

Information Session

for students of the BSc degree in Biomedical Engineering (GEBM)

**Elective courses | Internships |
Final year project (TFG) | Mobility**

2026-2027

General Information

Study Plan / Pla d'estudis:

- Basic courses / Assignatures bàsiques (64 credits)
- Core courses / Assignatures obligatòries (118 credits - **6 credits of mandatory internships**)
- Elective courses / Matèries optatives (**40 credits**)
- Final year project / TFG (**18 credits**)

Elective courses /Crèdits optatius:

- Optional subjects (= Elective courses) / Assignatures optatives
- Core subjects from other BSc studies of the School of Engineering / Assignatures obligatòries d'altres graus de l'Escola
- Internships in industry or academia / Pràctiques en empreses o a la universitat (**up to 9 credits**)
- Outgoing Mobility / Mobilitat fora UPF (**up to 30 credits**)
- Mobility UPF (Elective transversal education / Formació transversal de lliure elecció): <https://www.upf.edu/web/formacio-transversal/>
- Crèdits RAC (Reconeixement Acadèmic de Crèdits):
<https://www.upf.edu/web/upfparticipacio/oferta-activitats-credits> i per títol de llengua estrangera:
<https://seuelectronica.upf.edu/normativa-de-reconeixement-academic-en-credits-per-aprenentatge-de-llengues-en-els-estudis-de-grau>

Syllabus 3rd and 4th years (2020-)

3r	Trim 1	Biocomputació (6)	Modelat d'Òrgans i Sistemes (4)	Fisiopatologia (5)	Optativa (4)	
	Trim 2	Anàlisi d'Imatges Biomèdiques (5)	Sistemes d'Imatge Biomèdica (5)	Teoria de Control i Autorregulació (5)	Optativa (4)	
	Trim 3	Optativa (4)	Optativa (4)	Optativa (4)	Optativa (4)	Optativa (4)

4t	T1	Introducció als Dispositius Mèdics i el seu Disseny (5)	Gestió de Projectes i Innovació en Eng. BM (4)	Introducció a la Investigació i Desenvolupament de Fàrmacs (4)	Biologia de Sistemes (5)	Gestió Transversal d'Activitats Científiques (4)	Optativa (4)	TFG (18)	Pràctiques obligatòries (6)
	T2	Organització i Regulació Sanitàries (4)					Optativa (4)		
	T3						Optativa (4)		

Optional subjects GBEM

1st trimester

- **Microfluidics – Up to 10 students only!**
- **Advanced synthetic biology (MELIS)**
- **Nanomedicine and Nanobiotechnology (MELIS)**
- **Clinical medicine Group 1 (MELIS, Hospital del Mar) – Only up to 15 fourth-year students 4th!**

2nd trimester

- **Advanced analysis of neuronal signals (DTIC)**
- **Machine learning for applications in biomedicine (DTIC)**
- **Advanced Modelling in Biomechanics & Systems Mechanobiology (DTIC)**

Optional subjects GBEM

3rd trimester

- **Advanced analysis of biomedical images: Segmentation and Quantification (DTIC)**
- **Planning and guidance for minimally-invasive interventions (DTIC)**
- **Advanced Modelling in Biomechanics & Systems Mechanobiology – VPH Summer School (DTIC)**
- **Data Science and computational models in biomedicine (DTIC / MELIS)**
- **Clinical medicine Group 2 (MELIS, Hospital del Mar) – Only up to 15 third-year students!**
- **iGEM (International Genetically Engineered Machine) Biennial. Next edition: academic year 2027–2028!!**

Optional subjects from other UPF degrees

2nd trimester

- **Gesture and face analysis (DTIC, Audiovisual systems)**
- **Synthetic images (DTIC, Computer science)**

3rd trimester

- **Neuroscience and Humanities (MELIS, human biology) – Up to 10 GEBM students**
- **Virology (MELIS, human biology)**
- **Genomics (MELIS, human biology)**
- **Developmental biology (MELIS, human biology)**
- **Genetics (MELIS, human biology)**
- **Computer vision (DTIC, Audiovisual systems)**
- **Innovation management (DTIC, Telematics)**
- **Three-dimensional vision (DTIC, Audiovisual systems)**

To choose other optional subjects within UPF, see [UPF Mobility](#)



Universitat
Pompeu Fabra
Barcelona

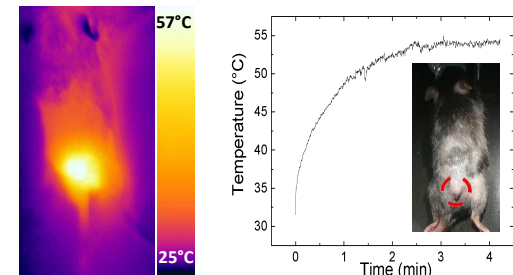
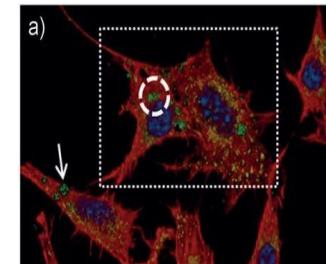
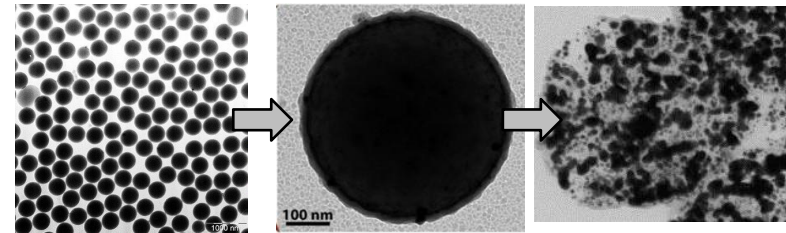
Short descriptions of GEBM optional subjects

NANOMEDICINE AND NANOTECHNOLOGY (1st TRIMESTER, ENGLISH)

Coordination: Pilar Rivera (MELIS) – pilar.rivera@upf.edu

The main goal of this subject is to present how biomedicine can benefit from nanotechnology

- **Fundamental concepts** on the hierarchical structure of the matter in the nanoscale.
- **Synthesis** of inorganic and organic nanoparticles and nanomedicines.
- **Bio-physicochemical** characterization techniques: nanotoxicity, spectroscopy, optical microscopy *in vitro* / *in vivo* biodistribution, pharmacokinetics.
- **Medical applications:** Nanotargeting, triggered drugs, controlled biosensing, therapy, imaging, hyperthermia, photodynamic



Lab classes will be devoted to perform experimental procedures in the Nanomedicine Lab at UPF

ADVANCED SYNTHETIC BIOLOGY (1st TRIMESTER, ENGLISH)

Coordination: Marc Güell (MELIS) – marc.guell@upf.edu



General objectives

Synthetic Biology is an emerging field of research where scientists construct new biological systems and redesign existing ones. Emergent consequences of reinventing biology have already started to reach society. For example, engineered human immune T cells (CAR-T) cure cancers with outstanding performance, or ‘ex vivo’ gene therapy has successfully cured severe genetic diseases such as ‘bubble boys’, or sickle cell disease. Also, multiple non-medical applications have emerged. Genetically engineered salmons that grow faster, or ‘CRISPR mushrooms’ that rotten less have been developed. Perhaps even one day, synthetic biology may help in reviving extinguished species. Biological technology will have a growing influence in our lives.

