Onsite Program
AMIA 35th Annual Symposium on Biomedical and Health Informatics
“Improving Health: Informatics and IT Changing the World”

October 22-26, 2011
Washington Hilton
Washington, DC

AMIA designates this live educational activity for a maximum of 27.75 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.
Dear Colleague,

Welcome to AMIA 2011! We’re glad you have come to experience AMIA’s biggest and best educational event to date! If you expect AMIA 2011 to keep you well informed and linked into the richest leadership community working in the field today, you are definitely in the right place! There is one busy week ahead of you!

Throughout this Symposium, a key truism will be strengthened and conveyed. Informatics is certainly “Improving Health: Informatics and IT Are Changing the World”.

Nearly 100 sessions provide breakthrough findings in translational bioinformatics and biomedicine, data mining, natural language processing, new approaches to knowledge representation and clinical decision support, plus the use of computers in public health and health education. An especially provocative semi-plenary session on Tuesday morning brings us in touch with popular culture and informatics as Watson, the Jeopardy! game show champion joins us here.

We are honored to host two distinguished keynoters: Dr. Collins of NIH, and Dr. Abowd of Georgia Tech. Dr. Collins has had a remarkable career, with involvement in informatics at key ascents in its growth. Dr. Abowd will discuss the latest aspects of his research which gives a glimpse into the future and how technology can ease patients’ lives in the most practical sense. Be sure to get a good seat at both of these events!

Please relax in the gracious atmosphere the Washington Hilton provides us once again, and enjoy the full breadth of the Symposium. As the informatics work force expands, you will see new faces among us. Please extend a warm AMIA welcome to folks discovering the critical needs that informatics meets-- members of a new corps of informatics professionals trained with support from ONC.

On a final note, I would like to extend many thanks to my colleagues on the Scientific Program Committee. Their dedication and hard work have resulted in a Symposium of great depth and currency. It most surely reflects a past year of collectively keeping noses to the grindstone and watchful eyes on the calendar to fit in all that required our attention. It most certainly does take a rather large village of informaticians to put on a successful and satisfyingly rich AMIA Symposium!

R. Scott Evans, PhD
AMIA 2011 Chair
Intermountain Healthcare
University of Utah
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Conversation on
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AMIA2011#

Visit AMIA at Booth 220
Wireless Internet
For your convenience, AMIA provides wireless internet to attendees. Excessive bandwidth usage, such as broadcasting, streaming or continuous downloading of files may affect network performance and is strongly discouraged. Any device which adversely impacts our network may be blocked from further access without prior notice to you. Please limit your usage to e-mail access and web browsing.

The SSID (wireless network name) is hhonors
When you launch your browser you will automatically go to the Hilton page.
Use Promotional Code: AMIA2011
Your access will continue for the duration of the Symposium.

Technical Assistance
For assistance, please visit the registration desk.

Cyber Café
Location: Terrace Level
Computers are provided to registered Symposium attendees. The connection is available for any attendee who wishes to check e-mail accounts provided that the attendee has configuration information. Please limit your use to 10 minutes.

Note About Firewalls
If your mail account is on a server that is protected by a firewall, you need to have the proxy server information. We will not be able to access it.

No Smoking Policy
Smoking is not permitted inside the hotel.

Responsible Drinking Policy
Alcohol will be available at some receptions. Please exercise a responsible drinking policy. Your cooperation will help keep events pleasant and enjoyable for everyone.

Safety First
We want you to have a safe and enjoyable time visiting Washington, DC. Please observe the caution appropriate for any major urban area. Don’t forget to remove your name badge before leaving the hotel. The badge clearly identifies you as a tourist in unfamiliar surroundings.

Attendance Policy at Program Sessions
All attendees must be registered either for the full conference, or as a daily registrant specific to the day of the activity he/she is attending. Attendees MUST show their badge for entrance. Room monitors are instructed to ask individuals to either display a badge or have a replacement issued at the registration desk before being admitted to a session or other activity. Tutorial attendees may attend only those tutorials for which they are registered and will be required to turn in a ticket at the door. Tickets will be distributed with registration materials, or are available for purchase at the registration desk.

Symposium Proceedings
AMIA provides a dynamic online archive of Proceedings. The Proceedings are fully searchable by title, author, and full text terms. AMIA members and Symposium registrants have free access to the archives. To access the AMIA Proceedings archive, simply point your browser to http://proceedings.amia.org. Use your AMIA login and password to access the 2011 volume. You can also access the site on web-enabled mobile devices like the iPhone.

Image Release
A team of AMIA photographers and videographers are roaming the plenary hall, corridors, and Exhibition floor throughout the Symposium. Please be advised that by attending the Annual Symposium, you have given your tacit permission to AMIA to publish images, online or in print, that may include your person, either recognizably or not. If you are aware of being photographed and do not wish your image to be used, please find an AMIA staff person to indicate withdrawal of your permission for image use.

Mobile Onsite Program
You may access a mobile application of the onsite Symposium program at www.mobile.amia.org
This browser-based app will enable you to view the onsite program with enhanced capabilities for mining web-based information related to many sessions, exhibitors, and other program elements.

Navigational Support
Locate the electronic ‘reader boards’ in the corridors throughout the hotel to find rooms and times for sessions, special events, and Affiliates’ events being held onsite.
Program at a Glance • AMIA 2011

Friday, October 21
8:30 am – 4:30 pm  The EHR Usability Symposium 2011: “Usability Present and Future”*
8:30 am – 4:30 pm  2011 Doctoral Consortium on Sociotechnical Issues in Biomedical Informatics*

Saturday, October 22
8:00 am – 5:00 pm  AMIA Board of Directors Meeting
8:30 am – 4:30 pm  Workshop on Interactive Systems in Healthcare/WISH 2011*
8:30 am – 4:30 pm  NIWG Symposium: Human Factors, Modeling, and Workflow: Methods for Implementing Health Information Technology*
8:30 am – 4:30 pm  Tutorials*
1:00 – 4:30 pm  CMIO Informatics Workshop* (Part 1)
1:00 – 5:00 pm  10x10 at University of Minnesota In-person session
5:00 – 7:30 pm  Workshops

Sunday, October 23
8:00 am – 12:00 pm  10x10 at OHSU In-person Session
8:00 am – 12:00 pm  10x10 UIC In-person Session
8:00 am – 12:00 pm  10x10 at Kansas University In-person Session
8:00 am – 12:00 pm  10x10 at University of Texas In-person Session
8:00 am – 12:00 pm  Nursing Informatics WG Special Event
8:00 am – 12:00 pm  Student Paper Competition
8:30 am – 12:00 pm  Tutorials*
8:30 am – 12:00 pm  CMIO Informatics Workshop* (Part 2)
1:00 – 3:00 pm  Opening Session and Keynote Presentation
3:30 – 5:00 pm  Scientific Sessions
5:00 – 7:00 pm  Exhibition Hall Opens
5:00 – 7:00 pm  Welcome Reception in the Exhibition Hall
5:30 – 10:00 pm  Working Group Business Meetings

Monday, October 24
7:00 – 8:15 am  Committee Meetings
7:00 – 8:30 am  Academic Forum Meeting
8:30 – 10:00 am  Keynote Address
10:00 am – 2:00 pm  Exhibition Hall Open

*Additional fee required
### MONDAY, OCTOBER 24

10:30 am – 12:00 pm | Scientific Sessions  
10:30 am – 2:00 pm | Poster Session I Preview  
12:00 – 1:30 pm | Committee Meetings  
12:15 – 1:30 pm | Unconferences  
1:45 – 3:15 pm | Scientific Sessions  
3:30 – 5:00 pm | Scientific Sessions  
4:00 – 7:00 pm | Exhibition Hall Open  
5:00 – 6:30 pm | Committee Meetings  
5:15 – 7:00 pm | Poster Session I (authors present)  
5:30 – 10:00 pm | Working Group Business Meetings  
6:00 – 8:00 pm | JAMIA Editorial Board Meeting

### TUESDAY, OCTOBER 25

7:00 – 8:15 am | Committee Meetings  
8:30 – 10:00 am | Semi-plenary Sessions  
10:00 am – 2:00 pm | Exhibition Hall Open  
10:30 am – 12:00 pm | Scientific Sessions  
10:30 am – 2:00 pm | Poster Session II Preview  
12:15 – 1:30 pm | State of the Association Meeting and Award Presentations  
1:45 – 3:15 pm | Scientific Sessions  
3:30 – 5:00 pm | Scientific Sessions  
4:00 – 7:00 pm | Exhibition Hall Open  
5:00 – 6:30 pm | Committee Meetings  
5:15 – 7:00 pm | Poster Session II (authors present)  
5:30 – 7:00 pm | Working Group Business Meetings  
7:30 – 9:00 pm | Chair’s Reception  
9:00 – 11:00 pm | AMIA Lounge  
9:00 pm – 12:00 am | Dance Party

### WEDNESDAY, OCTOBER 26

8:30 – 10:00 am | Scientific Sessions  
10:30 am – 12:00 pm | Scientific Sessions  
12:15 – 1:15 pm | Closing Session
**Dr. Francis S. Collins**  
Director, National Institutes of Health

**Sunday, Oct. 23, at 1 pm**  
Room: International Ballroom Center

As Director of NIH, Dr. Collins, MD, PhD, oversees the work of the world’s largest supporter of biomedical research, spanning the spectrum from basic to clinical research. A physician-geneticist noted for his landmark discoveries of disease genes, Dr. Collins’ leadership of the international Human Genome Project culminated in the completion of a finished sequence of the human DNA instruction book. His own research laboratory has discovered a number of important genes, including those responsible for cystic fibrosis, neurofibromatosis, Huntington’s disease, a familial endocrine cancer syndrome, and most recently, genes for type 2 diabetes and the gene that causes Hutchinson-Gilford progeria syndrome, a rare cause of premature aging.

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**Come to the Chair’s Reception**  
A festive event on Tuesday evening,  
7:30 – 9 pm

Hosted by Nancy M. Lorenzi, Chair,  
AMIA Board of Directors  
All AMIA Volunteers, Members, and  
International Symposium attendees are welcome!

*Refreshments and Cash Bar • International Terrace Room*
Dr. Gregory Abowd
Distinguished Professor, School of Interactive Computing
Georgia Tech

Monday, Oct. 24, at 8:30 am
Room: International Ballroom Center

Gregory D. Abowd, PhD, currently serves as the Director of the Health Systems Institute, a joint Georgia Tech/Emory University research institute investigating the impact of technologies on healthcare delivery. In this position, Dr. Abowd extends his own work over the past decade on information technologies and autism: his research interests concern how advanced information technologies of ubiquitous computing (or ubicomp) impact ordinary life when they are seamlessly integrated into our living spaces. Dr. Abowd’s work has involved schools and homes, with a recent focus on healthcare delivery. Dr. Abowd also directs the Ubiquitous Computing Research Group in the School of Interactive Computing. This effort started with the Future Computing Environments research group in 1995, and has since matured into a collection of research groups, including a major research effort that Dr. Abowd initiated called the Aware Home Research Initiative.

Are you a JAMIA Journal Club member?
Join online webinars with Editor in Chief Lucila Ohno-Machado and a new guest author each month.
JAMIA Journal Club meets the first Thursday of every month!

Visit JAMIA at Booth 223 to learn more!

JAMIA Journal Club 3 pm ET
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* Intermountain Healthcare/University of Utah  
* **AMIA 2011 SPC CHAIR**

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* Johns Hopkins University, Division of Neonatology  
* **Vice Chair, Applications**

WANDBA PRATT  
* University of Washington  
* **Vice Chair, Foundations**

WILLIAM HERSH  
* Oregon Health & Science University, School of Medicine  
* **AMIA 2012 SPC Chair**

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* Brigham & Women's Hospital

MELIHA YETISGEN-YILDIZ  
* University of Washington

MARY REGAN  
* University of Maryland School of Nursing, serves as the Nurse Planner on the committee for this activity
T01: Do You Believe in Angels? Intellectual Property, Entrepreneurship, and Early-stage Funding

T02: Transforming & Visualizing Clinical Data for Research

T03: Practical Modeling Issues Representing Coded and Structured Patient Data in EHR Systems

T04: Best Practices for Teaching Informatics

T05: Personal Health Records, Patient Portals & Consumer-facing Health IT

T06: An Introduction to Clinical Natural Language Processing (Sponsored by AMIA Natural Language Processing Working Group)

T07: Clinical Classifications and Biomedical Ontologies: Terminology Evolution, Principles, and Practicalities

T08: Introduction to Biomedical and Health Informatics

T09: Connecting States to HIT: Health Information Exchange & Beacon Communities

T10: Sociotechnical Design and In-Situ Evaluation for Health Information Technology (Sponsored by AMIA Academic Forum)

T11: The Role of Informatics in New Healthcare Delivery Organizations: Medical Homes, ACOs

T12: Knowledge-based Decision-support Systems for Implementing Clinical Practice Guidelines

T13: Advanced Natural Language Processing (Sponsored by AMIA Natural Language Processing Working Group)

T14: Introduction to R for Bioinformatics and Biomedicine

T15: Embracing Healthcare IT Standards in the World of Meaningful Use

T16: Developing Successful Informatics Research Grant Applications

T17: Making Your Point: Effective Presentation and Visual Design Skills

T18: An Introduction to Data Mining Principles and Practice

T19: Introduction to Translational Bioinformatics

T20: Clinical Decision Support: A Practical Guide to Developing Your Program to Improve Outcomes

T21: Evolving Privacy and Security Under HITECH

T22: Clinical Research Informatics: Theory, Methods, and Best Practices (Sponsored by AMIA Clinical Research Informatics Working Group)

T23: Ontology-oriented Resources from the National Center for Biomedical Ontology

T24: Potential Informatics Interventions in the Complex Adaptive System of Health Care
Clinical Decision Support, Outcomes, and Patient Safety: Design, development, and implementation of state-of-the-art clinical decision support and its effects on clinical quality and patient safety outcomes.

Clinical Research Informatics (CRI): Highlights information management to address challenges facing clinical research and rapidly evolving biomedical informatics methods specifically designed to address CRI management requirements.

Clinical Workflow and Human Factors: Examines how many aspects of human factors in clinical information system implementation and use revolve around the clinician’s and clinic’s workflow.

Consumer Informatics and Multimedia Personal Health Records PHRs: Explores the consumer perspective in the use of health information science designed to improve patient engagement, medical outcomes, and the healthcare decision-making process.

Data Integration and Exchange: Methods organizations have undertaken to develop and implement various clinical data integration and exchange activities, including use of standard data formats (e.g., continuity of care document or HL7) and vocabularies (e.g., SNOMED, LOINC, ICD-9).

Data Mining, NLP, Information Extraction: Research and application of data mining, natural language processing, information extraction to all areas of biomedical informatics to increase the amount of usable data and information that can be accessed from existing clinical patient databases.

EHRs and Achieving Meaningful Use: How to promote the successful and effective development, implementation, and evaluation of Electronic Health Records as the nation works toward ‘meaningful use’ of these systems.

Global eHealth: Approaches to Global eHealth challenges and the need for scalable HIT solutions, a global informatics workforce, and a scholarly network to support current and future leadership around the world.

Informatics Education and Workforce Development: Efforts to create a trained HIT workforce and to support the national build-out of clinical information systems and the informatics contributions embedded in this movement.

Informatics in Clinical Education: The application of information technology in health professional education and promotion of teaching informatics as a discipline.

Interactive Systems: Human-computer interaction (HCI) research, compelling designs, or innovative interactive technologies, including those that improve our understanding of the social and human elements of health technologies.

Policy and Ethical Issues: Unprecedented national HIT activity and ethical considerations are posed as more practitioners and the public interface with these technologies.

Public Health Informatics and Biosurveillance: Leading-edge approaches to disease detection, communications, workforce development, standards and interoperability, and best practices to combine the domains of health information science and technology with the practice and science of public health.

Imaging Informatics: The intersection of imaging science, biomedical engineering and biomedical informatics, including imaging ontologies, methodologies and techniques of image processing, standards for image information sharing, content-based image retrieval, decision support in image detection and interpretation, integration of genomic and drug information, computer-aided systems, and evaluations of image-based systems.

Simulation and Modeling: Computer-based simulation and modeling methodologies and tools as they can be applied within the field of biomedical informatics to help researchers and clinicians explore complex healthcare interactions.

Terminology and Standards: Complex issues surrounding standard syntax, semantics, and pragmatics of design, development and use of various application-specific and general purpose clinical terminologies.

Translational Bioinformatics and Biomedicine: Opportunities in biomedical informatics arise from the storage, retrieval, analysis, and dissemination of molecular and genomic information in a clinical setting.
**Accreditation**

AMIA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMIA designates this live educational activity for a maximum of 27.75 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

**Nursing Contact Hours**

Nursing contact hours will be provided by the University of Maryland School of Nursing Office of Professional Development. Total number of hours for tutorials, workshops and the Symposium is 27.75. The University of Maryland School of Nursing Office of Professional Development and Continuing Education is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center (ANCC) Commission on Accreditation.

**Learning Objectives**

The objectives of the AMIA 2011 Annual Symposium are to:

- Demonstrate and discuss issues related to the development, application, and evaluation of information technologies in medicine and health care.
- Provide a comprehensive portfolio of presentations that detail work, progress, and challenges in theoretical and applied information systems development.
- Improve knowledge and skill of attendees with respect to using, developing, and managing information technologies as they relate to medicine and health care.
- Present research and applied methodologies and results in the broad field of medical informatics.
- Promote information exchange among attendees.

**Who Should Attend**

Attendees of AMIA Symposia come from a variety of venues, notably from some of the most technologically innovative healthcare facilities in the world. Participants will include physicians, nurses, dentists, pharmacists, and other clinicians; health information technology professionals; computer scientists and systems developers; policy-makers; biomedical engineers and bioinformaticians; consultants and vendor representatives; medical librarians; academic researchers and scientists; and other professionals involved in the collection and dissemination of health information.

**Disclosure of Financial Relationships with any Commercial Interest**

As a sponsor accredited by ACCME, AMIA requires that everyone who is in a position to control the content of an educational activity disclose all relevant financial relationships with any commercial interest prior to the educational activity. ACCME considers relationships of the person involved in a CME activity to include financial relationships of a spouse or partner. Faculty and planners who refuse to disclose relevant financial relationships will be disqualified from participating in CME activity. An individual with no relevant financial relationship(s) must inform CME participants that no conflicts of interest or financial relationship(s) exist.

A special website will be set up to assist you in claiming your continuing education credits. Specific instructions are available at www.amia.org/amia2011.
Please join us for the State of the Association Meeting on Tuesday, October 25, from 12:15 to 1:30 pm. Many AMIA award presentations will be announced and presented at this session! Don’t miss the opportunity to cheer for your colleagues and students and their accomplishments.

Nancy M. Lorenzi, AMIA Board Chair, and Edward H. Shortliffe, AMIA President and CEO, will co-chair this session, designed to provide AMIA members and attendees with a state of the association overview. Topics will include work of the Board of Directors, new and continuing initiatives, and an update on AMIA’s strategic directions, finances and the election results.

**About AMIA Membership**

AMIA is the center of action for more than 4,000 health care professionals, informatics researchers and thought leaders in biomedicine, health care and science. AMIA serves as an unbiased, authoritative source within the informatics community and the health care industry. Through trusted science, education and practice in biomedical and health informatics, AMIA and its members are transforming health care.

AMIA connects a broad community of professionals and students interested in informatics. AMIA is the bridge for knowledge and collaboration across a continuum, from basic and applied research to the consumer and public health arenas. The association supports five domains:

- Translational Bioinformatics
- Clinical Research Informatics
- Clinical Informatics
- Consumer Health Informatics
- Public Health Informatics

As the voice of the nation’s top biomedical and health informatics professionals, AMIA members play a leading role in:

- Moving basic research findings from bench to bedside.
- Evaluating interventions across communities.
- Assessing the affect of health innovations on health policy.
- Advancing the field of informatics.

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Thanks to [Microsoft Research](#) for sponsoring the Award Presentations
The Signature Awards program recognizes AMIA members who have made significant contributions to the field at various stages of their careers.

**AMIA New Investigator Award**
Recognizes an individual’s early informatics contributions and significant scholarly contributions on the basis of scientific merit and research excellence. The criteria for nomination include significant scientific productivity in informatics prior to eligibility for fellowship in the College of Informatics, multiple significant scientific publications, and demonstrated commitment to AMIA.

**Kai Zheng**
Kai Zheng, PhD, Assistant Professor in the University of Michigan Schools of Public Health and Information, draws upon techniques from the fields of information systems research and human–computer interaction to study the use of information, communication, and decision technologies in patient-care delivery and management. Dr. Zheng’s recent work has focused on topics related to interaction design, workflow and sociotechnical integration, and diffusion and evaluation of health information technologies. His publications appear in JAMIA, and in the proceedings of both the AMIA Annual Symposium and the Association for Computing Machinery Conference on Human Factors in Computing Systems. Dr. Zheng received his PhD from Carnegie Mellon University, where his dissertation titled, “Design, Implementation, User Acceptance, and Evaluation of a Clinical Decision Support System for Evidence-Based Medicine Practice” received the 2007 William W. Cooper Doctoral Dissertation Award in Management/Management Science.

**Virginia K. Saba Informatics Award**
Recognizes a distinguished career with significant impact permeating the care of patients and the discipline of nursing. The Virginia K. Saba Informatics Award recipient demonstrates the use of informatics to transform patient care, visionary leadership, impact, enduring contribution to professional practice, education, administration, research, and/or health policy, and demonstrated commitment to AMIA.

**Rita D. Zielstorff**
Rita D. Zielstorff is an internationally recognized expert in clinical informatics, with over 35 years experience in the field. She began her informatics career in 1971 at the Laboratory of Computer General Hospital, where she worked as an investigator on grant-funded projects dealing with medication order entry, clinical documentation, and clinical terminologies. Subsequently, she moved to Partners Clinical Information Systems Research and Development in Boston, where she worked on clinical decision support, documentation, and terminology systems. In 2000, she became a clinical designer and product manager in e-health systems at Healthvision, Inc. There, her products included a patient portal, and a referral management system. She joined the consulting world in 2006 as a Manager in the Digital Health group at PricewaterhouseCoopers, LLC. Her client engagements included auditing the implementation of a clinical information system, evaluating a web-based portal for clinicians, and assisting an academic medical center to achieve promised benefits from their clinical information system.
Ms. Zielstorff, a registered nurse, is currently an independent consultant. She is lead author of more than 70 publications in nursing and healthcare informatics, dating back to 1975. The most recent is a chapter on consumers’ use of computers for health in Saba and McCormick’s Essentials of Nursing Informatics (5th edition), published Summer 2011. She has served on numerous committees of the American Nurses Association, JCAHO, the TIGER initiative, and others. She has been an active member of AMIA for more than 20 years, and has served as past chair of the Awards Committee, a founder of the Nursing Informatics Working Group, and on the JAMIA editorial board. She was elected a Fellow of the American College of Medical Informatics in 1990 and has served as its Treasurer.

**Don Eugene Detmer Award for Health Policy Contributions in Informatics**
Recognizes an individual who has made a significant singular contribution or series of contributions over the course of a career, exemplifying the expertise, passion, and spirit that Dr. Detmer has for health policy.

**Julie McGowan**
Julie J. McGowan holds a Ph.D. in Medical Education and an M.A. in Medical Iconography from the University of South Carolina, as well as an M.L.S. in Information Science from University of Maryland. Recently retired, she is Professor and Chair Emeritus of the Department of Knowledge Informatics and Translation at Indiana University School of Medicine, and Research Scientist at Regenstrief Institute, Inc. During a career that spanned nearly forty years, Dr. McGowan held administrative positions at four medical schools. At University of Vermont, Dr. McGowan was responsible for the development of VTMEDNET, the first comprehensive statewide health information network in the country. At Indiana University, Dr. McGowan served as director of the medical library, in addition to other duties. She earned recognition from the Medical Library Association in 1996 as the recipient of the Frank Bradway Rogers Award, presented to her for outstanding contributions in the application of technology to delivery of health science information, to the science of information, and to the facilitation of the delivery of health science information. Dr. McGowan was elected a Fellow of the American College of Medical Informatics in 2002.

Dr. McGowan’s work has had a national impact, not only affecting the four medical schools where she served with excellence, but also through her research on the effect of health IT and HIE on health care, and through her work in policy formulation involving the medical informatics agenda. Throughout her career, Dr. McGowan’s professional passion has been public policy and its effect on clinical informatics, and effective, efficient, and evidence-based information dissemination. A proud veteran of the first HIPAA ‘wars’, she recently completed five years of service as Chair of AMIA’s Public Policy Committee. She also served as steering committee chair for AMIA’s 2010 Invitational Policy Meeting.
**Donald A.B. Lindberg Award for Innovation in Informatics**

Recognizes an individual at any career stage for a technological, research, or educational contribution that advances biomedical informatics. Dr. Lindberg’s continuous commitment to the field dramatically altered the scope and extent of informatics practice and research. The recipient of this award will have earned recognition for work conducted in a non-profit setting; adoption of the particular informatics advancement will be on a national or international level.

**R. Scott Evans**

R. Scott Evans is a Senior Medical Informaticist Consultant in the department of Medical Informatics at Intermountain Healthcare and a Professor in the Department of Biomedical Informatics at the University of Utah, Salt Lake City, Utah. Dr. Evans’ major interests have been in the design, development, implementation and evaluation of computerized decision support tools for the selection and management of anti-infective agents, computer methods to identify and reduce adverse drug events, adverse medical device events and venous thrombotic events, computerized methods to identify patients needing isolation, and computerized methods to identify and reduce hospital-acquired infections and to report notifiable diseases. A number of these computerized tools are clinically operational at all 22 hospitals at Intermountain Healthcare, where Dr. Evans contributes to a number of enterprise-wide, patient safety-related committees and clinical programs. He also serves on a number of graduate student committees, teaches Clinical Research and Decision Support in the Biomedical Informatics Department and lectures on Computerized Decision Support to first-year medical students at University of Utah. He is a reviewer for a number of medical informatics, clinical and patient safety journals, and has published over 100 articles, most on topics involving Medical Informatics, including New England Journal of Medicine, JAMA and CHEST.

Dr. Evans received his BS degree in Zoology, his MS degree in Microbiology/Parasitology from Brigham Young University, and his PhD in Medical Biophysics & Computing from the University of Utah. He is a Fellow in the American College of Medical Informatics and sits on editorial boards of JAMIA and the Annals of Pharamcotherapy. He also was on the Institute of Medicine’s Committee for the “Identification and Prevention of Medication Errors.” He currently serves AMIA as an officer on its Board of Directors (Treasurer and a member of the Executive Committee), as well as serving as Chair of the Scientific Program Committee for the AMIA 2011 Symposium. Last year, Dr. Evans’ paper, “Infusion Pump Programming Errors,” was nominated for Best Paper at MedInfo in South Africa. In 2008, he served as Vice Chair of Applications for the AMIA Annual Symposium and has served on a number of AMIA scientific program committees prior to that. He received AMIA’s “Distinguished Poster Award” in 2005, and in 1997 received the Osler’s Cloak Award for excellence in caring and curing from Intermountain Health Care. In 1993, he received the “Priscilla M. Mayden Award” for outstanding contribution in the field of Medical Informatics. In 1992, he won “Best Paper Award” at the AMIA Symposium.
Morris F. Collen Award of Excellence

In honor of Morris F. Collen, a pioneer in the field of medical informatics, this prestigious award is presented by the American College of Medical Informatics (ACMI) to an individual whose personal commitment and dedication to medical informatics has made a lasting impression on the field. The award is determined by ACMI’s Awards Committee.

William Tierney, MD

William Tierney, MD, is President and CEO of the Regenstrief Institute, Inc. He also is Chancellor’s Professor and holds the Sam Regenstrief Chair in Health Services Research at the Indiana University School of Medicine, where he serves as Associate Dean for Clinical Effectiveness Research. He is the Chief of the Internal Medicine Service at Wishard Memorial Hospital and Wishard Health Services, the third largest safety-net healthcare system in the United States. Dr. Tierney’s research focuses on implementing electronic health record systems (EHRs) in hospital and outpatient venues in Indiana and in East Africa, where his team of developers implemented sub-Saharan African’s first ambulatory EHR. With the engagement of EHR developers from the Regenstrief Institute, Partners in Health, and the Research Council of South Africa, this system has grown to support a network in Kenya of more than 50 primary care clinics, containing more than 100 million observations from more than 3 million visits for more than 300,000 patients; moreover, the system has expanded to become OpenMRS, the most widely implemented open-source EHR in the developing world. Dr. Tierney helped implement one of the first computer-based provider order-entry systems in the U.S. in Wishard Health Services and has used it and other computer-based tools to enhance the quality and efficiency of health care. Dr. Tierney is a member of the Institute of Medicine, a Master of the American College of Physicians, a Fellow of the American College of Medical Informatics, and a former President of the Society of General Internal Medicine. In 2010, he became the second President and CEO of the Regenstrief Institute, Inc., one of the oldest and most productive research organizations in the U.S., focusing on enhancing the quality, effectiveness, and efficiency of care.

Dr. Tierney’s career has consistently reflected excellence. He earned his medical degree at Indiana University School of Medicine in 1979 in internal medicine and completed a post-doctoral fellowship at Regenstrief Institute for Health Care. Since 1980, he has published scores of research papers and has been the Principal Investigator or Co-investigator on dozens of research grants and awards. He was elected an ACMI Fellow in 1988 and was elected a member of the Association of American Physicians in 2001. He has served on numerous editorial boards, including a five-year term on JAMIA’s.

Earlier this year, Dr. Tierney was recognized for “major contributions to patient care in the field of clinical epidemiology” by the American College of Physicians. He won recognition for “Best Paper” at Medinfo last year, along with the Robert J. Glasser Award from the Society of General Internal Medicine for “exceptional contributions to education and research in generalism.” In 2006, he was elected to the Institute of Medicine, National Academy of Sciences.
The Awards Committee recognizes notable and distinguished papers from the Annual Symposium. Distinguished papers are awarded at the Annual Symposium but contain no ordinal designation. Student Paper Competition finalists are not eligible. The following papers have been nominated:

**Automated Medication Reconciliation and Complexity of Care Transitions**  
P. Bozzo Silva, E. Bernstam, J. Herskovic, E. Markowitz, J. Zhang, The University of Texas Health Science Center at Houston; T. Johnson, The University of Texas Health Science Center at Houston/University of Kentucky College of Public Health (S87)

**A Multi-site Content Analysis of Social History Information in Clinical Notes**  
E. Chen, I. Sarkar, University of Vermont; S. Manaktala, G. Melton, University of Minnesota (S75)

**Applying Active Learning to Assertion Classification of Concepts in Clinical Text**  
Y. Chen, S. Mani, H. Xu, Vanderbilt University (S74)

**In Search of Common Ground in Hand-off Documentation in an Intensive Care Unit**  

**Comparison of OWL and SWRL-based Ontology Modeling Strategies for the Determination of Pacemaker Alerts Severity**  
O. Dameron, P. Van Hille, L. Temal, Université de Rennes/INSERM; A. Rosier, Université de Rennes/INSERM/Institut Catholique Lillois; L. Deleger, C. Grouin, P. Zweigenbaum, LIMSI-CNRS; A. Burgun, Université de Rennes/INSERM (S52)

**All Health Care is Not Local: an Evaluation of the Distribution of Emergency-Department Care Delivered in Indiana**  
J. Finnell, M. Overhage, S. Grannis, Regenstrief Institute & Indiana University (S55)

**The EpiCanvas Infectious Disease Weather Map: an Interactive Visual Exploration of Temporal and Spatial Correlations**  
P. Gesteland, University of Utah School of Medicine; Y. Livnat, N. Galli, Scientific and Computing Imaging Institute; M. Samore, A. Gundlapalli, University of Utah School of Medicine (S97)

**A Legal Framework to Enable Sharing of Clinical Decision Support Knowledge and Services Across Institutional Boundaries**  
T. Hongsermeier, S. Maviglia, Partners HealthCare System and Harvard Medical School; L. Tsurikova, D. Bogaty, Partners HealthCare System; R. Rocha, H. Goldberg, Partners HealthCare System and Harvard Medical School; S. Meltzer, Partners HealthCare; B. Middleton, Partners HealthCare System and Harvard Medical School (S19)

**Complex Disease Networks of Trait-associated SNPs Unveiled by Information Theory**  
H. Li, Y. Lee, J. Li, J. Chen, E. Rebman, K. Regan, Y. Lussier, University of Chicago (S27)

**Lexically Suggest, Logically Define: Quality Assurance of the Use of Qualifiers and Expected Results of Post-Coordination in SNOMED CT**  
A. Rector, L. Iannone, University of Manchester (S09)

**A Vector Space Model-based Approach to Identify Genetically Similar Diseases**  
I. Sarkar, University of Vermont (S27)
Structured vs. Unstructured: Factors Affecting Adverse Drug Reaction Documentation in an EMR Repository
S. Skentzos, M. Shubina, J. Plutzky, Brigham and Women’s Hospital; A. Turchin, Partners HealthCare (S63)

Search Filter Precision Can be Improved by NOT-ing Out Irrelevant Content
N. Wilczynski, K. McKibbon, R. Haynes, McMaster University (S37)

Distinguished Paper Reviewers
The Annual Symposium Scientific Program Committee recognizes the following individuals for their outstanding service in providing exceptional reviews during the manuscript peer-review process.

Lawrence Afrin
Alan Aronson
Olivier Bodenreider
Emily Campbell
Donna DuLong
W. Ed Hammond
Andrea Hartzler
William Hogan
George Kim
Predrag Klasnija
Madhu Reddy
Katie Siek
Kim Unertl

THE MARTIN EPSTEIN AND STUDENT PAPER AWARDS

The Martin Epstein and Student Paper Awards are issued in recognition of best student papers at the Annual Symposium. Student papers are selected by the Annual Symposium Scientific Program Committee and forwarded to the Student Paper Advisory Committee (SPAC) who nominate eight finalist papers for presentation at the Student Paper Competition. Based on a combination of the written paper and oral presentation, the judges select a first-, second-, and third-place paper. If the first-place paper is truly extraordinary, the SPAC awards the Martin Epstein Award. Oral presentations of the Student Paper Competition take place on Sunday, October 23, 8:00 am - 12:00 pm in the International Ballroom West.

Student Paper Competition Finalists:

Automated Plan-recognition of Chemotherapy Protocols
H. Bhatia, M. Levy, Vanderbilt University School of Medicine (S61)

Naïve Electronic Health Record-based Phenotype Identification for Rheumatoid Arthritis
R. Carroll, Vanderbilt University School of Medicine; A. Eyler, Vanderbilt University Medical Center; J. Denny, Vanderbilt School of Medicine (S84)

Evaluating Effectiveness of Clinical Alerts: A Signal Detection Approach
M. Ong, E. Coiera, University of New South Wales (S94)

Exploring Schizophrenia Drug-gene Interactions through Molecular Network and Pathway Modeling
D. Putnam, J. Sun, Z. Zhao, Vanderbilt University School of Medicine (S08)

Extracting Temporal Constraints from Clinical Research Eligibility Criteria Using Conditional Random Fields
Z. Luo, S. Johnson, C. Weng, Columbia University; A. Lai, The Ohio State University (S61)

Similarity-based Disease Risk Assessment for Personal Genomes: Proof of Concept
J. Woo, Columbia University; A. Lai, The Ohio State University; C. Weng, Columbia University (S27)

Attribute Utility Motivated k-anonymization of Datasets to Support the Heterogeneous Needs of Biomedical Researchers
H. Ye, E. Chen, University of Vermont (S19)
Evaluating Measures of Redundancy in Clinical Texts
R. Zhang, S. Pakhomov, B. McInnes, G. Melton, University of Minnesota (S16)

AMIA provides a series of merit awards each year for research work submitted to its Annual Symposium through a peer-review process.

Diana Forsythe Award
Honors either a peer-reviewed AMIA paper published in the Proceedings of the Annual Symposium or peer-reviewed article published in JAMIA or other journals publishing medical informatics-related content that best exemplifies the spirit and scholarship of Diana Forsythe’s work at the intersection of informatics and social sciences with a cash prize. Selection is determined by a sub-committee of the AMIA Awards Committee and the AMIA People and Organizational Issues Working Group, with the award presented annually at the AMIA Annual Symposium. The following papers have been nominated.


Harriet H. Werley Award
A cash prize is presented to the paper presented at the AMIA Annual Symposium with a nurse as first author that is judged to make the greatest contribution to advancing the field of nursing informatics. The candidate papers are recommended by the AMIA Annual Symposium Scientific Program Committee, and the selection of the recipient is made by a special committee within the AMIA Nursing Informatics Working Group. The following paper has been nominated.

Representation of Nursing Terminologies in UMLS
T. Kim, A. Coenen, University of Wisconsin-Milwaukee; N. Hardiker, University of Salford; C. Bartz, University of Wisconsin-Milwaukee (S07)

Nursing Informatics Working Group Award
Honors a student who demonstrates excellence in nursing informatics and who has the potential to contribute significantly to the discipline of nursing and health informatics. The candidate papers are recommended by the AMIA Annual Symposium Scientific Program Committee, and the selection of the recipient is made by a special committee within the AMIA Nursing Informatics Working Group. The following papers have been nominated.
In Search of Common Ground in Hand-off Documentation in an Intensive Care Unit

A Dynamic Classification Approach for Nursing
N. Hardiker, University of Salford; T. Kim, A. Coenen, K. Jansen, University of Wisconsin-Milwaukee (S07)

Homer R. Warner Award
The Homer R. Warner Award is named for Homer R. Warner, MD, PhD, a pioneer in the field of informatics and the founder of the Department of Medical Informatics at the University of Utah. A cash prize is awarded for the paper chosen at the AMIA Annual Symposium that best describes approaches to improving computerized information acquisition, knowledge data acquisition and management, and experimental results documenting the value of these approaches. The candidate papers are drawn from the distinguished paper nominees recommended by the AMIA Annual Symposium Scientific Program Committee, and the selection of the recipient is made by the University of Utah Department of Biomedical Informatics.

