The Advancement of European Biomedical and Health Science PhD Education by Cooperative Networking

Vienna, Austria, April 8-10, 2010

PROGRAMME AND ABSTRACT BOOK
ORGANISATION

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Andrea Olschewski [Medical University of Graz]
Hannes Stockinger [Medical University of Vienna], Chairman
Program at a glance

THURSDAY, APRIL 8, 2010
15.00 - 17.00  Registration
17.00 - 17.45  Opening of the Conference
17.45 - 18.15  Introductory Session
18.15 - 19.15  Keynote lectures on partnership academia and industry
19.15 - 20.30  Reception by invitation of the Rector of the Medical University of Vienna

FRIDAY, APRIL 9, 2010
08.30 - 09.30  Keynote lectures on joint degrees
09.30 - 10.00  Coffee break
10.00 - 12.15  International and national ORPHEUS reports
12.15 - 12.25  Photo shoot of conference participants
12.25 - 14.00  Lunch and poster presentation
14.00 - 15.30  Keynote lectures on brain drain/brain gain and joint PhD programmes
15.30 - 16.00  Coffee break
16.00 - 17.30  Keynote lectures on partnership academia and scientific societies
17.30 - 18.30  Short reports on networking in PhD programmes
20.00 - 24.00  Social evening at Heurigen Fuhrgassl-Huber

SATURDAY, APRIL 10, 2010
09.00 - 09.30  Keynote lecture on global PhD trafficking
09.30 - 11.30  Workshops on networking
11.30 - 12.30  Presentation of workshop papers and closing
12.30 - 13.30  ORPHEUS General Assembly
The venue for the Conference is the Lecture Hall Centre of the Medical University of Vienna/General Hospital of Vienna, Währinger Gürtel 18-20, A-1090 Vienna
Welcome address

We are delighted to have the privilege to welcome all participants to the Fifth ORPHEUS 2010 conference - an event, we believe, of utmost significance to the future development of PhD programmes in Europe.

With more than 100 participating institutions involved in the organisation of PhD programmes in the European medical system this is the largest gathering of medical and health science related schools or universities that have ever come together in Europe. From Reykjavik to Izmir, from Moscow to Las Palmas, representatives from almost all countries in Europe have gathered here in Vienna.

Imagine science and education of young scientists on a continent with many borders, many political elites, with a multitude of different languages where not only countries but even particular universities behave as isolated intellectual islands. Many people still believe that only national languages are acceptable in the scientific discourse and that early stage researchers should primarily improve national professional vocabulary. Imagine a university with new information technologies understandable only to local students, where PhDs as well as professors are elected by inter-connected peers from the same institution, even from the same building. Only with a lot of financial incentive are those professionals willing to think outside their borders, even to organised “continental” PhD programmes. Is there a continent like this?

New technologies or climatic changes do not recognise national borders or languages, as diseases never did. Since the 1st ORPHEUS conference in 2004 we have been criticising the lack of information on PhD programmes, which should have been made available to students and lecturers across the continent and not just to native speakers in each country. Most recent ORPHEUS standards advised that the students should be selected on the basis of “internationally open process” and that “supervisors should have a broad scientific international network”. These conditions together with the need for improving competitiveness of European medical science have impelled us to organise this Conference concentrating on cooperation and networking ranging from student exchange to different forms of joint degrees. We believe that international cooperation and networking are not only a political claim of the united Europe but also a need and a requirement to increase competitiveness of Europe. Moreover, this appears to be the best way for smaller scientific communities to abandon their autarchic traditions, a development that will eventually become beneficial for the whole continent.

Naturally, changes are hard to accept and implement, accompanied by understandable hesitation and fear that mobility would only increase a one-way brain drain. We will try to address all these challenges and we hope that the Conference will end with a clear consensus document, which will help guide us to our common goal.

On the behalf of ORPHEUS and the Organising Committee we wish you a successful Conference, which we hope you will find both professionally worthwhile as well as culturally uplifting and enjoyable.

Hannes Stockinger
5th ORPHEUS 2010 Conference Chairman

Zdravko Lacković
ORPHEUS President
GENERAL INFORMATION

Conference Administration and Management
Ms. Helga Bodor (general secretariat) helga.bodor@meduniwien.ac.at
Ms. Petra Eisenhut (finances) petra.eisenhut@meduniwien.ac.at

Registration Desk
A registration desk will be available at the following times:
Thursday, April 8 15.00 - 19.00
Friday, April 9 08.00 - 13.45

A hospitality desk will be available throughout the conference.

A free all-inclusive public transportation ticket can be collected at the registration desk.

Name Badges
Participants are required to wear their name badges throughout the conference.

Scientific Sessions
All sessions will be held in Hall HS3 of the Lecture Hall Centre on Level 7.

Workshops
Workshops will be held in seminar rooms KS9 - KS14 on Level 7.

Poster Presentations
All posters will be on display on Level 7 for the duration of the whole conference. They should be mounted at the numbered spaces indicated in the programme.

Bursaries for PhD students
The European Federation of Immunological Societies (EFIS) supports the conference by providing a package of travel bursaries. This allowed us to award PhD students/candidates attending the conference and submitting abstracts with scholarships of up to 400,- Euros per applicant.

Liability and Insurance
Neither the organisers of 5th ORPHEUS Conference 2010 nor the Conference Secretariat will assume any responsibility whatsoever for damage or injury to persons or property during the Conference. Participants are recommended to arrange for their own personal travel and health insurance.

Changes
The organizers reserve the right to adjust or change the programme as necessary.

Climate
The weather in Austria in April is normally pleasant, but can also be cool. Bring an umbrella! For more information please visit www.wetter.at
GENERAL INFORMATION

Tips
Tips are not mandatory, however, you can give up to 10% dependent on your personal decision in taxis and restaurants.

Electricity
Electricity is supplied at 230 volts A/C, 50 Hz cycle.

Emergency Services
Police - Dial 133
Ambulance - Dial 144
Fire Brigade - Dial 122

Sketch of Vienna
Vienna lies in the east of Austria and the centre of the new Europe and is the largest city in Austria. Vienna has established an outstanding reputation as a conference city.

Vienna has a long history of scientific and medical research. The city offers a wide range of theatres, music and art. It has been home of many famous musicians as Haydn, Strauss, Schubert, Mozart, van Beethoven and Schönberg.

Classical concerts are performed at well-known venues such as the Wiener Musikverein, home of the Vienna Philharmonic Orchestra.

Vienna has a very good public transport system with waiting times that are generally short. The best way to reach the venue of the congress and to visit the sights of Vienna is by public transport with metro, trams and buses.

Travel in Vienna
A free all-inclusive public transportation ticket can be collected at the registration desk.

Travel within Vienna to the conference venue. The Medical University of Vienna/General Hospital of Vienna (Allgemeines Krankenhaus - AKH) can easily be reached by metro U6, tram #5, #43, #44 and bus #13A.

For instance
- from railway station Wien-West you can take the metro U6 to direction Floridsdorf and get out at the station Michelbeuern-AKH;
- from railway station Wien-Meidling you can take the metro U6 to direction Floridsdorf and get out at the station Michelbeuern-AKH;
- from the railway station Wien-Süd, take the bus 13A to the end station Alser Straße;
- from the railway station Wien-Mitte you can take the metro U3 to direction Ottakring, change at railway station Wien-West to metro U6 to direction Floridsdorf and get out at Michelbeuern-AKH station;
- for the airport you can also take a bus which ends at Schwedenplatz. There, you change to metro U4 to direction Heiligenstadt, change at station Spittellau to metro U6 to direction Siebenhirten and get out at Michelbeuern-AKH.
SOCIAL PROGRAMME

Thursday, April 8, 2010

19.20 - 20.30  Reception by invitation of the Rector of the Medical University of Vienna

Friday, April 9, 2010

20.00 - 24.00 Social evening at Heurigen Fuhrgassl-Huber sponsored by the City of Vienna. An invitation letter can be collected at the registration desk.

A bus transfer from the main entrance of the General Hospital and at the end of the event to the several hotels will be organized.

Saturday, April 10, 2010

14.00  For interested people we offer an excursion in the Josephinum, our famous Museum of the History of Medicine in Währinger Straße 25.

The greatest treasure of the Josephinum is the unique collection of anatomical and obstetric lifelike wax models, which had been made under the supervision of the physiologist, Felice Fontana (1720 - 1805) in Florence.

Participants interested in the excursion should inform the registration desk latest till Friday, April 9, noon.
Thursday, April 8, 2010

15.00 - 17.00 REGISTRATION

17.00 - 17.45 OPENING OF THE CONFERENCE
17.00 - 17.15 Zdravko Lackovic, President of ORPHEUS, Zagreb
17.15 - 17.30 Wolfgang Schütz, Rector of the Medical University of Vienna, Vienna
17.30 - 17.45 Hannes Stockinger, Chairman of the 5th ORPHEUS Conference, Vienna

17.45 - 18.15 INTRODUCTORY SESSION
Chairs: Zdravko Lackovic, Wolfgang Schütz
17.45 - 18.05 Michael Mulvany, Aarhus
The ORPHEUS 2009 position paper: what now? (K1)
18.05 - 18.15 Corina Duncescu, Timisoara
Why enrol in a PhD programme: A Romanian student’s testimonial (K2)

18.15 - 19.15 KEYNOTE LECTURES ON PARTNERSHIP ACADEMIA AND INDUSTRY
Chairs: Seppo Meri, Hannes Stockinger
18.15 - 18.45 Anita Aperia, Stockholm
The EMTRAIN PhD program; an intellectual liaison between industry and academia (K3)
18.45 - 19.15 Hartmut J. Ehrlich, Vienna/Deerfield
Successful partnerships between industry and academia: The BioScience perspective (K4)

Friday, April 9, 2010

8.30 - 9.30 KEYNOTE LECTURES ON JOINT DEGREES
Chairs: Andrea Olschewski, Michael John Mulvany
8.30 - 9.00 Jean Chambaz, Paris
Joint degrees, a driver for the European Research Area (K5)
9.00 - 9.30 Michael Wolzt, Vienna
Models of joint PhD programmes to ensure flexibility, mobility and mutual benefit (K6)

9.30 - 10.00 COFFEE BREAK
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<th>Session</th>
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<td>10.00 - 12.15</td>
<td><strong>ORPHEUS INTERNATIONAL AND NATIONAL REPORTS</strong>  Chair: Miroslav Cervinka, Jadwiga Mirecka</td>
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<td>10.00 - 10.15</td>
<td>Zdravko Lackovic, Zagreb. President of ORPHEUS  ORPHEUS general report</td>
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<td>10.15 – 10.30</td>
<td>Chris van Schravendijk, Brussels  PhD education in Flanders, variations on a consensus model (NR1)</td>
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<td>10.30 - 10.45</td>
<td>Petr Hach and Miroslav Cervinka, Hradec Kralove  Twenty years of experience with PhD study programmes in the Czech Republic (NR2)</td>
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<td>10.45 - 11.00</td>
<td>Helen Gallagher, Dublin  Doctoral-level education in the six Irish medical schools (NR3)</td>
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<td>11.00 - 11.15</td>
<td>Roland Jonsson, Bergen  The Norwegian PhD training program (NR4)</td>
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<td>11.15 - 11.30</td>
<td>Jadwiga Mirecka, Krakow  PhD Studies in biomedicine and health related sciences in Poland (NR5)</td>
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<td>11.30 - 11.45</td>
<td>Luis Martinez Millan, Leioa  Organisation of the PhD titles in Spain (NR6)</td>
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<td>11.45 -12.00</td>
<td>Gül Güner-Akdogan, Hakan Örer and Sulhiye Yildiz, Izmir, Ankara  PhD Education and Graduate Schools of Health Sciences in Turkey (NR7)</td>
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<td>12.00 - 12.15</td>
<td>Bajram Hysa, Genc Burazeri, Tirania  „Brain Gain“ in Albania (NR8)</td>
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<td>12.15 - 12.25</td>
<td>PHOTO SHOOT OF CONFERENCE PARTICIPANTS</td>
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<td>12.25 - 14.00</td>
<td>LUNCH AND POSTER PRESENTATION</td>
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<td>14.00 - 15.30</td>
<td><strong>KEYNOTE LECTURES ON BRAIN DRAIN/BRAIN GAIN AND JOINT PHD PROGRAMMES</strong>  Chair: Irene Lang, Petr Hach</td>
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<td>14.00 - 14.30</td>
<td>Vanessa Debiais-Sainton, Brussels  The PhD degree in the context of EU policy (K7)</td>
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<td>14.30 - 15.00</td>
<td>Thomas Ekman Jørgensen, Brussels  Certification and awareness of mobility-related skills (K8)</td>
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<td>15.00 - 15.30</td>
<td>Ylva Huber, Vienna  The 7th EU Framework Programme „Healthy Perspectives“ for PhD students (K9)</td>
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<td>15.30 - 16.00</td>
<td>COFFEE BREAK</td>
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<td>16.00-17.30</td>
<td><strong>KEYNOTE LECTURES ON PARTNERSHIP ACADEMIA AND SCIENTIFIC SOCIETIES</strong></td>
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<td>Chairs: Karl Kuchler, Günther Gell</td>
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<td>16.00-16.30</td>
<td>Catherine Sautes Fridman, Paris</td>
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<td>Scientific societies as partners for PhD education in biomedicine and health sciences</td>
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<td>16.30-17.00</td>
<td>Daniela Corda, Naples</td>
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<td>The PhD experience: the roots of a scientific career</td>
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<td>17.00-17.30</td>
<td>Eeva Moilanen, Tampere</td>
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<td>PhD education and future challengers in drug development</td>
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<td>17.30-18.30</td>
<td><strong>SHORT REPORTS ON NETWORKING IN PHD PROGRAMMES</strong></td>
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<td>Chairs: Akos Heinemann, Chris F.H. van Schravendijk</td>
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<td>17.30-17.45</td>
<td>Marija Geroldinger-Simic and Bernhard Knapp, Vienna</td>
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<td>Improvement of doctoral schools by intramural networking: The Young Scientist Association of the Medical University of Vienna as paradigm</td>
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<td>17.45-18.00</td>
<td>Erik Ingebrigtsen, Trondheim</td>
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<td>A new Norwegian network for research training in medical imaging</td>
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<td>18.00-18.15</td>
<td>Maria M. Tavio, Las Palmas</td>
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<td>Network for international postgraduate degree: Managing PhD education in which different universities and countries participate</td>
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<td>18.15-18.30</td>
<td>Giuseppina Rota and Stephanie Clarke, Lausanne</td>
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<td>PhD programmes at the University of Lausanne: National and international networks at the interface of biology and medicine</td>
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**Saturday, April 10, 2010**

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<td>9.00-9.30</td>
<td><strong>KEYNOTE LECTURES ON GLOBAL PHD TRAFFICKING</strong></td>
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<td>Chairs: Osman Sinanovic, Stefan Böhm</td>
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<td>Reinhold E. Schmidt, Hannover</td>
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<td>Where do bright brains go? – Determinants of PhD trafficking</td>
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<td>9.30-11.30</td>
<td><strong>WORKSHOPS ON NETWORKING</strong></td>
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<td>Seminar room KS9</td>
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<td>WS 1 Joint degrees</td>
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<td>Chairs: Andrea Olschewski, Michael John Mulvany</td>
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**SCIENTIFIC PROGRAMME**
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Seminar room KS10
WS 2 National and international joint PhD programmes
Chairs: Stefan Böhm, Michael Wolzt

Seminar room KS11
WS 3 Partnership academia and industry
Chairs: Akos Heinemann, Chris van Schravendijk

Seminar room KS12
WS 4 Partnership academia and scientific societies
Chairs: Daniela Corda, Karl Kuchler

Seminar room KS13
WS 5 Brain drain/brain gain
Chairs: Irene Lang, Zdravko Lackovic

Seminar room KS14
WS 6 Promotion of mobility
Chairs: Seppo Meri, Wilfried Ellmeier

11.30 - 12.30 PRESENTATION OF WORKSHOP PAPER AND CLOSING
Chairs: Zdravko Lackovic, Seppo Meri

12.30 – 13.30 ORPHEUS GENERAL ASSEMBLY
K1 THE ORPHEUS 2009 POSITION PAPER: WHAT NOW?