Topics

- Technologies:
 - Gene synthesis / Advanced genetic engineering / Cell free systems / Elements of genetic circuits / Genome synthesis and refactoring / Directed evolution
- Applications:
 - Plant biotechnology / Medical biotechnology and gene therapy / Bioproduction
- Implications:
 - Bioethics / Bioindustry / Bioeconomy / Humans 2.0
- Exposure to multiple professional outcomes of synthetic biology: academic research, entrepreneurship/startup, industry, clinical research and practice

ADVANCED ANALYSIS OF NEURONAL SIGNALS (2nd TRIMESTER, ENGLISH)

Coordination: Ralph G. Andrzejak (DTIC)

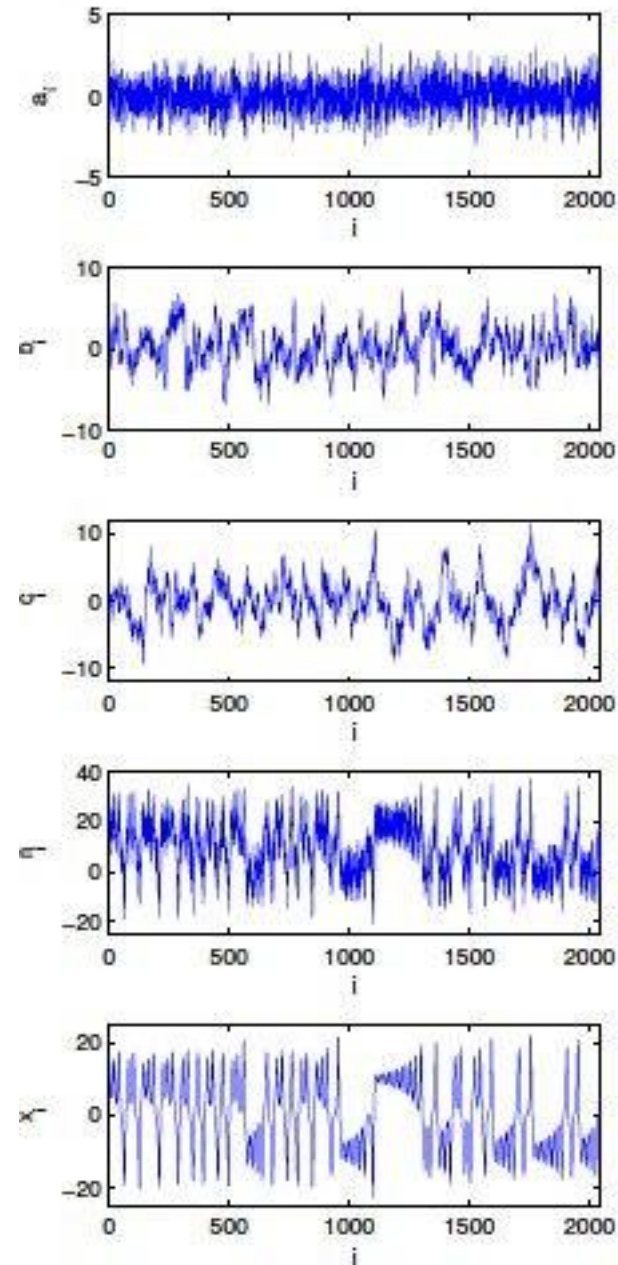
-ralph.andrzejak@upf.edu

Nonlinear time series analysis

- Analyze experimental signals to characterize the underlying dynamics
 - Detect non-random structure in signals
 - Test null hypothesis about signals
 - Signals: model signals, electroencephalogram
 - Dynamics: model systems, brain

Approach

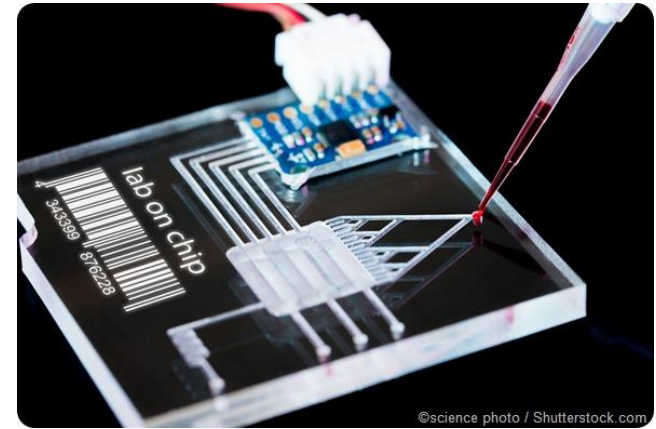
- Very strong emphasis on concrete examples to understand the theoretical concepts
 - Analyze database of electroencephalographic signals from epilepsy patients (see <http://ntsa.upf.edu/nonlinear-time-series-analysis-group>)
 - Matlab will be used in the theory, labs and seminars
 - High degree of interaction in all sessions



MICROFLUIDIS (1st TRIMESTER, ENGLISH)

Coordination: Kristina Hasse (EMBL)

The main goal of this subject is to present the techniques and potential applications of Microfluidics



- **Point-of-Care (POC) Diagnostics:** Microfluidic devices enable the development of fast and portable diagnostic systems that can be used directly at the point of care, such as in clinics and hospitals.
- **Cellular and Molecular Analysis:** Microfluidics is used for the precise manipulation of cells and molecules.
- **Organs-on-a-Chip and Tissues-on-a-Chip**
- **Controlled Drug Delivery Devices**
- **Stem Cell Research:** The ability to create chemical gradients and control the cellular microenvironment is essential for the study of stem cells and their differentiation.