Distinguished Poster Awards
The Awards Committee recognize between two and ten distinguished posters with awards. Posters are selected by the Annual Symposium Poster Committee and forwarded to a committee that judges nominated posters during sessions held at the Annual Symposium. A ribbon is displayed on the board for nominated work.
The transformation of the American healthcare system and the future of the biomedical and health informatics profession are dependent on workforce education and development. AMIA is committed to the education and training of a new generation of clinical, public health, research and translational bioinformatics professionals who will lead the deployment and use of advanced clinical computing systems.

Founded in 2005, AMIA’s 10x10 program originally aimed to train at least 10,000 healthcare professionals in applied health and medical informatics during the ensuing 10 years. Now, having trained nearly 2,000 students, this distance-learning program is geared to train “next-generation informatics leaders.” 10x10 training is conducted across the United States by AMIA, in collaboration with key academic partners in the biomedical and health informatics education community.

Program Summary

AMIA’s 10x10 courses cover the following topics:
• Clinical or health informatics
• Clinical research informatics
• Translational bioinformatics
• Nursing informatics
• Public Health informatics

In-person sessions for 10x10 courses held earlier this year are convened at the Annual Symposium. These sessions provide additional lectures, panel discussions, project work, and an opportunity for students to interact with faculty and with one another.

Program Objectives

• Provide introductory level informatics knowledge/education for health care professionals who are in a position to advise or apply informatics-rooted solutions to problems encountered in their health care practice settings.
• Raise awareness of the importance and role of informatics in answering the health information technology training challenge across the clinical informatics, public health/population informatics, and translational bioinformatics domains.
• Promote information exchange about AMIA’s member institutions currently providing education and training opportunities in informatics.
• Prepare individuals for further professional training.

10x10 Partners

Kansas University Medical Center (KU)
Nova Southeastern University (NSU)
Oregon Health & Science University (OHSU)
Stanford University
The Ohio State University (OSU)
University of Alabama at Birmingham (UAB)
University of Illinois at Chicago (UIC)
University of Minnesota School of Nursing (UMN)
University of Texas Health Science Center at Houston (UTH)
University of Utah (Utah)
American Dietetic Association (ADA)
American College of Emergency Physicians (ACEP)

Upcoming Courses:

10x10 with OHSU – November 30, 2011 – March 7, 2012
This course provides a detailed overview of informatics to those who will work at the interface of healthcare and information technology. It provides a broad understanding of the field from the vantage point of those who implement, lead, and develop IT solutions for improving health, health care, public health, and biomedical research.
10x10 with OSU – January 6 – March 16, 2012
The Department of Biomedical Informatics at The Ohio State University will offer its Introduction to Clinical Research Informatics (CRI) starting January 6, 2012. The course provides students with a survey of the rapidly emerging field of clinical research informatics. In addition to defining the CRI domain and highlighting the key challenges and opportunities facing CRI, students will be exposed to key models, approaches, tools, regulatory/ethical issues and initiatives driving CRI developments and practice. Registration will open October 2011.

10x10 with University of Kansas Medical Center (KUMC)
January 30 – April 29, 2012
Introduction to Health Informatics
Led by Helen Connors, PhD, RN, FAAN, this course provides a broad survey of health informatics focused on five themes: health informatics foundations; clinical decision support; human/organizational factors; public health informatics and current issues in health informatics including best practices.

10x10 with University of Utah
February 1 – May 28, 2012
Public Health Informatics (PHI)
Offered through its Department of Biomedical Informatics, an introductory survey course on PHI. This course introduces public health, IT, and informatics practitioners to informatics principles and their application. Targeted to individuals in population/public health informatics, in clinical or public health settings. Directed by Catherine Staes, PhD, MPH.

Registration
Please see www.amia.org/education/10x10-courses to register online, view full course descriptions, and to view additional course dates.
AMIA’s Industry Advisory Council (IAC) brings together AMIA’s Corporate Partners on Industry Day to exchange information, improve communication and build partnerships and collaborative opportunities on a pre-competitive basis. The IAC is an objective, professional, and ethical forum, where AMIA and industry collaborate on issues of mutual interest to bring an essential and influential industry perspective to AMIA and its Board. IAC membership is currently open to all Corporate Partners. Industry Day represents a demonstrated commitment to furthering discussion on important informatics issues that have an impact on the marketplace.

**SPECIAL EVENTS**

8:30 – 10:00 am  Keynote Address – Gregory Abowd (reserved seating for corporate guests)

5:00 – 6:30 pm  Industry Advisory Council Meeting

6:30 – 7:30 pm  Corporate Reception

**SCIENTIFIC SESSIONS**

10:30 am – 12:00 pm  S12: Common Framework for Secondary Uses of Data: Next-generation Models for Sharing Real-world Evidence

1:45 – 3:15 pm  S22: mHealth Innovations: The Impact of Remote Monitoring and Adherence Devices on Care Delivery and Healthcare Research

3:30 – 5:00 pm  S33: Desperately Seeking Informaticians: How Today’s Employers are Building the Global Informatics Workforce

*Denotes Industry Day session*

For more information on AMIA’s corporate program please contact Jonathan Grau at jonathan@amia.org.
Corporate Partnership has given the following companies terrific opportunity to develop relationships with established and emerging thought leaders in informatics, to access the academic and research institutions they represent, and to initiate meaningful collaboration with future trading partners. AMIA will help your organization continue to develop and expand its programs, products, and services with cutting-edge information and research, regular accessibility to the nation’s healthcare leaders, and regular membership in one of the most influential professional societies in health care.
## Committee Meetings

<table>
<thead>
<tr>
<th>Committee</th>
<th>Date/Time</th>
<th>Room</th>
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</thead>
<tbody>
<tr>
<td><strong>Awards Committee</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Holmead</td>
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<tr>
<td><strong>Bylaws Committee</strong></td>
<td>Monday, Oct. 24</td>
<td>Albright</td>
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<tr>
<td><strong>Education Committee</strong></td>
<td>Monday, Oct. 24</td>
<td>Gunston</td>
</tr>
<tr>
<td><strong>Ethics Committee</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Independence</td>
</tr>
<tr>
<td><strong>Finance Committee</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Jay</td>
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<tr>
<td><strong>International Affairs Committee</strong></td>
<td>Monday, Oct. 24</td>
<td>Independence</td>
</tr>
<tr>
<td><strong>Meetings Committee</strong></td>
<td>Monday, Oct. 24</td>
<td>Gunston</td>
</tr>
<tr>
<td><strong>Membership Committee</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Holmead</td>
</tr>
<tr>
<td><strong>Public Policy Committee</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Kalorama</td>
</tr>
<tr>
<td><strong>Publications Committee</strong></td>
<td>Monday, Oct. 24</td>
<td>Independence</td>
</tr>
<tr>
<td><strong>Working Group Steering Committee</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Fairchild</td>
</tr>
</tbody>
</table>

## Scientific Program Committees

<table>
<thead>
<tr>
<th>Conference</th>
<th>Date/Time</th>
<th>Room</th>
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</thead>
<tbody>
<tr>
<td><strong>2012 Summit on Clinical Research Informatics</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Kalorama</td>
</tr>
<tr>
<td><strong>2012 Summit on Translational Bioinformatics</strong></td>
<td>Monday, Oct. 24</td>
<td>Jay</td>
</tr>
<tr>
<td><strong>AMIA 2012</strong></td>
<td>Monday, Oct. 24</td>
<td>Northwest</td>
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</table>

## Other Business Meetings

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date/Time</th>
<th>Room</th>
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<tbody>
<tr>
<td><strong>ACMI Business Meeting</strong></td>
<td>Tuesday, Oct. 25</td>
<td>Cabinet</td>
</tr>
<tr>
<td><strong>AMIA Usability Task Force Meeting</strong></td>
<td>Sunday, Oct. 23</td>
<td>Kalorama</td>
</tr>
<tr>
<td><strong>ACMI Executive Committee</strong></td>
<td>Monday, Oct. 24</td>
<td>Boundary</td>
</tr>
<tr>
<td><strong>Industry Advisory Council</strong></td>
<td>Monday, Oct. 24</td>
<td>Holmead</td>
</tr>
<tr>
<td><strong>JAMIA Editorial Board</strong></td>
<td>Monday, Oct. 24</td>
<td>Lincoln East/Monroe</td>
</tr>
<tr>
<td><strong>NIWG Leadership Meeting</strong></td>
<td>Monday, Oct. 24</td>
<td>Jay</td>
</tr>
</tbody>
</table>
WORKING GROUP BUSINESS MEETINGS

Biomedical Imaging Informatics
Sunday, Oct. 23
5:30 – 7:00 pm
Room: Holmead

Clinical Decision Support
Tuesday, Oct. 25
5:30 – 7:00 pm
Room: Lincoln West

Clinical Information Systems
Sunday, Oct. 23
5:30 – 7:00 pm
Room: Jefferson West

Clinical Research Informatics
Monday, Oct. 24
7:30 – 10:00 pm
Room: International Ballroom East

Consumer Health Informatics
Sunday, Oct. 23
6:00 – 7:30 pm
Room: Georgetown

Dental Informatics
Sunday, Oct. 23
5:30 – 7:00 pm
Room: Independence

Ethical, Legal, & Social Issues
Monday, Oct. 24
5:30 – 7:00 pm
Room: Fairchild

Evaluation
Sunday, Oct. 23
5:30 – 7:00 pm
Room: Fairchild

Genomics
Tuesday, Oct. 25
5:30 – 7:00 pm
Room: Independence

Knowledge in Motion
Sunday, Oct. 23
6:00 – 7:30 pm
Room: Georgetown

Knowledge Representation and Semantics
Sunday, Oct. 23
7:30 – 10:00 pm
Room: Jay

Natural Language Processing
Sunday, Oct. 23
5:30 – 7:00 pm
Room: Cabinet

Nursing Informatics
Monday, Oct. 24
5:30 – 7:00 pm
Room: Jefferson West

Open Source
Sunday, Oct. 23
5:30 – 7:00 pm
Room: Lincoln West

People & Organizational Issues
Sunday, Oct. 23
5:30 – 7:00 pm
Room: Gunston

Pharmacoinformatics
Monday, Oct. 24
5:30 – 7:00 pm
Room: Gunston

Primary Care Informatics
Monday, Oct. 24
5:30 – 7:00 pm
Room Lincoln West

Public Health Informatics
Sunday, Oct. 23
7:30 – 10:00 pm
Room: Jefferson East

Student
Sunday, Oct. 23
7:30 – 10:00 pm
Room: Lincoln West
<table>
<thead>
<tr>
<th>Time</th>
<th>Suite A*</th>
<th>Suite B*</th>
<th>Suite C*</th>
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<tbody>
<tr>
<td><strong>Sunday</strong></td>
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<tr>
<td>4:00 – 6:00 pm</td>
<td>Pharmacoinformatics</td>
<td>Ethical Legal and Social Issues</td>
<td>Knowledge Representation and Semantics</td>
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<tr>
<td>6:00 – 8:00 pm</td>
<td>Clinical Information Systems</td>
<td>Primary Care Informatics</td>
<td>Knowledge Discovery and Data Mining</td>
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<tr>
<td>8:00 – 10:00 pm</td>
<td>Natural Language Processing</td>
<td>Consumer Health Informatics</td>
<td>Regional Informatics Action</td>
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<tr>
<td>10:00 pm – 12:00 am</td>
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<td>Evaluation</td>
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<td><strong>Monday</strong></td>
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<tr>
<td>12:00 – 2:00 pm</td>
<td>Natural Language Processing</td>
<td>Primary Care Informatics</td>
<td>Knowledge Discovery and Data Mining</td>
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<td>2:00 – 4:00 pm</td>
<td>Nursing Informatics</td>
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<tr>
<td>4:00 – 6:00 pm</td>
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<td>Ethical Legal and Social Issues</td>
<td>Knowledge Representation and Semantics</td>
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<tr>
<td>6:00 – 8:00 pm</td>
<td>Pharmacoinformatics</td>
<td>Clinical Information Systems</td>
<td>Regional Informatics Action</td>
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<tr>
<td>8:00 – 10:00 pm</td>
<td>Nursing Informatics</td>
<td>Consumer Health Informatics</td>
<td>Membership New Member Welcome</td>
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<td>Evaluation</td>
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<td><strong>Tuesday</strong></td>
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<td>12:00 – 2:00 pm</td>
<td>Education</td>
<td>Knowledge Discovery and Data Mining</td>
<td>Knowledge Representation and Semantics</td>
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<tr>
<td>10:00 pm – 12:00 am</td>
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<td>Evaluation</td>
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* Look for suite numbers on site
Sunday, 3:30 – 5:00 pm

**LB1 - Sorrell v. IMS Health**
Douglas Peddicord, Washington Health Advocates; Kenneth W. Goodman, University of Miami; additional panelists to be announced.

Last year, the U.S. Supreme Court issued an opinion in Sorrell v. IMS Health, in which Vermont law restricts pharmacies from selling doctor-patient prescription information to data-miners and pharmaceutical companies, but allows the dissemination of this information for healthcare research and other exceptions. This session will provide an overview of the case and the Supreme Court decision as a jumping-off point to explore significant implications related to Health Information Exchange (HIE) and healthcare database activities important to the informatics community.

Monday, 10:30 am – 12:00 pm

**LB2 - AMIA’s Code of Ethics: Professionalism, Patient-Centeredness and Best Practices**
Kenneth W. Goodman, University of Miami; Peter Embi, The Ohio State University; Carolyn Petersen, Mayo Clinic; Peter Winkelstein, University of Buffalo

The AMIA Ethics Committee has significantly updated the AMIA Code of Ethics, which was previously published in JAMIA. This session includes members of the committee who will summarize key elements in the revised code, emphasizing the updates that have been developed in response to the changing landscape in HIT and informatics practice.

Tuesday, 10:30 am – 12:00 pm

**LB3 - Strategic and Policy Implications of Unintended Consequences of HIT and HIE**
Meryl Bloomrosen, AMIA; Julie McGowan, Regenstrief Institute and Indiana University; Elizabeth Belmont, MaineHealth; Dean Sittig, UT Health Houston

Many factors can potentially affect adoption or use of health information technology (HIT) and/or exchange of Health Information Exchange (HIE). The DHHS recently announced additional efforts to enhance Consumer Engagement in patient care, and has issued proposed rules on patient access to laboratory data. The FDA has issued Draft Guidance on Mobile Medical Applications. This session will explore the achievement and benefits of exchanging health information, mitigating business risk for adopters, and market-mediated changes, followed by a moderated panel discussion.

Tuesday, 3:30 pm – 5:00 pm

**LB4 - Usability of Clinical Systems**
Jiajie Zhang, UT Health Houston; Madhu Reddy, Pennsylvania State University; Blackford Middleton, Partners Healthcare System, Brigham and Women’s Hospital and Harvard University; Matt Quinn, National Institute of Standards and Technology; Kathy Kenyon, U.S. Department of Health and Human Services

This session will feature: Jiajie Zhang, speaking on behalf of the ONC-funded SHARP-C group from UT Health Houston; Madhu Reddy, speaking on behalf of the Association for Computing Machinery Special Interest Group on Computer Human Interaction (ACM SIGCHI) and reporting on the jointly sponsored WISH workshop being held at AMIA 2011; Blackford Middleton, speaking on behalf of the AMIA Usability Task Force; Matt Quinn, speaking on behalf of National Institute of Standards and Technology (NIST) and their usability guideline-development efforts; and Kathy Kenyon, speaking on behalf of the HHS/Office of the National Coordinator on HIT (ONC) and their efforts to encourage and assure usability of EHR systems.
8:30 am - 4:30 pm

The EHR Usability Symposium 2011, “Present and Future of EHR Usability”
Room: Georgetown East

EHR usability is a major barrier to the adoption and meaningful use of EHR. AMIA members are invited to attend a collaborative discussion to learn about the science of EHR usability, the methods to improve the status quo, the innovations that could radically improve EHR usability, the policy implications of EHR usability, and the perspectives of EHR vendors.

By the end of the symposium, participants will be able to:
• Understand usability as a science.
• Learn about the implications of EHR usability for the adoption and meaningful use of EHR.
• Learn about the current and future approaches to EHR usability.
• Learn about the perspectives of federal agencies and EHR vendors.

Participants will have ample opportunity to interact with usability experts, representatives from industry, federal agencies and researchers from the ONC-sponsored SHARPC project.

You are a prospective attendee if you are a consumer, vendor, usability professional, academic, researcher or practitioner. For more information please visit www.sharpc.org

3:00 – 6:00 pm Registration Open

Doctoral Consortium on Sociotechnical Issues in Biomedical Informatics
Room: L'Enfant

The AMIA People and Organizational Working Group, along with the International Medical Informatics Association’s (IMIA) Organizational and Social Issues Working Group is proud to sponsor the 2011 Doctoral Consortium on Sociotechnical Issues in Biomedical Informatics.

The Doctoral Consortium is a forum in which doctoral students can meet and discuss their work with a panel of experienced researchers. We welcome applicants from a broad range of disciplines and approaches that inform biomedical informatics, including the social sciences, humanities, computer and information sciences, clinical sciences, law, and related fields. Applicants should be past the candidacy stage and near their thesis proposal defense. If you would like to apply but do not meet this criteria, please contact the Consortium Chair. The Consortium committee will select approximately 10-12 participants who will be expected to give short, informal presentations of their work during the Consortium. http://faculty.ist.psu.edu/reddy/amia
NIWG Symposium: Human Factors, Modeling, and Workflow: Methods for Implementing Health Information Technology
Room: Georgetown East

Gregory L. Alexander, Sinclair School of Nursing; University of Missouri; Thomas Clancy, School of Nursing; University of Minnesota; Mical DeBrow, Siemens Medical Solutions; Rosemary Kennedy, Thomas Jefferson University School of Nursing

This activity explores three major areas: (1) the use of human factors science as a method to evaluate care delivery workflow and automation within health information technology (HIT); (2) the use of care delivery process modeling as a practical tool to optimize workflow efficiency and quality when implementing HIT; and (3) the application of best practices when implementing electronic workflow systems to streamline processes. Participants will learn methods to represent interprofessional care delivery processes and decision-making within the design and implementation of electronic workflow. Through hands-on exercises, participants will apply modeling principles to clinical scenarios such as bar-code medication management, clinical documentation, and transfer of responsibility of care. In addition to capturing data and providing decision support, HIT can facilitate the flow of information and completion of care activities, thereby improving quality and safety. Participants will learn how to maximize use of HIT to optimize workflow and decision-making.

Workshop on Interactive Systems in Healthcare/WISH 2011
Room: International Ballroom East

With growing emphasis on adoption and impact of Health IT (HIT), HIT researchers and practitioners are increasingly focusing on the design of interactive systems, human factors, and human–computer interaction. Despite this progress, however, there is largely untapped potential to create deeper and more profound connections among the biomedical, informatics, human–computer interaction, human factors, medical sociology and anthropology communities that would lead to the development of new methods, approaches, and techniques for removing the barriers to the adoption of HIT.

To address this limitation, the Association of Computing and Machinery (ACM) Conference on Human Factors in Computing Systems (CHI’2010) hosted the 2010 Workshop on Interactive Systems in Healthcare (WISH 2010 external link), which attracted over 150 participants from a variety of disciplines and institutions. Building on the success of last year’s workshop, AMIA is hosting WISH 2011 and co-locating it with the Annual Symposium. The workshop will feature invited talks, panels and a peer-reviewed technical program.

8:30 am – 12:00 pm Tutorials (Half-day tutorials are T01-T06 and T09-T14)

8:30 – 4:30 pm (Full-day tutorials are T07 and T08)
Pre Symposium Events and Tutorials

T01: Do You Believe in Angels? Intellectual Property, Entrepreneurship, and Early Stage Funding
Room: Georgetown West

Travis Good, HISTalkMobile, access.health, access.mobi, CarePilot; Seth Watkins, Steptoe & Johnson, Duke University; Whitney Winston, U.S. International Trade Commission

Covers the entire venture creation process, from idea generation to business organization, with special emphasis on the unique perspective of the Informatician. Whether attendees have already launched a successful venture, and need to think critically about next-generation opportunities, or have ideas that require further evaluation and development, all will learn how to protect IP and fund a start-up in an engaging, interactive experience. Participants will learn about different types of money, the difference between angel investors and VCs and how to find both, at what stage and under what circumstances entrepreneurs should consider seeking investment.

T02: Transforming & Visualizing Clinical Data for Research
Room: Jefferson West

Shawn Murphy, Massachusetts General Hospital

Using data collected in the clinical care domain for clinical research poses many challenges. Clinical data is diverse in structure and reliability. It is generated in truly massive quantities, but for consumption mostly by human eyes, not by machines. To be useful for clinical research, the data must usually be transformed to a machine-readable format. Considerations of sensitivity and specificity must be considered when performing these transformations. One then needs a systematic approach to organizing the data such that queries can be generated against seemingly disparate data. This usually translates into finding a suitable “atomic fact” and organizing the data into these discrete pieces. Finally, the data must be shown to clinical researchers and allowed to be queried in a format that provides insights into and hypothesis-testing of the data.

T03: Practical Modeling Issues Representing Coded and Structured Patient Data in EHR Systems
Room: Jefferson East

Stanley Huff, Intermountain Healthcare

This tutorial provides models for flexible representation of patient data; the proper roles for standard terminologies like LOINC, SNOMED CT, First DataBank, and RxNORM; approaches to handling pertinent negative findings and negation; support for pre-coordinated data entry, while storing the data in a post-coordinated database; and storage of data that belongs to another patient in the patient record.

The tutorial describes the need for formal data models for the EHR and how standard terminologies are used in the models. Starting with use cases encountered while developing EHR systems at Intermountain Healthcare, the instructors will discuss the basic name-value pair paradigm for flexible representation of patient data; the proper roles for standard terminologies like LOINC, SNOMED CT, First Data Bank, and RxNORM; approaches to handling pertinent negative findings and negation; support for pre-coordinated data entry, while storing the data in a post-coordinated database; and storage of data that belongs to another patient (baby or donor) in the patient record. There are no absolute prerequisites for this tutorial. However, those who have experience in designing, developing, configuring, and implementing EHR systems will find the tutorial more meaningful. Experience in modeling of medical data and knowledge of standard coded terminologies like SNOMED CT, LOINC, and RxNORM will also be very helpful.
The practices of teaching and learning are intimately related. The best practices in teaching relate to the best learning outcomes, and they follow from a combination of activities: encouraging faculty development as teachers; engaging students with high levels of thinking in their studies, using most current instructional methods available; and implementing regular, thoughtful, and periodic assessment procedures to provide ongoing feedback: to students about the progress of their learning, and to program faculty about how well their program is meeting its objectives. The best teaching, just like the best science and the best medicine, is a moving target and so the process of pursuing best practice is just a process, something fluid and dynamic that we all try to stay actively involved with as much as we possibly can.

Informatics is a multidisciplinary field and it lives equally in both the world of practice and the world of science. This is what makes the field complex in terms of training. As a science, it is concerned with the structuring and representation of knowledge and models of information processing in human beings and computers. Practice in informatics focuses on the design and implementation of systems and tools that facilitate the delivery of information, such as health care, and can be used to train practitioners as well as to support research.

This tutorial will attempt to capture the current status of the field in terms of instruction in Informatics, and the nature of what makes a successful training program, successful. Lectures and discussions will be lead by four faculty members, who have expertise in teaching and learning in informatics from variety of perspectives.

**T05: Personal Health Records, Patient Portals & Consumer-facing Health IT**
Room: Lincoln West

Patricia Flatley Brennan, University of Wisconsin-Madison; Jonathan Wald, Partners HealthCare System; Stephen Ross, University of Colorado Denver

As the HIT landscape continues to differentiate, consumer-facing health information technology solutions are assuming increasing importance in engaging people in self-care and disease management. Personal health-information tools provide lay people with access to subsets of their clinical records and with the health-information management tools needed for self-care and effective healthcare utilization. Taking on many forms, including PHRs, iPhone apps, patient portals, standalone applications, and Web 2.0 services, these innovative IT tools may also enable better access to healthcare systems resources, including health information, appointment scheduling, and provider communication, and personal health-tracking. Through case studies, this tutorial will introduce clinicians, systems administrators, and IT developers to critical issues regarding the design and deployment of PHRs and other personal health information management tools. During the tutorial, participants will have an opportunity to examine and critically evaluate existing tools & applications, explore patient portals, and discuss technical, ethical and policy considerations related to the deployment of personal health records tools. An update of the national environment and trends enabling (or interfering with) deploying IT tools for direct-to-consumer will be provided: meaningful use, privacy policies, payment schemes, and health reform. Participants are encouraged to appraise their institutions’ current plans for deploying consumer
Natural language processing (NLP) is the umbrella term used to describe the automated structuring and extraction of information formatted as free text. The demand for NLP technologies in medicine will grow significantly in the coming years. This growth will be fueled by the continuing adoption of the electronic medical record, increasing emphasis on quality measurement and improvement initiatives, and the growing need for evidence to be used as part of evidence-based medicine. This half-day tutorial is designed to introduce clinicians and informaticians to the practice, tools, techniques, and science of clinical NLP. Instruction will be hands-on, interactive, and case-driven. The tutorial will focus primarily on clinical NLP, although related uses and methods such as literature-based NLP and text mining will be discussed to lend context. Topics covered include: an overview of clinical NLP and its uses in medicine; a brief history of clinical NLP and the evolution of NLP methods; the challenges to NLP; the number of approaches used to process natural language, and the strengths and weaknesses of each; implementation considerations; creating annotated corpora as training/test sets; evaluation of NLP; and a review of open-source tools for NLP. Demonstrations and in-class exercises will be used to help tie the theory of NLP to every-day research problems addressed by these technologies. The tutorial will be taught by four instructors who are experienced as researchers, developers, and users of a variety of tools and approaches to clinical NLP. Users will also be exposed to several open-source technologies for clinical NLP, including the Unstructured Information Management Architecture (UIMA) and Knowtator for manual annotation. They will also experience, first-hand, the challenges of clinical NLP through manual annotation of de-identified patient records.

T06: An Introduction to Clinical Natural Language Processing, “Part 1” (Sponsored by AMIA Natural Language Processing Working Group)
Room: Lincoln East

Leonard D’Avolio, VA Boston Healthcare System, Harvard School of Medicine; Dina Demner-Fushman, National Library of Medicine; Wendy Chapman, University of Pittsburgh; John Pestian, Cincinnati Children’s Hospital Medical Center, University of Cincinnati

The CMIO community is an important segment for AMIA outreach. AMIA provides a combination of personal experience and anecdote with firm grounding in evidence-based biomedical informatics literature, informatics theory, foundational knowledge, and proven best practices, in a thoughtful and coherent educational setting. The following activity is designed as a precursor to the more in-depth, AMIA CMIO Boot Camp held annually over four days.

CMIO Informatics Workshop
1:00 – 4:30 pm
Room: Gunston

Program Committee: Paul Fu, Jr., Harbor-UCLA Medical Center; Gilad Kuperman, NewYork Presbyterian Hospital; Joseph Kannry, Mount Sinai Medical Center; Richard Schreiber, Holy Spirit Hospital

Program Faculty: Paul Fu, Jr., Harbor-UCLA Medical Center; Joseph Kannry, Mount Sinai Medical Center; Richard Schreiber, Holy Spirit Hospital; David Bates, Brigham and Women’s Hospital

This event introduces new and established CMIOs and others who play similar roles (such as Medical Directors for Information Systems, CNIOs, clinical leadership) to a set of topics that will help them carry out their professional responsibilities, and also provide them with a deeper understanding of the field of informatics. This
activity will help assure that their organizations realize the potential benefits that health IT can bring and also assure that the organizations will meet their meaningful use requirements. The activity focuses on maximizing value from your clinical systems/EHR implementation.

8:30 am – 4:30 pm

**T07: Clinical Classifications and Biomedical Ontologies: Terminology Evolution, Principles, and Practicalities**
Room: Monroe

Christopher G. Ghute, Mayo Clinic; James J. Cimino, National Institutes of Health; Mark Musen, Stanford University

Standardized terminologies and classification systems are an essential component of the information infrastructure that supports healthcare delivery and evaluation. Despite significant advances and increased motivation for the use of terminology systems, widespread integration of standardized terminologies into computer-based systems has not yet occurred. In this tutorial, we provide an overview of the state of the science related to terminologies and classification systems and demonstrate application of selected terminologies to a patient case study to highlight the strengths and weaknesses of various terminologies. Standardized terminologies alone are insufficient to achieve semantic interoperability. Consequently, the tutorial will include content designed to elucidate the relationships among standards for terminologies, information models, messages, and document and record structures. In addition, we will demonstrate the use of advanced terminology tools that facilitate the use of standardized terms in computer-based systems and provide an overview of significant international and national initiatives related to terminology systems.

**T08: Introduction to Biomedical and Health Informatics**
Room: Fairchild

Dominic Covvey, University of Waterloo; Christopher Cimino, Albert Einstein College of Medicine

This tutorial gives the 30,000-foot view of healthcare informatics through a combination of presentations and audience discussions. Experts in the field will describe the general principles, jargon, and major problems in each of a half-dozen healthcare informatics domains. The audience will be given a chance to struggle with some of these problems to gain a sense of the underlying intricacies.

The session will orient participants as to the content of the major healthcare informatics domains and how they interact. While participants should not expect to be able to start solving informatics problems based on this tutorial, they should have an understanding of what the problems are, which ones are attractive to them, and how they can acquire more knowledge and training to enter into the domain.

10:00 – 10:30 am Coffee Break

1:00 – 4:30 pm Tutorials

**T09: Connecting States to HIT: Health Information Exchange & Beacon Communities**
Room: Kalorama

Doug Fridsma, U.S. DHHS Office of the National Coordinator for Health Information Technology and Mark Frisse, Vanderbilt University

As the complexity and expense of healthcare services grows, new means must be identified to ensure that information necessary to support health care is available wherever and whenever decisions must be made.
PRE SYMPOSIUM EVENTS AND TUTORIALS

A shift in focus from a provider-centric perspective to a patient-centric perspective is an essential part of a broader effort to provide more effective care. To support high-quality patient-centered care, information must be exchanged among all parties involved in decision-making and care provision. Such exchange often runs counter to prevailing data management and control paradigms. This session will review how health information exchange can impact the American care-delivery system. It will address the rationale for exchange, means of realizing exchange, and methods to demonstrate impact. Beginning with an historical overview, the session will emphasize Federal initiatives to promote the exchange of information, lessons learned from pioneering efforts, new approaches and emerging trends. Specific federal, state, and private-sector initiatives will be emphasized. Standards adoption, project initiation, governance, management, evaluation, privacy, security, and sustainability issues will be discussed in detail. The sessions are designed to be highly interactive.

**T10: Sociotechnical Design and In-Situ Evaluation for Health Information Technology**
Room: Jefferson West

Sponsored by the Evaluation and the Ethical, Legal, and Social Issues (ELSI) Working Groups

Bonnie Kaplan, Yale University; Annette L. Valenta, James G. Anderson, University of Illinois–Chicago

Successful implementation depends on understanding how health information technologies actually are used in practice. Sociotechnical approaches are grounded in theory and are evidence-based. They provide a way to analyze what people actually do when working with these technologies and why they do it. They assess how an application and workflow influence each other, how clinical and patient roles relate to system use, and what unintended consequences, patient safety issues, or user responses might occur. On-going, in situ sociotechnical evaluation can identify and forestall problems. The methods also can help prevent difficulties through better system design and implementation practices. The tutorial will address how to identify challenges associated with designing and implementing both clinician-facing and patient-facing health information technologies. The presenters will draw on their own work and the experience of participants to engage participants in designing in situ evaluation for application development, implementation, and continued use. After some introductory didactic presentation, presenters and participants will discuss and design sociotechnical evaluations.

**T11: The Role of Informatics in New Healthcare Delivery Organizations: Medical Homes, ACOs**
Room: Lincoln West

David W. Bates, Brigham and Women’s Hospital and Partners Healthcare; Theresa Cullen, US Department of Health and Human Services; Judy Murphy, Aurora Health Care and Alliance for Nursing Informatics

Succeeding as an Accountable Care Organization (ACO) or Medical Home will require healthcare organizations to build an infrastructure capable of supporting care delivery and cost management across the continuum. This tutorial will examine the key components of these new healthcare delivery and cost models, highlighting the importance of health IT systems to support ongoing patient management, knowledge management and performance monitoring. Hear about obtaining NCQA Patient Centered Medical Home recognition by following their designated standards to organize care around patients, work in teams and coordinate and track care over time. This partnership between the patient and their healthcare team is facilitated by registries, information technology, and health information exchange to assure that patients get the indicated care when and where they need and want it in an appropriate manner.
Similarly, ACOs create incentives for health care providers to work together to treat an individual patient across care settings – including ambulatory settings, hospitals, and long-term care facilities. The Medicare Shared Savings Program will reward ACOs that lower growth in health care costs while meeting performance standards on quality of care and putting patients first and at the center of all care. Again, hear how this is facilitated through the use of registries, information technology, and health information exchange. The proposed ACO regulation from CMS/HHS published in March 2011 will also be discussed.

**T12: Knowledge-based Decision-support Systems for Implementing Clinical Practice Guidelines**  
Room: Lincoln East

Samson Tu, Stanford University; Mor Peleg, University of Haifa

This tutorial gives an overview of the issues involved in, methods for, and examples of implementing clinical decision-support systems for guideline-based care. Clinical practice guidelines, or more generally clinical recommendations, are summaries of evidence-based best practices. In recent years, there has been an explosion of published guidelines. Computer-based decision-support tools can enhance the implementation of these guidelines by bringing focused recommendations to care providers at the point of decision-making. This tutorial will first give a general introduction to the history and practice of clinical decision-support systems, and then look at alternative methods for representing and delivering clinical recommendations.

We will use examples of guideline-based knowledge-based systems that have been implemented to illustrate both technical aspects of system development and organizational aspects of deployment and integration into clinical workflow. The technical aspects will include the steps and problems involved in formalizing guideline recommendations in computable format, system architecture, and technical challenges of integrating an external application into a continually-changing IT environment. The organizational aspect will address successful strategies for implementing the system into multiple medical centers of a large healthcare network. Presentation will be mixed with exercises and demonstrations of actual clinical systems that can provide decision support to primary-care clinicians.

**T13: An Introduction to Clinical Natural Language Processing, Part 2: Interactive Demonstrations of Fundamental Concepts With Available Open-source Tools**  
Room: Jefferson East

Sponsored by the Natural Language Processing (NLP) Working Group

Leonard W. D’Avolio, Massachusetts Veterans Epidemiology Research and Information Center (MAVERIC) and Harvard Medical School; Wendy W. Chapman, University of California San Diego; Dina Demner-Fushman, U.S. National Library of Medicine; Guergana Savova, Children’s Hospital Boston, Harvard Medical School; Brett R. South, VA Salt Lake City Health Care System, University of Utah; Scott L. DuVall, VA Salt Lake City Health Care System, University of Utah

In “Introduction to Clinical NLP” Part 1, fundamental concepts of NLP are described. Part 2 advances attendees’ understandings by walking through each fundamental concept as part of performing end-to-end applications using available open-source NLP tools. The tutorial will follow a single clinical use case with variations provoking the use of several approaches to NLP. Demonstrations will be step-by-step and taught by NLP developers and researchers, including creators of some tools demonstrated.
This tutorial is about analyzing multiple and different genomic-data types. Bioconductor, a package repository for bioinformatics, contains 467 packages in addition to the 3,128 general-purpose packages from R. The wide array of possibility makes R a platform particularly suited for translational bioinformatics research. However, like other statistical software, the learning curve can be steep for some of us less versed in computer science. This tutorial is based on the successful workshop “Introduction to R programming” taught at Stanford. Participants will be introduced to the basics of the R language through practical examples from actual biomedical research projects. We will show advanced techniques on how different resources can be plugged into R to perform an analysis and to produce publication-ready graphics.

1:00 – 5:00 pm Special Event

10x10 at University of Minnesota In-person Session
Room: Holmead

2:30 – 3:00 pm Coffee Break
Room: Concourse

5:00 – 7:30 pm Workshops

Workshop 1: Just a Spoonful of Sugar: Improving Technology Change Success in Healthcare IT
B. Magda, V. Grady, George Washington University
Room: Georgetown East

In 2004, the White House mandated that medical facilities implement technology required to maintain electronic patient health information by 2014. The unique dynamics of the healthcare environment will challenge the timeline of the federal mandate. Magda (2009) notes that it is not only those implementing the new information systems that need to be technologically proficient, but it also will be crucial for employees maintaining health records to understand the comprehensive long-term objectives. In addition to the aforementioned technical challenges, many employees within these organizations will be confronted with organizational culture shifts in daily process and data flow within their respective organizations. With organizational change, failure rates approach 70% (Standish, 2009). It is critical, therefore, for the healthcare environment to embrace technology transformations, while maintaining a tight critical path to maximize potential for successful technology transition. This workshop will introduce the LOE Index (Grady, 2005), a quantitative diagnostic tool that identifies organizational symptoms typically experienced during a technology change, that unrecognized, can lead to an Organizational loss of effectiveness (LOE). Subsequently, utilizing the unique results of the LOE Index, the participants will be introduced to a qualitative process that creates a customized formula of leadership, communication, end-user involvement, and education.

