The Declaration of the European Conference on Harmonisation of PhD Programmes in Medicine and Health Sciences

Convened in Zagreb on April 24 – 25, 2004
(hereafter referred to as the «Zagreb Declaration»)

After extensive discussion and exchange of ideas and experiences among participants coming from 25 universities and from 16 European countries having different schemes for obtaining PhD degree in medicine 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 European Conference on Harmonisation of PhD Programmes in Medicine and Health Sciences (hereafter referred to as the «Zagreb Conference» or the «Conference») have agreed on the following:

**Article 1**

PhD programme is intended to enable individuals, after completing and defending their PhD thesis, to carry out independent, original and scientifically significant research and critically evaluate work done by others. To assure the above, the participants of the Conference reached consensus on the following:

**Article 2**

As in any kind of scientific peer review process, the reviewers of PhD thesis should be competent and independent from the PhD thesis, candidates and supervisor. In this sense, the participants of the Conference would like to encourage the inclusion of reviewers from other universities and countries.

**Article 3**

The Conference agreed that a suitable benchmark to describe the necessary achievement is a PhD thesis based on original *in extenso* publications in internationally recognized scientific-medical journals. The independent contribution of the candidate should be clearly demonstrated (for example the candidate being the first author). The Conference recommends that the minimal requirement for the PhD thesis in medicine and health sciences should be the equivalent of at least three *in extenso* papers published in internationally recognized journals. In addition to the papers presented the candidate should provide a full review of the literature relevant to the themes in the papers, and, where necessary, a fuller account of the research methods and results. Where the PhD research is presented in other formats, such as the single monograph, reviewers should demonstrate that the contribution is at least equivalent to this benchmark, and should encourage inclusion of publication from the research.
Article 4

While the main demonstration of the achievement should be the thesis and published papers, PhD programmes should include theoretical basis as well as development of technical research skills in taught courses where appropriate.

Article 5

The Conference recommends to all universities to make their PhD programmes publicly available to students, lecturers and tutors from other universities and countries. All medical schools are recommended to create their web pages and written material about PhD programmes in English and to make their programs open to candidates from other universities and countries. The Conference encourages the development of joint PhD programmes in order to enhance the link between the European Higher Education Area and the European Research Area with a view to ensure higher quality and enable joint degree recognition.

Article 6

The development of well-designed and high-quality PhD programmes requires substantial support by medical faculties, universities, national governments, the European Commission or private sponsors and other institutions in order to engage the best medical students into scientific research so as not to lose our future in medicine and public health.

The Zagreb Declaration was adopted unanimously on April 25, 2004 at 2:00 P.M. by:

Conference participants

Representatives of international and Croatian professional/academic associations and governmental institutions (in alphabetical order)

Association of Medical Education in Europe (AMEE)
  Prof. Jadwiga Mirecka, MD, PhD, Executive Committee member

Association of Medical Schools in Europe (AMSE)
  Prof. Petr Hach, MD, PhD, President

Association of Schools of Public Health in the European Region (ASPHER)
  Prof. Charles Normand, BA, DPhil, FFPHM, President

Croatian Medical Association
  Prof. Ivan Bakran, MD, PhD, Vice-President

European Medical Association (EMA)
  Vincenzo Costigliola, MD, President

German Academic Exchange Service (DAAD), South-Eastern European Cooperation, Curriculum Reform in Medicine
  Prof. Hans Joachim Seitz, MD,

Ministry of Health and Social Welfare of the Republic of Croatia
  Prof. Velimir Božikov, MD, PhD, State Secretary for Health

Ministry of Science, Education and Sports of the Republic of Croatia
  Prof. Pavo Barišić, PhD, Assistant Minister

University of Zagreb, Croatia
  Prof. Aleksa Bjeliš, PhD, Vice-Rector
  Prof. Helena Jasna Mencer, PhD, Rector
Representatives of medical schools and schools of public health (in alphabetical order by country name)

University of Mostar, Medical School, Mostar, Bosnia and Herzegovina
- Prof. Filip Ćulo, MD, PhD, Dean
- Prof. Mirna Saraga-Babić, MD, PhD, Vice-Dean for Science

University of Sarajevo, Medical School, Sarajevo, Bosnia and Herzegovina
- Prof. Jadranka Dizdarević, MD, PhD, Vice-Dean for Undergraduate Studies
- Prof. Benjamin Vojniković, MD, PhD, Secretary General of the Medical School

University of Tuzla, Medical School, Tuzla, Bosnia and Herzegovina
- Prof. Lejla Begić, MD, PhD, Vice-Dean for Science
- Prof. Osman Sinanović, MD, PhD, PhD Programme Director
- Prof. Husref Tahirović, MD, PhD, Dean

Higher Medical Institute of Pleven, Pleven, Bulgaria
- Prof. Maria Simeonova, MD, PhD, Head of Medical Genetics Department

J. J. Strossmayer University, Medical School, Osijek, Croatia
- Asst. Prof. Gordan Lauc, MD, PhD, Vice-Dean for Education
- Asst. Professor Ante Tvrđeić, MD, PhD, Vice-Dean for Postgraduate Studies

