

mefanet.2011

5th international conference
of Czech and Slovak faculties of medicine,
focused on e-learning and medical informatics

November 24–25, 2011
Brno, Hotel Voroněž, Czech Republic



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editors

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Welcome word

Dear colleagues and students,

we are pleased to welcome you to the 5th year of the MEFANET conference, which brings together teachers and students of all medical faculties of the Czech Republic and Slovakia and experts in the field of medical informatics and electronic support of teaching. Besides the methodological and educational aspects of e-learning in the network of all Czech and Slovak medical faculties MEFANET (MEdical FACulties NETwork), this year conference will also be focused on the impact of this phenomenon on a specific field of medicine. This time the Programme Committee chose topic "Electronic teaching in study programmes with extended training in pediatry".

Besides the standard lecture sessions, the conference programme also includes three specialized educational seminars. They will be focused on electronic assessment, legal-ethical aspects of MEFANET activities, and advanced technologies in e-learning (from „web 2.0 in learning“ to „Apple technologies for teaching“). The plenary sessions will certainly be attractive as well, since they include lectures by invited speakers from the MEFANET network, but also by our dear guests from abroad (prof. Stephen R. Thomas – Institut Gustave-Roussy, France, prof. Radu Iliescu – University of Medicine and Pharmacy, Romania; University of Mississippi Medical Center, USA & dr. Jiří Kofránek – 1st Faculty of Medicine, Charles University in Prague), who will introduce their research in physiology modelling and simulations.

We thank all participating speakers and authors of the conference proceedings contributions. We believe that this year event will continue in inspiring our teaching and research activities.

On behalf of the Programme Committee

Ladislav Dušek, Stanislav Štípek, Vladimír Mihál, Jiří Kofránek

On behalf of the Organization Committee

Daniel Schwarz, Martin Komenda, Jaroslav Majerník

Přivítání

Vážené kolegyně, vážení kolegové, milí studenti,

dovoluujeme si Vás přivítat na 5. ročníku konference MEFANET, na které se pravidelně setkávají pedagogové a studenti všech lékařských fakult z České republiky a ze Slovenska spolu s odborníky v oblasti zdravotnické informatiky a elektronické podpory výuky. Letošní konference se vedle metodických a pedagogických aspektů e-learningu v síti všech českých a slovenských fakult MEFANET (MEdical FACulties NETwork) bude opět zabývat i dopadem tohoto fenoménu na konkrétní obor medicíny. Programový výbor tentokrát zvolil téma: Elektronická výuka ve studijních programech s rozšířenou výukou pediatrie.

I letos najdete v programu konference kromě standardních přednáškových bloků najdete v programu také tři úzce zaměřené, interaktivní vzdělávací semináře či diskuzní panely. Ty se budou věnovat jednak problematice elektronického testování, dále budou opět probráný legislativně-etické aspekty aktivit okolo vzdělávací sítě MEFANET a pro zájemce o technologické trendy v e-výuce je také připraven panel, při kterém budou probírána témata od „web 2.0 ve výuce“ až po „technologie Apple pro výuku“. Atraktivní budou jistě i plenární sekce, neboť zde zazní vedle příspěvků od zvaných řečníků z tuzemských lékařských fakult také přednášky vzácných hostů, kteří z různých úhlů pohledu představí výsledky své práce v projektech zaměřených na simulace a fyziologické modelování. (prof. Stephen R. Thomas – Institut Gustave-Roussy, Francie, prof. Radu Iliescu – University of Medicine and Pharmacy, Rumunsko; University of Mississippi Medical Center, USA & dr. Jiří Kofránek – 1. Lékařská fakulta Univerzity Karlovy v Praze).

Děkujeme všem přihlášeným řečníkům a všem autorům příspěvků ve sborníku konference. Věříme, že letošní akce bude další inspirací pro naši pedagogickou i odbornou činnost.

Za programový výbor konference

Ladislav Dušek, Stanislav Štípek, Vladimír Mihál, Jiří Kofránek

Za organizační výbor konference

Daniel Schwarz, Martin Komenda, Jaroslav Majerník

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Organizing Agency

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Conference secretariate

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General information

Registration of participants at the conference venue

On-line pre-registration is preferred.

24 November 2011, 7.30–16.00 h

25 November 2011, 8.00–11.00 h

Lunch

Lunch is included in the registration fee and will be provided to all conference participants on 24th and 25th November 2011 in the hotel restaurant.

Poster session

Poster section is placed in the hall A.

Information for lecturers

Technical equipment

Data projector and PC will be available to the lecturers.

The lecturers are invited to test the technical equipment before the conference start or during coffee breaks.

Technical assistance will be available for the whole time of the conference.

**We ask lecturers to stay within the time limit
for their presentations.**

	HALL A	HALL B
9.00	<p>OPENING CEREMONY prof. MUDr. Jaroslav Štěrba, Ph.D. doc. RNDr. Ladislav Dušek, Ph.D.</p>	
9.15	<p>D1.1a PLENARY SESSION I L. Dušek Project MEFANET- 5 year experience with development of collaborative platform supporting medical and healthcare education</p> <p>R. Iliescu HumMod - integrated multilevel mathematical modeling of physiology for research and education</p>	
10.30	<p>COFFEE BREAK</p>	
10.45	<p>D1.1b PLENARY SESSION I S. R. Thomas The Virtual Physiological Human (VPH) project, with focus on an integrated core model of blood pressure regulation</p> <p>J. Kofránek Web multimedia simulation for biomedical teaching</p>	
12.15	<p>LUNCH</p>	
12.15	<p>D1.2 NEW MEMBERS IN MEFANET</p>	
13.45	<p>D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY</p>	
16.15	<p>COFFEE BREAK</p>	
16.30		<p>D1.4 SYMPOSIUM ON E-ASSESSMENT: BEST PRACTICE OF TEACHERS IN MEFANET M. Komenda</p>
18.00	<p>D1.5 MULTIMEDIA SUPPORT OF PRESENT AND DISTANCE EDUCATION</p>	<p>D1.6 INFORMATION SCIENCE IN HEALTH CARE</p>
19.00	<p>END OF 1ST DAY PROGRAMME</p>	
19.30	<p>SOCIAL EVENING</p>	

POSTER SESSION

	HALL A	HALL B
8.30	<p>D2.1 PLENARY SESSION II: SUBPROJECTS IN MEFANET: TEACHERS' AND STUDENTS' OPINIONS</p> <p>D. Schwarz Standardization of Educational Web Platform Among All Medical Schools in the MEFANET Project</p> <p>M. Vejražka Where WikiLectures Are Heading?</p> <p>J. Feberová MoodleMefanet – Current situation</p>	
10.00	<p>COFFEE BREAK</p>	
10.15		<p>D2.2 WORKSHOP: COPYRIGHT LAW IN PRACTICE</p> <p>D. Brechlerová</p>
11.45	<p>D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION</p>	<p>D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS</p>
13.15	<p>LUNCH / OBĚD</p>	
13.45	<p>D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION</p>	<p>D2.6 WORKSHOP: TECHNOLOGICAL TRENDS IN E-EDUCATION</p> <p>E. Kvašňák</p>
15.30		<p>MEFANET COORDINATING COUNCIL open discussion coordination meeting of the OPVpK 2.4 project</p>

POSTER SESSION



MEDICAL
FACULTIES
NETWORK



The MEFANET project (MEDical FACulties NETwork) has initiated international, effective and open cooperation among eleven medical faculties in the Czech Republic and Slovakia. One of the elementary goals of the project is to advance medical teaching and learning with the use of modern information and communication technologies. As an instrument for that, MEFANET has decided to develop an original and uniform solution for educational web portals which are used, together with a central gate, to offer and share digital educational content. In this way, a unique collaborative environment, which is full of shared resources, is growing. Three fundamental principles of the educational web platform are:

A. Medical disciplines linker



B. Authentication / Authorization Framework

- on-registered anonymous user
- registered anonymous user, who accepts the terms of use
- **user of MEFANET network, i.e. student or teacher from any Czech or Slovak medical faculty**
- user of local university
- user of local medical faculty
- user to whom attachments are made available only on the author's explicit consent



Czech academic
identity
federation



SP
service provider

WAYF

IdP
identity provider



Shibboleth.

Federative single-sign-on
authentication framework which
allows to share web resources
among institutions.

C. 4-D quality assessment

review

level

type

selfstudy
score

<http://portal.mefanet.cz>

OPENING CEREMONY

Thursday, 24 November 2011, 9.00–9.15, Hall A

prof. MUDr. Jaroslav Štěrba, Ph.D., doc. RNDr. Ladislav Dušek, Ph.D.

Faculty of Medicine, Masaryk University

D1.1a PLENARY SESSION I

Thursday, 24 November 2011, 9.15–10.30, Hall A

Dušek L. 45'

Masaryk University, Brno, Czech Republic

Project MEFANET– 5 year experience with development of collaborative platform supporting medical and healthcare education

Illiescu R. 45'

University of Medicine and Pharmacy, Iași, Romania;

University of Mississippi Medical Center, Jackson, USA)

HumMod – integrated multilevel mathematical modeling of physiology for research and education

D1.1b PLENARY SESSION I

Thursday, 24 November 2011, 10.45–12.15, Hall A

Thomas S. R. 45'

Institut Gustave Roussy, France

The Virtual Physiological Human (VPH) project, with focus on an integrated core model of blood pressure regulation

Kofránek J. 45'

Charles university, Prague, Czech Republic

Web multimedia simulation for biomedical teaching

D1.2 NEW MEMBERS IN MEFANET

Thursday, 24 November 2011, 13.00–13.45, Hall A

Rosina J. 15'

Czech Technical University, Kladno, Czech Republic

Electronic study support for bachelor and magister fields at CTU FBME

Marečková J. 15'

Palacký University, Olomouc, Czech Republic

Faculty of Health Sciences – new member of MEFANET project

Kamarád V. 15'
University of Ostrava, Ostrava, Czech Republic
Faculty of Medicine University Ostrava the youngest member of Czech Medical Faculties family

D1.3a ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

Thursday, 24 November 2011, 13.45–16.15, Hall A

Šlapák I. 30'
Masaryk University, Brno, Czech Republic
Extended teaching pediatrics – creation and use of electronic teaching materials

Mihál V. 30'
Palacký University, Olomouc, Czech Republic
Innovation of undergraduate evidence-based paediatric curriculum: a case study

Doležalová P. 15'
Charles University, Prague, Czech Republic
E-learning in paediatric rheumatology

Velemínský M. 15'
University of South Bohemia, České Budějovice, Czech Republic
Lessons of Preventive and Social Paediatrics at the Faculty of Health and Social Studies of the University of South Bohemia in České Budějovice

Ludíková B. 15'
Palacký University, Olomouc, Czech Republic
Innovation of compulsory study subject Pediatrics and creation of a multimedia text for practical training at Faculty of Medicine, Palacký University Olomouc

Mejstříková E. 15'
Charles University, Prague, Czech Republic
Role of adaptor protein SH2D1A in the regulation of immune system. Demonstration on X linked lymphoproliferative syndrome

Kobr J. 15'
Charles University, Plzeň, Czech Republic
Supraventricular tachycardia in children

Planka L. 15'
Masaryk University, Brno, Czech Republic
National Children Trauma Register in teaching

D1.4 SYMPOSIUM ON E-ASSESSMENT: BEST PRACTICE OF TEACHERS IN MEFANET

Thursday, 24 November 2011, 16.30–18.00, Hall B

Komenda M. (Masaryk University, Brno, Czech Republic) 90'

D1.5 MULTIMEDIA SUPPORT OF PRESENT AND DISTANCE EDUCATION

Thursday, 24 November 2011, 18.00–19.00, Hall A

Štuka Č. 15'

Charles University, Prague, Czech Republic

MedicalMedia.eu: Protected video distribution system

Majerník J. 15'

P. J. Šafárik University, Košice, Slovak Republic

3D animations in education of medical students

Jenča A. 15'

P. J. Šafárik University, Košice, Slovak Republic

Visualization of education in dental medicine at Faculty of medicine in Kosice

Martinka J. 15'

Comenius University, Bratislava, Slovak Republic

Possibilities of interactive tables in practical training on biophysics

D1.6 INFORMATION SCIENCE IN HEALTH CARE

Thursday, 24 November 2011, 18.00–19.00, Hall B

Brechlerová D. 15'

Czech Technical University, Kladno, Czech Republic

What's new in the new Criminal Code in relation to IT?