Michael J. Mulvany

Graduate School of Health Sciences, Aarhus University, Aarhus, Denmark

The international emphasis on building knowledge-based societies has increased the need for researchers and their international mobility. The PhD degree is a basic qualification for research, and it is therefore desirable, indeed necessary, for general agreement on what the degree entails. As a step towards such agreement a position paper was produced (www.orpheus2009.org) at the 2009 ORPHEUS meeting with representatives from 72 faculties from 33 countries. Key points were: (a) The PhD is a research degree performed in a strong research environment. (b) Enrollment to a PhD programme is normally based on a completed Master’s degree. (c) The overall aim is to produce a qualified researcher, evaluated by the PhD thesis and oral defence of the scientific results. (d) The length of a PhD programme should be 3-4 years and include coursework of up to 6 months. (e) A PhD programme should be structured, with qualified and regular supervision. (f) The benchmark for the content of a PhD thesis is a review and three published international articles or equivalent publishable manuscripts. (g) Theses should be evaluated by independent panels, normally including international members. The position paper has been presented at a number of meetings, including the EUA-CDE. Several organizations are using it as a basis for considering the organization of their PhD programmes. There are also discussions as to whether the position paper should be formalized into a “standard”. Any standards need, however, to take account of the general view that PhD education differs from the first two Bologna cycles and that flexibility is required. Perhaps more important is to define the research basis that an institution needs to offer PhD education, and how this can be enhanced through networking.

K2 WHY ENROLL IN A PHD PROGRAM: A ROMANIAN STUDENT’S TESTIMONIAL

Corina Duncescu

Emergency Hospital for Children “Louis Turcanu”, First Clinic, Timisoara University of Medicine and Pharmacy “Victor Babes” Timisoara

Annually the “Victor Babes” University of Medicine and Pharmacy enrolls a hundred new Ph.D students. In 2009 I was considering becoming one of them. The decision seemed easy: I became involved in research since the first months of my residency and I enjoyed it a lot, I started to have a good idea of what I wanted to study; my colleagues and family, the senior doctors supported me. But I started rationalizing. Was this what I really wanted? Was it worth the money, the hard work, the long hours? All in all: what are the benefits? A question kept popping in my mind: what can a Ph.D program do for me? After a few days of inner struggle I realized that the compulsive question wasn’t the proper one. I have finally understood: it was not about what a Ph.D program can do for me, but what can I do for my Ph.D program. The answer was simple: I can make a difference! After this I realized that enrolling in a Ph.D program was a great idea. All the cons became minimal and I could only think about the great things that would come out of this. It became clear that as a medical doctor, I had the ability to change a life every day, but with a good thesis I can change the life of many more. So this is my advice: when considering enrolling in a Ph.D program, begin by asking yourself not what the program can do for you, but what you can do for the program.
Keynote Lectures

K3 THE EMTRAIN PHD PROGRAMME: AN INTELLECTUAL LIAISON BETWEEN INDUSTRY AND SOCIETY

Anita Aperia
Karolinska Institute, the EMTRAIN project (www.emtrain.eu), funded by the Innovative Medicines Initiative (www.imi.europa.eu)

The scientific/analytic thinking and the capacity of critical evaluation offered by PhD training programmes is a great resource for society, but do we use it properly? 60 to 90% of PhD students in life science at European Universities will not be offered an academic tenure position. Yet, relatively few PhD students are offered a formal career coaching during their training. As life expectancy increases, costs of medical care will increase, too. It is a problem that relatively few new principles for treatment of common as well as rare diseases have reached the market during the past decade. A good way to take a more innovative approach to drug development would be to bring industry and academia closer together. Given the fact that many drug companies have decided to transfer their research sections to USA or Asia, Europe must develop new strategies to counteract this trend. The EMTRAIN project, funded by the Innovative Medicines Initiative, includes one work package aiming at the development of public-private partnerships for Bologna-compliant PhD programmes. The universities will have the ultimate educational responsibility but the interaction with industry will be a key element of the programmes. Representatives from academia and industry will decide on the criteria for student recruitment and the general content of the PhD projects. Students will spend at least 6 months in an industry lab and visits to laboratories abroad (both academic and industry) will be encouraged. Courses will include information about IP rights, drug development chains and clinical trials. A number of administrative and logistic hurdles are still to be overcome but overall academia and industry has joined forces towards a more collaborative way of running PhD programmes in Europe.

K4 SUCCESSFUL PARTNERSHIPS BETWEEN INDUSTRY AND ACADEMIA: THE BIOSCIENCE PERSPECTIVE

Hartmut Ehrlich
Global Research and Development, Baxter BioScience

Medical Doctors are playing key roles in the continuous assessment of the safety and efficacy of medicines, both during product development as well as once a drug or biologic is licensed and available on the market. Using the example of Baxter BioScience with its worldwide R&D headquarters in Vienna/Austria, this presentation will provide an overview of the complexities of the job requirements for physicians in a global pharmaceutical/biotech environment. There are a number of specific skills we consider critical for the physician-scientist in product development, and the implications for a successful MD, PhD program will be discussed.
Joint PhD programmes provide students insight into different workplaces and can broaden the spectrum of expertise gained, which is of interest to all stakeholders in education and training. Students of such programmes face difficulties from different facts: mutual recognition of time spent and credits earned have to be established; allocation at places needs to fit to work progress; bureaucratic hurdles must be overcome; and funding and salaries might vary between sites and projects. The skills and knowledge achieved have to fulfill a defined standard which allows for accreditation of courses for a backpack system equivalent to the Bologna higher education aims. The legal competence for definition of PhD programme contents and outcomes resides with the university. However, joint diplomas may be awarded when partners agree on conditions and deliverables of programmes. In principle, the following scenarios are possible regarding joint programmes: (i) A contract between partners defines how a PhD is organized for students; however, this confines mobility to the named participating centres. (ii) Enrolment could be at a single university, but the full programme would be conducted at a partner institution; the university would award the degree on behalf of this third party. The mutual benefit would be limited. (iii) A credit system could be established, comprising a hub at a university with a given set of introductory/advanced courses and accredited additional courses at different other places to accomplish a full PhD programme. This system would enable maximum flexibility for students. This presentation will discuss the options for joint PhD studies and present a best practice example from a cooperative Master programme, where flexibility and mobility criteria are met.
Keynote Lectures

K7 THE PHD DEGREE IN THE CONTEXT OF EU POLICY

Vanessa Debiais-Sainton

People Programme: Marie Curie Actions, Unit A6, Education and Culture Directorate General, European commission, Brussels

The Marie Curie Actions funded under FP7's People programme support research training, career development as well as transnational and intersectoral mobility through a variety of fellowships and networking activities including those undertaking PhD studies [Initial Training Networks - ITN]. Training is provided by both the public and commercial actors. This ensures that researchers trained through the ITN are able to continue their careers in the sector of their choice.

The funding also builds networks and strengthens the ties between the participating institutes including universities, research-active companies and public research organisations; networking activities are a key component of the ITNs and also strongly contribute to the interdisciplinary and intersectoral dimensions of the training. This funding scheme also emphasises the importance of transferable skills training which also constitute an essential component of the career development plan of the trainees.

Researchers funded by the ITNs are professionals from any country in the early stages of their career and as such are recruited on employment contracts with full social security rights. They receive a competitive salary and an allowance to cover costs related to their mandatory international mobility. Funding is provided for up to 36 months for each early stage researcher.

The Marie Curie Actions are bottom up actions open to all fields of research and do not predefine disciplines that will be supported. The biomedicine and health areas of research accounted for 23% and 33% of the projects funded in the first and second call for proposals respectively and are expected to train more than 550 researchers to PhD level in 2007-2008 alone and 2500-3500 researchers overall for the period 2007-2013.

Another EU programme, Erasmus Mundus, offers full-time scholarships for Doctorate programmes to researchers coming from any country around the world. These scholarships are exclusively awarded to fellows that have been selected to attend one of the Erasmus Mundus Joint Programmes at Doctorate level.

K8 CERTIFICATION AND AWARENESS OF MOBILITY-RELATED SKILLS

Thomas Ekman Jørgensen

Head of Unit, EUA Council for Doctoral Education, Brussels

Mobility in doctoral education is a topic that receives increasing attention and not least is the object of increasing ambition. The European Research Area Board has recently set the goal for 2030 that 20 % of all doctoral candidates should be conducting their research outside their home country. Concretely, the European Commission has expanded its Erasmus Mundus funding for joint degrees to include the doctorate. Among Europe’s universities, there is a growing interest in formal co-operation for mobility such as joint programmes and to develop institutional strategies for internationalisation.

Doctoral education, being research based, is inextricably linked to the research environments and research capacity of their institution. This, again, is linked to the international nature of research: good research environments are by nature international as knowledge knows no borders. For this reason, international mobility is far from new to doctoral education. As other parts of doctoral education, it has traditionally been a ‘private’ matter dependent on a strongly person supervisor-supervisee relationship.

As institutions move towards programmes that replace this ‘private’ relation with more transparent institutional structures, international mobility also becomes an institutional concern. How can they develop strategies that match with the special, individual mobility of researchers rather than the cohort structure from the first and second cycle? Which are the skills and outcomes of research mobility, and how can they be attested? What is the right balance between assuring the quality of mobility and partner institutions and keeping the flexibility that is researcher mobility needs, and how is this attested? These are the questions of this presentation.
K9 THE 7TH EU FRAMEWORK PROGRAMME: "HEALTHY PERSPECTIVES" FOR PHD STUDENTS

Ylva Huber
Austrian Research Promotion Agency

As the largest research and innovation funding programme of its kind worldwide, the 7th EU Framework Programme (FP7) also provides a broad spectrum of opportunities for education and training activities targeting PhD students. The "Marie Curie Actions" as part of the Programme "People" in FP7 are generally most well-known by PhD students. However, they may also find ample opportunities in the largest FP7 Specific Programme "Cooperation", which funds cooperation between research teams throughout the EU and beyond with more than 32 billion Euro until 2013. Focusing on the "Health" Theme, an overview on participation opportunities for PhD students in FP7 is presented. In addition, the network of "FP7 National Contact Points" that supports FP7 participants through all stages of their involvement is introduced.

K10 SCIENTIFIC SOCIETIES AS PARTNERS FOR PHD EDUCATION IN BIOMEDICINE AND HEALTH SCIENCES

Catherine Sautes-Fridman
European Federation of Immunological Societies (EFIS)

Scientific societies in life sciences and medicine represent an heterogeneous and large group of national and European organizations which encompass a wide range of disciplines. Despite these differences, they share a common goal: promotion of scientific knowledge and exchange. To this aim, they organize annual meetings, meetings of their regional or affinity groups and workshops.

As well as representing their members, some of the scientific societies publish academic journals. These journals enable the society to disseminate research and generally provide a substantial income. Hence, they finance grants to enable scientists to attend meetings, support student travel exchange, and distribute fellowships to develop scientific collaboration.

Among hundred of scientific societies, promotion of education is restricted to few of them. For more than 40 years, funding and support from EMBO Courses & Workshops has helped molecular life scientists in Europe organize events to train researchers at all career stages. FEBS also finances such advanced courses. Clinically oriented societies such as the EULAR, the EAACI encourage and provide training and continuous education. The EFIS creates this year an advanced course on innovative immunologically-based therapies, targeting clinical Immunologists, allergists, dermatologists, transplant experts, rheumatologists, gastroenterologists and scientists from academia and pharmaceutical industry. EFIS also promotes awareness of immunology amongst non scientists by using a series of innovative communication tools.

Despite this large panel of activities it is striking that scientific societies remain far from academia. The strength brought by the collaboration of the European countries allows science to be more competitive, powerful and creative. Indeed, the organization of European PhD programmes are part of this game. The EU provides support for some of these programmes within the frame of their calls. The Universities create partnerships. It is obvious that scientific societies could facilitate the organization of joint PhD programmes by funding students travels and organizing joint courses with universities for instance. We need to create tools, build networks and get to know each other better in order to enable and facilitate such productive collaborations. This will be one of the objectives of the 5th Orpheus meeting.
The decision-making processes that are so crucial across all aspects of our lives are also central to the building of our careers. For young scientists, the most appropriate PhD programme, a good supervisor, and an exciting project are all helpful ingredients. Although the work in the laboratory is central at the start of a career in scientific research, there is also the need to develop the complementary skills that will be essential for progress through the various future career stages. In addition, there are diverse career paths in science, so a considered and appropriate choice here should lead to a more fulfilling professional life. Indeed, PhD candidates are now rarely 'left alone', as there are various scientific organisations and governmental and international bodies that can help to provide them with the necessary information as they proceed into and along their chosen career path.
Keynote Lectures

K13 WHERE DO BRIGHT BRAINS GO? – DETERMINANTS OF PHD TRAFFICKING

Reinhold E. Schmidt

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PhD education is an increasingly international process. The percentage of international PhD recipients is not only increasing in the US but also in Europe. Many of these students are coming from Asia (China, India, Korea and Taiwan) but increasing numbers also from Africa, Russia and South America. International students try to find a PhD position where they think it is best for them. Still their motivation is different by country of origin and class background. Some of the criteria determining student motivations are: excellent research facility, medium of instruction is English, some form of funding, structured programs with clear expectations, benchmarks and cohort learning environment, good to famous professors, international PhD may help for a good job in the home country and finally some countries the PhD may open up the possibility for a fair job in host country. On the other hand research universities are interested in obtaining international doctoral students. The reasons for this: institutions and professors want the best possible students, it is a highly selective admission, international students are highly motivated, they work hard, long hours, in some fields national students are only few for a doctorate, for international universities a vibrant diverse intellectual learning environment is critical, international students provide access to their home countries – establishment of future international networks. Thereby internationalization of graduate education is a two way street. The outcomes for the individual PhDs are cosmopolitan mind set, often more and improved employment possibilities, rich intellectual live, early international network building; for the university international mobility creates a vibrant intellectual learning community, excellent researchers, later international collaboration and helps to improve inequalities in intellectual capital. Therefore we need to educate our students to be able to define and solve scientific and societal problems both at home and abroad in trans-, multi-, inter- disciplinary and international group.
NR1  PhD EDUCATION IN FLANDERS; VARIATIONS ON A CONSENSUS MODEL

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University education in Belgium has developed in different perspectives and backgrounds in the two language communities. As a consequence (Bio)Medical PhD education has been coordinated within the communities rather than between them. This report refers to the development and current status of (Bio)Medical PhD education in Flanders, rather than in Belgium. Interuniversity co-ordination of Medical PhD Education in Flanders started in 1994.

