International Conference

Systems for Medical Decision Support and Forensic Identification:
Principles, Methods and Assessment

and

Mentoring Course

Decision Support Systems for Medicine and Forensics

February 22nd-24th 2017, Prague, The Czech Republic

PROGRAM
Publications from the International Conference Systems for Medical Decision Support and Forensic Identification are available at www.ijbh.org

Cover Design: Anna Schlenker
Cover photo: Marie Zítková
PROGRAM

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www.euromise.net
General Information
Date, Place and Registration

International Conference
Systems for Medical Decision Support and Forensic Identification:
Principles, Methods and Assessment

Thursday, February 23rd 2017, 8:00-16:30
Friday, February 24th 2017, 8:00-13:30

Venue: House of Physicians, Sokolská 31, Prague 2
Registration: Thursday, February 23rd 2017, 8:00-16:30
Friday, February 24th 2017, 8:00-13:30
General Information
Date, Place and Registration

Mentoring Course
Decision Support Systems for Medicine and Forensics

Wednesday, February 22nd 2017, 9:00-16:30

Venue: Faust House, Academic Club of the First Faculty of Medicine, Charles University, Karlovo náměstí 40, Prague 2
Registration: Wednesday, February 22nd 2017, 8:30-16:30
Keynote Speakers

International Conference

Systems for Medical Decision Support and Forensic Identification: Principles, Methods and Assessment

Thursday, February 23rd 2017, 8:00-16:30

Mor Peleg is Assoc. Prof at the Dept. of Information Systems, University of Haifa, Israel, since 2003, and has been Department Head in 2009-2012. Her BSc and MSc in Biology and PhD in Information Systems are from the Technion, Israel. She spent 6 years at Stanford BioMedical Research during her post-doctoral studies and Sabbatical, and is currently on Sabbatical at Stanford (till July 2017). She was awarded the New Investigator Award by the American Medical Informatics Association (AMIA) for her work on modeling and execution of the knowledge encoded in clinical guidelines and is International Fellow of the American College of Medical Informatics since 2013. She is Associate Editor of Journal of BioMedical Informatics and a member of the editorial board of Methods of Information in Medicine. Her research concerns knowledge representation, decision support systems, and process-aware information systems in healthcare, and appeared in journals such as JAMIA, International Journal of Medical Informatics, Journal of Biomedical Informatics, IEEE Transactions on Software Eng, TKDE, Bioinformatics. She was the coordinator of the FP7-ICT large-scale project MobiGuide (http://www.mobiguide-project.eu/) in 2011-2015. She has edited a number of special issues related to process support in healthcare and artificial intelligence in medicine. Mor has served in program committees of numerous conferences, including, among others, AI in Medicine (Where she chaired the scientific PC in 2011), Medinfo, ER. She has been co-chair of the BPM ProHealth Workshop seven times and an organizing committee member of Knowledge Representation for Healthcare Workshop five times. http://mis.hevra.haifa.ac.il/~morpeleg/
Keynote Speakers

International Conference
Systems for Medical Decision Support and Forensic Identification: Principles, Methods and Assessment

