

PROCEEDINGS OF SPIE

11th International Symposium on Medical Information Processing and Analysis

Eduardo Romero
Natasha Lepore
Juan D. García-Arteaga
Jorge Brieva
Editors

17–19 November 2015
Cuenca, Ecuador

Organized by
Universidad Nacional de Colombia (Colombia)
Universidad Politécnica Salesiana (Ecuador)
Universidad de Cuenca (Ecuador)

Sponsored by
Prometeo—Secretaría de Educación Superior, Ciencia, Tecnología e Innovación (Ecuador)
CIM@lab, Universidad Nacional de Colombia Sede Bogotá (Colombia)
Red Nacional de Investigación y Educación del Ecuador (Ecuador)

Published by
SPIE

Volume 9681

Proceedings of SPIE 0277-786X, V. 9681

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

11th International Symposium on Medical Information Processing and Analysis, edited by Eduardo Romero,
Natasha Lepore, Juan D. García-Arteaga, Jorge Brieva, Proc. of SPIE Vol. 9681, 968101
© 2015 SPIE · CCC code: 0277-786X/15/\$18 · doi: 10.1117/12.2229646

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in *11th International Symposium on Medical Information Processing and Analysis*, edited by Eduardo Romero, Natasha Lepore, Juan D. García-Arteaga, Jorge Brieva, Proceedings of SPIE Vol. 9681 (SPIE, Bellingham, WA, 2015) Six-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781628419160

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2015, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/15/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.



Paper Numbering: Proceedings of SPIE follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a six-digit CID article numbering system structured as follows:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

- vii Authors
- ix Conference Committee
- xiii *Introduction*

DIGITAL PATHOLOGY

- 9681 02 **A low dimensional entropy-based descriptor of several tissues in skin cancer histopathology samples** [9681-117]
- 9681 03 **A method for medulloblastoma tumor differentiation based on convolutional neural networks and transfer learning** [9681-55]
- 9681 04 **Unsupervised color normalisation for H&E stained histopathology image analysis** [9681-121]

DATA MODELING

- 9681 05 **Efficient scatter model for simulation of ultrasound images from computed tomography data** [9681-6]
- 9681 06 **Fast pseudo-CT synthesis from MRI T1-weighted images using a patch-based approach** [9681-69]
- 9681 07 **A hybrid method for efficient and accurate simulations of diffusion compartment imaging signals** [9681-29]

TRACTOGRAPHY AND CONNECTIVITY

- 9681 08 **Tract specific analysis in patients with sickle cell disease** [9681-127]
- 9681 09 **Reconstruction of major fibers using 7T multi-shell Hybrid Diffusion Imaging in mice** [9681-36]
- 9681 0A **Blockmodels for connectome analysis** [9681-114]
- 9681 0B **Adaptive algorithms to map how brain trauma affects anatomical connectivity in children** [9681-18]

WEB DEVELOPING

- 9681 0C **Multidimensional Interactive Radiology Report and Analysis: standardization of workflow and reporting for renal mass tracking and quantification** [9681-116]

- 9681 0D **On the illumination compensation of retinal images by means of the bidimensional empirical mode decomposition** [9681-98]
- 9681 0E **Mobile application to induce lifestyle modifications in type 2 diabetic patients: prototype based on international guidelines** [9681-81]

BRAIN: STRUCTURE

- 9681 0F **Finding models to detect Alzheimer's disease by fusing structural and neuropsychological information** [9681-108]
- 9681 0G **Magnetic resonance brain tissue segmentation based on sparse representations** [9681-31]
- 9681 0H **Abnormal ventricular development in preterm neonates with visually normal MRIs** [9681-125]
- 9681 0I **Changes in neurocranium thickness in early childhood** [9681-113]