Lab classes will be devoted to perform experimental procedures in the μ Fab Lab at PRBB

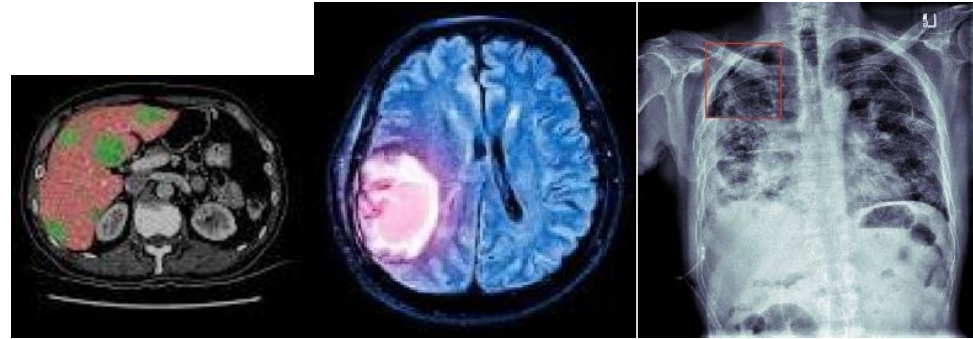
PRBB μ FabLab

Access to Rapid Prototyping techniques



ADVANCED ANALYSIS OF BIOMEDICAL IMAGES (3rd TRIMESTER, ENGLISH)

Coordination: Oscar Camara
(DTIC) – oscar.camara@upf.edu



The course covers **state-of-the-art techniques for biomedical image analysis** on real clinical applications (e.g. neuroimaging, cardiology, oncology) and all kind of medical images (e.g. X-ray, CT, MRI). Statistical atlases, Big Data analytics, radiomics, standard machine learning, **deep learning (DL)** and GAN techniques will be reviewed.

Note: Complementary subject to ML for Applications in Biomedicine (by R. Ramírez)

Seminars: tutorials in Python to get familiar with image analysis techniques

Imaging challenge project with DL techniques (50% mark): chosen by students to work during the whole trimester among available international imaging challenges (see <https://grand-challenge.org>). Past projects:

- Intra-cranial haemorrhage detection from CT scans
- Automatic evaluation of myocardial infarction from delayed-enhancement cardiac MRI
- Liver cancer segmentation in CT scans
- Identifying pneumothorax disease in chest X-rays
- Brain tumor segmentation from multimodal MRI

DATA SCIENCE AND COMPUTATIONAL MODELS IN BIOMEDICINE (COMPBIOMED) (3rd TRIMESTER, ENGLISH)

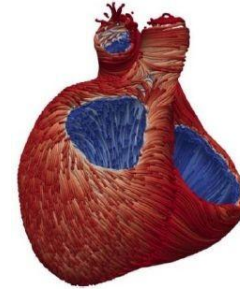
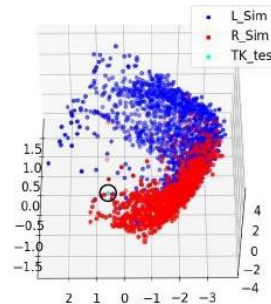
Coordination: Oscar Camara
(DTIC) – oscar.camara@upf.edu

The course is the first inter-department (MELIS, DTIC) initiative at UPF to **integrate students from medicine, biology, (biomedical) engineering and data science** degrees around **computational techniques in biomedicine**. Basic concepts, adapted to the level of each student typology, will be given on **Data Science, Artificial Intelligence and Machine (Deep) Learning, Digital Twin, Visual Analytics and High-Performance Computing**.

The subject will be implemented in collaboration with the Barcelona Supercomputing Centre (BSC), which will facilitate the access to computational resources and is part of the CompBioMed European project (<https://www.compbioimed.eu/>)

Multi-disciplinary project (60% mark): The students will work together in **multi-disciplinary teams** leveraging the complementary skills from each discipline. Projects on cardiac/brain electrophysiology will be offered, but teams could propose alternative ones. Seminars will be used to present progress of the projects

Tutorials/labs: to get familiar on some computational biomedicine tools



PLANNING AND GUIDANCE FOR MINIMALLY-INVASIVE INTERVENTIONS (3rd TRIMESTER, ENGLISH)

Coordination: Miguel Ángel González Ballester (DTIC) – ma.gonzalez@upf.edu

We will study the general architecture and implementation aspects of computer-assisted surgery, from planning and simulation to intraoperative navigation and surgical robotics. We will analyse several existing systems, also from the point of view of clinical applications.

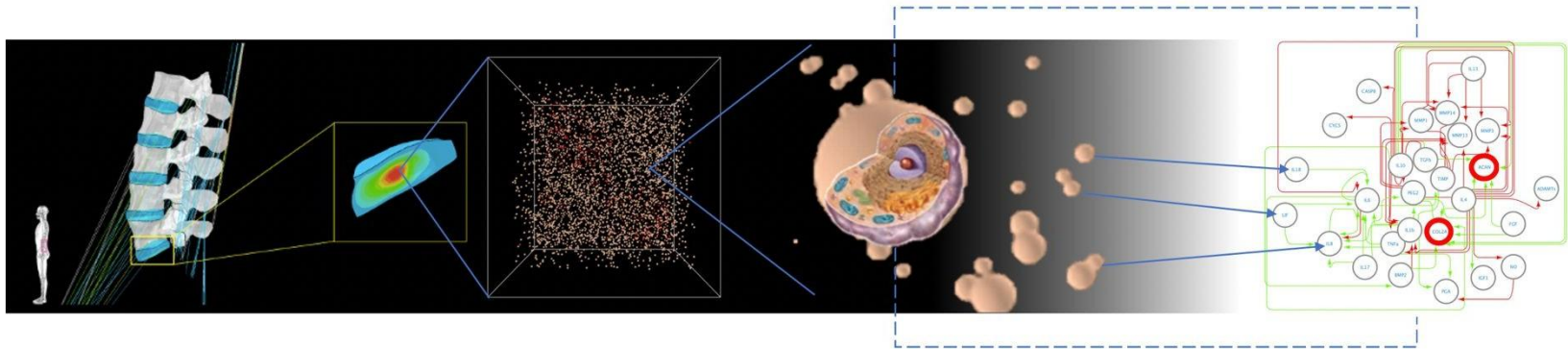
Topics

- Planning of pre-operative trajectories and structures
- Registration of pre-operative and intra-operative images
- Tracking of surgical instrumentation
- Augmented reality
- Biomechanical deformation models
- Applications in neuroradiology, neurosurgery, orthopaedics, hyperthermic ablations, endoscopy, among others

In labs sessions, students will become familiar to open-source libraries covering several topics in computer-assisted surgery.