Horváth D. 15'

Charles University, Prague, Czech Republic

Scientific Information in E-education Focused on Information Support in Medicine

Vejvalka J. 15'

Charles University, Prague, Czech Republic

International Classification of Nursing Practice – a Multilingual Approach to Health Terminology

Michálková H. 15'

University of South Bohemia, České Budějovice, Czech Republic

Implementation of the on-line technology in post-graduate training of nurses

D2.1 PLENARY SESSION II: SUBPROJECTS IN MEFANET – TEACHERS' AND STUDENTS' OPINIONS

Friday, 25 November 2011, 8.30–10.00, Hall A

Schwarz D., Košťálová M. 30'

Masaryk University, Brno, Czech Republic

Standardization of Educational Web Platform Among All Medical Schools in the MEFANET Project

Vejražka M. 30'

Charles University, Prague, Czech Republic

Where WikiLectures Are Heading?

Feberová J. 30'

Charles University, Prague, Czech Republic

MoodleMefanet – Current situation

D2.2 WORKSHOP: COPYRIGHT LAW IN PRACTICE

Friday, 25 November 2011, 10.15–11.45, Hall B

Brechlerová D.

Czech Technical University, Kladno, Czech Republic

D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION

Friday, 25 November 2011, 11.45–13.15, Hall A

Pokorná A. 15'

Masaryk University, Brno, Czech Republic

Electronic teaching materials – case studies, use of medical image data

Krajčí D. 15'

Palacký University, Olomouc, Czech Republic

Methods of application of virtual slides in modern histology practical sessions

Pospíšilová E. 15'

Palacký University, Olomouc, Czech Republic

Evaluation of a new e-learning method of teaching practical histology at Department of Histology and Embryology in Olomouc

Černochová D. 15'

Palacký University, Olomouc, Czech Republic

Testing practical skills of histology students in the PC-equipped histology practical lab

Vokurka J. 15'
Masaryk University, Brno, Czech Republic
Atlas of Oral Diseases for Undergraduate Students of Dental Medicine

Gavliaková S. 15'
Comenius University, Martin, Slovak Republic
Three-dimensional computer model of the brainstem respiratory neuronal circuits – application for teaching purposes and research in respirology

D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS

Friday, 25 November 2011, 11.45–13.15, Hall B

Bolek L. 15'
Charles University, Plzeň, Czech Republic
Project MODIM

Rajdl D. 15'
Charles University, Plzeň, Czech Republic
E-clinical Biochemistry: cooperative authoring of e-learning materials

Kordek D. 15'
Charles University, Hradec Králové, Czech Republic
Mefanet and IT medik as a support expansion of quality e-learning

Kozlíková K. 15'
Comenius University, Bratislava, Slovak Republic
Electromagnetic biosignals and electromagnetic radiation in electronic education of medical biophysics

Rous V. 15'
Thomayer University Hospital with Polyclinic
E-health education of medical stuff in Thomayer hospital

Bílková V. 15'
Institut postgraduálního vzdělávání ve zdravotnictví
E-learning in a projects "Improvement of physicians and non-physicians education"

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

Friday, 25 November 2011, 13.45–15.30, Hall A

- | | |
|--|-----|
| Dostálová T.
<i>Charles University, Prague, Czech Republic</i>
Dentistry Students' e-Learning Satisfaction | 15' |
| Zahradníček O.
<i>Masaryk University, Brno, Czech Republic</i>
Use of "Drill" utility of Information System of Masaryk University for non-language medical student education | 15' |
| Žourková A.
<i>Masaryk University, Brno, Czech Republic</i>
Psychiatry and Examination Tests | 15' |
| Zeman V.
<i>Charles University, Plzeň, Czech Republic</i>
E-learning in Sports Medicine | 15' |
| Rudnay M.
<i>P. J. Šafárik University, Košice, Slovak Republic</i>
Multidisciplinary view of the kidney | 15' |
| Varga M.
<i>P. J. Šafárik University, Košice, Slovak Republic</i>
Use flash presentation on medical portal of slovak medical chamber (www.i-med.sk) | 15' |
| Veterník M.
<i>Comenius University, Martin, Slovak Republic</i>
Teaching biomedical statistics at Faculty of Medicine and Dentistry, Palacký University in Olomouc | 15' |

MEFANET COORDINATING COUNCIL

Friday, 25 November 2011, 15.30–17.00, Hall B

– open discussion

MEFANET COORDINATING COUNCIL

Thursday, 25 November 2010, 17.00–17.30, Hall B

– coordination meeting of the OPVpK 2.4 project

POSTER SESSION

24–25 November 2011, Hall A

Vejvalka J.

Charles University, Prague, Czech Republic

METABO – ICT Tools to Support Diabetic Patients in Their Daily Life

Langová K.

Palacký University, Olomouc, Czech Republic

Teaching biomedical statistics at Faculty of Medicine and Dentistry, Palacký University in Olomouc

Seifertová G.

Institut postgraduálního vzdělávání ve zdravotnictví

E-learning in a project "Improvement of physicians' education"

Seifertová G.

Institut postgraduálního vzdělávání ve zdravotnictví

E-learning in a project "Improvement of non-physicians' education"

Komenda M.

Masaryk University, Brno, Czech Republic

The common portal platform in the MEFANET

Komenda M.

Masaryk University, Brno, Czech Republic

MEFANET project: multidimensional quality assessment



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WWW.AKUTNE.CZ

PROJECT MEFANET – 5 YEAR EXPERIENCE WITH DEVELOPMENT OF COLLABORATIVE PLATFORM SUPPORTING MEDICAL AND HEALTHCARE EDUCATION

L. Dušek, D. Schwarz, M. Komenda, S. Štípek, M. Vejražka, Č. Štuka, J. Feberová, V. Mihál

Thursday, 24 November 2011, 9.15–10.30, Hall A

D1.1a PLENARY SESSION I

The MEFANET – Medical Faculties NETwork – has initiated international and open cooperation among all Czech and Slovak medical faculties since 2006. The MEFANET projects aim to develop new electronic teaching tools and origin educational solutions in medical and health care fields using modern information and communication technologies, which are available for both teachers and students. This paper describes the MEFANET progress overview and introduces fundamental principles related to electronic support of medical education. All chosen approaches fully respect independence and different requirements of each medical faculty. The base of the MEFANET success and key activities are reported here, as well as mechanism of a new multidimensional digital content quality assessment.

HUMMOD – INTEGRATED MULTILEVEL MATHEMATICAL MODELING OF PHYSIOLOGY FOR RESEARCH AND EDUCATION

R. Iliescu, R. L. Hester, T. Coleman

Thursday, 24 November 2011, 9.15–10.30, Hall A

D1.1a PLENARY SESSION I

Multilevel, integrated mathematical modeling of physiology allows examination of a multitude of variables which may not be amenable to direct experimental testing or measurement. We have developed HumMod, a model composed of ~ 4,500 equations describing human physiology, which includes cardiovascular, neural, renal, endocrine, metabolic, and respiratory physiology. Variables are described by differential and / or algebraic equations and numerical solutions are computed simultaneously for increments of the independent variable, time. All variables and equations are organized in XML files, which can be opened by any text editor and are directly readable and interpretable by users as the local names are self-descriptive. The model structure is parsed, equations are solved and results are displayed graphically by a compiled executable file. In addition, by way of XML files, users can add or modify existing content (variables and relationships), making HumMod a user-friendly, interactive modeling platform. The major advantage of the HumMod, besides its complexity, is that it allows evaluation of dynamic changes in physiological variables in response to perturbations. Such an approach is currently used for conveying complex physiological processes in medical education and also for research hypothesis generation and testing. We present mathematical simulations using HumMod describing normal and pathophysiological behaviors in both steady state and dynamic conditions.

THE VIRTUAL PHYSIOLOGICAL HUMAN (VPH) PROJECT, WITH FOCUS ON AN INTEGRATED CORE MODEL OF BLOOD PRESSURE REGULATION

S. R. Thomas

**Thursday, 24 November 2011, 10.45–12.15, Hall A
D1.1b PLENARY SESSION I**

European Physiome activity is currently supported under the 7th Framework Program VPH call (Virtual Physiological Human)(Hunter et al. 2011), which has now funded one Network of Excellence (NoE) and more than thirty targeted projects. The mission of the NoE is to coordinate these efforts, explore training possibilities, disseminate information about VPH resources and projects, and furnish a VPH Tool-Kit. The aim of the VPH ToolKit is to foster interoperability among the plethora of models at different scales through the use of markup languages, shared reference ontologies, model repositories, databases, and so on. I will briefly summarize this activity and then focus on progress in the Renal Physiome (Thomas 2009), which is linked to the VPH NoE through the SAPHIR Exemplar Project (Thomas et al. 2008) treating blood pressure regulation and renal physiology in a Guyton-inspired modular modeling environment (Guyton et al. 1972, 1987). Among other items, I will describe the Quantitative Kidney DataBase (QKDB) of experimental measurements and anatomical details relevant for kidney physiology, and preliminary results from an extensive sensitivity analysis of the Guyton models (Hernandez et al. 2011).

WEB MULTIMEDIA SIMULATION FOR BIOMEDICAL TEACHING

J. Kofránek, P. Privitzer, M. Mateják, S. Matoušek

**Thursday, 24 November 2011, 10.45–12.15, Hall A
D1.1b PLENARY SESSION I**

We present the current state of the technology used for web multimedia educational simulator development. The main aim is to provide novel interactive multimedia application that can be used for biomedical education where (a) simulations are combined with tutorials, and (b) the presentation layer is simplified while the complexity of the model is kept beneath. The development of the multimedia teaching simulators required the cooperation of many professionals including teachers, system analysts, artists, and programmers. During the design of the multimedia simulators, tools were developed that allow for component-based creation of simulation models, creation of interactive multimedia and their final coordination into a compact unit based on the given design. The result of our works is Atlas of physiology and pathophysiology as freely available online application, which can help to explain the function of individual physiological systems and the causes and symptoms of their disorders.

