Contents

President’s Statement

S. Koch
Leading IMIA through a Global Pandemic

Obituary

S. Koch, D. Shires, D. Skiba, M. Ball, J. H. van Bemmel
Hans Peterson (1928 — 2021) — Forever in Our Hearts, Always in Our Thoughts

Editorial

L. F. Soualmia, K. Fultz Hollis, F. Mougin, B. Séroussi
Health Data, Information, and Knowledge Sharing for Addressing the COVID-19

IAHSI Paper

R. Haux, M. J. Ball, W. R. Hersh, E. Huesing, M. Kimura, S. Koch, F. Martin-Sanchez, P. Otero
The International Academy of Health Sciences Informatics (IAHSI): 2020 Report

WHO Paper

S. Koch, W. R. Hersh, R. Bellazzi, T. Y. Leong, M. Yedaly, N. Al-Shorbaji
Digital Health during COVID-19: Informatics Dialogue with the World Health Organization

Keynote

M. A. Basit, C. U. Lehmann, R. J. Medford
Managing Pandemics with Health Informatics: Successes and Challenges

Special Section:
Managing Pandemics with Health Informatics

Survey

B. Tilahun, K. Dessie Gashu, Z. A. Mekonnen, B. F. Endehabtu, D. A. Angaw
Mapping the Role of Digital Health Technologies in Prevention and Control of COVID-19 Pandemic: Review of the Literature

Working Group Contributions

S. Kobayashi, L. Falcón, H. Fraser, J. Braa, P. Amarakoon, A. Marcelo, C. Paton
Using Open Source, Open Data, and Civic Technology to Address the COVID-19 Pandemic and Infodemic

Primary Care Informatics Response to Covid-19 Pandemic: Adaptation, Progress, and Lessons from Four Countries with High ICT Development

Managing Pandemic Responses with Health Informatics — Challenges for Assessing Digital Health Technologies

How to Improve Information Technology to Support Healthcare to Address the COVID-19 Pandemic: an International Survey with Health Informatics Experts
## Section 1: Health Information Management

### Survey

**B. L. Massoudi, D. Sobolevskaya**

Keep Moving Forward: Health Informatics and Information Management beyond the COVID-19 Pandemic

### Synopsis

**M. Bloomrosen, E. S. Berner**

Findings from the 2021 Yearbook Section on Health Information Management

### Best Paper Selection

**Synopsis**

- **Cappetta K, Lago L, Potter J, Phillipson L.** Under-coding of dementia and other conditions indicates scope for improved patient management: A longitudinal retrospective study of dementia patients in Australia. Health Inf Manag 2020;1833358319897928

**Synopsis**


## Section 2: Human Factors and Organizational Issues

### Survey

**J. Marquard**

Human Factors and Organizational Issues in Health Informatics: Innovations and Opportunities

### Synopsis

**Y. Senathirajah, M. Hribar**

Human Factors and Organizational Issues Section Synopsis IMIA Yearbook 2021

### Best Paper Selection

**Synopsis**

Section 3: Clinical Information Systems

Survey
The Clinical Information Systems Response to the COVID-19 Pandemic

Working Group Contribution

Synopsis
W. O. Hackl, A. Hoerbst
Clinical Information Systems Research in the Pandemic Year 2020

Best Paper Selection
Content summaries of:

Section 4: Sensor, Signal and Imaging Informatics

Working Group Contribution
V. Vimalarund, E. M. Borycki, A. W. Kushniruk, K. Avenberg
Ambient Assisted Living: Identifying New Challenges and Needs for Digital Technologies and Service Innovation

Synopsis
W. Hsu, C. Baumgartner, T. M. Deserno
Notable Papers and New Directions in Sensors, Signals, and Imaging Informatics

Best Paper Selection
Content summaries of:
Section 5: Decision Support

Survey

P. Taber, C. Radloff, G. Del Fiol, C. Staes, K. Kawamoto
New Standards for Clinical Decision Support: A Survey of The State of Implementation 159

Synopsis

D. Borbolla, G. Ficheur
Clinical Decision Support Systems and Computerized Provider Order Entry: Contributions from 2020 172

Best Paper Selection

Content summaries of:


Section 6: Knowledge Representation and Management

Survey

K. Verspoor
The Evolution of Clinical Knowledge During COVID-19: Towards a Global Learning Health System 176

Synopsis

F. Dhombres, J. Charlet
Knowledge Representation and Management: Interest in New Solutions for Ontology Curation 185

Best Paper Selection

Content summaries of:


Section 7: Consumer Health Informatics and Education

Survey
T. Dingler, D. Kwasnicka, J. Wei, E. Gong, B. Oldenburg
The Use and Promise of Conversational Agents in Digital Health

Working Group Contribution
E. Gabarron, O. Rivera-Romero, T. Miron-Shatz, R. Grainger, K. Denecke
Role of Participatory Health Informatics in Detecting and Managing Pandemics: Literature Review

Synopsis
P. Staccini, A. Y. S. Lau
Consumer Informatics and COVID-19 Pandemics: Challenges and Opportunities for Research

Best Paper Selection
Content summaries of:


Section 8: Bioinformatics and Translational Informatics

Survey
Predictions, Pivots, and a Pandemic: a Review of 2020’s Top Translational Bioinformatics Publications

Section 9: Clinical Research Informatics

Survey
M. Christofidou, N. Lea, P. Coorevits
A Literature Review on the GDPR, COVID-19 and the Ethical Considerations of Data Protection During a Time of Crisis

Synopsis
C. Daniel, A. Bellamine, D. Kalra
Key Contributions in Clinical Research Informatics

Best Paper Selection
Content summaries of:


Section 10: Natural Language Processing

Survey
E. Laparra, A. Mascio, S. Velupillai, T. Miller
A Review of Recent Work in Transfer Learning and Domain Adaptation for Natural Language Processing of Electronic Health Records

Working Group Contribution
L. Balkányi, L. Lukács, R. Cornet
Investigating the Scientific ‘Infodemic’ Phenomenon Related to the COVID-19 Pandemic

Synopsis
N. Grabar, C. Grouin
Year 2020 (with COVID): Observation of Scientific Literature on Clinical Natural Language Processing

Best Paper Selection
Content summaries of:

Section 11: Public Health and Epidemiology Informatics

Working Group Contributions
E. M. Borycki, A. W. Kushniruk, R. Kletk1, V. Vimarlun3, Y. Senathirajah, Y. Quintana
Enhancing Safety During a Pandemic Using Virtual Care Remote Monitoring Technologies and UML Modeling

Synopsis
G. Diallo, G. Bordea
Public Health and Epidemiology Informatics: Recent Research Trends

Best Paper Selection
Content summaries of:
### Research & Education

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>G. Hripcsak, M. J. Schuemie, D. Madigan, P. B. Ryan, M. A. Suchard</td>
<td>283</td>
</tr>
<tr>
<td>Drawing Reproducible Conclusions from Observational Clinical Data with OHDSI</td>
<td></td>
</tr>
</tbody>
</table>

### History of Medical Informatics

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. A. Kulikowski</td>
<td>290</td>
</tr>
<tr>
<td>Pandemics: Historically Slow “Learning Curve” Leading to Biomedical Informatics and Vaccine Breakthroughs</td>
<td></td>
</tr>
</tbody>
</table>

### Information on IMIA

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome to IMIA</td>
<td>302</td>
</tr>
<tr>
<td>Honorary Fellows</td>
<td>304</td>
</tr>
<tr>
<td>IMIA Member Societies</td>
<td>305</td>
</tr>
<tr>
<td>Institutional Members</td>
<td>306</td>
</tr>
<tr>
<td>Addresses of IMIA Member Societies</td>
<td>308</td>
</tr>
</tbody>
</table>

### Information on IMIA Regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information on APAMI (Asia Pacific Association for Medical Informatics)</td>
<td>319</td>
</tr>
<tr>
<td>Information on Helina (African Region)</td>
<td>326</td>
</tr>
<tr>
<td>Information on MENAHIA (Middle East and North African Association for Health Informatics)</td>
<td>328</td>
</tr>
<tr>
<td>Information on NAMI (North-American Medical Informatics)</td>
<td>335</td>
</tr>
<tr>
<td>Information on EFMI (European Federation For Medical Informatics)</td>
<td>340</td>
</tr>
</tbody>
</table>

### Miscellaneous

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributors</td>
<td>346</td>
</tr>
<tr>
<td>Reviewers</td>
<td>347</td>
</tr>
<tr>
<td>IMIA Yearbook Special Topics</td>
<td>348</td>
</tr>
</tbody>
</table>