Workshop 2: The Five-minute Hour: Online Clinical Interactions in the Era of Social Media
J. Reider, Twistle, Inc; M. Stuart, RWJ School of Medicine; H. Rippen, Westat; T. Agresta, University of Connecticut; H. Chueh, Massachusetts General Hospital; M. Weiner, University of Pennsylvania; S. Morgan, Partners HealthCare
Room: Jefferson West

Since the publication of the AMIA Guidelines for Clinical Use of Electronic Mail with Patients in 1998, e-mail has given way to Facebook, Twitter, and Skype, yet patients and clinicians remain separated by a chasm of legacy technology and clinician fears of an avalanche of uncompensated work. How can the clinical team provide true connected patient-centered care, while keeping
their heads above water? The same tools that helped a generation of primary-care physicians to compress a therapeutic hour into fifteen minutes can now provide a virtual compression of time, space, and presence. The BATHE framework helps physicians achieve shared understanding, ownership, and direction in their relationships with patients. This model can guide online clinical interactions to become fluid, ongoing relationships rather than a barrage of “extra work” for the harried clinician. The workshop will present a White Paper and a tool set. We will review the rationale for enhanced connectivity and collaboration among providers and patients, and introduce tangible processes that will enable participants to turn online interactions into a delightful component of the modern care-delivery environment.

Workshop 3: Security and Privacy
M. Gaynor, Saint Louis University
Room: Jefferson East

As we move from paper to Electronic Medical Records (EMRs), the technology of security and privacy has morphed from mostly physical to mostly electronic. Managers and practitioners must understand emerging security and privacy technologies to protect patient data and comply with federal regulations, such as HIPAA. Medical professionals, administrators of healthcare-related organizations, lawyers, and policy-makers require updated skills to protect patient privacy. Health care managers who have a basic understanding of privacy and security of health care information are vital to the success of EMRs. Without understanding how to protect and ensure accurate medical information, the public will not have confidence to allow their medical information to benefit public health. This workshop will consist of a simulation-based role-playing game allowing workshop participants to engage in the conceptual aspects of protecting EMRs. This hands-on approach provides workshop attendees with: an understanding of security; the ability to manage security and privacy infrastructure; an understanding of the basic concepts of privacy; an understanding of the unique aspects of privacy and security and its management in the health care industry; and an understanding of how to comply with HIPAA security and privacy regulations.

Workshop 4: i2b2/VA/Cincinnati Workshop on Natural Language Processing
O. Uzuner, University at Albany, SUNY; J. Pestian, University of Cincinnati; B. South, VA Salt Lake City Health Care
Room: Lincoln West

In 2011, i2b2 and the VA teamed with Cincinnati Children’s Hospital Medical Center, University of Cincinnati in organizing a two-track challenge on natural language processing. The i2b2/VA track of the challenge is focused on co-reference resolution on clinical records; the Cincinnati track is on data mining of emotions found in suicide notes. Both tracks are supported by annotated data that is provided by the organizers. This workshop will present the two tracks of the 2011 challenge, the results and evaluation of the systems developed for these challenges, and the state of the art in objective and subjective natural language processing.

Workshop 5: An Introduction to Agent Based Modeling (ABM) for the Health Sciences
J. Schindler, Northrop Grumman Corporation; J. Holmes, University of Pennsylvania
Room: Lincoln East

This workshop will provide attendees with an overview of the modeling process and the application of agent-based modeling (ABM) to the health sciences. We will: compare and contrast deterministic and ABM generative modeling approaches, examining how each can provide benefit to the modeler or researcher; provide an overview of the ABM model development process, looking at model concept development, model construction, model testing, and model dissemination; explore a sample of health science and public health models that
Workshop 7: Standards in Clinical Decision Support: Activities in Health Level Seven and Beyond
R. Jenders, National Institutes of Health; R. Jenders, Georgetown University; G. Del Fiol, University of Utah; K. Kawamoto, Duke University
Room: Fairchild

Health Level Seven (HL7) is the principal international HIT standards development organization (SDO). Prominent among its suite of standards are formalisms related to clinical decision support (CDS), including the Arden Syntax, GELLO, Infobutton, and Decision Support Service (DSS) standards. Continuing improvement of these standards and ongoing development of future decision-support standards require wide participation in order to maximize their success. Accordingly, the purpose of the workshop is twofold. First, the instructors will convey the latest developments regarding existing CDS standards and related efforts to develop new standards. Second, the instructors will solicit feedback so that attendees who do not participate in HL7 can have input into the standards activities of that organization while placing them in the context of other SDOs and harmonization efforts. The instructors of this workshop, who are co-chairs of the CDS Work Group of HL7, will review progress in these areas. They will present details of ongoing development of the extant HL7 standards and planned future ones, including an Order Set and Virtual Medical Record (vMR) standard. Finally, they will solicit discussion regarding the future direction of standards development in these areas.

Workshop 6: Electronic Health Record Facilitated Performance Measurement/Reporting
A. Jain, S. Hayden, Cleveland Clinic
Room: Monroe

Performance measurement and subsequent reporting of outcomes is critical in the current healthcare climate and a central focus of the EHR-incentive programs from CMS. The EHR and EHR-derived data are essential for efficient measurement and reporting of patient-specific process and outcomes measures. Governance issues, workflow consistency and technical challenges remain obstacles for institutions that have implemented an EHR for clinical purposes and that are now challenged with supporting local, regional and national quality initiatives. We illustrate the use of a multidisciplinary group at our institution to leverage our EHR-based clinical data repository for rapidly collecting, aggregating and validating patient-specific performance measures and outcomes. We will use local, regional and national reporting obligations, such as our Aligning Forces for Quality community, and the “meaningful use” EHR-incentive program to demonstrate our process. Finally, we will focus on overcoming governance and clinical workflow challenges, extending investments already made in the health IT infrastructure and developing a team to manage the complexity of secondary use of EHR data to measure quality.

Workshop 8: Should AMIA Revise Its Code of Ethics?
R. Hsiung, dr-bob.org
Room: Gunston

The AMIA Board of Directors approved a Code of Ethics in 2007. As its authors stated when it was published, “the code ... is a dynamic document. It will evolve as the field itself evolves.” In 2011, the AMIA Board approved a...
Conflict of Interest Policy. It is now considering revisions or updates to the Code of Ethics. The Conflict of Interest Policy will be enforced. One issue to consider is whether the Code of Ethics should also be enforced. The authors of the Code also stated, “adoption of a code of ethical conduct naturally raises the questions of compliance. What are the consequences of violating the code? How is the code enforced? The authors have suggested to the AMIA Board that these are issues best decided by the AMIA membership itself. In future forums, AMIA will initiate a dialog with its membership to seek consensus on this important topic.” This workshop is such a forum. Hypothetical scenarios involving possibly unethical conduct, including conflicts of interest, are discussed. Half of the time is reserved for dialog. The session concludes with an informal vote to assess progress toward consensus and to provide feedback to the AMIA Ethics Committee and Board of Directors.
T15: Embracing Healthcare IT Standards in the World of Meaningful Use
Room: Georgetown West

Charles Jaffe, HL7; Rebecca Kush, CDISC; Dixie Baker, SAIC; Blackford Middleton, Harvard-Partners; Chris Chute, Mayo Clinic; Stanley Huff, Intermountain Healthcare; and Robert Dolin, Semantically Yours, LLC

Healthcare IT Standards often have been viewed with only passing interest in the medical informatics community. The HITECH provisions of the ARRA legislation have brought their importance to the fore. These standards are essential if we are to achieve any of the regulatory provisions that require reuse of healthcare data. At the top of anyone’s list, the essential elements would include decision support, vocabulary binding, privacy and security, quality measurement, and clinical research integration. In the end, successful implementation of any solution is predicated on collaboration across standards developers, realizing both quality improvement and cost effectiveness.

T16: Developing Successful Informatics Research Grant Applications
Room: Georgetown East

Valerie Florance, National Library of Medicine; Eneida A. Mendonca, University of Wisconsin Madison; Justin B. Starren, Northwestern University

Success in obtaining research funding depends on many things, but especially an understanding of the priorities of the funding agency and preparing an application that addresses those priorities effectively. This tutorial will provide a broad overview on the grant process, from topic development to application submission to peer review and award decisions. Topics will include fundamentals of good grant writing, interpretation of a funding announcement (RFA), preparation of a grant application, different funding mechanisms, roles
and responsibilities of a principal investigator and key personnel, how to interpret and respond to reviewers’ comments, communication with grant program officers, analysis of reviews and strategies for response and re-application. The tutorial will cover general aspects of federally funded grants as well as grant opportunities provided by Foundations, but NIH will be the source of many examples. Faculty will share thoughts derived from their own experiences and from what they learned over the years writing and reviewing grant proposals. The faculty bring together many years experience spanning the roles of grant writer, grant reviewer, and NIH grant program officer.

**T17: Making Your Point: Effective Presentation and Visual Design Skills**  
Room: Jefferson West

Daniel Z. Sands, Cisco Internet Business Solutions Group, and Harvard Medical School

An important part of any career is giving presentations, yet many do it poorly, either ineffectively communicating the message, boring the audience, or both. And yet, presentation skills can be learned. Participants in this tutorial will learn effective presentation skills, learn best practices for slide design, and have the opportunity to try out skills. At some point, everyone needs to present their work, either orally or in written form. And surveys show that public speaking is a common phobia, and in some is more feared than death itself. Although writing for publication is taught at many stages of our careers, oral presentation skills get little attention. These skills are especially important since many people present more than they write for publication, and subsequently have many more opportunities to make an impression (either good or bad) and convey ideas. As a result, even many experienced veterans in the field give poor presentations. Yet presentation skills can be taught, practiced, and learned. The purpose of this tutorial is to raise the quality of presentations in our field, which will benefit both presenters and their audiences.

The format of the seminar will be a lecture and demonstration consisting of concrete advice, real-world examples and opportunities for attendee interaction. The presentation itself will incorporate principles being discussed, so the participants can better understand their application. After discussing presentation skills, there will be a discussion of the technologies that can be used, including some comments related to slide design and layout. Also in this tutorial, participants will be invited to do exercises to try what they have learned in a non-threatening environment. Finally, those who wish to bring their PowerPoint presentations can receive constructive critique from the instructor and class.

**T18: An Introduction to Data Mining Principles and Practice**  
Room: Cabinet

John H. Holmes, University of Pennsylvania

This interactive tutorial introduces attendees to the theory, tools, and techniques for discovering knowledge in biomedical data. Using a well-known data mining life cycle as a conceptual framework, attendees will experience first-hand, thorough demonstration and direct participation, the techniques of mining clinical data. These techniques include data preparation, description and visualization, feature selection, mining association, classification, prediction rules, and clustering. A variety of mining algorithms will be explored with each technique. The capstone of the tutorial will be the application of mined data to informing traditional statistical analysis. The tutorial will include hands-on experience in using Weka, a well-known open-source data mining software suite. Although not required, attendees will get the most out of the tutorial if they bring a laptop to the session to participate in the hands-on sessions. Instructions for downloading and installing Weka will be sent to registrants approximately one week prior to the tutorial.
T19: Introduction to Translational Bioinformatics
Room: Jefferson East

Atul Butte, Stanford University

In 2005, Dr. Elias Zerhouni, Director of the National Institutes of Health (NIH), wrote “It is the responsibility of those of us involved in today’s biomedical research enterprise to translate the remarkable scientific innovations we are witnessing into health gains for the nation... At no other time has the need for a robust, bidirectional information flow between basic and translational scientists been so necessary.” Clearly evident in Dr. Zerhouni’s quote is the role biomedical informatics needs to play in facilitating translational medicine. AMIA now hosts the Joint Summits on Translational Science; the Summit on Translational Bioinformatics is one of its two components. This tutorial is designed around the successful curriculum used in Stanford’s course in Translational Bioinformatics, one of the first courses to be offered in this field. This tutorial is designed to teach the basics of the various types of molecular data and methodologies currently used in bioinformatics and genomics research, and how these can interface with clinical data. This tutorial will address the hypotheses one can start with by integrating molecular biological data with clinical data, and will show how to implement systems to address these hypotheses. The tutorial will cover real-world case studies of how genetic, genomics, and proteomic data has been integrated with clinical data.

T20: Clinical Decision Support: A Practical Guide to Developing Your Program to Improve Outcomes
Room: Lincoln West

Robert A. Jenders, National Library of Medicine and Georgetown University; Jerome A. Osheroff, TMIT Consulting, LLC and University of Pennsylvania; Jonathan M. Teich, Elsevier Health Sciences and Harvard University; Dean F. Sittig, UT – Memorial Hermann Center for Healthcare Quality & Safety, University of Texas Health Science Center at Houston; Robert E. Murphy, Memorial Hermann Healthcare System and University of Texas Health Science Center at Houston

This tutorial will provide attendees with a practical approach to developing and deploying clinical decision support (CDS) interventions that measurably improve outcomes of interest to a healthcare delivery organization. The following key steps, including overcoming barriers, will be examined in detail: initiating an overall CDS program, including selecting appropriate CDS goals and enhancing organizational structures needed for CDS success in the context of current healthcare drivers and enablers; selectively implementing CDS technology to achieve a specific goal, with a focus on stakeholder and process analysis; knowledge management; and following up and monitoring CDS interventions. The role of national programs relevant to CDS, including knowledge-sharing, structured guidelines, and meaningful use, also will be explored. Special considerations in CDS for small clinical practices, for hospitals and health systems and for vendors will be explored. The systematic approach to CDS implementation will be presented in an interactive, case-oriented fashion, incorporating examples provided by tutorial leaders and participant’s experiences. The course content is drawn from the tutorial leaders’ popular and award-winning guidebook series on improving outcomes with clinical decision support, with newly revised material published this year.

T21: Evolving Privacy and Security Under HITECH
Room: L’Enfant

Soumitra Sengupta, Columbia University, New York-Presbyterian Hospital, and Columbia University Medical Center

Privacy and security of healthcare information were originally proposed under HIPAA, and were then revised under the HITECH Act in 2009. In parallel, information
technology and threats to the information have evolved significantly with the advent of mobility, cloud-computing, wireless and healthcare systems and devices. This tutorial considers these modern regulations and threat concerns, discusses associated risks, and proposes balanced and practical methods to address them. Examining information system components and divided but shared responsibilities of all stakeholders, an approach to privacy and security management is presented that is both reasonable and flexible.

**T22: Clinical Research Informatics: Theory, Methods, and Best Practices (Sponsored by AMIA Clinical Research Informatics Working Group)**

Room: Morgan

Philip Payne, The Ohio State University; Peter Embi, University of Cincinnati

This tutorial provides participants with a unique opportunity to increase their knowledge and understanding of core Clinical Research Informatics (CRI) theories and methods, as well as recent policy and funding developments, in the context of a rapidly growing and increasingly high-demand informatics practice domain. Clinical research is critical to the advancement of medical science and public health. Conducting such research is a complex, resource-intensive endeavor comprised of a multitude of actors, workflows, processes, and information resources. Recent national-level research and policy efforts have explicitly focused on increasing the clinical-research capacity of the biomedical sector, largely through fostering improvements in both workflow and information management infrastructure. These efforts have served to increase attention on clinical research throughout the governmental, academic, and private sectors. In the specific context of the intersection between biomedical informatics and clinical research, the emergence of both a notable body of literature and a set of targeted funding mechanisms such as the National Cancer Institute’s (NCI) Cancer Biomedical Informatics Grid (caBIG) and National Center for Research Resources (NCRR) Clinical and Translational Science Award (CTSA) programs have served as significant catalysts for the emergence of a robust sub-discipline of informatics focusing on clinical research applications, known as CRI.

In this tutorial, we provide researchers, technical leaders, and technical staff with an overview of core definitions and informatics theory that collectively contribute to the successful practice of CRI. We use a set of research vignettes to illustrate common challenges and opportunities in the CRI space and best-practice approaches to such scenarios, including: 1) the design and implementation of integrative clinical research information management systems; 2) the query of disparate enterprise and research information systems to support clinical research activities and information dissemination/reporting; and 3) the identification and recruitment of clinical research participants via multiple retrospective and prospective modalities.

**T23: Ontology-oriented Resources from the National Center for Biomedical Ontology**

Room: Lincoln East

Nigam H. Shah and Mark A. Musen, Stanford University

The National Center for Biomedical Ontology (NCBO) offers a range of Web services that allow users to access biomedical terminologies and ontologies, to use ontology terms to create pick lists and lexicons, to identify terms from controlled terminologies and ontologies that can describe and index the contents of online data sets (data annotation), and to recommend particular terminologies and ontologies that would be appropriate for data-annotation tasks. An ontology repository, known as BioPortal, provides a Web-based interface that allows users to visualize ontologies, to map the terms in ontologies to one another, and to provide public comments on ontologies that can guide ontology developers and
that can offer assistance to ontology users. This tutorial will provide hands-on experience in using the NCBO’s resources, and will offer participants in-depth understanding of how ontologies and terminologies are used to solve problems in biomedical informatics. The tutorial will demonstrate the use of NCBO resources to facilitate tasks such as semantic data integration, information retrieval, structured data entry, and knowledge management.

**T24: Designing Informatics Interventions for the Complex Adaptive System of Health Care**  
Room: Monroe

E. Coeira, Australian Institute of Health Innovation; D. Covvey, National Institutes of Health Informatics, University of Waterloo; R. Kolodner, Collaborative Transformations, LLC., Open Health Tools, Inc.; H. Lehmann, Johns Hopkins University

Introducing eHealth into our health system is a world-class challenge and a heavy investment. The activity increases the risk that we are pursuing a rate of change that our health system cannot safely attain, especially given a limited complement of competent informatics human resources, the possible underestimation of needed effort and investment, and our understanding of the complexity of the health system. This could set the stage for failure.

One challenge for informatics solutions is that healthcare delivery systems are complex adaptive systems. To appreciate the implications of this, we will explore the nature of complexity and what it implies for developing, introducing, and managing informatics interventions. In particular, we will question the current assumption that health care is a linear, non-interacting, predictable system and we will explore how complexity impacts our interventions. Then, we will provide aids that will better equip us to deal with the challenges we face.
the HIT Policy Committee. The HITPC Meaningful Use (MU) Workgroup makes recommendations to the HIT Policy Committee on how to define meaningful use in the short- and long-term; the ways in which electronic health records (EHRs) can support meaningful use; and how providers can demonstrate meaningful use. Several AMIA members and leaders serve as volunteers on the HITPC and/or its Work Groups. The panel presentation will provide insights into the status of MU deliberations, recommendations, and implementation.

S02 – Panel
Theme: Clinical Decision Support, Outcomes, and Patient Safety
Room: International Ballroom East

Infobuttons for Clinical Decision Support
H. Strasberg, Wolters Kluwer Health; G. Del Fiol, University of Utah; T. Yosick, Epic; C. Curtis, Department of Veterans Affairs

The HL7 context-aware knowledge retrieval (Infobutton) standard became an official, normative standard in June 2010. We will discuss this standard and its implementation from various perspectives. First, we will describe the standard itself, its history and its future direction. Standards are only successful if they are implemented, and in this case, the standard has been implemented by both electronic health record system vendors, healthcare organizations, and knowledge vendors. Each of these types of organizations will give a perspective on how they implemented the standard, what challenges they faced in doing so, and what future enhancements they would like to see. The standard allows for an optional knowledge-broker component called an Infobutton Manager. The Veterans Health Administration has developed an open-source Infobutton Manager called OpenInfobutton. The VHA will describe this project, its rationale and the vision for its future. Attendees will learn the details of the standard, the issues involved in implementing it and the role of an Infobutton Manager.

S03 – Panel
Theme: Clinical Workflow and Human Factors
Room: International Ballroom West

Dimensions of Hand-off Communication and Documentation: Implications for Patient Safety
J. Abraham, University of Texas, Houston; D. Kaufman, Columbia University; M. Reddy, The Pennsylvania State University; R. Koppel, University of Pennsylvania; N. Staggers, University of Maryland

Patient hand-off is a vital communication event that has increasingly been the subject of scrutiny with regard to matters of patient safety. Hand-off refers to transfer of care from one care provider to the next and involves three aspects: a transfer of information, responsibility, and authority. Despite its importance in the care-delivery process, hand-off practice varies considerably within and across care settings, and is sometimes considered an informal process. For example, hand-off is not routinely documented as a core part of the patient record. The four panelists will present current research on the different types of patient hand-offs, in terms of hand-off strategies adopted and their related challenges. Within hospitals, hand-offs occur at both individual (e.g. between nurses during shift reports) and collaborative (e.g., between teams during rounds) levels. The unifying theme across all the presentations will be on how the hand-off method influences the nature of clinical communication. This is a multidisciplinary panel of experts that draws on a wide range of perspectives including those derived from organization systems, computer-supported cooperative work (CSCW), sociology, and human-computer interaction (HCI). Using these unique perspectives, panelists will discuss their experiences and lessons learned in studying healthcare communication behaviors.

S04 – Panel
Theme: Data Mining, NLP, Information Extraction
Room: Jefferson West
Shared Annotated Resources for the Clinical Domain
G. Savova, Children’s Hospital Boston/Harvard University; W. Chapman, University of California San Diego; N. Elhadad, Columbia University; M. Palmer, University of Colorado at Boulder

Natural Language Processing (NLP) of the clinical narrative has been a major effort within medical informatics. Advances, however, have been hampered by the lack of shared, large annotated corpora to be leveraged for methods development and system evaluations. In the general domain, the gold standard annotated Penn Treebank (PTB) fostered truly revolutionary advances. Within the clinical domain, there are several recent, complementary initiatives to create shared annotated resources - the Shared Annotated Clinical Resource project, Strategic Health Advanced Research Project Area 4, Multi-source Integrated Platform for Answering Clinical Questions, the Temporal Relations in the Clinical Domain, Ontology Development and Information Extraction, and the Integrating Informatics and Biology to the Bedside initiatives. In each, care was taken to ensure common annotation schemas and guidelines, all compatible with PTB. The combined resources will contain 1.5 million tokens and will be available to the research community. Their availability is expected to energize the clinical NLP community as well as involve the general NLP community into porting best methods and practices to health care. The panel will report on progress on these efforts, discuss the use of existing community-adopted conventions and domain-specific types of annotations, as well as the implications of making the annotated corpus publicly available.

S05 – Papers: Clinical Education on Steroids
Theme: Informatics in Clinical Education
Room: Jefferson East
Session Chair: Martha Adams

Right Diagnosis, Wrong Care: Therapeutic Reasoning Errors in Emergency Care Computer-based Case Simulations
G. Schauer, D. Robinson, V. Patel, The University of Texas Health Science Center at Houston

Approaching the Limits of Knowledge: The Influence of Priming on Error Detection in Simulated Clinical Rounds
E. Razzouk, T. Cohen, K. Almoosa, V. Patel, The University of Texas Health Science Center at Houston

Family Physicians’ Completion of Scoring Criteria in Virtual Patient Encounters
W. Sumner, Washington University School of Medicine; T. O’Neill, G. Roussel, J. Xu, H. Fu, D. Ivins, University of Oklahoma; M. Hagen, American Board of Family Medicine

A Student-Authored Online Medical Education Textbook: Editing Patterns and Content Evaluation of a Medical Student Wiki
C. Thompson, W. Schulz, T. Adam, University of Minnesota

S06 – Papers: Imaging/NLP
Theme: Data Mining, NLP, Information Extraction
Room: Fairchild
Session Chair: Mia Markey

A Generative Model-Based Approach to Retrieving Ischemic Stroke Images
T. Dinh, T. Silander, National University of Singapore; T. Lim, National Neuroscience Institute; T. Leong, National University of Singapore

Automatic Identification of Critical Follow-up Recommendation Sentences in Radiology Reports
M. Yetisgen-Yildiz, M. Gunn, F. Xia, T. Payne, University of Washington
Critical Finding Capture in the Impression Section of Radiology Reports
E. Gershanik, R. Lacson, R. Khorasani, Brigham and Women’s Hospital/Harvard Medical School

Leveraging Terminologies for Retrieval of Radiology Reports with Critical Imaging Findings
G. Warden, R. Lacson, R. Khorasani, Brigham and Women’s Hospital

S07 – Papers: Nursing & CAM Classification
Theme: Terminology and Standards
Room: Cabinet
Session Chair: Donna DuLong

Feasibility and Potential Benefit of Collecting Complementary and Alternative Medicine Data through a Computerized Patient Interview
L. Scarton, Q. Zeng-Treitler, B. Bray, University of Utah

Leveraging Standards to Support Patient-centric Interdisciplinary Plans of Care
P. Dykes, Brigham and Women’s Hospital; R. DaDamio, Partners HealthCare; D. Goldsmith, Brigham and Women’s Hospital; H. Kim, University of California, San Diego; K. Ohashi, Brigham and Women’s Hospital; V. Saba, SabaCare

A Dynamic Classification Approach for Nursing
N. Hardiker, University of Salford; T. Kim, A. Coenen, K. Jansen, University of Wisconsin-Milwaukee

Representation of Nursing Terminologies in UMLs
T. Kim, A. Coenen, University of Wisconsin-Milwaukee; N. Hardiker, University of Salford; C. Bartz, University of Wisconsin-Milwaukee

S08 – Papers: Use of Translational Bioinformatics & Biomedicine
Theme: Translational Bioinformatics and Biomedicine
Room: Lincoln East/Monroe
Session Chair: to be announced

Exploring Schizophrenia Drug-gene Interactions through Molecular Network and Pathway Modeling
D. Putnam, J. Sun, Z. Zhao, Vanderbilt University School of Medicine

Drug Repositioning for Cancer Therapeutics Based on Selective Multi-targeting to Biologically Relevant Cavities Associated with Cancer Signaling Pathways
X. Peng, Regenstrief Institute

Evaluating De Novo Locus-disease Discoveries in GWAS Using the Signal-to-Noise Ratio
X. Jiang, M. Barmada, M. Becich, University of Pittsburgh

The Effect of Reference Datasets and Software Tools on Genotype Imputation
K. Nho, Regenstrief Institute/Indiana University School of Medicine; L. Shen, S. Kim, S. Swaminathan, S. Risacher, A. Saykin, Indiana University School of Medicine

S09 – Papers: SNOMED Evaluation
Theme: Terminology and Standards
Room: Gunston
Session Chair: Alan Aronson

Comparison of SNOMED CT® versus Medcin® Terminology Concept Coverage for Mild Traumatic Brain Injury
D. Montella, S. Brown, Department of Veterans Affairs; S. Brown, Vanderbilt University; P. Elkin, Mount Sinai School of Medicine; J. Jackson, S. Rosenbloom, Vanderbilt University; D. Wahner-Roedler, G. Welsch,
Mayo Clinic School of Medicine; B. Cotton, University of Texas Medical School; O. Guillamondegui, Department of Veterans Affairs; H. Lew, Virginia Commonwealth University; K. Taber-Maier, L. Tupler, Department of Veterans Affairs; L. Tupler, Duke University School of Medicine; R. Vanderploeg, T. Speroff, Department of Veterans Affairs; T. Speroff, Vanderbilt University School of Medicine

**SNOMED CT Revisions and Coded Data Repositories: When to Upgrade?**
W. Ceusters, New York State Center of Excellence in Bioinformatics & Life Sciences

**Can SNOMED CT Fulfill the Vision of a Compositional Terminology? Analyzing the Use Case for Problem List**
J. Campbell, University of Nebraska Medical Center; J. Xu, K. Fung, National Library of Medicine

**Lexically Suggest, Logically Define: Quality Assurance of the Use of Qualifiers and Expected Results of Post-Coordination in SNOMED CT**
A. Rector, L. Iannone, University of Manchester

**S10 – Theater-style Demonstrations: Consumer Health Informatics**
Theme: Consumer Informatics and Multimedia Personal Health Records PHRs
Room: Georgetown
Session Chair: Lindsey Hoggle

**From 10 communities to 1,000: Scaling PatientsLikeMe**
P. Wicks, PatientsLikeMe

Since its formation in 2005, PatientsLikeMe has hosted around 15 distinct and siloed disease communities for patients with life-changing conditions, such as ALS, MS, or epilepsy. In 2011, PatientsLikeMe underwent a transformational series of upgrades that expanded the platform to allow patients with any medical condition to join the site, for all patients to be able to see one another’s profiles, and for patients to access features for multiple comorbidities e.g. a patient with both MS and epilepsy. In this presentation, site architect Dr Paul Wicks will discuss the motivation behind this series of upgrades (from patient, research, and business points of view), additional features that the upgrade has permitted (better understanding of complex patients), and will share data on the reaction of the site’s users (new and old) to the upgraded system.

**MONAHRQ: Reporting to Consumers about Quality of Healthcare**
C. Sniegoski, A. Elixhauser, Agency for Healthcare Research and Quality

Consumer health applications aim to help people make better healthcare choices. This can mean tools to better understand your own health. But it also means tools to better understand the state of our healthcare system. How good is the quality of our healthcare? Does it vary by region or provider? What can people do to obtain good quality care? Today, we see increasing efforts to measure and report healthcare quality information to the public. But healthcare organizations can find that producing good reports is challenging, time-consuming, and expensive. To help make healthcare quality reporting easier, the Agency for Healthcare Research and Quality (AHRQ) has created a new free software tool, MONAHRQ, that makes it easier to quickly generate a fully functional, semi-customizable, user-friendly reporting website. MONAHRQ aims to help local organizations report healthcare quality information to consumers in a way that is consistent and easy to understand. First released in June 2010, MONAHRQ is already used in four states for statewide reporting. Learn more and see a demonstration of the latest MONAHRQ website that provides consumers with information about the quality of our healthcare.
Last year, the U.S. Supreme Court issued an opinion in Sorrell v. IMS Health, in which Vermont law restricts pharmacies from selling doctor-patient prescription information to data-miners and pharmaceutical companies, but allows the dissemination of this information for healthcare research and other exceptions. This session will provide an overview of the case and the Supreme Court decision as a jumping-off point to explore significant implications related to Health Information Exchange (HIE) and healthcare database activities important to the informatics community.

5:00 – 6:30 pm Business Meeting

ACMI Historian Committee
Room: Kalorama

5:00 – 7:00 pm Exhibition Hall Open and Welcome Reception
Room: Columbia Hall

Registrants are invited for hors d’oeuvres and a cash bar in the Exhibition Hall. See the exhibits and meet your peers in an informal, convivial setting.

Visit CAP-STS at Booth 116 to learn more about their services.

5:30 – 7:00 pm Business Meetings

Biomedical Imaging Informatics WG Business Meeting
Room: Holmead

Clinical Information Systems WG Business Meeting
Room: Jefferson West

Dental Informatics WG Business Meeting
Room: Independence

Evaluation WG Business Meeting
Room: Fairchild

Natural Language Processing WG Business Meeting
Room: Cabinet

Open Source WG Business Meeting
Room: Lincoln West

People and Organizational Issues WG Business Meeting
Room: Gunston
**MONDAY, OCTOBER 24 - AMIA 2011**

### 7:00 – 8:15 am Committee Meetings

Education and Meetings Committees Meeting (held jointly)  
Room: Gunston  
Publications Committee Meeting  
Room: Independence

### 7:00 – 8:30 am Business Meetings

Academic Forum Meeting  
Room: Cabinet  
Nursing Informatics Working Group Leadership  
Room: Jay

### 7:00 – 8:30 am Special Event

Deloitte Round Table (Prior RSVP required)  
Room: Northwest

### 7:00 am – 7:00 pm Registration Open

### 8:30 – 10:00 am Plenary Session

S11 – Keynote Address  
Room: International Ballroom Center

**Dr. Gregory Abowd**  
Distinguished Professor, School of Interactive Computing, Georgia Tech

(For more information on Dr. Abowd, please see p. 7).

### 10:00 – 10:30 am Coffee Break

Room: Columbia Hall

### 10:00 am – 2:00 pm Exhibition Hall Open

Room: Columbia Hall

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### 10:30 am – 12:00 pm Scientific Sessions

**S12 – Featured Presentation**  
Theme: Data Integration and Exchange  
Room: International Ballroom Center

**Common Framework for Secondary Uses of Data: Next-generation Models for Sharing Real World Evidence**

J. Easter, GlaxoSmithKline; D. Foltz, CSC; D. Fridsma, Office of the National Coordinator on Health Information Technology; G. Hripcsak, Columbia University

Multi-stakeholder collaborations are emerging as an important vehicle for research using healthcare data for wide-ranging uses, including comparative effectiveness research, safety monitoring, disease modeling, protocol feasibility testing and patient recruitment. While collaborative research is not new, what is different now is the emergence of new operating models that employ a standard approach to data management and analysis across a federated network of partners. These new models seek to enable a systematic and efficient approach to leveraging data and expertise across many partner organizations, while providing incentives for participation from multiple stakeholder groups. This panel will discuss the utility of and identify weaknesses and gaps in existing standards, reveal effective strategies for generating public awareness and gaining consent, and analyze the roles and responsibilities of all participants in the health information supply chain, including pharma companies, as the need for new sharing models becomes more acute.
A decade ago, the Institute of Medicine (IOM) published the landmark report, “To Err is Human,” effectively highlighting problems in patient safety. Health Information Technology (HIT) has been identified as a pivotal solution to improving patient safety, although there is also growing evidence of unintended consequences and risks from HIT. With the anticipated accelerated adoption of HIT from the $27 billion dollars in incentive payments for providers to adopt electronic health records (EHRs), it is critical to continue to evaluate and understand the risk and benefits to patients. In this panel, national and international experts will provide an overview of current national efforts to evaluate benefits and risk of HIT, including a recently commissioned IOM consensus study, provide a summary of the literature on HIT benefits and risks, and review a three-year Australian observational case study of the implementation of a clinical information system that highlighted unintended consequences and risks.

HIT has great potential to increase care quality, reduce care cost, and improve patient safety through its wide adoption and meaningful use. However, there are huge gaps between the status quo and the potential of HIT. Patient-centered cognitive support has been identified as an overarching research grand challenge for HIT. In this panel, the presenters will discuss how usability and workflow are important cognitive support factors that contribute to the success or failure of HIT projects.

The exponential increase of biomedical data provides new opportunities for the prevention, diagnosis, and treatment of diseases. Several fields like bioinformatics and social networking have exploited this opportunity through the use of networks to discover, verify, and validate patterns and their underlying mechanisms in molecular and social data. However, network-based approaches have not yet been fully exploited to analyze the wide range of medical information that is becom-
ing available through electronic health records. This panel brings together theoretical, applied, and funding perspectives to discuss the opportunities and challenges of using networks to analyze medical data. Learning objectives include: research questions that are ame-
nable to network analysis; strengths and limitations of
different network representations; domain-dependent
and -independent network concepts; complementary
relationship between network analysis and biostatis-
tics; skills required for effective network analysis; and
funding opportunities for exploratory network analysis.
This multi-perspective discussion will be aimed towards
defining an agenda for the application of networks to
accelerate discoveries in medical data.

