



# SECOND EUROPEAN CONFERENCE ON HARMONISATION OF PhD PROGRAMMES IN BIOMEDICINE AND HEALTH SCIENCES

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## Guidelines for Organisation of PhD Programmes in Biomedicine and Health Sciences

### Foreword

*This document is based on:*

1. The Declaration of the European Conference on Harmonisation of PhD Programmes in Biomedicine and Health Sciences, that was adopted in Zagreb on April 25, 2004. The participants of the Zagreb Conference, who were representatives of 25 universities from 16 European countries, have agreed on the important issues concerning the obtaining of the PhD degree in Biomedicine and Health Sciences.
2. Conclusions and recommendation of the Bologna seminar on «Doctoral Programmes for the European Knowledge Society» held in Salzburg, 3-5 February 2005, Berlin Communiqué and other main documents of the Bologna Process
3. Irish and British National guidelines on PhD programmes
4. Contributions published in the proceedings of the first and second Zagreb Conference on Harmonisation of PhD Programmes in Biomedicine and Health Sciences i.e. experiences of other countries.

After extensive discussion and exchange of ideas and experiences among participants coming from 33 universities and from 21 European countries having different schemes for obtaining the PhD degree in biomedicine and health sciences regarding both, form and the way of evaluation, ranging from monograph and evaluation within the same university to high standards of PhD thesis containing four or more papers published in internationally recognized peer reviewed journals, often with high impact factor and the inclusion of evaluators from abroad, the participants of the Second European Conference on Harmonisation of PhD Programmes in Biomedicine and Health Sciences (hereafter referred to as the «Zagreb Conference») have agreed on the following:

### Introduction

European higher education is facing the challenges of implementation of the Bologna principles. Within the European Union and among other signatories of the Bologna process, mobility of students and staff should be ensured. In addition, higher education institutions should foster diverse but compatible curricula.

The idea of a two-cycled structure (bachelor and master) and ECTS as a measure of the workload has enabled international and inter-institutional mobility with current results demonstrating over a million students participating in exchange programmes.

In contrast to the undergraduate and graduate education, serious discussions on PhD programme as a third cycle started only two years ago.

The Bologna seminar, held in February 2005, in Salzburg, was the first one which brought together representatives from European universities with the aim to primarily exchange ideas and views on doctoral education and it is expected that similar discussions will be continued at the Ministers' conference in Bergen, in May 2005.

In Salzburg it was agreed that doctoral programmes should be tailored to include training (advanced learning) and scientific research and their interaction.

The participants of the first Conference on Harmonisation of the PhD Programmes in Biomedicine and Health Sciences held in Zagreb in 2004 agreed on the necessity of firm scientific standards for obtaining a PhD degree. The Zagreb Declaration represents a reached consensus on what a PhD thesis should be (equivalent of at least

three *in extenso*, paper in internationally recognized journals) and the agreed proposal for the countries which had achieved such standards to continue with them, and those with less advanced criteria to strive towards achieving this goal.

As already accepted by the Zagreb Declaration, the *PhD programme is intended to enable individuals, after completing and defending their PhD thesis, to carry out independent, original and scientifically significant research and to critically evaluate the work done by others.* To ensure the above, the participants of the Second Zagreb Conference reached a consensus about the general principles of good practice in organising PhD programmes, from admission criteria, organisation of the study, and role of the PhD candidate, adviser and university.

### **Admission criteria**

Universities have autonomy and authority in the organisation of PhD programmes, research training and have the right to select PhD applicants on the basis of a competitive (internationally) open process. This process must be fair and transparent.

The basic principles of admission criteria for enrolment of students into PhD programmes are that each candidate having a Master's degree, MD, or an equivalent degree will be able to carry out original, independent and good quality research (i.e. carry out the research leading toward PhD thesis as described in Zagreb Declaration) and to complete a dissertation in a given time period.

In order to have realistic expectations that each candidate has a potential and conditions to achieve this goal, several requirements regarding (i) the abilities of candidate, (ii) his or her mentor/adviser and (iii) setting in which the research will be done, need to be fulfilled. At the admission the PhD candidate should demonstrate proven competence (or at least a high motivation in scientific research) is probably the most important criteria.

Arrangements for supervision and assessment should be based on transparent contractual framework of shared responsibilities between PhD candidate, mentor/adviser and the institution.

### **Criteria for the Advisers**

Critical selection of advisers is probably the most important and difficult task that must be done by the university.

1. Advisers should have a PhD or the highest required degree, be an active scholar and preferably a research project leader with good records of achievement i.e. publications and citations in internationally indexed peer-reviewed journals.
2. Advisers must be able to stimulate, collaborate and follow up the candidate's research and scientific activities including publication of research results required for achievement of the PhD degree. Therefore one person can be an adviser only to a limited number of PhD candidates.

### **Criteria for the Institution/University**

In addition to competent adviser(s) who are specialist(s) in the field of research, the support of other professionals/experts and availability of settings, rules, procedures and expertise must be ensured to enable the candidate to complete successfully each particular task and phase of work within the expected time period. Adequate level of funding and support facilities (such as computer, library and laboratory services) must be ensured.

### **Structure and Organization of PhD Programme**

The PhD programme is intended to enable individuals, after completing and defending

their PhD thesis, to carry out independent, original and scientifically significant research and to critically evaluate the work done by others (definition given in Article 1 of the Zagreb Declaration). To achieve that goal, the PhD programme should be comprised of two major parts:

1. Organised education: acquisition of generic skills, specific technical skills and critical knowledge necessary for understanding the scientific process through courses which occupy no more than 20% of the candidate workload. Organised education might include field-related courses.
2. Original research done by the candidate (Criteria defined in Zagreb Declaration).

The recommendations of the Salzburg meeting indicate that the PhD candidates might be full time students (candidates) and part time students (candidates). Especially in clinical medicine it might be expected that most of the PhD candidates will be part time students. In line with that, the PhD programmes should be organized in a non-rigid way to allow the research work of the candidate or his/her attendance to be stopped and resumed when possible. However, the candidate should be aware of a possible risk of losing priority or even actuality in scientific discovery. In this sense expectations of candidate and adviser and/or project leader should be cleared at the beginning of the candidate's programme.

In line with the high requirements for a PhD thesis, no university should enrol more PhD students than it can provide with adequate services. Especially for smaller universities, but in some fields of biomedicine and health sciences even for some larger universities establishment of a network with other universities might be the only way to establish and maintain high standards in all fields. Ideally the doors of all European universities i.e. laboratories, research facilities, and advisers should be open to all young scientists as much as possible. In line with that goal:

It is recommended to national and international authorities create specific funds which would specifically facilitate the mobility and co-operation in the PhD programmes.

It is recommended that all European medical schools and schools of public health create a pan-European network to enable the mobility of the candidates.

Joint advisership should be encouraged. Possible local regulations, which restrict scientists from other countries to be acknowledged as advisers, should be abandoned.

In line with the need for international cooperation, all universities should allow the presentation of the PhD thesis not only in national languages but also in other European languages understood by most participants in such public presentations.

### **The PhD candidates (Students)**

The PhD programmes participants, i.e. PhD candidates (term put in use by EURODOC), in contrast to a bachelor and master level students, are not only recipients of the knowledge which has been discovered and synthesised by others, but are also active contributors to the generation of new knowledge. Their status should be established accordingly.

It is a goal that the PhD candidates should be employed with full benefits including social security, health insurance and salary for their scientifically useful work.

All PhD candidates at the same University should have equal opportunities to complete the PhD programme and to develop their research talent.