



DEVELOPMENT OF A COMMON CORE CURRICULUM FOR A "EUROPEAN PhD" WITHIN BIOMEDICINE

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Abstract: *This paper describes a new collaborative program, Eurogendis, between seven universities within the EU. The aim is to develop a common core curriculum for PhD training in biomedicine.*

The program complements the existing PhD Programs at the participating universities since it will increase the selection of postgraduate courses available to students during the first year, and also facilitate an exchange research period of 3-12 months. This will bring a strong European dimension to the advanced training in postgraduate education in biomedicine.

Seven different institutions bring their own particular strength to the program: University of Edinburgh; Trinity College in Dublin; University of Montpellier; University of Innsbruck; University of Leiden; University of Göttingen and Karolinska Institutet (KI). The Deans of the medical faculties of each university have signed a memorandum of understanding to work towards common goals in medical research and education.

The different curricula have been reviewed and a general model for postgraduate education has been proposed. In this model, the student will focus on course work during the first year of training followed by project work for the remaining three years. KI participates in a special first year program, the Biomedical Research School (BRS), which will serve as a model for development of a common core curriculum. In addition, the students of the BRS will be offered to apply for short exchange periods of 3-12 months at the seven collaborating universities. The first group of students for these exchange periods will be selected in May 2001.

The program is funded by EU grants within the Sokrates and Marie Curie Training Sites programs.

For updated information, please find the Eurogendis web-site: <http://www.ki.se/eurogendis>

INTRODUCTION

There is at present no officially standardized common PhD program covering medical molecular genetic research, nor any organized European element to PhD education in biomedicine. Thus, there is limited access for EU students to experience other working research environments than their national norms.

The European Commission communication *Towards a European Research Area, COM(2000)6*, states that the promotion of a European Research Area will require more abundant and more mobile human resources. More specifically it indicates that "greater mobility of researchers and introduction of a European dimension to scientific careers" is necessary to facilitate this process. This program addresses exactly this issue by providing the first step towards a biomedical research education with a clearly defined European dimension. This is a pioneer program in which seven universities (table I) have agreed on a common study period from which all graduate students in the relevant fields may benefit, irrespective of their country of origin.

Table I. The seven collaborating universities

• University of Edinburgh
• University of Göttingen
• University of Innsbruck
• Karolinska Institutet, Stockholm
• University of Leiden
• University of Montpellier
• Trinity College, Dublin

EUROGENDIS

The seven universities belong to the European network Eurolife. For the postgraduate training program, the research training program with focus on the research projects that will follow after the completion of the Human Genome Project. The title of the program is *Eurogendis - Postgraduate Training Program on Genetic Basis of Disease*.

The Eurogendis training program will allow access to and/or training in the use of equipment and facilities at the seven participating universities. By pooling complementary facilities and competence presently spread over seven universities with a history of excellence in biomedical research, the aim is to create a strong training and research infrastructure to underpin state-of-the-art developments in relevant fields of endeavor. Exchange of materials, databases and cell/animal models; harmonization of experimental and clinical protocols; coordination of joint research projects;

and organization of specialized postgraduate training courses are the major specific aims.

CORE CURRICULUM

Whilst acknowledging that the academic rules of postgraduate education vary from nation to nation, we have proposed the basis of a curriculum, which does not conflict, with any of the local or national rules of the participating countries. The aim is to build upon this basic curriculum, such that quality is maintained and that it could eventually be standardized throughout Europe.

In short, the curriculum contains one introductory year with course work and laboratory visits. Following this first year, the student will mainly focus on project work for the following three years. Students applying to the program may choose to participate in the full one-year curriculum, or in parts. Students will be examined locally and awarded with certificates from the university giving the course. Students may choose to attend courses at different universities. Students from EU member states or associate states, with at least three years of university studies are eligible to participate in the Eurogendis program.