**S16 – Papers: Clinical Text Analysis**
Theme: Data Mining, NLP, Information Extraction
Room: Jefferson East
Session Chair: George Kim

**It’s About This and That: a Description of Anaphoric Expressions in Clinical Text**
Y. Wang, G. Melton, S. Pakhomov, University of Minnesota

**Automated Non-alphanumeric Symbol Resolution in Clinical Texts**
S. Moon, S. Pakhomov, J. Ryan, G. Melton, University of Minnesota

**Part-of-speech Tagging for Clinical Text: Wall or Bridge Between Institutions?**
J. Fan, Kaiser Permanente Southern California;
R. Prasad, University of Pennsylvania; R. Yabut,
R. Loomis, D. Zisook, J. Mattison, Y. Huang, Kaiser
Permanente Southern California

**Evaluating Measures of Redundancy in Clinical Texts**
R. Zhang, S. Pakhomov, B. McInnes, G. Melton, University of Minnesota

**S17 – Papers: The Eyes Have It: Imaging Informatics**
Theme: Imaging Informatics
Room: Gunston
Session Chair: James Brinkley

**A Pilot Prospective Study Using Target Contour Testing/Instructional Computer Software (TaCTICS), a Training and Evaluation Platform for Radiotherapy Target Volume Delineation**
J. Kalpathy-Cramer, S. Bedrick, Oregon Health & Science University; K. Boccia, Harvard University; C. Fuller,
University of Texas Health Science Center at San Antonio

**Studying Visual Behaviors from Multiple Eye-Tracking Features Across Levels of Information Representation**
B. Anderson, C. Shyu, University of Missouri

**Early Prediction of the Response of Breast Tumors to Neoadjuvant Chemotherapy Using Quantitative MRI and Machine Learning**
S. Mani, Y. Chen, L. Arlinghaus, X. Li, A. Chakravarthy,
S. Bhave, E. Welch, M. Levy, T. Yankeelov, Vanderbilt
University

**Teleretinal Screening for Diabetic Retinopathy in Six Los Angeles Urban Safety-Net Clinics: Initial Findings**
O. Ogunyemi, E. Terrien, A. Eccles, Charles Drew University of Medicine and Science; L. Patty, University of California Los Angeles; S. George, A. Fish,
S. Teklehaiamanot, R. Ilapakurthi, O. Aimiuwu, R. Baker,
Charles Drew University of Medicine and Science

**S18 – Papers: Classification Methods**
Theme: Clinical Decision Support, Outcomes, and Patient Safety
Room: Jefferson West
Session Chair: Alexander Turchin
Modeling Patient Safety Incidents Knowledge with the Categorial Structure Method
J. Souvignet, INSERM; C. Bousquet, J. Rodrigues, B. Trombert, P. Lewalle, CHU Université Jean-Monnet

Toward a Two-tier Clinical Warning System for Hospitalized Patients
G. Hackmann, M. Chen, O. Chipara, C. Lu, Y. Chen, Washington University in St. Louis; M. Kollef, T. Bailey, Washington University School of Medicine

Integrating Machine-Learning and Physician Knowledge to Improve the Accuracy of Breast Biopsy
I. Dutra, University of Porto; H. Nassif, D. Page, J. Shavlik, R. Strigel, Y. Wu, M. Elezaby, E. Burnside, University of Wisconsin - Madison

Evaluation of the Use of Electronic Health Data to Classify Four-Year Mortality Risk for Older Adults Undergoing Screening Colonoscopies
M. Synnestvedt, M. Weiner, University of Pennsylvania

S19 – Papers: Policy & Ethical Issues
Theme: Policy and Ethical Issues
Room: Lincoln East/Monroe
Session Chair: W. Ed Hammond

Attribute Utility Motivated k-anonymization of Datasets to Support the Heterogeneous Needs of Biomedical Researchers
H. Ye, E. Chen, University of Vermont

Progress and Challenge in Meeting Meaningful Use at an Integrated Delivery Network
W. Bowes, Intermountain Healthcare & University of Utah

Ethics of Implementing Electronic Health Records in Developing Countries: Points to Consider
M. Were, Regenstrief Institute, Inc. and Indiana University; E. Meslin, Indiana University School of Medicine

A Legal Framework to Enable Sharing of Clinical Decision Support Knowledge and Services Across Institutional Boundaries
T. Hongsermeier, S. Maviglia, Partners HealthCare System and Harvard Medical School; L. Tsurikova, D. Bogaty, Partners HealthCare System; R. Rocha, H. Goldberg, Partners HealthCare System and Harvard Medical School; S. Meltzer, Partners HealthCare; B. Middleton, Partners HealthCare System and Harvard Medical School

S20 – Papers: Terminology & Evaluation
Theme: Terminology and Standards
Room: Cabinet
Session Chair: Stan Huff

Testing Three Problem-list Terminologies in a Simulated Data-Entry Environment
K. Fung, J. Xu, U.S. National Library of Medicine; S. Rosenbloom, Vanderbilt University; D. Mohr, Mayo Clinic; N. Maram, Intermountain Healthcare

Graphical Methods for Reducing, Visualizing, and Analyzing Large Data Sets Using Hierarchical Terminologies
X Jing, J. Cimino, National Library of Medicine, & NIH

An Evaluation of the UMLS in Representing Corpus-Derived Clinical Concepts
J. Friedlin, M. Overhage, Regenstrief Institute and Indiana University School of Medicine
Comparative Analysis of the VA/Kaiser and NLM CORE Problem Subsets: An Empirical Study Based on Problem Frequency
A. Wright, J. Feblowitz, Brigham & Women’s Hospital; A. McCoy, D. Sittig, University of Texas Health Science Center

S21 – Theater-style Demonstrations: Clinical Research Informatics
Theme: Clinical Research Informatics
Room: Georgetown
Session Chair: Katie Siek

SWEETInfo: a Web-based Tool for Querying and Visualization of Longitudinal Clinical Data
M. O’Connor, M. Uehara-Bingen, A. Richards, S. Martins, S. Tu, Stanford University; S. Tu, A. Das, Stanford University

We will present SWEETInfo (Semantic Web-enabled Exploration of Temporal Information), a tool to support querying and visualizing of time-oriented clinical data. SWEETInfo is based on an open-source Web-based infrastructure that allows clinical investigators to import data and to perform operations on their temporal dimensions. The architecture combines Semantic Web standards, such as OWL and SWRL, with advanced Web development software, such as the Google Web Toolkit. User interaction with SWEETInfo creates OWL-based specifications of (1) data operations, such as filtering, grouping, and visualization, and (2) data pipelines for data analyses. Both of these can be shared with and adapted by other users via the Web. We will show that the system meets the functional and nonfunctional specifications derived from the use cases in clinical research informatics related to HIV drug-resistance and breast-cancer care. We will demo how SWEETInfo provides non-technical users the ability to interactively define data pipelines for such complex temporal analyses.

Quadri: A Question Answering System for HIV Drug Resistance Information
R. Waldinger, SRI International; A. Das, Stanford University; D. Bobrow, K. Richardson, C. Condoravdi, Palo Alto Research Center

We present a demo of an intelligent interface for answering English-language clinical queries. Although our approach is domain-independent, we focus on the needs of clinical researchers who are identifying cohorts of patients based on HIV drug-resistance patterns. Such questions are transformed into an unambiguous logical form by natural language technology (Bridge), which is then sent to a theorem prover (SNARK) that operates over an axiomatic theory of the subject domain. Symbols in the theory are linked to relations in one or more knowledge resources, such as databases, and an answer is obtained from the proof. Answers may be deduced or computed if they are not represented explicitly in a resource. We will describe the design of our prototype system, called Quadri, and show how the components interact in the demo. We conclude with additional challenges that need to be addressed to support anaphoric references and complex temporal conditions.

10:30 am – 12:00 pm

LB2 – Late-breaking Session

AMIA’s Code of Ethics: Professionalism, Patient-Centeredness and Best Practices
Kenneth W. Goodman, University of Miami; Peter Embi, The Ohio State University; Carolyn Petersen, Mayo Clinic; Peter Winkelstein, University of Buffalo

The AMIA Ethics Committee has significantly updated the AMIA Code of Ethics, which was previously published in JAMIA. This session includes members of the committee who will summarize key elements in the revised code, emphasizing the updates that have been
Posters developed in response to the changing landscape in HIT and informatics practice.

10:30 am – 2:00 pm Posters
Room: Columbia Hall

Poster Session 1 Preview
The poster preview runs from 10:30 am to 2:00 pm with optional attendance by authors. This is intended to allow registrants to browse posters at their leisure. The poster session with authors present will take place from 5:15 to 7:00 pm.

Theme: Clinical Decision Support, Outcomes, and Patient Safety

1. Transitioning Between Electronic Health Records: Effects on Ambulatory Prescribing Safety
E. Abramson, S. Malhotra, K. Fischer, A. Edwards, E. Pfoh, S. Osorio, A. Cheriff, R. Kaushal, Weill Cornell Medical College

2. Systematic Utilization of User Feedback to Aid Knowledge Management of a Clinical Decision Support System
D. Anderson, D. Vsetecka, K. Berg, R. Olsen, B. Kaspar, P. Caraballo, Mayo Clinic

3. Predictors of Tobacco-use Screening Rates of Nurses Using an mHealth Tool
K. Cato, S. Bakken, Columbia University

4. Designing an Integrated Dynamic Display of Health Data for Aging in Place
A. Chandra, Y. Gong, University of Missouri-Columbia

5. Implementation of a Digitalized and Real-time “Early-goal-directed-therapy” (EGDT) Checklist Form for Septic Shock Patients in Intensive Care Unit
D. Chiang, National Yang-Ming University/Taipei Veterans General Hospital; P. Chang, National Yang-Ming University

6. A Randomized Controlled Trial of a Computerized Asthma Management System in a Pediatric Emergency Department
J. Dexheimer, D. Arnold, K. Johnson, Y. Shyr, N. Patel, T. Abramo, D. Aronsky, Vanderbilt University

7. Performance-measure Reporting Foundation for Veterans Health Administration

8. A Comparison Between a Combined Diagnostics Model and the Framingham Risk Score for the Prediction of Hypertension Development
G. Fung, S. Yu, B. Krishnapuram, Siemens Healthcare; T. Itterman, M. Nauck, R. Rettig, S. Felix, H. Kroemer, H. Volzke, Greifswald University; R. Rao, Siemens Healthcare

9. Validation of Computerized Automatic Calculation of the Sequential Organ Failure Assessment (SOFA) Score
A. Harrison, R. Cartin-Ceba, H. Yadav, B. Pickering, A. Hanson, D. Korc, V. Herasevich, Mayo Clinic

10. Evaluation of Anesthesia Providers’ Perceptions of Patient Safety Improvement After Implementation of an Anesthesiology Electronic Record
K. Heermann-Do, Department of Defense-U.S. Army
11. Pharmacy and Prescriber E-prescribing Experience Reporting (PEER)
A. Hincapie, University of Arizona; R. Snead, T. Modisett, National Alliance of State Pharmacy Associations; T. Warholak, University of Arizona

12. Usability Testing on a Voluntary Medical Incident Reporting Prototype
L. Hua, Y. Gong, University of Missouri, Columbia

13. Health Information Technology to Improve Healthcare Quality: Lessons from the VA
D. Hynes, E. Whittier, M. Browning, R. Perrin, J. Humensky, T. Weddle, D. Atkins, Department of Veterans Affairs

E. Johns, Duke University Medical Center; M. Cooley, B. Halpenny, T. Saunders, J. Abrahm, Dana-Farber Cancer Institute; K. Kawamoto, Duke University; G. Del Fiol, University of Utah; D. Lobach, Duke University Medical Center

15. OpenCDS: Enabling Clinical Decision Support at Scale through Open-source, Standards-based Software and Resources
K. Kawamoto, D. Shields, G. Del Fiol, University of Utah

D. Lobach, Duke University Medical Center; J. Ramsey, R. Harman, Religent, Inc.; A. Muthiyani, Patagonia Health, Inc.

17. Visual Mapping of Patient Medical Profile to Clinical Guideline
K. Mane, P. Owen, C. Schmitt, C. Bizon, UNC-Chapel Hill; K. Gersing, Duke University Medical Center

18. Usability Testing to Refine a Pharmacogenomic-Guided Warfarin Clinical Decision Support System
B. Melton, Purdue University; A. Zillich, Purdue University/ Roudeshup VA Medical Center/Indiana University; J. Saleem, Veterans Health Administration/Regenstrief Institute; A. Russ, Roudeshup VA Medical Center; J. Tisdale, B. Overholser, Purdue University/Indiana University School of Medicine

19. Achieving Meaningful Use of Electronic Medication Lists
K. Nani, Massachusetts General Hospital; S. Pollard, Partners HealthCare; D. Williams, Brigham & Women’s Hospital; D. Bates, Harvard Medical School/Brigham & Women’s Hospital/ Partners HealthCare

20. Framework for Characterization of Heuristics Used in Critical-Care Settings
V. Payne, V. Patel, Univeritsty of Texas Health Science Center

21. Using Clinical Decision Support to Foster Collaborations: The Views of Community-based Physicians
J. Richardson, Weill Cornell Medical College; J. Ash, Oregon Health & Science University

22. Importance of Complete Documentation of Home Medications as First & Most Important Part of Electronic Medication Reconciliation & CPOE
K. Saxena, Adventist Health System - Information Services
23. Centralized Use of a Tracking Tool for Missed Colonoscopies: A Clustered Semi-randomized Controlled Trial
L. Siegel, Brigham and Women’s Hospital; S. Pollard, L. Newmark, J. Fiskio, T. Gandhi, Partners HealthCare

24. The Diabetic Foot Vital Signs: A Clinical Score to Summarize the Diabetic Foot Exam and Facilitate Comprehensive Diabetes Care Management in an EHR
L. Smith, CHW-Woodland Healthcare

25. Diagnosis Switches Associated with Asthma in Emergency Claims Data
W. Sumner, Washington University School of Medicine; P. Asaro, Washington University in St. Louis; M. Hagen, American Board of Family Medicine

26. Systematic Screening for Depression in Primary Care: Will Electronic Medical Records Outperform Paper-based Systems in Better Health Greater Cleveland?
T. Swales, MetroHealth System

27. An Electronic Evidence-based Checklist of Interventions for the Postoperative Management of Obstructive Sleep Apnea
B. Gammon, Duke University School of Nursing; V. Mittal, Boston University School of Public Health; K. Whiting, University of California at Los Angeles

28. Diabetes Registry Usage at the Portland VA Medical Center (PVAMC)
J. Yang, J. McConnachie, L. Winterbottom, Portland VA Medical Center

29. Computer-assisted Medication and Patient Information Interface (CAMPII) is Accurate and Acceptable for Medication and Hypoglycemia Detection
D. Ziemer, Emory University; G. Ryan, Mercer University College of Pharmacy and Health Sciences; J. Caudle, C. Barnes, Emory University School of Medicine; J. Hickman, Southern Polytechnic State University; C. Tsui, Emory University

Theme: Clinical Research Informatics

30. RPE: a Process Approach to Linking Researchers, Providers, and Patients
M. Arratoon, GE Healthcare; L. Bain, R. Kush, CDISC; J. Aerts, XML4Pharma

31. A Suite to Manage and Communicate Genetic Results to Research Participants
C. Cassa, S. Savage, E. Kerwin, Children’s Hospital Boston; K. Mandl, Harvard Medical School

32. ASTEC: A System for Automatic Selection of Clinical Trials
M. Cuggia, Université Rennes; J. Dufour, Université Aix-Marseille; P. Besana, O. Dameron, R. Duvaufier, Université Rennes; D. Fieschi, Université Aix-Marseille; C. Bohec, Oncobretagne; A. Bourde, Université Rennes; L. Charlois, Université Aix-Marseille; C. Garde, ENOVA-COM; I. Gibaud, Syndicat Interhospitalier de Bretagne (SIB); J. Laurent, O. Zekri, CRLCC E. Marquis; M. Fieschi, Université Aix-Marseille

33. Conceptual Data-driven Lung Cancer Cohort Data Portal
V. Fiadosau, P. Li, Mayo Clinic
34. A Closely Integrated Tool that Employs Automated NLP to Validate Use Cases in i2b2.
V. Gainer, S. Goryachev, L. Phillips, Partners HealthCare; Q. Zeng-Treitler, University of Utah; K. Liao, S. Churchill, I. Kohane, Children’s Hospital; S. Murphy, Partners HealthCare

35. Envisage: a Tool for Graphing Research Knowledge
M. Harris, Mayo Clinic; L. Gerstley, PSMI Consulting; C. Thompson, University of Nebraska Medical Center; J. Graves

36. A Sustainable Platform for Data-Sharing in Multi-institutional Population-based Clinical Research
A. Jain, Cleveland Clinic; D. Kaelber, The MetroHealth System/Case Western Reserve University; J. Gilder, D. Meil, C. Lougheed, Explorys, Inc.

37. DCU: A Data Correction Utility to Correct Clinicopathologic Data in the Data Warehouse for Translational Research
L. Kvecher, W. Wu, J. Kohr, C. Shriver, R. Mural, H. Hu, Windber Research Institute

38. A Solution for Monitoring the Extract, Transform and Load (ETL) Processes Status in a Near Real-time Clinical Translational Database in a Timely Manner
M. Li, A. Hanson, B. Pickering, V. Smith, G. Ognjen, V. Herasevich, Mayo Clinic

39. Heuristic Evaluation of a Health-Coaching Application
A. Lushaj, H. Jimison, Oregon Health & Science University

40. Going FURTHeR with i2b2
S. Narus, N. Schultz, O. Livne, R. Bradshaw, J. Mitchell, University of Utah

41. iConnect: a Web-based ‘Do-it-yourself’ Patient Recruitment Registry and Platform
C. Patel, S. Khan, Applied Informatics Inc; A. Atreja, Cleveland Clinic

42. Translating Informatics Innovations: From Prototype to Production
P. Payne, P. Embi, T. Borlawsky, The Ohio State University; J. Frost, P. Teater, The Ohio State University Medical Center

43. i2b2-NCBO Collaboration to Extract Ontologies for Use Within i2b2
L. Phillips, S. Murphy, Partners HealthCare; N. Shah, Stanford University; I. Kohane, Children’s Hospital

44. Implementation of an Enterprise Master Person Index for Clinical Research
P. Reeder, M. Byrne, S. Guerrero, J. Herskovic, E. Bernstam, The University of Texas Health Science Center at Houston

45. Survey Security: Yes, There Is an App for That!
K. Riordan, L. Quarles, C. Cowansage, B. Boden-Albala, A. Wilcox, Columbia University

46. Analyzing CPOE-related Medication Errors: New Insights from Qualitative Review of the MEDMARX Error-Reporting Database
A. Seger, D. Bates, G. Schiff, J. Boehne, D. Whitney, Brigham and Women’s Hospital; R. Elson, Clinical Systems Design, LLC; M. Amato, Massachusetts College of Pharmacy and Health Sciences; A. Rashidee, Quantrios. Inc

47. Integrating Metabolomic and Physiological Data Using Informatics Tools in Interdisciplinary Research Environment
P. Tokachichu, K. Mulier, G. Beilman, University of Minnesota
48. Expanding the WorkWeb Portal to Enhance Research Collaboration Between Investigators from Community-based Organizations and the University

49. Measuring Document Quality: a Systematic Review
C. Weir, University of Utah; J. Garvin, A. Hall, R. Barrus, SLC VA

50. Health Research Economics of Patient Recruitment: Probabilistic Modeling of Multi-center Clinical Trial Recruitment for Cost Forecasting
L. Yang, ClinSolver, M. Kao, Stanford University Medical Center; K. Shem, Santa Clara Valley Medical Center; C. Koo, Stanford University

Theme: Clinical Workflow and Human Factors

51. Analyzing Information Needs in Critical Care Hand-offs
J. Abraham, V. Nguyen, V. Patel, University of Texas Health Science Center at Houston

52. The Care-coordination Capability Maturity Model: Understanding HIT Adoption
N. Behkami, D. Dorr, Oregon Health & Science University; T. Daim, Portland State University

53. A Qualitative Comparison of Problem-based and Concept-based Design Metaphors of the Electronic Health Record Upon Nurse Information-Seeking
E. Borycki, University of Victoria

54. Perioperative Transitions in Care: Integrating Patient Flow, Information Flow, and Clinical Workflow
M. Burton, Indiana University School of Medicine; P. DeLaurentis, Regenstrief Institute, Inc.; H. Ekbia, Indiana University; E. Wiebke, Indiana University School of Medicine; M. Lawley, Purdue University; B. Doebbeling, Regenstrief Institute, Inc.

55. Benefits of a Paper Cognitive Artifact Used by Pediatric Nurses to Support Nursing Workflow
R. Colligan, E. Bass, University of Virginia

56. Information Demands and Consumption of Clinical Documents by Clinicians in Electronic Health Record Systems
O. Farri, S. Pakhomov, T. Adam, D. Pieczkiewicz, G. Melton, University of Minnesota

57. Information Integration Model in Critical-Care Setting: Role of Electronic Health Records
D. Gottipati, V. Nguyen, S. Myneni, K. Almoosa, University of Texas Health Science Center at Houston; T. Kannampallil, University of Texas; V. Patel, UTHealth

58. Categorizing Outpatient Data: a Cognitive Approach to EHR Design
M. Janes, Partners HealthCare Systems, Inc.; H. Ramelson, A. Kirk, Partners HealthCare; J. Horsky, Brigham & Women’s Hospital

59. Can We Improve Clinical Software Based on Users’ Personal Values? Identification of Potentially Beneficial Software Features
S. Koch, R. Proynova, B. Paech, T. Wetter, University of Heidelberg

60. A Framework for Comparing Paper and Electronic Interoperability
C. Kuziemsky, University of Ottawa; K. Keshavjee, InfoClin Inc./University of Victoria
61. Estimating Task Execution Time in EHRs Using the Keystroke-Level Model
L. Lee, M. Walji, Y. Li, J. Zhang, The University of Texas Science Center at Houston

62. A Preliminary Study to Explore Effective Decision Support for Treatment of Heart Failure
M. Nakayama, Tohoku University Hospital/Tohoku University Graduate School of Medicine; Y. Kondo, Tohoku University Hospital; H. Shimokawa, Tohoku University Graduate School of Medicine

63. Clinicians’ Usability Feedback on a Novel Interface for Communicating Genetic Results
P. Neri, S. Pollard, L. Volk, L. Newmark M. Varugheese, S. Baxter, A. Aronson, Partners HealthCare; H. Rehm, Partners HealthCare/Harvard Medical School; D. Bates, Brigham & Women’s Hospital/Partners HealthCare

64. An Extended Usability Framework to Support Clinical Information System Design for Collaborative Care Delivery
L. Peyton, D. Langayan, B. Mcleod, V. Mallur, C. Kuziemsky, University of Ottawa

65. Development of a Collaborative Patient-Discharge Documentation Module
L. Selvitella, M. Carty, R. Boxer, Brigham and Women’s Hospital; C. Pelletier, M. Cardito, Partners HealthCare; P. Fraser, D. Goldsmith, Brigham and Women’s Hospital

66. Time Analysis Performance of Manual and Computerized Registry of the Nursing Care Systematization in Intensive Care and Surgery Unit
V. Silva, C. Betta, E. Nishio, C. Barsottini, J. Wainer, Federal University of São Paulo – UNIFESP; J. Wainer, UNICAMP

67. Evaluation of a Sign-out Checklist Tool to Support Individual and Team Task Management in an Electronic Health Record
D. Stein, S. Bakken, P. Stetson, Columbia University Medical Center; D. Vawdrey, Columbia University

68. Interactive Variance Analysis Method for Improving Clinical Pathways

69. Problem List: Exploring a Navigation Mechanism to Access Long-term Medical Information
X. Zhou, Rutgers, The State University of New Jersey; M. Ackerman, D. Hanauer, K. Zheng, The University of Michigan

Theme: Consumer Informatics and Multimedia PHRs

70. User-interface Design of the Smartphone Device for Elder People in Nutrition Self-Management
Y. Chen, P. Chang, National Yang-Ming University

71. Patient Information Needs and Desired Features of an Aid to Facilitate Decision-Making Related to Temporal Lobe Epilepsy Surgery

72. Presenting Tailored Clinical Trials Information Within the Patient Portal
J. DeShazo, L. Penberthy, R. Brown, Virginia Commonwealth University
73. Use of the Internet for Health-related Purposes in U.S.: Prevalence, Predictors, and Impact
J. Finkelstein, E. Cha, Johns Hopkins University School of Medicine

74. Development of the Smartphone Application for Counseling with Hospital Pharmacists about Medications
H. Han, Y. Park, P. Pak, J. Kim, J. Kim, D. Shin, Asan Medical Center; W. Kim, J. Lee, University of Ulsan College of Medicine

75. iPhone Application and an Allied Server System for Ubiquitous Learning of Biomedical Science
T. Hishiki, Toho University; T. Tamura, Bits Co., Ltd.

76. Developing QR Code-based Smartphone Medication Safety Support System for Children
H. Lee, P. Chang, National Yang-Ming University

77. Social Computing for Health Organizations: Some Preliminary Findings
R. Leung, K. Pasupathy, University of Missouri

78. Clinical Validation of an Unobtrusive Method for Detecting Cognitive Decline in the Elderly
J. McKanna, H. Jimison, M. Pavel, Oregon Health & Science University

79. Learning from the Disparate Many
F. Nicolalde, T. Patton, K. Johnson, P. Brennan, University of Wisconsin-Madison

80. Toward a Spoken Web-enabled Personal Health Record Technology
R. Padman, Carnegie Mellon University; A. Nanavati, IBM; P. Khera, C. Banke, IBM Research; J. Damir, Carnegie Mellon University

81. Family Health History for Nontraditional Families
J. Peace, Duke University

82. Integrating Avatars into a Symptom Management System for PLWH
R. Schnall, Columbia University; D. Wantland, Rutgers; O. Velez, Columbia University; P. Yen, OSU; K. Cato, S. Bakken, Columbia University

83. A New Approach to Healthcare Monitoring and Management for Elderly People in Japan Using a Mobile Phone-based System
A. Shibuya, Nihon University School of Medicine; Tohoku University Graduate School of Medicine; R. Inoue, Tohoku University Hospital; T. Yamada, The Medical Information System Development Center; Y. Maeda, Y. Umesato, Y. Kondo, Nihon University School of Medicine

84. When Physicians Control Access to PHRs They Variably Restrict Patient Options
Y. Tamrat, B. Crotty, Beth Israel Deaconess Medical Center; S. Reti, Harvard Medical School; H. Feldman, Beth Israel Deaconess Medical Center; B. Landon, C. Safran, Harvard Medical School

85. Design and Development of a Computer-assisted Self-interviewing Kiosk for Low-literacy Patients to Ensure Medication Safety
C. Tsui, J. Caudle, Emory University; G. Ryan, Mercer University; C. Barnes, Emory University; J. Hickman, Southern Polytechnic State University; A. Franklin, UTHealth; D. Ziemer, Emory University; D. Ziemer, Emory University

86. Creating Composite Pictograms Based on Composite Rules: a Feasibility Test
F. Vineet, San Diego State University; H. Kim, E. Aronoff Spencer, V. Muhlen, L. Ohno-Machado, University of California, San Diego
**Posters**

**Theme: Data Integration and Exchange**

87. A Data Mart to Streamline De-identified Bio-specimen Distribution  
J. Chen, J. Liu, D. Xu, J. Kamal, The Ohio State University Medical Center

88. Web Portal for Cohort Studies and Later Data-Cluster Analysis  
F. Cohrs, F. Sousa, J. Tenorio, L. Ramos, I. Pisa, Universidade Federal de Sao Paulo

89. Early Findings from the Evaluation of the State HIE Cooperative Agreement Program  
P. Dullabh, C. Nye, NORC at the University of Chicago; J. Adler-Milstein, Harvard University; A. Moiduddin, NORC at the University of Chicago; V. Patel, Office of the National Coordinator for Health Information Technology; L. Virost, E. Babalola, A. Mahmud, J. Goldwter, NORC at the University of Chicago; M. Swain, Office of the National Coordinator for Health Information Technology; A. Jha, Harvard School of Public Health

90. PGRN Ontology Network Resource  
R. Freimuth, J. Pathak, D. Sharma, M. Durski, C. Chute, Mayo Clinic

91. Development of Provenance-aware Cloud-based Semantic Web Data Service  
A. Grueneberg, Furtwangen University; H. Deus, Digital Enterprise Research Institute; W. Maass, Furtwangen University; T. Almeida, University of Alabama at Birmingham

92. Generalizable Session-dependent De-identification Methods  
S. Kahmann, The Ohio State University; S. Erdal, J. Liu, J. Kamal, OSU Medical Center; B. Clymer, The Ohio State University

93. Identifying the List of Drugs Currently Available for Sale in the U.S.  
J. Kilbourne, National Library of Medicine

94. Using Security and Fault Tolerance Within Informatics for Integrating Biology and the Bedside (i2b2)  
M. Mendis, L. Phillips, R. Kuttan, J. Donahoe, Partners HealthCare; S. Churchill, I. Kohane, Harvard University; S. Murphy, Partners HealthCare

95. Comparison and Reconciliation of Tuberculosis Data Elements  
M. Parker, Duke University School of Nursing; A. Walden, M. Nahm, Duke University

96. Governance Structures in State Health Information Exchange  
A. Phillips, Columbia University School of Nursing; R. Kaushal, Weill Cornell Medical College; J. Merril, Columbia University

97. Validation of a Shared Toolkit Approach for Facilitating Adoption of Care Transition Exchange Standards  
S. Renly, J. Timm, IBM Almaden Research Center

98. Integrating Lightweight Web Application Technologies and caGrid Web Services  
W. Stephens, The Ohio State University; T. Nguyen-Pham, M. Barrett, UCSD Moores Cancer Center; S. Wang, J. Pierce, The Ohio State University; A. Greaves, University of California San Diego; P. Payne, The Ohio State University

99. A Hospital-led, Multi-specialty Health Information Exchange as the Framework for an Accountable Care Organization  
J. Wong, Adventist HealthCare

CANCELLED
**MONDAY, OCTOBER 24 • AMIA 2011**

**POSTERS**

**Theme: Data Mining, NLP, Information Extraction**

**100. Toward Dynamic Phenotyping with Clinical Data**  
D. Albers, N. Elhadad, G. Hripcsak, Columbia University;  
E. Tabak, New York University

**101. Electronic Monitoring of Antimicrobial Use as a Component of Antimicrobial Stewardship: Development of an Antimicrobial Datamart**  
V. Bubelev, J. West, J. Santangelo, K. Stevenson, The Ohio State University Medical Center

**102. A Natural Language Processing Algorithm for Improving Efficiency of Breast Cancer Surveillance Abstraction**  
D. Carrell, S. Halgrim, D. Tran, Group Health Research Institute

**103. Linguistic Differences of Depressed Patients in an Online Health Forum**  
B. Chee, PatientsLikeMe

**104. Identifying Collaborators in Emerging Research Topics**  
C. Cowansage, D. Fort, K. Riordan, A. Wilcox, Columbia University

**105. Extracting Sources of Admission and Discharge Destinations from Discharge Summaries**  
D. Demner-Fushman, S. Abhyankar, F. Callaghan, C. McDonald, U.S. National Library of Medicine

**106. Relationship Identification Model: How Do Medical Concepts Relate in Patient Records?**  

**107. Using String Distance to Detect Structure in Medical Documents**  
D. Finch, University of South Florida/James A. Haley Hospital

G. Gobbel, R. Reeves, T. Speroff, S. Brown, M. Matheny, Department of Veterans Affairs/Tennessee Valley Health System/Vanderbilt University Medical Center

**109. Applications of Network Analysis to Clinical Data**  
J. Klann, Regenstrief Institute; J. Klann, Indiana University

**110. ResearchIQ: Technical Architecture of an Ontology-Anchored Knowledge and Resource Discovery Tool**  
O. Lele, The Ohio State University; R. Dhaval, Center for Clinical and Translational Science, The Ohio State University; T. Borlawsky, P. Payne, The Ohio State University

**111. Converting Unicode Lexicon and Lexical Tools for ASCII NLP Applications**  
J. Lu, A. Browne, U.S. National Library of Medicine

**112. TrANEMap: a Fast Tree-based Named-Entity Recognition Engine**  
J. McCart, J. Jarman, James A. Haley Veterans Hospital; M. Matheny, Vanderbilt University

**113. Mining Significant Partial Order Patterns in Electronic Medical Records**  
D. Patnaik, N. Ramakrishnan, Virginia Polytechnic Institute and State University; B. Keller, Eastern Michigan University; D. Hanauer, University of Michigan
114. Health Assessment Using Sensor-Sequence Alignment and EHR Data
M. Popescu, Z. Zeng, M. Skubic, University of Missouri

115. An Informatics Approach to Methicillin-resistant Staphylococcus Aureus Surveillance in the Department of Veterans Affairs
M. Rubin, VA Salt Lake City Health Care System; M. Garvin, Salt Lake City VA Medical Center; B. Doebbeling, M. Merchant, Roudebush VAMC; R. Martinello, P. Mutilak, VA Connecticut Healthcare System/Yale School of Medicine; M. Goldstein, VA Palo Alto Health Care System; S. Luther, James A. Haley Veterans Hospital; M. Samore, B. South, VA Salt Lake City Health Care; S. Gullans, Roudebush VAMC

116. i2b2 and Keyword Search of Narrative Clinical Text
E. Scheufele, D. Housman, Recombinant Data Corp.; J. Wasser, S. Pauker, Tufts Medical Center; M. Palchuk, Recombinant Data Corp.

117. Identification of SNPs Increasing the Risk of Cardiovascular Diseases
A. Shashkin, Moscow State University

118. Multi-labeling Health Web Pages: an Approach Based on Category Relevance
F. Sousa, F. Mancini, F. Teixeira, F. Nunes, I. Pisa, Universidade Federal de São Paulo

119. Minnow: a Flexible Web-based Tool for Support of Systematic Literature Reviews
K. Unertl, T. Coffman, Vanderbilt University

120. Mining Electronic Health Records to Repositioning Drugs: a Feasibility Study
L. Yao, P. Agarwal, GlaxoSmithKline

Theme: EHRs and Achieving Meaningful Use

121. Return on Investment from Electronic Health Records in Community Practices
J. Adler-Milstein, Harvard University; C. Green, D. Bates, Brigham & Women's Hospital

122. Using Personas to Increase Provider Awareness, Engagement, and Acceptance
D. Chase, J. Rote, M. Brush, D. Dobbolla, T. Gamble, J. Ash, Oregon Health & Science University

123. A Newly Established Disaster-Supply Management System: Focus on the Concept of Physical Distribution
P. Cheng, P. Chang, National Yang-Ming University; P. Cheng, S. Hung, T. Wang, Shin-Kong Wu Ho-Su Memorial Hospital

124. An Event-centric Ontology (ECO) for Electronic Health Records (EHR)
J. Fan, W. Desmedt, Y. Sharma, R. Adams, Booz Allen Hamilton; R. Chatterjee, One Preserve Pkwy; M. Keller, J. Klenk, Booz Allen Hamilton, Inc.; R. Taylor, St. John's Mercy Medical Center

125. Integration of Medical and Dental Information of HIS Has Led to Improving Quality of Clinical Results and Medical/Dental Research
S. Kasahara, R. Inoue, Tohoku University Hospital; M. Nakazawa, Tohoku University Hospital; M. Kamata, Tohoku University Hospital; A. Shibuya, Nihon University; C. Sato, Tohoku University Hospital; J. Urushihara, GC Limited; Y. Kondo, Nihon University

126. Analysis of a Mobile Electronic Medical Record Usage Pattern: a University Hospital Experience
J. Kim, Asan Medical Center; W. Kim, University of Ulsan College of Medicine; G. Lee, T. Kwon, Asan Medical Center; J. Lee, University of Ulsan College of Medicine
127. Minnesota Clinical Laboratory Survey of Readiness and Needs for Electronic Health Information Exchange
V. Kuruchittham, Centers for Disease Control and Prevention; K. Guida, C. Brueske, P. Snipes Vagnone, P. Schlichter, C. Wolf, M. LaVenture, Minnesota Department of Health

128. Automated Inference of Patient Problems from Medications using NDF-RT and the SNOMED-CT CORE Problem List Subset
J. McCoy, A. McCoy, The University of Texas Health Science Center at Houston; A. Wright, Brigham and Women’s Hospital; D. Sittig, University of Texas Health Sciences Center

129. The Space In-between: a Rigorous Algorithm to Detect Inaccurate Height Within EMRs
A. Muthalagu, J. Pacheco, Northwestern University; A. Kho, Feinberg School of Medicine

130. Data Entry Support for Improving Data Quality in Electronic Health Records
S. Quaglini, G. Lanzola, G. Leonardi, University of Pavia; G. Micieli; A. Cavallini, IRCCS Foundation C. Mondino

131. Normalized Representation of Data Elements for Phenotype Cohort Identification in the Electronic Health Record
C. Tao, Mayo Clinic; S. Welch, Intermountain Health Care; W. Wei, Mayo Clinic; T. Oniki, C. Parker, Intermountain Health Care; J. Pathak, Mayo Clinic; S. Huff, Intermountain Healthcare; C. Chute, Mayo Clinic

132. A Metric for Measuring Cognitive Transparency of EHR User Interfaces
Z. Zhang, Y. Li, M. Walji, A. Franklin, J. Zhang, University of Texas School of Biomedical Informatics, Houston

Theme: Global eHealth

133. Successful Implementation of a Web-based Medical Record for Non-communicable Diseases Follow-up in Rural Rwanda
B. Akimana, C. Amoroso, E. Ball, G. Bukhman, M. Cunderlik, H. Fraser A. Kidder, J. Ngiruwera, Inshuti Mu Buzima, D. Thomas, Partners In Health

134. Ubiquitous Health Service for the Patients with Chronic Obstructive Pulmonary Disease to Improve Knowledge, Skill and Attitudes
J. Kim, S. Kim, S. Yang, K. Kim, H. Kim, Seoul National University; C. Lee, Seoul National University/Seoul National University Bundang Hospital

135. The Informatics Infrastructure for the National Clinical Research Network in Ethiopia
E. Tsegaye, Johns Hopkins University; D. Fekade, Addis Ababa University; A. Abebe; E. Lemma, Ethiopian Health and Nutrition Research Institute; T. Gidey, Defense University; T. Hagos, Mekelle University; A. Getachew, Gondar University; M. Demena, Haramaya University; A. H/Amlak, Jimma University; Y. Berhan, Hawassa University; E. Hassen, R. Adamu, N. Simmons, W. Weiss, A. Ruff; H. Lehmann, Johns Hopkins University

Theme: Imaging Informatics

136. Assessment of Pulmonary Hypertension from Semi-automated Geometric Analysis of Computed Tomography Images
H. Berty, University of Pittsburgh; B. Chapman, University of California, San Diego

137. An Ontology of Normal Tissue Effects in Radiation Therapy
Y. Ge, Wake Forest University Health Sciences; T. Minta, Wake Forest University; L. Yuan, Q. Wu, Duke University
138. **Modeling Medical Imaging and Molecular Biology Correlates from Literature**  
W. Hsu, J. Sayre, A. Bui, R. Taira, University of California, Los Angeles

139. **Remote Interactive Volume Visualization Infrastructure for Researchers**  
A. Lai, The Ohio State University; D. Stredny, P. Calyam, B. Hittle, T. Kerwin, Ohio Supercomputer Center; D. Reed, Capital University; K. Powell, The Ohio State University

140. **Content-based Image Retrieval Using Feature Density Estimates**  
W. Speier, C. Arnold, W. Hsu, A. Bui, UCLA Medical Imaging Informatics

**Theme: Informatics Education and Workforce Development**

141. **Using Concept Maps to Teach Clinical Reasoning: an Experience with CMapTools Software**  
E. De Domenico, T. da Costa, F. Cohrs, C. Cohrs, F. Mancini, I. Pisa, Universidade Federal de Sao Paulo

142. **H-index of Panel Session Participants from AMIA 2010 Annual Meeting**  

143. **Level of Knowledge and Computer Skills in Students of First Admission to Medical School**  

144. **Health Information Technology on Nursing Graduation in Brazilian Public Institutions**  
L. Sanches, Universidade Federal de Pernambuco; R. Jensen, M. Monteiro, M. Lopes, Universidade Estadual de Campinas

**Theme: Informatics in Clinical Education**

145. **Increasing Patient Empowerment by Utilizing a Computer-based Patient “Power Page”**  
C. Barnes, C. Tsui, J. Caudle, A. Herron, N. Kluza, D. Ziemer, Emory University

146. **Health Informatics Teaching in Brazil: a Brief Review**  
T. da Costa, A. Hummel, A. Falcao, I. Pisa, H. Marin, Universidade Federal de Sao Paulo

147. **A Pilot Usability Evaluation of Computerized Long-term In-dwelling Catheterization Instructional Program**  
Y. Li, National Hsinchu University of Education; Z. Lin, Tzu-Chi College of Technology; H. Jih, National Hsinchu University of Education