PARKINSON'S AND KINEMATICS

- 9681 0J **Quantifying Parkinson's disease progression by simulating gait patterns** [9681-77]
- 9681 0K **A characterization of Parkinson's disease by describing the visual field motion during gait** [9681-92]
- 9681 0L **Ipsilateral coordination features for automatic classification of Parkinson's disease** [9681-101]
- 9681 0M **Kinematic parameter estimation using close range photogrammetry for sport applications** [9681-51]

HEART AND MOVEMENT

- 9681 0N **Automatic right ventricle (RV) segmentation by propagating a basal spatio-temporal characterization** [9681-50]
- 9681 0O **Level set algorithms comparison for multi-slice CT left ventricle segmentation** [9681-73]
- 9681 0P **Reduction of blooming artifacts in cardiac CT images by blind deconvolution and anisotropic diffusion filtering** [9681-59]
- 9681 0Q **Motion magnification using the Hermite transform** [9681-58]

DATA ANALYSIS

- 9681 0R **Lipid-anthropometric index optimization for insulin sensitivity estimation** [9681-60]

- 9681 OS **Spanish language generation engine to enhance the syntactic quality of AAC systems** [9681-90]
- 9681 OT **Classification of antimicrobial peptides with imbalanced datasets** [9681-15]

BRAIN: FUNCTIONAL

- 9681 OU **Reduction of resting state network segregation is linked to disorders of consciousness** [9681-42]
- 9681 OV **Automatic identification of resting state networks: an extended version of multiple template-matching** [9681-119]
- 9681 OW **Low-frequency fluctuation amplitude analysis of resting-state fMRI in sickle cell disease** [9681-83]

SOFTWARE DEVELOPMENT

- 9681 OX **Fast, accurate, robust and Open Source Brain Extraction Tool (OSBET)** [9681-28]
- 9681 OY **Open source cardiology electronic health record development for DIGICARDIAC implementation** [9681-66]
- 9681 OZ **Grid platform for medical federated queries supporting semantic and visual annotations** [9681-131]
- 9681 10 **WebMedSA: a web-based framework for segmenting and annotating medical images using biomedical ontologies** [9681-134]

ULTRASOUND

- 9681 11 **Spatial composition of US images using probabilistic weighted means** [9681-38]
- 9681 12 **An explorative childhood pneumonia analysis based on ultrasonic imaging texture features** [9681-34]
- 9681 13 **An analysis of mechanical and computational properties for noninvasive vascular elastography** [9681-19]
- 9681 14 **Automatic segmentation of the fetal cerebellum using spherical harmonics and gray level profiles** [9681-27]

IMAGE AND SIGNAL APPLICATIONS

- 9681 15 **EEG source analysis of data from paralysed subjects** [9681-63]

- 9681 16 **An intelligent ecosystem to support the psychological diagnosis and intervention of children under social vulnerability [9681-109]**

ECG

- 9681 17 **CinC Challenge 2013: comparing three algorithms to extract fetal ECG [9681-135]**
- 9681 18 **Data fusion for QRS complex detection in multi-lead electrocardiogram recordings [9681-16]**
- 9681 19 **Semiautomatic validation of RR time series in an ECG stress test database [9681-132]**
- 9681 1A **Detection of segments with fetal QRS complex from abdominal maternal ECG recordings using support vector machine [9681-26]**

Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

- | | |
|-------------------------------------|-------------------------------------|
| Adalsteinsson, E., 06 | Donnelly Kehoe, P., 0X |
| Alcain, E., 06 | Duddalwar, Vinay, 0C |
| Altuve, Miguel, 18, 1A | Dugarte, Nelson, 0Y |
| Alvarez, Charlens, 0K | Encalada, L., 0R |
| Álvarez, Pablo, 02 | Escalante-Ramírez, Boris, 0Q, 14 |
| Anticona, Cynthia, 12 | Espinosa, Mauricio, 10 |
| Arámbula Cosío, Fernando, 11, 14 | Ezis, Andrea, 0I |
| Arévalo, John, 03 | Faskowitz, Joshua, 0A |
| Armijos, Jairo, 19 | Fernandez Vera, E., 05 |
| Asarnow, Robert F., 0B | Figueroa, Dante, 12 |
| Astudillo, Darwin, 17, 19 | Fitzgibbon, Sean P., 15 |
| Atehortúa, Angélica, 0J, 0K, 0L, 0N | Flores-Andrade, Santiago, 16 |
| Babbitt, Christopher, 0B | Gajawelli, Niharika, 0I |
| Babikian, Talin, 0B | García, David, 19 |
| Barbuzza, R., 05 | García-Arteaga, Juan D., 02, 0F |
| Borck-Vintimilla, Estefanía, 16 | García-Jaramillo, M., 0E |
| Borzage, Matt, 08, 0W | Gilman, Robert H., 12 |
| Brieva, Jorge, 0Q | Giraldo, Diana L., 0F |
| Bush, Adam, 08, 0W | Giza, Christopher C., 0B |
| Cadena-Bonfanti, Alberto J., 0P | Gómez, Francisco, 0U, 0V |
| Camacho, Francy L., 0T | Gomez-Coronel, Sandra L., 0Q |
| Carabali, Carmen A., 15 | González, Fabio, 03 |
| Cárdenas, Luisa, 0J | Grummert, Tyler, 15 |
| Castañeda, Benjamín, 12 | Guaje, Javier, 0U, 0V |
| Castillo-Amor, Angélica M., 0P | Gualán, Ronald, 0Z |
| Celis, Raúl, 04 | Guillermo, Juan, 0Z |
| Ceschin, Rafael, 0H | Gutman, Boris, 0A |
| Cevallos-León Wong, Verónica, 16 | Heine, Lizette, 0U, 0V |
| Chai, Yaqiong, 08 | Hernandez-Tamames, J. A., 06 |
| Checkley, William, 12 | Herraiz, J. L., 06 |
| Chirino, Melet, 0D | Herrera, H., 0R |
| Choi, Soyoung, 08 | Huiracocha, Lourdes, 0Y |
| Coloigner, Julie, 08, 0W | Hwang, Darryl H., 0C |
| Contreras-Ortiz, Sonia H., 0P | Iregui G., Marcela, 0S |
| Correa, Malena, 12 | Jacobs, Damien, 07 |
| Corredor, Germán, 02 | Jacobs, Russell E., 09 |
| Cruz-Roa, Angel, 03 | Johnson, Jeffrey, 0B |
| Daianu, Madelaine, 09 | Judkins, Alexander, 03 |
| D'Amato, J. P., 05, 0X | Kernan, Claudia, 0B |
| Dean, Douglas, 0I | Kim, Yeun, 0W |
| Del Fresno, M., 05, 13 | La Cruz, Alexandra, 0O, 0Z, 10 |
| Delgado, J. S., 0E | Lao, Yi, 0H |
| Delgado, Juan A., 1A | Larrabide, I., 05, 13 |
| DeLosAngeles, Dylan, 15 | Laureys, Steven, 0U, 0V |
| Demertz, Athena, 0U, 0V | Lavarello, Roberto, 12 |
| Dennis, Emily L., 0B | Ledezma, Carlos A., 18 |
| Deoni, Sean, 0I | León-Vargas, F., 0E |
| Diaz, Kristians, 12 | Lepore, Natasha, 08, 0C, 0H, 0I, 0W |
| Dirks, Holly, 0I | Lewis, Trent, 15 |

