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**Membership Committee** Enrique Terrazas, MD University of California, San Francisco

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2007 • Ulysses G.J. Balis, MD University of Michigan

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2012-2013 • Raymond D. Aller, MD University of Southern California

2013 • Liron Pantanowitz, MD University of Pittsburgh

# Association for Pathology Informatics

ANNUAL REPORT 2013-14 (July 1, 2013 to June 30, 2014)

# **Report from the President**

Dear Members and Colleagues:

On behalf of the Governing Council of the Association for Pathology Informatics (API), I am pleased to provide the president's letter for this year's API Annual Report. The API was formed in 2001, and is dedicated to the specialty of Pathology Informatics. This year (2014) represents our fourth year as a separately chartered and fully independent professional association. We continue to make considerable progress in advancing Pathology Informatics as a valued and respected subspecialty of pathology. Some of the highlights of the last year are listed below and are mentioned in greater detail within the pages of this annual report.

- Pathology Informatics Summit 2014: The Pathology Informatics Summit was a resounding success for the organization and its members. With over 300 attendees, 6 platinum sponsors (Cerner, Hamamatsu, Leica, Ventana/Roche, SCC Soft Computer, Sunquest), 19 silver sponsors (3DHISTECH, ASCP, Apollo, ARUP, Atlas, CAP, Cortex, CytoSavvy, Fimmic Oy, General Data, Indica labs, LifePoint Informatics, McKesson, Orchard Software, PathXL, Sakura, Visiopharm, Voicebrook and Xifin) and 1 gold sponsor (GenomOncology), the energy was high and the connections and interactions significant. We are very grateful to all who attended for their participation.
- An update on API and the American Society for Clinical Pathology (ASCP) alliance: Last year, the API provided 19 hours of informatics content at the annual meeting of the ASCP. This year, the API is providing 22 hours of informatics content at the ASCP annual meeting, which will be held in Tampa, Florida, from October 6 - 11, 2014. The API and ASCP continue to collaborate on efforts in education and advocacy. A survey was recently submitted to members regarding educational content for the joint API-ASCP University of Pathology Informatics. The University of Pathology Informatics will apply informatics education resources to train the community on critical informatics topics as it applies the practice of pathology and laboratory medicine. We are looking forward to seeing this important program take its inaugural flight.
- Teaching Program Memberships: We recently announced some exciting new teaching institutional memberships which will allow teaching institutions to expand the number of faculty and trainee memberships under the organizational umbrella. This is a great step forward for larger academic facilities with a vested interest in the future. The API Teaching Institutional Members continue to make significant contributions to both the success of API and to the success of the Pathology Informatics Summit. A significant number of institutional trainees attended the conference along with many prominent and active pathology department faculty. We are committed to continuing to expand the number of teaching institution programs as we move forward this year.
- Presence of API in National Initiatives: Official representatives of the API have been involved in a number of national initiatives. The pathology informatics education resource (PIER) has been jointly developed by the API in collaboration with the College of American Pathologists (CAP), Association of Pathology Chairs (APC) and other organizations. This resource is intended to help pathology programs to train our pathology residents in informatics because of the ever increasing central nature of informatics to our profession.

continued on page 2

## www.PathologyInformatics.org

## **Report from the President (continued)**

In addition, the API is officially represented on the laboratory TIGER team for the Office of the National Coordinator (ONC) for Health Information Technology. Other initiatives including efforts to further define and promulgate the specialty of computational pathology, initiated by Dr. David Louis (the chair of Pathology at Massachusetts General Hospital), have had heavy involvement from members of the API.

- Clinical Informatics is a Board Certifiable Medical Subspecialty: Clinical Informatics is now a board-certifiable subspecialty • primarily housed in the American Board of Preventive Medicine and co-sponsored by the American Board of Pathology. Pathologists are the only candidates outside of preventive medicine who are allowed to register for the exam through their own specialty board. The first examination took place in October 2013, and 25 pathologists were certified. After 2017, candidates must complete an accredited fellowship in order to qualify for the board examination. Dr. Bruce Levy (current co-chair for the training and education committee of the API) from the University of Chicago is the first pathologist to receive approval for a clinical informatics fellowship program by the Accreditation Council for Graduate Medical Education, (ACGME). This fellowship is open to applicants with primary certification in any specialty certified through the American Board of Medical Specialties, but Dr. Levy's fellowship is the first such fellowship to be approved under the Pathology Residency Review Committee of the ACGME.
- Journal of Pathology Informatics: JPI is now five years strong and continues to publish important articles in the field of • pathology informatics. The quality of the articles published and reviews received continue to improve and impress. This vehicle to disseminate our published work has become a major player in shaping our field.
- API-Sunguest Educational Webinars: After the resounding success of the first series of webinars provided by API experts with • platform support from Sunquest Information Systems, Inc., the API is happy to announce that it will continue to sponsor a second series of free webinars on hot topics in Pathology Informatics. These webinars are free of charge to API members and are also available to be downloaded from the members' only area of the API website.
- Other API Educational Programs: The past year has been quite successful, with the API represented at a number of national • conferences. API branded content was delivered to the annual meetings of the American Pathology Foundation, the Association for Molecular Pathology and the CAP. In addition, the API held its second annual companion society meeting at the United States and Canadian Academy of Pathology annual meeting. The API will have its third annual companion society meeting at the USCAP meeting in March 2015. API-branded content has also been delivered to the Pathology Visions meeting held by the Digital Pathology Association.

In addition, I want to say a special thank you to the staff at both the API and the ASCP who have helped to move this organization in a positive direction. Nancie Thompson has served as the ASCP liaison to the API and has managed much of our transition in our relationship with the ASCP. Nancie is retiring, so we are looking forward to working with Robert Lendi and Steve Ciacciao at the ASCP in her place.

Barbara Karnbauer has been in large part responsible for the continued success of the Pathology Informatics Summit. Nova Smith has truly been the cornerstone of API operations in general, performing a wide variety of functions for the organization, following up when needed, and ensuring that the leadership of API address salient issues. Without these important individuals, the API would not be as successful as it is today.

I have greatly enjoyed my term as the president of this wonderful organization and its members. Pathology informatics is critically important for accurate, efficient and improved patient care, and as such, it is the key to the future success of pathology and all of its subspecialties. In addition, pathology informatics is just plain near and dear to my heart as are my colleagues who work in this field. A special set of thanks is due to API members, including but not limited to members of the API Council, who have dedicated so much time and effort to the advancement of this organization and the specialty of pathology informatics in general.