148. **Using Social Networking Resources to Search MEDLINE/PubMed, a Practice Guidelines Database and Journal Club**  
F. Liu, P. Fontelo, U.S. National Library of Medicine

**Theme: Interactive Systems**

149. **Voice Recognition for a Point-of-Care, History-taking Tool Written for iOS and Implemented on the Apple iPad**  
W. Bennett, W. Sumner, Washington University School of Medicine

150. **Use of Commodity Video Game Controllers in Disaster Response Systems**  
P. Blair, W. Griswold, University of California San Diego
151. A Framework Proposal for Developing 3D Graphical User Interfaces on Telehealth Systems
F. Ferreira, A. Filho, M. Novaes, Federal University of Pernambuco

152. Factors that Affect Interpretation of Data Displayed in Treemaps
A. Hugine, E. Bass, S. Guerlain, University of Virginia

153. Evidence of Using a Mobile Device for Communication with Children with Autism: Lessons Learned and Critical Obstacles
G. Leroy, J. Gutierrez, Claremont Graduate University; H. Seung, California State University Fullerton

154. Design and Evaluation of a Problem-oriented View for OpenVista EHR using UFuRT Framework
M. Mohammad, G. Espinosa, D. Murphy, J. Zhang, University of Texas

155. Language Fluency and Other Predictors of International Use of PubMed and MedlinePlus
L. Sheets, University of Missouri; A. Gavino, P. Fontelo, U.S. National Library of Medicine

Theme: Policy and Ethical Issues

156. Do the Brazilian Health Websites Have Suitability to the HON Code? A Study Based on Web 2.0 Approach
A. Falcao, K. Aureliano, F. Cohrs, D. Sigulem, I. Pisa, UNIFESP

157. Health IT and Disparities after HITECH
A. Moiduddin, J. Bushar, NORC

158. Application of Social Theory to Health Information Technology Support Programs
S. Rizk, RTI

Theme: Public Health Informatics and Biosurveillance

159. MyMedEffects: Improving Drug Safety by Enabling Self-reporting of Adverse Events and Side Effects using Social Microblogging
S. Ahmed, K. Johnson, Vanderbilt University

160. Does Electronic Death Registration Improve Physician Reporting Timeliness?
J. Duncan, B. Nangle, Utah Department of Health; W. Xu, Utah Office of Public Health Informatics

161. Reviewing Age-group Based H1N1 Incidence Rates to Understand the Relationship Between Public Health Policy and Outcomes
R. Gamache, Indiana University; P. DeLaurentis, S. Grannis, Regenstrief Institute

162. An Automated Rule-based Decision Tool for Improving Public Health Reporting Logic
E. Han, University of Utah; J. Duncan, Utah Department of Health; C. Staes, University of Utah

163. Expanding Environmental Public Health Tracking Through an Ontological Approach for Content Management
J. Jellison, C. Kassinger, Centers for Disease Control and Prevention

164. Using Contextual Inquiry to Validate and Extend a Tool for Public Health Disease Outbreak Investigations
H. Kramer, Y. Livnat, University of Utah; W. Pettey, University of Utah School of Medicine; J. Reid, University of Utah; R. Dzierzon, University of Utah School of Medicine; M. Samore, University of Utah
165. Use of the Bayesian Skyline Plot to Inform a Prediction Model of Zoonotic Infection in Animal and Human Hosts
P. Ortiz, M. Scotch, J. Taylor, J. Taylor, Arizona State University

166. Integration of Disparate Genomic Sequences for Phylogeography of Influenza
A. Singraur, M. Scotch, Arizona State University

167. Theory-based Evaluation of Public Health Information Systems
S. Tandon, Centers for Disease Control & Prevention; C. LeRouge, School of Public Health, Saint Louis University; S. Ganesan, Northrop Grumman Corporation

168. The Texas Teen Birth Mapping Tool: From Raw Data to Policy Change
N. Tucker, University of Texas

169. Reportable Conditions Interoperability Information Gateway (RCIIG)
M. Winarsky, Centers for Disease Control and Prevention; M. Pray, S. Ganesan, S. Keller, V. Fernandez, Northrop Grumman

170. What Are People Saying About Physical Activity in Tweetdom?
S. Yoon, S. Bakken, Columbia University

Theme: Simulation and Modeling

171. A Proposal for a Telehealth Service Platform Architecture
D. Silva, F. Ferreira, I. Costa, A. Campos, M. Novaes, UFPE

Theme: Terminology and Standards

172. Pioneers of Nursing Informatics: a Qualitative Study of Nurse Leaders
A. Branchini, University of Connecticut; A. Branchini, Three Rivers Community College

173. An Ontological Exploration of Medication Propositions in Clinical Records
S. Essaid, Oregon Health & Science University

174. Taiwan ICNP V2 Translation and Validation Project
I. Hou, National Taiwan University Hospital

175. An Ontology-driven Approach to Improve the OpenSocial Standard
E. Meeks; L. Yuan; M. Kahlon, University of California, San Francisco; G. Weber, Harvard Medical School and Beth Israel Deaconess Medical Center

176. MED to SNOMED-CT Mapping via ICD-9-CM and the UMLS
C. Morrey, NewYork-Presbyterian Hospital/Utah Valley University; D. Baorto, NewYork-Presbyterian Hospital

177. Practical Issues in Mapping a Local Medication Terminology to a National Standard
M. Weiner, University of Pennsylvania; K. Haynes, P. Gabriel, M. Massary, B. Moore, University of Pennsylvania School of Medicine; L. Lau, 3M Health Information Systems

Theme: Translational Bioinformatics and Biomedicine

178. VIVO: Discovery through Linked Open Data
M. Conlon, University of Florida; K. Holmes, Washington University School of Medicine; M. Tennant, University of Florida
**179. An Ontology-anchored Post-coordination Approach for Hypothesis Discovery**
S. James, T. Borlawsky, P. Payne, The Ohio State University

**180. Using a Locally Adaptive Distance Metric to Relief Algorithms**
M. Stokes, S. Visweswaran, University of Pittsburgh

**12:00 – 1:00 pm Business Meeting**
JAMIA Associate Editors Meeting
Room: Albright

**12:15 – 1:15 pm Special Event**
REC and HIT in Practice Session
Room: Cabinet

This session is for members who came to AMIA through the special memberships offered to participants in Regional Extension Centers for HIT and University-Based Training programs, and for other members whose primary area of focus is frontline HIT in practice. Participants will discuss their frontline HIT and HIE roles and interests, their ongoing development, training and resource needs, and then brainstorm ideas for 2012 offerings to meet those frontline HIT/HIE interests and needs. Co-sponsored by the Regional Informatics Action Working Group and the AMIA Membership Committee.

**12:00 – 1:30 pm Committee Meetings**
ACMI Executive Committee Meeting
Room: Boundry

**12:00 – 1:30 pm Special Event**
First Data Bank Roundtable
Room: Piscataway
Intelligent Medical Objects Roundtable
Room: Holmead
Rothman Healthcare Roundtable
Room: Jay
Wolters Kluwer Health Roundtable
Room: Independence
(Prior RSVP Required)

**Policy 101: What Public Policy Is and How to Help Shape It**
(bring your lunch)
Room: Fairchild
D. Bates, AMIA Public Policy Committee; M. Bloomrosen, AMIA Public Policy and Government Relations; D. Peddicord, Washington Health Strategies Group

This session will provide information about the processes of health policy development and implementation and an overview of federal and state regulatory programs effecting the healthcare industry in general and biomedical and health informatics in particular. Participants will gain an understanding of the purpose of policy advocacy and AMIA’s role in educating and influencing policy-makers. This session will present the big picture of federal budgeting, its players, and the formal and informal budget processes, as well as how budgets influence policy and how tax cuts and budget deficits drive the policy agenda. Other topics include the role of the White House in health policy-making; the Congressional timetable and processes, as well as the role of Congressional and federal agency staff. This session will also provide pointers for communicating effectively with decision-makers.
Providing pertinent information about health policy in order to help participants:

• Expand their capacity to address and catalyze action on crucial biomedical and health informatics issues.
• Bolster their skills to play a more influential role in shaping and creating health policies that are relevant.
• Understand how AMIA engages in health policy discussions.
• Gain skills to help shape public policy.

12:15 – 1:30 pm Unconferences

You asked for programming that is not top-down! You’ve got it! A series of “Unconferences” will debut on Monday, Oct. 24, from 12:15 to 1:30 pm. What should you expect?

• Facilitated, participant-driven conferences centered on a theme or purpose.
• A collaborative learning event that is organized and created by and for its participants.
• Spontaneous events with little structure, where attendees drive the agenda and freely form new discussions and sub-groups as ideas emerge. “Unconferences” will be facilitated by a group of “Unchairs” in each of the five domains.
• Translational Bioinformatics
  Room: Kalorama
• Clinical Research Informatics
  Room: L’Enfant
• Clinical Informatics
  Room: Morgan
• Consumer Health Informatics
  Room: Northwest
• Public Health Informatics
  Room: International Terrace

Registration? If you are already registered for the conference - don’t bother. Just turn up at the Unconference of your choice!

1:45 - 3:15 pm Scientific Sessions

S22 – Featured Presentation
Theme: Interactive Systems
Room: International Ballroom Center

mHealth Innovations: The Impact of Remote Monitoring and Adherence Devices on Care Delivery and Healthcare Research
J. Frassica, Philips Healthcare; L.Ferrara, CSC; M. Alwan, LeadingAge; M. Peeples, WellDoc

Recent work in telemedicine has aimed at developing solutions to support the management of chronic diseases and delivery of home care services. The latest developments in Microsystems and nanotechnologies as well as in information processing and communication technologies allow miniaturization and non-invasive smart monitoring of physiological and physical data. Ongoing cutting-edge multidisciplinary research in biomedical sensors and wireless and mobile telecommunications, integrated with telemedicine, aims at developing technologies that support personalized management of health and diseases at point of need and at any time. This panel will discuss the impact of these new technologies on delivery systems and clinical research as providers shift to broader use of decentralized, technologically enabled care networks.

S23 – Panel
Theme: Clinical Research Informatics
Room: International Ballroom West

What is the Role of Electronic Health Records in Clinical Trials?
M. Cantor, Pfizer Inc.; C. Friedman, University of Michigan; R. Kush, CDISC; A. Kamauu, Clinical Methods, LLC; M. Rocca, FDA

Clinical trials are essential for the development and evaluation of new therapies. The increasing adoption of
electronic health records (EHRs) provides an important opportunity to reduce the complexity of data capture in clinical trials, mainly because there is often substantial overlap between data for a trial and data from routine clinical care. Additionally, information captured in clinical databases can play a major role in modeling trials, leading to improved efficiency. The current landscape of fragmented systems and necessary focus on features that impact clinical care rather than research are still not ideally suited for the broad use of EHRs as data-capture systems in clinical trials; however, several initiatives are paving the way for expanding the use of EHRs in research. This panel will examine the specifics of those initiatives, at both the strategic and tactical levels. Learning objectives for this panel include: understanding of strategic and regulatory issues involved in expanding the roles of EHRs in clinical trials; understanding of national policy initiatives influencing both EHRs and clinical research; identification of particular projects where EHRs have been successfully used in clinical research.

S24 – Panel
Theme: Data Integration and Exchange
Room: Cabinet

Evaluating HIE Systems: Understanding the Elephant by Examining Each Body Part
M. Ozkaynak, University of Wisconsin-Madison; J. Ancker, Weill Cornell Medical College; J. Vest, Georgia Southern University; M. LaVenture, Minnesota Department of Health; S. Ross, University of Colorado Denver

The promises of health information exchange (HIE) systems include improvement in patient outcomes and organizational performance. However, these large systems interact with clinical work environments in multiple complex ways creating challenges for systematic evaluation. Practical challenges include difficulties of integrating evaluation activities into ongoing medical practice. Methodological challenges include reliability and validity concerns of the collected data due to a high level of variability and complexity in clinical settings. Theoretical challenges include a lack of comprehensive, robust conceptual frameworks that will guide HIE evaluation studies. This panel will address these challenges in evaluating HIE systems. The panel will also discuss important aspects of HIE systems that should be studied in an evaluation endeavor, the use of relevant theories, and strategies to overcome the aforementioned challenges. This panel will contribute to research and practice by discussing the strengths and weaknesses of evaluation strategies in the context of five HIE systems implemented in Wisconsin, New York, Texas, and Minnesota.

S25 – Panel
Theme: EHRs and Achieving Meaningful Use
Room: International Ballroom East

Using EHRs to Transform Clinical Care: Successfully Implemented Innovations That Go Beyond Established Uses of EHRs
A. Compton-Philips, The Permanente Federation/Kaiser Permanente; M. Kanter, Southern California Permanente Medical Group/Kaiser Permanente; M. Goldstein, VA Palo Alto Health Care System/Stanford University; D. Sands, Cisco Internet Business Solutions Group/Harvard Medical School

While much attention has been given to how EHRs provide benefits by enabling clinical decision support (CDS), improving patient safety, and enabling health information exchange, less attention is paid to how the EHR can transform the way clinical care is delivered to individuals and populations. New models of care delivery, enabled by EHR technology, have achieved robust traction in a number of healthcare organizations. This panel will highlight programs in leading organizations that have used EHRs to support care transformation, including reliably delivering bundles of care for acute and
chronic conditions, proactive population care through outreach to patients, maximizing office visits through comprehensive in-reach in primary and specialty care, clinical decision support and just-in-time education at the point of care, and patient engagement through the use of HIT. The organizations featured are Kaiser Permanente, the Veterans Health Administration of the U.S. Department of Veterans Affairs, and Cisco Systems. Panelists will talk about the goals and principles of these new care-delivery methods, the organizational change management required to implement these programs, changes in staff roles and incentives, and the improvements in care coordination and clinical outcomes that have resulted. The experience and results presented in this panel are designed to stimulate innovative thinking and audience discussion about other potential areas where EHRs can transform clinical care.

**S26 – Papers: Controlled Terminologies & Mining**
*Theme: Data Mining, NLP, Information Extraction*
*Room: Fairchild*
*Session Chair: Olivier Bodenreider*

**Parenthetically Speaking: Classifying the Contents of Parentheses for Text Mining**
K. Cohen, T. Christiansen, University of Colorado School of Medicine

**S27 – Papers: Information Extraction for Translational Bioinformatics & Biomedicine**
*Room: Lincoln East/Monroe*
*Session Chair: Nigam Shah*

**Drug Repositioning Using Disease-Associated Biological Processes and Network Analysis of Drug Targets**
S. Mathur, D. Dinakarpandian, University of Missouri-Kansas City

**S28 – Papers: Terminologies & Ontologies**
*Theme: Terminologies & Ontologies*
*Room: Gunston*
*Session Chair: William Hogan*

**S26 – Papers: Controlled Terminologies & Mining**
*Theme: Data Mining, NLP, Information Extraction*
*Room: Fairchild*
*Session Chair: Olivier Bodenreider*

**Using UMLS Lexical Resources to Disambiguate Abbreviations in Clinical Text**
Y. Kim, J. Hurdle, S. Meystre, University of Utah

**Voice-dictated versus Typed-in Clinician Notes: Linguistic Properties and the Potential Implications on Natural Language Processing**

**Leveraging Rich Annotations to Improve Learning of Medical Concepts from Clinical Free Text**
S. Yu, F. Farooq, B. Krishnapuram; B. Rao, Siemens Medical Solutions USA, Inc.
Scientific Sessions

An OWL Meta-ontology for Representing the Clinical Element Model
C. Tao, Mayo Clinic; C. Parker, T. Oniki, Intermountain Healthcare; J. Pathak, Mayo Clinic; S. Huff, Intermountain Healthcare; C. Chute, Mayo Clinic

Auditing Hierarchical Cycles to Locate Other Inconsistencies in the UMLS
M. Halper, New Jersey Institute of Technology; C. Morrey, Utah Valley University; Y. Chen, BMCC CUNY; G. Elhanan, NJIT & Halfpenny Technologies, Inc.; G. Hripcsak, Columbia University; Y. Perl, NJIT

Investigating the Semantic Interoperability of Laboratory Data Exchanged Using LOINC Codes in Three Large Institutions
M. Lin, The University of Utah; D. Vreeman, Indiana University School of Medicine and Regenstrief Institute; S. Huff, Intermountain Healthcare & University of Utah

Implementation of a Platform Dedicated to the Biomedical Analysis Terminologies Management
S. Cormont, AP-HP; P. Vandenbussche, INSERM UMRS 872; A. Buemi, AP-HP; J. Delahousse, Mondeca; E. Lepage, AP-HP; J. Charlet, INSERM UMRS 872

S29 – Papers: Health Information Exchange
Theme: Policy and Ethical Issues
Room: Jefferson East
Session Chair: David Kaelber

Health Information Exchange, Health Information Technology Use, and Hospital Readmission Rates
S. Jones, RAND Corporation; M. Friedberg, RAND Corporation/Brigham and Women’s Hospital; E. Schneider, RAND Corporation/Brigham and Women’s Hospital/Harvard School of Public Health

Impact of Health Disclosure Laws on Health Information Exchanges
I. Adjerid, R. Padman, Carnegie Mellon University

S30 – Papers: Clinical Practice Guidelines
Theme: Clinical Decision Support, Outcomes, and Patient Safety
Room: Jefferson West
Session Chair: Christoph Lehmann

Unexpected Effects of Unintended Consequences: EMR Prescription Discrepancies and Hemorrhage in Patients on Warfarin
A. Turchin, Partners HealthCare; M. Shubina, Brigham and Women’s Hospital; S. Goldberg, Massachusetts General Hospital

Revisiting the EBM Decision Model to Formalize Non-compliance with Computerized CPGs: Results in Management of Breast Cancer with OncoDoc2
J. Bouaud, AP-HP; B. Séroussi, UPMC, UFR de Médecine and Hopital Tenon, Département de Santé Publique

Reconciling Pairs of Concurrently Used Clinical Practice Guidelines Using Constraint Logic Programming
S. Wilk, Poznan University of Technology; M. Michalowski, Adventium Labs; W. Michalowski, M. Mainegra Hing, K. Farion, University of Ottawa

Race and Medication Adherence and Glycemic Control: Findings from an Operational Health Information Exchange
V. Zhu, W. Tu, D. Marrero, M. Rosenman, M. Overhage, Regenstrief Institute and Indiana University School of Medicine

Technical Architecture of ONC-approved Plans for Statewide Health Information Exchange
R. Barrows, J. Ezzard, Deloitte Consulting LLC
GEM at 10: a Decade’s Experience with the Guideline Elements Model  
N. Hajizadeh, N. Kashyap, G. Michel, R. Shiffman, Yale Center for Medical Informatics

S31 – Papers: Biomedical Literature and Text Mining  
Theme: Data Mining, NLP, Information Extraction  
Room: Lincoln West  
Session Chair: Thomas Rindflesch

SEACOIN—an Investigative Tool for Biomedical Informatics Researchers  
H. Lee, Georgia Institute of Technology; A. Quarshie, Morehouse School of Medicine; E. Lee, Georgia Institute of Technology

Exploring the Use of Social Media to Measure Journal Article Impact  
P. Evans, M. Krauthammer, Yale University School of Medicine

A Bottom-up Approach to MEDLINE Indexing Recommendations  

Semantic Characteristics of NLP-extracted Concepts in Clinical Notes vs. Biomedical Literature  
S. Wu, Mayo Clinic; H. Liu, Mayo Clinic College of Medicine

S32 – ACMI Senior Member Presentation: Clinical Decision Support  
Theme: Clinical Decision Support, Outcomes, and Patient Safety  
Room: Georgetown  
Session Chair: James Cimino

Clinical Decision Support: The State of the Art and the Next Steps  
J. Teich, Elsevier and Harvard University

From the earliest days of informatics and electronic health records, a fundamental goal has always been to use computer technology to improve the quality and safety of healthcare by using clinical decision support (CDS) to deliver relevant information, filtered to the current situation and organized for greatest impact. CDS takes many forms, from simple alerts to complex predictive analytic systems, multi-dimensional displays, tailored reference information and care-plan guidance tools. New technologies have advanced both the usability and the intelligence of CDS systems, allowing them to be used in more complex and subtle situations. At the same time, the adoption and impact of CDS have been uneven; some clinical organizations have achieved marked reductions in adverse events, improvements in quality metrics and cost savings, while others have had poor acceptance or unintended consequences, or have avoided implementation altogether for fear of both. This presentation reviews the current state of CDS and the newest developments in CDS technologies, applications, and methods. It explores current local and national efforts to improve implementability, usability, scope, and dissemination, and touches on some of the grand challenges for CDS in an age of genomics, social media, and universal access to computing.
A Research-in-Progress Report from the Clinical Decision Support Consortium  
B. Middleton, Partners HealthCare System

The goal of the CDS Consortium is to assess, define, demonstrate, and evaluate best practices for knowledge management and clinical decision support in healthcare information technology at scale—across multiple ambulatory care settings and EHR technology platforms. This project team is comprised of a diverse array of academic and industrial collaborators and is mid-course in a five-year project timeline. Key questions posed in the original proposal will be addressed in light of lessons learned, and findings from the research and development efforts. New research questions and issues that must be addressed to achieve the vision of accelerating the translation of knowledge into practice will be highlighted.

3:30 – 5:00 pm Scientific Sessions

S33 – Featured Presentation  
Theme: Informatics Education and Workforce Development  
Room: International Ballroom Center

Desperately Seeking Informaticians: How Today’s Employers are Building the Global Informatics Workforce

J. Leviss, Microsoft Health Solutions Group; S. Labkoff, AstraZeneca; M. Dente, GE Healthcare; L. Dimitropoulos, RTI International

Given the projected addition of approximately 50,000 informatics positions in the next decade to satisfy global healthcare workforce demand, the perception is that there has never been a better time to leap into the informatics jobs marketplace. Curiously, it is still challenging for many practicing clinicians to make career transitions into informatics roles in industry and for employers to find the right candidates to fill critical positions. This panel is designed to help mid-career clinicians and informatics professionals better understand available career paths in different sectors, such as pharma, product development, and strategic consulting. Each panelist will provide anecdotes from their personal and industry experiences, discuss what their companies are doing to recruit qualified candidates into their global enterprise, and explain how a formal education in informatics is invaluable for success in these new and emerging industry roles.

S34 – Panel  
Theme: Clinical Decision Support, Outcomes, and Patient Safety  
Room: Jefferson East

Lessons from Evaluating the Implementation of New Informatics in an Integrated Healthcare Delivery System: the Veterans Health Administration

R. Perrin, D. Hynes, Department of Veterans Affairs; M. Goldstein, VA Palo Alto Health Care System; C. Achtmeyer, A. Young, Department of Veterans Affairs

The Veterans Health Administration’s comprehensive healthcare system has an EHR system that supports patient safety and quality of care with applications such as computerized provider order entry, bar code medication administration, and clinical decision support (CDS). The implementation of new health information technology (HIT) to further advance safety and quality can meet with varying degrees of success in any organization, depending on many factors related to the informatics and the healthcare organization. The purpose of this panel is to present and discuss lessons learned from evaluations of the implementation of interventions that include informatics solutions within the VA healthcare system. These interventions range in scale and complexity from a comprehensive CDS system to disease-focused clinical reminders. This panel will identify important barriers and facilitators to implementation
along with examples of unintended consequences. The challenges the VA faces to meet the demand for healthcare quality improvement are not unlike those facing other large- and small-scale institutions. We hope to share lessons that are applicable to other public and private sector healthcare systems undertaking programs that utilize healthcare informatics in improving the quality of patient care.

**S35 – Panel**  
Theme: EHRs and Achieving Meaningful Use  
Room: International Ballroom West

**Quality Reporting from Health Information Technology: Challenges, Opportunities, and Insights**  
L. Kern, Weill Cornell Medical College; P. Tang, Palo Alto Medical Foundation and Stanford University; J. Weiner, Johns Hopkins University; M. Honour, R. Kaushal, Weill Cornell Medical College

The federal government is investing up to $27 billion in incentives for meaningful use of EHRs. Demonstrating meaningful use involves reporting quality measures electronically from EHRs. This represents a significant shift from current methods of measuring healthcare quality from administrative claims and/or manual record review. This panel brings together perspectives from the academic and vendor communities to discuss challenges, opportunities and insights on electronic quality reporting. Specifically, the panel will explore topics including: adapting claims-based measures for EHRs, reporting meaningful use measures from EHRs, the validity and reliability of electronic reporting compared to manual review, advancing novel measurement of aspects of quality that cannot be captured by claims (for example, utilizing laboratory values, medications lists and/or problem lists), case mix adjustment from EHRs, collaboration with vendors, and implications for research. The learning objectives for these presentations are for participants to: a) gain a greater appreciation for the conceptual and technical complexities involved in electronic quality reporting; b) recognize opportunities for the development of novel quality measures; and c) understand future directions of the meaningful use program and other national efforts to advance quality measurement.

**S36 – Panel**  
Theme: Interactive Systems  
Room: International Ballroom East

**Tablets in Healthcare: Not Just for Pills Anymore**  
H. Feldman, L. Nathanson, J. Halamka, Beth Israel Deaconess Medical Center; J. Meyers, Hospitals Corporation of America

Second-generation tablets such as the Apple iPad, are causing a groundswell of new applications in medicine. These are being driven heavily from the ground up, as providers bring their personal devices and expectations of adopting them into large and small healthcare organizations. These devices present unique opportunities for bedside care, as well as challenges for HIT. At our hospital, iPads have been in use since the first day of release in clinical care across multiple departments, and use is rapidly expanding. The addition of competing tablets will likely drive performance and price drops and further raise integration and security issues. These devices are making location much less relevant as one can literally practice in the palm of your hand regardless of where you are, while location and spatial awareness services are making local location a new asset for care-providers.

**S37 – Paper: Information Retrieval & Text Mining**  
Theme: Data Mining, NLP, Information Extraction  
Room: Lincoln West

Session Chair: Wendy Chapman
Search Filter Precision Can be Improved by NOT-ing Out Irrelevant Content
N. Wilczynski, K. McKibbon, R. Haynes, McMaster University

An Investigation Into the Feasibility of Spoken Clinical Question Answering
T. Miller, K. Ravvaz, University of Wisconsin - Milwaukee; J. Cimino, U.S. National Library of Medicine; H. Yu, University of Wisconsin - Milwaukee

The MiPACQ Clinical Question-Answering System
B. Cairns, R. Nielsen, University of Colorado at Boulder; J. Masanz, Mayo Clinic College of Medicine; J. Martin, M. Palmer, W. Ward, University of Colorado at Boulder; G. Savova, Children’s Hospital Boston and Harvard Medical School

NeuroLOG: Sharing Neuroimaging Data Using an Ontology-based Federated Approach
B. Gibaud, INSERM; G. Kassel, Univ. de Picardie Jules Verne; M. Dojat, Univ. Joseph Fourier Grenoble; B. Batrancourt, Univ. Pierre et Marie Curie; F. Michel, A. Gaignard, J. Montagnat, UNS, I3S Lab

Evaluation of HL7 v2.5.1 Electronic Case Reports Transmitted from a Healthcare Enterprise to Public Health
D. Rajeev, C. Staes, University of Utah; R. Evans, University of Utah/Intermountain Healthcare; A. Price, M. Hill, Salt Lake Valley Health Department; S. Mottice, Utah Department of Health; I. Risk, Salt Lake Valley Health Department; R. Rolfs, University of Utah/Utah Department of Health

Methods to Identify Standard Data Elements in Clinical and Public Health Forms
N. Abernethy, University of Washington; P. Small, Institute of Systems Biology; K. DeRimer, University of California, Davis

Quantifying the Longitudinal Value of Healthcare Record Collections for Pharmacoepidemiology
M. Sperrin, Lancaster University; S. Thew, University of Manchester; J. Weatherall, AstraZeneca Pharmaceuticals; W. Dixon, University of Manchester; I. Buchan, University of Manchester

Development and Evaluation of a Prototype Search Engine to Meet Public Health Information Needs
J. Keeling, Columbia University; E. Allen, S. Rowe, Syracuse University; A. Turner, University of Washington; J. Merrill, Columbia University; E. Liddy, H. Turtle, Syracuse University

Determining Reasons for Medication Prescriptions in the EHR Using Knowledge and Natural Language Processing
Y. Li, H. Salmisian, R. Harpaz, H. Chase, C. Friedman, Columbia University

SRCAST-diagnosis: Understanding How Different Members of a Patient-care Team Interact with Clinical Decision Support System
**Scientific Sessions**

**Improving Patient Safety by Modifying Provider-ordering Behavior Using Alerts (CDSS) in CPOE system**
K. Saxena, B. Lung, J. Becker, Adventist Health System–Information Services

**The Effect of Computerized Provider Order Entry (CPOE) on Ordering Patterns for Chest-pain Patients in the Emergency Department**
T. Adam, University of Minnesota; R. Waitman, I. Jones, D. Aronsky, Vanderbilt University

**S40 – Papers: New Methodologies in Text Mining**
Theme: Data Mining, NLP, Information Extraction
Room: Cabinet
Session Chair: Meliha Yetisgen-Yildiz

**A Cloud-based Approach to Medical NLP**
K. Chard, M. Russell, Y. Lussier, The University of Chicago; E. Mendonca, University of Wisconsin-Madison; J. Silverstein, NorthShore University HealthSystem

**Graph-based Methods for Discovery: Browsing with Semantic Predications**
B. Wilkowski, Technical University of Denmark; M. Fiszman, C. Miller, National Library of Medicine; D. Hristovski, University of Ljubljana; S. Arabandi, G. Rosemblat, T. Rindflesch, U.S. National Library of Medicine

**Improving Predictions in Imbalanced Data Using Pairwise Expanded Logistic Regression**
X. Jiang, R. El-Kareh, L. Ohno-Machado, University of California, San Diego

**Statistical Machine Translation for Biomedical Text: Are We There Yet?**
C. Wu, F. Xia, University of Washington; L. Deleger, I. Solti, Cincinnati Children’s Hospital Medical Center

**S41 – Papers: Usability & Use Challenges in Consumer Health Informatics**
Theme: Consumer Informatics and Multimedia Personal Health Records PHRs
Room: Jefferson West
Session Chair: Andrea Hartzler

**Development and Early Usage Patterns of a Consumer-facing Family Health History Tool**

**Who Are Portal Users vs. Early E-Visit Adopters? A Preliminary Analysis**
C. Jung, R. Padman, Carnegie Mellon University; G. Shevchik, S. Paone, University of Pittsburgh Medical Center

**A Tablet Computer Application for Patients to Participate in Their Hospital Care**
D. Vawdrey, L. Wilcox, S. Collins, S. Bakken, S. Feiner, Columbia University; A. Boyer, NewYork-Presbyterian Hospital; S. Restaino, Columbia University & NewYork-Presbyterian Hospital

**Usability Evaluation of a Personal Health Record**
N. Segall, Duke University Medical Center; J. Saville, P. L’Engle, B. Carlson, Duke University Health System; M. Wright, Duke University Medical Center; K. Schulman, Duke Clinical Research Institute; J. Tcheng, Duke University Medical Center

**S42 – Partnerships in Innovation: Research Informatics, Data Integration and Exchange**
Theme: Data Integration and Exchange
Room: Gunston
Session Chair: to be announced
The Pediatric Heart Network Portal - A Collaboration of Pediatric Heart Centers, Academia, Government and Industry to Improve Image Workflow for Pediatric Cardiac Multi-site Studies
G. Pearson, National Heart, Lung, and Blood Institute; S. Tennstedt, New England Research Institutes; R. Winslow, Johns Hopkins University; M. Keller, A. Fernandez, Booz Allen Hamilton

We will present collaborative efforts among pediatric heart centers, academic centers, government and industry to apply bioinformatics methodology and open-source technologies to enhance the multisite clinical study management of the Pediatric Heart Network (PHN). The PHN was created and funded by the National Heart, Lung, and Blood Institute (NHLBI) in 2001 to improve outcomes and quality of life in children with congenital and acquired heart disease. The network consists of pediatric heart centers, a data coordinating center (New England Research Institutes, NERI) and core labs to capture, store and analyze clinical data. Booz Allen Hamilton conducted a community analysis to identify areas for workflow improvement and develop a bioinformatics strategy. Priority areas were identified in image study workflow, security, and infrastructure improvements. A web-based portal system that integrates image storage, security and semantics is being developed, in collaboration with PHN sites, as well as incorporating common infrastructure from the NHLBI’s Cardiovascular Research Grid (CVRG). Together, these groups have brought clinical and bioinformatics technology perspectives and efficient solutions to improve the clinical study management of the PHN today. The bioinformatics infrastructure will provide the backbone to add additional data types in the future to enable sharing within PHN sites.

Clinical Results Clearinghouse—a Collaboration Model that Addresses Challenges to Meaningful Use and Data Interoperability
G. Elhanan, Halfpenny Technologies, Inc and NJIT; T. Thornburg, Health Sciences South Carolina

Interoperable data are essential to the HITECH initiative. Despite standardization efforts, much of the clinical laboratory data pushed into ambulatory electronic health records (EHRs) are not stored in compliance with a standard code set. Similarly, certified EHRs vary in their capabilities to produce discrete, normalized data. Such deficiencies interfere with providers’ ability to achieve meaningful use (MU) and limit the benefits that can be realized through the use of modern EHRs and health information exchanges (HIEs). To overcome such limitations, the South Carolina regional extension center (REC) and HIE collaborated with a neutral vendor to adopt an economically sustainable model of a clinical results clearinghouse. This model overcomes the limitations of traditional point-to-point interfaces, facilitates MU by ambulatory providers, offers bidirectional connectivity for lab results, and ensures the availability of discrete, standardized clinical lab results within EHRs and the SC HIE. This presentation describes a pilot project: a collaboration between South Carolina’s HIE, REC, and Halfpenny Technologies that offers a middleware approach that simplifies the burden of implementation on the community physicians and the hospital labs, while providing a sustainability option to the HIE. Business and design drivers are discussed as well as scale-up feasibility and potential secondary uses.
Distributed Interoperable Research Experts Collaboration Tool (DIRECT)

G. Weber, Harvard Medical School; W. Barnett, University of Indiana; M. Conlon, University of Florida; D. Eichmann, University of Iowa; W. Kibbe, H. Falk-Krzesinski, Northwestern University; M. Halaas, Stanford School of Medicine; L. Johnson, University of Minnesota; E. Meeks, University of California, San Francisco; D. Mitchell, Stanford University School of Medicine; T. Schleyer, University of Pittsburgh, School of Dental Medicine; S. Stallings, University of Colorado Denver; M. Warden, Elsevier; M. Kahlon, University of California, San Francisco

Research networking tools use data-mining, social networking, and semantic web approaches to enable expertise discovery, matchmaking, and more. Several platforms have been built, such as the commercial product Elsevier’s SciVal Experts (formally ‘Collexis’), U.Pittsburgh’s DigitalVita, Harvard Catalyst Profiles, U.Florida’s VIVO, U.Iowa’s Loki, Northwestern’s LatticeGrid, Indiana’s HUB, and Stanford CAP; and, many additional institutions have also deployed at least one of these products. In August, 2010, the Clinical and Translational Science Award (CTSA) Research Networking Group launched an initiative, which included the leads of major research networking tools, to explore interoperability between products and to design a pilot for a federated national network that connects both CTSA and non-CTSA institutions. Over the subsequent months, this group expanded to 29 institutions representing more than 50,000 researchers, established a set of guidelines for participation, and built a prototype federated site at http://direct2experts.org. This presentation will primarily review the technical architecture of the network, provide a live demonstration of how to locate expertise across the country, and illustrate the various user interfaces different institutions have developed for the network. We will also briefly present preliminary results of the pilot network, point out future challenges, and explain how others can participate in the national network.

Rapid Identification of Toxic Chemicals During Emergencies: Integrating Search with Visual Analytics

S. Bhavnani, University of Texas; A. Ganesan, University of Michigan; C. Weber, Washtenaw County Hazardous Materials Response Team

First responders have a critical need for rapidly identifying toxic chemicals during emergencies. However, current first-responder systems require a large number of inputs before a chemical can be identified. Here we demonstrate a novel system which significantly reduces the number of inputs required to identify a toxic chemical, and provides a visualization of the identification process to help first responders make sense of complex information during stressful situations. The system has been evaluated and demonstrated to first responders in the field. Current development efforts are focused on refining the prototype for deployment, and generalization to other datasets.

5:00 – 6:30 pm Committee Meetings

2012 Summit on Translational Bioinformatics SPC Meeting
Room: Jay

AMIA 2012 Annual Symposium SPC Meeting
Room: Northwest

Bylaws Committee Meeting
Room: Albright

Industry Advisory Council Meeting
Room: Holmead

International Affairs Committee Meeting
Room: Independence
5:15 – 7:00 pm Poster Session 1
Room: Columbia Hall
Authors are present. Posters and authors in this session are listed on p. 53.

5:30 – 6:30 pm Special Event
AMIA Mentorship Meeting
Room: Georgetown
AMIA Mentorship Program participants are invited to a meet-and-greet where mentor and mentee pairs can get together in person and kick-off what we expect to be a terrific year of mentoring. Please join us—many participants have found this face-to-face event to be rewarding and worthwhile.