In that year, the five faculties of Medicine agreed that their PhD degrees in Medical Sciences should be equivalent and that collaboration in the doctoral training programs would in itself provide an added value for the PhD student. The most important principle in this consensus model was the pivotal role of research in the PhD process, which until today implies that self-executed original research remains the cornerstone of a (bio)medical doctorate in Flanders. In addition, the universities created a framework for doctoral training and follow up that encourages the development of research and generic skills by the PhD student. This framework consists of 1) research related activities, 2) specific thematic activities within the various disciplines, and 3) transferable skills development. Until 2007, the emphasis of interuniversity collaboration for this PhD programme was on thematic discipline related days. From 2007 on, the Flemish universities initiated Doctoral Schools (DSs). (Bio)Medical PhD education is now part of the DS of Life Sciences and Medicine or the DS of Biomedical Sciences. The focus of these DSs is threefold: 1) (international) recruitment, 2) doctoral training including skills development, and 3) career perspectives of PhD graduates. As such, the DSs co-ordinate (Bio)Medical PhD education within the universities while using the added value of interuniversity collaboration in Flanders whenever possible.

NR2  TWENTY YEARS OF EXPERIENCE WITH PHD STUDY PROGRAMMES IN THE CZECH REPUBLIC

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In the 1992 our Parliament approved the law dealing with University education and one sector in this law has been dedicated to doctoral studies leading to the PhD degree. The process of accreditation started immediately and within several years all faculties of medicine got accreditation for several programmes covering practical all basic theoretical a clinical subjects. The standard length of study (originally 3 years) has been recently prolonged to 4 years.

When introducing the actual Czech system for PhD education we have to solve several problems: 1) Proportion between individual study (coordinated by the tutor) and general study (coordinated by the faculty). We have adopted schema that the PhD study is very individual specific program based on individual training. The extent of general study is about 20 % in the first study year, 10 % in second year and none in the third and last year. 2) Criteria for the extent and quality of PhD thesis. 3) Criteria for eligibility to start the defence of the thesis. Especially the third point was a matter of discussion. Currently we have as a minimum requirement publication of 3 full text research papers, in one of these papers the student should be the first author, at least two of these articles should be published in a journal with impact factor. In the near future we would like to improve the quality of scientific education during the PhD study by obligatory long-term stay at the laboratory abroad. Due to the fact, that Charles University consists of five faculties of medicine and there are other faculties with possible engagement in biomedical research, an integrated system of doctoral studies in biomedicine has been created. This system is open to all other institutions educating researchers in biomedicine.
NR3 DOCTORAL-LEVEL EDUCATION IN THE SIX IRISH MEDICAL SCHOOLS

Helen C. Gallagher

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There are six medical schools in the Republic of Ireland. Five of these schools offer an undergraduate MB BAO BCh degree and three schools offer a four-year dedicated graduate-entry programme instead of, or alongside, the six-year undergraduate programme. Irish medical schools are partially funded by central government and are increasingly reliant on income generated through high fees paid by non-EU students, who make up a significant proportion of the overall student population. At the postgraduate level, most of the medical schools offer a number of taught programmes at Diploma and Masters level and all are engaged in original research, with several hundred students currently enrolled for MSc, PhD and MD degrees. While those enrolled for MDs all have medical backgrounds, a large proportion of the PhD students hold BSc or MSc degrees in the life sciences area, or degrees in allied health professions including nursing, radiography and physiotherapy. As medical doctors find that quality research is increasingly demanded for their career progression, the PhD degree is becoming more popular amongst medics. Many postgraduates who initially register for an MD degree subsequently opt to change to the PhD programme. Other recent trends in doctoral education in the Irish medical schools include increased numbers of part-time PhD and MD registrants, and the introduction of several structured thematic PhD Programmes. In University College Dublin, for example, three thematic PhD programmes have been introduced in Bioinformatics and Computational Biomedicine, Translational Medicine and Infection Biology. Students gain 30 ECTS credits by completing in-house taught modules and/or other relevant modules with the research project accounting for the remaining required credits (240).

NR4 THE NORWEGIAN PhD TRAINING PROGRAM IN MEDICINE AND HEALTH RELATED SCIENCES

Roland Jonsson

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The medical and health related PhD training programs in Norway are structured and organised activities of early stage researchers. The programs follow the Salzburg principles of implementing the doctoral level as the third cycle of higher education within the Bologna process. The duration of the PhD training is three years, and consists of an original research work and a training component.

The training component comprises 30 ECTS, corresponding to a half year of workload. Science theory, ethics and dissemination of academic information are mandatory elements in the training component. A national committee is aiming for harmonization of the training.

The research work is written up as a thesis (monograph or consisting of a collection of articles, normally 3-4, with a synopsis). The thesis is evaluated by a committee consisting of three members – two external opponents and one internal committee coordinator. If approved [written evaluation], the thesis will be defended in public by discussing the research findings with the opponents. In addition, the doctoral candidate has to hold a 45 min. public lecture on a prescribed theme, followed by a discussion with the audience. Both the trial lecture and the public defence must be approved by the committee for granting the PhD degree.

The number of Norwegian doctoral degrees in medicine and health related topics have been increasing steadily between 2000-2009 (135 in 2000 and 336 in 2009), currently making up 29% of all doctoral degrees. The female share is 53%.

There was a slight decrease of the total number of Norwegian PhDs between 2008 and 2009, while the medical degrees were stable. Each finished PhD degree generates ca. 42,000 € to the granting university.
NR5 PHD STUDIES IN BIOMEDICINE AND HEALTH RELATED SCIENCES - National report from Poland

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PhD degrees can be awarded in the following areas embraced by OPRHEUS: medicine, dentistry, pharmacy, biological sciences, health sciences. Out of 12 medical universities 11 are eligible for awarding PhDs. The universities have PhD studies, but there are no PhD schools based on a common theme. PhD studies last 4 years. Candidates for studies should have a Master (or equivalent) degree. They come from various disciplines: medicine, dentistry, nursing, public health, biology, chemistry. Each student is carrying research in his /her own field. The instructional part of the PhD programmes, includes about 60 - 90 hrs/y. All schools offer instruction in the following subjects: methodology of research, statistics, bioethics, some schools have additional courses in methodology of teaching, philosophy, foreign language. The degree (doctorate) is awarded on a basis of thesis (reviewed by two experts, including one external expert), oral exam from the discipline related to the research (in front of 6-10 experts panel) and a public defence.

The statistical data for y2008/9 are as follows: for the country: No of PhD students in the above fields - 2057. No of degrees awarded - 787, for a single PhD program (JU.MC): no of PhD students 183 – no of degrees awarded 78. The last group included 25 students of PhD programme: as well as current employees from the Faculties of Medicine (27), Public Health (3), the University Hospital (11) plus "free lancers" from the outside (12). PhD is not the final degree along the research career but is followed by "Habilitatia" with some responsibilities of PhDs reserved to holders of the next degree. Last year the ORPHEUS Standards were presented to coordinators of PhD programmes and we are waiting for data regarding their implementation.

NR6 ORGANIZATION OF THE PHD TITLES IN SPAIN

Luis Martinez-Millan, Inmaculada Gurrikagoitia

University of the Basque Country, Spain

According to the Bologna Process, PhD studies in Spain are divided in two periods: Master Degree (MD) which is a formative phase and PhD which is a research period carried out under a PhD supervisor. MD studies contain a list of subjects specifically related to the main topic of the program, and a period of introduction to the scientific research. The duration of the MD oscillates from 60 to 120 credits of the European Credit Transfer System (ECTS), taking into account that each ECTS requires 25 h of student dedication: ten of which are spend in attending theoretical and practical seminars, and the additional 15 h. are used by students in self-learning activities. One hundred twenty ECTS are coursed in two years academicals time, whereas 60 ECTS are coursed in only one year. The programs of the MD studies are evaluated by National and Local Agencies that accredit their quality. To be admitted in a MD program students have to accomplish several criteria related to their academic studies, curriculum and scientific merits. In the Spanish Universities 226 biomedical MDs are offered. Of them 186 are given in public Universities and additional 40 in private Universities. Most of them are related to basic or applied Medicine, Pharmacology, Dentistry, Sports, Nutrition, Public Health and Hospital Management. The research activities (PhD) are extended to a period of 3 to 5 years, and are devoted to add significant and original contributions to a relevant research topic. Results are presented and discussed publicly and evaluated by a board specifically appointed by the PhD Commission of the corresponding University. Most of PhD programs include additional series of seminars related to the contents of the program and dictated by qualified experts.
NR7 PHD EDUCATION AND GRADUATE SCHOOLS OF HEALTH SCIENCES IN TURKEY

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Turkey, in her endeavour to enhance research and innovation and to integrate science with society, has, in the last few decades, made an outstanding mobilization in the training of researchers through PhD education. Turkey's aim of attaining a total of 40,000 researchers for the year 2010 was already achieved in 2007. According to Thomson's ISI web of science, Turkey has gained, in 2008, the 18th position in the world in the total number of scientific articles published in indexed journals, the majority originating from health sciences.

In general, PhD education in medicine and health sciences aims to produce competent, reliable, and self-directed research scientists, academicians, and health professionals having a strong sense of scientific integrity. Graduate Schools (Institutes) of Health Sciences were founded in 1982 to coordinate MSc and PhD education Programmes in various fields related to medical and health sciences, according to the regulations of Turkish Higher Council of Education. Presently, there are 45 active Graduate Schools of Health Sciences in Turkey. Some of the main fields regarding MSc and/or PhD degrees are: Medicine, Veterinary Medicine, Dental Medicine, Pharmacy, Nursing, Oncology, Sports Sciences, Physical Therapy and Rehabilitation, as well as some interdisciplinary fields under the umbrella of Health Sciences Institutes.

According to the statistics of Turkish Higher Council of Education, in the school year of 2008-2009, a total of 9406 graduate students were enrolled in 45 active Graduate Schools of Health Sciences, of whom 6103 were females and 3343, males. The total number of PhD students in the Graduate Schools of Health Sciences were 4735, of whom 2800 were females and, 1935, males. Acceptance of candidate PhD students is under the strict regulations of Turkish Higher Council of Education as far as the “minimum” prerequisites are concerned. The PhD training program has a general duration of four years, with formal courses to be finished in the first two years.

A survey on “Planning of Graduate Education and Human Resources in Health Sciences-Turkey- and Integration to the Bologna Process” has been accomplished by the three authors, as commissioned by the Presidency of the Turkish Council of Education in Medicine and Health Sciences and published in 2008. A significant finding from this survey is that there is a tendency of the PhD education in the professional areas to be erroneously mixed with specialty training programs, which this may partially explain the low impact factor observed for the scientific publications originating from health sciences.

NR8 "BRAIN GAIN " IN ALBANIA

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In recent years, international organizations such as e.g. the International Labour Organization and the World Health Organization (WHO) have published reports on the European migration of health care personnel, academicians (university lecturers) and other professionals and experts especially from the transitional former communist countries in Europe. However, the evidence and data from Albania are scant. In 1990 Albania emerged from the most isolated and rigid communist regime in Europe. With the return of personal freedom in early 1990, it became possible for professionals to find means of emigration to various western countries in Europe mainly Greece, Italy, Germany and subsequently the United Kingdom. It is estimated that more than 3000 well-trained professionals and experts have emigrated from Albania since the early 1990s. Thus, the emerging democracy in Albania opened the “age of migration” including also the “brain drain” where many talented and well-trained professionals and experts from different fields and backgrounds migrated to Western European countries. The factors that influence the decisions of Albanian professionals to migrate are similar to elsewhere: low pay (including irregular pay), poor working conditions, work overload, limited promotion and training opportunities to name a few. However, the impacts of such decisions are less well understood. The experiences of migrants that often include discrimination and loneliness and the struggles of health workers left behind, including increased workloads and stress, are often not in the forefront of policy discussions about the “development potential” of remittances. Although the benefits of migration may be considerable for some individual migrants and their families, for others the personal and social costs are extremely high.

Faced with the difficult transition from state-enforced economy to a market-oriented system, Albania is nevertheless in the process of accession and integration into the European Union (EU). Among other things, one of the attempts of the Albanian government is to find means of preventing the process of brain drain so as the well-qualified and talented professionals to not leave Albania, but rather contribute for the economic development and prosperity of their country. To meet this goal, a program entitled “brain gain” was initiated more than 5 years ago by the Albanian government with financial support from the United Nations Development Fund. The aim of the program is to prevent brain gain of the well-qualified Albanian experts by offering them attractive and competitive remuneration schemes. To date, many Albanian professionals have benefited from this program which turns out to be a useful instrument and an effective mechanism to prevent migration of the young talented and the renowned Albanian experts. In addition, other similar strategies and instruments have been applied by different public institutions in Albania including the Faculty of Medicine, University of Tirana, where attractive financial compensations are offered to several well-qualified professionals and university lecturers.
Short Reports on networking

SR1 IMPROVEMENT OF DOCTORAL SCHOOLS BY INTRAMURAL NETWORKING: THE YOUNG SCIENTIST ASSOCIATION OF THE MEDICAL UNIVERSITY OF VIENNA AS PARADIGM

Marija Geroldinger-Simic, Bernhard Knapp, Susanne Diesner, Monika Hoelzl, Anita Jallitsch, Felicia Popovici

Young Scientist Association, Medical University of Vienna, Austria

The Young Scientist Association (YSA) is a communication platform for young researchers at the Medical University of Vienna (MUV). The major aims of the YSA are to organize scientific meetings, to improve networking between young scientists and to establish the link between them and the board of the MUV. The annual PhD Symposium being the major event organized by the YSA gathers more than 300 participants, including young and established scientists of the MUV as well as international keynote speakers. It enables all young researchers to present their data, to participate in scientific discussions with experts, to meet other PhD students and to get an overview of the scientific work at the MUV. Furthermore, the YSA organizes diverse workshops, such as Career Workshops, Scientific Presentation Workshops, Methods Workshops, and Publication Workshops. In addition, social evenings, like YSA goes Public, take place each semester. Thus, the YSA serves as a network which links scientists and ideas from all levels of the MUV and contributes largely to the continuous improvement of doctoral programs. Special emphasis is put on adapting the PhD program to the needs of medical doctors. In future, each medical student who plans an academic career at the MUV will have to obtain a PhD degree. This brings new challenges for the YSA, like helping to optimize schedule of the PhD courses in order to allow medical students to combine clinical and scientific work. We expect that international networking at the 5th ORPHEUS Conference will bring us a plethora of new ideas for improvement of doctoral programs at the MUV. Furthermore, we hope that our paradigm will inspire other European universities to establish platforms such as the Young Scientist Association.

