# 2011 – 2013 Workshop on Health IT & Economics (WHITE)

**Inclusive Dates: 09/01/11 – 11/30/13**

**Principal Investigator**:
Ritu Agarwal, PhD

**Team Members:**
Guodong Gao, PhD
Jeffrey McCullough, PhD[*]
Kenyon Crowley, MBA, MS, CPHIMS
Faye Baker

**Performing Organization:**
The Center for Health Information and Decision Systems (CHIDS)
Robert H. Smith School of Business
University of Maryland at College Park
[*]All team members are affiliated with CHIDS; Jeffrey McCullough is also affiliated with the
School of Public Health at the University of Minnesota

**Project Officer:**
Michael Hagan

# Acknowledgments

This project represents a team effort in which many individuals made valuable contributions, in addition to the core team members. We gratefully acknowledge their assistance. We would like to recognize the contribution of AHRQ Project Officer Michael Hagan. The organizers would also like to thank all the presenters, students, and participants who made WHITE such as success. Members of the WHITE advisory boards, listed below, provided valuable guidance and counsel throughout the project.

| Academic Advisory Board | Policy and Practice Advisory Board |
|---|---|
| Ritu Agarwal, Robert H. Smith Dean's Chair of Information Systems Director of the Center for Health Information and Decision Systems Smith School of Business, University of Maryland | Mark Dente, MD, Chief Medical Informatics Officer GE Healthcare |
| | Michael Gluck, Director Academy Health |
| Martin Gaynor, E.J. Barone Professor of Economics and Public Policy H. John Heinz III School of Public Policy and Management Carnegie Mellon University | Brian Jacobs, Chief Medical Information Officer Children's National Medical Center |
| | Paul Keckley, Executive Director Center for Health Solutions, Deloitte |
| Lorin Hitt, Class of 1942 Term Professor Professor of Operations and Information Management The Wharton School, University of Pennsylvania | Geeta Nayyar, Chief Medical Information Officer Patient Point |
| | Suniti Ponkshe, Partner Health and Public Service Accenture |
| Stephen Parente, Minnesota Insurance Industry Chair of Health Finance Professor of Finance Carlson School of Management, University of Minnesota | Helga Rippen, Chief Health Information Officer and Vice President Center for Health Information Technology, Westat |
| Mark Pauly, Bendheim Professor Professor of Health Care Management, Business and Public Policy Insurance and Risk Management, and Economics The Wharton School, University of Pennsylvania | Daniel Sands, Director Healthcare, Cisco Internet Business Solutions Group, Cisco |
| | Mark Turner, President Optimal Solutions Group |
| | Kevin Vigilante, Vice President Booz Allen Hamilton |

# Abstract

**Purpose:** The annual Workshop on Health IT and Economics (WHITE) is intended to promote interdisciplinary collaborations and communication in health IT research by providing a forum for knowledge gathering, sharing, and dissemination. In addition to building bridges across the academic disciplines engaged in health IT research, the workshop includes health IT policymakers, funders, practitioners, patient advocates and industry professionals to help promote robust dialogue between these stakeholders. The specific aims of WHITE are: (1) To build the foundation for a multidisciplinary health IT research community by gathering researchers from medical informatics, computer science, public health, business, and economics; (2) To provide a forum for leading health IT researchers to disseminate cutting-edge findings and knowledge; (3) To afford policymakers and practitioners the opportunity to shape the evolving health IT research agenda; and, (4) To develop the next generation of health IT researchers.

**Scope:** Health information technology (IT) research is conducted in a variety of fields, including health services research, medical informatics, computer science, public health, business, and economics. While each field brings a unique vantage point, many more insights may be gained by interdisciplinary communication and collaboration. We solicit papers on a wide range of topics, including, but not limited to, the following: the effect of health IT on patient safety and quality; health IT adoption barriers; assimilation of health IT into workflows and organizations; impacts of health IT investments; measures and incentives for meaningful use; medical informatics; business models for health information exchange; IT-enabled new organizational forms and delivery processes; and much more.

**Methods:** WHITE occurs annually over two days, starting on Friday morning and ending on Saturday afternoon. It is structured as a typical workshop, with a mix of paper sessions, keynote presentations, and panels. This structure supports one of the Workshop's key objectives: the integration of an academic conference with distinctive perspectives from industry and innovation domains. WHITE provides AHRQ and participants with a deep scientific dive into the research and evidence base for health IT value creation. The workshop also provides a forum for communication between researchers and emergent thinking from the policymakers and practitioners both to translate research results into reality and to offer a valuable context for furthering the research communities' perspective and understanding.