ELECTRONIC STUDY SUPPORT FOR BACHELOR AND MAGISTER FIELDS AT CTU FBME

J. Rosina, J. Hozman

Thursday, 24 November 2011, 13.00–13.45, Hall A

D1.2 NEW MEMBERS IN MEFANET

Faculty of Biomedical Engineering CTU is the second youngest faculty of CTU and is very motivated to offer a few examples of the electronic support of education in bachelor's and master's degree fields. In particular, the promotion of studies in the paramedical fields. Due to the interdisciplinary approach to study at the faculty is to use just as much as possible electronic support teaching and learning. Among the used electronic support study include use of e-learning system Moodle, working in various modules NIS, educational videos, animation, testing knowledge EduBase2 system (especially for the medical terminology), both for self and for the final tests, as well as several web portals focusing on imaging systems in medicine. Given the priority of the faculty to develop high-quality laboratory facilities, is to link each laboratory with the aforementioned tools and technologies and other means. Such examples are both artificial laboratory simulation and patient anatomy and physiology lab. In the laboratory simulation of artificial patient is newly available recording system METI Vision, which enables complete business document such as rescue team at reviving injured. In the laboratory of anatomy and physiology is available specialized software environment which allows the connection of real experiments and the results of these experiments used in the models. In conclusion, the paper is then carried out summary and discussed some specific examples of experience from electrical study support.

FACULTY OF HEALTH SCIENCES – NEW MEMBER OF MEFANET PROJECT

J. Marečková

Thursday, 24 November 2011, 13.00–13.45, Hall A

D1.2 NEW MEMBERS IN MEFANET

The Faculty of Health Sciences is the eighth and the youngest Faculty of Palacký University in Olomouc. It was established in 2008 and focuses on education of non-medical professionals in health care, whose specification complies with the Act No.96/2004 Coll. The Faculty of Health Sciences detached from the Faculty of Medicine and Dentistry of Palacký University that had conducted non-medical healthcare programmes until then. The detachment resulted from the differences in profiles and competencies of the graduates and from unequal research focus areas of the study programmes. The Faculty of Health Sciences provides eight specialties in four study programmes and a postgraduate Nursing Programme. Cooperation with the Faculty of Science has been carried out in the bachelor degree study programme of Optometry for several years and in the new programme of Orthoptics since the academic year of 2008/2009. The Faculty of Health Sciences has been

also involved in the master degree study programme of Teaching of Specialized Subjects at Secondary Schools for Nurses since 2008/2009. Opportunity to be a member of the MEFANET project is an important opportunity for faculty to collaborate in a series of topics.

FACULTY OF MEDICINE UNIVERSITY OSTRAVA THE YOUNGEST MEMBER OF CZECH MEDICAL FACULTIES FAMILY

V. Kamarád

Thursday, 24 November 2011, 13.00–13.45, Hall A

D1.2 NEW MEMBERS IN MEFANET

Faculty of Medicine is part of The University of Ostrava which was founded on 28 September 1991. Its origins can be traced back to 1953, when a training college for future primary school teachers was opened in the nearby town of Opava. Since its foundation twenty years ago, the University has provided a much-needed focus for the study and research of humanities and social sciences, helping to redress a historic imbalance in a region traditionally dominated by heavy industry and technical studies. The Faculty of Medicine was established in September 2010. Its history is closely connected with the Medical-Social Faculty of the University of Ostrava, which was established in 1993. In 2008 the Medical-Social Faculty was divided into two faculties: the Faculty of Social Studies and the Faculty of Health Studies. The Faculty of Health Studies was transformed into the Medical Faculty in 2010. The Faculty currently has more than 1200 students studying in eleven Bachelor degree study fields, one six-year Master's and five standard Master's study fields. The degree programmes provided by the Faculty cover the complete range of allied and nursing medical professions, ranging from social sciences-oriented specializations to those related to medical technology and laboratories.

EXTENDED TEACHING PEDIATRICS – CREATION AND USE OF ELECTRONIC TEACHING MATERIALS

I. Šlapák

Thursday, 24 November 2011, 13.45–16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

With the support of the project CZ 1.07/2.2.00/15.0187 – Innovation of the study program of general medicine with extended teaching of pediatrics at the Medical Faculty of Masaryk. Project of extended education in pediatrics at the Faculty of Medicine MU has been designed on the basis of experience with this field and with effort to improve and increase range of courses for students of general medicine, who desire to specialize in pediatrics. Emphasis is given on a development of teaching materials available at FM MU's special web page, including texts, images, videos, and other multimedia forms suitable for teaching. Project key activities 1. Electronic educational and information materials • Creation of electronic educa-

tional texts published at educational portal developed for this project • Creation of videos (typically from examination methods, surgeries, case studies) published at the educational portal • Creation of image sets (atlases, case studies, , examination and surgery procedures with description) 2. Centers of practical training • Creation of specialized practical training centers for training skills with models • Creation of image documentation (photos, films) with tutorials, how to work with models 3. Creation of materials, advantages, disadvantages and cooperation with ET dpecialists. Necessary assistance of ET specialists in these activities, cooperation and support of faculty administration. 4. Experience of teachers and students with such forms of education, availability and trends for future.

INNOVATION OF UNDERGRADUATE EVIDENCE-BASED PAEDIATRIC CURRICULUM: A CASE STUDY

V. Mihál, J. Potomková, J. Zapletalová, D. Šubová

Thursday, 24 November 2011, 13.45-16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

The aim of the paper is to outline an innovative project of the existing evidence-based paediatric course at a 'bench to bedside' learning platform. Three-year experience based on the feedback gathered from students has demonstrated that the students' actual clinical cases may improve uptake of EBM knowledge. The current curriculum includes formal training for use of online search skills by medical librarians as well as interactive web-based tutorials. Students work in pairs, they are assigned an actual patient case, ask a clinical question, and select an article that would assist in answering their question. The online curriculum consists of self-learning as well as facilitated units. Each pair of students has to go through evaluation afterwards. In general, students have confirmed the value in the curriculum, but many of them cited the time commitment as a weakness. Based on the results of SWOT analysis we have defined a set of innovative parameters to eliminate the weaknesses: online collection of peer-reviewed students' paediatric cases with repeated common diagnoses but different complications; lecture podcasts; PICO seminars for group discussion of clinical questions and their relevance;(e)-mentoring. The innovated educational prescription will be demonstrated on the example of acute lymphoblastic leukaemia complications.

E-LEARNING IN PAEDIATRIC RHEUMATOLOGY

P. Doležalová

Thursday, 24 November 2011, 13.45-16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

Paediatric rheumatology deals with diseases affecting multiple organ systems as well as physical and psycho-social functioning of patients and their families. High

level of expertise of treating physicians as well as other members of interdisciplinary team involved in the complex care is a pre-requisite to high quality clinical service. Moreover, parent and patient education plays important role in their long-term compliance as well as in general perception of their health related quality of life. Therefore multiple levels of education need to be directed at several target groups: medical pre- and post-graduate (general paediatric component, subspecialty training, continuing medical education-CME), allied health professional pre- and post-graduate (physio and occupational therapist, clinical nurse specialist, social worker, psychologist), patient (child) and parents/caregivers. Although e-learning cannot substitute for either „hands-on“ teaching or brainstorming discussions, it can complement learning in a unified, widely accessible and mentor-independent manner. At the moment, no systematic e-learning courses approved by the scientific society are generally available for neither of the target groups. Individual institutions build their own educational programmes for patients and families and/or their junior physicians. Examples of a few simple e-learning programmes both international and Czech ones will be presented.

LESSONS OF PREVENTIVE AND SOCIAL PAEDIATRICS AT THE FACULTY OF HEALTH AND SOCIAL STUDIES OF THE UNIVERSITY OF SOUTH BOHEMIA IN ČESKÉ BUDĚJOVICE

M. Velemínský, Z. Tomšíková, R. Šembera, L. Kukla, D. Průchová

Thursday, 24 November 2011, 13.45–16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

The E-learning program of Preventive and Social Paediatrics of the Faculty is based mainly on the fact that the broader contents of the subject is processed in form of learning texts and other literary sources. The actual E-learning program is elaborated on the base of those sources in form of support. The program elaborated in that way has: A chapter stating the basic source literature A chapter of discussion A chapter of tests with automatic evaluation of results A chapter of tasks and their evaluation by the teacher And the actual chapter processing the topic of Preventive and Social Paediatrics (50 topics) The chapter includes – Basic theses of the relevant topic based on the described literature – Key words – Questions – Answers

INNOVATION OF COMPULSORY STUDY SUBJECT PEDIATRICS AND CREATION OF A MULTIMEDIA TEXT FOR PRACTICAL TRAINING AT FACULTY OF MEDICINE, PALACKÝ UNIVERSITY OLOMOUC

*B. Ludíková, V. Mihál, J. Potěšil, J. Zapletalová, E. Klásková, E. Karásková,
L. Dubrava, H. Flögelová, T. Malý, J. Potomková, D. Pospíšilová, F. Kopřiva*

Thursday, 24 November 2011, 13.45–16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

The medical faculty, University Palacky in Olomouc, is from September 2010 dealing with new ESF project titled "Innovation of compulsory study subject Pediatrics and creating multimedia texts for practical practice – Multimedia text of pediatrics." The project aims to modernize, increase quality, efficiency and advancement of student education at the Palacký University Olomouc – Faculty of Medicine and Faculty of Health Sciences. The aim of the project is an innovation of the existing system of preparation of students leading to greater awareness, flexibility and for independent decision-making that are necessary to improve their skills and erudition. Thus the project should create the necessary conditions for increasing competitiveness of the students in the labor market and ensure better care for pediatric patients. Innovation of the Subject of Pediatrics is based on creation of till now missing multimedia learning support (interactive, audiovisual), in the extension and change of content of practical training with the direct involvement of a child patient in teaching. Also the innovation is in testing the students where solution of these case studies will be part of exams and state exam. The project also provides the possibility of effective self-preparation of the student using the web interface and hypertext links to recent publications in reputable journals. Working project team is currently developing an interactive, electronic, audio-visual teaching materials and case studies from these disciplines: Hematology, Surgery, Alergology, Pneumology, Endocrinology, Gastroenterology, Rheumatology, Nephrology, Intensive medicine, Cardiology and Neonatology, which are published and regularly updated on the website: www.pedkaz.cz. The part of the presentation will also be the demonstration of work with this application. Work is supported by grant project: CZ.1.07/2.2.00/15.0305

ROLE OF ADAPTOR PROTEIN SH2D1A IN THE REGULATION OF IMMUNE SYSTEM. DEMONSTRATION ON X LINKED LYMPHOPROLIFERATIVE SYNDROME

E. Mejstříková, D. Sumerauer, T. Freiberg, H. Bučková, J. Starý, Z. Sedláček, O. Hrušák, A. Janda

Thursday, 24 November 2011, 13.45–16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

X linked lymphoproliferative disease (XLP) caused by mutation in SH2D1A gene is a rare genetic disorder historically first described in patients with fatal infectious mononucleosis. Later on other disease manifestations were identified in patients with XLP not always associated with EBV infection: Burkitt lymphoma, common variable immunodeficiency, aplastic anemia, pure red cell aplasia, lymphoid vasculitis. Recently in patient with juvenile rheumatoid arthritis SH2D1A mutation was identified. SH2D1A gene is a member of SAP protein family and interferes with the signalling pathways in T lymphocytes, NK and NKT cells. SH2D1A is expressed primarily in lymphocytes, specifically T, NK, and NKT cells, as well as in eosinophils and platelets. Role of SH2D1A family will be described on a recently dia-

gnosed family, where completely different disease manifestations in three affected males were observed (fatal infectious mononucleosis, Burkitt lymphoma followed by aplastic anemia and severe unusual skin affliction so far not described in the literature). With broader availability of molecular genetic testing we expect identification of other less typical disease manifestations. Supported by NS/10480-3, MSM0021620813, MZOFNM2005

SUPRAVENTRICULAR TACHYCARDIA IN CHILDREN

J. Kobr,

Thursday, 24 November 2011, 13.45–16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

In the lecture are listed last definition, nomenclature and classification of dysrhythmias. Outputs are rated 30-year history of electrophysiology, which ran from bedside to molecular genetics. Are explained in detail the mechanisms of dysrhythmias, including schemes of the author's archive. Dysrhythmias are classified according to etiology, which is a crucial factor for the treatment strategy. The overview is presented clinical symptoms dysrhythmias in children. Diagnosis, including evaluation of ECG recording from the archives of the author is paid a large part of the lecture. Defined are the goals of treatment. Treatment is divided into acute, prophylactic and definitive. The conclusion is devoted to forecast of dysrhythmias in children and prospects for the future.

