplinary**, also highlighted by the variety of skills present in the Department.



# Who are we?

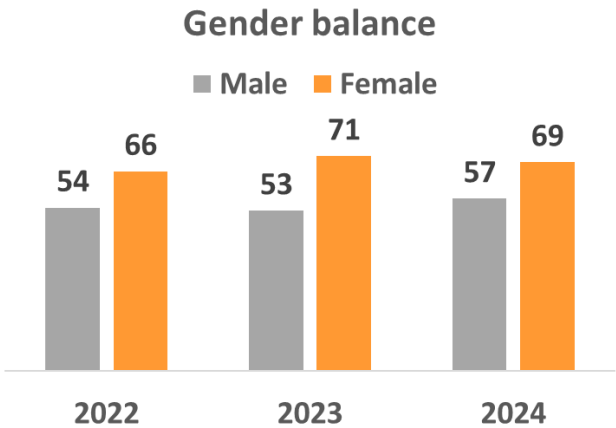
53  
TECHNICIANS



126  
LECTURERS  
AND RESEARCHERS

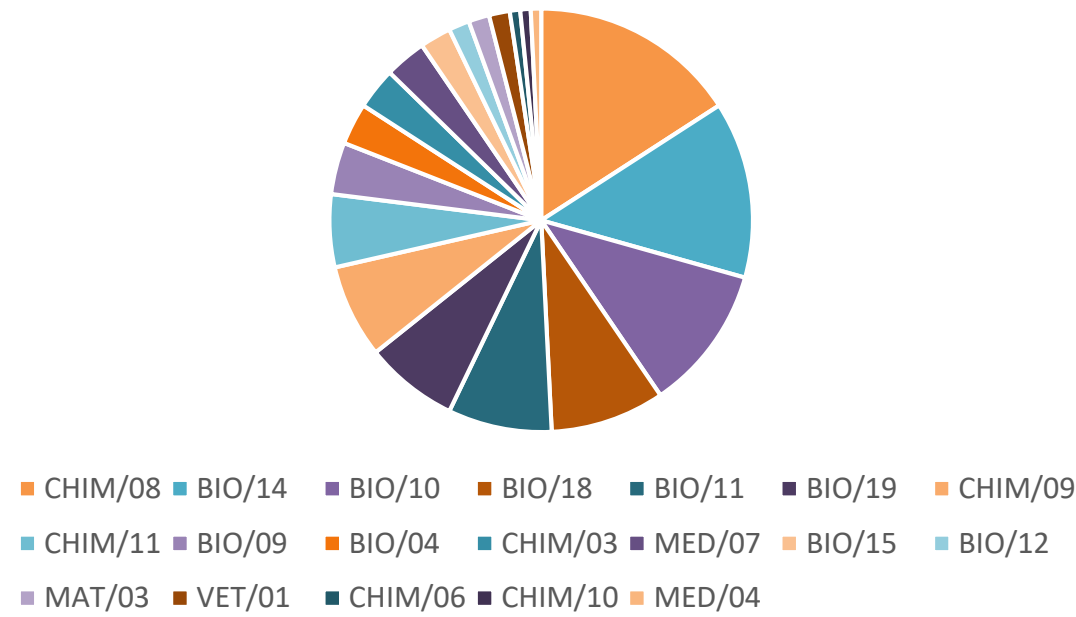
40  
NEW RECRUITS

59  
CAREER  
PROGRESSIONS



# Who are we?

SSD docenti



Position	Professor/Researchers		
	2022	2023	2024
Total number	120	124	126
Full professor	23	23	24
Associate professor	59	57	60
Assistant professor	18	18	14
Senior researcher	7	11	7
Junior researcher	13	15	13
Tenure track researcher			8

Position	Newly recruited		
	2022	2023	2024
Total number	14	15	15
Full professor	3	2	1
Associate professor	6	1	5
Senior researcher	3	4	
Junior researcher	2	8	1
Tenure track researcher			8



