

RESPONSIBLE RESEARCH, INNOVATION AND ENTREPRENEURSHIP

STUDY PLAN 2019-2020

Coordinated by **Dr Joan Bigorra** Director of Innovation at the Hospital Clínic Barcelona, IDIBAPS
and **Dr Pastora Martínez** Vice-rector of Globalization and Cooperation, Universitat Oberta de Catalunya

GENERAL INFORMATION

Subject Name	Responsible Research, Innovation and Entrepreneurship
Code	572713
Type	Optional
Teaching	Second semester
Coordinator	Dr. Joan Bigorra and Dr. Pastora Martínez
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ECTS credits	3

OBJECTIVES

Part 1: Responsible Research and Innovation

This subject has two differentiated blocks and the main objectives are:

- A) Scientific communication for a scientific audience
- Improve the student's capacity to communicate and disseminate the results obtained from their research in different formats (oral presentations, posters, scientific papers, CV)
 - To contextualize such communications within the different stages of research
- B) Responsible Research and Innovation (RRI) or Scientific communication for a general public (
- Report the key issues from the Responsible Research and Innovation (RRI) actions promoted by the European Commission within the action research program Horizon 2020
 - Skills to delve deeper in systems and mechanisms

Part 2: Entrepreneurship

The overall objective of the subject is to provide students the basic set of knowledge, know-how and skills to understand the basic policies and procedures to capture value from basic and translational research in Biomedicine and Biotechnology.

COMPETENCES TO BE GAINED DURING THE STUDY

General

- G1: Broader view of biomedicine and biotechnology
G2: Communication, initiative and personal development

Specific

- S1: Negotiation skills
S2: Basic bio-business trends
S3: Learn in a scientific and social context how the research careers develop (Horizon2020 framework)
S4: Learn how to disseminate research results (audiovisual tools, social networking, scientific databases)
S5: Learn the key aspects in what is called public engagement (education, ethics, dissemination, open science...)

THEMATIC BLOCKS

Part 1: Scientific Communication (Dr Martinez)

1. Introduction
2. Block A: Scientific communication for a scientific audience
 - Speaking in public: tips for impact presentations
 - How to write a scientific paper
 - How to make a scientific poster
 - Introduction to leadership
 - Career development in a scientific environment
 - How a teacher (or a funding agency) will evaluate your résumé
3. Block B: Scientific communication to the general public (public engagement)
 - The need for a renewed relationship between science and society: towards responsible research and innovation
 - Science dissemination 2.0
 - Ethics, research and public engagement: analysis of case studies
 - Two other ways of cooperation in science: the open access initiative and the citizen science movement

Part 2: Entrepreneurship (Dr Bigorra)

1. Introduction: how does the sector look like?
2. Public-Private partnerships
3. Patents in Biomedicine and related areas
4. Biopharma: key strategic challenges and future perspectives
5. The Organization of Transfer policies in a University Hospital
6. Creation and development of start-up companies

METHODOLOGY

Total training hours: 3 credits ECTS x 25h/credit = 75h

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|---------------------------------|--|
| a) Face-to-face training (40h): | - Lectures
- Seminars
- Research projects presentation |
| b) Home training (35h): | - Individual and group work |

EVALUATION

To pass the subject, students must obtain a minimum of 50 points. The score will be established as follows:

- **Attendance:** 50% of the overall score
- **Oral Presentation** (related to Part 1): 25% of the overall score
- **Test exam** (related to Part 2): 25% of the overall score

To pass the subject, students will have to fulfill three requisites: Attendance-score $\geq 20/50$, exam+oral presentation-score $\geq 20/50$, and overall score (attendance + exam and oral presentation) $\geq 50/100$.

Reevaluation: In case of failing the ordinary evaluation, students will have to send a written report to the coordinators. The re-evaluation final score will never get over 50 points.