5:30 – 7:00 pm Business Meetings
Ethical, Legal, and Social Issue WG Business Meeting
Room: Fairchild
Nursing Informatics WG Business Meeting
Room: Jefferson West
Pharmacoinformatics WG Business Meeting
Room: Gunston
Primary Care Informatics WG Business Meeting
Room: Lincoln West

6:00 – 8:00 pm Business Meeting
JAMIA Editorial Board Meeting
Room: Lincoln East/Monroe

6:30 – 7:30 pm Special Event
Corporate Reception
AMIA's Corporate Members and Sponsors are invited to a specially focused event at which AMIA is able to express its thanks for their generous and reliable support.
Room: Kalorama
Sponsored by Booz Allen Hamilton

7:00 – 8:00 pm Special Event
Nursing Informatics WG Reception
Room: Jefferson East
Sponsored by Cerner, Siemens, University of Minnesota

7:30 – 10:00 pm Business Meetings
Clinical Research Informatics WG Business Meeting
Room: International Ballroom East
Sponsored by Oracle, Velos

8:00 – 10:00 pm Special Event
New Member Welcome Suite
Come chat and network with your colleagues and get to know AMIA leaders and VIPs in a relaxed and casual setting. AMIA's membership committee will be on hand to meet new and potential members. Come socialize, enjoy refreshments and even win some great prizes.
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**SCIENTIFIC SESSIONS**

**7:00 – 8:15 am Committee Meetings**

- 2012 Summit on Clinical Research Informatics SPC
  Room: Kalorama
- Awards Committee Meeting
  Room: Holmead
- Ethics Committee Meeting
  Room: Independence
- Finance Committee Meeting
  Room: Jay
- Working Group Steering Committee Meeting
  Room: Fairchild

**7:00 am – 8:30 am Special Event**

- CSC Corporate Roundtable
  Room: Morgan
  (Prior RSVP required)

**7:00 am – 6:00 pm Registration Open**

**8:30 – 10:00 am Semi-plenary Sessions**

**S44 – Featured Presentation**
Theme: Clinical Research Informatics
Room: International Ballroom Center

**Informatics Year in Review**
Daniel Masys, University of Washington

This popular review session presents notable events that have occurred in the past twelve months. Included will be new findings from the published literature, achievements in operational applications of informatics, changes in public policy and government, and emerging technologies. Implications of these events on the future of bioinformatics, clinical informatics and healthcare will be addressed. Dr. Masys is Affiliate Professor in the Department of Medical Education and Biomedical Informatics at the University of Washington Seattle.

**S45 – Panel**
Theme: Policy and Ethical Issues
Room: International Ballroom West

**The IOM ‘Future of Nursing’ Report: Informatics Implications**
B. Westra, University of Minnesota; D. Alexander, GE Healthcare Information Technologies; Y. Bolla, AMIA; C. Delaney, University of Minnesota; S. Bakken, Columbia University; R. Kennedy, Thomas Jefferson University

The Institute of Medicine (IOM) completed a two-year study funded by the Robert Wood Johnson Foundation (RWJF) that examined evidence to answer the question, “What roles can nursing assume to address the increasing demand for safe, high-quality and effective healthcare services?” There are significant healthcare reform changes in process; however, the goals of reforming health care cannot be achieved without strengthening the largest segment of the workforce—nurses—as full partners and leaders in improving health and healthcare delivery. The IOM report had four high-level recommendations to improve and empower the future of nursing: 1) ensure that nurses practice to the full extent of their education and training; 2) improve nursing education; 3) provide opportunities for nurses to assume leadership positions and serve as full partners in healthcare redesign and improvement efforts; and 4) improve data collection for workforce planning and policy-making. The purpose of this panel is to relate the implications of this report for informatics practice, education, research, health policy, and alignment with AMIA’s strategic planning.
Introducing Watson into Clinical Practice: How Elementary Will It Be?
H. Chase, Columbia University, College of Physicians and Surgeons; D. Gondek, IBM, Watson Strategy Team; E. Siegel, University of Maryland School of Medicine; E. Shortliffe, AMIA (Moderator)

“Chronic kidney disease for $500 please!” Although providers are unlikely to utter these words as they search for appropriate medical information and clinical guidelines to diagnose and manage patients with CKD, they may soon have an advanced computer system reading their notes and listening to their conversations with patients. IBM’s wunderkind, Watson, who decisively bested the two greatest champions in Jeopardy! history in February 2011, is now being reconfigured to be used in healthcare. Think of the possibilities: answering providers’ medical questions in a split second, diagnosing diseases from the EHR that are unrecognized by providers, or identifying treatments that are guideline-based and modified for the individual patient. The panelists will focus on three aspects of Watson’s potential to reduce the information gap between provider and what is “actually known:” Herbert Chase will provide an overview of current information needs and how Watson might be used to satisfy them; David Gondek will describe the science behind Watson and how Watson decides what is the best information; and Eliot Siegel will discuss the process of taking Watson through “medical school” and potential gaps and challenges associated with realization of its full potential in healthcare.

10:00 – 10:30 am Coffee Break
Room: Columbia Hall

10:00 am – 2:00 pm Exhibition Hall Open
Room: Columbia Hall

The 2011 Joint Summits on Translational Science, held in San Francisco in March of 2011, was the second time that the Summit on Translational Bioinformatics (TBI) and the Summit on Clinical Research Informatics (CRI) were co-located. It was, however, the first time that the two meetings were purposely melded together with a number of events that spanned both meetings, including ‘Bridge Day’ that consisted of presentations and keynotes that spanned the content of both. Combining the TBI and CRI summits into a single event, along with cooperatively functioning Scientific Program Committees, is concomitant with the ultimate goal of crossing the often-described “translational barriers” in biomedicine. This panel will provide an overview of major topics that have been areas of emphasis in TBI and CRI since the first Summits, followed by a more detailed exposition of topics discussed at the 2011 Joint Summits, and concluding with discussion of how the convergence of TBI and CRI initiatives may help usher in a new era of biomedicine.
Scientific Sessions

S48 – Panel
Theme: Clinical Workflow and Human Factors
Room: Jefferson East

Visualizing Change: The Role of Data Visualization in Health IT
B. Hesse, National Cancer Institute; B. Shneiderman, University of Maryland; M. Kreuter, Washington University; B. Rabin, Kaiser Permanente

Significant advances in high-throughput computing, interoperability, storage, and adoption of health information technologies may be heralding an era of “Big Data” in medicine. According to projections by the Institute of Medicine, these same advances can—and ought to—be used to enable “rapidly learning health systems” with data structures optimized for shortening the gap between discovery and practice. Understanding how to present data effectively in a rapidly learning health environment, however, will be a crucial step needed to avoid confusion, paralysis, and a sense of “data smog” among users. This panel will present the results of focused research funded by the National Cancer Institute (NCI) aimed at (a) understanding the information environment surrounding patients and clinicians within a data-intensive environment, (b) understanding the cognitive and behavioral constraints surrounding the consumption and use of health data, and (c) developing the scientific knowledge needed to improve presentation of large-scale data sets in both clinical and public health settings in the future. Such a basic investment in the cognitive and computational sciences is needed, program directors at the NCI have argued, to enable progress in the ‘meaningful use’ of HIT as described by the Department of Health and Human Services.

S49 – Panel
Theme: Data Mining, NLP, Information Extraction
Room: International Ballroom Center

Advances in Clinical Question Answering: Watson Meets Healthcare
J. Hurdle, University of Utah; G. Savova, Harvard University; M. Kohn, IBM Research; D. Demner-Fushman, U.S. National Library of Medicine; R. Nielsen, University of Colorado at Boulder; H. Yu, University of Wisconsin–Milwaukee

This panel offers a thought-provoking discussion on a topic that stirred up an unprecedented amount of chatter in the AMIA Natural Language Processing Working Group community. Our goal is to review the state of the art of clinical question answering systems (cQA) in light of the brilliantly showcased achievement of IBM’s Watson QA system on the Jeopardy! game show. We take a nontraditional approach to this panel’s format by briefly describing three important cQA tools, followed by three perspectives on the clinician’s view of cQA in the world of life-after-Watson. Setting the stage, a lead IBM scientist will provide an overview of IBM’s technology and their healthcare plans. The panel will leave 20 minutes for discussion with the audience. Learning objectives for the panel: 1) Attendees will be able to describe the special nature of clinical question asking at the point of care; 2) Attendees will understand how to compare and contrast three state-of-the-art clinical question answering systems; 3) Moving beyond the recent publicity, attendees will leave with an understanding of how IBM’s technology is being repurposed for healthcare. This panel is sponsored by the AMIA NLP WG.
S50 – Panel
Theme: Informatics Education and Workforce Development
Room: International Ballroom East

Education for the Clinical Informatics Subspecialist
W. Hersh, Oregon Health & Science University; C. Friedman, University of Michigan; B. Munger, University of Arizona; R. Gardner, University of Utah; E. Shortliffe, AMIA

The clinical informatics subspecialty is likely to become a reality for physicians in the next one to two years. In addition to rigorous on-the-ground training, clinical informatics specialists will need comprehensive educational programs covering the knowledge base of the field. This panel will bring together four individuals involved in the subspecialty’s educational efforts and related areas to discuss the educational needs of future specialists and how related programs, such as the ONC University-based Training Program (and other programs) can adapt to meet these needs.

S51 – Paper: Challenges of Sharing
Theme: Data Integration and Exchange
Room: Jefferson West
Session Chair: to be announced

Federating Clinical Data from Six Pediatric Hospitals: Process and Initial Results from the PHIS+ Consortium
S. Narus, R. Srivastava, R. Gouripeddi, O. Livne, P. Mo, University of Utah; J. Bickel, Children’s Hospital Boston; D. de Regt, Seattle Children’s Hospital; J. Hales, University of Utah/Intermountain Healthcare; E. Kirkendall, Cincinnati Children’s Hospital Medical Center; R. Stepanek, Child Health Corporation of America; J. Toth, Children’s Hospital of Pittsburgh; R. Keren, Children’s Hospital of Philadelphia

The Department of Veterans Affairs, Department of Defense, and Kaiser Permanente Nationwide Health Information Network Exchange in San Diego: Patient Selection, Consent, and Identity Matching
O. Bouhaddou, J. Bennett, T. Cromwell, G. Nixon, J. Teal, R. Smith, M. Davis, L. Fischetti, Department of Veterans Affairs; D. Parker, Department of Defense; Z. Gillen, J. Mattison, Kaiser Permanente

Cross-mapping Clinical Notes Between Hospitals: an Application of the LOINC Document Ontology
L. Li, C. Morrey, D. Baorto, NewYork-Presbyterian Hospital

Electronic Laboratory Data Quality and the Value of a Health Information Exchange to Support Public Health Reporting Processes
B. Dixon, Regenstrief Institute & Indiana University; J. McGowan, Indiana University School of Medicine; S. Grannis, Regenstrief Institute

S52 – Papers: Learning & Modeling Algorithms
Theme: Clinical Decision Support, Outcomes, and Patient Safety
Room: Fairchild
Session Chair: to be announced

Comparison of OWL and SWRL-based Ontology Modeling Strategies for the Determination of Pacemaker Alerts Severity
O. Dameron, P. Van Hille, L. Temal, Université de Rennes/INSERM; A. Rosier, Université de Rennes/INSERM/Institut Catholique Lillois; L. Deleger, C. Grouin, P. Zweigenbaum, LIMSI-CNRS; A. Burgun, Université de Rennes/INSERM

A Discriminative Approach to EEG Seizure Detection
A. Johnson, Georgia Institute of Technology; D. Sow, A. Biem, IBM Research
**Sample-efficient Learning with Auxiliary Class-label Information**  
Q. Nguyen, H. Valizadegan, A. Seybert, M. Hauskrecht, University of Pittsburgh

**A Surveillance Tool to Support Quality Assurance and Research in Personalized Medicine**  
N. Khan, Vanderbilt University; J. Peterson, Vanderbilt University/VA Tennessee Valley Healthcare System

**Evaluation of an Android-based mHealth System for Population Surveillance in Developing Countries**  
Z. Rajput, Regenstrief Institute; S. Mbogua, D. Amadi, V. Chepungeno, USAID-AMPATH Partnership; J. Saleem, Veterans Health Administration; Y. Anokwa, C. Hartung, G. Borriello, University of Washington; B. Mamlin, Regenstrief Institute; S. Ndege, USAID-AMPATH Partnership; S. Ndege, Moi University; M. Were, Regenstrief Institute, Inc. and Indiana University School of Medicine

**Beyond Regional Health Information Exchange in China: a Practical and Industrial-Strength Approach**  
S. Liu, B. Zhou, G. Xie, J. Mei, H. Liu, IBM Research-China; C. Liu, L. Qi, IBM China Software Development Lab

**OpenMRS, a Global Medical Records System Collaborative: Factors Influencing Successful Implementation**  
N. Mohammed-Rajput, Regenstrief Institute/Indiana University School of Medicine; D. Smith, Regenstrief Institute; B. Mamlain, P. Biondich, Regenstrief Institute/Indiana University School of Medicine; B. Doebbeling, Regenstrief Institute/Indiana University School of Medicine/Center for Implementing Evidence-based Practice

**How Can a Computer be Useful to You? A Feasibility Study to Elicit Perceptions of Computers in Rural India**  
S. Bhavnani, University of Texas Medical Branch; A. Chavan, Human Factors International, Inc.; S. Maroo, Indian Institute of Technology; I. Jain, Mphasis BFL, Ltd

**PASTE: Patient-centered SMS Text Tagging in a Medication Management System**  
P. Stenner, K. Johnson, J. Denny, Vanderbilt University School of Medicine

**Using Medical Text Extraction, Reasoning and Mapping System (MTERMS) to Process Medication Information in Outpatient Clinical Notes**  
L. Zhou, Partners HealthCare/Brigham and Women’s Hospital/Harvard Medical School; J. Plasek, L. Mahoney, Partners HealthCare; N. Karipineni, Partners HealthCare/Brigham and Women’s Hospital Medical School; F. Chang, Partners HealthCare; X. Yan, Brigham and Women’s Hospital; F. Chang, D. Dimaggio, D. Goldman, Partners HealthCare; R. Rocha, Partners HealthCare/Brigham and Women’s Hospital/Harvard Medical School
Variability in Drug Formularies and Implications in Decision Support  
M. Stephens, J. Finnell, L. Simonaitis, M. Overhage, Regenstrief Institute/Indiana University

Modeling Drug Exposure Data in Electronic Medical Records: an Application to Warfarin  
M. Liu, M. Jiang, V. Kawai, C. Stein, D. Roden, H. Xu, Vanderbilt University; J. Denny, Vanderbilt School of Medicine

S55 – Papers: Health Care Quality & Delivery  
Theme: EHRs and Achieving Meaningful Use  
Room: Lincoln East/Monroe  
Session Chair: Kim Unertl

Assessing the Motivation of MDs to use Computer-based Support at Point-of-Care in the Emergency Department  
D. O’Sullivan, Aston University; J. Doyle, Dundalk Institute of Technology; W. Michalowski, University of Ottawa; S. Wilk, Poznan University of Technology; K. Farion, University of Ottawa/Children’s Hospital of Eastern Ontario; C. Kuziemsky, University of Ottawa

All Health Care is Not Local: an Evaluation of the Distribution of Emergency-Department Care Delivered in Indiana  
J. Finnell, M. Overhage, S. Grannis, Regenstrief Institute & Indiana University

Reducing Missed Laboratory Results: Defining Temporal Responsibility, Generating User Interfaces for Test Process Tracking, and Retrospective Analyses to Identify Problems  
S. Tarkan, C. Plaisant, B. Shneiderman, University of Maryland; A. Hettinger, MedStar Institute for Innovation & Washington Hospital Center

From Simply Inaccurate to Complex and Inaccurate: Complexity in Standards-based Quality Measures  
D. Dorr, A. Cohen, M. Williams, Oregon Health & Science University; J. Hurdle, University of Utah

S56 – Theater-style Demonstrations: Informatics and Open-Source Systems  
Theme: Interactive Systems  
Room: Georgetown  
Session Chair: Charles Jaffe

The Regenstrief G3 System: a User-Centered CPOE Built on an Open-source Framework  
J. Duke, B. Mamlin, D. Martin, Regenstrief Institute & Indiana University School of Medicine

The Regenstrief Institute, a pioneer in physician order entry and clinical decision support systems, is currently in the midst of deploying a new platform built on open-source technologies. The centerpiece of this effort is G3, a CPOE designed to support advanced research in clinical decision support, usability, physician workflow, and patient safety. We will be demonstrating this new system, with a focus on its interface design, CDS architecture, natural language processing capabilities, and provider communications. We also will be discussing our user-centered design process, opportunities for collaboration, and future development plans.

Open-source, Standards-based Software to Enable Decision Support  
G. Del Fiol, K. Kawamoto, University of Utah; J. Cimino, U.S. National Institutes of Health–Clinical Center

Open-source, standards-based clinical decision support (CDS) could catalyze significant improvements in health and healthcare. In this panel, co-chairs of the HL7 CDS
Work Group and leaders of multi-institutional initiatives to develop open-source, standards-based CDS software will discuss this promising approach to developing highly scalable CDS. The panelists will demonstrate a suite of open-source CDS software, including: (1) a reference implementation of the HL7/OMG Decision Support Service standard (OpenCDS); (2) a reference implementation of the HL7 Infobutton standard (Open-Infobutton); and (3) a knowledge-management tool that enables users with no programming background to create and maintain HL7-compliant infobutton-managing knowledge bases (LITE; Librarian Infobutton Tailoring Environment).

10:30 am – 12:00 pm

LB3 – Late-breaking Session

Strategic and Policy Implications of Unintended Consequences of HIT and HIE

Meryl Bloomrosen, AMIA; Julie McGowan, Regenstrief Institute and Indiana University; Doug Peddicord, Washington Health Advocates; Dean Sittig, University of Texas Houston; Justin Starren, Northwestern University Biomedical Informatics Center.

Many factors can potentially and negatively affect adoption or use of health information technology (HIT) and/or exchange of Health Information Exchange (HIE). Some unintended consequences (UCs) can be anticipated, addressed, or mitigated directly by those individuals or organizations experiencing the consequences. Other potential UCs are likely to have serious negative impacts unless action is taken at a national or strategic level to help identify and then prevent or mitigate them. During this session, panelists will explore several strategic, political, and policy-related implications of unintended consequences of HIT and HIE. Building on issues explored in AMIA’s previous policy meeting on UCs and focusing on current events and possible future scenarios, panelists will consider where national policy developments and other actions could help prevent UCs from occurring or mitigate the impact if they did.

10:30 am – 2:00 pm Posts

Room: Columbia Hall

Poster Session 2 Preview

Attendance by authors is optional in this session, which allows registrants to browse posters at their leisure. The poster session, with authors present, takes place from 5:15 to 7:00 pm.

Theme: Clinical Decision Support, Outcomes, and Patient Safety

1. Prevalence of Drug-drug Interaction Alerts and Override by Type
E. Ahn, H. Kam, R. Park, Ajou University

2. A Naive Bayes Classifier to Estimate Mandibular Growth by the Cervical Vertebral Maturation Method
R. Baptista, C. Quaglio, L. Mourad, C. Ortolani, I. Pisa, Universidade Federal de Sao Paulo

3. Automated Creation of Clinical Progress Notes with Machine Learning
M. Cham, Blenderhouse

4. Designing an Integrated Dynamic Display of Health Data for Aging in Place
A. Chandra, University of Missouri-Columbia; Y. Gong, University of Missouri

5. A Survey on Nurses’ Interpretations of the Braden Scale Parameters
J. Choi, University of Massachusetts Amherst; J. Choi, Spaulding Rehabilitation Hospital; H. Kim, University of California San Diego
E. Eisenstein, R. Edwards, Duke Clinical Research Institute; K. Kawamoto, Duke University; K. Anstrom, J. Willis, Duke University Medical Center; J. Simo, Duke University; S. Yaggy, NC Foundation for Advanced Health Programs; D. Lobach, Duke University Medical Center

7. Nursing Non-pharmacologic Interventions in Post-operative Pain Management
F. FitzHenry, Department of Veterans Affairs Tennessee Valley Healthcare System and Vanderbilt University School of Medicine; J. Doran; M. Dietrich, Vanderbilt University Medical Center; S. Littlejohn; Y. Chen; M. Matheny, Vanderbilt University; J. Ehrenfeld, N. Wells, Vanderbilt University Medical Center

8. Decision Support System in Diagnoses and Prescription of Physical Activity
E. Gomes, Federal University of São Paulo; C. Barsottini, J. Wainer, Federal University of São Paulo–UNIFESP

9. Transitioning from Adverse Drug Event Surveillance to Prevention
K. Heard, K. Faulkner, P. Milligan, BJC HealthCare; P. Milligan, Washington University School of Medicine

V. Herasevich, S. Caples, J. Jensen, O. Gajic, B. Pickering, Mayo Clinic

11. Evaluation of Documentation of Delirium in the VA Electronic Health Record
C. Hope, SLC VA IDEAS Center; N. Estrada, VASLCHCS; A. Gundlapalli, University of Utah; J. Garvin, Salt Lake City VA Medical Center; M. Lincoln, Veterans Health Affairs; C. Weir, B. Sauer, University of Utah; B. Sauer, SLC IDEAS Center

A. Hummel, R. Maciel, R. Baptista, P. Schor, I. Pisa, Universidade Federal de São Paulo

E. Joffe, O. Havakuk, Tel Aviv Medical Center, V. Patel, UTHealth

14. Using Clinical Decision Support to Identify Sepsis Outside the Intensive Care Unit in a Community-based Hospital
T. Jukes, Sutter Health and UC Davis School of Medicine; M. Daly, M. Larrabee, Sutter Health

15. Reasoning with Effects of Clinical Guideline Actions Using OWL
G. Leonardi, S. Quaglini, Università di Pavia, M. Peleg, University of Haifa, S. Tu, Stanford University, P. Russo, G. Palladini, G. Merlini, IRCCS Policlinico San Matteo Foundation and University of Pavia

16. Performance of Automated Adverse Drug Event (ADE) Triggers Designed for the Ambulatory Setting
17. The Greasemonkey Firefox Add-On for Altering Display of Data in a Web-based Electronic Medical Record
A. McCoy, The University of Texas Health Science Center at Houston (UTHealth) and UT-Memorial Hermann, J. Peterson, Vanderbilt University Medical Center and Vanderbilt University School of Medicine

18. Classification of Clinical Trial Eligibility Criteria to Support Semantic Linkage of Research and Clinical Care Data
K. Milian, A. Teije, F. Harmelen, Vrije Universiteit, A. Bucur, Philips Research

19. An Analysis of Clinical Decision Support for Repetitive Urine Culturing
A. Noto, Case Western Reserve University; P. Greco, The MetroHealth System; D. Kaelber, The MetroHealth System/Case Western Reserve University

20. Physician Prescribing Experiences Over Time After Transitioning from an Older to a Newer Electronic Health Record
E. Ploeh, V. Patel, E. Abramson, S. Malhotra, S. Osorio, A. Cheriff, R. Kaushal, Weill Cornell Medical College

21. The Association of Electronic Health Record-based Reminders with Hypertension Screening and Blood Pressure Control at U.S. Primary Care Visits
L. Samal, Brigham and Women’s Hospital, J. Linder, S. Lipsitz, L. Hicks, Brigham and Women’s Hospital/ Harvard Medical School

22. A Personal Health Record Module Improves Documentation of Family History
J. Schnipper, Brigham and Women’s Hospital; L. Volk, Partners HealthCare, J. Wald, Harvard Medical School; T. Gandhi, D. Williams, Partners HealthCare, B. Middleton, Partners HealthCare System

23. Automatic Calculation of Low-Risk Monitoring Based on TISS Score
R. Smairat, B. Pickering, Y. Dong, A. Hanson, V. Herasevich, Mayo Clinic

24. Computer-Assisted Diagnosis in Dysmorphology: from Compendiums to Diagnostic Systems
F. Suarez-Obando, S. Visweswaran, University of Pittsburgh

25. Toward a Decision Basis of Breast Reconstruction: Defining the Alternatives
C. Sun, D. Wang, J. Lee, The University of Texas at Austin; G. Reece, M. Fingeret, M. Crosby, E. Beahm, The University of Texas MD Anderson Cancer Center; M. Markey, The University of Texas at Austin

26. Do Copied Electronic Notes Reflect Patient Care? A Study of Lifestyle Counseling Documentation in Patients with Diabetes
A. Turchin, Partners HealthCare; S. Goldberg, Massachusetts General Hospital; E. Breydo, Partners IS; M. Shubina, Brigham and Women’s Hospital; J. Einbinder, Partners HealthCare System

27. Nursing Perceptions of Electronic Health Record (EHR) Alerts
T. Winden, Allina Hospitals and Clinics

28. Identifying Invalid Childhood Vaccinations Among Patients in an Inner-City Health Care System
V. Zhu, S. Grannis, W. Tu, M. Rosenman, S. Downs, Indiana University School of Medicine & Regenstrief Institute
**Theme: Clinical Research Informatics**

29. Techniques for Federating Queries Across Different “Ontologies” in i2b2  
A. Abend, A. Mandel, M. Palchuk, Recombinant Data

30. Query Chains for Dynamic Generation of Value Sets  
J. Brinkley, L. Detwiler, University of Washington

31. The Use of an Electronic Workflow Solution in Community-based Research  
M. Co, Jr., Y. Lee, R. Lucero, Columbia University

32. Leveraging a Regional Health Information Exchange (HIE) to Accelerate a Population-based Epidemiology Study  
P. Embi, The Ohio State University; K. Alwell, C. Moomaw, P. Hoskins, R. Witzke, University of Cincinnati; J. Khoury, Cincinnati Children’s Hospital Medical Center; D. Kleindorfer, B. Kissela, University of Cincinnati

33. Using the OpenMRS Open-source EMR Platform to Support a Large Study of TB Epidemiology  
H. Fraser, D. Thomas, Partners In Health; J. Tomaylla, N. Garcia, L. Lecca, Socios En Salud, M. Murray, Brigham and Womens Hospital; M. Becerra, Harvard

34. Computerized Patient Interviews: Complexity Scoring  
M. Gnieski, S. Reti, Beth Israel Deaconess Medical Center; C. Safran, Harvard Medical School, H. Kowaloff, E. Kaldany, Beth Israel Deaconess Medical Center; W. Slack, Harvard Medical School; H. Feldman, Beth Israel Deaconess Medical Center

35. GluHMap: A Novel Visualization of Continuous Glucose-Monitoring Data Using Heatmaps  
J. Hubbard, Beth Israel Deaconess Medical Center and Harvard Medical School; S. Reti, Harvard Medical School; H. Feldman, Beth Israel Deaconess Medical Center; H. Wolpert, Joslin Diabetes Center and Joslin Clinic; C. Safran, Harvard Medical School

36. Impact of a Patient Portal to Improve Quality of Care in an Autism Clinic  
S. Kleinfelder, J. O’Rourke, C. Ferron, A. Zai, D. Berkowicz, J. Chung, A. Neumeyer, Massachusetts General Hospital


38. A Step Against Re-identification: Keep Low Volume Query Result Inside Your Data Source  
J. Liu, OSU Medical Center; S. Erdal, OSUMC; J. Kamal, OSU Medical Center

39. Understanding Behavioral Intent to Participate in Shared Decision-making in Medically Uncertain Situations  
R. Maffei, UT Health Science Center

40. Identifying Patients with High Hospitalization Cost Using Psychosocial Characteristics  
J. O’Rourke, J. Weilburg, A. Zai, Massachusetts General Hospital

41. The Linked Clinical Data Project: Applying Semantic Web Technologies for Phenomics Using Electronic Medical Records  
J. Pathak, R. Kiefer, C. Chute, Mayo Clinic
42. Simplifying High Throughput Electronic Phenotyping
P. Peissig, A. Miller, N. Yoder, J. Starren, L. Rasmussen, Marshfield Clinic Research Foundation

43. Improving NLP Throughput Through Multi-threading
D. Redd, Q. Zeng-Treitler, University of Utah

44. Developing a Middleware to Collect Minimum Data Set for Cross-institutional Lymphedema Research
J. Reneker, University of Missouri; S. Xu, J. Armer, B. Stewart, University of Missouri-Columbia; C. Shyu, University of Missouri

45. Trends in Genetic Testing Using Electronic Health Records (EHRs)
J. Ronquillo, W. Lester, Massachusetts General Hospital & Harvard Medical School; R. Sakai, Juntendo University School of Medicine; C. Li, Harvard School of Public Health

46. Heat Maps as a Tool for Large, In-hospital Database Visualization for Rapid Hypothesis Generation
G. Simon, P. Li, V. Fiadosau, Mayo Clinic; P. Sampathkumar, Infectious Diseases; A. Hanson, V. Herasevich, B. Pickering, Mayo Clinic

47. VA Informatics and Computing Infrastructure’s VINCI Workspace
T. Trautman, J. Nebeker, L. Derby, V. Barrett, H. Saoudian, J. Scehnet, VA Salt Lake City Health Care System

48. Monitoring and Improving Mental Health Treatment Outcomes Using REDCap
T. Weigel, T. Idiculla, A. Laband, A. Busch, McLean Hospital

49. Applying Diffusion of Innovations Theory to Implementation of a Clinical Trials Management System
A. Wilcox, J. Weiss, B. May, M. Paulson, Columbia University

50. Integrating a Web-based Geographic Information System for Lymphedema Stakeholders
S. Xu, J. Armer, B. Stewart, University of Missouri-Columbia; C. Shyu, University of Missouri

51. Effective Information Management in Cancer Registries: Evaluating and Addressing the Needs for Cancer Research and Data Collection
I. Zachary, University of Missouri; J. Thompson, Missouri Cancer Registry, M. King, N. Cole, University of Missouri

Theme: Clinical Workflow and Human Factors

52. Systematic Collection of Patient-Reported Outcomes Within an EHR-based Clinical Workflow
C. Bae, M. Speck, I. Katzan, Cleveland Clinic

53. Developing and Evaluating a Nursing Hand-off Tool for the iPadTM
J. Blaz, S. Kapsandoy, University of Utah, N. Staggers, University of Maryland

54. Structured Data Availability in New Ambulatory EHR Implementations: the Case for/against Manual Data Abstraction and Preloading
M. Brunelle, A. Bempong, Northwestern University/CHITREC; Z. Rahman, University of Illinois

55. Using a Novel Method to Reveal Language Patterns Used by Nurses to Communicate Patient Status Associated with a Clinical Event
J. Carrington, University of Colorado
56. Workflow Considerations of a Computerized Asthma Management System in the Pediatric Emergency Department
D. Aronsky, J. Dexheimer, Vanderbilt University

57. Automated Triaging Method of Telereferral Service in the Philippines
R. Fernandez, I. Cardenas, M. Pedrena, R. Gavino, A. Wee, University of the Philippines Manila National Telehealth Center; A. Gavino, National Library of Medicine; P. Fernandez-Marcelo, A. Marcelo, University of the Philippines Manila National Telehealth Center

58. The Feasibility of Using Cycle Feedback to Fit the Operating Room System Implementation
F. Huang, Armed Forces Taichung General Hospital

59. Bringing Narrative Data into the Oncology Clinic Workflow: Pilot Testing
K. Johnson, P. Brennan, University of Wisconsin-Madison

60. Clinician Information Needs for Data Visualization-based Diabetes Risk-assessment and Guideline Compliance
A. Joshi, L. Levine, S. Jaladi, R. Padman, D. Neill, Carnegie Mellon University; C. Harle, University of Florida; F. Solano, University of Pittsburgh Medical Center; J. Zgibor, University of Pittsburgh

61. A Methodology for Reducing the Occurrence of Technology-induced Error in Health Information Systems
A. Kushneruk, University of Victoria

62. Integrated Electronic Documentation in Maternal-neonatal Nursing and Indicators Collection for Baby-friendly Hospital Initiative
Y. Lee, T. Chien, F. Hsu, S. Hsu, Chi Mei Medical Center

63. Application of Laboratory Testing and Simulation to Assess the Usability of Integrated Clinical Prediction Rules in an Electronic Health Record
A. Li, Mount Sinai School of Medicine; D. Mann, Boston University School of Medicine; A. Kushniruk, University of Victoria; T. McGinn, North Shore-LIJ Health System; Hofstra North Shore-LIJ Medical School; D. Edonyabo, L. Romero, J. Arciniega, Mount Sinai School of Medicine; D. Chrimes, University of Victoria, J. Kannry, Mount Sinai Medical Center

64. PsychVACS (v.2.0): A System for Asynchronous Telepsychiatry (ATP) Across Cultural Barriers
A. Odor, P. Yellowlees, D. Hilty, A. Riedl, N. Than, M. Burke, University of California Davis Health System; A. Iosif, University of California Davis

65. Comparative Analysis of Diagnostic Test-ordering Procedures in Emergency Departments
A. Ricksecker, T. Pressler, A. Wagner, P. Payne, The Ohio State University

66. Analysis of Triage Workflow in the Pediatric Emergency Department (ED): Implications for Development of a Clinical Decision Support System (CDSS)
67. Software Supporting the Certification of an IVD-Point-of-Care Testing Service According to ISO-15189 and ISO-22870 and Its Linkage to an ASTM-E2369-05 Continuity-of-Care Record
B. Spyropoulos, Technological Education Institute of Athens; E. Oikonomi, M. Botsivaly, TEI Athens

68. Cognitive Engineering Approach to Visualizing Clinical Data
T. Thyvalikakath, M. Dziabiak, M. Torres-Urquidy, University of Pittsburgh; A. Acharya, Marshfield Clinic Research Foundation; T. Schleyer, University of Pittsburgh, School of Dental Medicine

69. Evaluation of Medication Alerts for Compliance With Human Factors Principles: a Multi-Center Study
M. Zachariah, S. Phansalkar, Partners HealthCare; S. Phansalkar, Brigham & Women’s Hospital; H. Seidling, University of Heidelberg and University Hospitals of Geneva; L. Volk, Partners HealthCare; M. Bloomrosen, AMIA; D. Bates, Partners HealthCare and Brigham & Women’s Hospital

Theme: Consumer Informatics and Multimedia PHRs

70. Use of Real-Time Geographic Information Systems in Health Promotion
U. Backonja, P. Brennan, University of Wisconsin-Madison

71. Weekly Lapse Prediction in mHealth Intervention for Alcoholism
M. Chih, University of Wisconsin; T. Patton, University of Wisconsin–Madison; D. Gustafson, University of Wisconsin

72. Physician Variation by Specialty in Personal Health Record Use
B. Crotty, Y. Tamrat, Beth Israel Deaconess Medical Center; S. Reti, Harvard Medical School; H. Feldman, Beth Israel Deaconess Medical Center; B. Landon, C. Safran, Harvard Medical School

73. Satisfaction With Care Among Patients in Practices Undergoing Patient-centered Medical Home Transformation
R. Dhopheshwarkar, R. Kaushal, A. Edwards, L. Kern, Weill Cornell Medical College

74. A Colorectal Cancer Survivor’s Personal Health Record
D. Haggstrom, VA HSR&D Center on Implementing Evidence-based Practice and Indiana University; H. Xiao, J. Leventhal, Regenstrief Institute; M. Walsh, Indiana University; K. Norton, Regenstrief Institute; M. Weiner, VA HSR&D Center on Implementing Evidence-based Practice and Indiana University

75. Enhancing Communication After Treatment: What Cancer Patients Want From a Quality-of-Life Dashboard
A. Hartzler, K. Olson, B. Dalkin, J. Gore, University of Washington

76. Probabilistic Model-based Dynamic Elicitation and Personalized Recommendation of Preventive Health Services
M. Kao, Stanford University Medical Center; C. Chen, UCSF School of Medicine; S. Yu, A. Tam, K. Ng, A. Brodeur, The FreeHealth Team

77. A Framework of CHI-related Consumer Health Outcome Expectations
C. LeRouge, C. Van Slyke, Saint Louis University; G. Deckard, Florida International University; S. Joshi, R.O.C.
78. The Development of a Computer-based Fall Prevention Intervention in a Predominately Latino Population
R. Lucero, B. Sheehan, Columbia University; D. Nobile-Hernandez, 2ARC XVI Ft. Washington Senior Center; P. Yen, Ohio State University; O. Velez, S. Bakken, Columbia University

79. Communication Networks in Online Breast Cancer Support Groups
K. Namkoong, University of Wisconsin-Madison; M. Chih, University of Wisconsin; D. Shah, University of Wisconsin-Madison; D. Gustafson, University of Wisconsin

80. Effect of a Promotional Video on Patient Portal Registrations
F. North, B. Hanna, S. Crane, S. Smith, S. Tulledge-Scheitel, R. Stroebel, Mayo Clinic

81. “Personal Theories” from Observations of Daily Living
T. Patton, P. Brennan, University of Wisconsin–Madison

82. Assessing Patients’ Attitudes Concerning Medication Management Through Personalized Health Records
J. Philips, T. Pressler, P. Payne, The Ohio State University

83. Home Telemonitoring: Comparing Cognitive Reactions to Receiving Risk Measures
K. Shea, Arizona State University

84. Developing a Smartphone-based Peak Flow Meter
Y. Su, C. Lin, P. Chang, National Yang-Ming University

85. Impact of Outreach Efforts on an Untethered PHR: myNYP.org
V. Tiase, S. Fatalevich, A. Boyer, NewYork-Presbyterian Hospital

86. Mom-O-Meter: A Self-help Pregnancy Android App
B. Tulu, E. Agu, Worcester Polytechnic Institute

Theme: Data Integration and Exchange

87. FURTHeR Federation of Clinical Trials
R. Bradshaw, B. LaSalle, S. Narus, University of Utah

88. LOINC Learns to Speak Italian: Translation and Mapping of LOINC in Italy
M. Chiaravalloti, Università degli Studi della Calabria, D. Vreeman, Indiana University School of Medicine; D. Vreeman, Regenstrief Institute, Inc

89. Geospatial Enhancement of a Health Information Exchange
B. Dixon, Regenstrief Institute; K. Comer, The Polis Center at IUPUI; A. Martin, Regenstrief Institute; N. Devadasan, The Polis Center at IUPUI; S. Grannis, Regenstrief Institute

90. Secondary Data Reuse in Comparative Effectiveness Research: a Model Framework
D. Fort, K. Riordan, C. Cowansage, A. Wilcox, Columbia University

91. The UICollaboratory: Expanding Social Networking for Research
M. Garrett, J. Byelick, A. Garcia, P. Tej, D. Hynes, University of Illinois at Chicago
92. Distributed Interoperable Research Experts Collaboration Tool (DIRECT)  
M. Kahlon, University of California, San Francisco; W. Barnett, University of Indiana; M. Conlon, University of Florida; D. Eichmann, University of Iowa; W. Kibbe, H. Falk-Krzesinski, Northwestern University; M. Halaas, Stanford School of Medicine; L. Johnson, University of Minnesota; E. Meeks, University of California, San Francisco; D. Mitchell, Stanford University School of Medicine; T. Schleyer, University of Pittsburgh, School of Dental Medicine; S. Stallings, University of Colorado Denver; M. Warden, Elsevier; G. Weber, Harvard Medical School

93. Integrating Genomic Risk Reports Into an EMR Through a Data Warehouse  
J. Kamal, J. Liu, OSU Medical Center; J. Ding, The Ohio State University Medical Center; D. Newman, K. Sweet, A. Sturm, C. Link, S. Gecse, C. Marsh, OSU Medical Center

94. Design of Data-visualization Techniques for Integrated Assessment of Wellness  
T. Le, K. Wilamowska, H. Thompson, G. Demiris, University of Washington

95. Integrated Access to Disease Information: the PubMed Disease Sensor  

96. SRIEG: Secure Regional Images Exchange Gateway  
M. Petruc, G. Springer, M. Harris, C. Shyu, University of Missouri, Columbia

97. Developing Adoption-use Cases for a Statewide Master-person Index  
G. Rehwoldt, University of Utah; J. Duncan, W. Xu, Utah Department of Health; S. Narus, University of Utah

98. Continuity of Care Document (CCD) Provides Medications and Laboratory Results to Drools Decision-support Engine  
L. Simonaitis, Regenstrief Institute

99. Geographic Distribution of Patients Visiting a Health Information Exchange in New York City  
S. Vaidya, NYCLIX, J. Shapiro, A. Onyile, Mount Sinai School of Medicine/NYCLIX Inc.; G. Kuperman, New York-Presbyterian Hospital/NYCLIX Inc.