**Results:** WHITE successfully met all of its stated aims. Participants represented 90 research institutes, ten federal agencies, and almost three dozen industry, policy and practice organizations, with most attending every year. More than 100 papers were presented at WHITE, representing the latest thinking and evidence across issues central to achieving quality, value and performance from the health sector through the use of information technology. A range of policymaker, patient, clinical and industry perspectives have been debated. WHITE created a true multi- and trans-disciplinary community where scholars across diverse fields have an opportunity to exchange perspectives.

# Final Report

# Purpose

The annual Workshop on Health IT and Economics (WHITE) was created to promote interdisciplinary collaborations and communication in health IT research by providing a forum for knowledge gathering, sharing, and dissemination. In addition to building bridges across the academic disciplines engaged in health IT research, the workshop includes health IT policymakers, funders, practitioners, patient advocates and industry professionals to help promote robust dialogue between these stakeholders.  It remains a unique offering to this research and practice community.

The specific aims of WHITE are:

1.  To build the foundation for a multidisciplinary health IT research community by gathering researchers from medical informatics, computer science, public health, business, and economics.

2.  To provide a forum for leading health IT researchers to disseminate cutting-edge findings and knowledge.

3.  To afford policymakers and practitioners the opportunity to shape the evolving health IT research agenda.

4.  To develop the next generation of health IT researchers.

# Scope

WHITE was developed by the Center for Health Information and Decision Systems (CHIDS) at the University of Maryland, College Park and is hosted annually in Washington, DC. Recently completing its $4^{th}$ year, each year WHITE includes approximately 100 participants consisting of researchers, students, policymakers, practitioners, funders as well as industry professionals.  A variety of academic fields are represented at WHITE, such as health services research, medical informatics, management science, public health, computer science, pharmaceutical science, business, and economics. Each field brings a unique vantage point and insights into health IT research. WHITE provides the essential platform to integrate and cross-pollinate the multiple disciplines.

Agencies and federal departments participating in WHITE include: Agency for Healthcare Research and Quality (AHRQ); Office of National Coordinator for Health IT (ONC); Congressional Budget Office (CBO); Federal Trade Commission (FTC); Centers for Disease Control and Prevention (CDC) - National Center for Health Statistics (NCHS); Centers for

Medicare & Medicaid Services (CMS); Food and Drug Administration (FDA); Assistant Secretary for Planning and Evaluation (ASPE); Veteran's Health Administration (VA) and Military Health System (MHS). Industry representatives from Accenture, AT&T, GE Healthcare, IBM, PWC, RAND, and Westat, as well as many small and medium-sized businesses have participated in WHITE. Clinical organizations such as Children's National Medical Center, Miami Children's Hospital, UPenn Health Systems and MedStar have also joined WHITE.

A vibrant mix of research sessions, keynote speakers, research and policy panels are delivered with of opportunity for networking and discussion across the two-day conference. We solicit papers on a wide range of topics, including, but not limited to, the following: the effect of health IT on patient safety and quality; health IT adoption barriers; assimilation of health IT into workflows and organizations; impacts of health IT investments; measures and incentives for meaningful use; business models for health information exchange; IT-enabled new organization forms and delivery processes; market competition and health insurance exchange; health 2.0 and empowering patients; quality transparency and public reporting; as well as medical analytics. Research addressing the information technology and systems implications of new models of care delivery envisioned in the ACA such as Accountable Care Organizations and Patient-Centered Medical Homes is encouraged. Session, Panel and Keynote topics covered during WHITE 2011, 2012 and 2013 are presented in Table 1.

**Table 1. WHITE program content summary**
**Part a. 2011**

| Sessions | Panels | Keynotes |
|---|---|---|
| <ul><li>Return on Investment of Health IT</li><li>HIT and Quality of Care</li><li>Market Competition</li><li>Chronic and Primary Care</li><li>Health IT Design</li><li>Internet and Health</li><li>Health IT Adoption</li><li>Short Presentations</li></ul> | <ul><li>Policy Landscape Affecting Health IT Adoption</li><li>Health Data Frontiers</li></ul> | <ul><li>Gregory Downing, Innovation for the Immediate Office of the Secretary, HHS: "The Health Data Initiative: turning HHS and our sister agencies into the *NOAA of health data*"</li><li>Dr. Narendra Kini, CEO of Miami Children's Hospital: "Healthcare IT and Transformation *Do we have the right parameters*"</li><li>James Burgess, PhD, VA Center for Organization, Leadership and Management Research and Boston University: "Where is the Innovation and Efficiency in Health Information Technology?"</li></ul> |

