POLITECNICO
MILANO 1863

PhD School - Politecnico di Milano
Regulations of the PhD Programme in:

BIOENGINEERING

Cycle XXXVII

1. General Information

PhD School - Politecnico di Milano

PhD Programme: BIOENGINEERING

Course start: November 2021

Location of the PhD Programme: Milano Leonardo

Promoter Department: Department of Electronics, Information and Bioengineering & Department of Chemistry, Materials and Chemical Engineering "G. Natta"

Scientific Disciplinary Sectors

- ING/INF 06 - Electronic and Informatics Bioengineering
- ING-IND 34 - Industrial Bioengineering

PhD School Website: http://www.polimi.it/phd
PhD Programme Website: http://www.phdbioengineering.polimi.it/

Areas:
Area 09 – Industrial and Information Engineering

2. General presentation

The PhD Programme aims at developing high scientific profiles who intend to practice their major activities in the field of Bioengineering. It addresses theoretical and experimental activities in 4 major research areas:

- Biomimetic engineering and micro-nano technologies;
- Rehabilitation Engineering and Technology;
- Technologies for Therapy;
- Physiological Modelling and non-Invasive Diagnostics.

More specific areas include but are not limited to: Molecular and cellular engineering. Biomaterials. Tissue Engineering. Bio-artificial interfaces and devices. Neuro-prostheses. Movement analysis. Cardiovascular and Respiratory system bioengineering. Central nervous system signal and image processing for rehabilitation. Biomechanics. Computational fluid-dynamics. Computer assisted surgery and radiotherapy. Artificial organs. Implantable devices. Biomedical signal and image processing. E-Health. Bioinformatics, functional genomics and molecular medicine. Robotics.
Research focuses on theoretical models, methods and technologies to support design of applications, software and hardware systems, together with tools and prototype device development. The

involvement of industrial and clinical partners reinforces the mix between theory and application, which is the strength of our PhD.
Stage periods in distinguished research institutes in Italy and abroad all over the world, are essential features in the PhD candidate training.
Scientific and research activities of PhD Bioengineering candidates are strongly grounded on research Laboratories located inside and outside the Departments in cooperation with other research institutes and university hospitals.
Publications in scientific peer-reviewed journals, participation to international projects and the numerous collaborations confirm the excellence level of the activities carried out in our PhD Programme.

The PhD course is run by a Coordinator and a Faculty Board composed by professors and researchers belonging to the Department of Electronics, Information and Bioengineering (DEIB), and Department of Chemistry, Materials and Chemical Engineering "G. Natta" (CMIC).
The Coordinator chairs the Faculty Board, coordinates the preparation of the annual Educational Programme and organises the general educational activities of the PhD course (see Attachment A1).
The Faculty Board is responsible for the Educational programme and for teaching and administrative activities related to the PhD course (see Attachment A2).

3. Objectives

The main objective of the PhD Programme in Bioengineering is to prepare PhD candidates to the development of scientific research project dealing with a complex problem which can be at different scales, from the molecular and the cellular levels to living organisms up to biomedical systems. They investigate original methods, devices, and systems with different purposes: increasing knowledge, proposing innovative methods for diagnosis and therapy as well as improving healthcare and daily life structures and services. The PhD Program aims at developing high level engineering problem-solving abilities in biomedical, healthcare and life sciences, within research groups or in private/public industrial or clinical contexts, through a strong interdisciplinary training bridging engineering to medical/biological know-how.
At the end of the PhD Programme, the candidates are expected to be able to carry out innovative projects and research development in the Bioengineering field, by proposing new methodological and technical solutions and properly evaluating the technology impact in healthcare, life science and biomedical industry.

4. Professional opportunities and job market

Graduated PhD's in Bioengineering have a wide range of professional opportunities, including research positions in Universities, public and private research institutions, and public health services, as well as in the industrial or healthcare context.
More in general, the competencies of graduated PhD's are particularly appreciated for the coordination

and management of research projects. In addition, the PhD Programme also encourages the opportunity to generate spin-off and start-up initiatives where to exploit innovative results.
Fellowships directly sponsored by external subjects may easily lead to work opportunities.