University of Rijeka, Medical School, Rijeka, Croatia
- Prof. Andelka Radojčić Badovinac, MD, PhD, Vice-Dean for Postgraduate Studies
- Prof. Dragica Bobinac, MD, PhD, Vice-Dean for Graduate Studies
- Asst. Prof. Zlatko Trbonjača, MD, PhD
- Prof. Luka Zaputović, MD, PhD, Vice-Dean for Science

University of Split, Medical School, Split, Croatia
- Prof. Mladen Boban, MD, PhD, Dean
- Prof. Željko Dujić, MD, PhD, Coordinator of Postgraduate Studies
- Prof. Stjepan Gamulin, MD, PhD, Head of Postgraduate Studies Committee
- Prof. Marijan Saraga, MD, PhD, Vice-Dean for Science

University of Zagreb, Medical School, Zagreb, Croatia
- Prof. Nada Čikeš, MD, PhD, ECTS Coordinator
- Prof. Marija Dominis, MD, PhD, Vice-Dean for Postgraduate Studies
- Prof. Boris Labar, MD, PhD, Dean
- Prof. Zdravko Lacković, MD, PhD, PhD Programme Director, Deputy Dean for Postgraduate Studies

University of Zagreb, Medical School, Andrija Štampar School of Public Health, Zagreb, Croatia
- Prof. Jadranka Božičkova, PhD, PhD Programme Deputy Director
- Prof. Luka Kovačić, MD, PhD Deputy Director
- Prof. Stjepan Orešković, PhD, Director

Charles University in Prague, First Faculty of Medicine, Prague, Czech Republic
- Prof. MUDr. Stanislav Štípek, DrSc., Vice-Dean for Pedagogical Affairs

University of Helsinki, Faculty of Medicine, Finland
- Prof. Seppo Meri, MD, PhD, Head, Committee for Postgraduate Scientific Studies in Medicine

University of Hamburg-Eppendorf, Germany
- Prof. Dr. Hans Joachim Seitz, MD, Director of the Institute for Biochemistry and Molecular Biology III - Biochemical Endocrinology

University of Szeged, Albert Szent-Gyorgyi Medical and Pharmaceutical Centre, Faculty of General Medicine, Szeged, Hungary
- Prof. László Vécsei, MD, PhD, DSc, Director of the Experimental and Clinical Neuroscience PhD Programme

University of Dublin, Trinity College, Dublin, Ireland
- Prof. Charles Normand, BA, DPhil, FFPHM, Edward Kennedy Professor of Health Policy and Management
University of Pavia, Faculty of Medicine and Surgery, Pavia, Italy
   Prof. Alberto Calligaro, Deputy Dean

University "St. Cyril and Methodius", Medical School, Skopje, R. Macedonia
   Prof. Magdalena Žantineva-Naumoska, MD, PhD, Vice-Dean for Postgraduate Studies
   Prof. Ljubica Georgijevski-Ismail, MD, PhD, FESC, Member of the Postgraduate Studies Committee

Norwegian University of Science and Technology (NTNU), Faculty of Medicine, Trondheim, Norway
   Anne Britt Storeng, Senior Executive Officer, Research Administration
   Prof. Alf O. Brubakk, Professor of Environmental Physiology

University of Oslo, Faculty of Medicine, Oslo, Norway
   Sigrid Bergseng, Senior Executive Officer and Head of PhD Programme University Administration

Medical Centre of Postgraduate Education, Warsaw, Poland
   Zbigniew Wegrzyn, MD, Department of Education and Quality Assessment

Jagellonian University, University Medical College, Kraków, Poland
   Prof. Jadwiga Mirecka, MD, PhD, Head of the Department of Medical Education

Poznan University of Medical Sciences, Poznan, Poland
   Prof. Maciej Zabel, PhD, Head of PhD Program

Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania
   Prof. Petru Adrian Mircea, Vice-President of the University

University of Niš, School of Medicine, Niš, Serbia and Montenegro
   Prof. Goran Nikolić, MD, Vice-Dean

University of Novi Sad, Faculty of Medicine, Novi Sad, Serbia and Montenegro
   Prof. Nevena Šečen, MD, PhD, Vice-Dean for Foreign Communication and Foreign Students

Comenius University, Jessenius Faculty of Medicine, Slovak Republic
   Prof. Kamil Javorka, MD, DSc, Vice-Dean for PhD Study

University of Navarra, Medical School, Navarra, Spain
   Prof. Alfonso Sánchez Ibarrola, MD, PhD, member of University PhD Committee

List of other invited lecturers not listed above (in alphabetical order):

Tina Dušek, MD, PhD student, University of Zagreb Medical School, Croatia

Dr. Guy Haug, Expert on the European Higher Education Area (Bologna Process), Bruxelles

Alena Kavalírová, graduated pharmacist, PhD student, Faculty of Pharmacy in Hradec Králové, Charles University in Prague