100. Using REDCap to Administer a Delphi Study  
A. Wyckoff, M. Cummins, B. Crouch, B. Wong, J. Abramson, P. Gesteland, University of Utah

Theme: Data Mining, NLP, Information Extraction

101. Exploring Predictive Models of ACS Outcomes with a Longitudinal, Multi-institutional Patient Database  
W. Black, E. Horvitz, University of Washington; E. Horvitz, Microsoft Research; M. Yetisgen-Yildiz, J. Gennari, University of Washington

102. Use of Association Rule-mining to Assess Diabetes Risk in Patients with Impaired Fasting Glucose  
P. Caraballo, M. Castro, S. Cha, P. Li, G. Simon, Mayo Clinic

103. Integrating i2b2 and R to Identify and Evaluate Potential Adverse Drug Reactions Using Secondary Use EMR Data  
V. Castro, V. Gainer, Partners HealthCare, S. Murphy, Harvard/Partners

104. Mining Optional Nursing Documentation Finds Links to Mortality  
S. Collins, D. Albers, D. Vawdrey, Columbia University
105. A GATE Plug-in for Tagging French Medical Texts with UMLS concepts
T. Delbecque, P. Zweigenbaum, LIMSI-CNRS

106. A Medical Document Text Element Ontology
G. Divita, University of Utah; D. Finch, James A. Haley Veterans Hospital; B. South, VA Salt Lake City Health Care; S. Shen, University of Utah; J. Jarman, VISN 8 Falls Clinic–James A. Haley VAMC (118M); Q. Zeng-Treitler, University of Utah

107. Analysis of UMLS Terms Occurrence in Renal Biopsy Reports
A. Falcao, A. Reis, F. Nicolas, UNIFESP; E. Ruiz, Universidade de São Paulo; I. Pisa, Universidade Federal de São Paulo

108. Clinical Note Type Analysis
S. Fodeh, C. Brandt, Yale University, Q. Zeng-Treitler, D. Redd, G. Divita, University of Utah

109. Templates for Identifying Breast Cancer Recurrence in Pathology
S. Halgrim, Group Health Research Institute; W. Chapman, University of California San Diego; G. Savova, Children’s Hospital Boston and Harvard Medical School; M. Sordo, Children’s Hospital Boston and Harvard Medical School; D. Tran, Group Health Research Institute; J. Zheng, Children’s Hospital Boston and Harvard Medical School; D. Carrell, Group Health Research Institute

110. Assessing Disease Co-occurrences Using Association Rule-mining and Public Health Data Sets
R. Kost, Fletcher Allen Health Care, E. Chen, B. Littenberg, University of Vermont

112. Temporal Information Extractor: Identifying Symptom Onset Date from Emergency Department Notes
D. Mahalingam, R. Medlin, D. Travers, S. Haas, University of North Carolina at Chapel Hill

113. Creation of a Gold Standard for EHR-based Information Retrieval
K. Natarajan, H. Chase, N. Elhadad, Columbia University

114. An Application Programming Interface for NDF-RT
L. Peters, T. Nguyen, O. Bodenreider, U.S. National Library of Medicine

115. Automated Classification of Death Events: Using Natural Language Processing in Public Health
A. Riedl, K. Anderson, University of California Davis Health System; E. Geraghty, University of California Davis; M. Hogarth, UC Davis School of Medicine

116. An Informatics Approach to Methicillin Resistant Staphylococcus Aureus Surveillance in the Department of Veterans Affairs
M. Rubin, VA Salt Lake City Health Care System and University of Utah School of Medicine; J. Garvin, Salt Lake City VA Medical Center; B. Doebbeling, S. Gullans, R.L. Roudebush VAMC, HSR&D; M. Merchant, Roudebush VAMC; R. Martinello, P. Mutalik, VA Connecticut Healthcare System/Yale School of Medicine; M. Goldstein, VA Palo Alto Health Care System; S. Luther, James A. Haley VMAC; M. Samore, B. South, VA Salt Lake City Health Care System

117. Diagnostic Delay in Graves’ Disease
118. Coverage of Manual De-identification on VA Clinical Documents
S. Shen, B. South, University of Utah & VA Salt Lake City Health Care; J. Friedlin, Regenstrief; S. Meystre, VA Salt Lake City Health Care

119. Statistical Approach for Categorizing Content in Medical Informatics, Computer Science and Health Domains
F. Teixeira, Universidade Federal de Sao Paulo; A. Hummel, E. De Domenico, UNIFESP; L. Araujo, USP; I. Pisa, Universidade Federal de Sao Paulo

120. Combined Bootstrap Approach for Correcting Conflated Terms Error in Radiology Reports
R. Wilson, University of Pittsburgh; B. Chapman, University of California San Diego

121. Extraction of Pneumonia Cases From Free-text Intensive Care Unit Reports
M. Yetisgen-Yildiz, B. Glavan, F. Xia, University of Washington; L. Vanderwende, Microsoft Research; M. Wurfel, University of Washington

122. Mapping the Data Deluge to LOINC®—Tsunami, Downpour or Drought?
P. Banning, 3M Health Information System

123. Developing and Embedding a Pediatric Pain Management Clinical Informatics System—a Preliminary KBNI Project
K. Chen, C. Hsu, M. Chang, Taipei Medical University–Wan Fang Hospital

124. Analyzing the Prevalence of Hedges in Electronic Health Record-oriented Phenotyping Algorithms
M. Conway, J. Pathak, Mayo Clinic

125. Qualitative Analysis of End-user Challenges Encountered During a Large-scale Outpatient EMR Implementation at an Academic Medical Center
S. Hom, J. Lyman, B. Sullivan, Z. Maclsaac, N. Ellero, W. Cohn, J. Harrison, Jr., S. Borowitz; University of Virginia Health System

126. Electronic Health Records and Ambulatory Quality of Care
L. Kern, Y. Barr, R. Dhopeshwarkar, R. Kaushal, Weill Cornell Medical College

127. Lessons Learned from Designing Clinical Data Modeling for National Surveillance of Intractable Disease in Japan
E. Kimura, S. Kobayashi, K. Ishihara, Medical School of Ehime University

128. Evaluation of Medical Safety in an e-Health Information System Through Incident Reports Management System
T. Matsumoto, Nagasaki University Hospital

129. Existence and Content of Academic Hospital Policies That Address Physician Documentation in Electronic Health Records
J. McGreevey III, S. George, C. Hanson III, University of Pennsylvania Health System

130. Physician Readiness to Respond to the HITECH Act: EHR Adoption from 2008-2010
V. Patel, M. Buntin, Office of the National Coordinator for Health IT; E. Jamoom, National Center for Health Statistics; C. Hsaio, National Center for Health Statistics
131. The Impact of Ambulatory Electronic Health Records on Healthcare Costs  
C. Salzberg, Brigham & Women’s Hospital; J. Adler-Milstein, Harvard University; C. Franz, Eastern Research Group; J. Orav, D. Bates, Brigham & Women’s Hospital

132. An Evaluation of the Impact of Additional Longitudinal Data on an EMR-Based Phenotype Algorithm for Identifying Type 2 Diabetes Mellitus Subjects  
W. Wei, University of Minnesota Twin Cities & Mayo Clinic; C. Chute, C. Leibson, Mayo Clinic

133. Extracting and Inserting Meaningful Use Concepts into UFuRT Models  
M. Zhu, University of Texas at Houston; M. Walji, University of Texas Dental Branch at Houston; J. Zhang, The University of Texas

Theme: Global eHealth

134. Global OpenELIS: Progress on an Open-source Laboratory Information System in Haiti and Cote d’Ivoire  
J. Flowers, B. Lober, L. Nixon, University of Washington

135. Identifying Needs for Informatics Solutions in Latin America  
J. Puyana, University of Pittsburgh, P. Ordonez, University of Maryland; C. Gomez, Pontificia Universidad Javeriana; C. Rojas, Oak Ridge National Laboratory; A. Ruiz, J. Ruiz, Pontificia Universidad Javeriana; J. Camacho, G. Douglas, University of Pittsburgh

136. Information Needs and Technical Self-efficacy of Midwives in Rural Ghana  

Theme: Imaging Informatics

137. Proxy PACS Servers for Image Delivery Through an Information Warehouse  
S. Erdal; J. Liu, C. Key, J. Kamal; The Ohio State University Medical Center; B. Clymer, The Ohio State University

138. Multi-channel Image Browser for Feature Analysis of Smooth Muscle Cells  
M. Grasso, University of Maryland School of Medicine

139. Improving Image Quality in Cine Phase-contrast MRI Using Constrained Reconstruction with a Temporal Constraint  
J. Hulet, D. Parker, J. Facelli, University of Utah

140. A Novel Masking Technique for Pulmonary Vasculature Segmentation  
X. Song, University of California, San Diego

141. Medical Imaging Informatics Bench to Bedside  
Y. Wang, S. Murphy, Partners HealthCare; D. Marcus, T. Olsen, Washington University St. Louis; C. Herrick, D. Sack, T. Wang, Partners HealthCare; R. Gollub, Massachusetts General Hospital; S. Pieper, Isomics, Inc.; W. Plesniak, Brigham and Women’s Hospital, Harvard Medical School; J. Wei, Radiology Informatics; K. Andriele, Brigham and Women’s Hospital; P. Lamonica, W. Tellier, Children’s Hospital

Theme: Informatics Education and Workforce Development

142. Where do Biomedical Informaticians Live? Analysis of Geographic Distribution of AMIA Annual Symposium Attendees 2008-2010  
A. Hanson, V. Herasevich, Mayo Clinic; W. Hersh, Oregon Health & Science University; B. Pickering, R. Rader, AMIA
143. Preliminary Findings and Early Lessons Learned from IT Professionals in Health Care (“Workforce”) Program  
K. Lowell, C. Markovitz, NORC at the University of Chicago; M. Swain, Office of the National Coordinator for Health Information Technology; J. Kronstadt, S. Brown, E. Zurawski, L. Rosenberger, NORC at the University of Chicago; M. Silver, JBS International

144. EMR Practicum at University of Wisconsin-Milwaukee  
T. Patrick, E. Dohman, C. Lindell, N. Tabesh-Saleki, N. Rahming, University of Wisconsin-Milwaukee

145. Native versus Non-native English-speaking PubMed Users: an Interactive Study  
K. Vanopstal, University College Ghent; R. Vander Stichele, G. Laureys, Ghent University; J. Buysschaert, University College Ghent

Theme: Informatics in Clinical Education

146. The Biomedical Information and Informatics Curriculum Thread: a Partnership Between Biomedical Informatics and a Health Sciences Library  
D. Beaudoin, University of Utah; J. Le Ber, A. Honisett, J. Shipman, Spencer S. Eccles Health Sciences Library; J. Mitchell, University of Utah

147. Information-seeking Practices of Medical Professionals and Students in Low- and Middle-income Countries  
A. Gavino, U.S. National Library of Medicine; B. Ho, P. Wee, A. Marcelo, University of the Philippines Manila–National Telehealth Center; P. Fontelo, U.S. National Library of Medicine

148. Technology-based Cooperative Learning to Enhance Critical Thinking and Skill Acquisition  
Z. Lin, Tzu-Chi College of Technology; M. Lee, National Dong Hwa University

149. Experience of Using Online Second Opinion in the Brazilian Public Primary Healthcare System  
M. Novaes, L. Sanches, Universidade Federal de Pernambuco; M. Lopes, State University of Campinas; D. Alves, J. Machiavelli, Universidade Federal de Pernambuco

Theme: Interactive Systems

150. More Than Looks Alone: Cognitive Support in an Emergency Department Information Display System  
B. Berster, Y. Liu, M. Zhang, V. Patel, J. Zhang, D. Robinson, A. Franklin, University of Texas Health Science Center at Houston

151. A Platform for the Recruitment and Enrollment of One Million Veterans for Genomic Medicine  

152. Using the UMLS as a Semantic Priming Mechanism for Co-reference Resolution in Annotation of Clinical Texts  
T. Forbush, VA Salt Lake City Healthcare System; S. Shen, J. Thibault, C. Weir, University of Utah; O. Uzuner, University at Albany, SUNY; B. South, VA Salt Lake City Health Care
153. Radical Redesign of the Electronic Medical Record Using a Hybrid Design Framework  
K. Keshavjee, InfoClin Inc., University of Victoria; J. Goss, OCAD University and University of Toronto; J. Cafazzo, University Health Network, University of Toronto

154. Building a Smartphone-based EMR: From Concept to Design to Prototype  
R. Lu, MGH Institute of Health Professions

155. Dart Hits Its Mark  
J. Scehnet, L. Derby, G. Larimer, VA Salt Lake City Health Care System/University of Utah; T. Trautman, VA Salt Lake City Health Care System; L. Kok, VA Information Resource Center (VIReC); V. Barrett, VA Salt Lake City Health Care System; J. Nebeker, VA Salt Lake City Health Care System/University of Utah

**Theme: Policy and Ethical Issues**

156. Proposed Evaluation Methodology for the SMArt Adoption  
J. Baran, E. Ramly, L. Hu, N. Chan, P. Brennan, University of Wisconsin-Madison

157. Analysis of the Workflows, Resources, and Barriers in Public Health Law Research and Practice  
J. Keeling, J. Merrill, Columbia University

158. Workspace Crossover and Partnership Tension in Informatics Innovation  
W. Pettey, University of Utah School of Medicine; J. Reid, Utah Office of Public Health Informatics; Y. Livnat, University of Utah; M. Samore, University of Utah, VA Salt Lake City Health Care System; W. Xu, Utah Office of Public Health Informatics

159. National Initiatives to Implement Health Information Technology in the United States: Perspectives of Key Policy Experts  
E. Zimlichman, R. Rozenblum, C. Salzberg, Y. Jang, R. Tamblyn, D. Bates, Brigham & Women’s Hospital

**Theme: Public Health Informatics and Biosurveillance**

160. Improved Automated Encoding of Death Certificates to Identify Pneumonia and Influenza Deaths  
K. Davis, C. Staes, J. Facelli, University of Utah; J. Duncan, Utah Department of Health; R. Price, S. Igo, University of Utah

161. A Month in the Life of an Automated Public Health Notifiable Condition Detector  
J. Friedlin, R. Gamache, S. Grannis, Regenstrief Institute, Indiana University School of Medicine

S. Grannis, Regenstrief Institute; R. Gamache, Indiana University; J. Friedlin, Regenstrief; D. Revere, University of Washington

163. Impact of Two-dimensional Barcoding of Vaccine Product Labels on Data Exchange: Stakeholder Perspectives and Preliminary Review of Standards  
**164. Applying Standards to Public Health: an Information Model for a Global Rare-diseases Registry**  

**165. OCEANS: Observational Cohort Event Analysis and Notification System**  
M. Matheny, Vanderbilt University, TVHS Veterans Administration; L. Nookala, S. Eden, Vanderbilt University Medical Center; U. Govindarajulu, Brigham & Women’s Hospital, Harvard Medical School; S. Normand, Harvard Medical School; R. Cope, Brigham & Women’s Hospital, Coping Systems, Inc.; L. Ohno-Machado, University of California San Diego; F. Resnic, Brigham & Women’s Hospital, Harvard Medical School  
Spatial Distribution of Viral Hepatitis Hospitalizations in the State of Sergipe, Brazil  
M. Santos, K. Arajo, Universidade Federal de Sergipe–UFS; P. da Silva, Federal University of Sergipe

**166. Best Practices in Implementing and Integrating Health IT Infrastructure: Lessons Learned from 10 Case Studies of Local and State Public Health Agencies**  
P. Soper, NORC at the University of Chicago

**167. Visualizing Influenza Activity Using the iPhone Platform**  
M. Torres-Urquidy, E. Neuhaus, L. Finelli, U.S. Centers for Disease Control and Prevention

**168. Systematic Approach to Analysis of Immunization Information Systems Operations and Processes**  
W. Williams, U.S. Centers for Disease Control and Prevention (CDC); D. Lyalin, Northrop Grumman Corp.

**169. The New National Hospital Care Survey and Use of Electronic Data Collection**  
M. Wolford, C. DeFrances, S. Williams, U.S. Centers for Disease Control and Prevention/NCHS; B. Gugerty, Gugerty Consulting, LLC

**Theme: Simulation and Modeling**

**170. Addressing Errors in a Retrospective Observational ICU Database**  
F. Callaghan, D. Demner-Fushman, S. Abhyankar, C. McDonald, National Institutes of Health

**Theme: Terminology and Standards**

**171. Telehealth Second-Opinion Archetypes for Case-study Standardized Shared Information in Brazil**  
M. Bernon-Hegray, ISIS, UFPE-NUTES; F. Silva, A. Campos, M. Novaes, UFPE

**172. SNOMED CT® Content-request System for the United States**  

**173. Results of an ICD-10-CM Coding Pilot Study Related to Clinical Documentation**  
S. Fenton, J. Moczygemba, Texas State University; K. Mechler, R. Morrow, Texas A&M Rural and Community Health Institute

**174. Data Warehousing Resources to Support VA Research: VA/CMS Data for Research Project**  
L. Kok, K. de Groot, M. Brown, D. Hynes, D. Kan, K. Stroupe, G. Brown, Department of Veterans Affairs; S. Eisen, Veterans Health Administration
175. The Development in Use of Nursing Classifications in a Psychogeriatric Ward
T. Meum, Tromsø Telemedicine Laboratory

176. Using Circulating Plasma Protein Biomarkers of Inflammation and Vascular Modeling to Detect Abdominal Aortic Aneurysm

Theme: Translational Bioinformatics and Biomedicine

177. The Use of ICD-9 Codes in Genetic Association Studies
L. Bastarache, J. Denny, Vanderbilt University School of Medicine

178. Characterizing Error and Uncertainty of Centroid-based Genomic Predictors
M. Ebbert, J. Facelli, University of Utah; R. Bastien, ARUP Institute for Clinical and Experimental Pathology; P. Bernard, University of Utah Huntsman Cancer Institute

179. A Formal Representation of Phenotyping Algorithm Elements
G. Jiang, J. Pathak, C. Tao, H. Solbrig, C. Chute, Mayo Clinic College of Medicine

G. Weber, Harvard Medical School

12:15 – 1:30 pm Business Meeting
State of the Association Meeting and Award Presentations
Room: International Ballroom East

(For more information on the State of the Association Meeting please see page 12).

1:45 – 3:15 pm Scientific Sessions

S57 – Featured Presentation
Theme: EHRs and Achieving Meaningful Use
Room: International Ballroom West

AMIA Informatics Vendor Consortium
C. Lehmann, Johns Hopkins University ; B. Byrnes, Edward Hospital; S. Downs, Regenstrief Institute; S. Weinberg, Vanderbilt University Medical Center

There is significant demand from pediatricians for child health-specific clinical decision support to be integrated into electronic health records (EHRs). To achieve this critical milestone, the American Academy of Pediatrics (AAP) is interested in partnering with the vendor community to explore and discuss creative approaches to providing AAP clinical content. As such, the AAP hosted a Vendor Consortium on Monday June 6, 2011, to investigate ways in which to partner with the vendor community to distribute AAP knowledge and expertise in an electronic format that can be linked to, or embedded within electronic health records (EHRs). The one-day consortium provided an opportunity for vendors to: learn more about the pediatric community and their needs relative to EHR system usage; learn more about AAP content and explore market opportunities for the distribution of this content; provide feedback and preferences for the dissemination of pediatric content through EHR systems; and provide feedback on how the AAP could best serve the EHR-vendor community and its pediatrician clients. A series of pre interviews were conducted prior to the consortium to provide background information and to begin solicitation of each vendor’s perspective on potential uses of clinical information in their systems and solutions. Findings from these calls indicated that while there was quite a
bit of variability amongst vendor needs and knowledge, there were some shared themes around standardization and guideline consensus.

S58 – Panel
Theme: Clinical Decision Support, Outcomes, and Patient Safety
Room: International Ballroom East

Legal and Ethical Issues of Computer Decision Support and Order-Sets
R. Koppel, University of Pennsylvania; J. Daniel, Office of the National Coordinator on HIT; S. Hoffman, Case Western Reserve University; E. Zych, Geisinger Health System; J. Boehne, Brigham and Women’s Hospital; B. Kaplan, Kaplan Associates

Concern is increasing about liabilities associated with Computer Decision Support. These concerns are reflected in several over-arching questions: 1. Will hospitals, agencies, and companies offering CDS alerts or other forms of computer-mediated information be held responsible for errors that might arise from use of that information? 2. If a clinician acts according to an alert, but the outcome is bad, will the designers or approvers of the alert be held liable? 3. Will a clinician be able to use CDS guidance as a defense, or might there be liability because he/she naively followed the guidance when he/she should have known it was inappropriate for that patient? 4. On the other side of the equation, what liability concerns are associated with ignoring or overriding CDS alerts or order-sets suggestions—especially in light of the reality that most alerts are ignored or overridden? This panel provides a new and comprehensive taxonomy of computer-assisted information. Then it will review the policy implications, including liability, risk managers, IT leaders, the role of attorneys and other non-clinicians in affecting these decisions. We also discuss the structure of vendor–provider relationships in establishing alerts, order-sets, menus, and information displays.

S59 – Panel
Theme: Data Integration and Exchange
Room: Lincoln East/Monroe

Allergies: Issues Related to Interoperability for Patient Care and Research
E. Ayres, J. Cimino, National Institutes of Health–Clinical Center; R. Leftwich, State of Tennessee; S. Huff, Intermountain Healthcare; C. Jaffe, Health Level 7

The management of drug, food and environmental allergy information within any healthcare practice is essential for patient safety. With the implementation of electronic healthcare systems documentation, practices for recording allergies and other reactions remain inconsistent. Primary allergy documentation must support drug-allergy alerts, clinical decision support, adverse event reporting, secondary use for research and interoperability. This panel explores the issues related to the primary documentation of allergies and other reactions in the electronic health record, factors necessary to meet meaningful use core measures for allergies, and proposed models to enable interoperability for patient care and research.

S60 – Panel
Theme: Consumer Informatics and Multimedia Personal Health Records PHRs
Room: International Ballroom Center

The Role of the Clinician in a Patient Power Context
C. Safran, W. Slack, Harvard Medical School; P. Brennan, University of Wisconsin–Madison; S. Okun, PatientsLikeMe; D. deBronkart, e-patient Dave

One of the goals of the HITEH act of 2009 is to engage patients and their families in their health care. In 1970, Warner Slack coined the term “Patient Power” and since then, many have developed tools and conducted
research to make this a reality with or without clinician participation. Our panel focuses on the role of the clinician to enable patient and family participation. Dr. Slack will discuss his work on patient-computer dialogue and describe a current approach to patient-entered, Internet-based medical histories. Dr. Brennan will discuss the evolution of personal health technologies in Project HealthDesign, a $10-million national program of the Robert Wood Johnson Foundation (RWJF) designed to stimulate innovation in personal health information technology by using PHRs as springboards for action and improved health decision-making. Dr. Safran will discuss the use of eHealth among populations thought to lack access to the Internet and experience with eHealth applications. Sally Okun will discuss the role of health-related social networking sites such as PatientLikeMe to empower patients and to enable patients to enter health related data, and from the patient’s perspective. “ePatient Dave”—Dave deBronkar—will respond to the clinician-centric view of patient empowerment.

**S61 – Papers: Clinical Research Informatics & Text Mining**
Theme: Data Mining, NLP, Information Extraction
Room: Jefferson East
Session Chair: Guergana Savova

**Predicting Adverse Drug Events from Personal Health Messages**
B. Chee, R. Berlin, B. Schatz, University of Illinois at Urbana-Champaign

**Pattern Mining for Extraction of mentions of Adverse Drug Reactions from User Comments**
A. Nikfarjam, G. Gonzalez, Arizona State University

**Extracting Temporal Constraints from Clinical Research Eligibility Criteria Using Conditional Random Fields**
Z. Luo, S. Johnson, C. Weng, Columbia University, A. Lai; The Ohio State University

**Automated Plan-recognition of Chemotherapy Protocols**
H. Bhatia, M. Levy, Vanderbilt University School of Medicine

**S62 – Papers: Collection & Simulation of Public Health Informatics**
Theme: Public Health Informatics and Biosurveillance
Room: Fairchild
Session Chair: Catherine Staes

**Linking Supermarket Sales Data to Nutritional Information: an Informatics Feasibility Study**
K. Brinkerhoff, P. Brewster, E. Clark, K. Jordan, M. Cummins, J. Hurdle, University of Utah

**Wireless Data Collection of Self-administered Surveys Using Tablet Computers**
K. Singleton, M. Lan, C. Arnold, M. Vahidi, L. Arangua, L. Gelberg, A. Bui, University of California Los Angeles

**Simulation Analysis Platform (SnAP): a Tool for Evaluation of Public Health Surveillance and Disease-control Strategies**
D. Buckeridge, C. Jauvin, A. Okhmatovskaia, A. Verma, McGill University

**A Cloud-based Simulation Architecture for Pandemic Influenza Simulation**
H. Eriksson, M. Raciti, M. Basile, A. Cunsolo, A. Froberg, O. Leifler, J. Ekberg, T. Timpka, Linköping University

**S63 – Papers: Medication Adverse Events & Alerts**
Theme: Clinical Decision Support, Outcomes, and Patient Safety
Room: Jefferson West
Session Chair: Gilad Kuperman
**Integration of Heterogeneous Clinical Decision Support Systems and Their Knowledge Sets: Feasibility Study with Drug-drug Interaction Alerts**
H. Kam, Samsung Advanced Institute of Technology; R. Park, Ajou University, J. Kim; Kwandong University; I. Cho, Inha University; Y. Kim, Seoul National University

**A Successful Model and Visual Design for Creating Context-aware Drug-drug Interaction Alerts**
J. Duke, Regenstrief Institute; D. Bolchini, Indiana University School of Informatics

**Structured vs. Unstructured: Factors Affecting Adverse Drug Reaction Documentation in an EMR Repository**
S. Skentzos, M. Shubina, J. Plutzky, Brigham and Women's Hospital; A. Turchin, Partners HealthCare

**A Drug-adverse Event Extraction Algorithm to Support Pharmacovigilance Knowledge Mining from PubMed Citations**
W. Wang, K. Haerian, H. Salmasian, R. Harpaz, C. Friedman, Columbia University

**Analyzing the Heterogeneity and Complexity of Electronic Health Record-oriented Phenotyping Algorithms**
M. Conway, Mayo Clinic; R. Berg, Marshfield Clinic Research Foundation; D. Carrell, Group Health Cooperative; J. Denny, Vanderbilt University, A. Kho, Northwestern University; I. Kullo, Mayo Clinic; J. Linneman, Marshfield Clinic; J. Pacheco, Northwestern University; P. Peissig, L. Rasmussen, Marshfield Clinic Research Foundation; N. Weston, Group Health Cooperative; C. Chute, J. Pathak, Mayo Clinic

**Automatically Detecting Problem-list Omissions of Type 2 Diabetes Cases Using Electronic Medical Records**
J. Pacheco, W. Thompson, A. Kho, Northwestern University

**The Role of the Electronic Medical Record in the Assessment of Health-related Quality of Life**
S. Pakhomov, University of Minnesota; N. Shah, H. Van Houten; P. Hanson, S. Smith, Mayo College of Medicine

**S65 – Papers: Patient Safety, Medication Lists & Terminologies**
Theme: Terminology and Standards
Room: Gunston
Session Chair: John Poikonen

**Patient Safety Problems Associated with Healthcare Information Technology: an Analysis of Adverse Events Reported to the U.S. Food and Drug Administration**
F. Magrabi, M. Ong, University of New South Wales; W. Runciman, Australian Patient Safety Foundation, University of South Australia; E. Coiera, University of New South Wales
Evaluation of Medication List Completeness, Safety, and Annotations
M. Owen, N. Chang, D. Vawdrey, Columbia University

Using RxNorm and NDF-RT to Classify Medication Data Extracted from Electronic Health Records: Experiences from the Rochester Epidemiology Project
J. Pathak, S. Murphy, B. Willaert, H. Kremers, Mayo Clinic; B. Yawn, Olmsted Medical Center; W. Rocca, C. Chute, Mayo Clinic

An Approximate Matching Method for Clinical Drug Names
L. Peters, T. Nguyen, O. Bodenreider, U.S. National Library of Medicine; J. Kapusnik-Uner, First DataBank

Role Prediction using Electronic Medical Record System Audits
W. Zhang, Vanderbilt University, C. Gunter, University of Illinois at Urbana- Champaign, D. Liebovitz, Northwestern University, J. Tian, B. Malin, Vanderbilt University

Query Log Analysis of an Electronic Health Record Search Engine
L. Yang, Q. Mei, K. Zheng, D. Hanauer, University of Michigan

A Bill of Rights for Physician-users of Electronic Health Records
D. Sittig, University of Texas Health Sciences Center

The U.S. Government has made a multi-billion dollar investment in electronic health record (EHR) infrastructure in an attempt to transform healthcare delivery systems. This initiative is experiencing significant challenges, often related to the poor fit between technology and clinical workflow. Assurances must be provided that EHRs will deliver the features and functions physicians require and that the regulatory environment will support them. This presentation describes ten “rights” which, if turned into reality, will help overcome many of these challenges and provide these basic assurances to physician-EHR users. These rights represent not merely desirable, but the minimum, essential set of EHR features, functions, and user privileges that physicians require to provide the highest quality, safest, and most cost-effective care.
The Emergence of the Informatics Practitioner:
Occupational and Educational Perspectives
W. Hersh, Oregon Health & Science University

The field of biomedical and health informatics has changed profoundly over the years. One of the most substantial recent changes is emergence of professionals who play the role of informatics “practitioner” in healthcare organizations, research institutions, companies, and academic centers. In this ACMI Senior Member Presentation, a senior leader in the field will share his perspective of this change from the standpoint of an academic department leader and educational program director. He will review the research about the informatics workforce and describe educational programs and other activities that have emerged to meet those needs.

3:30 – 5:00 pm Scientific Sessions

S68 – Featured Presentation
Theme: Public Health Informatics and Biosurveillance
Room: Jefferson West

The Next Informatics Agenda for Public Health
This session will provide an open discussion on the output from the recent AMIA conference in May 2011 to develop the next informatics agenda for public health including interim developments, and next steps regarding the five Public Health Informatics Domains; ethics, technical frameworks, training and workforce development, research and evaluation, and sustainability.

S69 – Panel
Theme: Clinical Research Informatics
Room: Fairchild

The Open-source Software Development Process in the Informatics Community for Integrating Biology and the Bedside (i2b2)
S. Murphy, M. Mendis, Partners HealthCare;
A. McMurry, Harvard Medical School; G. Weber, Beth Israel Deaconess Hospital

The i2b2 software developed over the past five years provides clinical investigators with tools necessary to integrate medical record- and clinical research-data in the genomics age, using a software suite to construct and integrate the modern clinical research chart (CRC). Since the first complete release of the i2b2 software platform in November of 2007, there has been a remarkable adoption rate by hospitals and clinical research centers worldwide. The interest arises from the uniqueness of the platform to allow exploration of healthcare data from the Electronic Medical Record (EMR) to approach certain types of research questions. i2b2 software enables the enterprise’s research community to find sets of interesting patients from electronic patient medical record data, while preserving patient privacy through a query tool interface. This has simulated a great deal of interest and support from the software industry which is heavily involved with many of the implementation sites at the enterprise level. The ways in which this complex platform can be maintained as open-source software will be discussed and critiqued in this panel.

S70 – Panel
Theme: EHRs and Achieving Meaningful Use
Room: International Ballroom Center

Meaningful Evaluation of Large-scale Health Informatics Interventions
R. Hibberd, N. Barber, A. Takian, The School of Pharmacy–University of London; A. Sheikh, The University of Edinburgh

Substantial investments made in electronic health record (EHR) systems across the world, including through the U.S. Health Information Technology for Economic and Clinical Health (HITECH) Act have resulted in adoption of national dimensions. Meaningful evaluation of HIT initiatives, however, is necessary to inform success-
ful adoption. We will explore the lessons that can be drawn from two independent, longitudinal, in situ national evaluations done by the English National Health Service (NHS) National Programme for IT. Our panel will explore lessons for evaluation that can be drawn from evaluations of the implementation of England’s Electronic Health Record (EHR) in secondary care, the NHS Care Records Service (CRS), and the Electronic Prescription Service (EPS) in primary care. We will focus on the design and conduct of meaningful evaluation of Health Information Technologies (HIT), evaluation that supports development, use, and ‘working out’ of HIT by stakeholders over a technology’s life.

**S71 – Panel**
Theme: Interactive Systems
Room: Cabinet

**Four Steps to Using Research Networking Effectively at Your Institution**
G. Weber, Harvard Medical School; A. Chatterjee, E. Meeks, L. Yuan, University of California, San Francisco

Research networking software tools are rapidly being adopted by many academic healthcare centers across the country, providing investigators with a new means of finding collaborators and facilitating the formation of multi-disciplinary, multi-institutional studies. This panel will present four short talks that provide institutions with important steps that will guide them in implementing a research networking tool: (1) Learn about cutting-edge features of research networking tools, such as linked open data and social network analysis; (2) Use standard APIs, such as OpenSocial, to leverage a community of developers. (3) Incentivize usage and understand your audience; (4) Use data, tools, and strangers to measurably improve user interfaces.