# Degree programmes



## FIRST CYCLE DEGREE PROGRAMMES

Genomics

Biotechnologie

Scienze  
Farmaceutiche  
Applicate



## SINGLE CYCLE DEGREE PROGRAMMES

Pharmacy

Farmacia

Chimica e tecnologia  
farmaceutiche



## SECOND CYCLE DEGREE PROGRAMMES

Biotechnologie  
Molecolari  
Industriali

Molecular  
and Cell Biology

Pharmaceutical  
Biotechnology

Bioinformatics

Biologia della Salute  
Indirizzo Nutrizionale  
Indirizzo Biosanitario Forense








5  
INTERNATIONAL  
PROGRAMMES

3  
PROFESSIONAL  
PROGRAMMES





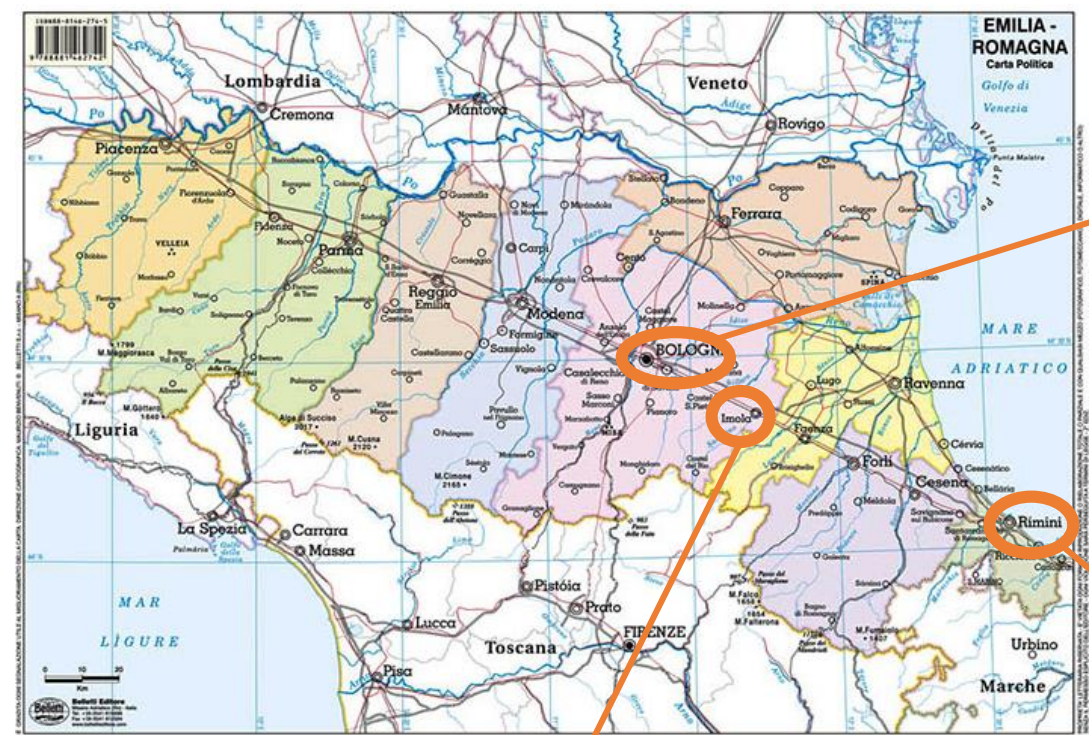
# Degree programmes and students

Degree Program Title		Degree Programme Class	Course location	Limited Enrollment (places)	Total Enrolled Students
<b>Chimica e Tecnologia Farmaceutiche</b>		LM-13 CU	Bologna	130	546
<b>Farmacia (doppio titolo con Siviglia)</b>		LM-13 CU	Bologna	200	738
<b>Pharmacy</b>		LM-13 CU	<b>Rimini</b>	100	369
<b>Biotechnologie</b>		L-2	Bologna	105	237
<b>Genomics</b>		L-2	Bologna	60	147
<b>Scienze Farmaceutiche Applicate</b>		L-29	<b>Imola</b>	150	142
<b>Bioinformatics</b>		LM-6	Bologna	-	95
<b>Biologia della Salute</b>		LM-6	Bologna	80	155
<b>Molecular and Cell Biology</b>		LM-6	Bologna	-	99
<b>Biotechnologie Molecolari e Industriali</b>		LM-8	Bologna	-	71
<b>Pharmaceutical Biotechnology</b>		LM-9	Bologna	-	104
<b>Total</b>					<b>2703</b>