KI has participated in one such special program, the Stockholm Biomedical Research School, in collaboration with the Stockholm University and the Royal Institute of Technology. The Research School gives the student a broad basic knowledge of research and will serve as a model for the further development of the Eurogendis core curriculum (fig. 1)

<p style="text-align: center;">Introductory course (5 weeks)</p> <p style="text-align: center;">Problem analysis and choice of methodology for life science research (5 weeks)</p> <p style="text-align: center;">Lab rotation 1 (10 weeks)</p> <p style="text-align: center;">Lab rotation 2 (10 weeks)</p> <p style="text-align: center;">Lab rotation 3 (10 weeks) <i>or</i> courses in bioinformatics and biostatistics (2 x 5 weeks)</p>

Figure 1 - Core curriculum, Biomedical Research School, KI

The final examination (dissertation) after four years will be based on the home university's PhD program and will be awarded by the home university. One representative from one of the universities participating in the Eurogendis program should be present during the dissertation. In addition to the national degree, a diploma from the Eurogendis Research Training Community will be awarded.

MARIE CURIE TRAINING SITES

Within the Eurogendis training program, the students can also apply for a working visit at another laboratory in the network. Approximately 75 students will be supported for participation in research projects during the time period 2001-2004. Each student can apply for 3-12 months at another laboratory presented in the project catalogue. The projects are within the following research areas:

- Neuroscience
- Cancer and Signal transduction
- Cardiovascular diseases
- Immunology Infection diseases and Epidemiology
- Development
- Endocrine diseases and Metabolism
- Genetic disease

The student visits and projects are funded within the Marie Curie Fellowships program.

In connection with the laboratory work, the student should also have the opportunity to participate in one postgraduate course given at the hosting university.

OTHER COURSES AND ACTIVITIES

All students working in a Marie Curie Training Site project are invited to yearly conferences that will change location between the Eurogendis universities. In connection with these yearly meetings, postgraduate courses will be organized. Taken together, these events will build strong networks between young scientists that will be important for their future.

MANAGEMENT AND ORGANISATION

The program as a whole is managed by the coordinating University, Karolinska Institutet (KI) through the Project Administrators Office. The over-all time plan is presented in Table II.

A decision-making committee (Steering committee) has been appointed from delegates of each of the participating universities. All members of the steering committee will have his/her own experience of research, research education or research administration.

The primary tasks of the steering committee are:

- Review the applications to the program according to the recommendations of the researchers and teachers concerned.
- Award the EUROLIFE diploma.
- Evaluation and development of the program.

CONCLUSION

The seven universities are together committed to the major objectives of Eurogendis:

- Standardization of biomedical doctorate studies in Europe.
- Establishment of postgraduate courses and training in the field of Genetic Basis of Disease.
- Enhanced accessibility to equipment and expertise.

We strongly believe that participating students as well as the collaborating universities will benefit considerably from the Eurogendis program and that it will contribute to increased mobility among researchers.

Activity	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004
Planning phase: General meetings	Sept, Oct, Nov, 1999 and May, 2000, meetings within Eurolife	Dec. 2000, planning meeting for project start.	Aug. 2001, Planning meeting for examination procedures.	Continued curriculum development.	Cont.
Planning phase: Marie Curie Training Site	Meetings as above, application submitted Feb, 2000 to Quality of Life Program	Oct. 2000: Application granted, Contract No.: QLGA-CT-2000-0005	April 2001: Start of Marie Curie Training Site projects	Cont.	Cont.
Funding: Erasmus	First application submitted	Contract 29441-IC-1999-1-SE-ERASMUS-CDA-4	Current application	Current application	Current application
Project start and activities	-	April, 2001, Admission of students.	Teacher exchange starts.	Cont.	Cont.
Evaluation of results, students	-	-	Questionnaires to evaluate courses during year 1. Review of project reports.	Cont.	Cont.
Evaluation of results, academic staff	-	Dec., 2001 1 st Annual Project Conference	Nov, 2001 and April, 2002, Academic staff meetings. Dec., 2002 2 nd Annual Project Conference	Academic staff meetings. Dec., 2003 3 rd Annual Project Conference	Academic staff meetings. Dec., 2004 4 th Annual Project Conference

Table II - Overall time plan with dates, activities and provisional outcomes