- Liu, Brent, 0C
 Lo Vercio, L., 05
 Loja, Juan, 17
 Ma, Kevin, 0C
 Macq, Benoît, 07
 Madabhushi, Anant, 03
 Magre Colorado, Luz Alejandra, 0M
 Malpica, N., 06
 Manterola, H. L., 13
 Marrugo, Andrés G., 0D
 Martínez Santos, Juan Carlos, 0M
 Martinez, Darwin, 0U
 Martínez, Fabio, 0J, 0K, 0L, 0N
 Mayta, Holger, 12
 Medina, Rubén, 0O, 0Y, 17, 19
 Medina-Bañuelos, V., 11
 Mi, Liang, 0H
 Millán, María S., 0D
 Mink, Richard, 0B
 Molina, Juan, 0V
 Montagne, Axel, 09
 Montemayor, A. S., 06
 Mora Esquivel, Juan I., 0Q
 Morocho, Villie, 0O
 Moya-Albor, Ernesto, 0Q
 Moyer, Daniel, 0A
 Nabhan Homsi, Masun, 1A
 Nadamuni, Mridula, 0C
 Nagel, J., 0X
 Namias, R., 0X
 Narváez A., Cristian, 0S
 Navarro-Navia, Cristian A., 0P
 Nayyar, Megha, 0C
 Nelson, Marvin D., 0H, 0I
 Oberhelman, Richard, 12
 O'Muircheartaigh, Jonathan, 0I
 Ordoñes, Andrés, 0O
 Pacurucu-Pacurucu, Ana, 16
 Pajuelo, Monica, 12
 Palacio-Baus, Kenneth, 17, 19
 Panigrahy, Ashok, 0H
 Pérez, Wilson, 0Z, 10
 Perez-Gonzalez, J. L., 11
 Perpiñan, Gilberto, 18
 Pesántez, Daniel, 0O
 Pesántez-Avilés, Fernando, 16
 Pineda-Villa, Yenner, 16
 Ponce, Hiram, 0Q
 Pope, Kenneth J., 15
 Prasad, Gautam, 0A, 0B
 Qu, Xiaoping, 08
 Rajagopalan, Vidya, 0W
 Ramírez-Montalvan, Washington, 0Z
 Ramos Pollán, Raúl, 0T
 Rensonnet, Gaëtan, 07
 Robles-Bykbaev, Vladimir, 16
 Rojas, Rubén, 0Y
 Romero, Eduardo, 02, 04, 0F, 0J, 0K, 0L, 0N
 Rozenholc, Y., 06
 Rubi, P., 05
 Rudas, Jorge, 0U, 0V
 Rueda, Andrea, 0G
 Saquicela, Victor, 10
 Sarmiento, Fernanda, 0L
 Sawardekar, Siddhant, 0I
 Sastoque H., Sebastián, 0S
 Severeyn, Erika, 0R, 18
 Shi, Jie, 0H, 0I
 Soddu, Andrea, 0U, 0V
 Solano-Quinde, Lizandro, 0Z, 10
 Taquet, Maxime, 07
 Tello, Andrés, 10
 Thompson, Paul M., 09, 0A, 0B
 Torrado-Carvajal, A., 06
 Torres, Rodrigo, 0T
 Trujillo, David, 0K
 Tshibanda, Luaba, 0U, 0V
 Vanegas, Pablo, 0O
 Vargas, Raúl, 0D
 Vega, Francisco, 10
 Velasco, Nelson, 0F
 Velásquez, J., 0R
 Velásquez-Rodríguez, Gustavo, 14
 Velecela, Esteban, 17
 Ver Steeg, Greg, 0A
 Vidal, Maria-Esther, 10
 Vu, Chau, 08
 Wald, L. L., 06
 Wang, Yalin, 0H, 0I
 Willoughby, John O., 15
 Wong, Sara, 0R, 17, 19
 Wood, John, 08, 0W
 Xu, Liang, 0I
 Yepes, Fernando, 0C
 Zenteno, Omar, 12
 Zimic, Mirko, 12
 Zlokovic, Berislav V., 09
 Zuluaga, María A., 0N

Conference Committee

Conference Chairs

Eduardo Romero, Universidad Nacional de Colombia (Colombia)
Natasha Lepore, Children's Hospital Los Angeles (United States)
and University of Southern California (United States)
Jorge Brieva, Universidad Panamericana (Mexico)