5. Enrolment

5.1 Admission requirements

Italian and International citizens can apply. They are requested to have graduated in accordance with the pre-existing laws D.M. 3.11.1999 n. 509, or to have a Master of Science degree in accordance with D.M. 3.11.1999 n. 509, or a Master of Science in accordance with D.M. 22.10.2004 n. 270, or similar academic title obtained abroad, equivalent for duration and content to the Italian title, with an overall duration of university studies of at least five years.
The certified knowledge of the English language is a requirement for admission. Please refer to the PhD School website for details.
The admission to the programmes will be established according to the evaluation of the candidates' curricula, motivation letters, and an illustrative report about the development of a possible PhD research, which candidates will send contextually with their application to the admission announcement.

5.2 Admission deadlines and number of vacancies

The number of positions is indicated in the Call for admission to the 37th PhD cycle Programmes: http://www.polimi.it/phd
Scholarships both on general and on specific themes are available, in accordance with what is specified in the call for admission.

6. Contents

6.1 Requirements for the PhD title achievement

The achievement of the PhD title in Bioengineering requires a study and research activity of at least three years' equivalent full time study and research and the development of the PhD thesis.
A mandatory, formal requirement is that PhD candidates in Bioengineering must earn a minimum of 30 course credits (see paragraph 6.3 below), and to continuously conduct studies and research.
Once a year the PhD Board evaluates the advancement of the PhD candidates' activities in order to allow the admission to the next year or to the final exam for PhD title awarding. The evaluation criteria adopted by the Board comprise the originality and scientific value of the research, as well as the quality and results of the education programme. In addition, the activity of the PhD candidate is evaluated also considering quantitative and qualitative indicators related to scientific publications which must report the affiliation of the candidate to Politecnico di Milano (see point 6.5 for further details).

At the beginning of the course, the Faculty Board assigns a tutor to each PhD candidate to supervise and assist him/her in the overall training programme. The tutor shall be a professor belonging to the Faculty Board. The tutors assist the candidates in the choice of courses to be included in the study plan, which is eventually submitted for approval to the Coordinator of the PhD Programme (see also section 6.4 below).
The Faculty Board may assign extra course credits to one or more candidates, in case they need to complete their preparation in specific topics, relevant for their research projects.

6.2 Research development

The main aim of all Politecnico di Milano PhD programmes is the development in the candidates of a research-oriented mind-set, with expertise and skills in a specific research topic. To this end, candidates develop a problem-solving capability in complex contexts, including the capacity of performing deep problem analysis, identifying original solutions, and evaluating their applicability in practical contexts.
These skills provide the PhD candidates with major opportunities of development in their research both in the academic field, and in public and private organisations.
PhD candidates are requested to develop an original research contribution. The PhD thesis must thus contribute to increase the knowledge in the candidate's research field. Besides, it has to be coherent with the research topics developed in the Department where the PhD Programme is carried out.
The original research results are collected in the PhD thesis, where the candidate's contribution is put in perspective with respect to the research state of the art in the specific research field.
The PhD research is developed under the guidance of a supervisor, who supports the candidate in the setting-out and in the everyday activities related to the thesis development. The supervisor is not necessarily a member of the Faculty Board, and may also belong to an institution different from Politecnico di Milano. The supervisor can be supported by one or more co-supervisors.
Further activities intended to develop the candidate's personal skills and research expertise are encouraged during the PhD path.
Candidates must acquire the capability to present and discuss their work in their research community. Consequently, both the participation to international conferences and the publication of the research results in peer-reviewed journals are encouraged.
The PhD programme favors the candidates' research interactions with other groups in their research field, preferably abroad. Research visits of at least three months are strongly encouraged, as through them the candidates may acquire further skills to develop their research work and thesis.
The duration of the programme is normally three years.

6.3 Objectives and general framework of the teaching activities

The PhD Programmes and the PhD School activate teaching forms of different kind and credit value, including courses, seminars, project workshops, laboratories. Teaching activities both cover the basic research issues (problems, theories, methods), which represent the founding element of the PhD Programme and identify clearly its cultural position, and deepening in a specialist way some research issues connected with the problems developed in the theses.
Lessons are usually held in English, except when indicated otherwise. The PhD programme includes at least one complete path delivered in English language.

Structured teaching activities allow to earn ECTS credits. Other activities, typically specialised and for which it is difficult to evaluate the learning and its quantification, fall within the scientific activities of which the Faculty Board takes into account in the overall evaluation, but they do not allow to earn ECTS.