ADVANCED MODELLING IN BIOMECHANICS & SYSTEMS BIOLOGY (2n-3rd TRIMESTER, ENGLISH) - Coordination: Jérôme Noailly (DTIC) – jerome.noailly@upf.edu

Technological needs for models & simulations and interpretation thereof, for the exploration of **load-bearing systems at different scales** in health and disease



Topics

- Mechanobiology & Mechanotransduction
- Nonlinear & Multiphysics constitutive tissue modelling
- Nonlinear finite element (FE) modelling
- Network modelling
- Agent-based (AB) modelling
- Model calibration & validation
- Clinical Seminars

Theoretical sessions & tutorized hands-ons; Advanced use of FE & computational biology approaches. Research seminars & hands-ons integrated with the [**VPH Summer School**](#)

MACHINE LEARNING FOR APPLICATIONS IN BIOMEDICINE (3rd TRIMESTER, ENGLISH)

Coordination: Rafael Ramirez (DTIC) – rafael.ramirez@upf.edu

This course introduces the theory and practice of solving problems with machine learning techniques. Special emphasis is given to problems in biomedicine

Topics

- Supervised and unsupervised learning
- Dimensionality reduction
- Linear/logistic regression
- Decision trees
- Instance-based learning
- Neural networks and deep learning

Hands-on practical work based on Matlab/Python to conduct an end-to-end machine learning project

CLINICAL MEDICINE (1st or 3rd TRIMESTER, ENGLISH)

Coordination: Luisa Sorlí (MELIS) – luisa.sorli@upf.edu

In this subject the student will put into practice in a real clinical environment the skills and knowledge acquired during the degree. For this, a deep understanding of the main medical pathologies and the available technology for their diagnostic and treatment in clinical routine is needed. Different medical and surgical specializations will be targeted.

- Practical sessions (60% of the subject) will consist on visits to different services at Hospital del Mar
- Students will develop an individual project to create or improve any of the devices/technology currently used in clinical routine. Poster sessions will also be organized.
- **Only 15 students (priority for 4th year students and best grades)**

iGEM (3rd TRIMESTER, ENGLISH)

Coordination: Javier Macia, Marc Güell (MELIS) –
javier.macia@upf.edu; marc.guell@upf.edu



- iGEM sets the standard in synthetic biology with standardized parts. Learn more about the open source technology and browse through 20,000+ standardized genetic parts in the **iGEM Registry**
- The International Genetically Engineered Machine (iGEM) Foundation is an independent, non-profit organization dedicated to the advancement of synthetic biology, education and competition, and the development of an open community and collaboration.
- iGEM's biggest program is the **iGEM Competition**. The GEBM gives UPF students the opportunity to participate to the iGEM Competition and push the boundaries of synthetic biology by tackling everyday issues facing the world
- Multidisciplinary teams are selected work together to design, build, test, and measure a system of their own design using interchangeable biological parts and standard molecular biology techniques.
- **Acceptance of students is limited and based on a previous selection process**

Elective courses – Practical information

Particularity of BME degree at UPF

- Many elective courses
- A lot of freedom
- Many decisions to make (Student proactivity is cornerstone)
- Possible scheduling difficulties

Keep in mind that:

- Not perfect schedules: impossible to fully avoid overlaps especially for the optional subjects from other degrees
- Think of backup solutions if a specific optional course cannot be followed for any reason
- Over the years: non-critical overlaps, teacher/student flexibility
- Flexibility from secretariat on enrolment

Get as much information as you can from professors (teaching plans, etc.) and former students



Servei de Carreres Professionals

Pràctiques
Orientació professional
Activitats grupals



Pràctiques

Què cal saber?

■ MATRÍCULA

En un ensenyament oficial.
No es podrà sol·licitar el títol.

■ ON FER-LES

Empreses, institucions i entitats públiques
nacionals i internacionals.

■ COM TROBAR-LES

1. Taulers d'ofertes de **CAMPUS TREBALL**

2. Proactivament

■ PROJECTE FORMATIU

Activitats relacionades amb els estudis.

■ TUTOR ACADÈMIC I TUTOR A L'ENTITAT

■ MÀXIM 800 HORES PER CURS ACADÈMIC

Curriculars: 150h obligatòries. 225h Optatives

Extracurriculars (fins a 800h sumant curriculars i extracurriculars)

■ CONVENIS SIMULTANIS

1. Màxim 800 h/curs, 8 h/dia i 40 h/set.
2. No interfereixi les obligacions acadèmiques.

■ AJUT A L'ESTUDI

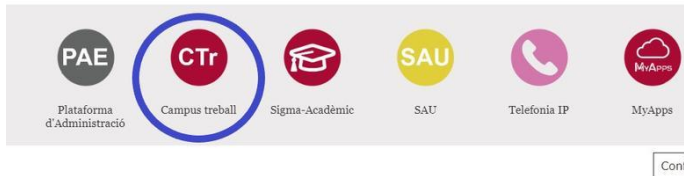
El Consell Social estableix un ajut mínim de **6,30 € b/h**.

Excepció: pràctiques curriculars a entitats públiques.

A entitats privades, cal que siguin remunerades exceptuant casos molt concrets i prèvia autorització acadèmica.

Accés a Campus Treball

Des de Campus Global



Web: <http://campustreball.upf.edu/>

Tens un compte com a entitat col·laboradora?

Correu electrònic*

Contrasenya*

No recordes la contrasenya?

INICIA SESSIÓ

Encara no tens un compte?
Dóna't d'alta com a entitat col·laboradora
Necessites ajuda?

Ets estudiant o alumni?

- Aconsegueix unes pràctiques complementàries als teus estudis o troba la feina que estàs buscant.

ENTRA-HI →

Dins de Campus Treball...

1 COMPLETA EL TEU CURRÍCULUM

Personalitza les teves candidatures (CV i carta de presentació) a través d'“**El meu perfil**”

➤ Dades personals errònies? Fes un CAU (cau.upf.edu/estudis)
Atenció acadèmica >> El meu expedient

2 INSCRIU-TE ALS TAULERS

Clica a l'opció “**Taulers d'ofertes**” i inscriu-te als que més t'interessin.

3 INSCRIU-TE A LES OFERTES

Ves a l'opció “**Anar al llistat d'ofertes**” que trobaràs dins de cada tauler.

TAULERS DE L'ÀMBIT
ENGINYERIES

SALUT
INFORMÀTICA I SISTEMES
PRÀCTIQUES A UNITATS I
SERVEIS DE LA UPF

BORSA DE TREBALL

Com gestiono el conveni?



A Campus Treball podràs seguir en tot moment l'**estat de gestió de la pràctica**.
Rebràs les **notificacions de CT al correu de la UPF**.

Recorda...

IMPORTANT

- Gestionar el conveni **abans d'iniciar** les pràctiques
- Obtenir número de la Seguretat Social (**NUSS**)
- Signatura amb **Certificat electrònic**
 - > El pots sol·licitar al PIE
- Enquestes:
 - De seguiment (5a setmana)
 - D'**avaluació**: imprescindible que el **tutor/a de l'entitat** la respongui

Els resultats són confidencials

INFORMAR A SCP

- **Canvis en les condicions** de les pràctiques (dates, hores totals, horari, tutor, etc.).
- **Incompliment** de les condicions pactades amb l'entitat.
- **Dubtes i consultes** relatives a la gestió del conveni de pràctiques

CONTACTE

scp.engineeries@upf.edu

Notes a Campus Treball

Seguretat Social

Qui fa l'alta?

Com es cotitza?