Organizing Committee

Alexandra La Cruz, Universidad de Cuenca (Ecuador)
Rubén Medina, Universidad de Cuenca (Ecuador)
Sara Wong, Universidad de Cuenca (Ecuador)
Juan D. García-Arteaga, Universidad Nacional de Colombia
(Colombia)

Local Committee

Pablo Vanegas, Universidad de Cuenca (Ecuador)
Juan Pablo Salgado, Universidad Politécnica Salesiana (Ecuador)
Villie Morocho, Universidad de Cuenca (Ecuador)
Lizandro Solano, Universidad de Cuenca (Ecuador)
Mauricio Espinoza, Universidad de Cuenca (Ecuador)
Fabián Narváez, Universidad Nacional de Colombia (Colombia)
Vladimir Robles, Universidad Politécnica Salesiana (Ecuador)

Program Committee

Oscar Acosta, Université de Rennes 1 (France)
Javier Adur, Universidad Nacional de Entre Ríos (Brazil)
Miguel Altuve, Universidad Pontificia Bolivariana (Colombia)
Fernando Arámbula, Universidad Nacional Autónoma de México
(Mexico)
Marc-Emmanuel Bellemare, Université Paul Cézanne (France)
Antonio Bravo, Universidad Nacional Experimental del Táchira
(Venezuela)
Jorge Brieva, Universidad Panamericana (Mexico)
Jorge Camargo, Universidad Antonio Nariño (Colombia)
Germán Castellanos, Universidad Nacional de Colombia (Colombia)
Alexander Cerquera, Universidad Antonio Nariño (Colombia)
Patricia Cifuentes, Universidad Antonio Nariño (Colombia)
Julie Colognier, University of Southern California (United States)

Boris Escalante-Ramírez, Universidad Nacional Autónoma de México (Mexico)
Jairo Espinosa, Universidad Nacional de Colombia (Colombia)
José Flórez, Universidad de Antioquia (Colombia)
Leonardo Flórez, Pontificia Universidad Javeriana Bogotá (Colombia)
Hugo Franco, Universidad Central (Colombia)
Maira García, Universidad Antonio Nariño (Colombia)
Juan D. García-Arteaga, Universidad Nacional de Colombia (Colombia)
Edgar Garduño, Universidad Nacional Autónoma de Mexico (Mexico)
Francisco Gómez, Universidad Central (Colombia)
Diego Goméz Cajas, Universidad Antonio Nariño (Colombia)
Fabio González, Universidad Nacional de Colombia (Colombia)
Ricardo Gutierrez, Université de Rennes 1 (France)
Mauricio Hernandez, Universidad de Antioquia (Colombia)
Nidiyare Hevia, Universidad Nacional Autónoma de Mexico (Mexico)
Nick Hine, University of Dundee (United Kingdom)
Marcela Iregui, Universidad Militar Nueva Granada (Colombia)
Juan Ramón Jiménez-Alaniz, Universidad Autónoma de Mexico (Mexico)
Aggelos Katsaggelos, Northwestern University (United States)
Alexandra La Cruz, Universidad de Cuenca (Ecuador)
Ignacio Larrabide, Universidad Nacional del Centro de la Provincia de Buenos Aires (Argentina)
Natasha Lepore, Children's Hospital Los Angeles (United States) and University of Southern California (United States)
Rory Lewis, University of Colorado at Colorado Springs (United States) and University of Colorado Anschutz Medical Campus (United States)
Anant Madabhushi, Case Western Reserve University (United States)
Norberto Malpica, Universidad Rey Juan Carlos (Spain)
José Vicente Manjón, Universitat Politècnica de València (Spain)
Alfredo Mantilla, Tecnológico de Monterrey (Mexico)
Antoine Manzanera, École Nationale Supérieure de Techniques Avancées, ParisTech (France)
Fabio Martínez, Université Paris-Sud (France)
Rubén Medina, Universidad de Cuenca (Ecuador)
Ernesto Moya-Albor, Universidad Panamericana (Mexico)
Quentin Noirhomme, Université de Liège (Belgium)
Gianfranco Passariello, Universidad Simón Bolívar (Venezuela)
Angélica Pérez-Fornos, Université de Genève (Switzerland)
Alfonso Prieto-Guerrero, Universidad Autónoma de Mexico (Mexico)
Daniel Racoceanu, Université Pierre et Marie Curie (France)
Raul Ramos, Universidad Industrial de Santander (Colombia)
Oscar David Robles, Universidad Rey Juan Carlos (Spain)