The PhD School of Politecnico di Milano proposes a set of courses aiming to train the PhD candidates in soft and transferable skills. The skills and abilities provided by these courses are expected to help candidates across different areas of their careers in order to respond to the rapidly evolving needs of the global economy and society at large. The PhD School courses activated for the 2021-2022 Academic Year are summarized in the following table.

Course name	Professor
Ethics in Research	Aliverti Andrea
Strengthening Critical Spatial Thinking	Armondi Simonetta
Advanced Interaction Skills for Academic Professionals	Arnaboldi Michela
Approaches to Resilience: Social, Economic, Environmental and Technological Challenges of Contemporary Human Settlements	Balducci Alessandro
English for Academic Communication	Biscari Paolo
European Culture	Cardilli Lorenzo
Epistemology of Scientific and Technological Research (Technologies Reshaping Humans)	Chiodo Simona
Professional Communication	Di Blas Nicoletta
The Copernicus Green Revolution for Sustainable Development	Gianinetto Marco
Power of Images and Visual Communication for Research Dissemination	Iarossi Maria Pompeiana
Communication Strategies that Score in Worldwide Academia	Jacchetti Emanuela
Sustainability Metrics, Life Cycle Assessment and Environmental Footprint	Lavagna Monica
Project Management (in Action)	Mancini Mauro
Ethical Aspects of Research on Dual-Use Technologies	Masarati Pierangelo
Sulla responsabilità della tecnica	Ossi Paolo Maria
La comunicazione nella scienza	Paganoni Anna Maria
Practicing research collaboration / La pratica della collaborazione nella ricerca	Pizzocaro Silvia Luisa
Science, Technology, Society and Wikipedia	Raos Guido
Teaching methodologies, strategies and styles	Sancassani Susanna
Scientific Reasoning: Philosophy, Logic and Applications	Valente Giovanni
Introduction to academic research	Volonte' Paolo Gaetano
Laboratorio di insegnamento a classi numerose	Zani Maurizio

At least 10 of the 30 course credits that each candidate is required to earn shall be obtained through soft and transferable skills courses organized by the PhD School.

At least 15 out of the 30 credits each candidate is required to earn, shall be obtained through courses

offered by the PhD Programme in Bioengineering (see Table A), which are specific of the Bioengineering area ('characterizing courses').
Since the XXXIV cycle, the offer will include every year, at least:

a. A course on biostatistics and experimental design;
b. A course on methods and techniques for modelling (alternating multi-scale models of biomedical systems, on one year, and biomedical data, signals and images modelling, on the following year);
c. A course on experimental methods and techniques for laboratory measurements (alternating electronic technologies in biomedical engineering, on one year, and experimental biomechanics, on the following year);
d. At least one course on new perspectives and trends in biomedical engineering technologies;
e. A cycle of seminars (at least eight per year, covering the following topics: Image processing, Signal processing biomechanics of the musculo-skeletal system, biomechanics of the cardio-vascular system, regenerative medicine (biomaterials and mechanobiology), neuroengineering/rehabilation/robotics, wearables)

The offer includes, every year, also the school of the National Bioengineering Group, which is held yearly for one week in Bressanone (BZ). Every year, the School is focused on a different topic.
The remaining 5 credits can be chosen either among those offered by the PhD School, or those offered by the PhD Programme in Bioengineering or by other PhD Programmes (in this last case upon approval of the Faculty Board).
Normally, each course has a weight of 5 ETCS (25-30 hours). The candidates are strongly encouraged to attend all the courses within the first two years, in order to be entirely devoted to research and development of the PhD thesis during most of the second year and the third year. However, the candidates should be devoted in a continuous way to the research activity, following the lead of their supervisors and of the Faculty Board.

The table below summarizes the candidate's programme (pertinent to the coursework activities).

The tables below summarize the candidate's path (as regards coursework activities). At the same time, the programme foresees that the candidates are devoted to research activity in a continuous way, following the lead of their supervisors, and of the Faculty Board.

First/Second Year

Courses	*Possible details or reference to following tables*	*Number of credits (min-max)*	*Note*
PhD School Courses		*10- 15*	
Courses characterising the PhD Programme	*Table A*	*15-20*	Minimum 1 Annual Bioengineering School (Bressanone)
Other PhD courses		*0-5*	

Third year

In the third year the candidate should be devoted entirely to the research and to the development of the PhD thesis.

PhD Course List

A) The PhD Programme in Bioengineering organizes the **Characterizing Courses** listed in table A.
For the admission to the final exam the acquisition of at least 15 credits in this list is **mandatory**.