Incompatibilitats

Important

Més informació

Remunerades

L'entitat que t'acull

Cotització per mes

No remunerades

La Universitat

Cotització per dia
Calendari de seguiment de dies

Si ja cotitzes o reps altres prestacions, pot haver-hi incompatibilitats

Imprescindible tenir NUSS abans de l'inici de les pràctiques
Cotitzes per contingències professionals i jubilació. NO per atur.

[Instruccions per a l'obtenció del NUSS](#)

Consulta les [FAQs a la nostra web](#).

Beques Erasmus+ pràctiques

■ CONVOCATÒRIA 2026-2027. Gestiona Carreres Professionals

- **35 beques** (ajut econòmic) a la mobilitat en pràctiques (Unió Europea).

- Període: Entre l'1 de març de 2026 i el 31 juliol de 2027.

■ CALENDARI. Períodes de sol·licitud

Estada finançada: mínim 2 mesos – màxim 4 mesos.

- **Sol·licitud oberta tot l'any.**

■ TRÀMITS Resolucions mensuals

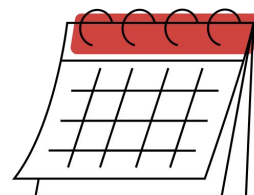
- Sol·licita la beca.

- Tramita la documentació.

Dubtes?

carreres.professionals@upf.edu

upf.edu/web/carreres-professionals/erasmus-practiques



Beques Erasmus+ pràctiques

DOCUMENTACIÓ I TRAMITACIÓ



Programa d'ajuts a les pràctiques_Beques Santander

■ Convocatòria any 2025

- Adreçada a estudiants de grau o màster de la UPF que hagin realitzat o estiguin realitzant una estada de pràctiques l'any 2025.
- 162 ajuts en la primera convocatòria i 100 ajuts en la segona de 500€ cadascun.

■ Presentació de sol·licituds

Segona convocatòria ja tancada.

- Procés tancat.

■ Inscripcions

- A través de la plataforma del Santander Open Academy.

- Informació i enllaços a la web de [Carreres Professionals](#)

CONVOCATÒRIA 2026 EN PROCÉS

**Pròximament a la web de
Carreres Professionals**

Dubtes?

carreres.professionals@upf.edu

www.upf.edu/web/carreres-professionals/programa-ajuts-a-les-practiques

 **Santander** | Becas



Orientació Professional

Activitats grupals

Orientació Professional

Atenció personalitzada

L'equip d'orientació ofereix **sessions d'orientació professional** on podràs:

- Definir objectius professionals
- Treballar eines (CV, carta de presentació, LinkedIn...)
- Preparar entrevistes

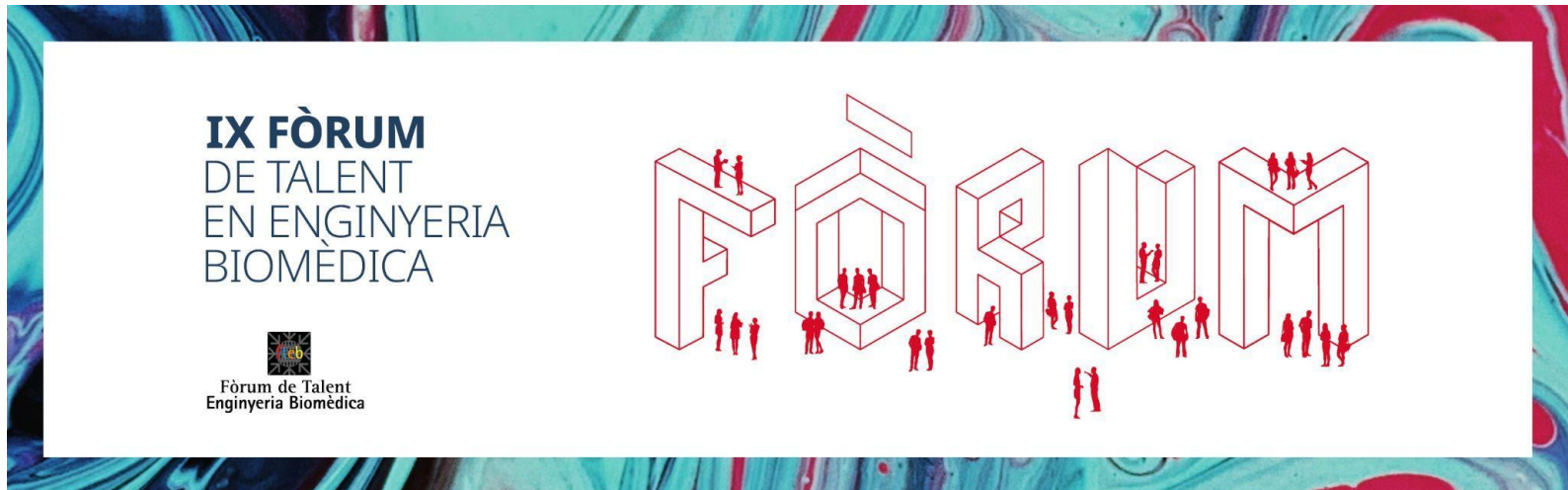


Demana [cita!](#)

Activitats grupals

- Fomenta les teves **competències professionals** i **habilitats personals**, per facilitar l'accés al món professional.
- Activitats formatives grupals gratuïtes on podràs obtenir reconeixement de crèdits
- Fires i esdeveniments per apropar-se al món laboral

Altres Fires



IX Fòrum de Talent en Enginyeria Biomèdica

Dimecres 15 d'abril 2026

Campus Ciutadella

Informació d'interès

[!\[\]\(4cb5c2912b9923108852be895c69764a_img.jpg\) Preguntes Freqüents - Estudiants](#)

[!\[\]\(3a826c315649e5ff8d9ba7aee7a8e49e_img.jpg\) Preguntes Freqüents - Empreses](#)

[!\[\]\(6c52b702f5bb101efc4b3234d01ee644_img.jpg\) Videotutorial de Campus Treball](#)

[!\[\]\(b7315602bb91b3d742e7604f9ff807ab_img.jpg\) Convocatòries](#)

[!\[\]\(24ce36ad8a1745263e2734b9313a9dc2_img.jpg\) Orientació Professional](#)

[!\[\]\(0d417cfc0d70f74bf5febdb4ffef61a7_img.jpg\) Activitats](#)

[!\[\]\(0f56135fbafc50fedfcfff94393fe0f3_img.jpg\) Web Servei de Carreres Professionals](#)

[!\[\]\(240c12821e227464ff6b7614924c0018_img.jpg\) Informació Erasmus+ Pràctiques](#)



T'ajudem a enlairar-te!