Sincerely,

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Alexis B. Carter, MD, FCAP, FASCP **API President** 



S U M M I

PATHOLOGY INFORMATICS May 5-8, 2015 Pittsburgh, PA

SECOND WORLD CONGRESS OF PATHOLOGY INFORMATICS (WCPI) Brought to you by the Association for Pathology Informatics.

## **Travel Awards at Pathology Informatics Summit May 2014**



Award winners with API Governing Council members.



Award winners with representatives from Travel Award Sponsors CAP, ASCP, General Data, and Dr. Klatt.

Edward Stites, MD, PhD

Riku Turkki, PhD Student

Institute for Molecular Medicine

Shuai Zheng, PhD Student

University of Helsinki

**Emory University** 

Washington University in St. Louis

Nine Travel Awards were given for trainee attendance at the Pathology Informatics Summit 2014 national meeting, held in Pittsburgh, PA May 13-16, 2014. Awards were presented at the Travel Awards Trainee Luncheon by the Co-Chairs of the API Training and Education Committee Bruce Levy, MD and Michael J. Riben, MD.

## **2014 TRAVEL AWARDEES**

Ben Brasseur, Medical Student University of Minnesota Medical School

Derrick Chen, MD Cleveland Clinic

**Gustaaf de Rider, MD, PhD** Duke University Medical Center Tushar Patel, MD University of Illinois at Chicago

Seema Sethi, MD Wayne State University Detroit Medical Center

Robert Stapp, DO Henry Ford Hospital

## 2014 TRAVEL AWARD SPONSORS



American Society for Clinical Pathology







Edward Klatt, MD, Director Biomedical Problems Program Mercer University School of Medicine

## Pathology Informatics Summit 2014 Electronic Poster Winners

Electronic Poster – Best Presentation – Imaging Informatics *Texture Analysis and Gleason Sub-Pattern Classification in Prostate Cancer Staging* Nicholas P. McCarthy, University College Dublin, Dublin, Ireland

Electronic Poster – Best Presentation – Pathology Informatics Data Explorer: A Tool for Data Exploration and Cohort Discovery in Massive Multidimensional Datasets Ameen Kazerouni, Emory University, Atlanta, GA

Electronic Poster – Best Presentation – Laboratory Informatics Applications of Google Glass [GLASSTM] in Autopsy Pathology Muhammad A. Syed, University of Pittsburgh Medical Center, Pittsburgh, PA

#### Electronic Poster – Best Presentation – Web-Based Applications Evaluation and Actualization of a Pathology Department/Residency Program Website: Developing an Enhanced Educational and Informational Tool Emilio Madrigal, Mount Sinai Health System, New York, NY

# Pathology Informatics Summit Most popular JPI article of 2013 Winner

Use of a wiki as an interactive teaching tool in pathology residency education: Experience with a genomics, research, and informatics in pathology course Seung L. Park, MD, University of Alabama, Birmingham, AL

## Journal of Pathology Informatics (JPI)

The *Journal of Pathology Informatics (JPI)* is an open access, peer-reviewed journal dedicated to the advancement of pathology informatics. This is the official journal of the Association of Pathology Informatics (API). The first issue was published in March 2010.

*JPI* aims to publish broadly about pathology informatics and freely disseminate all articles worldwide. All types of papers related to pathology informatics are published, including original research articles, technical notes, reviews, viewpoints, commentaries, editorials, book reviews, and correspondence to the editors. All submissions are subject to peer review by the editorial board and expert referees in appropriate specialties.

*JPI* is indexed with PubMed, Pubmed Central, Caspur, DOAJ, EBSCO Publishing's Electronic Databases, Expanded Academic ASAP, Genamics JournalSeek, Google Scholar, Health & Wellness Research Center, Health Reference Center Academic, Hinari, Index Copernicus, OpenJGate, PrimoCentral, ProQuest, SCOLOAR, SIIC databases, Summon by Serial Solutions, and Ulrich's International Periodical Directory.

Editors-in-chief are **Anil V. Parwani** and **Liron Pantanowitz**, University of Pittsburgh School of Medicine, Department of Pathology, Pittsburgh, PA.

The following are the PubMed listed articles from July 1, 2013 through June 30, 2014

### Most-viewed original research article for FY14 published in the Journal of Pathology Informatics

*Original Article:* Seung Park, Anil Parwani, Trevor MacPherson, Liron Pantanowitz. Use of a wiki as an interactive teaching tool in pathology residency education: Experience with a genomics, research, and informatics in pathology course. *J Pathol Inform* 2012, 3:32 (30 August 2012) DOI:10.4103/2153-3539.100366

## PUBMED LISTED ARTICLES THROUGH JULY 2013–JUNE 2014

Research Article: Jia-Fu Chang, Mihail Popescu, Gerald L Arthur. Automated extraction of precise protein expression patterns in lymphoma by text mining abstracts of immunohistochemical studies. J Pathol Inform 2013, 4:20 (31 July 2013) DOI:10.4103/2153-3539.115880 PMID:23967385

Original Article: Tyler Keay, Catherine Conway, Neil O'Flaherty, Stephen M Hewitt, Katherine Shea, Marios A Gavrielides. Reproducibility in the automated quantitative assessment of HER2/neu for breast cancer. J Pathol Inform 2013, 4:19 (31 July 2013) DOI:10.4103/2153-3539.115879 PMID:2396738

*Commentary:* Marilyn M Bui, Corinne L Stephenson. What is new in the evaluation of diagnostic digital cytopathology in cervicovaginal smears? J Pathol Inform 2013, 4:18 (31 July 2013) DOI:10.4103/2153-3539.115874 PMID:23967386

*Original Article:* Yanna Shen Kang, Mehmet Kayaalp. Extracting laboratory test information from biomedical text. J Pathol Inform 2013, 4:23 (31 August 2013) DOI:10.4103/2153-3539.117450 PMID:24083058