**Table 1.  Program content summary (continued)**
**Part b. 2012**

| Sessions | Panels | Keynotes |
|---|---|---|
| • HIT Impact on Cost, Quality and Efficiency (2 sessions)<br>• Health Information Exchange and Health<br>• Meaningful Use<br>• Medical Practices<br>• Short Presentations (2 sessions) | • Innovations in Healthcare Organization and Delivery<br>• Unleashing Data to Transform Healthcare<br>• Research Panel: Empowered Patients | • Dr. David Hunt, Medical Director, Health IT Adoption & Safety at ONC, "Health IT Grammar, Best Adverbs for the Future Perfect Tense?"<br>• Stephen T. Parente, PhD, MPH, MS, Minnesota Insurance Industry Prof of Health Finance in Carlson School of Management and Dir of the Medical Industry Leadership Institute, University of Minnesota, "Advancing a Short Circuit to Avoid Health IT Investment Backlash" |

**Part c. 2013**

| Sessions | Panels | Keynotes |
|---|---|---|
| • HIT Impact on Cost, Quality and Efficiency (2 sessions)<br>• Health Information Exchange and Health<br>• Meaningful Use<br>• Medical Practices<br>• Short presentations | • Patient Engagement and Fostering Smart Patients Panel<br>• Research Panel: Patient-centered Research<br>• Research Panel: Can IT drive down Healthcare costs<br>• Social Wellness for Better Health<br>• Health Insurance Marketplaces: Ready, Set, Go | • Rachel Fleurence, PhD, Director of CER, PCORI: "Patient Centeredness The National Patient-Centered Clinical Research Network: Building a National Data Infrastructure to Advance Patient-Centered Comparative Effectiveness Research (CER)"<br>• Karen Davis, PhD, Professor, Johns Hopkins University, "Research to Inform Health Policy"<br>• Gregory Kruse, Special Assistant to the CEO of UPenn Health System: "Health Systems and IT" |

# Methods

WHITE occurs over two days, starting on Friday morning and ending on Saturday afternoon. It is structured as a typical workshop with a mix of paper sessions, keynote presentations, and panels. This structure supports one of the Workshop's key objectives: the integration of an academic conference with distinctive perspectives from industry and innovation domains. WHITE is intended to provide AHRQ and participants with both a deep scientific dive into the research and an evidence base for health IT value creation. The workshop provides a form for communication between researchers and emergent thinking from the policy makers and practitioners both to translate research results into reality and to offer a valuable context for furthering the research communities' perspective and understanding.

While WHITE occurs in October or November, planning and preparations for the following year commence immediately after the conference concludes. A call for papers is distributed broadly via a number of relevant communities during the May preceding WHITE (See Appendix B for the 2013 Call for Papers). Extended abstracts are reviewed by a peer committee with acceptance letters mailed in August.

WHITE offers several different types of sessions, including:

- **Regular Sessions -** A regular session lasts 75 minutes. Each presenter is given 15 minutes for their presentation, followed by 5 minutes of discussion/comments by the assigned paper discussant. At the end of each session, there are 15 minutes of Q&A open to all participants. Audience members hold their questions to the end of the session. WHITE discussants are encouraged to coordinate with presenting authors to discuss the paper before the workshop and may arrange to receive advance copies of the presentation. Regular sessions offer the opportunity for researchers to receive feedback from the discussant and the audience as they further refine and improve their research.

- **Hot Topic Panels –** We schedule at least "hot topic" panel that includes prominent representatives from different perspectives (e.g. industry, provider, policymaker and/or patient) to provide insights into emerging issues. Hot topic panels in 2013 covered patient engagement, social wellness, and health insurance marketplaces, respectively. Past panels explored health data trends, innovations in healthcare organization and delivery, and the policy landscape.

- **Keynote Presentations** – Keynote presentations provide perspectives from leading thinkers from health IT fields. We always schedule at least one academic keynote and one practitioner keynote, and include coverage of important policy considerations.

- **Cluster Presentations –** There is a dedicated cluster presentation session. Each presenter gets 5 minutes and up to 6 slides (1 title slide and up to 5 content slides). Cluster sessions have proved an effective mechanism to showcase new and emerging research programs and young researchers.