B) The PhD School organises every year general and Interdoctoral courses. The acquisition of **at least 10 credits** is **mandatory** among the courses of B type. The list of PhD courses organized by the PhD School is available at the website http://www.dottorato.polimi.it/en/during-your-phd/phd-school-courses

C) Other PhD courses
Example: a maximum of 5 mandatory credits can be obtained by choosing among courses provided by other PhD programmes at Politecnico di Milano and/or external Institutions (in this case the previous approval of the tutor and the coordinator is mandatory).

PREPARATORY COURSES (only if foreseen)

If the supervisor and the tutor find it useful or necessary that the candidate attends preparatory courses (chosen among the activated courses at the Politecnico di Milano) the Faculty Board of the PhD programme may assign some extra-credits to be acquired to complete the training path. The credits acquired in this way will be considered as additional, in relation to the mandatory credits to be acquired with the PhD courses.

SPECIALISTIC COURSES, LONG-TRAINING SEMINARS
The attendance of Specialist Courses, Workshops, Schools, Seminars cycles is strongly encouraged and (if these seminars, workshops are certified and evaluated) may permit to acquire credits according the modalities established by the Faculty Board and previous approval of the study plan submitted by the candidate.
The scheduled course planning for the academic year 2018-2019 follows. Other courses may be activated during the year. In this case the candidates will be promptly informed, and will be allowed to insert these new courses in their study plan.

Table A: PHD COURSES CHARACTERISING THE PHD PROGRAMME

Name of the Course	Professor/s	A.A./Semester	Language	Credits
Biostatistics and experimental design	Linda Pattini Enrico Caiani Luca Mainardi	2021-2022	English	5
Advanced modelling in signal image and data analysis	Maria Gabriella Signorini Anna Maria Bianchi Roberto Sassi Manuela Ferraio Riccardo Barbieri	2021-2022	English	5
Experimental biomechanics	Luigi La Barbera Tomaso Villa Elena Bianchi Giancarlo Pennati Federica Boschetti	2021-2022	English	5
Perspectives in biomedical engineering technologies: AI methods for Bioengineering challenges	Pietro Cerveri Riccardo Barbieri Luca Mainardi	2021-2022	English	5
Perspectives in biomedical engineering technologies: European Medical Device Regulation and clinical investigations	Emilia Ambrosini Tomaso Villa Enrico Caiani Alberto Redaelli Alessandra Pedrocchi	2021-2022	English	5
Perspectives in biomedical engineering technologies: Translating your research into med-tech business	Riccardo Vismara	2021-2022	English	5
Seminars in biomedical engineering	Monica Soncini Gabriele Candiani Raffaele Dellaca' Riccardo Barbieri Tomaso Villa	2021-2022	English	5
External Course Bio	Andrea Aliverti (resp)	2021-2022	English	5
Annual School of Bioengineering (Bressanone 2022)	Andrea Aliverti (resp)	2021-2022	English	5

Table B SUGGESTED CROSS –SECTORAL COURSES

Name of the Course	Professor	Semester	Language	Credits
Ethics in research	Andrea Aliverti	2021-2022	English	5

6.4 Presentation of the study plan

PhD candidates must submit a study plan, which may be revised periodically (approximately every three months), in order to adequate them to possible changes in the course list, or to needs motivated by the development of their PhD career. The study plans must be approved by the PhD programme Coordinator, according to the modalities established by the Faculty Board of the PhD Programme itself.

6.5 Yearly evaluations

At the end of each academic year, the candidates have to pass an annual evaluation in order to be admitted to the next PhD year. The evaluation is based on a written report and an oral presentation offered to a Commission composed of 3 to 5 Faculty Board members. On the first year, the presentation is given to the Tutor who will report to the Faculty Board.

The written report should include i) a brief description of the specific activities of the candidate on her/his PhD project; ii) a brief description of the other research activity of the candidate in the course of the year under examination; iii) the publications of the candidate in the course of the year.

Activities of PhD candidates that can provide additional elements to be considered for the evaluation typically include: internships, external courses (held by other academic institutions, companies or other), national and international seminars, conferences and workshops, participation to national and international research projects, scientific paper writing and paper presentations on research results, support to teaching activities.

The third year evaluation establishes the candidate's admission to the final PhD defense.

As a result of each annual evaluation, the candidates receive an evaluation expressed in Grades A (excellent), B (very good), C (good), D (fair), E (not sufficient to pass the exam).