*Technical note:* Sonal Kothari, John H Phan, May D Wang. Eliminating tissuefold artifacts in histopathological wholeslide images for improved imagebased prediction of cancer grade. J Pathol Inform 2013, 4:22 (31 August 2013) DOI:10.4103/2153-3539.117448 PMID:24083057 Review Article: Tiffany L Sellaro, Robert Filkins, Chelsea Hoffman, Jeffrey L Fine, Jon Ho, Anil V Parwani, Liron Pantanowitz, Michael Montalto. Relationship between magnification and resolution in digital pathology systems. J Pathol Inform 2013, 4:21 (22 August 2013) DOI:10.4103/2153-3539.116866 PMID:24083056

Technical note: Adam Goode, Benjamin Gilbert, Jan Harkes, Drazen Jukic, Mahadev Satyanarayanan. OpenSlide: A vendor-neutral software foundation for digital pathology. J Pathol Inform 2013, 4:27 (27 September 2013) DOI:10.4103/2153-3539.119005 PMID:24244884

Original Article: Manu Jain, Navneet Narula, Bekheit Salamoon, Maria M Shevchuk, Amit Aggarwal, Nasser Altorki, Brendon Stiles, Claude Boccara, Sushmita Mukherjee. Fullfield optical coherence tomography for the analysis of fresh unstained human lobectomy specimens. J Pathol Inform 2013, 4:26 (27 September 2013) DOI:10.4103/2153-3539.119004 PMID:24244883

Book review: Jennifer K Sehn. Review of "Next-generation DNA sequencing informatics" by Stuart M. Brown (Editor). J Pathol Inform 2013, 4:25 (27 September 2013)

*Original Article:* Takashi Sawai, Miwa Uzuki, Yasuhiro Miura, Akihisa Kamataki, Tsubasa Matsumura, Kenji Saito, Akira Kurose, Yoshiyuki R Osamura, Naoki Yoshimi, Hiroyuki Kanno, Takuya Moriya, Yoji Ishida, Yohichi Satoh, Masahiro Nakao, Emiko Ogawa, Satoshi Matsuo, Hiroyuki Kasai, Kazuhiro Kumagai, Toshihiro Motoda, Nathan Hopson. World's first telepathology experiments employing WINDS ultra-high-speed internet satellite, nicknamed "KIZUNA". J Pathol Inform 2013, 4:24 (27 September 2013) DOI:10.4103/2153-3539.119002 PMID:24244882

Original Article: Eli Gibson, Mena Gaed, José A Gómez, Madeleine Moussa, Stephen Pautler, Joseph L Chin, Cathie Crukley, Glenn S Bauman, Aaron Fenster, Aaron D Ward. 3D prostate histology image reconstruction: Quantifying the impact of tissue deformation and histology section location. J Pathol Inform 2013, 4:31 (31 October 2013) PMID:24392245

Original Article: Gerard Lozanski, Michael Pennell, Arwa Shana'ah, Weiqiang Zhao, Amy Gewirtz, Frederick Racke, Eric Hsi, Sabrina Simpson, Claudio Mosse, Shadia Alam, Sharon Swierczynski, Robert P Hasserjian, Metin N Gurcan. Inter-reader variability in follicular lymphoma grading: Conventional and digital reading. J Pathol Inform 2013, 4:30 (29 October 2013) DOI:10.4103/2153-3539.120747 PMID:24392244

*Original Article:* Raja H Alyusuf, Kameshwar Prasad, Ali M Abdel Satir, Ali A Abalkhail, Roopa K Arora. Development and validation of a tool to evaluate the quality of medical education websites in pathology. J Pathol Inform 2013, 4:29 (29 October 2013) DOI:10.4103/2153-3539.120729 PMID:24392243

Original Article: Jarret C House, Evita B Henderson-Jackson, Joseph O Johnson, Mark C Lloyd, Jasreman Dhillon, Nazeel Ahmad, Ardeshir Hakam, Walid E Khalbuss, Marino E Leon, David Chhieng, Xiaohui Zhang, Barbara A Centeno, Marilyn M Bui. Diagnostic digital cytopathology: Are we ready yet? J Pathol Inform 2013, 4:28 (29 October 2013) DOI:10.4103/2153-3539.120727 PMID:24392242

Original Article: David A Cohen, Brian H Shirts, Brian R Jackson, Lisa S Parker. Laboratory informatics based evaluation of methylene tetrahydrofolate reductase C677T genetic test overutilization. J Pathol Inform 2013, 4:33 (29 November 2013) DOI:10.4103/2153-3539.122389 PMID:24392247

Research Article: Jonhan Ho, Orly Aridor, David W Glinski, Christopher D Saylor, Joseph P Pelletier, Dale M Selby, Steven W Davis, Nicholas Lancia, Christopher B Gerlach, Jonathan Newberry, Leslie Anthony, Liron Pantanowitz, Anil V Parwani. Needs and workflow assessment prior to implementation of a digital pathology infrastructure for the US Air Force Medical Service. J Pathol Inform 2013, 4:32 (29 November 2013) DOI:10.4103/2153-3539.122388 PMID:24392246

## PUBMED LISTED ARTICLES THROUGH JULY 2013–JUNE 2014 (continued from previous page)

Research Article: Amber D Donnelly, Maheswari S Mukherjee, Elizabeth R Lyden, Julia A Bridge, Subodh M Lele, Najia Wright, Mary F McGaughey, Alicia M Culberson, Adam J Horn, Whitney R Wedel, Stanley J Radio. Optimal z-axis scanning parameters for gynecologic cytology specimens. J Pathol Inform 2013, 4:38 (31 December 2013) DOI:10.4103/2153-3539.124015 PMID:24524004

*Commentary:* Keith J Kaplan. Needs and workflow assessment prior to implementation of a digital pathology infrastructure for the US Air Force Medical Service. J Pathol Inform 2013, 4:37 (31 December 2013)

*Original Article*: Yuri Murakami, Tokiya Abe, Akinori Hashiguchi, Masahiro Yamaguchi, Akira Saito, Michiie Sakamoto. Color correction for automatic fibrosis quantification in liver biopsy specimens. J Pathol Inform 2013, 4:36 (31 December 2013) DOI:10.4103/2153-3539.124009 PMID:24524002

Research Article: Swarnendu Bag, Sailesh Conjeti, Raunak Kumar Das, Mousami Pal, Anji Anura, Ranjan Rashmi Paul, Ajoy Kumar Ray, Sanghamitra Sengupta, Jyotirmoy Chatterjee. Computational analysis of p63 + nuclei distribution pattern by graph theoretic approach in an oral pre-cancer (sub-mucous fibrosis). J Pathol Inform 2013, 4:35 (31 December 2013) DOI:10.4103/2153-3539.124006 PMID:24524001