- **Research Panels –** There are two research panel sessions. These panels are academic research focused, and include brief presentations followed by moderator and audience questions. On occasion, one of the panelists may be from industry or a policy maker to

provide an alternative viewpoint to what might be presented by the academic researchers. Such a mix of participants promotes a rich discussion and is crucial to achieving WHITE's goal of cross-fertilization of perspectives.

- **Poster Presentations –** Floor space for posters is reserved in the main area outside the meeting hall, and there is a dedicated poster session on Day one of WHITE.

All abstracts and presentations are made freely available on the Web to the conference participants. Videos of the keynotes, where permitted, are also posted on the website. In 2013, we added an additional artifact – a health data compendium detailing all the data sets including meta-data about the data sets. This resource is being made freely available to the participants and public. This is a significant resource, particularly for young researchers seeking to catch up with the cutting-edge research and craft their research portfolios.

# Results

We conducted both formal and informal evaluations of the Workshop. Each year participants provide unsolicited feedback during the Workshop. The comments made have been extremely positive and appreciative of what has been accomplished. For example, this past year a new researcher who had just relocated to the Washington D.C. area to join the Brooking's Institution noted that WHITE had been instrumental in creating the connections and networks he needed to disseminate his research.

In the formal evaluations, WHITE participants overwhelmingly evaluated the workshop between excellent and very good. Every year, the program committee seeks to be responsive to the formal and informal feedback to continually deliver a program that responds to the needs academic, policy, and practitioner communities at the intersection of health IT and economics. As Table 2 details, WHITE 2013 provided the best overall experience yet, improving on already very good-to-excellent ratings to clearly excellent ratings. The evaluations include questions across several areas relevant to WHITE's specific aims, which are discussed below.

**Table 2. Conference overall evaluation[1]**

| Conference Year | 2011 | 2012 | 2013 |
|---|---|---|---|
| Overall conference rating | 4.42 | 4.48 | 4.78 |

---

[1] All evaluation tables are scored on a 5-point Likert scale with 5 = Excellent or Very Satisfied, 3 = Neutral, and 1 = Poor or Very Unsatisfied.

# Aim 1. To build the foundation for a multidisciplinary health IT research community by gathering researchers from medical informatics, computer science, public health, business, and economics

Each year, WHITE convened approximately 100 participants representing researchers and practitioners from communities including medical informatics, computer science, public health, business, and economics (See Appendix C for a list of the participating organizations).

Health IT research occurring in many different academic departments has been represented, such as: Economics; Health Policy; Management Science; Information Systems; Healthcare Informatics; Medicine; Pharmacy; Information Technology; Computer Science; Operations Management; Health Services Research; Health Administration; Negotiation, Organizations and Markets; Finance; Marketing; Health Economics; Supply Chain; Pharmacy; Information and Decision Sciences; Health Care Management; and Cyber Security, Privacy and Trust.

As Table 3 details, participants have been very satisfied with research design and quality of interdisciplinary health IT research at WHITE.

**Table 3. Satisfaction with research design and quality of interdisciplinary health IT research**

| Conference Year | 2011 | 2012 | 2013 |
|---|---|---|---|
| The opportunity for interaction with researchers from a variety of disciplines | 4.42 | 4.20 | 4.54 |

# Aim 2. To provide a forum for leading health IT researchers to disseminate cutting-edge findings and knowledge

WHITE is the primary venue that brings together the latest research and thinking at the intersection of health IT and economics. Topical areas cover critical issues facing health systems, practitioners, policy makers, and indeed, the nation as a whole. The format of WHITE facilitates both deep investigations into established research domains such as quality, patient engagement, and electronic health record adoption as well as emerging research areas including health information exchange, big data, health insurance marketplaces, and social media in healthcare. Deep dives are complimented with rapid-fire short presentations of early research, which not only offers the audience insights, but facilitates refinement and development of the research.

As Table 4 details, participants have been very satisfied with WHITE as a forum for dissemination of new research.