Luis Eduardo Rodríguez, Escuela Colombiana de Ingeniería
Julio Garavito (Colombia)
Katya Rodríguez, Universidad Nacional Autónoma de Mexico
(Mexico)
Andrea Rueda, Pontificia Universidad Javeriana Bogotá (Colombia)
Andrés Felipe Ruíz, Universidad Antonio Nariño (Colombia)
Olivier Salvado, Commonwealth Scientific and Industrial Research
Organisation (Australia)
Christina Santa Marta, Hospital General Gregorio Marañón (Spain)
Emanuele Schiavi, Universidad Rey Juan Carlos (Spain)
Daniel Suárez, Pontificia Universidad Javeriana Bogotá (Colombia)
Ramiro Velazquez, Universidad Panamericana (Mexico)
Sara Wong, Universidad de Cuenca (Ecuador)
Fernando Yepes, Children's Hospital Los Angeles (United States)
María Zuluaga, University College London (United Kingdom)

Introduction

Welcome to conference proceedings from the 11th International Symposium on Medical Information Processing and Analysis (SIPAIM 2015)!

This year, SIPAIM was held, for the first time, in Cuenca, Ecuador. The symposium was organized with the participation of three universities: the Universidad Nacional de Colombia, the Universidad Politécnica Salesiana de Cuenca and the Universidad de Cuenca. The organization has also the support from the Prometeo Project of the Ministry of Higher Education, Science, Technology and Innovation of the Republic of Ecuador as well as the Education and Research National Network from Ecuador (CEDIA).

The SIPAIM symposium has evolved from a regional event to an international symposium with participation of researchers from several countries and the collaboration of SPIE. This collaboration allows improving the quality and diffusion of the proceedings as well as their indexation. SIPAIM is becoming an important event where international participants can report their research work as well as participating in discussions about scientific trend topics in the areas covered. The symposium is also an opportunity for establishing networks aiming at performing joint projects in several topics. SIPAIM is addressed to researchers, students and professionals in a wide range of disciplines including Engineering, Physics, Mathematics, Computer Science, Biology and Health Sciences, and includes keynote lectures by recognized experts on issues related to acquisition, digitization, visualization, processing, analysis and interpretation of medical information. There are also several tutorials aimed at the complementary education of students concerning the topics of the conference.

We received 78 submissions, and after a very strict revision process, 50 papers were accepted for presentation. The conference included the participation of eight internationally recognized keynote speakers and six workshops. The symposium included the following tracks: Medical and Biomedical Imaging, e-Health, Digital Pathology, Gait Analysis and Biosignals, Representation Based Biosignal Analysis, and Analysis of Medical Procedures through Imaging.

SIPAIM's venue was organized in the beautiful city of Cuenca, Ecuador. Cuenca is the third largest city and the economic center of the southern sierra. The city has long been known for a rich intellectual, artistic, and philosophical tradition that matches its colonial architecture, and is famous for its colorful festivals, distinct food, and breathtaking scenery. Because of Cuenca's history and state of preservation, it is one of Ecuador's three UNESCO World Heritage Trust sites (the others are Quito and the Galapagos Islands).

We hope that all the attendees enjoyed SIPAIM 2015, its technical program, and the city of Cuenca!

Sara Wong
Alexandra La Cruz
Rubén Medina