Contents

**President’s Statement**

H.-A. Park
President’s Statement

1

**Obituary**

J. H. van Bemmel, M. Ball, A. Hasman
Remembering Jana Zvárová (1943 - 2017)

3

**Editorial**

B. Séroussi, L. F. Soualmia, J. H. Holmes
Transforming Data into Knowledge: How to Improve the Efficiency of Clinical Care?

4

The International Academy of Health Sciences Informatics: An Academy of Excellence

7

On Contributing to the Progress of Medical Informatics as Publisher

9

**Keynote**

C. P. Friedman, J. C. Rubin, K. J. Sullivan
Toward an Information Infrastructure for Global Health Improvement

16

---

**Special Section:**

**Learning from Experience:**

**Secondary Use of Patient Data**

**Survey**

C. Safran
Update on Data Reuse in Health Care

24

**Working Group Contributions**

F. J. Martin-Sanchez, V. Aguiar-Pulido, G. H. Lopez-Campos, N. Peek, L. Sacchi
Secondary Use and Analysis of Big Data Collected for Patient Care

28

S. M. Meystre, C. Lovis, T. Bürkle, G. Tognola, A. Budrionis, C. U. Lehmann
Clinical Data Reuse or Secondary Use: Current Status and Potential Future Progress

38

C. Paton, T. Karopka
The Role of Free/Libre and Open Source Software in Learning Health Systems

53

Evaluation Considerations for Secondary Uses of Clinical Data: Principles for an Evidence-based Approach to Policy and Implementation of Secondary Analysis

59

**Synopsis**

D. R. Schlegel, G. Ficheur
Secondary Use of Patient Data: Review of the Literature Published in 2016

68

**Best Paper Selection**

Content summaries of:


70

71

71

71
## Section 1: Health Information Management

**Survey**  
S. H. Fenton, S. Low, K. J. Abrams, K. Butler-Henderson  
Health Information Management: Changing with Time  

**Synopsis**  
M. Bloomrosen, E. S. Berner,  
Findings from the 2017 Yearbook Section on Health Information Management  

**Best Paper Selection**  
Content summaries of:  
- Bahous MC, Shadmi E. Health information exchange and information gaps in referrals to a pediatric emergency department. Int J Med Inform 2016;87:68-74  

## Section 2: Human Factors and Organizational Issues

**Survey**  
P. Turner, A. Kushniruk, C. Nohr  
Are We There Yet? Human Factors Knowledge and Health Information Technology — the Challenges of Implementation and Impact  

**Synopsis**  
S. Pelayo, R. Santos  
Trends and Progress in Human Factors and Organizational Issues in 2016: Learning from Experience  

**Best Paper Selection**  
Content summaries of:  
Section 3: Clinical Information Systems

Survey
S. Murphy, V. Castro, K. Mandl
Grappling with the Future Use of Big Data for Translational Medicine and Clinical Care

Synopsis
W. O. Hackl, T. Ganslandt
Clinical Information Systems as the Backbone of a Complex Information Logistics Process: Findings from the Clinical Information Systems Perspective for 2016

Best Paper Selection
Content summaries of:


Section 4: Sensor, Signal and Imaging Informatics

Survey
An Assessment of Imaging Informatics for Precision Medicine in Cancer

Synopsis
W. Hsu, S. Park, C. E. Kahn, Jr.
Sensor, Signal, and Imaging Informatics

Best Paper Selection
Content summaries of:

Section 5: Decision Support

Survey

R. A. Jenders
Advances in Clinical Decision Support: Highlights of Practice and the Literature 2015-2016

Synopsis

V. Koukiias, J. Bouaud
Contributions from the 2016 Literature on Clinical Decision Support

Best Paper Selection

Content summaries of:


Section 6: Knowledge Representation and Management

Survey

S. T. Rosenbloom, R. J. Carroll, J. L. Warner, M. E. Matheny, J. C. Denny
Representing Knowledge Consistently Across Health Systems

Synopsis

F. Dhombres, J. Charlet
Knowledge Representation and Management, It’s Time to Integrate!

Best Paper Selection

Content summaries of:


Section 7: Consumer Health Informatics

Survey
Present and Future Trends in Consumer Health Informatics and Patient-Generated Health Data

Working Group Contribution
Added Value from Secondary Use of Person Generated Health Data in Consumer Health Informatics

Synopsis
P. Staccini, L. Fernandez-Luque
Secondary Use of Recorded or Self-expressed Personal Data: Consumer Health Informatics and Education in the Era of Social Media and Health Apps