In the case of grades from A to D, the candidate is admitted either to the next year (1st and 2nd year evaluation) or to the final exam (3rd year evaluation).

In the case of grade E, the candidate is qualified as “Repeating candidate” (Er) or “not able to carry on with the PhD (Ei)”.

After the final year, candidates who have achieved sufficient results but need more time to draw up their theses, may obtain a prorogation of up to 12 months.

6.6 PhD thesis preparation

The main objective of the PhD career is the development of an original research contribute. The PhD thesis is expected to contribute to the advance of the knowledge in the candidate's research field.

The PhD study and research work is carried out, full time, during the three years of the PhD course. Stages or study periods in (Italian or International) companies or external Institutions may complete the candidate's preparation.

The resulting theses need to be coherent with the research issues developed in the Department where the PhD programme is developed.

The candidate must present an original thesis, discuss its contribution to the state of the art in the research field in the research community.

The PhD research is developed following the lead of a supervisor, who supports the candidate in the setting out and in the everyday activities regarding the thesis development.

At the conclusion of the PhD studies, the Faculty Board evaluates the candidates. Candidates who receive a positive evaluation submit their theses to two external reviewers for refereeing. If the evaluation provided by the reviewers is positive (or after the revisions required by the external reviewers), the candidates defend their thesis in a final exam, in front of a Committee composed of three members (at least two of which must be external experts).

7. Laboratories, PhD Secretary Services

7.1 Laboratories

The scientific research activity of the PhD candidates is performed in experimental laboratories either located at the Politecnico di Milano or outside, typically in research centers, hospitals or industries.
When the research is performed within the Politecnico, PhD candidates are usually assigned to one of the following laboratories belonging to DEIB or CMIC:

- Laboratory of Biological Structure Mechanics (LaBS) - CMIC
- Laboratory of Movement Analysis "Luigi Divieti" – DEIB
- Medical Informatics Laboratory – DEIB
- Neuroengineering and Medical Robotics Laboratory (NearLab) - DEIB
- Biosignals, Bioimaging and Bioinformatics (B3 Lab) – DEIB
- Biomaterials Laboratory (BioMatLab) - CMIC
- Biomedical Technology Laboratory (TBMLab), CasCart, LaRes, TechRes, MBMC - DEIB
- Experimental Micro and Biofluid Dynamics (μBS Lab) – DEIB
- Computational Biomechanics Laboratory – DEIB
- Biocompatibility and Cell Culture Laboratory (BioCell) - CMIC
- Bioreactors Laboratory - CMIC

The Istituto di Elettronica, Ingegneria dell'Informazione e delle Telecomunicazioni (IEIIT) of the Consiglio Nazionale delle Ricerche (CNR), which is located at DEIB, represents another possible option.

7.2 Administrative offices of the PhD Programme in Bioengineering

Secretary
Marco Simonini
Department of Electronics, Information and Bioengineering (DEIB)
Building 20, Via Golgi, 33 - Politecnico di Milano – 20133 Milano
Ph: +39 - 02 2399 3632
Fax: +39 - 02 2399 3360
e-mail: PhD-BIO@polimi.it

Administration
Fabio Conti
Department of Electronics, Information and Bioengineering (DEIB)
Building 20, Via Golgi, 33 - Politecnico di Milano – 20133 Milano
Ph: +39 - 02 2399 3431
Fax: + 39 - 02 2399 3417
e-mail: fabio.conti@polimi.it

8. Internationalization and inter-sectoriality

Carrying out study and research activities at external laboratories is strongly recommended.

Politecnico di Milano supports joint PhD paths with International Institutions, as well as Joint and Double PhD programmes. Further information is available on the PhD School website and on the PhD programme website.

Interaction with and exposure to non-academic sectors provides significant benefits to doctoral candidates as well as to research and innovation intensive employment sectors. Direct exposure to the challenges and opportunities in non-academic sectors of the economy and society at large is fostered by networking, connectivity, inter-sectoral mobility and wide access to knowledge. In particular, the PhD programme in Bioengineering considers the following collaborations: European Training Networks (ETN)- Marie Skłodowska Curie Actions, (MSCA), international agreements such as CSF-Confap (Brazil) and CSC (China), several agreements with industries (Medtronic (USA), E-Novia SPA, LIFE CORPORATION SA (LUX), ALASCOM Services SRL, Medteor GMBH (GER), AB.ACUS SRL, Qura SRL, Kalpa SRL, AZCOM Technology SRL, Lifecharger SRL, Linkverse SRL), research and clinical centres, such as CNR Institutes (STIIMA, IEIIT); IRCCS, E. Medea, Policlinico S. Donato, Besta, Ist. Maugeri, Ist. Nazionale dei Tumori, Ist. Europeo di Oncologia, Humanitas, Ente Ospedaliero Cantonale (CH), Houston Methodist Research Institute (USA)) - Foundations (Fond. IIT, Fond. Grigioni).