Original Article: Sally Krasne, Joseph D Hillman, Philip J Kellman, Thomas A Drake. Applying perceptual and adaptive learning techniques for teaching introductory histopathology. J Pathol Inform 2013, 4:34 (31 December 2013) DOI:10.4103/2153-3539.123991 PMID:24524000

Research Article: Pinky A Bautista, Noriaki Hashimoto, Yukako Yagi. Color standardization in whole slide imaging using a color calibration slide. J Pathol Inform 2014, 5:4 (31 January 2014) DOI:10.4103/2153-3539.126153 PMID:24672739

*Original Article:* Zheng Ping, Gene P Siegal, Jonas S Almeida, Stuart J Schnitt, Dejun Shen. Mining genome sequencing data to identify the genomic features linked to breast cancer histopathology. J Pathol Inform 2014, 5:3 (31 January 2014) DOI:10.4103/2153-3539.126147 PMID:24672738

Original Article: Jason M Baron, Anand S Dighe, Ramy Arnaout, Ulysses J Balis, W Stephen Black-Schaffer, Alexis B Carter, Walter H Henricks, John M Higgins, Brian R Jackson, JiYeon Kim, Veronica E Klepeis, Long P Le, David N Louis, Diana Mandelker, Craig H Mermel, James S Michaelson, Rakesh Nagarajan, Mihae E Platt, Andrew M Quinn, Luigi Rao, Brian H Shirts, John R Gilbertson. The 2013 symposium on pathology data integration and clinical decision support and the current state of field. J Pathol Inform 2014, 5:2 (31 January 2014) DOI:10.4103/2153-3539.126145 PMID:24672737

Research Article: Fang-Cheng Yeh, Qing Ye, T Kevin Hitchens, Yijen L Wu, Anil V Parwani, Chien Ho. Mapping stain distribution in pathology slides using whole slide imaging. J Pathol Inform 2014, 5:1 (31 January 2014) DOI:10.4103/2153-3539.126140 PMID:24672736

*Editorial:* J Mark Tuthill, Bruce A Friedman, Ulysses J Balis, Andrew Splitz. The laboratory information system functionality assessment tool: Ensuring optimal software support for your laboratory. J Pathol Inform 2014, 5:7 (25 February 2014) DOI:10.4103/2153-3539.127819 PMID:24741466

*Commentary:* Richard C Friedberg. Utility of alert-based CDSS in CPOE to improve compliance with plasma transfusion guidelines. J Pathol Inform 2014, 5:6 (25 February 2014) PMID:24741465

Original Article: Carolina Reyes, Offiong F Ikpatt, Mehrdad Nadji, Richard J Cote. Intra-observer reproducibility of whole slide imaging for the primary diagnosis of breast needle biopsies. J Pathol Inform 2014, 5:5 (25 February 2014) DOI:10.4103/2153-3539.127814 PMID:24741464

Guidelines: Chantal Bernard, SA Chandrakanth, Ian Scott Cornell, James Dalton, Andrew Evans, Bertha M Garcia, Chris Godin, Marek Godlewski, Gerard H Jansen, Amin Kabani, Said Louahlia, Lisa Manning, Raymond Maung, Lisa Moore, Joanne Philley, Jack Slatnik, John Srigley, Alain Thibault, Donald Daniel Picard, Hanah Cracower, Bernard Tetu. Guidelines from the Canadian Association of Pathologists for establishing a telepathology service for anatomic pathology using whole-slide imaging. J Pathol Inform 2014, 5:15 (28 March 2014) DOI:10.4103/2153-3539.129455 PMID:24843826

Technical note: Sten Thorstenson, Jesper Molin, Claes Lundström. Implementation of large-scale routine diagnostics using whole slide imaging in Sweden: Digital pathology experiences 2006-2013. J Pathol Inform 2014, 5:14 (28 March 2014) DOI:10.4103/2153-3539.129452 PMID:24843825

Research Article: Matthew D Krasowski, Scott R Davis, Denny Drees, Cory Morris, Jeff Kulhavy, Cheri Crone, Tami Bebber, Iwa Clark, David L Nelson, Sharon Teul, Dena Voss, Dean Aman, Julie Fahnle, John L Blau. Autoverification in a core clinical chemistry laboratory at an academic medical center. J Pathol Inform 2014, 5:13 (28 March 2014) DOI:10.4103/2153-3539.129450 PMID:24843824

*Editorial:* Joyeeta Dutta-Moscato, Vanathi Gopalakrishnan, Michael T Lotze, Michael J Becich. Creating a pipeline of talent for informatics: STEM initiative for high school students in computer science, biology, and biomedical informatics. J Pathol Inform 2014, 5:12 (28 March 2014) DOI:10.4103/2153-3539.129448 PMID:24860688

Original Article: Diana Mandelker, Roy E Lee, Mia Y Platt, Gregory Riedlinger, Andrew Quinn, Luigi K. F. Rao, Veronica E Klepeis, Michael Mahowald, William J Lane, Bruce A Beckwith, Jason M Baron, David S McClintock, Frank C Kuo, Matthew S Lebo, John R Gilbertson. Pathology informatics fellowship training: Focus on molecular pathology. J Pathol Inform 2014, 5:11 (28 March 2014) DOI:10.4103/2153-3539.129444 PMID:24843823

Original Article: Douglas J Hartman, Anil V Parwani, Bill Cable, Ioan C Cucoranu, Jeff S McHugh, Brian J Kolowitz, Samuel A Yousem, Vijaykumar Palat, Anna Von Reden, Stephen Sloka, Gonzalo Romero Lauro, Ishtiaque Ahmed, Liron Pantanowitz. Pocket pathologist: A mobile application for rapid diagnostic surgical pathology consultation. J Pathol Inform 2014, 5:10 (28 March 2014) DOI:10.4103/2153-3539.129443 PMID:24843822