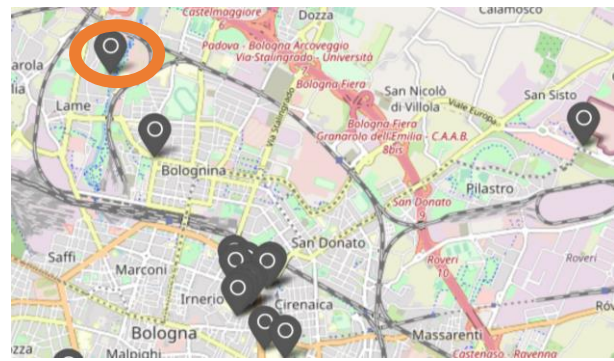
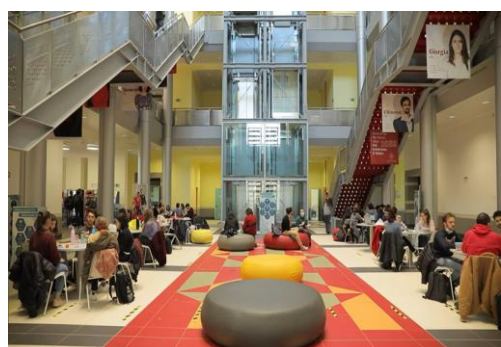




# Where we are: in Bologna and in the Multicampus



Bologna



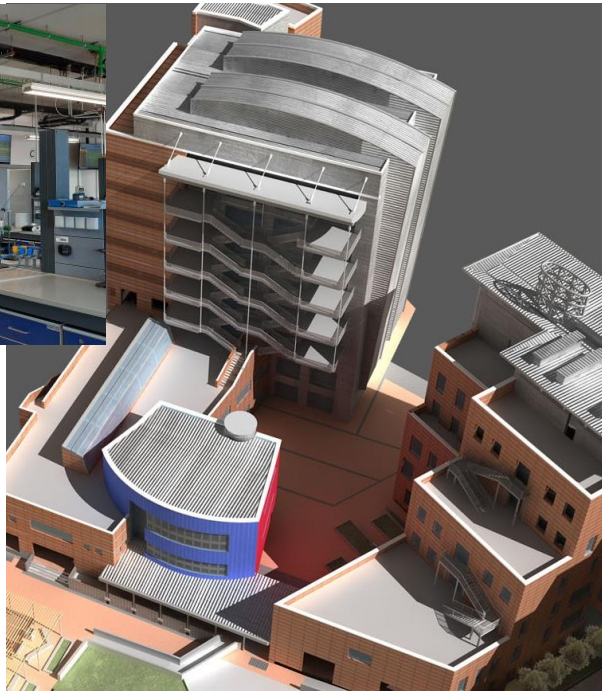
Imola



Rimini



Navile  
Ue5  
Ue6





# Post-graduate programmes

## PhD programmes

- Drug discovery and development
- Cellular and Molecular Biology
- Data Science and Computation
- Health, Safety And Green Systems (Imola)
- Innovative Technologies and Sustainable Use of Mediterranean Sea Fishery and Biological Resources (FishMed)

