



# HealthGIS 2013

**November 5      Orlando, Florida**

Second ACM SIGSPATIAL International Workshop on the Use of GIS in Public Health

In conjunction with the 21st ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems

Proceedings of the 2nd ACM SIGSPATIAL International  
Workshop on the Use of GIS in Public Health  
November 5th, 2013. Orlando, Florida, USA

Editor

Yaron Kanza, Technion and Jacobs Technion-Cornell Innovation Institute

ACM International Conference Proceedings Series  
ACM Press

The Association for Computing Machinery  
2 Penn Plaza, Suite 701  
New York, 10121-0701

**The Association for Computing Machinery, Inc.**  
**2 Penn Plaza, Suite 701**  
**New York, NY 10121-0701**

Copyright © 2013 by the Association for Computing Machinery, Inc. Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from Publications Dept., ACM, Inc., Fax +1 (212) 869-0481, or [permissions@acm.org](mailto:permissions@acm.org).

For other copying of articles that carry a code at the bottom of the first or last page, copying is permitted provided that the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

**Notice to Past Authors of ACM-Published Article**

ACM intends to create a complete electronic archive of all articles and/or other material previously published by ACM. If you have written a work that was previously published by ACM in any journal or conference proceedings prior to 1978, or any SIG Newsletter at any time, and you do NOT want this work to appear in the ACM Digital Library, please inform [permissions@acm.org](mailto:permissions@acm.org), stating the title of the work, the author(s), and where and when published.

**ACM ISBN:** 978-1-4503-2529-5

# FOREWORD

These proceedings contain the papers selected for presentation at the second edition of the ACM *Workshop on the Use of GIS in Public Health (HealthGIS 2013)* which is being held in conjunction with the ACM SIGSPATIAL GIS conference.

Public health and public healthcare are important social issues with deep implications for government administrations and with large effect on individual standards of living. In many countries, healthcare institutions are being pushed to their limit by an aging population and increased urbanization (which may lead to additional health issues such as pollution). Many of these challenges have strong geospatial components. For example, GIS techniques may be used to determine spatial correlates of health. In addition, the ability to detect and record the location history of individuals and groups using cellular phones coupled with the ability to analyze and visually present large amounts of geospatial data can be harnessed to advance health-related applications. Other notable examples include using geographic information systems and appropriate applications to assist the evacuation of injured people, monitoring the spread of infectious diseases, collecting data for statistical analysis of the effect of pollution on public health, and providing assistance to elderly people with orientation difficulties. These applications necessitate new techniques, systems, and algorithms to effectively utilize geospatial data in the context of public health.

This program of the workshop is organized in four sessions: (1) Collecting and analyzing health-related data, (2) Web services and social media, (3) Toward healthier cities and healthier life, and (4) an invited talk on utilizing mobile sensors, streaming video and geographical information, for evacuation assistance in disaster areas, by *Flora Gilboa-Solomon from IBM research labs*. The program also features a panel where several top experts in the field will discuss about “*Are privacy and security concerns exaggerated when it comes to health data?*”

We would like to thank the many people who contributed to the success of *HealthGIS 2013*. We thank the authors for providing the content of the program and the program committee for the evaluation process. We would also like to thank the organization committee of ACM GIS 2013 for the help with the workshop planning. Finally, we would like to express our appreciation to Hanan Samet for his guidance and support throughout the review process and program preparation.

We hope that these proceedings will inspire new research ideas, and that you will serve as a valuable resource for the community.

Daniel W. Goldberg  
James J. Horey  
Yaron Kanza  
and  
Oded Shaham

*HealthGIS 2013 Program Chairs*

# HealthGIS 2013 ORGANIZATION

## Program Chairs

Daniel W. Goldberg, Texas A&M University, USA

James L. Horey, Oak Ridge National Laboratory, USA

Yaron Kanza, Technion, Israel and Jacobs Technion-Cornell Innovation Institute, USA

Oded Shaham, IBM Haifa Research Labs, Israel

## Proceeding Editor

Yaron Kanza, Technion – Israel Institute of Technology and Jacobs Technion-Cornell Innovation Institute, USA

## Advisory Board

Hanan Samet, University of Maryland, USA

## Program Committee

Roland Assam (Aachen University, Germany)

Peter Bak (IBM Haifa Research Labs, Israel)

Scott Bell (University of Saskatchewan, Canada)

Malcolm Campbell (GeoHealth Laboratory, New Zealand)

Varun Chandola (Oak Ridge National Laboratory, USA)

Ori Gudes (Curtin University, Australia)

Geoffrey Jacquez (Biomedware, USA)

Martin Michalowski (Adventium Labs, USA)

Clive Sabel (University of Exeter, UK)

Nicola Shaw (Algoma University, Canada)

Sreenivas R. Sukumar (Oak Ridge National Laboratory, USA)

Giuseppe Tradigo (University of Calabria, Italy)

Pierangelo Veltri (Magna Graecia University, Italy)

# Sponsors