Review Article: Emad A Mohammed, Mostafa M. A. Mohamed, Behrouz H Far, Christopher Naugler. Peripheral blood smear image analysis: A comprehensive review. J Pathol Inform 2014, 5:9 (28 March 2014) DOI:10.4103/2153-3539.129442 PMID:24843821 Original Article: Robert J Toth, Natalie Shih, John E Tomaszewski, Michael D Feldman, Oliver Kutter, Daphne N Yu, John C Paulus, Ginaluca Paladini, Anant Madabhushi. Histostitcher™: An informatics software platform for reconstructing whole-mount prostate histology using the extensible imaging platform framework. J Pathol Inform 2014, 5:8 (28 March 2014) DOI:10.4103/2153-3539.129441 PMID:24843820

Original Article: Beth L. Braunhut, Anna R. Graham, Fangru Lian, Phyllis D. Webster, Elizabeth A. Krupinski, Achyut K. Bhattacharyya, Ronald S. Weinstein. Subspecialty surgical pathologist's performances as triage pathologists on a telepathologyenabled quality assurance surgical pathology service: A human factors study. J Pathol Inform 2014, 5:18 (26 May 2014) DOI:10.4103/2153-3539.133142 PMID:25057432

Brief Report: Etienne R. Mahe, Diane Higa, Christopher Naugler, Adnan Mansoor, Meer-Taher Shabani-Rad. Accuracy of the CellaVision DM96 platform for reticulocyte counting. J Pathol Inform 2014, 5:17 (26 May 2014) DOI:10.4103/2153-3539.133127 PMID:25057431

Research Article: Ioan C. Cucoranu, Anil V. Parwani, Suryanarayana Vepa, Ronald S. Weinstein, Liron Pantanowitz. Digital pathology: A systematic evaluation of the patent landscape. J Pathol Inform 2014, 5:16 (26 May 2014) DOI:10.4103/2153-3539.133112 PMID:25057430

Research Article: Ramamurthy Bhagavatula, Michael T McCann, Matthew Fickus, Carlos A Castro, John A Ozolek, Jelena Kovacevic. A vocabulary for the identification and delineation of teratoma tissue components in hematoxylin and eosin-stained samples. J Pathol Inform 2014, 5:19 (30 June 2014) DOI:10.4103/2153-3539.135606

## Journal of Pathology Informatics Thanks its Reviewers

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## **Editorial**

The Journal of Pathology Informatics (JPI) is now 4 years old and growing steadily.1 The quantity and quality of informatics content in JPI has evolved considerably. Manuscript submissions have originated from both the USA (54%) and overseas (46%). To date, 129,644 people have visited our journal. There were 283,327 pageviews recorded by our publisher Wolters Kluwer. The number of online sessions has virtually tripled since JPI was launched (Figure 1). The open access model JPI opted for has worked out well. Accordingly, most hits are for the full text HTML version of articles. The majority (78.5%) of these recorded online sessions have been linked to mobile devices (e.g. iPad).

The success and reputation of JPI is attributed not only to the authors and the caliber of their work, but also to our peer reviewers. We are grateful for the erudite, constructive and timely peer reviews received for manuscripts submitted to JPI. Below is the list of superb peer reviewers we would like to thank.

#### **Editors-in-Chief**

Liron Pantanowitz & Anil V. Parwani

References

1. Pantanowitz L, Parwani AV. Introducing the journal of pathology informatics. Journal of Pathology Informatics. 2010; 1:1.

## Figure 1. Website visitors analysis from 2010 - 2014



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## **API Teaching Institutional Members**

Since its inception in 2011, API's Teaching Institutional Membership program has been very successful in attracting the 'best-in-class' academic institutions that have collectively demonstrated leadership in adopting and teaching information technology in the medical (and specifically pathology) specialties. As a measure of its continued success, 30 institutions joined as new members or renewed their TI participation in FY14. API offers unlimited, free publication of all accepted articles in the *Journal of Pathology Informatics* to any faculty, resident, or fellow employed at an API Teaching Institution.

## FY14 TEACHING INSTITUTIONAL MEMBERS:

Albert Einstein College of Medicine, Montefiore Medical Center Weiler Division, Department of Pathology New York, NY

Beth Israel Deaconess Medical Center Department of Pathology Boston, MA

Cleveland Clinic Center for Pathology Informatics Cleveland, OH

Dalhousie University Department of Pathology Halifax, Nova Scotia, Canada

Duke University Department of Pathology Durham, NC

**Emory University** Department of Biomedical Informatics Atlanta, GA

Emory University School of Medicine Department of Pathology and Laboratory Medicine Atlanta. GA

Henry Ford Health System Department of Pathology Detroit, MI

Icahn School of Medicine at Mount Sinai Department of Pathology New York, NY

The University of Texas MD Anderson Cancer Center Department of Pathology Houston, TX Robert Wood Johnson Medical School (UMDNJ) Department of Pathology Piscataway, NJ

State University of New York at Buffalo Pathology and Anatomical Sciences Buffalo, NY

Stanford University School of Medicine Department of Pathology Stanford, CA

**University of Alabama at Birmingham** Department of Pathology Birmingham, AL

University of Arizona College of Medicine Department of Pathology Tucson, AZ

University of Calgary Calgary Laboratory Services Pathology and Laboratory Medicine Calgary, Alberta, Canada

### University of California, Davis

Health System Department of Pathology Davis, CA

**University of California, San Francisco** Department of Laboratory Medicine San Francisco, CA

**University of Colorado Denver** Department of Pathology Denver, CO

University of Illinois at Chicago Department of Pathology Chicago, IL University of Miami, Miller School of Medicine Department of Pathology Miami, FL

University of Michigan Health System Division of Pathology Informatics Ann Arbor, MI

**University of Pennsylvania** Department of Pathology and Laboratory Medicine Philadelphia, PA

**University of Pittsburgh Medical Center** Department of Pathology Pittsburgh, PA

University of Pittsburgh School of Medicine Department of Biomedical Informatics Pittsburgh, PA

**University of Southern California** Department of Pathology Los Angeles, CA

University of Utah Department of Medical Informatics Salt Lake City, UT

University of New Mexico -Health Sciences Center Department of Pathology Albuquerque, NM

Wake Forest Baptist Health Department of Pathology Winston-Salem, NC

Yale School of Medicine Department of Pathology New Haven, CT

## TEACHING INSTITUTIONAL MEMBERSHIP BENEFITS INCLUDE:

- Home page recognition on www.pathologyinformatics.org
- Two mentor-educator memberships as sustaining members of API and sustaining membership for the department chair
- · Four trainee memberships in API

- Discounted registration for the national meeting, Pathology Informatics, including an API presidents' trainees lunch
- No-cost publication of accepted articles in the Journal of Pathology Informatics (JPI)

## 2013 API Lifetime Achievement Award



Donald A.B. Lindberg, MD

Donald A.B. Lindberg, M.D. was the winner of the 2013 Association for Pathology Informatics (API) Lifetime Achievement Award. Dr. Lindberg has pioneered in applying computer technology to health care beginning in 1960 at the University of Missouri and in 1984 was appointed Director of the National Library of Medicine, the world's largest biomedical library (annual budget \$275 million; 690 career staff).