## Graduate school

- Residency school in Hospital Pharmacy

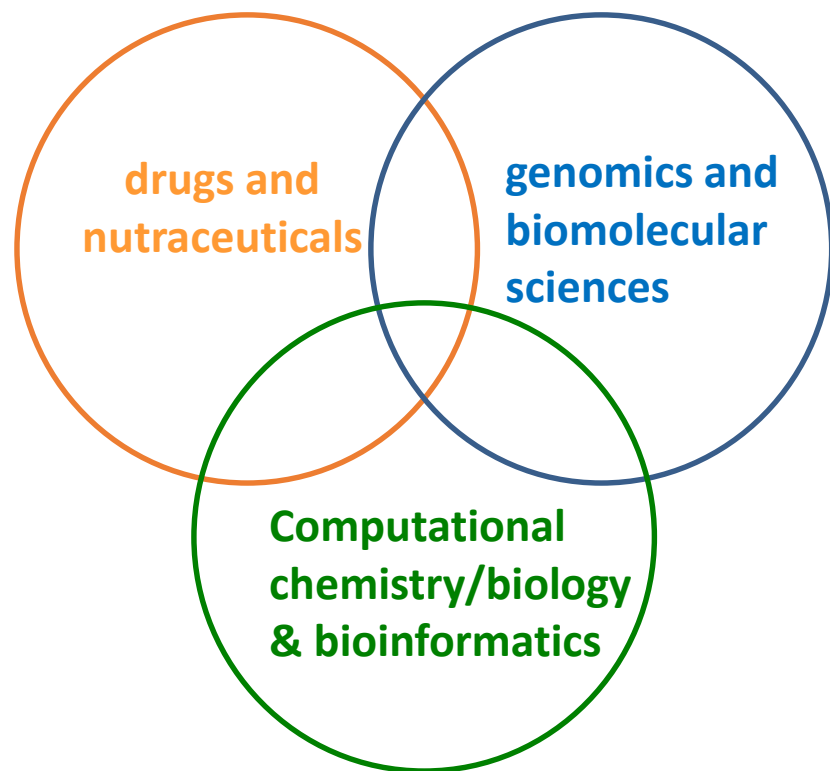
## Second-level master's degrees

- Forensic Chemical Toxicological Analyses (Imola)



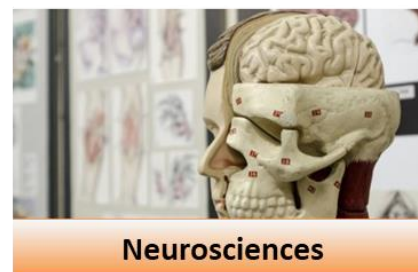


# Multidisciplinary in research



**Strategic areas of the Department**  
considering the national and international context

## Research topics



# Research areas

- **Cancer biology:** development and application of cell and molecular biology, genetics, biochemistry and nanotechnology to understand tumorigenesis and tumor progression.
- **Drug discovery and development:** discovery of drug targets and developments of methods to develop, analyze and deliver novel molecules active on specific pathological and microbiological targets.
- **Genomics:** development of experimental and bioinformatical methods to sequence, analyze and functionally understand prokaryotic and eukaryotic genomes.
- **Industrial, plant and environmental biotechnologies:** study of microbial, viral and plant biomolecular mechanisms in order to discover, develop and test cutting edge biotechnologies, readily employable in industrial, agricultural and environmental sectors.
- **Neuroscience:** analysis of brain organs and neuronal tissues to understand their physiological, pathological and toxicological homeostasis and devise pharmacological solutions to neuronal diseases.
- **Nutrition and health:** analysis of the complex interactions between nutrients and human health through physiology, exposomics, pharmacology, metabolomics and cell/molecular biology approaches.



# Shared equipment and facilities

- **FaBiT is equipped with state-of-the-art facilities for research in the fields of biochemistry, biology, and pharmaceutical chemistry, including animal facilities.**
- Most instruments have been purchased through initiatives funded by the University of Bologna and/or through programs managed by the University, such as recently the Resilience Plan (es. **iENTRANCE**, <https://www.ientrance.eu/home/>), to meet the increasingly specific and complex demands of experimental research.
- In accordance with the **University's Equipment Sharing Regulation**, **these instruments are all shared.**
- All FaBiT users can also access the **CILDIC** facilities (<https://centri.unibo.it/cildic/en>) and the Biomedical Research Center, **CRBA** (<https://centri.unibo.it/crba/en>), of the University of Bologna.



CENTRE FOR APPLIED BIOMEDICAL RESEARCH - CRBA



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# Equipment

## Equipment@FaBiT

- EnSpire® Multimode Plate Reader;
- S3e Cell Sorter;
- Mass detector for molecule identification coupled to UHPLC/HPLC and nitrogen generator;
- Cell Biology Imaging Platform (Livecyte™);
- Chemidoc Biorad;
- Beta-counter (Tri-Carb, PE);
- EnSight® Multimode Plate Reader with Imaging Module;
- Nivo plate player;
- Server for computational activity;
- Animal facility.