Friday, February 24th 2017, 8:00-13:30

Norah Rudin holds a B.A. from Pomona College and a Ph.D. from Brandeis University. She is a member of the California Association of Criminalists, a fellow of the American Academy of Forensic Sciences, and a Diplomate of the American Board of Criminalistics. After completing a post-doctoral fellowship at Lawrence Berkeley Laboratory, she served three years as a full-time consultant/technical leader for the California Department of Justice DNA Laboratory and has also served as consulting technical leader for the Idaho Department of Law Enforcement DNA Laboratory, the San Francisco Crime Laboratory DNA Section, and the San Diego County Sheriff’s Department DNA Laboratory. Dr. Rudin has co-authored An Introduction to DNA Forensic Analysis and Principles and Practice of Criminalistics: The Profession of Forensic Science. She is also the author of the Dictionary of Modern Biology. Dr. Rudin has taught a variety of general forensic and forensic DNA courses for the University of California at Berkeley extension and on-line. She is frequently invited to speak at various legal symposia and forensic conferences, and recently served a gubernatorial appointment to the Virginia Department of Forensic Science Scientific Advisory Committee. She is currently co-chair of the Constitution Project Committee on DNA Collection. She remains active as an independent consultant and expert witness in forensic DNA. Dr. Rudin and Mr. Inman have formed the non-profit company SCIEG (Scientific Collaboration, Innovation, and Education Group) for the purpose of developing Lab Retriever, a software tool to perform likelihood ratios with incorporating a probability of drop-out and other complexity variable, and more generally to further education in forensic science education in general.
Committees

Scientific Program Committee
Arie Hasman, The Netherlands, Chair
    Bernd Blobel, Germany
    Jiří Drábeck, Czech Republic
    Pirkko Nykänen, Finland
    John Mantas, Greece
    Ivan Mazura, Czech Republic
    Jaroslav Pokorný, Czech Republic
    Jan Rauch, Czech Republic
    Bernard Richards, United Kingdom
    Ignacio Serrano, Spain
    Halina Šimková, Czech Republic
    Milan Tuček, Czech Republic
    Arnošt Veselý, Czech Republic
    Jana Zvárová, Czech Republic

Local Organizing Committee
    Jana Zvárová, Chair
    Lenka Lhotská, Vice-Chair
        Anna Andrlová
        Martin Ouvín
        Anna Schlenker
        Libor Seidl
Program - Mentoring Course
DECISION SUPPORT SYSTEMS FOR MEDICINE AND FORENSICS

Wednesday, February 22\textsuperscript{nd} 2017

\textbf{Venue:} Faust House, Academic Club of the First Faculty of Medicine, First Faculty of Medicine, Charles University, Karlovo náměstí 40, Prague 2

\begin{tabular}{ll}
9:00-9:45 & Jana Zvárová: Principles of Medical Decision Making. Quantifying Uncertainty: Bayesian Approach and Statistical Decision Support \\
9:45-10:30 & Arie Hasman: From Clinical Practice Guidelines to Computer Interpretable Guidelines \\
10:30-10:45 & \textbf{Coffee Break} \\
10:45-12:15 & Petr Berka: Data Mining and Machine Learning \\
12:15-13:00 & \textbf{Lunch break} \\
13:00-14:30 & Bernd Blobel: Managing and Representing Knowledge in Decision Support Systems \\
14:30-14:45 & \textbf{Coffee Break} \\
14:45-16:15 & Radim Jiroušek: Bayesian Networks for Uncertain Knowledge Representation \\
16:15-16:30 & \textbf{Discussion and closing of the Mentoring Course} \\
\end{tabular}
Program - International Conference
SYSTEMS FOR MEDICAL DECISION SUPPORT AND FORENSIC IDENTIFICATION: PRINCIPLES, METHODS AND ASSESSMENT

Thursday, February 23rd 2017, 8:00-16:30
by the EuroMISE Mentor Association, Czech Society of Biomedical Engineering and Medical Informatics J.E. Purkyně and Czechoslovak Society for Forensic Genetics under the auspices of Charles University, First Faculty of Medicine
Venue: House of Physicians, Sokolská 31, Prague 2

8:00-16:30 Registration

9:00-9:15 Opening

9:15-10:15 Session I
Chairs: Arie Hasman and Jana Zvárová

9:15-10:15 Mor Peleg: The MobiGuide Clinical Guideline Based Decision-Support System: Objective, Methods and Assessment

10:15-10:40 Coffee Break

10:40-11:40 Session II
Chairs: Pirkko Nykänen and Ján Paralič

10:40-11:00 Arnošt Veselý, Jana Zvárová: Compliance of Patient’s Record with Clinical Guidelines