Segueix-nos a:  @carreresUPF

Contacte: scp.engineeries@upf.edu
93 542 24 29

www.upf.edu/web/carreres-professionals

 **Universitat
Pompeu Fabra**
Barcelona

Carreres
Professionals 

Internships – Practical information

Internships can be done at any time during the academic year, in industry and/or academia. You just need to:

- Register to Campus Treball through Carreres Professionals and upload your CV – More information here
- Agree about the terms of the internship agreement with supervisors at the host institution: dates, number of hours per week, total number of hours (**defines the number of credits to be validated**), tasks
- Validate your credits by the end of the 3rd trimester at the latest. More information here

Keep in mind that:

- 25 h of internship ⇔ 1 ECTS
- In the GEBM, internships aim to provide students with relevant professional experience related to biomedical engineering
- Internship agreements need to be approved by the GEBM coordinator (Antoni Ivorra, DTIC)
- You will be evaluated by the supervisors at the host institution (behaviour, skills and competencies during the internship) and by GEBM coordinator (internship report)
- Internships require professional attitude and regular dedication (don't commit yourself if you have already too many obligations from other subjects)

Get in touch with Carreres Professionals to find companies of interest, check the offers on Campus Treball and talk to the GEBM professors and to former internship students

https://www.upf.edu/web/etic/fer-practiques

upf.edu/web/etic/fer-practiques

upf.edu ▾ Information addressed to ... ▾ Contact Online office En 🔍 CG

upf. Universitat Pompeu Fabra Barcelona
Engineering and Information and Communication Technologies Academic Coordination Unit
Engineering School Department of Information and Communication Technologies

Studies ▾ Research ▾ Outreach ▾ News ▾ About us ▾

🏠 / Undergraduate Studies / Internships / Internships

Internships

- 1**
Internships
- 2**
Register and find your internship
- 3**
Agreement process
- 4**
Assess your internship and incorporate the credits to your academic record

The UPF SCP ([Servei de Carreres Professionals](#)) manages the internships (curricular and extracurricular) and the job placement office.

If you want to do your internship abroad, you also have the possibility of doing an [Erasmus internship](#).

Curricular internships

- The curricular internship allows you to obtain **academic credits** (25 hours of work = 1 credit)
- **Bachelor degree in Biomedical Engineering:**
 - On the **4th year** the student must enrol the **compulsory** internship of 6 credits (code: 24051).
 - On the **3rd and 4th year** you can do the **optional** internship (up to 9 credits). You can obtain (and enrol) from 1 credit to 9.

Internships – Practical information

EXTRACURRICULAR INTERNSHIPS

- Extracurricular internships will not be recognized with academic credits. These internships are voluntary and can be done at any time during the degree. They are not part of the curriculum, but they will add experience.
- You must be enrolled in a university degree in order to be able to do an extracurricular internship

WHERE CAN I DO AN INTERNSHIP?

- Internships can be done in an enterprise, academic or administrative unit, research group from the same university or institutions (national or foreign, both public and private).

WHEN CAN I DO THE INTERNSHIP?

- You can start the internship anytime during the year – but you need to have the agreement of educational cooperation before starting the internship, either if it is curricular or extracurricular.

HOW MANY HOURS DO I NEED TO DO?

- The dedication and schedule of your internship needs to be compatible with your studies.
- The agreement will finish before the start of the following academic year.

IF THIS IS MY FINAL YEAR, CAN I DO AN INTERNSHIP DURING THE SUMMER?

- If you finish your studies in July, you can still do an internship during the summer (until the beginning of the following academic year), as long as you do not apply for the official degree certificate.

Internships – Practical information

Companies that hosted two or more GEBM students during the academic years 2020-2021 and 2021-2022, (does not include universities and other public institutions such as research centers):

- ABLE HUMAN MOTION, S.L. (2)
- ACCORD HEALTHCARE SLU (2)
- Alma Medical Imaging (3)
- AMES Group Sintering (4)
- Azbil Telstar (8)
- Bitbrain(2)
- CONVATEC SL (4)
- Kerox Technology (2)
- New Born Solutions (2)
- Neuroelectrics (8)
- ROCHE DIAGNOSTICS, S.L. (3)
- Smith&Nephew (3)
- Sycal Technologies SL (4)
- TECNOLOGIA REGENERATIVA QREM (2)
- Werfen España (2)

General info and tips for the final year projects (TFG)

Coordinator: Jérôme Noailly, DTIC (jerome.noailly@upf.edu)

Keep in mind:

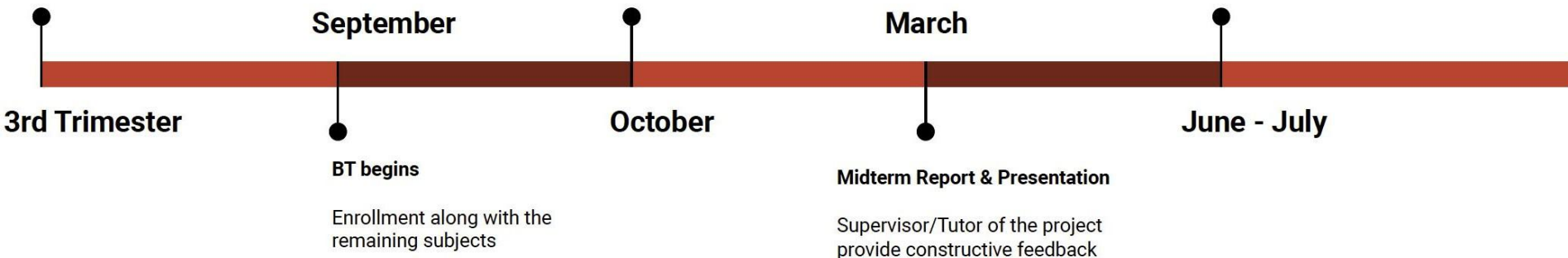
- The TFG can be done at UPF or not, including abroad
- Start to think about your TFG **by the end of the 3rd course**: talk to professors, use previous experience of internship, contact companies, etc...
- Secure your TFG **by the 1st trimester of the 4th course** and prepare yourself for the 2nd trimester (ask for information, for initial data, read the relevant literature, ask for meetings)

Look for topics that you really enjoy

Talk with your tutor, or professors that you have had and consider the different options

Final presentation: oral and written

It is time to show what you have done during the whole year and become a Biomedical Engineer.



General info and tips for the final year projects (TFG)

Get started:

- General information & procedures:
<https://www.upf.edu/web/etic/enginyeria-biomedica-2016-informacio-estudiant>
- Look for published TFG offers (**not exhaustive list of possibilities**):
http://tfg.esup.upf.edu/tfg/pfc_consultar_pfcs.jsp?estudi=ebm
- Talk to the professors & **secure your desired positioning**: build your own project; clinical or industrial collaboration; get involved in ongoing research project; move abroad; ...)
- To do your TFG in another institution, you need a UPF Tutor (who might not be supervising you)

During your TFG:

- Strictly respect the follow-up requirements and deadlines provided by the Coordinator
- **Work regularly**: continuous efforts are necessary to avoid /cope with last minute issues
- Request **regular follow-up meetings** with your supervisor(s): one meeting per week or every two weeks is not too much
- Timely inform your supervisors and/or UPF in case of problems (don't wait, time flies!)