**Table 4. Satisfaction with WHITE as a forum for dissemination of new research**

| Conference Year | 2011 | 2012 | 2013 |
|---|---|---|---|
| How satisfied are you with the workshop as a venue for disseminating research? | 4.46 | 4.58 | 4.72 |
| The overall quality of research presentations | 4.43 | 4.50 | 4.51 |

## Aim 3. To afford policymakers and practitioners the opportunity to shape the evolving health IT research agenda

Each year at WHITE, leading professionals from key federal agencies joined as participants and as keynote speakers and panelists, including representatives from:

- Agency for Healthcare Research and Quality (AHRQ)

- Office of National Coordinator for Health IT (ONC)

- Congressional Budget Office (CBO)

- Federal Trade Commission (FTC)

- Centers for Disease Control and Prevention (CDC)

- Centers for Medicare & Medicaid Services (CMS)

- Food and Drug Administration (FDA)

- Assistant Secretary for Planning and Evaluation (ASPE)

- Veteran's Health Administration (VA)

- Military Health System (MHS)

In 2011, keynote speakers included Dr. Gregory Downing, leader of the HHS health data initiative from the Immediate Office of the Secretary, who shared developments at the beginning of this now well-known movement. In 2012, Dr. David Hunt, communicated ONC's vision and activities. In 2013, insights into the patient-centered research movement were front and center, with Dr. Rachel Fleurence of PCORI.  Adam Dole, HHS Presidential Innovation Fellow, shared developments with Blue Button, the leading patient engagement initiative. Other ONC representatives shared the latest developments in Meaningful Use and the critical unanswered questions for researchers originating in the Office of Economic Analysis, Evaluation, and Modeling and elsewhere at ONC.

WHITE has integrated the opinions of leading clinical practitioners and health systems, such as keynotes by Narendra Kini, CEO of Miami Children's Hospital, and Greg Kruse, Special Assistant to the CEO of UPenn Health System. In 2013, a special focus on patient engagement included Dr. Ivor Horn of Children's National Medical Center and Regina Holliday, a leading patient advocate and founder of the Walking Gallery.

WHITE has leveraged a Policy and Practice Advisory Board consisting of industry and policy organization leaders to ensure the vantage point of this sector is well represented in programming.  Organizations represented included Deloitte, Accenture, Academy Health, GE Healthcare, Westat, Cisco and Optimal Solutions Group.

**Table 5. Satisfaction with keynotes and panels (the primary mechanism for practitioners and policymakers)**

| Conference Year | 2011 | 2012 | 2013 |
|---|---|---|---|
| Satisfaction with Keynotes and Panels | 4.5 | 4.18 | 4.43 |

## Aim 4. To develop the next generation of health IT researchers

In the foreseeable years, health IT will continue to play a critical role in transforming the care delivery system. This presents unprecedented demand for research capacity in health IT for both policy making and practice. Therefore, it is critical to nurture the next generation of researchers in health IT. Toward that goal, WHITE has utilized multiple approaches to help young scholars in this field:

- **Exposure** - We are sensitive to the importance of giving young researchers more exposure to the research community and supporting the development of their professional networks. In each year our program committee has included research from new researchers and students for full presentations. However, works by young researchers is often at an early stage and therefore not yet ready for full presentations. Each year we have a special session with rapid fire presentation geared toward young researchers with work-in-progress studies.  On average, a dozen young researchers have the opportunity to present in the plenary sessions.

- **Recognition** - to help promote outstanding young scholars, each year WHITE presents the Young Researcher Award and the Best Student-Authored Paper Award. We also select and recommend good work from young researchers for the special issue at the journal *Health Systems*. See Appendix C for all award winners. Two papers presented at WHITE by young researchers are now in the publication process.

- **Financial aid -** WHITE offers a substantial discount on registration fee to doctoral students. In addition, we discount by 50% or waive the registration fee to cases when students have difficulty obtaining financial support.

- **Outreach via other channels** - The Workshop Chair, Professor Ritu Agarwal, has been a champion for health IT research via various channels, including keynote speeches, doctoral consortium, and panel discussions at major academic conferences such as The International Conference on Information Systems, the Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS), and the Annual Meeting of the Academy of Management.  She has also promoted health IT research in a number of international venues, including Keynote Addresses at the Technical University of Munich, FAU in Nuremberg, Germany, City University of Hong Kong, and National Sun-Yat Sen University.. The program co-chair, Gordon Gao, gave a webinar on the introduction to health IT research to members of the Association for Information Systems (AIS). The webinar is recorded and made available to all of the approximately 2000 AIS members.

The research sessions and accompanying discussant critiques cover a wide range of methodological issues and cutting edge methods for generating rigorous results. We facilitate and encourage young researchers' interaction with senior researchers and taking on discussant roles. We plan to continue offering opportunities for less experienced researchers. We have purposefully increased less experienced researcher opportunities and the evaluation scores (Table 6) reflect this.