SR2 A NEW NORWEGIAN NETWORK FOR RESEARCH TRAINING IN MEDICAL IMAGING

Erik Ingebrigtsen

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The presentation/poster provides information on a recently established nationwide research training network - the Norwegian Research School in Medical Imaging. Established as a consortium of four Norwegian universities, encompassing all medical faculties in the country, the Research School aims towards developing a national multidisciplinary network promoting high quality research training. The main source of funds is the Norwegian Research Council. This initiative has been established to coordinate and strengthen PhD programmes in the field of medical imaging in Norway. It aims to foster international connections for PhD candidates, through institutional cooperation and individual exchange. Invitation of international guest lecturers is another field of priority. Combining the strengths of the participating institutions, we seek to facilitate research training of wider scope and depth than the individual partners can offer. The presentation/poster briefly introduces our multidisciplinary approach, illustrated by the range of relevant fields: ultrasound, MRI, PET, image guided surgery, biomedical optics and bionanotechnology. PhD candidates may come from a range of disciplines and PhD programmes, from clinical medicine and psychology to engineering and physical sciences. The research school offers a number of grants and support schemes for PhD candidates, for teachers of PhD courses and for supervisors. A general outline of these arrangements is presented, as well as procedures for applicants for support from the Norwegian Research School in Medical Imaging. The presentation guides interested parties towards sources of additional information, most particularly our web-site www.ntnu.no/medicalimaging
Short Reports on networking

SR3 NETWORK FOR INTERNATIONAL POSTGRADUATE DEGREE: MANAGING PhD EDUCATION IN WHICH DIFFERENT UNIVERSITIES AND COUNTRIES PARTICIPATE

Maria M. Tavío
Manager and Coordinator of the Network for International Postgraduate Degree, University of Las Palmas G.C., Spain

According to the University Strategy 2015 designed by the Spanish Ministry of Education, we have promoted the Network for International Postgraduate Degree at the University of Las Palmas G.C. (ULPGC). The aim of this Network is initially addressed to develop virtual campus of international excellence for training of postgraduate experts in bacteriology. This Degree will let the students to get training in bacteriology addressed to labour market since experts from Industry participate as teaching staff, in addition to ECTS of the research period for PhD Degree. In this background, ULPGC has been organising different courses through its virtual campus. Our International Network, utilising the tools of the virtual campus of our University, integrates in a single programme of training PhD experts in different fields of knowledge related to bacteriology from different Universities, Science Institutions, and Industries from several countries. The partner Universities agree formally to recognize the Postgraduate Degree through an official agreement between every Institution and our University. It is important for students and teaching staff to have a Reference Institution that in our case is ULPGC that coordinates and draws up the final certificate for every student. Nevertheless, necessarily students must be linked to any of the participating Universities, Institutions, and Industries, since their infrastructure is the physical part of our international campus. Training in some experimental skills is recorded and uploaded in the web of the Network in order any student from any country can download the file and review it at any moment. This type of training will also let us to share this Postgraduate Degree with Institutions of less developed countries.

SR4 PhD PROGRAMMES AT THE UNIVERSITY OF LAUSANNE: NATIONAL AND INTERNATIONAL NETWORKS AT THE INTERFACE OF BIOLOGY AND MEDICINE

Giuseppina Rota, Stephanie Clarke
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The doctoral school of our Faculty includes a PhD programme in life sciences and a separate programme in neuroscience, both of which are part of national and international networks. The PhD in life sciences is attended by 323 students and covers a wide choice of topics at the interface of biology and medicine, ranging from molecular biology to bioethics (www.unil.ch/fbm/page17130.html). Three thematic programmes offer specialised study courses: Ecology and Evolution (www.unil.ch/ee); Cardiovascular and Metabolism (www.unil.ch/edcm); and Cancer and Immunology (www.unil.ch/cancer-immunology). On the national level, the three thematic programmes are part of Swiss networks which received priority support from the government and/or from the Swiss National Science Foundation. The PhD in life sciences gives also the opportunity to participate in highly specialised all-Swiss programmes, such as the Swiss Institute of Bioinformatics or the Swiss School of Public Health. Over 50% of doctoral students in life sciences come from abroad. This is facilitated by the PhD fellowships which the Faculty of Biology and Medicine offers each year (www.unil.ch/fbm-phd). The PhD programme in Neurosciences (www.unil.ch/fbm-ln) is co-shared between the University of Lausanne and the University of Geneva and has as partner the EPFL in Lausanne. It is part of the Network of European Neuroscience Schools (NENS). Over several years the programme hosted a PENS school in neuroimaging. Internationally, many of the thesis directors in both the PhD programmes in life sciences and in neuroscience make use of the possibility of co-tutellage or thesis co-direction with colleagues from abroad.
P1 HOW MANY M.D. JUNIOR RESEARCHERS BECOME PH.D. IN CROATIA?

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Aim of the study was to determine the employment outcome of junior researchers supported by Croatian Ministry of Science, Education and Sports (MSES) whose fellowship was terminated between 1999 and 2005. Data was collected from MSES and junior researcher scientific productivity was obtained through Web of Science (WOS). Positive association for obtaining PhD degree was found with female gender, high scientific productivity and co-authoring an article with mentor, whereas fellowship in biomedicine and being amongst top 10% students according to undergraduate grade point average was surprisingly associated with significantly lower chance of obtaining PhD degree (Polasek O, Petrovecki M, Primorac D, Petrovecki M. Factors of scientific success of research fellows in Croatia. Drustvena Istrazivanja 2007;6:1127-50). An interesting finding was that only 12% of junior researchers in medicine obtained PhD degree during their fellowship and that as much as 55% of junior researchers with a Medical Doctor degree employed in the health system during the same month they terminated their fellowship. Re-employment of junior researchers was most common by clinics and hospitals and less common with female gender. Results suggest a possibility that junior researchers use the fellowship as a temporary solution until they find a position in health system (Petrovečki M, Smiljanic Lj, Troselj M, Polasek O. Employment outcomes among junior researchers in medicine in Croatia. Croat Med J 2008;49:91-97). Though these findings could implicate in serious waste of potentials (brain waste), it could also predict a good postgraduate system that allows only the best to obtain PhD degree.

P2 SOME ASPECTS OF EDUCATIONAL CONTINUUM FROM UNDERGRADUATE TO PHD STUDY IN MEDICINE: GEORGIAN CONCEPT

Levan Tvildiani

AIETI High Medical School, Georgia

Outcome-based education is neither a new context nor a passing phase in educational technology and is equally applicable throughout the educational continuum from primary school to postgraduate training. Between 12 major “level 1” outcomes, the “ability to apply scientific principles, method and knowledge to medical practice and research” is only one, that no specific level 2 outcomes were included. Similarly, research skills (from medical professionalism set of outcomes), with no further specification, is included as an outcome. Other international WFME recommendations on: “Basic Medical Education WFME Global Standards for Quality Improvement”, also give not very clear determinations. Meanwhile this is an acting instrument of program accreditation. Participation in research always was a part of academic life. But the activity of research groups were depend on students own initiative, on their interest. Participation in research will be mandatory part of student’s academic life in Georgia. This will be assessed using the scoring system and will be included in the Diploma supplement. ORPHEUS, as a participant of Bologna Process, and the initiator of harmonization of 3rd level of education in Europe, should include outcomes for practical research experience from the set of primary medical degree learning outcomes in the list of topics to be considered, because this important topic is not adjusted yet and by our opinion consent will not achieved without ORPHEUS participation. From our point of view: 1) this question is really very actual; 2) it needs to be considered and defined what is the minimum required standard in this field; 3) ORPHEUS is the institution, which should lead or at least take essential part in consideration process.
National reports

P3 PUBLIC HEALTH PhD PROGRAM IN KAZAKHSTAN

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Main goal of the approved in 2006 Conception of reforming of medical and pharmaceutical education of Kazakhstan and Plan of actions on its realization by regulation of government of Republic of Kazakhstan was introduction of new system of training medical and pharmaceutical personnel on basis of international standards, which would provide competitiveness of the specialists, considering priorities and features of healthcare of the country. One of the main components of these education reforms is development of doctoral degree programs in public health. Important objectives of such programs for the country should be training of specialists of new generation who would be able to decide aims on public health improvement, conduct worldwide researches in modern biomedical sciences, to provide evidence-based approaches to public health field. Structure of national doctoral degree program consists two parts – education and research activities. Theory of education includes basic consisting compulsory and elective courses and profile disciplines consisting elective courses. List of elective courses and appropriate volume of credits are determined by organization where doctoral degree program is provided. They are flexible due to needs of students’ employers. PhD program standards developed due to Law of Education approved in 2007 and Code of population health and health system approved in 2009. Program allows inviting co-mentors from different world schools and collaboration with other schools in education field. Kazakhstan School of Public Health currently works on syllabus development of this program and defining stakeholders and collaborators on world recognized curriculum development in public health to successfully implement efforts of educational reforms to practise.

P4 CURRENT REFORMS IN THE THIRD CYCLE OF STUDIES IN MEDICINE IN MACEDONIA: NATIONAL REPORT

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The reforms in the undergraduate education according to the Law of Higher Education in Macedonia, imposed reforms in the postgraduate education, as well. Starting the study year 2010/11, doctoral studies in medical science will be organized and realized at the Medical Faculty in Skopje, in accordance with the rules of the ECTS. The former doctoral studies in medicine were a continuum of the Master studies, consisting of an individual research work of the candidate, under the supervision of his mentor. The new system of doctoral studies covers three years, with 180 ECTS. The studies will be organized within a School of Doctoral Studies at the University level and include two programs: 1. Study program in the field of Medicine 2. Study program in the field of Public Health. The study program in the field of medicine includes three modules: basic medicine, clinical medicine and molecular medicine. The study plan covers lectures, seminars, individual consultations, individual scientific research upon a topic, elaboration and defense of dissertation work. The mentor and co-mentor (may be a scientist from abroad) assess the student continually and perform annual reports on student’s performance. The first study year covers 60 ECTS and includes two credit groups: 1) general obligatory subjects representing introduction to the research methodology and scientific work, 2) special obligatory subjects and elective, field related courses. The third credit group covers 120 ECTS (second and third year) and represents the research work of the student [publication of articles in peer reviewed and in internationally indexed journals, contributions to scientific meetings, scientific and professional presentations] as well as elaborating and defending his doctoral thesis.
P5 PhD EDUCATION IN HEALTH SCIENCES FROM ROMANIA: CONCLUSIONS FROM A DECADE OF PERPETUOUS TRANSITIONS

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During the last decade, Romanian legislation underwent various changes. More than 10 normative acts have been issued regarding the organization of PhD education. The Governmental Decision 37/1999 set a period of four years for the completion of PhD studies. During the PhD education, students were held to pass at least 3 exams and to publish at least three original articles (no mention of impact factors). The PhD title was awarded after two evaluations of the thesis: first by a committee of three specialists invited by the director of the thesis, and secondly by a committee of experts unique at national level for each scientific division.

In 2005, Governmental Decision 567 introduced in the first period of PhD education the Doctoral School, providing advanced studies with organized lectures and transferable credits. The choice of objects in the Doctoral School is made in order to help planning and developing the own specific research program. The normative changes of Romanian education allow PhD students of Health Sciences to participate to programs in different institutions, but it is difficult for new enrolled students to find, by themselves, foreign universities that accept training persons with no research experience. Increased responsiveness and implication of the universities regarding mobility of PhD students would be helpful. In order to help PhD students to get acquainted and to broaden their horizons, an annual conference for PhD students in Medicine and Pharmacy was organized in Romania. Attendance of high profile scientific manifestations from abroad would as well be necessary. Certainly, the entrance of Romania in the European Union facilitates the participations to international conferences; however high fees are often prohibitive.
General strategies to improve PhD education

P6 ANALYSIS OF METHODOLOGICAL QUALITY OF PHD THESIS PROPOSALS MADE AVAILABLE TO PHD STUDENTS INCREASES QUALITY OF FUTURE PROPOSALS IN A MEDICAL SCHOOL

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PhD thesis proposals are evaluated on basis of quality of design and research methodology by a Faculty’s scientific committee, prior its presentation to the Faculty’s Senate, who votes according to recommendations of the Committee. Results of evaluations made by the Committee were made freely available to all PhD students of Medical Faculty in Kragujevac starting from June the 1st, 2009, who could learn about common research design pitfalls. For 6 months before making evaluations available, percentage of rejected PhD proposals by the Committee was 33% (n=24), and for 6 months after, the percentage of rejected proposals dropped to 22% (n=27). The difference was not statistically significant ($\chi^2=0.5299, p>0.05$), but trend of improvement was noted. The PhD students have learned to avoid research methodology errors from available evaluations of previous PhD thesis proposals. Their research design skills showed tendency towards improvement, but larger study is needed to achieve statistical significance and confirm these results.