**Equipment@Navile: from a collaboration among FaBiT/Chemistry Dept./Industrial Chemistry Dept.**

## Alma attrezzature

- High resolution mass spectrometer
- Spectral confocal microscope with lifetime module – located at FaBiT
- Maldi-Tof

## IEntrance@ENL –PNRR IR

- Atomic force microscope



**Equipment@CRBA: collaboration FaBiT/Medical Area Departments**

- XFE96 Seahorse Extracellular Flux Analyzer
- Confocal/2 photon microscope and high content imaging platform
- Orbitrap Exploris 240 interfaced with UPLC and nano-HPLC
- Preparative centrifuge and Ultracentrifuge, Nanosight PRO, sonicator

## Multimode plate readers



## Confocal microscope



## UHPLC-QDa Mass spectrometer



**Zebrafish, in the future**



**Animal facility - rodents**

**Seahorse XFe96 Analyzer for cell metabolism**

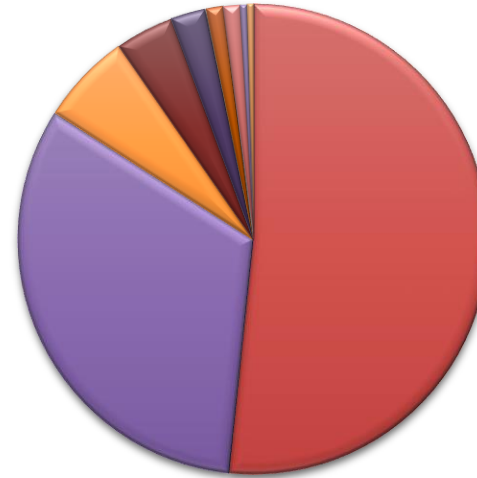
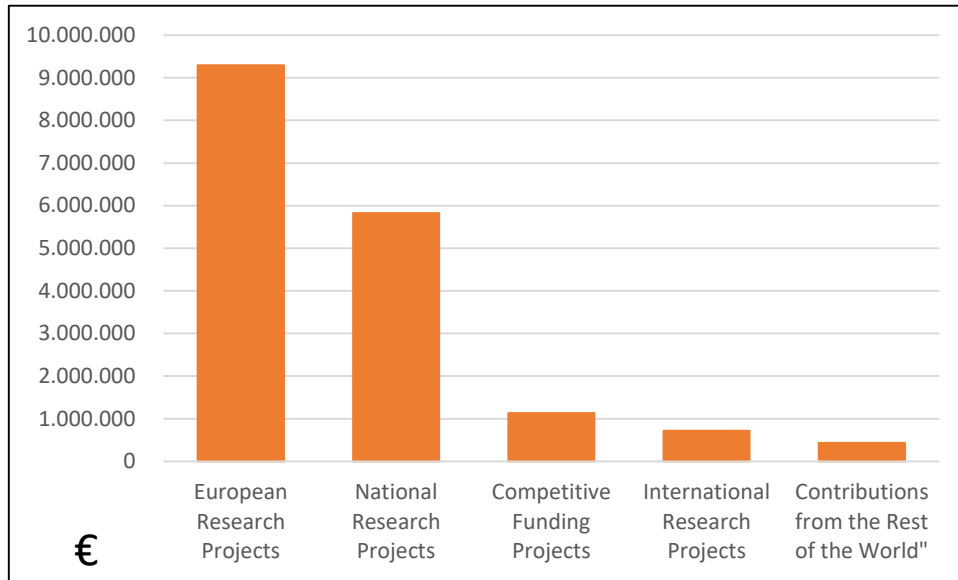


**Livecyte - Imaging platform for real-time live-cell analysis**

## Network of international collaborations



# Funding from ongoing competitive projects (2022-2025)



- European Research Projects
- National Research Projects
- Competitive Funding Projects
- International Research Projects
- Contributions from the Rest of the World"
- Contributions from Other (Public) Sources
- Regional Research Projects
- Contributions from others (private)
- Education, training, or international cooperation projects