NATIONAL CHILDREN TRAUMA REGISTER IN TEACHING

L. Plánka, P. Gál

Thursday, 24 November 2011, 13.45–16.15, Hall A

D1.3 ELECTRONIC TEACHING IN STUDY PROGRAMMES WITH EXTENDED TRAINING IN PEDIATRY

Injuries are the most frequent reasons for hospitalization and doctor's visits and the most common cause of death in the age group up to 24 years. Although highly effective prevention could reduced this negative fact significantly, but it is long-standing outside the main interest of professionals and people. Within the limited time allotted to the teaching of basic theoretical knowledge and theoretical skills can not discuss in detail the actual etiology and epidemiology of injuries, let alone the possible methods of prevention. Children's injuries are a good example of that professional authority (professional society, trauma centers) very well understand the importance of prevention and systematically over the years create a source of epidemiological data. Therefore the National Children Trauma Register and a web application which enabled the transfer of information on children's injuries were established. Students can get on-line overview of the frequency of accidents studied, its etiology, age range of patients and should the situation in past time. Children injuries are just one example, there are similar outcomes for cancer or diseases

of the cardiovascular system. Accurate and most current epidemiological data are absolutely essential complement of the information needed for detailed study of this issue.

MEDICALMEDIA.EU: PROTECTED VIDEO DISTRIBUTION SYSTEM

Č. Štuka, T. Nikl, S. Szkandera

Thursday, 24 November 2011, 18.00–19.00, Hall A

D1.5 MULTIMEDIA SUPPORT OF PRESENT AND DISTANCE EDUCATION

The project deals with the distribution of sensitive videomaterials designated for specific group of users – mainly the educational videomaterials for medical students. All videos uploaded to the system are automatically transformed into a generally supported format MPG4. CESNET servers and broadband transmission lines are used for the protected storage and transfers. Target distribution uses Shibboleth authentication technology and is based on authorizations defined by the creator of the distributed material. Server and service MedicalMedia.eu will be introduced and demonstrated at Mefanet 2011 conference. The system is intended to be used by all interested medical schools.

3D ANIMATIONS IN EDUCATION OF MEDICAL STUDENTS

J. Majernik, D. Kluchova, K. Kozlikova

Thursday, 24 November 2011, 18.00–19.00, Hall A

D1.5 MULTIMEDIA SUPPORT OF PRESENT AND DISTANCE EDUCATION

Traditional forms of education in the area of human anatomy were supported by the system of 3D virtual projection installed at the Faculty of medicine in Košice. 3D projection system, based on principles of virtual reality, is located in the lecture room with the capacity of 200 students. Using specialized glasses the students feel an existence of 3D space and they are allowed to study human body in more detailed form. Even if the students' response is very positive, the education using virtual projection is limited to the time schedule of lecture room. Due to this, the teachers asked us to create education material playable also outside the lecture room and its virtual projection system. To meet these needs we started to prepare so called 2D versions of educational movies. These movies can be equipped by audio and text comments and/or explanations of teacher. At the present, the movies are prepared according to the syllabus for Anatomy guaranteed by Department of anatomy. Database of such materials will be available for the students in the classroom with 10 computers as first. Later, we suppose to create also an off-line version in the form of DVD and after completion of all necessary modules the movies will be available in on-line forms as well. Using this way, we expect to reach our primary goal that is to offer students the possibilities of detailed study of human body, its organs and their topographical relations. On the other hand, these materials will be useable repetitively during different education activities. This work was partially supported by the EU grant ITMS 26250120003 and KEGA 004UK-4/2011.

VISUALIZATION OF EDUCATION IN DENTAL MEDICINE AT FACULTY OF MEDICINE IN KOSICE

A. Jenca, J. Majernik, A. Jenca Jr.

Thursday, 24 November 2011, 18.00–19.00, Hall A

D1.5 MULTIMEDIA SUPPORT OF PRESENT AND DISTANCE EDUCATION

Development of modern education tools based on information and communication technologies effects also education processes in dental medicine. To make education in this area more effective, illustrative as well as progressive, we have been realized a project where audio and visual techniques were used together with the network infrastructure to bring students more detailed and illustrative explanations of clinical cases. Visualization of education was realized at the Department of Stomatology and Maxillofacial Surgery, where the network infrastructure was built as first. LAN was increased by fifty new connection places and the communication is operated by three fully manageable 1Gb switches. Ten HD video cameras and projection equipment with large screen displays were installed to interconnect surgery halls, ordinations and consulting rooms. All the realized interventions can be easily recorded, stored and accessed using high performance storage server. Other ten intraoral cameras with LCD displays were installed directly on the dental chairs. To see the details of any patient/clinician from any dental chair these are interconnected and the data can be saved on separate file storage server. Preclinical education is supported by visualization of models the students work on in phantom rooms. Specialized 3D scanner was installed and interconnected with 10 computers the students can use to evaluate their works. All the installed technologies allow us to communicate and to see the patients and/or interventions in real time. Individual processes can be also recorded, processed and archived to be useable for present and also for distance learning. Using of such multimedia tools help teachers to explain practical problems in dental medicine in more efficient way. This work was supported by the grant of national agency KEGA 3/7134/09 "Rozvoj kreativity vzdelávania v multifunkčnom biomedicínskom laboratóriu klinických odborov".

POSSIBILITIES OF INTERACTIVE TABLES IN PRACTICAL TRAINING ON BIOPHYSICS

J. Martinka, K. Kozlíková, Z. Balázsiová, M. Trnka

Thursday, 24 November 2011, 18.00–19.00, Hall A

D1.5 MULTIMEDIA SUPPORT OF PRESENT AND DISTANCE EDUCATION

Technology of interactive boards opens new possibilities for implementation of electronisatoin of education on all levels. They can be a significant help to satisfy increasing demands for study. However, use of their potential requires new approach to teaching, often called „engaged teaching“. Using of interactive boards at universities is a new challenge. Teaching tools of boards are oriented to explain basic terms, what can be applied on lower education levels. Their usage by university pedagogic workers thus needs even higher requirements for preparation of

self-made materials and lessons. On the other hand, university students are more ready for active participation on teaching process, what should be supported by the modern approach to teaching. This year we installed electronic boards on the Department of Medical Physics, Biophysics, Informatics and Telemedicine of MF CU in Bratislava. First experiences show that teachers often use them as a supplement to common teaching habits. Within frame of the project KEGA, solved in cooperation with FMPH CU in Bratislava and MF UPJŠ in Košice, we try to find a suitable way of implementation of new technologies in practical training. After getting familiar with advanced functions of the boards, we want to design and prepare presentations of chosen tasks using the boards. The use of commercial database is limited, so we have to create new tools. It can be, for example, guidelines for practical training or usage of equipment in form of video presentations, eventually with connection to the internet, or questions for quick examination using answering devices. Supported by the project KEGA 004UK-4/2011 and KEGA 3/5153/07, MŠVVaŠ SR.

WHAT'S NEW IN THE NEW CRIMINAL CODE IN RELATION TO IT?

D. Brechlerová

Thursday, 24 November 2011, 18.00–19.00, Hall B

D1.6 INFORMATION SCIENCE IN HEALTH CARE

The new Criminal Code entered into force on 01.01.2010. In the field of IT very significant changes have been made. Some activities before 1.1.2010 which were inappropriate or unethical became now criminal. Unfortunately, the public pays no attention to this area. Paper reports about the innovations in this area and highlights the new sections and amendments to the old version. Because each of us is a user of IT, it can easily happen that even unwittingly we break act in this area.

SCIENTIFIC INFORMATION IN E-EDUCATION FOCUSED ON INFORMATION SUPPORT IN MEDICINE

H. Skálová, D. Horváth

Thursday, 24 November 2011, 18.00–19.00, Hall B

D1.6 INFORMATION SCIENCE IN HEALTH CARE

Scientific development demands continual professional literature studying and monitoring. Work on any scientific, pedagogical or similar project is inconceivable without existing knowledge collation and without the consistent study of information resources. Scientific information is the assumption, mediator and final result of scientific, research and pedagogical activity of physicians. The main function of certified course "Scientific and Research Work" (developed from "Library Science"), taught at 1st Medical Faculty, is to prepare full-time students and extra-mural students in medical and non-medical field for their work with everyday professional information. After completion of the course, students should be oriented in the flood of information, be able to find and choose relevant scientific documents and utilize them according to their study needs. Through 20-year-experiences with the tea-

ching at 1st Medical Faculty, Institute of Scientific Information tries to enrich basic knowledge by implementing new e-methods in education (e-manuals, e-presentations, etc.). The tutors also respond to current situation in the research field and in the operation of the institute. Tuition conception is unified for the particular forms of the study. We are going to support e-learning and preparing e-scripts. Their content will be placed in Wikiskripta. The Institute of Scientific Information closely cooperates with the Institute of Information Studies and Librarianship, the Faculty of Arts, Charles University – their tutors participate in teaching at 1st Medical Faculty and together with us apprise the function of our institute to foreign students from ERASMUS exchange study program.

INTERNATIONAL CLASSIFICATION OF NURSING PRACTICE – A MULTILINGUAL APPROACH TO HEALTH TERMINOLOGY

J. Vejvalka

Thursday, 24 November 2011, 18.00–19.00, Hall B

D1.6 INFORMATION SCIENCE IN HEALTH CARE

The stress on interoperability and standardization is perhaps the most significant result of the penetration of information and communication technologies into routine operations in both medical education and medicine. Concepts like continuity of care, quality assurance or academic degree compatibility are based on shared understanding of processes, of laws they follow, of possible interactions with these processes, of roles and outcomes. Also on shared not-understanding: the nature of biomedical knowledge gives enough room for legitimate contradictions. International classifications and language systems are examples of tools to support such shared understanding on international level. Of these, the International Classification of Nursing Practice (ICNP) is an ambitious project started by the International Council of Nurses (ICN), the top-level body representing the nursing community world-wide. Significant effort has been put into the development of ICNP and into its translation into various languages used by the nursing community. Besides contributing to the development of the ICNP itself, these translations (and the history of ICNP development) show a most interesting example of cultural determination of health, of health-related concepts and processes.