P7 PRIMING STUDENTS FROM THE FIRST YEAR IN MEDICAL SCHOOL INTO DOCTORAL PROGRAMS

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In Portugal the medical degree is 6 year long, and it is started after high school education. With the Bologna process implemented, after the first three years students are awarded a bachelor degree in biomedical sciences, while at the end of the 6th year a master degree in medicine. In order to promote the interest in research and to prime the interest of medical doctors in doctoral programs the School of Health Sciences started in 2006 an MD/PhD program with the following main characteristics: 1- Students interrupt the medical degree in the 5th year to develop a 3 year long PhD thesis project. 2- Before applying formally to the MD/PhD program in the 5th year, students are required to complete at least two one-month summer laboratory rotations offered by local research teams. Rotations have a scientific objective and a set of research skills to be developed. These include techniques student’s must master at the “trouble shooting level” such as spectrophotometry, at the “performance level” molecular biology techniques such as PCR, and others, such as mass spectroscopy that they must know is available for protein identification. Applications are accepted from the first year. 3- In the 5th year, those students who have fulfilled the requirements apply with a short grant proposal on a theme previously specified to be before a jury. To date, 4 students have formally started their thesis; two of which will defend their PhD thesis in 2010, and 44 laboratory rotations took place under the MD/PhD pre-requisite program. It is our believe that this program provides an interesting way to have future medical doctors engaged in research, even if they do not formally enroll in a PhD thesis project. Future empirical research might test this assumption.
The Society of Consumption in PhD Programs

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Capitalism implies a society of consumption. Utility is not the purpose for consumption. Needs are invented and encouraged, pursuing maximization of production in no regard to the demand, so creating low quality products. This happens also with the PhD programs. The need for academic qualifications was created through an inflation of the minimum job requirements. The idea behind education got sidetracked from being about knowledge to the race for the magical piece of paper to hang on the wall and so, the results are many mediocre PhD projects. In order for a project to be good and bring something new, it needs a good idea, finances, rigorous methods, good interpretation of data and dissemination. Except financing, everything depends on the researcher. We can now see the two causes for low quality projects. For the researcher’s part, we need to raise the standards for PhD admission and research education. The financing improvements are more difficult to implement, in this department we need a better administration of funds. In Romania 90% of Universities organize PhD programs and 2.4% of the total number of university graduates have a PhD. Most of them are faculty members. In order to advance through a university career one needs a PhD degree. But not all teachers are necessarily good researchers. My university has a no attendance mandatory PhD program, where the researcher must pay an annually fee. They offer free doctoral studies only for the universities employers, so there is not a fair contest for these scholarships. I consider that the quality of the PhD projects should be more important than their number and that the university should encourage those researchers who can bring new knowledge and not only the ones that need the PhD for upgrading their career.

PhD in Biomedicine: A Quest for Applied Science

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Blaming it on the taxpayers, who are the real project money grantor, grant agencies strive to fulfill the political demand for more tangible results of grant projects in all fields of science, the results being other than publications, e.g. patents. We may question the soundness of this thinking and Americans, who lead the world in patents in biomedicine, are currently doing it. However, the administrative preference for applied science and deeper co-operation between industry and academia is not likely to cease rapidly. Therefore PhD programs should reflect the quest for applied science and help the students get ready for it. Adjustments made to the PhD programs do not have to be dramatic such as imposing unnecessary requirements, e.g. patent co-authorship. It is not just a matter of outcomes, it could be a system of courses that will aid the students in their future scientific career development. EU funded educational projects that are currently under way in the Czech Republic permit establishment of such courses. There are some four projects to help students in facing the quest for applied science in biomedicine. One such coursework is the “School of molecular biotechnologies – Profession” which runs in close co-operation with a local biotechnology company. Another program of courses aims at educating future biomedical PhDs in grant project applications, clinical trials management, biostatistics, intellectual property transfer, science medialization and evidence based medicine. The goal is to prepare the students for a life of a scientist outside their field of expertise. [Funded by project CZ.1.07/2.3.00/09.0020]
P10 HOW TO START RESTRUCTURING POSTGRADUATE EDUCATION?

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Medical Faculty of University in Sarajevo is in front of the challenge of structuring the third cycle for biomedicine. Current postgraduate studies are for two academic years and enrolling Doctors of Medicine to achieve titles of Master in Medical sciences. Doctoral process competences are divided between University and Faculty. Preconditions for starting the procedure include delivery of Master thesis and one first-authorship published article in indexed scientific journal. The European University Association (2004) recommended to B&H Universities to concentrate on applied research in limited number of strategic fields of most relevance to the university’s partners, and noticed is the lack of modern coherent funding for the universities. Our aim is to develop strategy and plan of activities for restructuring postgraduate education on Medical Faculty within European Union framework. With the assistance of Medical University of Vienna and Vrije University from Brussels we tried to recognize our strengths and weaknesses, and future opportunities and threats by performing the SWOT analysis, and start redefining objectives, measures and procedures of the postgraduate education. How to proceed? Different persons and/or institutions can be affected by the reform of postgraduate education on medical faculty. For responsible future action, relevant affected parties should be consulted and the increased interaction with the most relevant stakeholders should be promoted. To ensure adequate definition of relevant internal and external stakeholders, the specific needs of the medical postgraduate education and different characteristics of stakeholders should be considered.

P11 STUDENTS MOBILITY, IS IT POSSIBLE?

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During ORPHEUS conference in Aarhus 2009, representatives of 42 institutions from 26 European countries answered questionnaire on organisation of PhD studies, conditions for enrolment into studies, and prerequisites for obtaining PhD. According to answers, PhD programmes at 34 (83%) institutions are combination of research for the PhD thesis and organised courses which students can choose according to their wishes and needs. Institutions have proposed number of ECTS credits that students have to accumulate, and proposed number of articles that students have to publish before obtaining PhD. Prerequisite for enrolment into PhD study is Master (3+2), or MD degree. Those requirements are harmonised which make mobility of students possible. Conditions that make mobility of students impossible or hard possible are: to sign up for PhD study students must have supervisor/mentor for PhD thesis at 31 (74%), scientific project at 32 (76%), and prepare periodical reports of work at 26 (62%) of institutions. All those mean that student’s mobility depends on supervisor. Student should have agreements of supervisor and employer for enrolment into course or research work at the other institution. Mobility of student will be support by supervisor and employer only if course or research work is related to scientific project of supervisor, and only in that case employer will give positive assess of student’s work. Student also should ensure funds for mobility. Supervisor must be person involved into international project. In that case student’s mobility would be part of research project with ensured funds for it.
P12 EVALUATION OF ELEMENTS FOR DESCRIPTION/DEFINITION OF PROFESSIONALISM BY PHD STUDENTS OF “AIETI” MEDICAL SCHOOL

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Professionalism has been identified as an important learning outcome in medical education. The problem is that despite the increasing interest in professionalism there is no agreement on how to define professionalism. The aim of our study was to explore the way professionalism is perceived and positioned by the PhD students from different fields in AIETI medical school. We clarify by literature researching the themes and elements (total 90) which constitute professionalism in medicine and proposed to PhD students to assess their meaning by quantitative indexes (from strongly agreed to strongly disagreed). We discovered that all PhD students consider very important: lifelong learning, responsibility, good clinical judgment, self-improvement, self-awareness, protect confidential information, honesty, professional conduct, be knowledgeable, give patient information they understand, professional awareness and sensitivity. None of the elements present in questionnaire deserved total ignorance from students. Together with these the most important referenced elements of professionalism, such as altruism, 61% of questioned PhD students strongly agreed on its importance, accountability-72%, respect-72%, integrity-44%. It should be mentioned that such type of study have not been performed in Georgian professional society. According to these, we have no ability to compare to any data from other Georgian Institutions. Our study brought to light the understanding that professionalism is a multidimensional concept. Our next step should be further thoughtful assessment, which elements of professionalism characterize professionalism in different medical specialties.

P13 FACEBOOK AND DENTAL WEBSITES: IMPACT ON DENTISTRY

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Introduction Facebook, today has found a wide application in the connection between people, informing them, increasing their knowledge and their positive education in different fields. The purpose of this research was to provide important data regarding how much information were offered for maintenance of oral health, websites which are most clicked (Facebook, Youtube, Myspace), how much did these websites contain alternative links (which enable the access to dental websites) and how much these information have influence in their education for maintaining oral health? Materials and Methods Facebook offers applications through which we can do an electronic survey. This is achieved by installing an application cited as ‘Poll’, through which we can create the questions and the answers which were sent to respondents as ‘Request’. In this Poll are included 14 questions which are sent electronically to the 200 Facebook users, in the period of 15.11-15.12.2009. Results From 200 respondents: In the dental websites have clicked 81%, 79% have learned about the importance of the dental cleaning techniques, 65% the importance of fluoridation, 70% the importance of caries prevention, 69% the importance of food type. 76% have acquired enough knowledge about dental plaque. Up to 69%, these information have influenced them to visit the dentist. In comparison with the period when there were no internet, 66% of respondents have 100% more knowledge about oral health. For the respondents who belong to the dentistry, 70% had shown that they have access to the new information’s. Conclusion Through this research, we conclude that the impact of the Internet in offering information’s, is very important in education, guidance and motivation for oral-health maintenance for the community.
General strategies to improve PhD education

P14 TRAINING EXCELLENCE IN TRANSLATIONAL NEUROSCIENCE BY EURON

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EURON bridges the gap between fundamental neuroscience and clinical, cognitive and behavioural neuroscience and attempts to understand (dys)function of brain and behaviour from a translational perspective. Improving the European network between our European partner institutions in the field of neuroscience an international environment is created for exchanges from the various neurodisciplines on the Master and PhD students level. Our PhD students will receive next to their local PhD degree our EURON certificate that certifies their training and education in the field of translational neuroscience. EURON aims to achieve more uniformity in PhD degrees within Europe and stimulates mobility and transfer of knowledge. Europe’s efforts to cope with the ever growing problems of ageing of the European population heavily depend on creative contributions of young well trained researchers. Exchanges and integration of different areas in neuroscience are necessary to create an integrated approach between industrial and academic disciplines. Therefore EURON provides insight into the pathophysiological mechanisms of neurodegenerative disorders in order to increase the development of new therapeutic strategies to stimulate central plasticity against neurodegenerative processes. EURON offers new strategies in the research field of neurodegeneration and plasticity which are linked towards a state-of-the-art education and training of neuroscientists in academia and industry.

The development of a research and training environment in which young people from all over Europe are working together creates a European research and training field in which the relation between industry and academia will be newly developed.
P15 PhD TRAINING AND REGULATIONS, UNIV.MED.SCHOOL OF PÉCS, HUNGARY

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Procedures for earning the PhD degree
Pre-requisites for acquiring the PhD degree a) the postgraduate acquisition of knowledge satisfying the requirements for permission to take the PhD final examinations b) reaching the minimal impact factor used to evaluate research activity c) Rules and regulations for foreign citizens and Hungarian citizens who continuously live abroad to take their doctoral (PhD) degree at the University Medical School of Pécs (UPMS). - Rules and regulations concerning the enrolment of foreigners for the doctoral (PhD) course as well as the awarding of the doctoral (PhD) degree for them must be in accordance with the Hungarian law including the relevant statutes and governmental decrees on the one hand and with those recommended, accepted and practiced by the European Union, UNESCO, the ENIC on the other. These conditions can be summarized as follows: - Foreign citizens and Hungarian citizens continuously living abroad are entitled to initiate the procedure for acquiring the doctoral (PhD) degree on the grounds of a dissertation and publications proving research activity, provided that the Doctoral Committee of the UPMS finds that the idea, the spirit or the character of research achievements presented by the applicant relate to one of the accredited Doctoral Schools of the University and that other publications make it obvious that the applicant’s achievements in research activity can at least partially be related to his / her previous continuous activity or work accomplished in collaboration at the UPMS. Foreign citizens or Hungarian citizens continuously living abroad are to spend a specified amount of time at the UPMS doing research and fulfilling other requirements as prescribed on the PhD degree.

P16 PhD AND MSc EDUCATION PROGRAMMES IN DOKUZ EYLÜL UNIVERSITY GRADUATE SCHOOL OF HEALTH SCIENCES

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PhD and MSc education programmes in Dokuz Eylül University Graduate School of Health Sciences Zübeyde Erbayraktar* & Gül Güner-Akdoğan*,** zubeyde.erbayraktar@deu.edu.tr gul.guner@deu.edu.tr * Dokuz Eylül University Graduate School of Health Sciences, ** Dokuz Eylül University School of Medicine, Inciralti 35340, Izmir-Turkey Dokuz Eylül University Graduate School (Institute) of Health Sciences (DEU-HSI) was founded in 1982 to coordinate masters (MSc) and PhD education programme in various fields related to medical and health sciences, according to the regulations of YÖK [Turkish Higher Council of Education] [Law code: 41-18/h]. The main fields regarding MSc and/or PhD degrees are as follows: Medical School (Anatomy, Biochemistry, Histology and Embryology, Microbiology and Clinical Microbiology, Molecular Biology and Genetics, Nuclear Medicine, Occupational Health, Parasitology, Pharmacology, Physiology, Biophysics, Public Health, Audiology, Pediatric Surgery, Medical Education), Health Science Institute Departments (Biomechanics, Laboratory Animal Science, Medical Informatics, Medical Physics, Molecular Medicine, Neurosciences & Quality Improvement and Accreditation in Health Sciences), Nursing Departments, Oncology, and Physical Therapy and Rehabilitation. The Institute holds the ISO9001–2000 quality award for education from RINA (Registro Italiano Navale). DEU-HSI aims to give both theoretical background and research education and training for obtaining MSc and PhD degrees, thus creating opportunities for the graduates of universities related to medicine and health sciences in order to produce competent, reliable, and self-directed research scientists, academicians, and health professionals having a strong sense of scientific integrity.
Institutional strategies to improve PhD education

P17 INTERNATIONAL COOPERATION EXPERIENCE OF BELARUSIAN STATE MEDICAL UNIVERSITY IN SETTING UP UNIQUE STANDARDS FOR DOCTOR’S RESEARCH IN MEDICINE

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Mastering of Doctor’s programs in the field of Biomedicine and quality improvement of their organization and harmonization for practical application in clinical and medical practice is one of the topical tasks faced by the Medical University of Belarus. Integration into common European scientific and educational space undoubtedly involves the establishment of unique standards for doctor’s research in the sphere of biological and clinical research of young scientists. To achieve success in this field, one of the priorities of international cooperation of the Belarusian State Medical University is joint scientific-research activity with foreign medical universities and organizations of the world on the basis of long-term cooperation agreements. A positive moment of such cooperation is carrying out of PhD research by young scientists not only at the native university but also at medical-biological and clinical chairs of foreign universities-partners. A vivid example may be long-term cooperation with universities of Germany (Wurzburg, Heidelberg), Poland (Medical University of Belostock), Japan (Nagasaki and Akita) in the framework of partnership on topical problems for the Republic of Belarus after the Chernobyl Nuclear Power Plant accident – studies of molecular biological and immunological aspects of thyroid cancer in children and adults. Joint scientific research has been carried on over 20 years at the chairs of molecular and clinical medicine, immunology and morphology of all partner universities. This research, completed by defense of Doctor’s thesis, may be an essential step to elaboration of unique standards of doctor’s medical biological research not only in European but also in the educational space of the world.

