Universidad de Navarra

Research Rotation (F. Medicina)

Guía docente 2025-26

PRESENTACIÓN

Research Rotation is offered to selected students from the 2nd academic year of the Medical Degree. During this rotation, the student completes a practical scientific internship in techniques of basic or clinical research in a research center or department of a national or foreign hospital or university.

The subject can be taken in three modes: I, II and III, which correspond to the number of months that the practical experience periods last: one, two or three months, respectively.

Teacher in charge of the subject: Dr. **Javier Gómez Ambrosi (CV)**. (Researcher- Associate Professor) Metabolic Research Lab – Dpt. of Endocrinology and Nutrition at the Clínica Universidad de Navarra (Office located in the CIFA building).

Coordinator for the exchange program: Ana de Pablo Fernández (adepablof@unav.es)

Duration: one, two or three months.

Number of ECTS credits: 3 ECTS (one month), 6 ECTS (two months), 9 ECTS (three months).

Number of hours of student work: a minimum of 140 hours of practical experience per month. In addition, the student will have to dedicate the time necessary to prepare a report and necessary documentation in order for the course to be evaluated.

Requirements: to be accepted by the School of Medicine of the University of Navarra for the program of practical experience in a foreign or national center. The information on the selection process is provided in the Mobility section, program of visits, of the School's website, at the following link:

Type of subject: Elective.

Language for the course: the language of the receiving laboratory.

Degree: Medical Degree

Module: Module VI: Electives

Topic: Topic I: Electives

RESULTADOS DE APRENDIZAJE (Competencias)

Basic competences

- BC1: Possess and understand knowledgeable facts that serve as a basis or opportunity for being original in the development and/or application of ideas, frequently within the context of research.
- BC2: The students will be able to apply acquired knowledge and problem solving abilities to fields outside this program, including that which is new and scarcely known, within a more ample or multidisciplinary context related to the research, development and innovation of drugs.

- BC3: The students will be able to integrate concepts and manage the complex task of drawing valid conclusions from information which, in spite of being incomplete or limited, includes reflections regarding social and ethical responsibilities linked to the application of general knowledge, specific concepts and common sense to the research, development and innovation of drugs.
- BC4: The students will learn to relay their conclusions -and the most recent facts and reasoning supporting said conclusions- to specialized personnel and to the general public in a clear and precise manner.
- BC5: The students will have acquired learning abilities that will permit them to continue studying in a self-directed and autonomous manner.

General competences

- GC1: Ability to deal with biomedical challenges in depth, from different viewpoints, identifying the state of present-day science.
- GC2: Identification of significant questions or hypotheses regarding biomedical issues or problems and definition of the steps necessary to resolve such questions.
- GC3: Possession of creative ability and originality in order to be able to respond to the questions raised in biomedical research.
- GC5: Possession of technical ability to obtain precise and reproducible results which can be used to draw valid and objective conclusions in the field of biomedicine.
- GC6: Possession of critical ability, both when reading scientific biomedical literature and when interpreting the results of experiments.
- GC7: Ability to orally communicate biomedical research matters or data in a fluent way, in both Spanish and English, taking into account the audience for which the presentation is intended.
- GC8: Ability to write correct, precise and well-structured texts about different types of biomedical research work.
- GC9: Ability to work in a team with allocated tasks and participate in work meetings, contributing to the solution of biomedical problems and achievement of working group objectives.

Specific competences

- SC1: Knowledge of the ethical principles which govern biomedical research in order to be able to apply them when designing, carrying out, publishing and evaluating biomedical experimentation.
- SC2: Knowledge of the tools and techniques for oral and written expression which are appropriate to the scientific language of biomedicine.
- SC3: Acquisition of an overall view of the general methodology used in biomedical research, as well as the regulations and procedures which allow work to be carried out safely in research laboratories.
- SC4: Knowledge of the legal framework that regulates the experimental use of the most widely-used animal species and the acquisition of key skills for handling them, as well as for designing and preparing in vivo experimental procedures.
- SC5: Application of the scientific method and acquisition of skills in dealing with legislation, information sources, bibliographies, instruments and techniques, as well as other aspects considered necessary in order to design, carry out, publish and evaluate trials in accordance with the ethical guidelines and safety regulations applicable to biomedical experimentation.

METODOLOGÍA

The objectives will be established with the student's supervisor on a daily or weekly basis at the assigned Laboratory (or Research Center). Laboratories (or Research Centers) can be focused on any biomedical research topic.

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Students will have the same degree of responsibility and will have to adhere to the same attendance timetable as the students of the same year in the corresponding country.

Each student must select those areas of knowledge, skills and competencies that he/she wants to acquire in the rotation. Among other aspects, it is expected that student:

• Have the ability to review and interpret relevant data from the literature within their topic of research. To be familiarized with and know how to use sources of biomedical information to obtain, organize, interpret and communicate scientific information.

• Be able to formulate hypotheses, collect and critically evaluate information for problem solving, applying the scientific method.