IMPLEMENTATION OF THE ON-LINE TECHNOLOGY IN POST-GRADUATE TRAINING OF NURSES

H. Michálková, L. Šedová, V. Benešová

Thursday, 24 November 2011, 18.00–19.00, Hall B

D1.6 INFORMATION SCIENCE IN HEALTH CARE

General nurses represent the largest group of workers in health care. They have two options of carrying out their profession which is given by the law No. 96/2004. They either work under specialist supervision or unsupervised. In order to obtain the license for unsupervised work, they have to submit a proof of having passed

educational activities. For the license renewal every nurse need 40 credits from educational activities pertaining their specialization. The work of general nurse is both physically and mentally demanding. Combining the roles of a professional worker and mother and wife is exceptionally difficult. Nurses have to integrate their professional and private duties with the post-graduate training program. Research findings have shown that the main obstacles to the post-graduate training perceived by the nurses are the financial demands and lack of time. Another significant problem is the local accessibility of the training activities. These obstacles can be removed by the implementation of on-line live lectures for nurses. On-line lectures are accessible all over the Czech Republic eliminating the need to commute. In a virtual classroom the student can see the teacher and is able to communicate with him or her on-line. The lecturer can respond to the students the same way as in classic teaching. The virtual classroom contains many interactive elements and the lecturer may support their presentation by audio-visual features and can engage the students in the learning process. In the retrospective evaluation of the on-line lectures, the students acknowledged this form of study as inspirative, they expressed their satisfaction and they are interested in continuing their learning through the virtual environment.

STANDARDIZATION OF EDUCATIONAL WEB PLATFORM AMONG ALL MEDICAL SCHOOLS IN THE MEFANET PROJECT

D. Schwarz, M. Komenda, M. Košťálová, L. Dušek

Friday, 25 November 2011, 8.30–10.00, Hall A

D2.1 PLENARY SESSION II: SUBPROJECTS IN MEFANET – TEACHERS' AND STUDENTS' OPINIONS

The MEFANET project (MEdical FACulties NETWORK) has initiated international, effective and open cooperation among ten medical faculties in the Czech Republic and Slovakia. One of the elementary goals of this educational network is to advance medical teaching with the use of modern information and communication technologies. As an instrument for that, MEFANET has decided to develop an original and uniform solution for educational web portals which are used, together with a central gate, to offer and share digital educational content. Three fundamental principles of the educational web platform will be described: 1. medical disciplines linker, 2. federative framework for users' authentication/authorization, 3. four dimensional quality assessment. As a success story, The Multimedia Atlas of Speech Disorders will be presented by its author as an example of a contribution that experienced a great expansion of its usage due to the portal platform.

WHERE WIKILECTURES ARE HEADING?

M. Vejražka, Č. Štuka, E. Kudlová, O. Šeda, A. Šípek, S. Štípek

Friday, 25 November 2011, 8.30–10.00, Hall A

D2.1 PLENARY SESSION II: SUBPROJECTS IN MEFANET – TEACHERS' AND STUDENTS' OPINIONS

WikiLectures – a tool for collaborative creation, storage and sharing educational materials, have been among the common tools of MEFANET network since 2008. They are based on Web 2.0 technologies and are characterized by great openness for cooperation. Anyone can enter or edit new study materials, even (at least to some extent) without registration. Despite the openness, the system remains safe – it is ensured by staff, organizationally and technically. Operation of WikiSkripta (and their English version WikiLectures) is maintained by a large group of students of the Czech and Slovak medical faculties. Members of the editorial staff are systematically trained in technical and communication skills. WikiLectures became the most popular medical teaching web in the Czech and Slovak Republics. The total number of visits exceeded 15 millions, around 8000 unique visitors come to the site every day. The number of articles is more than 5000, increasing each month by about 300. About 10 000 edits are done per month. Already at the beginning of its operation, WikiSkripta/WikiLectures proved its viability and capacity of development. At present, these sites are more and more popular among students of medical schools and gradually used for teaching directly by teachers. In WikiSkripta/WikiLectures, methodology of editorial work and training of editors were well established. Now, greater emphasis on the involvement of educators and experts is added, focusing on further improving the professional quality of published contributions. In 2011, full operation of the English version of the project – WikiLectures, was launched. At the end of lecture, teachers of medical faculty who use WikiSkripta/WikiLectures in teaching, will present their experience with this tool.

MOODLEMEFANET – CURRENT SITUATION

J. Feberová, A. Polášková, J. Polášek, B. Ohlídková, D. Rajdl

Friday, 25 November 2011, 8.30–10.00, Hall A

D2.1 PLENARY SESSION II: SUBPROJECTS IN MEFANET – TEACHERS' AND STUDENTS' OPINIONS

MoodleMefanet, the environment for the creation of e-learning courses was put into operation last year and it is available at the website moodle.mefanet.cz for all medical faculties in the Czech and Slovak Republic. The system has been connected to the Shibboleth service, so all the students of medicine can sign in with their own entering data (for Slovak medical faculties there is possibility to enter the system through the creation of the account in the MoodleMefanet). For the user sof the system there are prepared two handbooks – handbook for the students and handbook for the teachers. There is being created the intercollegiate course of E-biochemistry. This experience has led to many requirements for the system settings

and the changes were accomplished. There was prepared preliminary model of the evaluation of the quality of e-learning courses. The model is being reviewed by the experts from Pedagogical faculty.

ATLAS OF ORAL DISEASES FOR UNDERGRADUATE STUDENTS OF DENTAL MEDICINE

J. Vokurka, A. Fassmann, H. Poskerová, L. Izakovičová-Hollá, J. Vaněk

Friday, 25 November 2011, 11.45–13.15, Hall A

D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION

Background: Only limited number of patients with oral mucosa lesions can be seen during pregradual practice. Moreover, the oral mucosa diseases may change rapidly during time which has an impact on the differential diagnosis. For students' appropriate training it is necessary to see as many patients as possible and to inspect the oral mucosa lesions in all stages. Summary of work: The aim of the project was to create atlas of oral diseases for undergraduate students of Faculty of Medicine, Masaryk University, Brno, Czech Republic. Summary of results: Currently more than 400 pictures are divided into 12 chapters and 120+ sub chapters. The chapters are presented in the same order as in "Repetitorium onemocnění sliznice dutiny ústní" (authors: L. Izakovičová-Hollá, A Fassmann) – textbook of Oral mucosa diseases created by authors from our clinics. Each chapter covers one anatomical part of oral mucosa. Conclusions: The database can be updated according to the newest knowledge and scientific findings. The materials can be used for testing as a part of the written exam. Take-home message: The atlas is a useful tool to improve the knowledge of the oral mucosa diseases in undergraduate students of dental medicine. The study was supported by grant FRVS 2114.

METHODS OF APPLICATION OF VIRTUAL SLIDES IN MODERN HISTOLOGY PRACTICAL SESSIONS

D. Krajíč, E. Pospíšilová, D. Černochová

Friday, 25 November 2011, 11.45–13.15, Hall A

D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION

In history, technical developments in light microscopy had always been reflected in teaching methods of histology and pathology. During the last five years, several universities introduced a new method of virtual microscopy in teaching, research and diagnostic activities at morphology departments. In order to scan classical glass histology slides into a digital format of virtual slides, several commercial optical scanning system have been developed up to date. In order to use virtual histology slides successfully in practical sessions a special database system has to be developed, that enables students to orientate themselves in the learning contents of the practical quickly, and also that allows to open attached supplementary text- or picture-based documents easily. This database system should have a student-friendly graphical user interface, as well as it should allow teachers a simple access

to the database for adding, organizing and editing of teaching documents. At our Department of Histology in Olomouc, we have developed our own system of application of virtual slides in e-learning format of practical sessions. In this communication, we refer about various nationally and internationally used systems of application of virtual slides in histology practical teaching; we also compare them and discuss their pros and cons features.

EVALUATION OF A NEW E-LEARNING METHOD OF TEACHING PRACTICAL HISTOLOGY AT DEPARTMENT OF HISTOLOGY AND EMBRYOLOGY IN OLOMOUC

E. Pospíšilová, D. Černochová, D. Krajčí, R. Lichnovská

Friday, 25 November 2011, 11.45–13.15, Hall A

D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION

We have developed our own database of histology practical in the format of MS Excel document. It is available in two language versions, Czech and English, with identical contents. After logging into a welcome desktop screen, students are hyperlinked into the content page of the histology practical database. Each topic of practical session (24 in total) contains a set of virtual slides with slide properties, keywords, file size information and overview pictures of virtual slides. Additional supporting documents in pdf and ppsx format are also available for each of the histology topic. These are: a guide to the practical session, presentation for pre-lab session, presentation of selected electron micrographs, folder of movies and animations and embryology notes). During their own study of virtual slides, students can copy to clipboard selected areas of virtual slides viewed in the Olyvia viewer, and paste them directly into their own self-prepared pptx presentation for later revisions. Using the official university-recommended questionnaire and also our own specific set of evaluation questions, we have allowed students to evaluate this new method of practical sessions. Students evaluated positively the use of PC for examination of virtual slides, as they allowed them to study and also to discuss various details of cells and tissues clearly at various magnifications. Teachers benefited from a uniform quality of presented slides and also from a straightforward and personal communication with students in the class when personal guidance and explanation was needed at student's monitors.

TESTING PRACTICAL SKILLS OF HISTOLOGY STUDENTS IN THE PC-EQUIPPED HISTOLOGY PRACTICAL LAB

D. Černochová, E. Pospíšilová, D. Krajčí, R. Lichnovská

Friday, 25 November 2011, 11.45–13.15, Hall A

D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION

With the advent of modern didactic methods in histology teaching, we have started to use new and more effective methods of examination and testing of student's practical skills. First, we used projection of simple slide presentations in MS Power-

Point format on a central screen in the class. These presentations have been setup to advance further automatically with one minute timing in order to allow students to write their answers into a prepared answer form. This method had several drawbacks like a necessity of maximal dimming of room lights that interfered with the student's writing, and a possibility of cross talk of students in crowded benches. After the practical laboratory has been equipped with PCs for each student's seat, this method was improved with delivery of testing presentations onto student's monitors simultaneously in three different versions. As a further step in developing PC-based testing of identification of histology slides we have used a special software Articulate Quizmaker '09. Because this software shuffles the quiz content randomly onto monitors of examined students, only one version of histology test was necessary to prepare for one practical class. Quizmaker '09 offers the possibility to use a mix various formats of question like – MCQ, MRQ, Hot Spot and Drag& Drop. The test can be exported into different application formats for web or LMS. The major benefits of this system are the straight forward and quick use of question packages, immediate and objective evaluation and reporting of results, limitation of lateral student's communication and crosstalk, and a good prevention of leaving questions outside of the examination room. This PC-based method of practical skills testing was well accepted by students and teachers alike.