**Table 6. Opportunities for less experienced researchers**

| Conference Year | 2011 | 2012 | 2013 |
|---|---|---|---|
| How would you rate the opportunities for new researchers? | 3.91 | 4.36 | 4.58 |

## Overall Organization

The two-day conference experience is the culmination of substantial planning and organizing by the Center for Health Information and Decision Systems. The workshop organizers have consistently sought to create an experience that is not only intellectually stimulating, but also demonstrates excellence in operational issues. As shown in the evaluations below (Table 7), this goal has been achieved and the workshop has ranked highly in its operations and support of participants.  Appendix D shares several of the positive remarks participants provided in the evaluations.

**Table 7. Conference venue and organization**

| Conference Year | 2011 | 2012 | 2013 |
|---|---|---|---|
| Satisfaction with the registration process | 4.63 | 4.94 | 4.69 |
| Satisfaction the conference venue | 4.38 | 5.00 | 4.77 |
| Satisfaction with the meals and reception | 4.35 | 4.92 | 4.78 |

## Conclusions

The initiation of WHITE was motivated by the widely experienced gap in multi- and trans-disciplinary interactions among the academic, practitioner, and policy communities who are all seeking to understand the significant phenomenon: how can health information technology play an instrumental role in the transformation of healthcare practice and delivery? As our nation and more broadly, the global community tackles the next set of healthcare challenges, digital technologies have and will continue to play a significant role in finding solutions. Appropriate integration of health IT into care and delivery systems requires attention to a complex set of technical, economic, organizational, behavioral, and policy concerns. As such, no single academic silo can effectively solve these complex problems and WHITE provides the forum for cross-pollination of ideas.

As demonstrated by the various presentations and panels featured at the workshop, WHITE is responsive to the questions raised in AHRQ's health IT portfolio related to the quality and safety

of medication management, patient-centered care, and healthcare decision making. While its primary focus is on the health IT portfolio, to the extent that many research topics address multiple challenges, WHITE has also addressed questions raised in the value portfolio, the patient safety portfolio, and the innovations and emerging areas portfolio.

With technological innovations being created on a regular basis, the sophistication of health IT will continue to evolve, as will the opportunities and challenges associated with using it effectively. The knowledge created at WHITE has offered and will continue to offer important insights for all stakeholders in the healthcare ecosystem.

Our future plans for WHITE include an emphasis on emerging research domains and novel uses of health IT; two examples of which are the use of wearable and mobile devices in patient self-management and the use of big data and analytics in discovering new clinical and service delivery knowledge. There is much optimism about the potential value of wearable and mobile devices, yet the evidence base for what works under what conditions is limited. Likewise, with the rapid advances in computing capacity and data storage, developments in statistical modeling and data mining, and increased transparency in and availability of healthcare data, predictive analytics in healthcare offers the promise of revealing new patterns and insights that were hitherto hidden. We expect the research presented at WHITE in the future to address these emerging research areas.

WHITE is keen on building up the research infrastructure and dissemination of knowledge. We have begun to construct a knowledge repository including abstracts, papers, slides, and data source summary, which will prove to be very valuable to WHITE participants. In the future, we plan to strengthen these knowledge sharing capabilities by using webcasting to engage participants who are restrained by geographic locations. We also plan to launch a pre-conference mini-training sessions geared toward young researchers and students.

In conclusion, WHITE has become an anticipated event that participants look forward to. The workshop has developed a strong brand and is creating significant value for attendees, who continue to return each year. It is positioned in a very unique niche that is not addressed, to the best of our knowledge, by any other conference or workshop in health IT. The workshop format supports intimate, rich, and detailed interaction and discussion that is often infeasible in large conferences. It enables the development of human capital in the form of training the next generation of health IT scholars in a constructive setting.

# List of Publications and Products

- All conference extended abstracts and presentation decks are made available to participants for download via the Internet

- Special issue on Health IT and Economics at *Health Systems,* in process

- WHITE 2013 Research Data Compendium

- Videos of keynotes and special sessions are posted online at WHITE Website

# Appendices

## Appendix A. 2013 Call for Papers

## WHITE 2013
**The 4<sup>th</sup> Annual Workshop on Health IT and Economics**
**Nov 15-16, 2013, Washington, DC**
http://www.rhsmith.umd.edu/chidswhite/
Chair**:** Ritu Agarwal  Program co-chairs**:** Guodong (Gordon) Gao and Jeffrey S. McCullough

We are pleased to announce the call for submissions to the 4<sup>th</sup> Annual *Workshop on Health IT and Economics (WHITE)*. Health information technology (IT) offers the potential to improve the quality and reduce the cost of healthcare delivery. However, significant challenges remain regarding design, implementation, utilization, and evaluation of health IT. There is a compelling need for research that can inform both policymakers and practitioners.