P18 BERGEN RESEARCH SCHOOL IN INFLAMMATION

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The Broegelmann Research Laboratory (BRL) is a medical immunology research unit at the University of Bergen (UiB) and Haukeland University Hospital. At the time UiB started to establish research schools, BRL had already the framework of a training facility and plans for further development. Bergen Research School in Inflammation (BRSI) at BRL formally received the status as a research school in 2005. The theme for the research school was later broadened to include infectious organisms, general immunology and tissue interaction in health and disease. The research school has become an active and attractive training site involving >20 PhD trainees and master students. The ongoing work is to consolidate our activity, conforming to all formal rules and regulations, but most of all improving the quality of the training. Grants from NATO and EU (Marie Curie program) have enabled us to develop our research school to a high international standard. The primary objectives of BRSI: • To improve the quality of the PhD and post-graduate training • To facilitate PhD and post-graduate training • To develop professional skills and collaborative experience. Ambitions and standards of BRSI: • Thematically focused • Create strong research training - networks to several institutes/faculties/institutions • Size above critical threshold • Professionally additive and synergetic effects. Content in practical terms: • Resources are made accessible (biobanks, patient material, instruments, specialized laboratories, technology platforms etc.) • Courses are organized • Regular seminars as meeting points • Feedback, support, reflection and critical evaluation for the enrolled trainees.
P19 THE BERGEN PhD TRAINING PROGRAM IN MEDICINE AND DENTISTRY

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The PhD training at the Faculty of Medicine and Dentistry, University of Bergen (UiB) is a structured and organised activity of early stage researchers. The program is following the Salzburg principles of implementing the doctoral level as the third cycle of higher education within the Bologna process. The duration of the PhD training is 3 years, and consists of an original research work and a training component. The training component comprises 30 ECTS, corresponding to a half year of workload. Science theory, ethics and dissemination of research results are mandatory elements in the training. The faculty has five research schools and offers a broad range of research courses. The research work is written up as a thesis (monograph or a collection of articles [3-4] with a synopsis). The thesis is evaluated by a committee consisting of two external opponents and one internal committee coordinator. If approved, the thesis will be defended in public by discussing the research findings with the opponents. In addition, the doctoral candidate has to hold a 45 min. public lecture. Both the trial lecture and the public defence must be approved by the committee for granting the PhD degree. Almost 500 PhD candidates are currently affiliated with our Faculty. There are about 120 PhD training fellowships available after application. In 2009, 68 new PhD- and 2 dr.philos.-degrees were granted. Two dissertations were rejected in 2009, and three candidates quit the programme (i.e. drop-out ≈ 5%).

A program committee allows for continuous evaluation of the PhD training, and in 2010, special emphasis will be put on improving the quality of the guidance given to PhD candidates by launching a new course for supervisors.

P20 PHD IN POST-SOVIET COUNTRY: A CHALLENGE

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Armenia inherited from Soviet era the two-step system in academical degrees: candidate of the science (believed to be equal to PhD) and doctor of science (equal to DSc), awarded each time after successful protection of thesis. Anyone trying to receive Professorship must hold the degree of Doctor of Science and have completed both dissertations. In Armenia bylaws does not require mandatory publications in peer review journals prior to thesis defense, and the regulatory body – Supreme Attestation Committee (SAC) – awarding both degrees after inspection of paperwork immaculacy. The initiative group of professionals of different medical specialties (mainly holders both DSc or/and PhD degrees, with International work/study/fellowship experience) organized the Medical Chamber of Armenia and developed own recommendations for harmonization of efforts toward European adopted PhD-style. The Ethics Committee was established and currently successfully working in Yerevan State Medical University. New peer review “The New Armenian Medical Journal” was established in Armenia and currently is included in EMBASE, undergoing the accreditation within PubMed. The Medical Chamber of Armenia became an associate member of UEMS now. The principles of Evidence-Based Medicine, Good Clinical Practice, and modern statistics were widely announced and distributed among medical society. We developed recommendation for criteria of PhD thesis, already accepted by many of professional associations and de jure by SAC. Currently, we are developing certain criteria for PhD students and regulations of the consequent steps toward successful defense. Despite of considerable success in this field, we need further global changes and ORPHEUS could be an effective platform for cooperation and counseling.
**Institutional strategies to improve PhD education**

**P21 YONG SCIENTIST COUCUL – MODEL FOR TRANSITION TO MD PhD COMBINE PROGRAM IN YEREVAN STATE MEDICAL UNIVERSITY**

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Armenia is standing at a crossroads in all aspects of development. Healthcare is no exception. Now more than ever, the nation needs physician leaders who are capable of developing solutions to the problems that continue to undermine health and healthcare? There is a need for physicians who will not only characterize these and other deficiencies, but will also address and resolve them. The Yong Scientist Council (YSC) of the YSMU is a newly established faculty that aims to prepare physician leaders to improve the nation’s health and health care by generating knowledge through research and translating research into action at the local, regional and national levels. This preparation will be achieved by a curriculum that develops skills for investigation and proficiency in the application of research. The YSC will provide formal training in critical thinking, and quantitative and qualitative methods as it applies to clinical research and policy making. This YSC will help to foster clinical and community research, exposure to senior level leaders, and patient care. Participants will develop the experience and skills to lead positive change at the local, regional and national levels. It is going to be increasingly important for young doctors to be involved in advocating both for medical education but also for the good of their patients. The Curriculum of YSC can be used as a model for MD and PhD program and will ensure a high level of training and competence for the next generation of Bio-Med researchers in the Republic of Armenia.

**P22 A COOPERATIVE PHD PROGRAMME IN DIAGNOSTICS AND THERAPEUTICS FOR HUMAN DISEASE**

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Health Research Board, Ireland funds a €5M 4-year structured PhD programme, bringing together complementary skills of researchers from the Royal College of Surgeons in Ireland, Beaumont Hospital and Dublin City University in Diagnostics and Therapeutics for Human Disease. This programme has taught modules; 3 8-week laboratory rotations; choice of PhD project from an extensive range; opportunities for multidisciplinary bench to bedside research; supervision by internationally renowned Principal Investigators; placements in industry or overseas laboratories; professional skills training; international conferences travel; annual stipend of €18,000; laptop; fees. Projects exist in Respiratory Disease and Innate Immunity; Neuro/psychiatric Disorders; Molecular Endocrinology and Cancer; Cardiovascular Disease; Bioengineering and Regenerative Medicine; Structure Based Drug Design; Biomedical Diagnostics. Applicants with a 1st or upper 2nd class honours degree in any bioscience area, chemistry or engineering are eligible. The RCSI Professor of Medicine is programme director; the programme is overseen by a Steering Committee (8 professors, 3 are clinicians) supported by 40 PIs who are mentors, teachers, supervisors. Currently 21 scholars (2 German; 1 Spanish; 1 UK; 17 Irish) are in the programme with the final intake in 2010/2011. Annually, scholar feedback confirms 3 as the optimum number of rotations, 1 of which becomes the PhD project. There is no notable bias relating time of rotation project and PhD project selection. PhD supervision is by teams of at least 2 PIs, where possible 1 is a clinician. Thesis Committees conduct annual progress reviews mirroring the PhD viva. The structured PhD will become the standard format replacing the traditional 3-year apprenticeship model.
P23 STUDIES RELATED TO LIFE SCIENCES AT EGE UNIVERSITY, DEPARTMENT OF BIOENGINEERING, TURKEY

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Department of Bioengineering is a department within the Faculty of Engineering and was established in 2000, as a first of its kind in Turkey. The department has 228 undergraduate and 59 graduate students. The Programme focusing on the integration of engineering and life sciences, provides strong fundamental knowledge on Bioengineering and related disciplines through most recent technological applications at the labs via hands-on approach. As an example of joint degree programmes a total of 21 undergraduate students from ‘Chemical and Food Engineering’ programmes are enrolled at the Department for double major or minor degrees. It also coordinates a “multidisciplinary postgraduate programme in biotechnology” within the Graduate School of Ege University. Areas of research include: Tissue engineering, stem cells, monoclonal antibody production, diagnostic kit development, cytotoxicity, biocompatibility of biomaterials, DNA vaccine development, active compound determination of natural extracts, bioreactor design, bioinformatics, among other topics. The department, a “National Centre of Excellence” since 2005 is also one of the founders of the ‘World Virtual Institute Preventive & Regenerative Medicine’ with 102 completed and 47 on-going projects with funds over 9 M€. It has an extensive research infrastructure in the nine Research Labs namely, Bioprocess Engineering, Molecular Genetics, Plant and Animal Cell and Tissue Culture, Natural Products, Algal Culture, Industrial Microbiology and an established Pilot Plant facility. The Department emphasizes international and industrial relations as core values. Industrial scientists are invited to participate in research collaborations, are engaged in co-teaching new courses and provide internships for students.

P24 HEALTH PROMOTION IN MOSCOW STATE UNIVERSITY OF MEDICINE AND DENTISTRY

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As a leading medical school, Moscow State University of Medicine and Dentistry (MSUMD) is much envolved in health promotion programs. In 2003 UNESCO chair in healthy life for sustainable development was opened. International programs for health promotion were then translated and country-adapted. Special programs were developed for schoolchildren. Innovation program allowed developing such programs more broadly. Those programs of health promotion are unique. They include peer-to-peer education, trainings, brain storms and traditional methods. The main problem is training of trainers due to big size of our country. The main parts of materials are: basic principles of prophylaxis, health and environment, food and health, physical activity, life style, hygiene, sexual transmitted disease. All programs were previously approved for traditional ways of leaning. Texts were reviewed by psychologies. Regional or state permissions were received for the distance learning materials published. To test level of knowledge in health promotion the questionnaire was developed. The formal questioner is using to test the level of knowledge. But the knowledge of health promotion does not mean healthy life style for the person. For example, almost everybody knows that smoking may influence health, but people smoke. In this situation as one of results of education it is better to test not only knowledge, but also individual motivation for healthy life style. Unfortunately, in practices there is a limited number of questionnaires to detect motivation. That is why we are trying to determine behavioural risk factors. Knowing the risk factors allows us to make up programs of health promotion which are sensitive for special group. In future individually sensitive programs might be developed.
P25 INTERDISCIPLINARY DOCTORAL PROGRAM IN BIOMEDICINE AT UNIVERSITY OF LJUBLJANA

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The field of biomedicine is very broad and is developing at University of Ljubljana (UL) by various faculty members therefore it was reasonable to organize doctoral education at university level by interdisciplinary approach. The primary emphasis of doctoral study is on research, interdisciplinarity and collaboration between internationally renowned local and foreign experts. Based on recommendations of EUA, international student exchange is greatly stimulated. The doctoral programme meets all the requirements and criteria for doctoral studies established by the EUA. The program leads to the degree of Doctor of Science in the following fields: Biochemistry and Molecular Biology, Pharmacy, Genetics, Clinical Biochemistry and Laboratory Biomedicine, Basic Medicine, Clinical Medicine, Microbiology, Social Medicine, Toxicology, and Veterinary Medicine. The duration of doctoral programme is three years (180 ECTS credits), and according to Bologna guidelines this represents the third cycle of educational scheme. The programme consists of organized classes (60 credits) and individual research work for the doctoral thesis (120 credits). Organized classes include three types if courses: the obligatory courses for each scientific field, elective theoretical courses, and elective individual research courses. The program is organized by five faculties, members of UL with association of three national research institutes. The programme is coordinated at university level by the Program Council. The Program Council consists of members of each faculty and research institute.

P26 TRANSLATIONAL RESEARCH IN BIOMEDICINE – NEW GRADUATE COURSE AND CONCEPTS

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School of Medicine in Split was founded in 1997, and two years later established its first PhD program. From 2001 to 2005 there were11 PhD theses defended at the School, while in period 2005-2009 this number grew to 45, illustrating growing capacities for research. The School now has two PhD programs in clinical sciences and the time is right for creation of a new doctoral program Translational research in biomedicine (TRIBE), which will be devoted to basic medical sciences. The TRIBE program is envisioned according to the European Qualification Frame and European priorities. Besides classical education, the TRIBE will rely significantly on validation and recognition of learning outcomes in extracurricular and informal educational activities. The originality of the TRIBE is based on a concept of translational research, which involves moving knowledge and discovery gained from the basic sciences to applications in clinical and community settings. Also, a whole new concept of a Doctoral school will be established to integrate existing doctoral programs and TRIBE. The Doctoral school will enable cost reduction and interdisciplinary collaboration of doctoral students. So far, doctoral programs were organized independently from each other, but Doctoral school will link all the programs by providing joint obligatory and elective courses. Also, teaching at the Doctoral school will not be paid, but counted towards usual departmental teaching load. In conclusion, in 2010/2011 postgraduate doctoral programs at School of Medicine in Split will undergo complete makeover in an attempt to reduce costs and improve student outcomes. It is expected that these changes will enhance interdisciplinary translational research and further increase capacities for doing research in Croatia.
P27 INFORMAL AND FORMAL MENTORING BY INTERNATIONAL MENTORS: THE IMPACT ON POSTGRADUATE EDUCATION AT FACULTY OF MEDICINE UNIVERSITY J. J. STROSSMAYER OSIJEK

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The Scientific Postgraduate Study in Biomedicine and Health at the Faculty of Medicine University J.J. Strossmayer (MEFOS) has been established in academic year 2000/2001, 2 years after MEFOS became member of Osijek University. Collaboration with foreign medical higher education institution (in the USA, GB, Germany, Austria, Hungary) was very important for research training of PhD students, from the very beginning of postgraduate studies in Osijek. The aim of this analysis is to determine participation of foreign scientists in study program as professors or head of postgraduate courses and to evaluate the outcomes (in the form of mentoring defended PhD theses) in last 10 years. Ten out of 88 (11%) postgraduate doctoral courses are headed by professors from other Croatian universities and only 4/88 (5%) are led by foreign guest professors. 2 professors from MEFOS had PhD degrees from foreign institution (USA, Germany). In courses headed by Croatian professors, 6 foreigners participate as teaching staff. In last ten years, as an outcome, there were 67 defended PhD theses, mentored by 44 domicile professors, 19 by professors from other Croatian universities and only 4 mentored by foreign professors. Interestingly, 6/67 (9%) PhD students did part of their dissertation research at foreign institutions but defended theses with domicile mentors. At the moment, there are 70 postgraduate student in various stages of PhD work, and 7 of them did part or whole practical part of PhD degree research abroad, but will defend theses with domicile mentor. In conclusion, informal mentoring by foreign guest mentors is important part of postgraduate education in Osijek.