11:00-11:20 František Babič, Ján Paralič, Michal Vadovský, Miroslava Muchová, Alexandra Lukáčová, Zuzana Vantová: What is a Relation between Data Analytics and Medical Diagnostics?
11:20-11:40  Bernd Blobel: Knowledge Representation and Knowledge Management as Basis for Decision Support Systems

11:40-13:00 Lunch break

13:00-14:00 Session III
Chair: Bernd Blobel and Lenka Lhotská

13:00-13:20 Jan Kalina, Jana Zvárová: Regression Modelling: A Fundamental Tool in Clinical Decision Support

13:20-13:40 Michal Vadovský, Ján Paralič: The Current Methods of Collecting Data Used for the Diagnosis of Parkinson’s Disease Patients

13:40-14:00 Michaela Bučková: Clinical Decision Support System in Dentistry

14:00-14:30 Coffee Break

14:30-16:00 Session IV
Chair: Arie Hasman
Panelists: Bernd Blobel, Pirkko Nykänen, Mor Peleg, Jan Peleška, Arnošt Veselý

14:30-16:00 Panel discussion: The Role of Clinical Guidelines and Decision Support Systems in Holistic Medicine

14:30-16:00 Session V (parallel session to Session IV)
Chair: Jiří Drábek

14:30-16:00 Webinar FamLinkX
**Program - International Conference**

**SYSTEMS FOR MEDICAL DECISION SUPPORT AND FORENSIC IDENTIFICATION: PRINCIPLES, METHODS AND ASSESSMENT**

**Friday, February 24th 2017, 8:00-13:30**

by the EuroMISE Mentor Association, Czech Society of Biomedical Engineering and Medical Informatics J.E. Purkyně and Czechoslovak Society for Forensic Genetics under the auspices of Charles University, First Faculty of Medicine

**Venue:** House of Physicians, Sokolská 31, Prague 2

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**8:00-13:30**  **Registration**

**9:00-10:40**  **Session VI**

**Chairs:** Vladimír Bencko and Halina Šimková

**9:00-10:00**  Norah Rudin: Complex DNA Profile Interpretation Stories From Across the Pond: The Current State of Forensic DNA Interpretation and Statistics in the U.S.

**10:00-10:20**  Dalibor Slovák, Jana Zvárová: New Derivation of Balding-Nichols Formula

**10:20-10:40**  Halina Šimková, Jiří Drábek: Paternity or Maternity Assessment of Complete and Partial Hydatidiform Moles and Non-molar Triploids

**10:40-11:00**  **Coffee Break**
11:00-12:40  **Session VII**

**Chairs:** Jan Kalina and Jan Peleška


11:20-11:40  Lucie Hrušková, Ivan Mazura: Defective Collagen Type I Production in Czech Osteogenesis Imperfecta Patients

11:40-12:00  Jan Peleška, Jan Mužík, Marek Doksansky, David Gillar, Jan Kašpar, Karel Hána, Milan Poláček: Direct Home Blood Pressure Telemonitoring System-Suitable Tool for Repeated Out-of-Office Blood Pressure Monitoring

12:00-12:20  Matěj Hrachovina: Detection of Uncoverable Noise Segments in Body Surface Potential Mapping

12:20-12:40  Miroslav Mužný, Jan Mužík, Eirik Arsand: Expanding Functionality of Diabetes Smartwatch Application

12:40-13:30  **Lunch break**

13:30-14:30  **Discussion and closing of the Conference**
GET TOGETHER PARTY

Thursday, February 23rd 2017, 19:00 -22:00

Venue: Il Primo Piatto, Hornokrčská 646/39, Prague 4 (close to metro, line C „Budějovická“)

http://ilprimopiatto.cz/
Main Topic:

Systems for Medical Decision Support and Forensic Identification

Editors:

Arie Hasman and Jana Zvárová

www.ijbh.org