• Know how to design a research project according to a hypothesis.

• Inform those who supervise their work in the laboratory about the progress of their experiments.

• Acquire basic training for research activity in the laboratory (if necessary).

• Carry out the techniques and develop the practical skills requested of them according to their knowledge and under the supervision of the corresponding scientific personnel.

• Understand and interpret the statistical analysis used in the scientific papers of their interest. Be able to choose the statistical test more appropriate to analyze their collected data.

• Be able to makean oral presentation in public of scientific reports.

PROGRAMA

It will be detailed by the host center.

ACTIVIDADES FORMATIVAS

Those provided by the host center

EVALUACIÓN

To obtain a pass in this subject it is necessary to obtain a final grade of 5 (50%) or above.

For the evaluation of the subject, the following aspects will be taken into account:

- The evaluation obtained from the Laboratory (or Research Center) in which the basic rotation has been done (30% of the mark).
- The quality of the report (35% of the mark).
- The oral presentation of the report (30% of the mark).
- Other considerations (5% of the mark).

Documentation that must be provided on the date indicated:

Prior to the presentation of the report, students must provide, on the date given, the following documents:

• The certificate of attendance signed by the supervisor at the receiving Laboratory (or Research Center).

• The evaluation sheet signed by the tutor in charge of the period of practical experience.

Grades:

9.0-10: SB

7.0-8.9: NT

5.0#6.9: AP

0#4.9: SS

Those students with a final grade of 9 or above are eligible for Honors.

The report

In the report there must be clear statement of the author (first name, surname(s), year and the name of the student's clinical tutor at the Universidad de Navarra), name of the laboratory, hospital /university and country where the rotation was made, and also the dates of the rotation.

The written report must be written in English or in Spanish with a minimum length of 20 pages and a maximum length of 30 pages on one side (excluding references), single spaced, and font Times New Roman or Arial size 12 and consist of the following sections:

Front Page: the title of the study, the name of the student and the supervisor/project manager, and signed with the approval of the latter.

Abstract: summary of the work with a maximum length of 300 words.

Introduction: include the working hypothesis and specific objectives.

Material and Methods: describing in detail all the techniques learned or the subjects and methodology used in the study.

Results: this section contains the data collected during experimentation. Much of the information may be in the form of figures or tables.

Discussion: interpret the results, explaining them and comparing them to the results of other works reported in the literature. Areas of improvement for future research may be suggested.

Conclusions: focus on what is important about the research.

References: list of the scientific sources used in the report.

Self-Evaluation: should indicate what the student have learnt and to what extent the stay has contributed to their overall training from the point of view of both knowledge and personal development. The ways in which the objectives detailed in this teaching guide and those established with the supervisor has been achieved should be highlighted. The limitations and difficulties that they have encountered to attain the proposed aims and how they have tried to overcome these problems should also be detailed (maximum extension of one page).

Bookbinding: the memory of the research project must be submitted spiral bound with transparent plastic cover.

3 copies of the report of the project on paper should be delivered before the given date.

1 electronic copy of the report in pdf format must be also sent by email to: jagomez@unav.es

The documentation submitted in electronic format must exactly match the memory on paper.

Oral presentation of the report

The oral presentations of reports will take place at the beginning of 1st semester (September or October). The use of power point slides will be available and its use is strongly recommended.

The oral defense will be held publicly before a Committee and may be made in Spanish or English. The student will have a maximum of 15 minutes of talk followed for 15 minutes to answer questions by members of the tribunal.

The classroom and the order of intervention of the students will be indicated at least two weeks before the date of defense.

For the evaluation of the written report and oral presentation a Committee will be appointed for that purpose by the School of Medicine. The Committee shall consist of three professors or researchers.

The following will be evaluated: formal and structural aspects (presentation, writing, spelling, organization, clarity, adherence to the norms indicated in this guide, supporting material used, etc.), clarity in the definition of the objectives and their attainment, acquisition of scientific knowledge, acquisition of practical skills, ability to ask oneself questions and provide answers, professional development, originality, critical capacity, bibliography, and the fact of speaking in English if that language is chosen. A negative mark will be given to any aspect regarding the lack of originality,

especially that which can be considered as plagiarism (copy and paste) directly from other sources. A student will fail the subject if plagiarism is detected.

Marks

The subjects are annual, thus the final note appears in the corresponding period, when the examinations of annual subjects are finished.

ATTENTION: Please remember that any attempt at fraud, copying, plagiarism or other irregular behavior represents a serious infraction as contemplated in title IV "Rules of academic discipline for students" within the System of rules on coexistence at the University of Navarra.

NECESIDADES ESPECIALES

The particular requirements that students with special needs may have, will be taken into account in a personalized way.

HORARIOS DE ATENCIÓN

To contact with the professor ask for an appointment by e#mail: Javier Gómez-Ambrosi - jagomez@unav.es

BIBLIOGRAFÍA Y RECURSOS

Bibliography provided by the host center