**S72 – Papers: CRI: Aggregation & Clustering**
Theme: Clinical Research Informatics
Room: International Ballroom West
Session Chair: Ricardo Bellazzi

**Using RxNorm for Cross-institutional Formulary Data Normalization Within a Distributed Grid-computing Environment**
R. Wynden, P. Lakshminarayanan, University of California San Francisco; N. Anderson, University of Washington; M. Casale, T. Thimman, University of Rochester; K. Anderson, L. Errecart, University of California Davis Health System; J. Prosser, University of Washington; A. Livshits, M. Weiner, University of Pennsylvania

**The SHARPn Project on Secondary Use of Electronic Medical Record Data: Progress, Plans, and Possibilities**
C. Chute, C. Beebe, K. Bailey, L. Hart, J. Pathak, Mayo Clinic; G. Savova, Harvard University; M. Schor, IBM T.J. Watson Research Center; S. Huff, Intermountain Healthcare

**MiDas: Automatic Extraction of a Common Domain of Discourse in Sleep Medicine for Multi-center Data Integration**
S. Sahoo, C. Ogbuji, L. Luo, X. Dong, L. Cui, G. Zhang, Case Western Reserve University; S. Redline, Harvard Medical School

**Alignment and Clustering of Breast Cancer Patients by Longitudinal Treatment History**
W. Lee, VA Healthcare System at Palo Alto & Stanford University; W. Bridewell, A. Das, Stanford University

**S73 – Papers: Getting it Done: Vendors & Workforce**
Theme: Informatics Education and Workforce Development
Room: International Ballroom East
Session Chair: Jaap Suermondt
Developing an Online and In-person HIT Workforce Training Program Using a Team-based Learning Approach
F. Morrison, J. Zimmerman, M. Hall, H. Chase, Columbia University; R. Kaushal, J. Ancker, Weill Cornell Medical College

How Communities are Leveraging the Health Information Technology Workforce to Implement Electronic Health Records
J. Richardson, E. Abramson, E. Pfoh, R. Kaushal, Weill Cornell Medical College

Studying the Vendor Perspective on Clinical Decision Support
J. Ash, Oregon Health & Science University, D. Sittig, University of Texas Health Sciences Center; C. McMullen, The Center for Health Research, Kaiser Permanente Northwest; J. McCormack, Oregon Health & Science University; A. Wright, Brigham and Women’s Hospital; A. Bunce, J. Wasserman, V. Mohan, D. Cohen, M. Shapiro, Oregon Health & Science University; B. Middleton, Partners HealthCare

Characteristics Associated with Hospital Health IT Vendor Switching and Dropping
E. Lammers, K. Zheng, University of Michigan

Determining Word Sequence Variation Patterns in Clinical Documents Using Multiple-sequence Alignment
F. Meng, C. Morioka, S. El-Saden, VA Greater Los Angeles Healthcare System

Detecting Abbreviations in Discharge Summaries Using Machine-learning Methods
Y. Wu, S. Rosenbloom, Vanderbilt University; J. Denny, Vanderbilt School of Medicine; R. Miller, S. Mani, D. Giuse, H. Xu, Vanderbilt University

Knowledge-based Method for Determining the Meaning of Ambiguous Biomedical Terms Using Information Content Measures of Similarity
B. McInnes, S. Pakhomov, University of Minnesota; T. Pedersen, University of Minnesota Duluth; Y. Liu, G. Melton, University of Minnesota

Characteristics Associated with Hospital Health IT Vendor Switching and Dropping
E. Lammers, K. Zheng, University of Michigan

S74 – Papers: Clinical Narratives: Text Mining
Theme: Data Mining, NLP, Information Extraction
Room: Jefferson East
Session Chair: Timothy Bickmore

Applying Active Learning to Assertion Classification of Concepts in Clinical Text
Y. Chen, S. Mani, H. Xu, Vanderbilt University

Detecting Abbreviations in Discharge Summaries Using Machine-learning Methods
Y. Wu, S. Rosenbloom, Vanderbilt University; J. Denny, Vanderbilt School of Medicine; R. Miller, S. Mani, D. Giuse, H. Xu, Vanderbilt University

Knowledge-based Method for Determining the Meaning of Ambiguous Biomedical Terms Using Information Content Measures of Similarity
B. McInnes, S. Pakhomov, University of Minnesota; T. Pedersen, University of Minnesota Duluth; Y. Liu, G. Melton, University of Minnesota

S75 – Papers: A Common Language: Interoperability of Health Data
Theme: Data Integration and Exchange
Room: Gunston
Session Chair: Charles Safran

A Multi-site Content Analysis of Social History Information in Clinical Notes
E. Chen, I. Sarkar, University of Vermont; S. Manaktala, G. Melton, University of Minnesota

Semantic Interoperability of Health-risk Assessments
J. Rajda, H. Wei, ActiveHealth Management; D. Vreeman, Indiana University School of Medicine/Regenstrief Institute; H. Wei, Weill Medical College of Cornell University
Interoperability of Medical Databases: Construction of Mapping Between Hospitals’ Laboratory Results Assisted by Automated Comparison of Their Distributions
G. Ficheur, E. Chazard, A. Schaffar, M. Genty, R. Beuscart, CHRU de Lille/Lille University Hospital

ADEpedia: A Scalable and Standardized Knowledge Base of Adverse Drug Events Using Semantic Web Technology
G. Jiang, H. Solbrig, C. Chute, Mayo Clinic College of Medicine

S76 – Papers: Patient Needs: Challenges & Opportunities
Theme: Consumer Informatics and Multimedia Personal Health Records PHRs
Room: Georgetown
Session Chair: to be announced

Sharing Is Caring, but not Error-free: Transparency of Granular Controls for Sharing Personal Health Information in Social Networks
A. Hartzler, M. Skeels, M. Mukai, C. Powell, P. Klasnja, W. Pratt, University of Washington

Drama and Danger: The Opportunities and Challenges of Promoting Youth Sexual Health Through Online Social Networks
T. Veinot, The University of Michigan, T. Campbell, YOUR Center; D. Kruger, A. Grodzinski, S. Franzen, University of Michigan

Use of Topic Modeling for Individualized Recommendation of Education Material to Patients
S. Kandula, D. Curtis, MIT, B. Hill, Q. Zeng-Treitler University of Utah

Supporting Cancer Patients’ Unanchored Health Information Management With Mobile Technology
P. Klasnja, A. Hartzler, C. Powell, W. Pratt, University of Washington

S77 – Partnerships in Innovation: Clinical Decision Support
Theme: Clinical Decision Support, Outcomes, and Patient Safety
Room: Lincoln East/Monroe
Session Chair: Paulina Sockolow

Using Clinical Decision Support to Ensure Ordering of Appropriate High-tech Diagnostic Imaging Scans
C. Vinz, Institute for Clinical Systems Improvement; S. Cowsill, Nuance Communications

The use of high-tech diagnostic imaging (HTDI) scans was increasing 8 percent annually in Minnesota. This potential overuse contributed to patient exposure to unnecessary radiation, and unsustainable increases in healthcare costs. The Institute for Clinical Systems Improvement (ICSI) collaborated with medical groups, health plans and the Minnesota Department of Human Services to set up a three-year pilot in five medical groups. The pilot showed that using American College of Radiology standards embedded into an EHR could ensure more appropriate scans. Using decision support, it is estimated these five groups prevented 50 people from getting cancer, saved $84 million in three years, and significantly improved clinic efficiencies. There has been 0 percent growth in HTDI scans in Minnesota over the past three years. ICSI then aligned with Nuance Communications to provide a “common set of appropriateness criteria” that can be embedded into an EHR or accessed via the Web. This enabled ICSI to make this approach available to all medical groups in Minnesota. ICSI and Nuance are collaborating with health plans and medical groups to design and integrate the Nuance tool.
and to provide a back-end analysis tool that will enable medical groups to ultimately link their HTDI orders to patient outcomes.

**Innovation Lab: Evidence-based Order-sets Tools from a Dynamic Hospital–Vendor Partnership**

S. Claypool, Wolters Kluwer Health, K. Moidu, Orlando Health

Orlando Health had amassed a sizable library of order-sets within its Allscripts (Eclipsys) EHR, and built CPOE compliance of over 80 percent at its seven hospitals. As the situation matured, there was an urgent need—but no efficient way—to consolidate order-sets to conform to standards, meet quality protocols and guidelines. They turned to ProVation Order Sets, powered by UpToDate Decision Support, from Wolters Kluwer Health (WKH) to maintain and streamline development and consolidation of more than 500 order-sets. Leveraging the solution’s automated update capabilities required that existing order-sets be imported into its authoring tool, and a process established for identifying order-sets within the EHR for updating, then revising, consolidating, and returning to the system with embedded links to knowledge resources. Rather than attempting manual reconstruction, Orlando Health joined WKH’s “Innovation Lab,” where hospitals and WKH’s clinical informatics experts partner together to design solutions to problems hindering utilization of CDS tools. Innovation Lab developed tools that mapped order-sets from Orlando Health’s EHR and recreated them within ProVation Order Sets. They were then mapped to structured orderables in the software’s order catalog so they could be updated and integrated back into the EHR with limited manual intervention.

**3:30 – 5:00 pm**

**LB4 – Late-breaking Session**

**Usability of Clinical Systems**

Jiajie Zhang, UT Health Houston; Madhu Reddy, Pennsylvania State University; Blackford Middleton, Partners Healthcare System, Brigham and Women’s Hospital and Harvard University; Matt Quinn, National Institute of Standards and Technology; Jacob Reider, U.S. Department of Health and Human Services

This session will feature: Jiajie Zhang, speaking on behalf of the ONC-funded SHARP-C group from UT Health Houston; Madhu Reddy, speaking on behalf of the Association for Computing Machinery Special Interest Group on Computer Human Interaction (ACM SIGCHI) and reporting on the jointly sponsored WISH workshop being held at AMIA 2011; Blackford Middleton, speaking on behalf of the AMIA Usability Task Force; Matt Quinn, speaking on behalf of National Institute of Standards and Technology (NIST) and their usability guideline-development efforts; and Kathy Kenyon, speaking on behalf of the HHS/Office of the National Coordinator on HIT (ONC) and their efforts to encourage and assure usability of EHR systems.
**TUESDAY, OCTOBER 25 • AMIA 2011**

**SCIENTIFIC SESSIONS**

**5:00 – 6:30 pm Special Event**

CSC Corporate Roundtable  
Room: Morgan  
(Prior RSVP required)

**5:15 – 7:00 pm Poster Session**  
Room: Columbia Hall

Poster Session 2  
Authors are present at this session. Posters and authors are listed on page 90.

**5:30 – 6:30 pm Business Meeting**

ACMI Business Meeting  
Room: Cabinet

**5:30 – 7:00 pm Business Meetings**

Clinical Decision Support WG Business meeting  
Room: Lincoln West  
Genomics WG Business Meeting  
Room: Independence

**6:30 – 7:30 pm Special Event**

AMIA 2011 Annual Symposium Scientific Program Committee Members are invited to a special reception, hosted by AMIA, in appreciation for their contributions to the Symposium.

**7:30 – 9:00 pm Chair’s Reception**

Room: International Terrace

Celebrate AMIA! All AMIA members are invited to attend this event in which AMIA will recognize, honor, and thank its volunteers. Hosted by AMIA’s Chair of the Board of Directors, this year’s event spotlights all those who serve AMIA: JAMIA reviewers, Scientific Program Committee members and reviewers (for all AMIA educational events), Committee Chairs and members, the AMIA Board of Directors, JAMIA Board Members, and Working Group Chairs and members. Come to revel or to tip your hat and lend a round of applause for your peers and colleagues. All members are welcome. Not a member? Join today! Cash bar.

**9:00 – 11:00 PM AMIA Lounge**

Room: Concourse

You asked for an alternative to the jazz and high energy of the Dance Party. AMIA now offers Plan B—a mellower, gentler, more relaxed conclusion to the last full day of the Symposium. Enjoy free wi-fi, comfy furnishings, and a cash bar—perfect for connecting with your peers for drinks, conversation, and relaxation.

**9:00 PM – 12:00 AM Dance Party**

Room: Lincoln East/Monroe

After the prolonged intensive concentration of the Scientific Sessions, here is the time and place to kick back and release your inner dance star! This party gets revved up with high velocity energy, a popular DC deejay, a nightclub vibe and cash bar. Get your dance on!
THE BETTY IRENE MOORE SCHOOL OF NURSING seeks visionary nurse educators and researchers to join the founding faculty at the new innovative nursing school at UC Davis. The founding faculty have the unique opportunity to participate in the development of the interdisciplinary and interprofessional curricula for the doctoral and master's degree programs as well as a future prelicensure program.

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- A specialization in health informatics

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UC Davis is an affirmative action/equal opportunity employer with a strong institutional commitment to the achievement of diversity among its faculty, staff and students.
### Scientific Sessions

**7:00 – 8:30 am Special Event**

Astra Zeneca Corporate Roundtable  
Room: Independence  
3M HIS Corporate Roundtable  
Room: Holmead  
(Prior RSVP required)

**7:30 – 11:30 am Registration Open**

**8:30 – 10:00 am Scientific Sessions**

**S78 – Panel**  
Theme: Clinical Decision Support, Outcomes, and Patient Safety  
Room: Fairchild

**International Perspectives on Evaluating Large-scale Community-based Health Information Technology Projects**  
M. Honour, L. Kern, Weill Cornell Medical College; P. Dullabh, NORC University of Chicago; M. Bainbridge, University Victoria

Globally, health information technology is no longer primarily concentrated in academic medical centers, but is more widely adopted at the community level. With this proliferation of systems and settings, evaluation research has the potential to be more broadly generalizable and transferable than ever, while being more complex. This panel will bring together researchers in the field to discuss the potential value of evaluation research in these new settings, and examples of large-scale evaluation research. Panelists have designed and conducted multi-year, mixed-method evaluations with both formative and summative components. Dr. Kern will discuss methods and challenges associated with evaluating the federally funded State Health Information Exchange (HIE) Cooperative Agreements Program. Dr. Bainbridge will present perspectives on telehealth and telecare from the UK and Canada.

**S79 – Panel**  
Theme: Clinical Research Informatics  
Room: Lincoln East

**Designs and Implementations of Informatics Platforms for Comparative Effectiveness Research**  
B. Hazlehurst, Kaiser Permanente Northwest; D. Sittig, University of Texas Health Sciences Center; S. Murphy, Partners HealthCare; J. Brown, Harvard Medical School; M. Rosenman, Regenstrief Institute, Inc.

Widespread adoption and conduction of Comparative Effectiveness Research has the potential to radically change the healthcare system as well as place enormous demands on the existing clinical informatics research infrastructure. Recently, multiple new designs and implementations of informatics platforms provide electronic clinical data and infrastructure for inter-institutional comparative effectiveness research. These include the HMO Research Network’s Virtual Data Warehouse (VDW), Harvard/Partners HealthCare Informatics for Integrating Biology and the Bedside (i2b2), Health Information Exchanges serving research needs (e.g., Regenstrief/Indiana HIE), as well as other informatics platforms currently in development and designed to provide capacity for answering comparative effectiveness research questions of heterogeneous electronic clinical data. In this panel, key personnel from these projects will reflect on a series of questions designed to highlight choices each project made along a number of dimensions, including Content (what data model and data sources?), Workflow (how are data integrated and utilized?), Governance (who controls it?), Security and Privacy (how is this ensured?), Efficiency (who works with it and how?), and Completeness (how far along is it?). In addressing these questions, speakers will discuss
tradeoffs that resulted from the design and implementation decisions of each project.

S80 – Panel
Theme: Imaging Informatics
Room: Gunston

Secondary Use of Medical Images: Opportunities for Informatics
E. Siegel, University of Maryland; B. Chapman, University of California; S. Antani, National Library of Medicine; J. Kalpathy-Cramer, Massachusetts General Hospital. Moderator: W. Hsu, University of California, Los Angeles

In today’s clinical environment, patient care is largely dependent upon imaging to understand disease processes and to establish tangible evidence of response to treatment. Effective integration of imaging data and related patient information is a necessity. The Biomedical Imaging Informatics Working Group presents a panel of experts who will discuss late-breaking research touching upon computational methods in data storage and sharing, information extraction, knowledge representation, and indexing and retrieval. The primary objectives of this panel are: 1) to learn about current research topics in imaging informatics, 2) to foster a discussion on how to address some of these challenges, and 2) to identify common needs shared across research topics. A period of free-form discussion will be allotted following the presentations to identify potential areas of collaboration between imaging informatics and the broader informatics community.

S81 – Panel
Theme: Informatics Education and Workforce Development
Room: International Ballroom Center

S82 – Panel
Theme: Terminology and Standards
Room: Jefferson West

Outlook for Student Informaticists in the Era of HITECH
P. Sockolow, P. Dalrymple, Drexel University; D. Fridsma, Office of the National Coordinator for Health IT; D. Kaelber, Metro Health System; C. Underwood, Siemens Health Care

The AMIA Student Working-Group (ST-WG) proposes a panel of representatives from the policy, academic, medical, and industry sectors that will provide insights and perspectives on careers in the new era of HITECH, which created the Health IT Workforce Program to assure a labor force properly trained and equipped to support the adoption and meaningful use of electronic health records. The Office of the National Coordinator of Health IT (ONC) foresees increasing demand for skilled health IT experts to support providers as the nation’s healthcare system becomes more technologically advanced.
Automatic Computation of CHA2DS2–Vasc Score: Information Extraction From Clinical Texts for Thromboembolism Risk Assessment
C. Grouin, L. Deleger, LIMSI-CNRS, A. Rosier, Faculté Libre de Médecine, L. Temal, O. Dameron, P. Van Hille, U936, A. Burgun, Laboratoire d’Informatique Medicale; P. Zweigenbaum, LIMSI-CNRS

Evaluation of Semantic-based Information Retrieval Methods in the Autism Phenotype Domain
S. Hassanpour, M. O’Connor, A. Das, Stanford University

Medical Record and Imaging Evaluation to Identify Arterial Tortuosity Phenotype in Populations at Risk for Intracranial Aneurysms
K. Diedrich, D. Parker, J. Roberts, R. Schmidt, University of Utah; L. Cannon-Albright, George E. Wallen Department of Veterans Affairs Medical Center; A. Yetman, Primary Children’s Medical Center

Naïve Electronic Health Record-based Phenotype Identification for Rheumatoid Arthritis
R. Carroll, Vanderbilt University School of Medicine; A. Eyler, Vanderbilt University Medical Center; J. Denny, Vanderbilt School of Medicine
Using a Unified Usability Framework to Dramatically Improve the Usability of an EMR Module
C. Harrington, R. Wood, J. Breuer, O. Pinzon, R. Howell, M. Pednekar, M. Zhu, J. Zhang, University of Texas at Houston

Implementation of an Electronic Referral System for Outpatient Specialty Care
S. Straus, RAND, A. Chen, H. Yee, M. Kushel, UCSF/San Francisco General Hospital and Trauma Center; D. Bell, RAND/UCLA Department of Medicine

The Knowledge Program: an Innovative, Unique Comprehensive Electronic Data Capture System and Warehouse
I. Katzan, M. Speck, C. Dopler, J. Urchek, K. Bielawski, C. Dunphy, L. Jehi, C. Bae, A. Parchman, Cleveland Clinic

Temporal Evolution of Biomedical Research Grant Collaborations Across Multiple Scales—a CTSA Baseline Study
R. Nagarajan, C. Lowery, W. Hogan, University of Arkansas for Medical Sciences

A Cognitive Architecture for Simulating Bodies and Minds
S. Nirenburg, M. McShane, S. Beale, University of Maryland Baltimore County; R. Catizone, Onyx Consulting, Inc.

Design and Validation of a Data-simulation Model for Longitudinal Healthcare Data
R. Murray, S. Reisinger, UnitedBiosource; P. Ryan, Johnson & Johnson/Foundation for the National Institutes of Health

An Empirical Study of Opinion Leader Effects on Mobile Information Technology Adoption in Healthcare
H. Hao, R. Padman, R. Telang, Carnegie Mellon University

S86 – Papers: Research Models & Collaborations
Theme: Simulation and Modeling
Room: Jefferson East
Session Chair: Peter Embi

S87 – Papers: Medication Reconciliation
Theme: EHRs and Achieving Meaningful Use
Room: Lincoln West
Session Chair: to be announced

Medication Reconciliation: Work Domain Ontology, Prototype Development, and a Predictive Model
E. Markowitz, E. Bernstam, J. Herskovic, J. Zhang, The University of Texas Health Science Center at Houston; B. Shneiderman, C. Plaisant, University of Maryland; T. Johnson, The University of Kentucky

Automated Medication Reconciliation and Complexity of Care Transitions
P. Bozzo Silva, E. Bernstam, J. Herskovic, E. Markowitz, J. Zhang, The University of Texas Health Science Center at Houston; T. Johnson, The University of Texas Health Science Center at Houston/University of Kentucky College of Public Health

Application of a Temporal Reasoning Framework Tool in Analysis of Medical Device Adverse Events
K. Clark, University of Minnesota; D. Sharma, C. Chute, C. Tao, Mayo Clinic
**A Prototype Knowledge Base and SMART App to Facilitate Organization of Patient Medications by Clinical Problems**

A. McCoy, The University of Texas Health Science Center at Houston; A. Wright, Brigham and Women's Hospital; A. Laxmisan, H. Singh, Baylor College of Medicine; D. Sittig, University of Texas Health Sciences Center at Houston

**S88 – Theater-style Demonstration: Health Data Sources and Networks**

Room: Georgetown

Session Chair: John Duke

**RxNav: Browser and Application Programming Interfaces for Drug Information Sources**

L. Peters, U.S. National Library of Medicine (NLM)

Developed at NLM, RxNav was originally designed for displaying graphically and navigating the relations among various kinds of drug entities (ingredient, brand name, clinical drug, branded drug, etc.) in RxNorm. The entry module supports auto-completion and spelling correction. In addition to drug names, RxNav provides access to the National Drug Codes (NDC codes) for clinical and branded drugs, as well as external links to resources, such as DailyMed. RxNav was recently extended to provide access to additional drug information sources, including RxTerms and the Veterans Health Administration (VHA) National Drug File-Reference Terminology (NDF-RT). The three datasets are updated monthly (with additional weekly additions to RxNorm). RxNav always displays the most recent releases of the datasets (from our servers) and does not require users to maintain local copies of the datasets. RxNav is a standalone Java Web Start application and requires an Internet connection. RxNav can be used behind a proxy server and is available at: http://rxnav.nlm.nih.gov/.

**10:00 – 10:30 am Coffee Break**

Room: Concourse

**10:30 am – 12:00 pm Scientific Sessions**

**S89 – Panel**

Theme: Clinical Research Informatics

Room: Fairchild

**Cross-boundary Collaboration on Secondary Use of Healthcare Data for Clinical Research**

Z. Cai, AstraZeneca Pharmaceuticals; J. Brownstein, Children's Hospital Informatics Program; R. Robison, University of Utah School of Medicine; T. Yeatman, Moffitt Cancer Center; J. Weatherall, AstraZeneca Pharmaceuticals

Secondary use of healthcare data as real world evidence has become a forefront for clinical research areas, such as comparative effectiveness research, translational medicine, personalized healthcare, and proactive pharmacovigilance. Multiple healthcare stakeholders, such as regulatory agencies, healthcare providers, payers, patients, and pharmaceutical companies are all realizing the importance of demonstrating the effectiveness and long-term safety of a new medical treatment against other treatment options in real world settings. Such research is a natural and critical complement to the more familiar instrument of clinical research—the randomized, controlled trial. A variety of collaborations have been developed in this key emerging area, including industry–academia, government–academia, and industry–industry (e.g. pharma–payer/vendor) collaborations or partnerships. This panel will focus on these cross-boundary collaborations using real world examples presented by collaboration leaders from academia and industry.
SCIENTIFIC SESSIONS

S90 – Panel
Theme: EHRs and Achieving Meaningful Use
Room: Lincoln East

Successes and Pains in Moving Towards Meaningful Use
S. Morgan, Partners HealthCare; M. Weiner, University of Pennsylvania; D. Bates, Brigham & Women’s Hospital; N. Fleming, Baylor Health Care System

With providers scrambling to meet the criteria of meaningful use, this session will explore various successes and pains encountered in the development of criteria and implementation of systems to meet these criteria. Attendees will learn about the development of the 2011, 2013, and 2015 criteria. The presenters also will explore the real-world application of these criteria in two large integrated healthcare delivery systems. In addition, some of the financial implications of implementing systems to meet meaningful use will be discussed and finally there will be a discussion on applying meaningful use to child healthcare as an example of meeting the needs of specialty care.

S91 – Panel
Theme: Global eHealth
Room: Gunston

Global Public Health Grid: Value proposition, Roadmap and Use Cases
M. Mirza, CDC, M. Kratz, University of Michigan; A. Gundlapalli, University of Utah; V. Kumar, Georgia Health Sciences University

The panelists will describe the various global public health information management and exchange challenges that are being addressed by the Global Public Health Grid (GPHG) Initiative. The Initiative proposes GPHG as a services architecture for global public health information exchange with a vision to deploy grid infrastructure to improve population health, by facilitating timely, secure, and reliable global public health information-sharing. The panel will provide information about use cases as well as various phases of GPHG roadmap development process using the Health Metrics Network (HMN) framework and the Public Health Informatics Institute (PHII) Business Process Matrix. Description of a focus group of experts representing major stakeholders (conducted after PHIN 2009, Atlanta) will be shared. The panel also will describe the GPHG use cases being considered as pilot projects. The pilot ‘global health information exchange’ aims to query various publicly available WHO data sources and provide mechanism of analysis, reporting and visualization. The session will conclude by describing the overall collaborative approach taken by the GPHG, phased plans, and immediate plans.

S92 – Panel
Theme: Terminology and Standards
Room: International Ballroom Center

Privacy Standards: Looking Beyond the HIPAA Privacy Rule
S. Vinterbo, University of California San Diego; B. Malin, Vanderbilt University; K. El Emam, CHEO Research Institute; S. Murphy, Partners HealthCare; L. Sweeney, Harvard University

Problems with the HIPAA Privacy Rule have been presented in the literature. The voiced criticism of the Privacy Rule focuses mostly on three issues, the discrepancy with other privacy regulations and the complications this creates, the lack of useful information left in the data after applying the ‘safe harbor’ for de-identification, and the insufficiency of the ‘safe harbor’ rule for providing credible de-identification. This panel will discuss whether de-identification in general is sufficient as a privacy criterion, and contrast re-identification risk assessment strategies for validation of de-identification.
Scientific Sessions

S93 – Panel
Theme: Translational Bioinformatics and Biomedicine
Room: Jefferson West

In Silico Approaches to Drug Discovery

Despite increasing investments in pharmaceutical R&D, a paucity of new drugs are approved. Drug discovery continues to be a lengthy and resource-consuming process in spite of all the advances in genomics, life sciences, and technology. There is an ever-growing effort to apply computational power to improve the effectiveness and efficiency of drug discovery. With the emergence of new sciences such as systems biology and unprecedented volumes of high-throughput data in this post-genomic era, a new set of methods are being developed to expedite and facilitate drug discovery and reuse by examining and constructing networks of drug-target association and drug off-target effects at a systems level. These approaches include systematic analysis of chemical structures, transcriptional responses after drug treatment, and both apparent and hidden knowledge from the biomedical literature. The objective of the panel is to showcase new resources and computational methods for streamlining drug discovery and to discuss its challenges and opportunities. This discussion consists of a panel of experts from academia, government, and pharmaceutical industry, who have been actively involved in development of computational tools and resources for drug discovery.

S94 – Papers: Making Clinical Research Easier: Tools and Methods
Theme: Clinical Research Informatics
Room: International Ballroom East
Session Chair: to be announced

A Real-time Screening Alert Improves Patient Recruitment Efficiency
C. Weng, C. Batres, T. Borda, N. Weiskopf, A. Wilcox, T. Bigger, K. Davidson, Columbia University

Evaluating Effectiveness of Clinical Alerts: a Signal Detection Approach
M. Ong, E. Coiera, University of New South Wales

Improving Adherence to Research Protocol Drug Exclusions Using a Clinical Alerting System
J. Cimino, L. Farnum, G. DiPatrizio, B. Goldspiel, National Institutes of Health

Expressing Observations from Electronic Medical Record Flowsheets in an i2b2-based Clinical Data Repository to Support Research and Quality Improvement
L. Waitman, J. Warren, E. Manos, D. Connolly, University of Kansas

S95 – Papers: Hand-offs & Transitions of Care
Theme: Clinical Workflow and Human Factors
Room: Jefferson East
Session Chair: Gail Keenan

The Promise of the CCD: Challenges and Opportunity for Quality Improvement and Population Health
J. D’Amore, University of Texas School of Biomedical Informatics; D. Sittig, University of Texas Health Sciences Center; A. Wright, Brigham and Women’s Hospital; S. Iyengar, R. Ness, University of Texas Health Science Center at Houston
In Search of Common Ground in Hand-off Documentation in an Intensive Care Unit

Falling Through the Cracks: Information Breakdowns in Critical Care Hand-off Communication
J. Abraham, V. Nguyen, K. Almoosa, B. Patel, V. Patel, University of Texas Health Science Center at Houston

An Analysis and Recommendations for Multidisciplinary Computerized Hand-off Applications in Hospitals
S. Hunt, N. Staggers, University of Maryland School of Nursing

Qualitative Analysis of Workflow Modifications Used to Generate the Reference Standard for the 2010 i2b2/VA Challenge
B. South, VA Salt Lake City Health Care; S. Shen, University of Utah; R. Barrus, S. DuVall, VA Salt Lake City Health Care; O. Uzuner, University at Albany, SUNY, C. Weir, University of Utah

S96 – Papers: Information Extraction from Biomedical Text
Theme: Data Mining, NLP, Information Extraction
Room: Lincoln West
Session Chair: Ozlem Unuzer

Document Clustering of Clinical Narratives: a Systematic Study of Clinical Sublanguages
O. Patterson, J. Hurdle, University of Utah

Visual Cluster Analysis in Support of Clinical Decision Intelligence
D. Gotz, J. Sun, IBM T.J. Watson Research Center; N. Cao, HKUST, S. Ebadollahi, IBM T.J. Watson Research

Using Digital Crumbs From an Electronic Health Record to Identify, Study and Improve Healthcare Teams
J. Gray, H. Feldman, S. Reti, L. Markson, R. Davis, C. Safran Beth Israel Deaconess Medical Center

The EpIconvas Infectious Disease Weather Map: an Interactive Visual Exploration of Temporal and Spatial Correlations
P. Gesteland, University of Utah School of Medicine; Y. Livnat, N. Galli, Scientific and Computing Imaging Institute; M. Samore, A. Gundlapalli, University of Utah School of Medicine

Social Network Analysis of Physician Interactions: the Effect of Institutional Boundaries on Breast Cancer Care
W. Bridewell, A. Das, Stanford University
**Scientific Sessions**

**S98** – Papers: Of Primary Importance: Secondary Data Use  
Theme: Data Integration and Exchange  
Room: Monroe  
Session Chair: Brian Gugerty

**Practical Challenges in the Secondary Use of Real-World Data: the Notifiable Condition Detector**  
M. Fidahussein, J. Friedlin, S. Grannis, Regenstrief Institute, Inc.

**Root Causes Underlying Challenges to Secondary Use of Data**  
J. Ancker, A. Edwards, R. Kaushal, Weill Cornell Medical College; S. Shih, M. Singh, A. Snyder, New York Cig Department of Health and Mental Hygiene

**Data Quality and Fitness for Purpose of Routinely Collected Data—a General Practice Case Study from an Electronic Practice-based Research Network (Epbrn)**  
S. Liaw, University of New South Wales/South West Sydney Local Health Network; J. Taggart, S. Dennis, University of New South Wales; A. Yeo, Ingham Health Research Institute

**Demonstrating “Collect Once, Use Many”: Assimilating Public Health Secondary Data Use Requirements Into an Existing Domain Analysis Model**  
C. Barton, Duke University School of Nursing; C. Kallem, American Health Information Management Association; P. Van Dyke, Delta Dental Companies; D. Mon, American Health Information Management Association; R. Richesson, University of South Florida

**S99** – Papers: It’s all About the People: Clinical Workflow  
Theme: Clinical Workflow and Human Factors  
College of Medicine  
Room: International Ballroom West  
Session Chair: to be announced

**Understanding the Work of Pediatric Inpatient Medicine Teams: Implications for Information System Requirements**  
C. Lin, J. Gennari, University of Washington

**Workflow Concerns and Workarounds of Readers in an Urban Safety Net Teleretinal Screening Study**  
A. Fish, S. George, E. Terrien, A. Eccles, R. Baker, O. Ogunyemi, Charles Drew University of Medicine and Science

**Development of a Workflow Integration Survey (WIS) for Implementing Computerized Clinical Decision Support**  
M. Flanagan, Indiana University; N. Arbuckle, University of Dayton; J. Saleem, Indiana University/ Roudebush VA/IUPUI; L. Militello, IU School of Medicine; D. Haggstrom, B. Doebbeling , Indiana University / Roudebush VA/Applied Decision Science

**Systematic Refinement of a Health Information Technology Time and Motion Workflow Instrument for Inpatient Nursing Care Using a Standardized Interface Terminology**  
Y. Zhang, T. Adam, D. Pieczkiewicz, Institute for Health Informatics, University of Minnesota; K. Monsen, Institute for Health Informatics/School of Nursing/University of Minnesota; M. Daman, University of Minnesota Medical Center; G. Melton, University of Minnesota/Department of Surgery
**Development and Implementation of Distributed Health Data Networks: Lessons from Medical Product Safety, Public Health Surveillance, and Comparative Effectiveness Research**

J. Brown, Harvard Pilgrim Health Care Institute; R. Rosen, Lincoln Peak Partners

This presentation will describe the development, implementation and selected uses of an open-source software platform (PopMedNet™) for the creation of distributed health data networks. A distributed health data network advances the secondary use of electronic health information by creating standardized and reusable data sources in multiple sites, as well as tools to use it. In a distributed system, each data-holder maintains physical control of their data behind their firewalls, protected by their security processes and rules. A distributed network allows data partners to assess, track, and authorize query requests, or categories of requests, on a case-by-case basis, thus facilitating participation. Several health data networks currently use or are planning to use this distributed data and analysis platform to support comparative effectiveness research, public health surveillance, and medical product safety studies. The presentation will highlight approaches for data standardization, capabilities for creating and distributing simple and complex queries, query result aggregation and management, and fine-grained control over query execution and transmission of results. Planned enhancements to the system will be described, including scheduling of queries for routine automated execution, enhanced role-based access control options, querying and aggregation capabilities, and privacy-preserving analytic and technical approaches for fully distributed multi-variate analysis.

**A Real-time Patient Dashboard Enhances Patient Safety and Promotes Quality Improvement**

N. Pageler, C. Longhurst, Stanford University School of Medicine and Lucile Packard Children’s Hospital; J. Suermondt, HP Laboratories; P. DeCesare, D. Cornfield, P. Sharek, Stanford University School of Medicine and Lucile Packard Children’s Hospital; D. Franzon, Center for Excellence in Pulmonary Biology, Stanford University School of Medicine

We created a real-time patient safety dashboard at Lucile Packard Children's Hospital (LPCH), providing a unit-wide overview as well as detailed safety indicators (such as risk for CABS1 and VAP) for each patient. This dashboard is fully integrated with the hospital’s EHR, and was first deployed in the Spring of 2011 in the Pediatric ICU at LPCH. Independent audit data after 3 months showed that information presented on the dashboard prompted a change in the patient’s plan of care in 34% of patient encounters. We conclude that use of a real-time patient safety dashboard embedded in the electronic medical record increased compliance with important patient safety procedures, such as elements of CABS1 and VAP prevention bundles, and facilitated time-efficient interdisciplinary communication during PICU rounds.

**12:15 – 1:00 pm Closing Session**

Additional information to be announced.
**2012 CPT® in OWL & XML Formats**

The 2012 CPT® Developers Tool Kit (DTK) features the CPT content from the CPT® 2012 Professional Edition code book and is organized in a hierarchy with structured descriptors and CPT code properties as computer readable attributes in OWL and XML formats. CPT® DTK is also available in TXT format.

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AMIA  Booth 220
4720 Montgomery Lane, Suite 500
Bethesda, MD 20814
Tel: 301-657-1291
Fax: 301-657-1296
E-mail: mail@amia.org
www.amia.org

AMIA is the center of action for 4,000 informatics professionals from more than 65 countries. As the voice of the nation’s top biomedical and health informatics professionals, AMIA and its members play a leading role in moving basic research findings from bench to bedside, evaluating interventions across communities, assessing the affect of health innovations on health policy, and advancing the field of informatics. As demonstrated at its Annual Symposium, AMIA actively supports five domains in informatics: translational bioinformatics, clinical research informatics, clinical informatics, consumer health informatics, and public health informatics.

Apelon  Booth 115
Jack Bowie
100 Danbury Road, Suite 202
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Tel: 203-431-2530
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Biomedical informatics (BMI) at Arizona State University focuses on breadth and depth of the field, including concentrations in bioinformatics, imaging informatics, clinical informatics, population health informatics, and knowledge discovery. With strong synergies within our computer science department, we also offer foci on cross-cutting areas such as software engineering, data and knowledge representation, data mining and predictive modeling. The Department of Biomedical Informatics offers a master’s degree and doctorate in biomedical informatics. BMI is now located at the Mayo Clinic campus in Scottsdale, leveraging its well-developed partnership with Mayo Clinic as well as with several other leading health care delivery organizations such as Banner Health, Phoenix Children’s Hospital and St. Joseph’s Hospital and Medical Center. With further strong collaborations with the Translational Genomics Research Institute, ASU’s Biodesign Institute and the Arizona Department of Public Health, the program is positioned to offer an outstanding range of research opportunities for our students.

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Tel: 212-342-1641
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Christina Nelson
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Fax: 770-234-5030  
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Boston, MA 02115
Tel: 617-432-7294
Fax: 617-432-0693
Katherine_Flannery@hms.harvard.edu
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The Informatics Research Training Program is a consortium of leading informatics laboratories at Harvard, MIT, BU, and Tufts and is supported by a grant from the NLM. Fellows work with internationally recognized faculty on high-profile grants and research projects. They complete formal coursework for the MMSc in Biomedical Informatics degree at Harvard Medical School, and they are mentored in their respective laboratories.

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Department of Biomedical Informatics

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Jillian Bickle
3190 Graves Hall
333 W. 10th Avenue
Columbus, OH 43210
Tel: 614-292-4778
Fax: 614-688-6600
E-mail: Jillian.Bickle@osumc.edu
http://biomed.osu.edu/bmi/index.cfm

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University Partnership for Health
Informatics
Daniel Chan
330 Diehl Hall
505 Essex Street SE
Minneapolis, MN 55455
Tel: 612-624-0651
Fax: 612-626-7227
E-mail: up-hi@umn.edu
www.uphi.umn.edu

UP-HI (University Partnership for Health Informatics) has been created to educate new health professionals who can assist in the transition from paper to digital records — in the form of patients’ electronic health records, prescriptions, best treatments/therapies and more. UPHI members include the University of Minnesota Twin Cities, College of St. Scholastica, and the University of Minnesota-Crookston. The consortium will educate Health Informatics professionals in six different specialties that take 6-24 months to complete with the aim of transformational improvement in the quality, safety, outcomes, and thus, the value of health services in the United States.
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University of Utah
Booth 119
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Department of Biomedical Informatics
School of Medicine
Kate Handziuk
University of Utah
26 South 2000 East
Room 5515 HSEB
Salt Lake City, UT 84112
Tel: 801-213-3730
E-mail: Kate.Handziuk@utah.edu
www.bmi.utah.edu

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Howard J. Jacob, PhD, is known for his success using genome sequencing to identify a casual mutation in the case of a 6-year-old boy who suffered from an extreme form of inflammatory bowel disease. He is a faculty member of MCW’s Department of Physiology and Pediatrics, and Vice Chair of Research in Pediatrics at Children’s Hospital of Wisconsin.

Robert M. Califf, MD, Vice Chancellor for Clinical Research at Duke University’s Translational Medicine Institute, Founding Director of the Duke Clinical Research Institute and the Duke Translational Medicine Institute, will keynote the Bridge Day Plenary. Dr. Califf has led some of the best-known clinical trials and health outcomes studies in cardiovascular medicine and has published over 1,000 peer-reviewed original articles in collaboration with colleagues. A leader in the fields of quality of care, technology development and health policy, he is the seventh most frequently cited author in the field of medicine, according to the Institute for Scientific Information.

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