Best Paper Selection
Content summaries of:


Section 8: Bioinformatics and Translational Informatics

Survey
J. Vamathevan, E. Birney
A Review of Recent Advances in Translational Bioinformatics: Bridges from Biology to Medicine

Synopsis
H. Dauchel, T. Lecroq
Findings from the Section on Bioinformatics and Translational Informatics

Best Paper Selection
Content summaries of:


Section 9: Clinical Research Informatics

Survey
S. B. Johnson
Clinical Research Informatics: Supporting the Research Study Lifecycle

Working Group Contribution
W. Hinton, H. Liyanage, A. McGovern, S.-T. Liaw, C. Kuziemsky, N. Munro, S. de Lusignan
Measuring Quality of Healthcare Outcomes in Type 2 Diabetes from Routine Data: a Seven-nation Survey Conducted by the IMIA Primary Health Care Working Group

Synopsis
C. Daniel, R. Choquet
Clinical Research Informatics: Contributions from 2016

Best Paper Selection
Content summaries of:

Section 10: Natural Language Processing

Survey
G. Gonzalez-Hernandez, A. Sarker, K. O’Connor, G. Savova
Capturing the Patient’s Perspective: a Review of Advances in Natural Language Processing of Health-Related Text

Synopsis
A. Névél, P. Zweigenbaum
Making Sense of Big Textual Data for Health Care: Findings from the Section on Clinical Natural Language Processing

Best Paper Selection
Content summaries of:
Section 11: Public Health and Epidemiology Informatics

Surveys
Health Data for Public Health: Towards New Ways of Combining Data Sources to Support Research Efforts in Europe 235

B. L. Massoudi, K. G. Chester
Public Health, Population Health, and Epidemiology Informatics: Recent Research and Trends in the United States 241

Synopsis
R. Thiébaut, F. Thiessard
Public Health and Epidemiology Informatics 248

Best Paper Selection
Content summaries of:
Sharpe JD, Hopkins RS, Cook RL, Striley CW. Evaluating Google, Twitter, and Wikipedia as Tools for Influenza Surveillance Using Bayesian Change Point Analysis: A Comparative Analysis. JMIR Public Health Surveill 2016 20;2(2) 250

Research & Education
M.W. Jaspers, J. Mantas, E. Borycki, A. Hasman
IMIA Accreditation of Biomedical and Health Informatics Education: Current State and Future Directions 252

History of Medical Informatics
C. A. Kulikowski
Historical Roots of International Biomedical and Health Informatics: The Road to IFIP-TC4 and IMIA through Cybernetic Medicine and the Elsinore Meetings 257

Working Group Contribution
The IMIA History Working Group: Inception through the IMIA History Taskforce, and Major Events Leading Up to the 50th Anniversary of IMIA 263
<table>
<thead>
<tr>
<th>Information on IMIA</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome to IMIA</td>
<td>269</td>
</tr>
<tr>
<td>Honorary Fellows</td>
<td>272</td>
</tr>
<tr>
<td>IMIA Member Societies</td>
<td>273</td>
</tr>
<tr>
<td>Institutional Members</td>
<td>274</td>
</tr>
<tr>
<td>Addresses of IMIA Member Societies</td>
<td>276</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information on IMIA Regions</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information on APAMI (Asia Pacific Association for Medical Informatics)</td>
<td>292</td>
</tr>
<tr>
<td>Information on Helina (African Region)</td>
<td>298</td>
</tr>
<tr>
<td>Information on IMIA-LAC (Federation of Health Societies in Latin America)</td>
<td>299</td>
</tr>
<tr>
<td>Information on MEAHI (Middle East Association for Health Informatics)</td>
<td>301</td>
</tr>
<tr>
<td>The 2017 MEAHI report was not submitted to the Yearbook Editors</td>
<td></td>
</tr>
<tr>
<td>Information on NAMI (North-American Medical Informatics)</td>
<td>309</td>
</tr>
<tr>
<td>Information on EFMI (European Federation For Medical Informatics)</td>
<td>311</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National Contribution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. L. Parra-Calderón, G. Gómez-Soriano, J. Galván-Romo, L. Sáez-Ayerra</td>
<td>323</td>
</tr>
<tr>
<td>Innovation in Health Informatics Conference in Spain: Conclusions on the Responsibility to Use Patient Data and Big Data Methods to Improve Healthcare</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Miscellaneous</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributors</td>
<td>326</td>
</tr>
<tr>
<td>IMIA Yearbook Special Topics</td>
<td>327</td>
</tr>
</tbody>
</table>