WHITE is a health IT summit that gathers prominent scholars in a multidisciplinary setting. Inaugurated in 2010, each year WHITE attracts nearly 100 scholars and thought leaders from more than 40 institutes. This workshop provides a forum for researchers to disseminate their work and network within a growing and vibrant community. *WHITE* also fosters collaborations between academia, government, and industry.

We solicit papers on a wide range of topics, including, but not limited to, the following: health IT adoption barriers; assimilation of health IT into workflows and organizations; impacts of health IT investments; measures and incentives for meaningful use; business models for health information exchange; IT-enabled new organization forms and delivery processes; market competition and health insurance exchange; health 2.0 and empowering patients; quality transparency and public reporting; as well as medical analytics.  Research addressing the information technology and systems implications of new models of care delivery envisioned in the ACA such as Accountable Care Organizations and Patient-Centered Medical Homes are encouraged.

The 4<sup>th</sup> Annual WHITE will be held in Washington DC, center of health policy debates, on November 15-16, 2013. The conference is hosted by the Center for Health Information and Decision Systems (CHIDS) at the Robert H. Smith School of Business of University of Maryland. CHIDS (www.rhsmith.umd.edu/chids) was established in 2005, and is the first academic research center focused on health information and decision systems in a leading business school. Partial support for WHITE is provided by the Agency for Healthcare Research and Quality (AHRQ).

Please submit an extended abstract of no more than 5 pages (11-point font, one-inch margins on four sides, double-spaced) to whitepaper@rhsmith.umd.edu by Aug 15, 2013**.** Abstracts will be reviewed for novelty, rigor, and policy impact.

This year WHITE will give awards for *Best paper*, *Best student-authored paper*, and *Young researcher.*  The latter two awards are given to papers with either a student or junior researcher as the lead author. To be considered for the awards, full papers should be submitted to whitepaper@rhsmith.umd.edu by Nov 1, 2013**.**

Please check http://www.rhsmith.umd.edu/chidswhite for further information and updates, as well as opportunities to become a sponsor for the workshop.  If you are new to WHITE, please feel free to check out the programs and photo albums of previous years on the website.  We look forward to your participation.

Note: WHITE does not assume copyright over work accepted for presentation.

# Appendix B. Participating Organizations

| | | |
|---|---|---|
| American University | Shidler College of Business, University of Hawaii | AHRQ |
| Boston College | Simon Business School | Air Force Medical Service |
| Boston University | Sogang University | CDC - NCHS |
| Carnegie Mellon University | St. Louis University Center for Outcomes Research | Congressional Budget Office |
| Clemson University | State University of New York | Denver Health |
| College of William & Mary | Stevens Institute of Technology | Office of National Coordinator Health IT |
| Columbia University School of Nursing | SUNY Buffalo | Federal Trade Commission, Bureau of Economics |
| Dartmouth College (Tuck) | Texas Tech University | Innovation for the Immediate Office of the Secretary |
| McGill University | The George Washington University | National Center for Health Statistics |
| Emory University | The Lewin Group | CMS |
| Evergreen Advisors | The Pennsylvania State University | ASPE |
| Fordham University, Business School | The University of Texas at Austin | VA HSR&D |
| George Mason University | The University of Texas at Dallas | Penn State - Harrisburg |
| George Washington University | The Wharton School | MedStar Health Research Institute |
| Georgia Institute of Technology | UC Denver Business School | Miami Children's Hospital |
| Georgia State University | UCSF | UPenn Health System |
| GWU Medical School | UM School of Pharmacy | Accenture |
| Harvard Business School | UMBC | AT&T for Health |
| Health-IS Lab, ETH Zurich & University of St. Gallen | University at Albany, SUNY | CNSI |
| Idaho State University | University of Arizona | Computech, Inc. |
| IE Business School | University of California, San Francisco | GE Healthcare |
| Indiana University | University of Colorado Denver | IBM |
| Institute for Systems Research | University of Florida | PNC Bank |
| Institute of Health Administration, Georgia State University | University of Georgia | PWC |
| Johns Hopkins University | University of Hawaii | RAND |
| Kelly School of Business | University of Houston | Remain Home Solutions |
| Lehigh University | University of Maryland, College Park | RowdMap |
| MIT | University of Massachusetts Boston | ShapeUp |
| National Defense University | University of Miami | Vulcan Enterprises LLC |
| National School of Development | University of Michigan | Westat |
| National Science Foundation | University of Michigan Dearborn | You Me Health |
| National University of Singapore | University of Minnesota | Bates White Economic Consulting |
| Neu-Ulm University of Applied Science | University of Neu-Ulm | Alphastreams |
| New York University | University of Nevada, Reno | IMPAQ International, LLC |
| Niagara University | University of Notre Dame | LEVICK |
| Northeastern University | University of Pennsylvania | LMI |
| Northrop Grumman Corporation | University of Richmond | Mathematica Policy Research |
| Northwestern University | University of Rochester | NHII Advisors |
| NYU | University of South Florida | Optimal Solutions Group |
| PCORI | University of Texas at Dallas | Optum |
| Penn State University | University of Virginia | PHAMOS |
| Pennsylvania State University | University of Washington | Health Care Cost Institute |
| Rutgers University | UT Health Science Center at Houston | American Health Care Association |
| Saint Louis University | Wharton, University of Pennsylvania | The Walking Gallery |
| Chesapeake Regional Information System for Our Patients (CRISP) | Maryland Health Connection | Academy Health |