ELECTRONIC TEACHING MATERIALS – CASE STUDIES, USE OF MEDICAL IMAGE DATA

N. Hrtoňová, A. Pokorná, T. Váňová

Friday, 25 November 2011, 11.45–13.15, Hall A

D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION

Projects aiming at the preparation and implementation of teaching with the support of e-learning have different goals and strategies. The project Effective Teaching in Secondary Health Care Schools (project No. CZ.1.07/1.1.02/02.0074) involves, besides the participants from Masaryk University, 45 teachers and 857 pupils from three secondary health care schools in South Moravia. The project includes various areas, while the main ones are: teacher training in ICT and e-learning, preparation of comprehensive study materials and teaching activities in a shared environment, work with medical image data, the teaching of students using the materials created. One of its features is sharing and intensive cooperation taking into account the different curricula of the involved partner schools. Although it is difficult to ensure cooperation, the project brings a number of very positive results. For example, the project provides indispensable experience in preparing the students in online education and strategies, management principles and tools of online communication for teachers who have started primarily as the creators of teaching materials, but they gradually move from this role to the one of tutors. A substantial part of the teachers' work and of project coordination takes place in LMS Moodle which has proved to be very suitable not only for the preparation of teaching content and the related communication, but also as a sophisticated yet simple tool for alignment of

project activities. The contribution will be focused on a specific part – the preparation of case studies which will enable pupils to use their theoretical knowledge in problem-based learning (PBL). The greatest attention will be paid to the methodological and didactic requirements needed for the preparation of materials for valid case studies. Examples of specific case studies, teaching and educational use of medical image data will also be presented as well as the benefits and potential risks of using the problem-based learning through case studies. Dedicated to the project *Zavádění efektivních metod výuky s využitím digitálních medicínských obrazových informací na středních zdravotnických školách* (Introduction of Effective Learning Methods in Secondary Medical Schools Using Digital Medical Image Information) CZ.1.07/1.1.02/02.0074, short title: Effective Teaching in Secondary Health Care Schools.

THREE-DIMENSIONAL COMPUTER MODEL OF THE BRAINSTEM RESPIRATORY NEURONAL CIRCUITS – APPLICATION FOR TEACHING PURPOSES AND RESEARCH IN RESPIROLOGY

S. Gavliaková, I. Poliaček, J. Jakuš, J. Plevková

Friday, 25 November 2011, 11.45–13.15, Hall A

D2.3 IMAGE ATLASES AND MULTIMEDIA FOR EDUCATION

The aim of the presented project was to create an intuitive graphical tool for medical students and scientists who study neuronal clusters in the brainstem responsible for the generation and regulation of breathing and respiratory defensive reflexes. These neurons are located in several areas which are described as the dorsal and ventral respiratory group, pontine respiratory group and parafacial respiratory group. Defined neural circuits are involved in generating breathing pattern and their reconfiguration leads to initialization and neurogenesis of defensive reflexes. Data on neurons and their exact location were taken from stereotaxic atlas and number of relevant scientific papers published in the field of neurophysiology and experimental respirology, and these data were processed into tabular form. Recorded neurons were plotted on the coordinates of their location in the brainstem model created by isosurface in the computer environment MATLAB. Visual display of neurons in three-dimensional space allows better orientation in this anatomical area for students of medicine and provides a vision of their mutual relations, the possibility of convergence of nerve impulses and helps in understanding the complexity of the respiratory network. The model is beneficial for scientists who deal with issues of microinjecting into the brainstem or with the recording of electrophysiological parameters from defined neuronal populations. The model is flexible and upgradeable since the creation of tabular databases of neurons localization in Excel allows adding new data. Keywords: respiratory neurons, brainstem, model, location, respiration, respiratory centre.

PROJECT MODIM

L. Bolek, M. Dvořák, T. Junek, P. Míka, M. Navrátil

Friday, 25 November 2011, 11.45–13.15, Hall B

D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS

Information about the project In March and April of 2011 a team of staff of the Department of Computer Applications (OVAVT) Faculty of Medicine in Pilsen, developed the project "Modernization of Teaching Methods Through Promotion of E-Learning – MODIM". The main idea of the project was to ensure sustainable development through the e-learning portal MEFANET and LMS Moodle from 2012–2015. Key project activities 1) Support the authors that create electronic learning materials and e-learning courses Increased use of e-learning support in the form of LMS Moodle and MEFANET portal as a way of filling many high-quality electronic educational materials, which will consist of a large group of authors from 25 departments, clinics, institutes and departments of the Faculty of Medicine in Pilsen. Estimated number of materials developed during the project is about 250. 2) ICT training of academic staff and other faculty. The need for expansion of ICT education goes hand in hand with efforts to create the best possible educational materials. Therefore, throughout the project, training in ICT will be carried out for authors of works, as well as academic and other staff of the Faculty of Medicine. 3) Implementation of shibboleth authentication technology in the Faculty Hospital Pilsen. Solving the integration of the Hospital to the Academic Federation eduID will allow the involvement of medical practitioners in the e-learning educational process. Applicable in all Faculty Hospitals in the Czech Republic. 4) Design, installation and implementation of information kiosks. Extending the MEFANET portal with new teaching aids in the form of large touch-screens for easy access to educational materials in the Faculty Hospital and Faculty of Medicine locations. Conclusion The project will ensure sustainability of e-learning at the Faculty of Medicine in Pilsen. In September 2011 the Ministry of Education reported that the project has been approved for implementation.

(E-CLINICAL BIOCHEMISTRY): COOPERATIVE AUTHORIZING OF E-LEARNING MATERIALS

D. Rajdl, J. Racek, M. Klečková, R. Pikner, M. Dastyh, K. Šafarčík, T. Zima et al.

Friday, 25 November 2011, 11.45–13.15, Hall B

D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS

E-klinická biochemie (Project No.: CZ.1.07/2.2.00/15.0048) is 3 years lasting project (start 1.2.2011) that deals with pregradual education of clinical biochemistry on medical faculties. Official partners in the project are Medical Faculties of: Charles University in Prague, Medical Faculty in Pilsen; Masaryk University in Brno and University of Ostrava. However, also authors from 1st and 2nd Medical Facul-

ty, Charles University in Prague participate on this significantly project. E-klinická biochemie has 3 main goals: * education of authors in new possibilities, ways and tools for e-learning authoring * creation of common e-learning textbook (e-book) and course for clinical biochemistry (esp. for support of traditional teaching) * start of a long-term collaboration and creation of pedagogic teams across all participating universities You can find informational pages (dedicated esp. for project management) on <http://ebio.biochemik.org>, educational content is being created in Google Documents and in the next phase also in the Moodle MEFANETu (<https://moodlefefanet.cuni.cz/>) and several other tools (e.g. Adobe Presenter). In the presentation, we focus on several tools for management of the project and for training of authors (e.g. on-line videoconferences), our experience with cooperation in Google Documents and our vision of teaching in Moodle MEFANET.

MEFANET AND IT MEDIK AS A SUPPORT EXPANSION OF QUALITY E-LEARNING

D. Kordek, T. Nosek, J. Hanuš, A. Bezrouk, J. Záhora, V. Mašín, O. Kváš

Friday, 25 November 2011, 11.45–13.15, Hall B

D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS

The "IT medik" project, which is supported from Operational program Education for Competitiveness CZ.1.07/2.2.00/15.0164, is focused on pregraduate medical education. The main goal is to build a library of electronic materials based on Moodle 2 LMS with the possibility of flexible modifications and actualizations. As a collateral effect we also expect increase in computer literacy of the involved teachers. Peer reviewed complex materials are planned to be available through the Mefanet project (CZ.1.07/2.4.0/12.0050) to wider public.

ELECTROMAGNETIC BIOSIGNALS AND ELECTROMAGNETIC RADIATION IN ELECTRONIC EDUCATION OF MEDICAL BIOPHYSICS

K. Kozlíková, L. Šikurová, J. Sabo, J. Martinka, J. Majerník, M. Trnka

Friday, 25 November 2011, 11.45–13.15, Hall B

D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS

Without physical background, it is not possible to understand correctly many functions of the human organism, neither diagnostic methods in medicine based on physical principles, nor functioning of devices, what may lead to decreased diagnostic efficiency and as well as to patient impairment. If the doctors and the medical personnel intend to approach their work responsibly, they have to understand these problems not to consider them as an enemy. We try to contribute to this problem solution within the frame of the project KEGA in cooperation with FM-Phi CU in Bratislava and MF UPJŠ in Košice. The aim of this project is to prepare

multimedia materials enabling deeper understanding of topics, which cannot be explained in detail during current lessons because of lack of time. Individual topics in form of interactive lessons are planned to be completed with didactic tests and automatic evaluation. In the first stage, we cover the physical basis of bioelectromagnetism, transport processes, thermodynamics of living systems, biophysics of excitation processes, biological signals as the basis of diagnostic methods in medicine, essentials of biomedical electronics, passive electric and magnetic properties of cells, tissues and organs, electromagnetic spectrum, its basic characteristics and corresponding spectroscopic and tomographic methods, influence of non-ionising electromagnetic radiation on organism, safety and protection of health during registration of electric and magnetic biosignals. All materials are prepared in both Slovak and English language to ensure the uniform content of education in both languages. The chosen topics belong to the most difficult for understanding. They combine physical knowledge with essentials of biology, chemistry, and electronics, and represent an important background for next disciplines, as well as all diagnostic methods, which cannot be applied without modern technology. Supported by project KEGA 004UK-4/2011, MŠVVaŠ SR.

E-HEALTH EDUCATION OF MEDICAL STUFF IN THOMAYER HOSPITAL

V. Rous, V. Vocetka

Friday, 25 November 2011, 11.45–13.15, Hall B

D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS

This paper describes practical experiences in e-health education of physicians, nurses and other hospital staff, such as biomedical technicians and orderlies, in Thomayer University Hospital. It's based on positive practical results of realization project Vybudování jádra a realizace systému vzdělávání pro „Středisko informací a vzdělávání v elektronickém zdravotnictví“ (CZ.2.17/1.1.00/32244). The aim of the project is to increase quality of care of patients by setting up the educational system for new and dynamically growing area of e-health for employees. The basic schema of the project is followed and will be described in detail in this paper – basics of ICT for all employees of Thomayer University Hospital (course BASIC) – ICT based work-flow for nursing staff – educational and presentational support of physician's activities. This project offers attendance form of study at the classroom at IT department and also e-learning form of study, by using on-line connection at work or possibility from home (via internet). We are also focused on practical experiences gained by education of over 1200 employees. For example, after starting regular courses of ICT for all employees, there's a significant decrease of calls to ICT help-desk. This positive effect brings more time for medical staff to take care of patient and also result in more effective and quality health care. Improvements in cooperation and perception and greater respect among all professions are another very pleasant effect. At the end, we will show audience, how the increase of

interest about the attendance form of study helps us to create shared e-learning form and courses of continuous education in Thomayer University Hospital not even in e-health area. Key words: Electronic healthcare (e-health), European structural funds, medic and paramedic staff education, attendance form of study, e-learning, IT support improvement, home study, continuous education.