Dr. Cees C. Leibbrandt, MD, Former Secretary General (1999–2002) of the European Union of Medical Specialists (UEMS)

List of observers (in alphabetical order)

Sandra Belko, BA (English), PhD Programme Secretary, Medical School, University of Zagreb; Kristina Fišter, MD, Research Fellow, Andrija Štampar School of Public Health, Medical School, University of Zagreb; Asst. Prof. Ileana Linčir, MD, PhD, Vice-Dean for Postgraduate Education, University of Zagreb School of Stomatology; Prof. Josip Madići, DVM, PhD, Vice-Dean of Science and International Cooperation, Faculty of Veterinary Medicine, University of Zagreb; Prof. Albert Marinčulić, DVM, PhD, Vice-Dean of Education, Faculty of Veterinary Medicine, University of Zagreb; Anita Putrić, BA (Political Science), Senior Executive Officer of PhD Programme Administration, Medical School, University of Zagreb; Marita Mimica, BA (psychologist), Head of Postgraduate Studies Department, Medical School, University of Split, Miroslav Sabolek, BA (economy), Head of PhD Programme Administration, Medical School, University of Zagreb; Assoc. Prof. Velimir Sušić DVM, PhD, ECTS Coordinator, Faculty of Veterinary Medicine, University of Zagreb; Tea Vukušić Rukavina, MD, Research Fellow, Andrija Štampar School of Public Health, Medical School, University of Zagreb.
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/advisor 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.
TO THE MINISTERS RESPONSIBLE FOR HIGHER EDUCATION
ATTENDING MINISTERIAL CONFERENCE IN BERGEN
19-20 MAY 2005

The Second European Conference on Harmonisation of PhD programmes in Biomedicine and Health Sciences was held in Zagreb on 22 – 24 2004. This Conference was attended by high-level representatives from the medical faculties of 33 universities from 21 countries, as well as the representatives of four major pan-European bodies concerned with issues relating to academic biomedicine and health sciences. It followed the First Conference, held in April 2004, the outcome of which was the Zagreb Declaration, attached to this paper.

The Conference warmly endorsed the principles underlying the Bologna Declaration and successor documents: the development of increased collaboration, enhanced mobility and common practices and standards, with the objective of creating a Europe-wide higher education area, to the benefit of students, as well as the people and the economy of Europe. In biomedicine and health sciences, the benefits to the economy, to the development of science and education, and in improved health-care are likely to be high.

The Conference also agreed that development of high quality PhD programmes, and the setting of uniform criteria for PhD degrees in Europe, as the Third Degree Cycle within the Bologna framework, is essential. Much of the work of the Conference was devoted to the essential academic procedures and developments to promote this object.

The covering letter from the participants in the Conference draws to the attention of Ministers the salient outcomes of the Conference.

One outcome was a consensus on the need for funding to develop both existing and new programmes, including in the development of national and Europe-wide systems of validation and accreditation of programmes.

Another outcome was the need for further agreement on the common features of the Third (PhD) Cycle within the Bologna Area. Many of these common features are academic ones (matters such as examination requirements, publication in academic journals, mentoring of doctoral students, and the like), and, as such, not the immediate concern of Ministers. Political agreement is required on the minimum requirements of PhD programmes, and on the range of duration that is acceptable.
The Conference also noted two additional matters which, while not directly part of the discussion relating to the working of the Third Cycle, are highly relevant in PhD programmes in biomedicine.

Many PhD candidates in biomedicine will have a qualification in a clinical discipline, particularly in medicine, and will need to complete postgraduate training in their discipline before, during or after completing the PhD programme. It is not simple to combine research training (the PhD) and higher clinical training, and in order to enhance Europe’s performance the Conference believes that it is highly desirable for the management and content of higher clinical training in health-care disciplines to be closely linked to the relevant university departments.

Second, while the Conference welcomed the opportunities afforded to medicine (in particular) and to biomedicine (in general) in Europe by the proposals for the Third Cycle, and (as noted above) warmly endorsed the principles underlying the Bologna Declaration, it noted that the proposals that all subjects in universities be studied in two distinct cycles (Bachelor and Master degrees) cannot apply to medicine and some of the related subjects, such as dentistry and veterinary medicine. Modern educational practice is for medicine to be taught as a coherent programme extending normally over six years: to attempt to break this into two separate cycles is not practicable or educationally desirable, and in any event such an attempt could conflict with the requirements in law set out in EC directive 93/16/CEE, which requires (inter alia) that the medical course consist of at least six years and 5,500 hours of instruction.

On the behalf of the participants of
the Second European Conference on the Harmonisation of
PhD programmes in Biomedicine and Health Sciences

Professor Zdravko Lacković, MD, PhD
President of Scientific & Organising Committee and
ORPHEUS – ORganisation of PhD Education in Biomedicine and Health Sciences in the
EUropean System (association in the process of initiation)

Professor David Gordon, MA, FRCP, F MedSci
Member of Scientific & Organising Committee and ORPHEUS Vice President