From 1992-1995 he served in a concurrent position as founding Director of the National Coordination Office for High Performance Computing and Communications (HPCC) in the Office of Science and Technology Policy, Executive Office of the President. In 1996 he was named by the HHS Secretary to be the U.S. Coordinator for the G-7 Global Health Applications Project.

Dr. Lindberg was involved in the formation of the American Medical Informatics Association (AMIA) and was elected as the first President of AMIA. As the country's senior statesman for medicine and computers, he has been called upon to serve on many boards including the Computer Science and Engineering Board of the National Academy of Sciences, the National Board of Medical Examiners, and the Council of the Institute of Medicine of the National Academy of Sciences. He is the author of three books (The Computer and Medical Care; Computers in Life Science Research; and The Growth of Medical Information Systems in the United States) and more than 200 articles and reports. He has been the editor and/or a member of the editorial board of nine journals including the Journal of the American Medical Association.

In addition to an eminent career in pathology, Dr. Lindberg has also made significant contributions to information technology with respect to its use in medical diagnosis, artificial intelligence, research, and educational programs. Before his appointment as NLM Director, he was Professor of Information Science and Professor of Pathology at the University of Missouri-Columbia. He has current academic appointments as Clinical Professor of Pathology at the University of Virginia and Adjunct Professor of Pathology at the University of Maryland School of Medicine.

## Associate API Membership for Trainees available through the Peter J. Becich Fund



Peter J. Becich

**The Peter J. Becich Educational Grant** was established in 2003 by API's first President, Michael J. Becich, MD, PhD, in honor of his father, Peter J. Becich.

The purpose of the grant is to offer a full membership rebate to Associate members (individuals in training, including students, residents and fellows). Since its inception, over 300 Annual Associate memberships have been funded by the Becich Grant.

# API President's Awards at USCAP 2014

#### **Best Poster Award:**

• Ioan Coucoranu, M.D. and Collaborators at the University of Pittsburgh: Impact of Monitor Display Configuration on Digital Pathology Diagnosis

#### **Best Platform Presentation Award:**

 Jack Zeineh, M.D. and Collaborators at the Icahn School of Medicine at Mount Sinai: User Focused and Role Specific LIS and Digital Pathology System for Institutions Offering Multiple Molecular Assays

# API to Sponsor Awards at USCAP 2015

The API is pleased to announce that it will again be sponsoring two Association for Pathology Informatics President's Pathologist-In-Training Awards at the 2015 USCAP Companion Meeting:

- Award for Best Poster at \$300
- Award for Best Platform at \$300

## LIS Functionality Toolkit (LIS-FAT): Description of the Project and Progress to Date

The germ of the idea to initiate the LIS Functionality Toolkit project was arrived at during and immediately after the Strategic Summit, a mini-conference presented by the API on June 8, 2012, in Pittsburgh. This event was planned to discuss the future of laboratory information systems (LISs) and pathology informatics in an era when electronic health records (EHRs) seemed to dominate the hospital IT landscape. The conference was generously underwritten by four healthcare software vendors, SCC Soft, Sunquest, McKesson, Cerner with additional contributions from ARUP Labs, General Data, Lifepoint Informatics, and PathCentral.

A key underlying assumption behind this idea was that optimizing LIS functionality was a key factor in the continuing success of these systems in the face of EHR competition. Such functionality was necessary to enhance the productivity and efficiency of pathology and the clinical labs as well as that of the health systems of which they were embedded. It should be noted that the large annual four-day API conference of the API that was held in May, 2014, was renamed the Pathology Informatics Strategic Summit and should not be confused with the small, invitation-only event held in June of 2012.

A Task Force was formed in the Summer of 2012 following the mini-conference composed of Bruce Friedman, Ulysses Balis, Mark Tuthill, and Andy Splitz. It was tasked with deciding what action the API needed to take to ensure the continuing success and high level of functionality of the LISs available in the commercial market. During its deliberations in the latter half of 2012 and 2013, the Task Force decided that its primary goal should be to develop a set of tools that could be used to assess the functionalities of any LIS in the market. This set of tools came to be known as the LIS Functionality Toolkit (LIS-FAT). Here is a description of the four components of the LIS-FAT as described in the narrative report that was the first component of LIS-FAT:

- A narrative report that provides information about how to search for a new LIS among the systems available in the market and develop a request for proposal (RFP) which is commonly used to manage system selection.
- A list of approximately 850 weighted functionality statements (FSs), some of which can be integrated into the RFP submitted to the competing LIS vendors as part of a system selection process. (Appendix I) Participating vendors are required to reference each of these FSs as to its availability in their LIS
- A list of suggestions for scripted scenarios derived from the functionality statements in Appendix I. These scenarios can be used to guide the competing vendors during the on-site live demo's that are part of the LIS purchasing cycle.

 Worksheet guidelines that can be used to calculate the total cost of ownership (TCO) of an LIS or compare TCOs across several LISs. Such calculations are important if it has been demonstrated that the LIS chosen for installation in a hospital lacks specific functionalities.

The public launch of LIS-FAT occurred on September 12, 2013, when Bruce Friedman introduced LIS-FAT in a plenary lecture that was one of the numerous API presentations in the ASCP annual conference in Chicago. Simultaneous with this lecture, the four components of LIS-FAT just described were posted on the API web site and made available at no charge for download by any interested individuals. Over the ensuing months, LIS-FAT has been warmly received by the pathology community and LIS vendors. Appendix I, the list of 850 functionality statements, has been downloaded about 4,000 times.