E-LEARNING IN A PROJECTS "IMPROVEMENT OF PHYSICIANS AND NON-PHYSICIANS EDUCATION"

V. Bílková

Friday, 25 November 2011, 11.45–13.15, Hall B

D2.4 PROJECTS FOR SUPPORT OF ELECTRONIC EDUCATION IN MEDICAL AND HEALTH CARE FIELDS

E-LEARNING IN A PROJECTS "IMPROVEMENT OF PHYSICIANS AND NON-PHYSICIANS EDUCATION" Mgr. Vendula Bílková Manager Project Coordinator – e-learning (IPVZ) Abstract Within the Operational Programme Human Resources and Employment have been initiating two projects "Improvement of physicians and non-physicians education," cofinancing by the European Social Fund and the Czech Republic's budget and realized by the Ministry of Health of the Czech Republic. An Institute for postgraduate medical education (IPVZ) is the general provider of the above mentioned projects. Free education for physicians and non-physicians from outside Prague will be provided in the period May 2010 – April 2013. Projects' education will be aimed at the different branches in which is possible to obtain specialized competences by using face-to-face lectures, conferences, workshops but also due to projects by the method of e-learning. Key words: e-learning, specialized education for physicians and non-physicians Introduction 19 e-courses for physicians and 12 e-courses for non-physicians have been preparing since 2010. Each of 31 e-courses will be available gradually to apply for those interested during year 2012. E-learning for physicians Hopefully, applicants will be able to register to study the first 8 e-courses for general practitioners and gastroenterologists before attestation in the first half of 2012. In the second half of 2012, 9 additional e-courses will be probably available to prospective students for plastic surgeons, epidemiologist and other medical specialties, including new e-courses for general practitioners and gastroenterologists. An e-course "Basics of tropical and travel medicine" will be also available for physicians and non-physicians at this time. A specialized e-course for occupational physicians will be the last of all scheduled e-course. E-learning for non-physicians In early 2012, 6 e-learning courses for nurses-lectors of patients with various types of diseases are going to launched. Topics of the additional 5 e-courses designed for general nurses and other non-physicians will include the legal minimum, quality management and patient safety, communication with the patient, the ethical standards of provided health care. Conclusion Although, the projects will be finished in April 2013, all e-courses will be available to prospective students in the learning management system (LMS) for further study, it means the educational

environment in which learning takes place, but not with financial support of participants. More informations about the projects www.vzdelavani-zdravotniku.cz

DENTISTRY STUDENTS' E-LEARNING SATISFACTION

T. Dostálová, J. Feberová, M. Bučková, A. Buček, M. Seydlová

Friday, 25 November 2011, 13.45–15.30, Hall A

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

Computers nowadays play an important role in dentistry as an educational tool; not only in the gathering of information, but also as an active tool in undergraduate and postgraduate education and competence development. The aim of our study was to evaluate the results of Czech-English education courses – Dentistry for General medicine students and to compare students with and without internet E-learning access. The second goal of our contribution was to check the student activities during the educational process, namely online work – lessons, articles, videos, literature, and quiz. 291 students were retrospectively (after examination) reviewed. All students were asking in one session and fulfill questionnaire. Learning contents were provided through the university's website (<http://www.cuni.cz>) via personal login. Theoretical knowledge assessment test and oral examination before and after implementation of online learning tools were also compared. Examination: There were no results between students in Czech and international group and between students with and without e-learning lectures. Questionnaire: Real different results were found in questionnaire. It was confirmed that students with e-learning system perceived a higher benefit of theoretical and practical training system. E-learning database was easy to operate and use can also perceived a higher usefulness of the functions. The new training system provided valuable knowledge for students' learning, and could increase students' satisfaction. Statistically significant results in all questions were found. The study was supported by project No. CSM 46.

USE OF "DRILL" UTILITY OF INFORMATION SYSTEM OF MASARYK UNIVERSITY FOR NON-LANGUAGE MEDICAL STUDENT EDUCATION

O. Zahradníček

Friday, 25 November 2011, 13.45–15.30, Hall A

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

The "Drill" utility in the Information System of Masaryk University (IS MU) is based on recent findings from psychology of learning – so called "spaced repetition" system. For more quality remembering the terms it is better to repeat the terms less frequently during a longer time period, rather than intensive short-termed memorizing. The "Drill" utility is an automated system that offers to its users cards

with "questions" (e. g. terms in one language); user try to find an "answer" (e. g. term in the second language). The user self-evaluates his/her own knowledge of the answer. Later the system offers more frequently cards labelled by the user as trouble-making and less frequently the cards that do not make problems. The spaced repetition systems, including the "Drill" in IS MU, are mostly used for language education. Non-language use of this system is rare, although possible. At the Institute for Microbiology of Medical Faculty, Masaryk University, we decided to enable our students to use this system for memorizing some specific terms of our branch. In the first phase, we implemented "Drill" for scientific names of medically important parasites, this year we offered another "Drill textbook" to our students – some specific diseases and the typical pathogens causing them. Only part of our students use them, but available feedback sais that they are quite content with this new opportunity. In recent education it is emphasized to prefer learning "where to find facts" instead of learning facts themselves. Nevertheless, in medicine (and not only here) some basic knowledge of facts is unevitable and also accepted by students, but only when modern education methods are used. We assume that "Drill" or similar learning methods could be further used not only in the subject of medical microbiology, but also in some other subjects of medical education.

PSYCHIATRY AND EXAMINATION TESTS

A. Žourková

Friday, 25 November 2011, 13.45–15.30, Hall A

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

During 1990s of the 20th century period we established the successful passing the test as a condition of achieving the credit in the subject of psychiatry. At the beginning, the success was approximately at 70%, the unsuccessful students of the test had to repeat it. As the percentage of failures was relatively high , the same tests were submitted to the doctors from clinics, mostly already attested. Even our colleagues did not achieve greater success than the undergraduate students. In fact, the battery of questions contained a number of "catch questions", which were not essential for mastering the basics of psychiatry. Therefore, at the end of the 1990s, we returned to a practical individual examination of the patient as a condition of getting a credit. As a clinical workplace, we support the idea that the oral test can examine the student's knowledge better and can give the examiner a greater possibility to determine student's ability to synthesize the knowledge, received during the study at the Faculty, in the diagnostic and differentially diagnostic processes. The oral examination can also give the student a chance to complete and/or correct some partial ignorance which would lead to a failure in the test. Finally, we find the personal contact with the examiner as well as and the method of communication extremely important, as communication plays key role in our field and its skills cannot be verified by testing. However, we are considering a supplementary form of testing when testing English-speaking students who, because of

the language barrier, only with difficulties manage examination of patients which is in psychiatry based on an interview. Test questions will have to be drafted simply focusing on the basic knowledge of the subject. Let me add an interesting detail at the end: since the examination of pharmacology in the form of electronic tests was introduced, students' knowledge of psychotropic drugs has rapidly decreased.

E-LEARNING IN SPORTS MEDICINE

V. Zeman, L. Bolek, P. Míka

Friday, 25 November 2011, 13.45–15.30, Hall A

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

Electronic lecture presentations in sports medicine education have been used in our faculty for many years. However their electronic presentation via Mefanet was not available to students of our faculty until 2009. They are running during 2010-2011 and are under review at the present time. Subsequently they will be available for all medical faculties throughout the Czech Republic. The following titles are currently available: • Post-exercise broncho constriction, • Physical activity in prevention of diseases, • Metabolic syndrome and physical activity, • Hypertension and physical activity, • Spiroergometrie in cardiac and pulmonal diseases, • Traumatic and overuse injuries of the musculoskeletal system, • Doping and doping control, • Sport and age, • Morbus Scheuermann, • Adaptation of human body to physical activity in sportsmen.

MULTIDISCIPLINARY VIEW OF THE KIDNEY

R. Oravský, A. Pavlíková, M. Rudnay, A. Birková, J. Veselá, M. Mareková

Friday, 25 November 2011, 13.45–15.30, Hall A

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

Study of medicine contains the ability to see human body as a unit. It means that students must have multidisciplinary view of each organ and system and must understand their connection through variety of biochemical pathways and physiological mechanisms. This educational work contains basic information about kidney, its anatomical and histological structure, embryological development, biochemical and physiological functions. From macroscopic view is important to know what anatomical structures can be found in healthy kidney. Histology explores characteristic cells and textures, embryology explains prenatal development and biochemistry is monitoring kidney metabolism and its connection to physiological functions. Pictures and diagrams schematically explain educational text. This work helps students to understand the integration of kidney in human body. It can be also useful tool to improve education by teachers of various preclinical departments.

USE FLASH PRESENTATION ON MEDICAL PORTAL OF SLOVAK MEDICAL CHAMBER (WWW.I-MED.SK)

M. Varga

Friday, 25 November 2011, 13.45–15.30, Hall A

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

Slovak Medical Chamber in the year 2010 started the first medical portal (www.i-med.sk) [1] of this kind in Slovakia. The portal includes a complete medical branches and is addressed to the primary contact physicians – general practitioners for adults and general practitioners for children and adolescents. It is funded under the EU Operational Programme Education. In the first pilot projects was created also flash presentation on the topic "Bronchial hyperreactivity". This presentation was determined to understand and learn the lung function tests and respiratory disease problems – ARDS (acute respiratory distress syndrome) and followed irritation asthma. The whole flash presentation is in the form of case report. Also at the presentation are incorporated current tests and educational issues, allowing the reader at the end the evaluation of the correct answers. The entire flash presentation in a playful way forward and educate readers about the various areas of diagnosis, differential diagnosis and therapy of respiratory disease.

VARIABILITY OF SUPERPOSITION OF ACTION POTENTIALS, THEORETICAL MODEL

M. Veterník, I. Poliaček

Friday, 25 November 2011, 13.45–15.30, Hall A

D2.5 PEDAGOGY AND METHODOLOGY FOR ELECTRONIC SUPPORT OF EDUCATION

Elektromyogram (EMG) usually represents a complex electrical biosignal, the result of superposition of action potential trains recorded from muscle fibers. The assumption of linearity of this summation is crucial for an evaluation of intensity of muscle activation, for decomposition of multiunit EMG, for computer simulations and mathematical models. Linearity of values of rectified and integrated EMG signals with frequency of incidence of action potentials in muscle fiber and the effect of moving average window width on the range where the values of rectified signals fall was tested on theoretical model. The model consisted of five waveforms, four waveforms simulated single unit EMG signals and one waveform represented algebraic summation of these four single units. A three phase shapes of action potentials (single units) corresponded to the in vivo recordings and lasted 5 ms (the 1st and the 3rd waveform) and 7 ms (the 2nd and the 4th waveform). The frequency of their incidence was 5–75 Hz (the 1st and the 3rd one) and 9–135 Hz (the 2nd and the 4th one). Integrated waveform represented rectified (absolute values) and averaged signal using 3 windows widths – 1 s, 200 ms and 40 ms. Theoretical model was built and simulations were performed in PC environment MATLAB. Our

simulations demonstrated that integrated EMG signals are approximately linearly proportional to the frequency of action potentials. The width of moving average window influences the range (dispersion) of integrated values. Approximately three fold higher variability was found with the moving average window of 40 ms compared to that with the 200 ms window. Quality of EMG recordings, the frequency of action potentials as well as the width of moving average window affect an accuracy of the determination of integrated EMG signal.