Extended partnerships	Project acronym	FaBiT staff members
PE01	FAIR	2
PE06	HEAL ITALIA	4
PE07	SERICS	1
PE11	3A-ITALY	2
PE12	MNESYS	6
PE13	INF-ACT	4

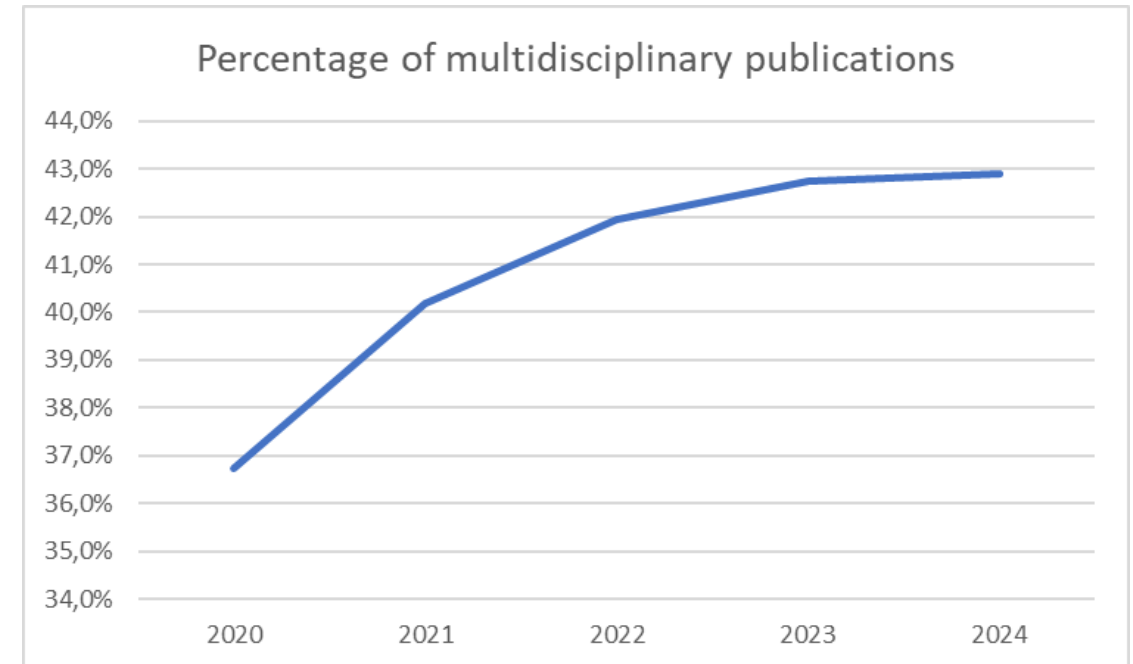
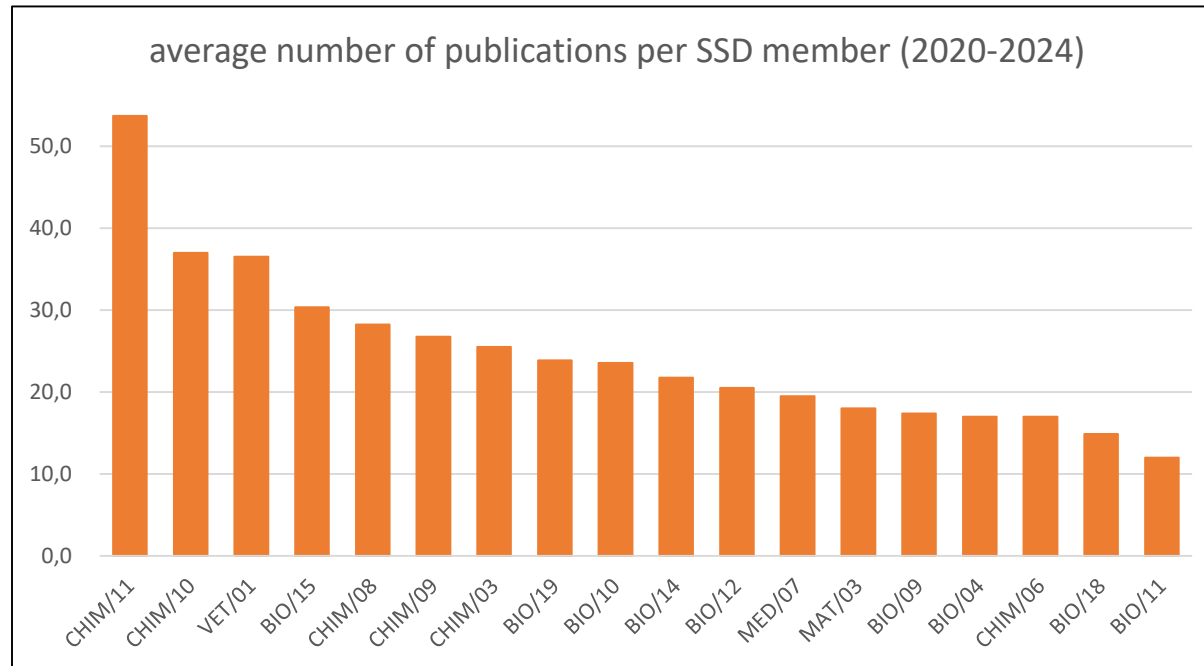
National champions	FaBiT staff members
Biodiversity	1
Agritech	1
mRNA	14
HPC	10