P28 THE PHD PROGRAM - MOLECULAR MEDICINE- AT THE MEDICAL UNIVERSITY OF GRAZ

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The Medical University of Graz offers since 2006 an international peer-reviewed PhD Program coordinated by a strong cluster of experienced scientists. The PhD Program - Molecular Medicine is aimed at outstanding research-oriented medical and life science graduates and provides comprehensive and interdisciplinary research training in an atmosphere of scientific excellence in the fields of metabolic and cardiovascular diseases, inflammation, and cancer. The language of the program is English. Admission to the program involves a two-step evaluation procedure. Candidates are selected based on their academic record, a motivation letter, and two academic references, and a personal hearing with site visits in the host labs. The participants are enrolled in a three-year experimental research project, supplemented with a core study program of obligatory lectures, guest seminars, progress reports, advanced method courses as well as scientific soft skills training. Students have to nominate two mentors in addition to their research supervisors, who regularly monitor the progress of the research. At present, 69 students from 14 countries are enrolled in the program. The PhD faculty currently consist of 30 selected principal investigators, 15 from clinical departments of the MUG and 15 from basic research institutes, who provide the critical mass, the infrastructure, and the stimulating research and training environment to ensure the successful education of the participants. Thus, graduates will be able to acquire all the skills and knowledge that prepare them for international careers in medicine and life sciences.
Institutional strategies to improve PhD education

P29 LINK BETWEEN PHD AND UNDERGRADUATE DEGREE RESEARCH STUDY PROGRAM IN AIETI HIGH MEDICAL SCHOOL: CONTRIBUTION OF PHD STUDENTS

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The objective of the bologna process is not uniformity but harmonization achieved through different routes within a common framework. Therefore main and overall trend is to move away from individual based to structured program. In this way, setting aside the differences, the collective dimension of research leading to its structuring, is a keystone for its efficiency. Including the PhD students in scientific communities or in regular seminar series is an important condition in ensuring high quality doctorates. The Doctoral Study policy of AIETI Medical School aims: strong responsibility for the professional preparedness of the future philosophy doctors, their profound involvement in the research environment of the institute and Essential participation in undergraduate education process. By now the undergraduate student's participation in scientific research process became an obligatory part of their study curricula. Therefore PhD students are involved in this part of undergraduate study process. PhD student's participation aims the following: they can be tutors and scientific consultants/advisors of students and scientific teams, in directions relative to their research, including them in own research work, in analyzing data, in preparation the article etc. The role of the PhD student – teacher is one of support and supervision, but he/she is also responsible for assessment. The aim of this participation in process is to learn through teaching: scientific behaviour as well as scientific facts; promote the use of information technology, teamwork, support future doctors broader their responsibilities.

P30 NETWORKING OF PHD STUDY AT JESSENIUS FACULTY OF MEDICINE IN MARTIN, SLOVAKIA

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Jessenius Faculty of Medicine, Comenius University (JFM CU) is active in development of the relationships with different universities and faculties in a frame of the PhD study networking in accredited PhD study programmes – medical (11 programmes) and non-medical (e.g. Nursing, Public Health, Biomedical Engineering etc.). JFM CU created the Joint Boards for individual PhD Programmes on the basis of contracts with co-operating faculties, even from abroad, and with Slovak Academy of Science (SAS). This existing network among faculties and the SAS comprises the research study stays of PhD students, activities of reviewers of PhD thesis (6 reviewers were from abroad in 2009), and advisors (Norway, USA, Italy, Sweden etc.) as well as participation of PhD students and advisors on international PhD conferences (e.g. in Czech Rep., Germany etc.). On the basis of the European Social Fund (ESF) project, the PhD study at JFM CU was supported and a significant progress in this field including the networking was achieved. JFM CU continually organizes annual PhD students conferences (6th Conference in 2009) with participation of PhD students and members of the advisory jury from other Slovak medical faculties and from abroad. Under the auspices of ORPHEUS, an international workshop on PhD study was organized in October 2008 at JFM CU reflecting the positive aspects as well as problems in PhD study existing mainly in clinical disciplines. In the present, JFM CU acquired a new EU project starting in spring 2010. This Project is aimed not only to support research work and mobility of PhD students but also to create new working places for PhD graduates (postdocs).
P31 ASSESSMENT OF PHD PROGRAM AND PROCESS BY PHD STUDENTS AT "AIETI" MEDICAL SCHOOL

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PhD program at "AIETI" Medical School is oriented to switch from conventional, individual based learning to structured program based model. "AIETI" Medical School PhD program focuses on: 1. Molecular, Structural and Functional Basis of Normal and Pathological processes (Biomarkers; Current Perspectives and Future Prospects and Integral Molecular and Cellular response of Human Organism To Pathological Processes) 2. Constitutive Factors of Disease Etiology, Clinical Course and Epidemiology 3. Leadership in Medical Education: Research and Innovation. Currently, 28 students, 8 men, 20 women, are enrolled in different directions (e.g. Biochemistry, Cardiology etc) of these programs. We offered PhD students at "AIETI" Medical School specialized questionnaire, including questions about their research experience before PhD study, educational environment at "AIETI" Medical School, their motivation, supervisors, future carrier plans and etc. Results showed that majority of them (71-86%) very positively evaluated several learning environment components, 71% of them are planning to continue research activities after obtaining PhD degree and will also recommend to their young colleagues to be enrolled in PhD research. Considering written above, we find interesting to see that, only 64% of students consider research as part of their everyday life. We consider that results from questionnaire will not only help "AIETI" Medical School to observe and correct the weaknesses, but also to contribute in answering certain main questions concerning PhD education, like PhD candidates motivation to stay in research field and factors determining their future carriers.

P32 OXFORD CLINICAL ACADEMIC GRADUATE SCHOOL: A MODEL TO TRAIN CLINICAL ACADEMICS IN TRANSLATIONAL RESEARCH

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It is recommended that dedicated academic training programmes are developed in partnership between Universities, local NHS Trusts and Deaneries to guarantee an explicit academic training pathway during the clinical specialist training period, with flexible programmes allowing clinical and academic competencies (leading to specialty and PhD qualifications) to be attained. This directed the University of Oxford to partner with local NHS Trusts as a nexus for world-class research and medical education. The NHS Trusts and the University have been engaged in a wide-ranging capital building programme to ensure state-of-the-art facilities for research and patient care, recruiting and retaining outstanding young clinicians interested in pursuing a career in academic medicine. The programme aims to ensure core clinical competencies are attained and provide training in research methodology to meet the individual needs of trainees. The University along with the Oxford Deanery commit to providing excellence in medical education and clinical training with opportunities for Oxford medical trainees to experience research and bring a strong clinical perspective to a wide-ranging research agenda. The Medical Sciences Division of the University which Oxford Deanery is partnering closely encompasses an impressive range of departments including interdisciplinary research areas such as the Institute of Biomedical Engineering with new doctoral training centres bringing medical and physical sciences research together and the newly funded Systems Approaches to Biomedical Science Industrial Doctorate Centre delivering cutting-edge research and training. The programme endeavours to train clinical academics competent in translational research from bench to bedside to foster healthcare innovation.
Institutional strategies to improve PhD education

P33 THE BEGINNING OF COOPERATIVE NETWORKING IN BIOMEDICAL AND HEALTH SCIENCE PHD EDUCATION AT THE FACULTY OF MEDICINE, VILNIUS UNIVERSITY, LITHUANIA

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Vilnius University was established in 1579, and the Faculty of Medicine was founded in 1781. Recently the main research fields are as follows: 1. Human genome diversity, its origin and phenotypic realization. 2. Human and public health, quality of life and environment. 3. Bioethics, health law and politics. 4. Etiopathogenesis, diagnostics and treatment of diseases: fundamental and clinical research, innovative technologies. Faculty of Medicine has PhD training in Medicine, Public Health and Odontology. In total there are 95 PhD students at the Faculty of Medicine. There is certain background for the Cooperative Networking in PhD studies at the Faculty of Medicine, Vilnius University: 1. The collaboration with the other Universities in neighbor and the other countries: Austria, Czech Republic, Denmark, France, Germany, Italy, Japan, Norway, Poland, Russia, Spain, Sweden, Taiwan, The Netherlands, UK, USA. 2. The participation in the International programs and projects: FP5, FP 6, F7, GROWTH, QUALITY OF LIFE, BRIMHEALTH, CEEFOODS, EURAP, EUNOMIA, EURECA, EURETHNET, BIT NET, PECD, STOPPII, AGIS, ISEC [at present 16 International projects are carried out]. 3. The organization of the International conferences [for example, 40 conferences were organized during the 2008-2009, and PhD students were active participants]. 4. The invitation of the scientists from the other countries (Austria, Denmark, Estonia, France, Germany, Latvia, Poland, Russia, The Netherlands, Sweden, UK, USA) to participate in the process of PhD studies – as the Supervisors, the Consultants or the Members of the Doctoral Defense Board. 5. Wide personal communication with many researchers from foreign Universities and broad activity at many Societies of Biomedical and Health Science.
PhD projects

P34 CARDIOPROTECTION AT REPERFUSION: THE ROLE OF CYCLOSPORINE A AND DIAZOXIDE IN ISOLATED RAT HEARTS


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Pharmacological cardioprotection at reperfusion is assessed by means of functional or structural endpoints: determination of contractile function recovery and measurement of infarct size. In the present study we determined the effects of diazoxide (Dx), a mitochondrial ATP dependent potassium channels opener and of cyclosporine A (CsA), a desensitizer of the mitochondrial permeability transition pore on contractile function and infarct size in paced (P) vs. non-paced (N-P) isolated rat hearts. To this aim hearts (n = 6/group) subjected to 30 min global ischaemia and 60 min reperfusion were randomized to receive: (i) no additional intervention (Ctrl), (ii) 0.2 microM/L CsA and (iii) 100 microM/L Dx throughout the reperfusion period. Recovery of post-ischaemic ventricular function was assessed by the left ventricular developed pressure (LVDP) expressed as a percentage of the pre-ischaemic values. Infarct size was quantified by 2.3.5-triphenyltetrazolium chloride staining. An important anti-infarct protection was observed in Dx treated (18±3% in N-P and 24±4% in P groups vs. 45±2% and 49±4% in the corresponding Ctrls) together with a substantial improvement in functional recovery for LVDP in N-P (63±3%) and P (73±4%) groups (p < 0.05 vs. Ctrls) CsA administration at reperfusion was followed by a lower reduction in infarct size as compared to Dx in both N-P and P groups, whereas a significant improvement of LVDP was reported only in the N-P group (73±3%, (p < 0.05 vs. Ctrl). In the isolated paced rat heart, Dx but not CsA administration at reperfusion was associated with both anti-necrotic protection and post-ischaemic improvement in the global left ventricular function.

P35 NO-DEPENDENT VASCULAR RELAXATION: EXPERIMENTAL MODEL IN RAT AORTIC RINGS

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Investigation of vascular reactivity in isolated organ bath is a classic method largely used for the in vitro study of endothelial dysfunction. The aim of the present study was to assess the significance of N-nitro-L-arginine methyl ester (L-NAME), a nonselctive inhibitor of endothelial nitric oxide syntase, in studying experimental endothelial dysfunction. Thoracic aortas were isolated from Wistar male rats and vascular rings (2-3 mm) were placed in two individual jacketed organ baths. After equilibration 37 C under 1.75 cN passive tension the tissues were challenged with 10-5M phenylephrine (PE). Vascular responses to cumulative concentrations (10-7 to 10 10-4 M) of acetylcholine (ACh) an adenosine diphosphate (ADP) as endothelial-dependent vasodilator agents, and sodium nitroprusside (SNP) as endothelial-independent vasodilator agent, were assessed in the absence and presence of L-NAME. Our dose-response curves showed that incubation with L-NAME did not completely abolish the ADP-induce vasodilator response whereas in case of ACh a mild vasoconstriction was recorded. This paradoxical behavior of the 2 vasodilator agents in the presence of L-NAME points towards the existence of other mechanism underlying their vasomotor response, in addition to the effect of influencing endothelial NO bioavailability. The presence of L-NAME in the organ bath further modifies the vasocostritor response. In conclusion, the use of L-NAME in organ bath studies allows the identification of NO related and non-related mechanisms of vascular reactivity underlying endothelial dysfunction. Key words: nitric oxide, vascular reactivity, rat aorta
PhD projects

P36 PROTECTIVE EFFECTS OF MAGNESIUM Orotate AT REPERFUSION IN LANGENDORFF PERFUSED RAT HEARTS AND ISOLATED MITOCHONDRIA


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Magnesium orotate (Mg-O), have been previously shown to markedly improve the energy status and heart function in pathological settings associated with ischemia/reperfusion injury. We aimed to evaluate the effects of 1 mM Mg-O given at reperfusion on contractile function in Langendorff perfused rat hearts subjected to 30 min global ischemia and on mitochondrial respiration. Post-ischemic ventricular function recovery was assessed by means of the left ventricular developed pressure (LVDP) and the first derivative of left ventricular pressure (+dLVP/dt) expressed as percentage of their pre-ischemic values. In a second group, oxygen consumption was measured in mitochondria isolated at 30 min of reperfusion by polarographic oxymetry (37°C). Basal (state 2) and ADP-stimulated (state 3) respiratory rates (nAtoms oxygen/min/mg mitochondrial protein) were recorded and respiratory control index (RCI) was calculated. At 30 min of reperfusion, Mg-O induced a substantial recovery of LVDP (62 ±3% vs. 45± 4% in non-treated animals, p < 0.01) and a similar significant improvement of +dLVP/dt. No differences were found in respiratory rates between the treated vs. non-treated group (13% increase in state 2 and 21% in state 3, p = NS), with complex I-dependent substrates. In the presence of complex II-dependent substrates respiratory rates increased significantly by 75% in state 2 and by 38% in state 3 (p < 0.01). RCI decreased by 21% (p < 0.05) in treated vs. non-treated animals. In isolated rat hearts, Mg-O given at reperfusion was able to elicit substrate-dependent partial mitochondrial uncoupling, effect that may contribute to its cardioprotective effect against reperfusion injury.

P37 IN VIVO EVALUATION OF THE ROOT CANAL LENGTH DETERMINATED BY AN APEX LOCATOR IN VITAL AND NECROTIC PULP

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Introduction: The ideal apical endpoint of a root canal is considered to be the apical constriction or cementodentinal junction of a tooth with completed root formation. Manufacturers claim that third-generation apex locators locate the apical foramen in the presence of moisture, pulp tissue, blood, exudates, or EDTA. Material & methods: In this study 37 teeth were used, 17 out of them with vital pulp, and 20 teeth with necrotic pulp in which was apical radiolucency. Initially, a K-file was placed in the root canal, and afterwards was done the Computed Dental Radiography. NiTi-files were used as instruments in which a stopper made out of rubber was placed in the endocentric length, which was calculated with Apex Locator, calibrated monitor from 0.0-0.1mm. The instrument was fixated with epoxy resin, while the rest of it was carefully cut. The extraction of the tooth was carefully done. Results: Under the certain issues of this experiment, with the use of Ni-Ti instruments, the length of the canal measured in electronic method NT, in 66% of the canals (36 canals) was the same with the actual length of root canal. In 14.8% (8 canals), the length measured in the electronic method was 0.5% shorter then the actual root canal. In 13% (7 canals) the electronic measurement was 0.5mm longer than the actual root canal. The tip of the endodontic instrument was went beyond the foramen in 5.6% of the cases (3 canals). In cases when it was over passed, it was 1-2 mm from the actual length of the root canal.