REFERENCES

Part 1: Scientific Communication

Biomedical Articles

- Pulido M. Publicaciones biomédicas (varios artículos). *Med Clin (Barc)* 1975; 65:156-7, 217-8, 264-5, 311-3, 436-7.
- Pulido M. Publicaciones biomédicas (varios artículos). *Med Clin (Barc)* 1976; 67:100-5, 252-3.
- Pulido M. Publicaciones biomédicas (varios artículos). *Med Clin (Barc)* 1977; 68:45-6, 257-9.
- Caldeiro MA, Feliu E, Foz M, Gracia D, Herranz G, Lience E, Pulido M, Ribera JM, Rey-Joly C, Ruiz FJ, Vilarroya O. *Medicina Clínica. Manual de estilo. Publicaciones biomédicas.* Barcelona: Ediciones Doyma, 1993.
- Hall GM. *How to write a paper.* Londres, The BMJ Publishing Group, 1998.
- Cardellach F, Ribera JM, Feliu E, Rey C. Las cartas al Director en *Medicina Clínica: 1985-1996.* *Med Clin (Barc)* 1998; 109:525.
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- Norman G. *Cómo escribir un artículo científico en inglés.* Madrid, AstraZeneca, 1999.
- Huth EJ. *Writing and publishing in Medicine.* Baltimore: Williams and Wilkins, 1999.
- International Committee of Medical Journal Editors. *Uniform Requirements for Manuscripts Submitted to Biomedical Journals.* Updated october 2005. <http://www.icmje.org/index.html>.
- Lang TA, Secic M. *How to Report Statistics i Medicine. Annotated guidelines for authors, editors and reviewers.* Philadelphia: American College of Physicians, 1997.
- Raymon H. *Mulford Library / Medical College of Ohio. Instructions to Authors in the Health Sciences.* <http://www.mco.edu/lib/instr/libinsta.html>. Instrucciones para los autores de más de 3.500 revistas biomédicas, con conexión con la fuente primaria. Incluye otros documentos de interés, como la Declaración CONSORT (normas de preparación de manuscritos para ensayos clínicos controlados) y la última edición de las normas de Vancouver.
- <http://www.bmj.com>. Ir a "advise to contributors". Normas de publicación, guías para evaluación de los artículos, editoriales sobre temas de publicación médica de interés.
- <http://www.thelancet.com>. Ir a "info for authors" (writing for the Lancet). Reflexiones sobre qué quiere y qué espera de los autores la Revista, cuáles son sus secciones, los intereses de sus lectores, etc. El contenido, variando de disciplina, puede ser aplicable a muchas otras revistas.
- *Investigación Médica en Medicina Clínica: Aspectos metodológicos. Selección 1983-1997.* *Medicina Clínica.* Barcelona: Ediciones Doyma, 1998.
- *Investigación Médica en Medicina Clínica: Aspectos metodológicos. Selección 1998-2001.* *Medicina Clínica.* Barcelona: Ediciones Doyma, 2002.
- *Investigación Médica en Medicina Clínica: Aspectos metodológicos. Selección 2002-2005.* *Medicina Clínica.* Barcelona: Elsevier-Doyma, S.L., 2006.
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Peer Reviews

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- *Guarding the guardians. Research on editorial peer review.* *JAMA* 1990;263:1317-1441.
- *The First International Congress on Peer Review in Biomedical Publication.* *JAMA* 1990;263:1317-1441.
- *The Second International Congress on Peer Review in Biomedical Publication.* *JAMA* 1994;272:79-174.
- *The Third Congress on Biomedical Peer Review.* *JAMA* 1998;280:203-306.

- The Fourth International Congress on Peer Review in Biomedical Publication, Barcelona, Spain September 14-16, 2001. JAMA 2002;287:2759-2871.
- International Congress on Peer Review and Biomedical Publication, Chicago, Illinois, September 16-18, 2005.
- Silva A, Campillo Artero C. Cómo se deben evaluar los artículos científicos propuestos para publicación. Med Clin (Barc) 1991;97:744-748.
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- Godlee F. Making reviewers visible: openness, accountability, and credits. JAMA 2002;287:2762-2765.
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- Schroter S, Black N, Evans S, Carpenter J, Godlee F, Smith R. Effects of training on quality of peer review: randomised controlled trial. BMJ 2004;328:673.
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Posters

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- Supe AN, Sahu DR. The art and science of presentation: the poster. J Postgrad Med 2000;46:112-5.
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- Hardicre J, Devitt P, Coad J. Ten steps to successful poster presentation. Br J Nurs 2007;16:398-401.
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- Shin SJ. Evaluation of electronic versus traditional format poster presentations. Med Educ 2012;46:501-527.

Biomedical science databases

- Web of knowledge
- Scopus
- Pubmed

Part 2: Entrepreneurship

- Innovation and Entrepreneurship in the Healthcare Sector: From Idea to Funding to Launch. Luis Pareras ed. ISBN-10: 0982705530 | ISBN-13: 978-0982705537
- www.biocat.cat
- Nature Biotechnology Journal