General info and tips for the final year projects (TFG)

TFG report and defence:

- TFG defences are an open event in the form of a scientific congress with limited presentation time (~ 15 min) plus questions & answers involving the jury and the attendees
- Reports and presentations must reflect your efforts and the quality of the work
- Reports must be well-written and well-structured, free of errors and clean – Check examples at the e-Repository: <https://repositori.upf.edu/handle/10230/25277> - **Ask your supervisor(s)**
- Presentations must be visually clean, understandable by both experts & non-experts and remember... **Information is not communication!**
- Respect the timing for the presentation (rehearse, rehearse, rehearse)

**BACHELORS
THESIS**

BIOMEDICAL
ENGINEERING **UPF**

“By failing to prepare, you are preparing to fail”

Benjamin Franklin

General info and tips for the final year projects (TFG)

Most important take-home message:



General information & tips for mobility

Two types of mobility:

- **UPF mobility:** Opportunities in Cross disciplinary programmes (Minors | Free elective cross-disciplinary training | Barcelona International Summer School | Barcelona Programme for Interdisciplinary studies): <https://www.upf.edu/web/programes-transversals/>
- **Outgoing mobility:**
 - National: Programme SICUE - <https://www.upf.edu/web/estudiarfora/estudiar-a-espanya>
 - International (see below)

Outgoing mobility:

- How to prepare an Outgoing mobility:
 - Current destinations:** https://www.upf.edu/documents/105229234/141094937/ESUP_2324.pdf/2274fa9c-9d3e-a68d-fd2a-1675862733433
 - Studying abroad UPF webpage:** <https://www.upf.edu/web/estudiarfora>
 - Engineering School Mobility Webpage:** <https://www.upf.edu/en/web/etic/mobilitat>
 - Erasmus Internships:** <https://www.upf.edu/web/carreres-professionals/erasmus-practiques>



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Outgoing mobility:

- Support & Contact:

- ❑ **Engineering School Coordinator:** Alfonso Martínez, coord-mobilitat.enginyeria@upf.edu
Roles: Academic guidance for mobility; Validation of the Learning Agreements & requested equivalences; Evaluation of the academic results obtained during the mobility abroad
- ❑ **Engineering School Secretariat:** Judit Ferrer, mobilitat.enginyeria@upf.edu or CAU.
Roles: Eligibility rules; Administrative management of UPF learning agreements; Update of UPF transcripts according to academic results obtained during the mobility abroad
- ❑ **UPF Mobility and Welcome Office (OMA) Outgoing:** <https://cau.upf.edu/estudis>
(Contact only through CAU)
Role: Requests for mobility & assignments; Contact & Communication with host universities abroad; Recipient of the academic transcripts from the host universities

International mobility for students with special needs by UPF Inclusion:

<https://www.upf.edu/en/web/upfinclusio/mobilitat-internacional>

Indicative schedule (<https://www.upf.edu/web/estudiarfora/com-pots-participar>)

Com pots participar?

Calendari-resum de la convocatòria de mobilitat internacional

Fins al 10 de novembre	Acredita l'idioma: Hauràs d'accedir a la Secretaria virtual per adjuntar el teu certificat d'idiomes.
4 novembre	Consulta les Destinacions del curs 2025-26 (oferta provisional)
8 novembre	Consulta les Destinacions del curs 2025-26 (oferta definitiva)
11 al 15 de Novembre	Participa als International Days i assisteix a les Sessions informatives per estudis.
11 al 20 de Novembre	Sol·licita les places d'intercanvi
Desembre	Publicació al web de la llista provisional d'admesos i exclosos, a partir del qual s'obrirà un període d'al·legacions de 10 dies naturals.
Segona quinzena de gener	Revisa la primera assignació de places
Febrer	Segona assignació de places (Reassignació). Si no tens plaça o estàs en participació condicionada, sol·licita de nou.
Març	Consulta l'assignació definitiva de places i accepta la plaça adjudicada. La UPF farà les nominacions a les universitat de destinació.
Març-Abril	Assisteix a les sessions informatives, on us informarem dels propers passos abans de marxar i les gestions per preparar l'estada a nivell pràctic i acadèmic
Maig-Juny	Consulta l'adjudicació d'ajuts, on us informarem de la documentació a complimentar

<https://www.upf.edu/web/estudiarfora/com-pots-participar>

ESTUDIAR FORA: COM FUNCIONA LA SOL-LICITUD I ADJUDICACIÓ DE LES PLACES



General information & tips for mobility

Outgoing mobility:

Tips and facts:

- You might be interested in joining a university not already partner of UPF: talk to the coordinator of the GEBM and to the coordinator of Mobility in engineering (**the administrative process for establishing new mobility agreements among universities takes at least one year**)
- You **don't need any Erasmus agreement** for an internship or TFG abroad (**although in that case you won't have a scholarship**)
- The GEBM professors have a lot of international academic and industrial collaborators in many different fields. Seize the opportunity and ask for contacts.

Acquire professional research experience in Biomedical Engineering @UPF



**Universitat
Pompeu Fabra**
Barcelona

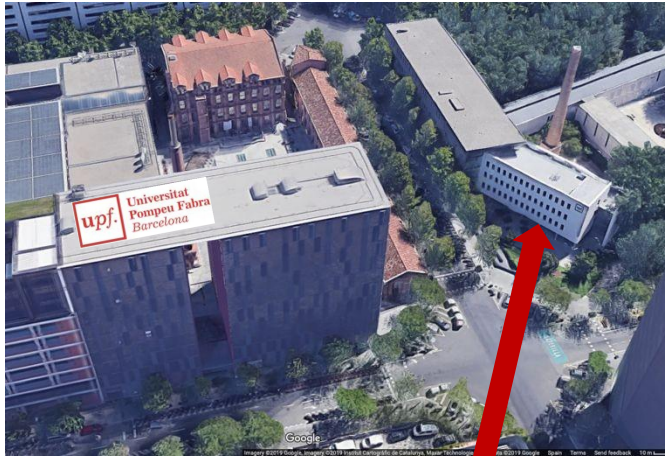
Department
of Information and Communication
Technologies