SYMPOSIUM ON E-ASSESSMENT: BEST PRACTICE OF TEACHERS IN MEFANET

M. Komenda

Thursday, 24 November 2011, 16.30–18.00, Hall B

D2.2 SYMPOSIUM

The symposium follows the workshop on electronic examinations, which was held during the conference MEFANET 2010. Invited experts and teachers will present in the form of panel discussion their opinions and experience from various fields related to electronic examinations. Preliminary list of topics for discussion is below:

- Preferences, objectives, and problems associated with electronic form of exams
 - Various environments across the MEFANET network (LMS Moodle, LMS IS MU ...)
 - Usability in different phases of educational process – right time to use electronic exams
 - Experience with various forms and technologies (local applications, web applications, exam agenda in LMS, reply forms scanning ...)
 - Test questions creation (technical support vs. author)
 - Sources for questions creation (tests from other sources – trustworthiness, author law)
 - Students' feedback
 - Assuring of source questions and exams processing
 - Verification (evaluation) – use of some of the verification methods?
 - Panel guests' best practice
-

COPYRIGHT LAW IN PRACTICE

D. Brechlerová

Friday, 25 November 2011, 10.15–11.45, Hall B

D2.2 WORKSHOP

Topic: issues of copyright law, especially in educational practice.

Many teachers at universities are struggling with copyright law. The workshop should help to illuminate some of the problems both by answering the questions posed in advance, and subsequent discussions with lawyers present.

Expected topics: Bachelor thesis, thesis, PhD thesis and copyright Copyright to electronic materials generated within the teaching at universities Publication of medical results in teaching materials, Publication of the patient data Grants and copyright to materials created under a grant Citation of materials on the Internet And another according to the interest of the participants.

TECHNOLOGICAL TRENDS IN E-EDUCATION

E. Kvašňák

**Friday, 25 November 2011, 14.45–15.30, Hall B
D2.2 WORKSHOP**

The workshop will take place in the form of panel discussion; registered speakers will be provided 3 minutes at the workshop beginning to introduce their own topic. Aim of the discussion is mapping trends in electronic teaching in light of use of new information technologies, methodological approaches, education models, information processing, etc.

Announced topics:

- Web 2.0 – challenges and use in practice
- E-tool of education integration
- WikiSkripta – innovation with tradition
- Apple in education
- Analytical and intuitive data mining
- Full HD a 3D medical records

THE COMMON PORTAL PLATFORM IN THE MEFANET PROJECT

M. Komenda, D. Schwarz, I. Snabl, L. Dusek, S. Stipek, V. Mihal

POSTER SESSION, HALL A

Background:

The project MEFANET (MEdical FACulties NETwork) has initiated international cooperation among medical faculties in the Czech Republic and Slovakia. One of the elementary goals of the project is to advance medical teaching and learning with the use of modern information and communication technologies. As an instrument for that, MEFANET has decided to develop a uniform solution for educational web portals.

Summary of work:

There were two particular goals concerning the common portal platform in the MEFANET project:

1. to unify faculty educational web portals such that the published educational content is accessible horizontally,
2. to build a common central gateway enabling easy and comprehensible content browsing.

Summary of results:

The educational web portal of the Medical Faculty at Masaryk University has been accepted as the uniform ground for the solution of the common portal platform. All the information presented on the portal instances are integrated into one common place on the web – central gateway. All these portals and the gateway compose the e publishing platform in the MEFANET.

Conclusions:

The students and academic staff from the MEFANET network can access and view the offer of electronic study materials also at other medical faculties, what should gradually improve the quality of the content and motivate authors to work in joined interinstitutional teams.

Take-home message:

MEFANET – the network without borders

MEFANET PROJECT: MULTIDIMENSIONAL QUALITY ASSESSMENT

M. Komenda, D. Schwarz, I. Snabl, L. Dusek, S. Stipek, V. Mihal

POSTER SESSION, HALL A**Background:**

The MEFANET project (MEDical FACulties NETwork) has initiated an international cooperation among medical faculties in the Czech Republic and Slovakia. Elementary goal of the project is to advance medical teaching and learning with the use of modern information and communication technologies. As an instrument for that, the MEFANET has been developing an original e-publishing platform, which combines web-based tools for sharing electronic educational resources as well as for their quality evaluation.

Summary of work:

4-D quality assessment is proposed for the e-publishing platform in the MEFANET project. It is a set of tools which ensures an effective way how to provide quality assessment of digital educational materials. The whole assessment process stays on four independent principles, which enable easy classification and sophisticated on-line review mechanism:

- review,
- typological classification,
- level of the target group,
- users' self-study score.

Summary of results:

The multidimensional quality assessment has been already implemented as the new feature of the latest release of the MEFANET portal platform. All members of the educational network can freely use its tools for quality evaluation of their published electronic teaching materials.

Conclusions:

The students and academic staff in the MEFANET network can access and view the offer of electronic teaching materials also at other medical faculties, what should

gradually improve the quality of the content. The 4-D model promises a wider range of tools for organizing the published contents as well as a possibility to present the contents completed by comments from tutors selected from expert medical societies.

Take-home message:

MEFANET – the network without borders

TEACHING BIOMEDICAL STATISTICS AT FACULTY OF MEDICINE AND DENTISTRY, PALACKÝ UNIVERSITY IN OLOMOUC

K. Langová, J. Zapletalová, H. Kolářová

POSTER SESSION, HALL A

During their studies and practice, many doctors encounter interesting data. It needs to be statistically processed and the results need to be correctly interpreted. Today, statistical methods are used when publishing results of studies in quality scientific journals. The presentation focuses on a new concept in teaching biomedical statistics in the subjects "Medical biophysics, biometric and computer technology" and "Basics of medical devices and biostatistics". Our goal is to create and innovate teaching methods and texts for lectures, seminars and tutorials. New exercises in descriptive and inductive statistics have been created for tutorials. In descriptive statistics, students will make frequency and contingency tables for categorical data, calculate basic statistical characteristics of numerical data and make various types of graphs with an emphasis on correctly understanding the information they contain. In inductive statistics, they will test statistical hypotheses by t-tests and the chi-square test. The dependence of numerical variables is analysed using the methods of correlation and regression. The instructions for tutorials contain a number of model examples as well as exercises for students to solve without assistance. All of these examples use data related to medicine. For solving exercises, statistical functions and tools in Microsoft Excel 2007 are used. This program was chosen as it is widely available to all students. New test have been created to check the students' knowledge. All academic texts and instructions for tutorials are available at the e-learning application LMS Unifor <http://unifor.upol.cz/>. This work was supported by the project CZ.1.07/2.200/07.0054. The project is co-financed by the European Social Fund and state budget of the Czech Republic.

E-LEARNING IN A PROJECT „IMPROVEMENT OF PHYSICIANS' EDUCATION“

G. Seifertová

POSTER SESSION, HALL A

Within the Operational Programme Human Resources and Employment a project "Improvement of physicians' education" co-financing by the European Social Fund and the Czech Republic's budget and realized by the Ministry of Health of the

Czech Republic has been initiated. An Institute for Postgraduate Medical Education is the general provider of this project. Key words: e-learning, specialized training of physicians Introduction Since 2010, 19 e-courses have been prepared for physicians of various specialities from elsewhere but Prague. E-learning During 2012, most of the upcoming e-courses will gradually be available to apply without registration fee for general practitioners, gastroenterologists, plastic surgeons and traumatologist, epidemiologist and other medical specialities. Apart from these e-courses an interdisciplinary e-course "Basics of tropical and travel medicine" for epidemiologists, general practitioners, pediatricians, physicians infectologist and others will also be available. The last scheduled e-course is a specialized e-course for occupational physicians. IS ZEUS Information system ZEUS provides IPVZ a complete educational records of different educational actions including e-courses. For applicants it offers a complete overview of open educational events to apply together with the specification of necessary qualifications and guidelines for training. Prospective students can apply for specific dates of events, keep track the status of their applications and receive a personal overview of the visited courses. The system ZEUS has functionality of e-learning secured by integrated module LMS iTrivio that allows realization of e-training, including final tests and discussion forums. Conclusion Although, the project will be finished in April 2013, all e-courses will be available within ZEUS, but without any financial support of participants.

E-LEARNING IN A PROJECT „IMPROVEMENT OF NON-PHYSICIANS' EDUCATION“

G. Seifertová

POSTER SESSION, HALL A

Abstract Within the Operational Programme Human Resources and Employment a project "Improvement of non-physicians' education" co-financing by the European Social Fund and the Czech Republic's budget and realized by the Ministry of Health of the Czech Republic has been initiated. An Institute for Postgraduate Medical Education is the general provider of this project. Key words: e-learning, specialized training of non-physicians Introduction Since 2010, 12 e-courses have been prepared for non-physicians of various specialities from elsewhere but Prague. Those will gradually be available to apply without registration fee for those who are interested during 2012. E-learning The first group of 6 upcoming e-courses will be focused on education of nurses-lectors of patients with various types of diseases. Topics of the additional 5 e-courses designed for general nurses and other non-physicians will include f.e. a legal minimum or quality management and patient's safety. Apart from these e-courses an interdisciplinary e-course "Basics of tropical and travel medicine for non-physicians" will be also available. IS ZEUS Information system ZEUS provides IPVZ a complete educational records of different educational actions including e-courses. For applicants it offers a complete overview of open educational events to apply together with the specification of necessary qualifications and gui-

delines for training. Prospective students can apply for specific dates of events, keep track the status of their applications and receive a personal overview of the visited courses. The system ZEUS has functionality of e-learning secured by integrated module LMS iTrivio that allows realization of e-training, including final tests and discussion forums. Conclusion Although, the project will be finished in April 2013, all e-courses will be available within ZEUS, but without any financi.

METABO – ICT TOOLS TO SUPPORT DIABETIC PATIENTS IN THEIR DAILY LIFE

Jan Vejvalka

POSTER SESSION, HALL A

Contemporary mobile devices have made computing and communication a steady companion. Exploitation of this ubiquitous infrastructure for tasks relevant to health is a natural requirement that now begins to change the landscape of services related to health. Continuous monitoring of various physiological parameters is a most valuable source of data – not only for monitoring of human task forces in dangerous environments. With the aim to design, create and verify tools based on contemporary ICT that will support diabetic patients in their everyday life, project METABO of the 7th Framework Programme develops a comprehensive platform for continuous and multi-parametric monitoring of the metabolic status in patients with, or at risk of, diabetes. The platform is based on a computational model of glucose metabolism that is continuously compared with measured blood glucose values, taking into account the most relevant factors like medication, food intake and energetic output / physical exercise. Based on the model, predictions and relevant recommendations are presented to the patient, e.g. to prevent hypoglycaemic episodes. On the longer perspective, the individual metabolic model of each patient is personalized to his/her individual values that are determined by the type of disease, by lifestyle, by genetic predispositions etc. Besides immediate predictions, recommendations and alerts that are designed to assist the individual patients to manage their daily life with diabetes, the other stream of communication will inform the doctors in charge about important facts related to the health status of their patients. The project is run by a consortium of 21 partners, commercial and universities, from both information technology and medicine.



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