Conclusion: Ultima EZ apex locator, gives accurate readings, thus the exposure of patient in rtg, waves. Apex locators have a lot of advantages compared to the radiographic method.
P38 FREQUENCY AND INTENSITY OF BRONCHIAL HYPERREACTIVITY IN TIME OF COLD IN PATIENTS WITH ALLERGIC ASTHMA ON SPECIFIC IMMUNOTHERAPY

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Introduction: Asthma and allergic rhinitis are the major allergic respiratory diseases. They are associated with bothersome symptoms which may become chronically. Viral infections augment immediate and late allergic responses in the lungs of patients with allergic asthma. Certain viruses that typically exacerbate asthma have been noted to induce release of the cytokine interleukin-11 (IL-11), which is associated with AHR. Immunotherapy has been used extensively for 80 years as a specific treatment of allergy. Moreover, allergen vaccination in mono-sensitized young children was found to reduce the onset of new sensitizations. A fundamental advantage of immunotherapy in the treatment of allergy may be its interference with the pathophysiologic mechanisms responsible for mediator release. Examinees and Methods: This is a prospective, comparative clinical research that will be done in the University Clinical Hospital in Prishtina and in cooperation with specialized allergologic center Yili in Prishtina (Kosovo). 60 patients of both sexes that have allergic asthma will be included in this study and they will be divided into two groups. In the examined group there will be 30 examinees that will receive immunotherapy, while in the control group there will be 30 examinees that will be treated with other medications but not with immunotherapy. Examinees of the examined group will be treated with subcutaneous specific immunotherapy (SCIT) each. The level of IL3 and IL11 will be determined from the peripheral blood of both groups of examinees through ELISA test. Determination of IL3 and IL11 will be done every 3, 6, 9 and 12 months, and the frequency of cold conditions in these patients will be measured.

P39 INVESTIGATION OF PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE IN HUMAN GYNECOLOGICAL AND ANDROLOGICAL FLUIDS

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Pituitary adenylate cyclase activating polypeptide (PACAP) is a multifunctional and pleiotropic neuropeptide. Although PACAP was first described as a hypothalamic peptide influencing the functions of the pituitary gland, the peptide has numerous other effects throughout the nervous system and peripheral organs. Its endocrine actions and effects in reproductive organs are still in focus of research. PACAP plays important roles in spermato- and oogenesis, in implantation and in the development of the nervous system. However, it is not known whether PACAP is present in the fluids of the human reproductive organs. The aim of the present study was to determine, by means of mass spectrometry, whether PACAP is present in the amniotic fluid, in the ovarian follicular fluid, in the seminal plasma and in the cervico-vaginal fluid. Samples were obtained from healthy adult volunteers. Our MALDI TOF spectrometry results show that PACAP38 is present in half of the seminal fluid samples and in most follicular fluid samples. However, we did not find the characteristic peaks representing the 38 and 27 forms of the peptide in normal cervico-vaginal and amniotic fluids. The functional implications of these results await further investigation.
P40 THE ROLE OF ENDOGENOUS PACAP IN PROTECTION AGAINST HYPOXIA AND OXIDATIVE STRESS: IN VITRO STUDIES IN PACAP KNOCKOUT MICE

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One of the well-known effects of pituitary adenylate cyclase activating polypeptide (PACAP) is its neuro- and cytoprotective actions, including renoprotective effects. PACAP deficient mice display several behavioural, metabolic and developmental alterations. Furthermore, it has been shown that PACAP deficient mice have larger infarct volume in a model of cerebral ischemia, delayed axonal regeneration and increased cell death in cerebellar oxidative stress. These results show that endogenous PACAP plays a protective role against different stressors. The aim of the present study was to investigate whether endogenous PACAP has protective effect in the kidney against oxidative stress and in vitro hypoxia. Kidney cell cultures were isolated from wild type and PACAP deficient mice and cell viability was assessed following oxidative stress induced by 0.5, 1.5 and 3 mM H2O2. In vitro hypoxia was induced by CoCl2. We found that the sensitivity of cells from PACAP deficient mice was greatly increased to oxidative stress: both after 2 or 4 hrs of exposure, cell viability was significantly reduced compared to control wild type mice. These results show that endogenous PACAP protects against oxidative stress in the kidney, and that PACAP may act as a stress sensor in renal cells.

P41 CONSEQUENCES OF ADIPOSE TISSUE INFLAMMATION IN MORBIDLY OBESE ADOLESCENTS – THE TOBI-KIDS PROJECT

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The prevalence rate of pediatric obesity is rising alarmingly. In addition to the economic burden the health consequences are serious and in worst case pediatric obesity causes premature death. Furthermore obesity is associated with a chronic low-grade inflammation which leads to impaired glucose tolerance and finally to type 2 diabetes. The chronic inflammation originates in the adipose tissue (AT) and it results in elevated circulating concentrations of CRP, IL-6, IL-8 and TNF-alpha. The aim of the study is to evaluate possible correlations of metabolic and inflammatory alterations within obese adolescents and differences between morbidly obese adolescents and adults. Patients: We plan to study 100 obese children and adolescents aged 10 to 18 years defined as having body mass indexes (BMI) that exceed the 97th percentile for age and sex. Methods: Evaluation of weight, height, BMI, blood pressure and waist-, hip- and neck circumferences. Serum and plasma samples are taken to evaluate fasting blood concentrations of glucose, insulin and other relevant parameters. Furthermore adipokines and systemic inflammatory markers [e.g. CRP, TNF-alpha] will be analyzed. Insulin resistance is evaluated by an oral glucose tolerance test and using the homeostasis model assessment for insulin resistance (HOMA-IRI). The carotid intima-media thickness is examined by ultrasound. A subgroup of the participants undergoes a bariatric surgery and AT will be collected intraoperatively and analyzed with regard to inflammatory gene expression and macrophage infiltration. This work is supported by the European Community’s 7th Framework Programme (FP7/2007-2013) under grant agreement no. 201608 (TOBI - Targeting OBesity-driven inflammation; to T.M.S.).
P42 ASSESSMENT OF MITOCHONDRIAL RESPIRATION IN RAT SKELETAL MUSCLE AFTER BLUNT INJURY

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Estimation of wound age represents a critical issue in forensic medicine. In cases of suspected non-accidental injury, predicting the age of soft-tissue lesions from the macroscopic changes provides a rather rough estimation. Several proteins such as interleukins, adhesion molecules, skeletal troponin I have been investigated as potential molecular markers for wound age estimation. In this work, we evaluated mitochondrial respiratory chain complexes I and II after traumatic muscular injury. Female Wistar rats were randomly divided into four groups (n = 4-6): control group and 24, 48, 72 h post injury groups. Gastrocnemius muscle injury was induced by a single blunt-impact trauma. Mitochondria were isolated by means of differential centrifugations at 24, 48 and 72 h, respectively. Mitochondrial respiration was measured at 37°C by polarographic oxymetry in the presence of complex I (CI) and complex II (CII) substrates. Respiratory control index (RCI) calculated as the ratio between state 3 and 2 respiratory rates was 6±0.63 in control group for CI dependent respiration and 4.2±0.63 for mitochondrial respiration related to CII. Our results showed that the activities of complex II after 72 h of muscular lesion were significantly increased when compared to the 24 h group. Basal (state 2) respiratory rate was 66.5±3.69 natoms oxygen/min/mg mitochondrial protein and ADP-stimulated (state 3) respiratory rate was 200±7.04 natoms oxygen/min/mg in the 72 h group (p < 0.05 vs the 48 h group). In conclusion, we observed an improvement of mitochondrial respiration starting 72 h post-injury. Further experiments on mitochondria isolated beyond 72 h are needed in order to involve these organelles’ dysfunction in soft-tissue blunt injury age estimation.

P43 EXPRESSION ANALYSIS AND MOLECULAR CHARACTERIZATION OF C20ORF116 GENE PRODUCT


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After definition of the human genome, it has become a challenge to characterize gene products originating from undefined open reading frames. Comparative expression analysis of normal versus tumor tissue demonstrated over expression of C20orf116 in multiple tumor tissues. Encouraged by these findings we decided to characterize its transcript and translation product. Northern analysis showed expression of 1.35 kb transcript in liver, kidney and brain. Antibodies against the recombinant protein used for immunoblots verified its expression in these tissues. Immunostaining revealed the presence of C20orf116 protein in cytosol and cell nucleus. Cell compartment separation confirmed its presence in peroxisomes/mitochondria, microsomes, cytosol and nucleus. This is in line with GFP-C20orf116 fusion protein shuttling between cytosol and nucleus. Sequence alignment identified a PCI-domain at the C-terminus of C20orf116 protein which is found in several subunits of three protein complexes: the proteasome, the COP9 signalosome (CSN) and the translation initiation factor (eIF3). The PCI-domain is known to act as protein-protein interaction mediator. Following the question whether C20orf116 represents an unknown member of any of these complexes, size exclusion chromatography and consecutive immunoblotting for both proteasome and C20orf116 were performed. The distribution rather excluded that this novel protein represents a member of the proteasome. However, the CSN and eIF3 represent potential candidates. This is supported the luciferase reporter studies using the substance P promoter in a neuroblastoma cell line. This assay revealed an almost three fold increase of promoter activity suggesting potential involvement of C20orf116 protein in transcription or translation.
PhD projects

P44 SIGNS OF TAUOPATHY IN INSULIN-PRODUCING CELLS

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Impaired glucose metabolism, altered insulin-signaling and oxidative stress are some of several pathological features common to Alzheimers’ disease (AD) and type 2 diabetes (T2D). In β-cells of individuals suffering from T2D the presence of phosphorylated tau as well as of intracellular islet amyloid peptide deposits has been demonstrated recently. Motivated by these facts we evaluated tau protein expression in the Rin-5F insulin secreting rat cell line as well as in human insulinomas. Moreover, as calcium-binding proteins such as the recently identified secretagogin (SCGN) might exert protective effects, we looked if SCGN over-expression in Rin-5F cells could influence cell vitality. In order to investigate the biophysical states of tau the following methods were used: immunoblotting, immunofluorescence, detergent treatment with ultracentrifugation and sucrose density gradient centrifugation. In addition, GST-SCGN pull down assays were employed to find out SCGN-tau interaction. The MTT proliferation assay was the basis for testing the vulnerability of Rin-5F clones. We described the presence of six tau isoforms in insulin secreting cells. Furthermore, we showed tau protein appearance in hyperphosphorylated states as well as in protein deposits and as sarkosyl-insoluble aggregates, which all resemble features of tauopathy in AD. Additionally, we demonstrated co-expression and association of one tau isoform with SCGN in insulin-secreting cells. We revealed that higher levels of SCGN expression were not able to antagonize tau aggregate formation. Our findings support the implication that β-cells might represent an extra cerebral site of tauopathy. Furthermore, we demonstrated for the first time the association of tau and the calcium-binding protein secretagogin.

P45 SYNTHESIS OF LIPID-DERIVED ADIPOKINES IS ALTERED IN OBESITY-INDUCED ADIPOSE TISSUE INFLAMMATION

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Obesity-induced chronic low grade inflammation originates in adipose tissue and represents a crucial link between obesity and insulin resistance. A number of potent pro- and anti-inflammatory lipid mediators such as prostaglandins (PG), lipoxins and resolvins (Rv) exist that arise from polyunsaturated fatty acids (PUFA) of the n-6 and n-3 series. Based on the extensive production of free fatty acids in adipose tissue we hypothesized that lipid-derived mediators synthesized in adipose tissue, so-called lipid-derived adipokines (LDA), play a potential role in obesity-induced adipose tissue inflammation. Possible alterations of LDA synthesis in obesity were investigated in two mouse models of obesity, namely genetic (db/db) and diet-induced obesity applying solid-phase extraction and HPLC-tandem mass spectrometry. In parallel, mRNA expression of relevant enzymes for LDA production was analysed by quantitative RT-PCR. Adipose tissue concentration of analysed lipid mediators and precursors like PGE2, 12-HETE, 15-HETE, 17-HDHA and protectin D1 was significantly reduced while RvE1 precursor 18-HEPE was significantly increased in both mouse models of obesity compared to lean controls. From the investigated enzymes, gene expression of 12/15-lipoxygenase and COX-1 was decreased in diet-induced but not genetically obese mice. In addition, n-3 PUFA supplementation increased the concentration of PGE3, protectin D1, 17-HDHA and 18-HEPE. In conclusion, these data demonstrate obesity-induced alterations of LDA and their precursors in adipose tissue that could affect adipose tissue inflammation and contribute to insulin resistance in obesity. This research was supported by the European Community’s 7th Framework Programme (FP7/2007–2013) under grant agreement n° 201608 (to T.M.S).
P46 INTERIM ANALYSIS ON THE IMPACT OF N-3 POLYUNSATURATED FATTY ACIDS ON INFLAMMATORY AND METABOLIC PARAMETERS IN MORBIDLY OBESE PATIENTS


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Obesity is associated with insulin resistance and inflammatory shifts promoting development of type 2 diabetes mellitus. N-3 polyunsaturated fatty acids (PUFA) counter inflammatory alterations, improve serum lipid profiles and insulin sensitivity. In my PhD thesis I test the hypothesis that n-3 PUFA inhibit obesity-driven inflammation, thus reducing insulin resistance in morbidly obese non-diabetic patients. For this abstract, an interim analysis was performed. We randomized 40 out of planned 50 patients (mean BMI 45.9±5.5 kg/m²) aged 20 to 62, in a randomized controlled open-label study to treatment with either n-3 PUFA (3.6 g/day) or an equivalent amount of butter for eight weeks. Fasting serum concentrations of the inflammatory marker CRP and lipids were measured. Oral glucose tolerance tests were performed at baseline and at the end of the treatment, allowing calculation of the homeostasis model assessment (HOMA-IR) index and the quantitative insulin-sensitivity check index (QUICKI). Treatment with n-3 PUFA significantly lowered triglyceride serum concentrations (23±26 mg/dl vs. -17±79.9 mg/dl, p=0.04) at the end of the treatment period with no significant changes in total, HDL, LDL cholesterol and CRP. HOMA-IR and QUICKI remained unchanged by the treatment. N-3 PUFA supplementation significantly improved serum triglycerides but did not alter systemic inflammation or insulin resistance. Further analyses are needed, in order to investigate the influence of n-3 PUFA on inflammatory metabolic alterations in morbidly obese patients. This work was supported by the European Community’s 7th Framework Programme (FP7/2007-2013) under grant agreement no. 201608 (TOBI - Targeting OBesity-driven inflammation) and the Austrian National Bank, project no. 12735 (both to T.M.S.).
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