Attachment A1 – PhD Programme Coordinator

Andrea Aliverti is the Chairman (Coordinator) of the PhD Programme in Bioengineering since 2014. He is Full Professor at the Department Electronics, Information and Bioengineering (DEIB), Politecnico di Milano where he teaches Sensors and Instrumentation Technologies and Bioengineering of the Respiratory System. He received the Master degree in Electronic Engineering in 1992 and the PhD in Bioengineering in 1997 from Polimi. He is responsible of Lares (Respiratory Analysis Lab) at the Biomedical Technology Laboratory (TBM-Lab). His actual main research interests include the bioengineering of the respiratory system, physiological measurements, biomedical instrumentation and sensors and functional lung imaging. Specific research areas of interest include respiratory mechanics, biomedical instrumentation and functional imaging (CT, MRI and US).
More recently, the research activity is considering other sectors, including the development of new systems and methods for monitoring of physiological variables by means of wearable unobtrusive sensors.
He is author or co-author of more than 240 papers in peer-reviewed scientific journals, 16 book chapters, editor of 5 books, inventor in 18 patents and author of >250 abstracts and brief communications. He is member of the editorial board of the Journal of Applied Physiology (American Physiological Society), Respiratory Physiology and Neurobiology, Breathe.
He is FERS, honorary fellow of the of the European Respiratory Society (ERS), former Secretary and Chairman of the scientific groups "Respiratory Structure and Function" and "Clinical Physiology and Exercise" (2012-2014), Secretary (mandate 2014-2017), head (mandate 2017-2020) of the Assembly "Clinical Physiology, Sleep and Pulmonary Circulation", member of the ERS Science Council, member of the ERS International Congress Committee.

Attachment A2 – PhD Faculty Board

Name	**Affiliation**	**Scientific Disciplinary Sector**
Aliverti Andrea (coordinator)	DEIB	ING-INF/06
Bianchi Anna Maria	DEIB	ING-INF/06
Boschetti Federica	CMIC	ING-IND/34
Candiani Gabriele	CMIC	ING-IND/34
Cerveri Pietro	DEIB	ING-INF/06
Cimolin Veronica	DEIB	ING-INF/06
Corino Valentina	DEIB	ING-INF/06
Costantino Maria Laura	CMIC	ING-IND/34
Dellacà Raffaele	DEIB	ING-INF/06
De Momi Elena	DEIB	ING-INF/06
Draghi Lorenza	CMIC	ING-IND/22
Dubini Gabriele	CMIC	ING-IND/34
Farè Silvia	CMIC	ING-IND/34
Ferrante SImona	DEIB	ING-INF/06
Fiore Gianfranco Beniamino	DEIB	ING-IND/34

Gastaldi Dario	CMIC	ING-IND/34
Guazzoni Chiara	DEIB	ING-INF/01
Mantero Sara (vice-coordinator)	CMIC	ING-IND/34
Matas Jose Felix Rodriguez	CMIC	ING-IND/34
Pozzi Giuseppe	DEIB	ING-INF/05
Pattini Linda	DEIB	ING-INF/06
Ravazzani Paolo Giuseppe (vice-coordinator)	DEIB	CNR
Redaelli Alberto Cesare Luigi	DEIB	ING-IND/34
Signorini Maria Gabriella	DEIB	ING-INF/06
Soncini Monica	DEIB	ING-IND/34
Villa Tomaso Maria Tobia	CMIC	ING-IND/34

Attachment A3 – PhD Advisory Board

Name	**Affiliation**
Luca Antiga	Orobix
Giulia Bechi	Fondazione Cariplo
Elena Bottinelli	Gruppo San Donato
Barbara Castellano	Panakes
Andrea Chiesi	Chiesi Farmaceutica
Stefano Mainetti	Polihub
Claudio Varinelli	AB Medica