# Appendix C. Award Winners

**2011**

| Name | Award Category | Title of Paper | Organization(s) |
|---|---|---|---|
| Jason Chan<br>Anindya Ghose | Best paper award | Internet's Dirty Secret: Assessing the Impact of Technology Shocks on the Outbreaks of Sexually Transmitted Diseases | New York University |
| Amalia R. Miller<br>Catherine E. Tucker | Best paper award | Can Health Care Information Technology Save Babies? | University of Virginia<br>Massachusetts Institute of Technology |
| Julia Adler-Milstein<br>Claudia Salzberg<br>Calvin Franz<br>E. John Orav<br>Joseph P. Newhouse<br>David W. Bates | First runner-up for best paper | Will Electronic Health Records Bend the Cost Curve? Evidence from Community Practices | University of Michigan<br>Division of General Internal Medicine and Primary Care<br>Eastern Research Group, Inc<br>Harvard University |
| Haijing Hao<br>Rema Padman | Best student-authored paper | Quantifying the Influence of Opinion Leaders on Information Technology | Carnegie Mellon University |
| Leila Agha | Best young researcher award | The Effects of Health Information Technology on the Costs and Quality of Medical Care | Boston University |

**2012**

| Name | Award Category | Title of Paper | Organization(s) |
|---|---|---|---|
| David Dranove<br>Chris Forman<br>Avi Goldfarb<br>Shane Greenstein | Best paper award | The Trillion Dollar Conundrum: Complementarities and Health Information Technology | Northwestern University<br>Georgia Institute of Technology<br>University of Toronto<br>Northwestern University |
| Sunita Desai | Best student-authored paper | Adoption of Health Information Exchange: Understanding the Negative Externality | University of Pennsylvania |
| Lucy Yan | Best young researcher award | Collaborative Information Sharing and Patients Health Education | Indiana University |

**2013**

| Name | Award Category | Title of Paper | Organization(s) |
|---|---|---|---|
| Matthew Chesnes<br>Daisy Dai<br>Ginger Zhe Jin | Best paper award | Consumer Protection or Consumer Frustration? The Impact of Banning Foreign Pharmacies from Sponsored Search | Federal Trade Commission<br>University of Maryland |
| Bingyang Li | Best student-authored paper | Cracking the Codes: Do Electronic Medical Records Facilitate Hospital Revenue Enhancement? | Northwestern University |
| Sam Ransbotham<br>Eric M. Overby<br>Michael C. Jernigan | Best young researcher award<br>Best young researcher award<br>Best young researcher award | Improving the Malpractice System: Effect of EMRs on Claim Resolution Time | Boston College<br>Georgia Institute of Technology<br>Massachusetts General Hospital, Harvard Medical School |

# Appendix D. Participant Comments Snapshot

*"Fills niche in dissemination of IT in healthcare sector"*

*"I really liked getting to see students presenting in addition to more established researchers"*

*"I really enjoyed how the ONC highlighted their top priorities which provide us with possible research directions"*

*"Fantastic. One the best I have attended due to the specific focus."*

*"Seriously, my favorite little conference of the year"*

*"Mix of academic and industry/government attendees was very good."*

*"This is very important for AHRQ + ONC. The main reason is the dissemination of publication of research on value of HIT"*

*"Good balance across perspectives and audience engagement well done"*

*"This conference is a wonderful venue for research + very important to ONC"*