The LIS-FAT Task Force is currently working on a plan to determine the "next steps" for the LIS-FAT project. At the top of the list is the need to develop additional functionality statements in areas that were not given sufficient attention in the first edition such as lab outreach and molecular/genomic testing. Moreover, the Task Force has observed with interest that many LIS vendors have developed their own corporate responses to all of the functionality statements for review by current and potential customers. It is the sense of the Task Force that LIS-FAT seems to be attaining the status of a quasi-standard for LIS functionality. This response by LIS vendors is viewed as a very positive outcome to LIS-FAT in the sense that the LIS vendors are actively seeking to reach for the high standard for LIS functionality established by the documents. Additional future plans for LIS-FAT include a Task Force meeting at the ASCP annual conference in September in Tampa that will be also be open to all interested parties including vendor representatives. There will also be at least one LIS-FAT lecture at the Pathology Informatics Summit that will be held in May 4-8, 2015, in Pittsburgh.

## LIS Toolkit Stats to date:

							PDF		%		Excel/Doc		%
	Toolkit Page	White Paper	Appendix I	Appendix II	Appendix III	Appendix I	Appendix II	Appendix III		Appendix I	Appendix II	Appendix III	
09/19/2013-09/25/2013	258	106	145	103	89	90	68	57		55	35	32	
09/26/2013-10/12/2013	539	332	509	267	242	351	178	156		158	89	86	
10/13/2013-11/04/2013	445	208	411	244	193	225	108	84		186	136	109	
11/18/2013-12/19/2013	285	183	341	140	127	159	94	90		182	46	37	
12/19/2013-01/15/2014	213	106	184	123	89	118	73	53		66	50	36	
01/15/2014-03/02/2014	545	308	483	266	177	300	126	97		183	140	80	
03/02/2014 - 04/04/2014	252	308	429	243	157	304	146	103		125	97	54	
04/27/2014-05/25/2014	571	284	467	250	183	233	135	102		234	115	81	
05/25/2014-06/29/2014	753	344	539	236	250	341	154	157		198	82	93	
06/29/2014-08/22/2014	879	209	377	181	146	198	99	89		179	82	57	
	Toolkit Page	White Paper	Appendix I	Appendix II	Appendix III		PDF		%		Excel/Doc		%
Totals	4740	2388	3885	2053	1653	2319	1181	988	59.12%	1566	872	665	40.88%

# API and Sunquest continue partnership to offer free webinars to API members

The Association for Pathology Informatics and Sunquest Information Systems are proud to continue their partnership to offer bi-monthly educational webinar series on topics in the Anatomic Pathology industry to members of API. We had remarkable success with our 2013-2014 webinar series of six lectures with a total of 817 registrants, 488 participants, and 1,052 website downloads. API and Sunquest plan to build on this success and will continue to feature presentations by industry leaders and medical academia experts. API and Sunquest believe in fostering a community of educated members and clients and look forward to partnering to bring this series to the API membership

API members can access previously recorded API-Sunquest Webinars on the API website after logging into their online account. The API-Sunquest webinars presented in FY14 were:

# Biospecimens, Biorepositories, and Biobanking Informatics – Practical Pearls for Pathologists

Date: Tuesday, June 4th at 9am PDT/ 12pm EDT Presenter: Dr. James Robb, MD FCAP, Consulting Pathologist Presenter: Dr. Raj Dash, MD, Associate Professor of Pathology at Duke University Health System

# The Meaning in "Meaningful Use" of EHRs – an Update for Laboratories and Pathologists

Date: Thursday, September 26 at 1 PM EDT/10 AM PDT Presenter: Walter H. Henricks, MD of Cleveland Clinic

#### Can We Resurrect the Autopsy in the High Tech/IT World? Date: October 24th at 1pm EDT/10am PDT

Presenter: Bruce Levy, MD, Director of Pathology Informatics and Associate Chief Health Insurance Officer

# Problems of Mislabeled Specimens in U.S. Clinical Laboratories and Practical Solutions

Date: January 29, 2014 at 10am PST/1pm EST Presenter: Brian R. Jackson, MD, MS, VP and Chief Medical Informatics Officer at ARUP Laboratories Presenter: Charles D. Hawker, PhD MBA, Scientific Director for Automation at ARUP Laboratories.

## Integrated Disease Reporting: Order from (Almost) Chaos

Date: February 25th at 3:30pm EST/12:30pm PST Presenter: Monica E. de Baca, MD of Hematologics, Inc. Presenter: George Birdsong, MD of Emory University School of Medicine/Grady Health System

### Laboratory Information System Functionality Assessment Toolkit (LIS-FAT): What you need to know about your LIS solution

Date: March 19th at 10am PST/1pm EST Presenter: J. Mark Tuthill, MD, Division Head of Pathology Informatics at Henry Ford Health System Presenter: Andrew Splitz, President/CEO of S&P Consultants, Inc.

## The API-Sunquest webinar series planned for the FY15 are:

- Pathology Informatics: A Key Element for Navigating Through Healthcare Reform (Bruce Friedman; scheduled for 9/9/2014)
- Deploying Analytic Software in Your Lab for Management Support (Dennis Winsten and Hal Weiner)
- Working with Clinicians to Improve Test Ordering and Result Interpretation (Jason Baron and Anand Dighe)
- Computational Pathology: IT Support for Basic Research in Pathology (Mike Becich)
- Diagnostic Information Systems and Enhanced IT Support for Cancer Genomics (Justin Starrin)
- The Interface between Hospital Pathologists and Direct-to-Consumer Lab Testing (Jill Hagenkord)
- How Digital Pathology Will Reshape Surgical Pathology (Steve Hewitt)



## API Budget (FINAL June 30, 2014)

REVENUE

EΧ	Б	le	EQ	
EA				

Corporate Contributions	\$100	Accounting Fees	\$9,438			
Individual & Business	\$2,825	Professional Fees - Consulting \$24,300				
Contributions		Website Maintenance	\$3,104			
Unrestricted Contributions	\$250	Business Expenses	\$2,462 \$11,000			
Travel Awards	\$11,700	ASCP Management fee				
Membership Dues	\$37,675	Books, Subscriptions, Reference \$5,699				
Books and Journals	\$3,174	Credit Card Fees	\$3,028 \$1,508 \$1,246			
Meeting Sponsorships	\$192,075	Service Fees				
Program Income	\$84,360					
•	. ,	Supplies				
Total Revenue	\$332,159					