**Universitat
Pompeu Fabra**
Barcelona

Department
of Medicine
and Life Sciences

Department of Information and Communication Technologies (DTIC) - BCN MedTech



**Engineering School
Department of Information
and Communication Technologies**



ANDRZEJAK, RALPH GREGOR
Biomedical Signal Processing



BIJNENS, BART H
Computational Cardiology

IDIBAPS



CAMARA REY, OSCAR
Physiological modelling



**GONZALEZ BALLESTER, MIGUEL
ANGEL**
Computer Assisted Surgery



IVORRA CANO, ANTONIO
Biomedical Electronics

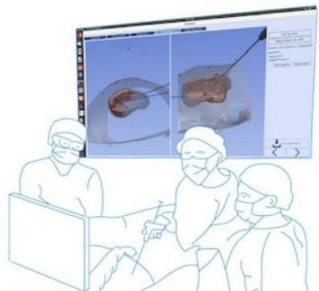


NOAILLY, JÉRÔME BERNARD
Biomechanics and Mechanobiology

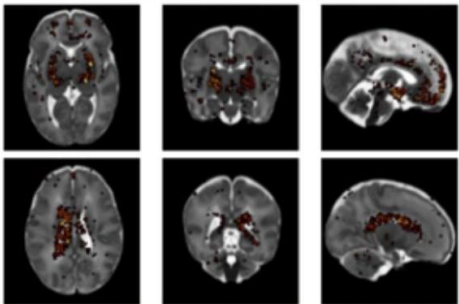


PIELLA FENOY, GEMA
Medical Image Analysis

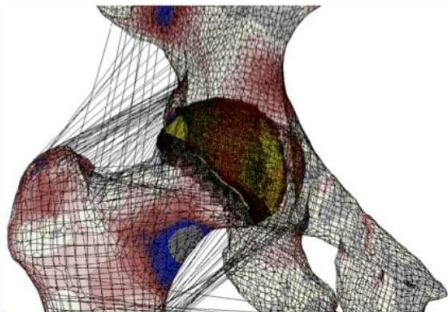




Computer Assisted Surgery



Medical Image Analysis



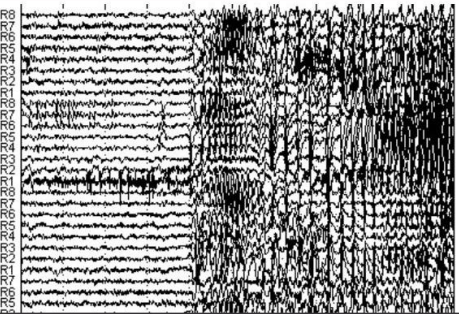
**Biomechanics and
Mechanobiology**



Physiological Modelling

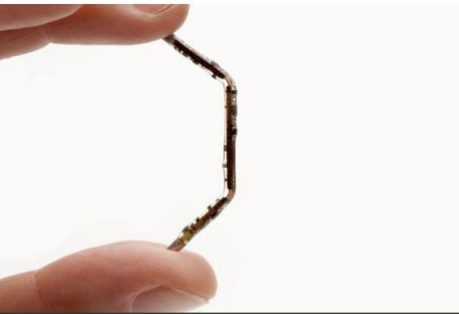
SIMBIOSys (M.A González Ballester, G. Piella, J. Noailly)

Physense (O. Camara)



Biomedical Signal Processing

NTSA (R. Andrzejak)



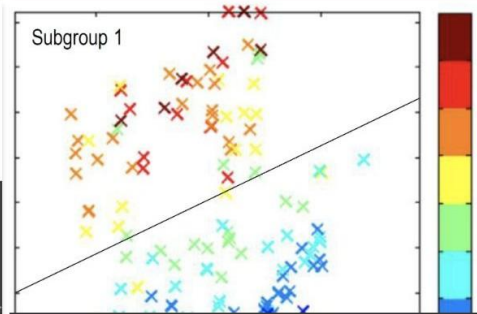
Biomedical Electronics

BERG (A. Ivorra)



Biomedical Data Handling

Transversal



**Machine learning for
personalised medicine**

Transversal

BCN MedTech in numbers

Some indicators that define us

200

I+D Projects

40

External Collaborators

1,000

Publications

19

Patents

57

PhD Thesis

Clinical collaborations

- [Hospital Clínic de Barcelona](#)
- [Hospital Universitari Vall d'Hebron](#)
- [Brigham and women's hospital](#)
- [Cetir ASCIRES](#)
- [Fetal Medicine Barcelona](#)
- [CELLEX Foundation](#)
- [Hospital Sant Joan de Déu](#)
- [INRIA](#)
- [St George's Hospital](#)
- [Hospital de la Santa Creu i Sant Pau](#)
- [Althaia](#)
- [Cardiology Care for Children](#)
- [Centre Hospitalier Universitaire de Caen](#)
- [German Center for Neurodegenerative Diseases](#)
- [Atos](#)
- [University Hospital of Wales](#)
- [Hospital Universitario Virgen del Rocío](#)

- [IDIBAPS](#)
- [Harvard Medical School](#)
- [Utrecht Medical Centre](#)
- [IMIM](#)
- [Hospital General Universitario Gregorio Marañón](#)
- [Hospital Clínico Universitario Lozano Blesa](#)
- ...

Industry & Research Centre collaborations

- [Philips Research](#)
- [Toshiba Medical Systems](#)
- [Indra](#)
- [Materialise](#)
- [Galgo Medical](#)
- [Brainlab](#)
- [Alma Medical Imaging](#)
- [Eurecat](#)
- [Instituto Gustave Roussy](#)

- [Eresa](#)
- [MED-EL](#)
- [Institute for Bioengineering of Catalonia](#)
- [Institute of photonic sciences](#)
- [Barcelona Supercomputing Center](#)
- [CIMNE](#)
- [Fundacion Pasqual Maragall](#)
- [Basque Center for Applied Mathematics](#)
- [QUIBIM](#)
- [SIMULA](#)
- [SIEMENS](#)
- [Everis](#)
- [ISGlobal](#)
- [Fundación QUAES](#)
- ...

<https://www.upf.edu/web/bcn-medtech/>

Department of Medicine and Life Sciences (MELIS)

The UPF-MELIS centre is located at the **Barcelona Biomedical Research Park** (Parc de Recerca Biomèdica de Barcelona - PRBB) and includes a large number of research groups organized into the following research programs:

- Cell and Molecular Biology
- Molecular Medicine Program
- Evolutionary Biology and Complex Systems
- Biomedical Informatics
- Genetics and Neurosciences
- **Systems Bioengineering**

Department of Medicine and Life Sciences (MELIS)

Alliances and Collaborations

MELIS has made a big effort to establish important strategic alliances with surrounding research institutes affiliated to the UPF such as:

- Barcelona Institute for Global Health (IS Global)
- Centre for Genomic Regulation (CRG)
- Hospital del Mar Medical Research Institute (IMIM)
- Institute of Evolutionary Biology (IBE)
- Pasqual Maragall Foundation (FPM)
- European Molecular Biology Laboratory (EMBL)

These alliances have allowed us to increase the scientific critical mass of scientists in several areas of research with some of our Faculty members performing their research in these institutes.

Department of Medicine and Life Sciences (MELIS)

Funding and Scientific Production

Substantial external funding from:

- competitive sources
- research contracts with industry

over **10 million Euros per year**. Multiple ERC grants.

The number of scientific articles produced by the MELIS has been **increasing to a total of more than 1,000 articles in last 5 years**.