FAIR: artificial intelligence  
 HEAL ITALIA: innovative diagnostics and therapies in precision medicine  
 SERICS: Cybersecurity, new technologies and protection of rights  
 3A-ITALY: Circular and sustainable Made in Italy  
 MNESYS: Neuroscience and neuropharmacology  
 INF-ACT: Emerging infectious diseases  
 HPC: High Performance Computing

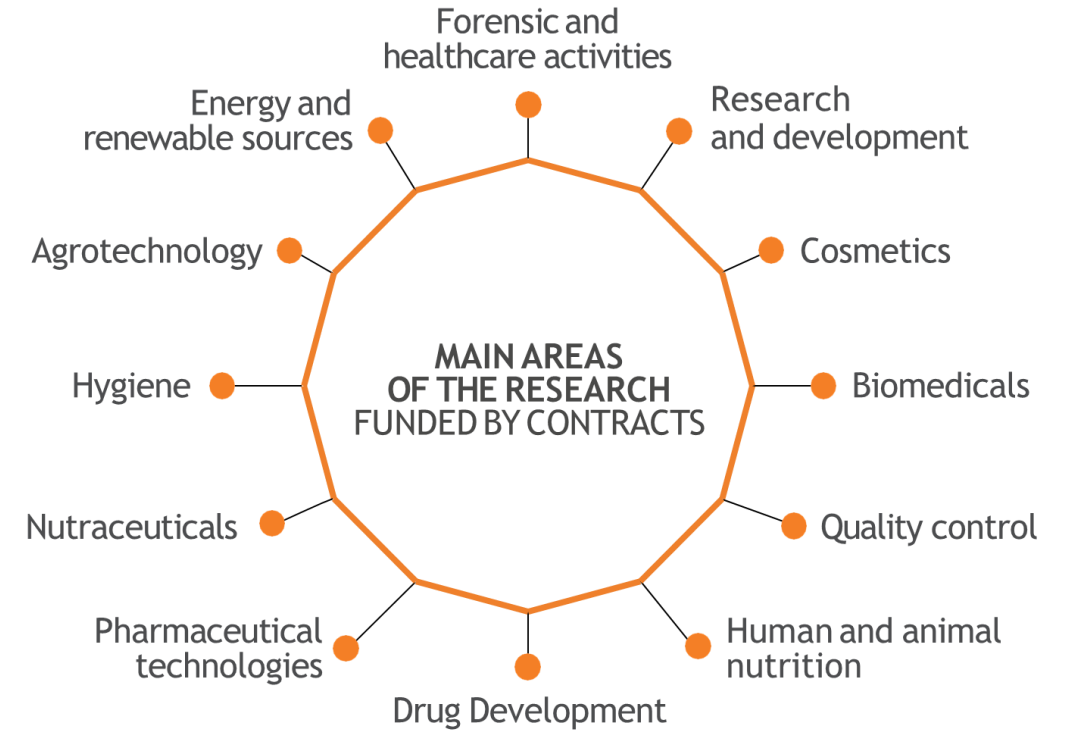
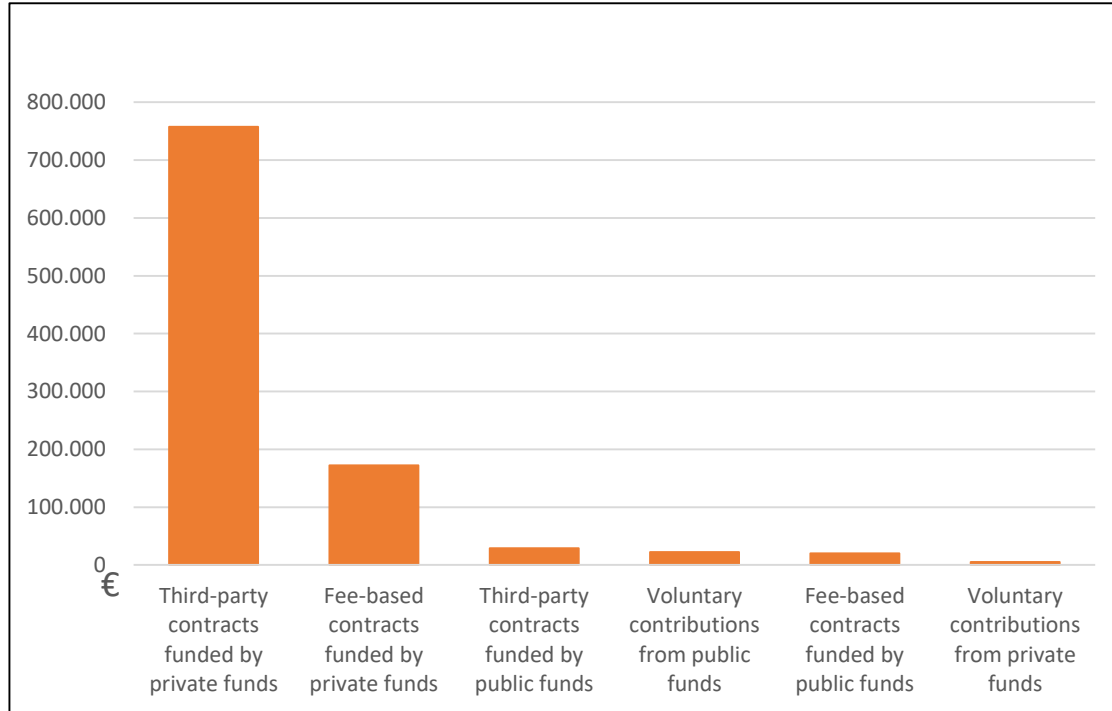


# Number of publications & bibliometric indicators: 2020-2024

- Total number of publications by FaBiT members: 1718
- Mean number of publications by FaBiT members: 24,91
- Mean 10 years H-index by FaBiT members: 15,18



# Patents and research contracts (2022-2025)



68

PATENTS

## SPIN-OFF:

- **Microbiome Analytics** is a new spin-off currently being established at FaBiT Department;
- **Bionys** is a spin-off in the process of licensing patents involving FaBiT Department.



# Public engagement

The Department of Pharmacy and Biotechnology is actively **involved in scientific communication to a non-science audience** with public engagement initiatives.

The aim is spreading the scientific knowledge and culture inside society, in particular on themes dealing with pharmacy and biotechnology.

In addition, professors and researchers show and explain, using a language suitable for a non-science audience, their research activity and its impact on the society.

Researchers and professors of the department:

- **Organize and participate to Café Scientifiques, scientific aperitifs, debates, round tables, scientific festivals.**
- **Teach in laboratories and lessons for children** (es. Unijunior), answering questions on chemistry and biology for the young public.
- **Give interviews and participate on television broadcast on their research activity.**
- **Collaborate to the writing of general press articles and press release.**
- **Contribute to the training of high school students** offering stages (“alternanza scuola-lavoro”, ASL) in their laboratories.
- **Participate to the European Researchers’ Night.**







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