Postage, Mailing Service	\$5,555					
Printing and Copying	\$12,739					
Telephone, Telecommunications \$1,671						
Travel and Meetings	\$174,300					
Faculty Expenses	\$18,822					
Travel Awards	\$6,852					
Total Expenses	\$281,723					
Net Revenue/(Loss)	\$50,437					

## API at ASCP 2013 in Chicago

API held its 2013 Annual Meeting in conjunction with the ASCP in October in Chicago, and the API was formerly recognized as a partner organization. In this capacity, API was responsible for providing 23 hours of education, including a plenary session anchored by Drs. Balis, Friedman and Tuthill. The Friday morning plenary session topic was on the convergence of technology and health care, and was moderated by Mark Tuthill. Following the session Dr. Friedman described the session as undoubtedly the largest audience ever to hear a lecture on pathology informatics. The sessions were well attended and received excellent evaluations from participants. Further, API formally announced publication of the "Laboratory Information System-Functionality Assessment Toolkit" (LIS-FAT) a collection of functionality statements, scenarios, and cost evaluation tools accompanied by an explanatory white paper. The API also hosted its annual business/membership meeting at the Chicago meeting. Plans for 2014 were developed based on feedback from the API council, membership, and attendees.

# API at ASCP 2014 in Tampa

Continuing to provide support for informatics education, the API will sponsor twenty plus hours of informatics topics at the upcoming ASCP meeting in Tampa. This represents the second year in which API has formally worked with ASCP to sponsor and select informatics topics for the ASCP's annual meeting. In addition to informatics topic delivered as lectures, sessions will presented in a round table forum allowing more focused attention to topics of interest by meeting participants. New to the meeting this year, the API will be presenting its informatics "Lifetime Achievement Award", given to an informaticist that has made outstanding career contributions to the field of pathology informatics. Once again the API will host a membership/business meeting, open to the public this year.

# University of Pathology Informatics: API – ASCP Education Initiative

The API in conjunction with the ASCP launched the University of Pathology Informatics initiative to spearhead the development of targeted informatics education resources applicable to the lab community, specifically to train the community on critical informatics topics as it applies the practice of pathology and laboratory medicine. The leadership committee, headed by Dr. Michael Riben, kicked off activities in March, 2014 and had a Face-to-Face meeting at the Pathology Informatics in May. The leadership committee is working to design, develop and deploy a certificate program that addresses pathology informatics competencies , skills and knowledge for physicians, laboratory professionals, administrators, and trainees. Our current activities has been to perform a gap analysis survey to identify educational needs of the community, prioritize and recommend content programs based on this gap analysis and organize and coordinate subworking groups that would develop the content. Our survey will be launched in September to the laboratory community and we will promote it heavily to ensure as many interested parties as possible have an opportunity to give us feedback to help shape and direct the content of the program.

## Pathology Informatics Essentials for Residents (PIER)

The API is working closely and collaboratively with the College of American Pathologists and the Program Directors Section (PRODS) of the Association of Pathology Chairs (APC) to develop a pathology informatics instructional resource that will be made available, free of charge, to all pathology residency programs. It provides (1) up-to-date and validated pathology informatics knowledge and skill set objectives; (2) flexible delivery options that can be adapted by program size, needs and level of faculty expertise; and (3) topic organizers, objectives, milestone levels, rotation planning, practical clinical applications, and existing learning resource options. PIER provides a framework for residency programs to provide informatics training to their residents. The content and implementation strategies are closely aligned with the ACGME "Milestones" requirements. Representative alpha test residency programs have been selected to collaborate in the optimization of the instructional materials beginning in November, 2014. The work group which developed the materials will provide updates and supplementation.

View PIER online at http://www.apcprods.org/PIER/

## Pathology Informatics Summit 2014 Platform Short Abstract Winners

Informatics Infrastructure Requirements for Clinical Next Generation Sequencing (NGS): Challenges and Solutions Somak Roy, MD, Department of Pathology, University of Pittsburgh Medical Center

A Free-Standing Clinical Laboratory Data Warehouse in the Era of Enterprise Clinical and Research Warehouses: 16 Years of Experience, Future Options, and Strategic Considerations Philip J. Boyer, MD, PhD, East Carolina State

"WSI ZoomViewer": A Vendor Neutral HTML5 Whole Slide Image Viewer Liron Pantanowitz, MD, University of Pittsburgh Medical Center, Department of Pathology, Pittsburgh, PA

Reader Studies for Digital Pathology: Software for Simulation, Analysis, and Sizing Weijie Chen, PhD, Food and Drug Administration, Center for Devices and Radiological Health, Office of Science and Engineering Laboratories, Silver Spring, MD An Open Standards, Enterprise Whole Slide Imaging Warehouse and Layered Governance Model Seung Park, MD, Division of Informatics, Department of Pathology, University of Alabama at Birmingham

#### This Is Your Brain on Informatics: A Total-Immersion Data Sciences Course for the Next Generation of Informaticists

Timothy Kennell Jr., BS, NIH Medical Scientist Training Program, University of Alabama at Birmingham School of Medicine

### Integrating Robotic Analyzer with LIS to Reduce Human Errors in HPV Reporting

Peter Gershkovich MD, Yale Medical School, Department of Pathology, New Haven CT

### Large-Scale Retrospective Data Analysis For Postmarketing Surveillance of Point-of-Care Glucose Meter Accuracy

Lee Schroeder, MD, PhD, Stanford University, Department: Pathology, Stanford, CA

## Pathology Informatics Summit 2015 and 2016

Following on the success of Pathology Informatics Summit 2014, the API has committed to host summits in both 2015 and 2016 to be held at the Wyndham Grand Hotel, in Pittsburgh. This newly renovated hotel serves as an excellent space for advanced pathology informatics education, science and networking.

Of particular interest is that the 2015 meeting will incorporate efforts to be bring in an international audience under the auspices of a "Word Congress on Pathology Informatics" or WCPI under the leadership of PI Summit conference co-Directors Drs. Balis and Tuthill working with Dr. Michael Legg from Australia leveraging extensive connections in Asia and Europe. As this international platform has been done once previously, we are billing this as a "Second World Congress of Pathology Informatics". Meeting curriculum planning is well underway.

The dates for both Pathology Informatics Summit meetings are already established:

## PI-SUMMIT 2015, MAY 5-8, 2015 PI-SUMMIT 2016, MAY 23-26, 2016

Both held at the Wyndham Grand Pittsburgh Downtown, Pittsburgh, PA











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