

**Curriculum Vitae**  
**Jonathan C. Silverstein, MD, MS, FACS, FACMI**

**Address:** Department of Biomedical Informatics  
University of Pittsburgh School of Medicine  
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**Current Positions:**

Chief Research Informatics Officer  
Visiting Professor, Department of Biomedical Informatics  
University of Pittsburgh School of Medicine

**EDUCATION/TRAINING**

1998 Master of Science, Clinical Epidemiology (MS)  
School of Public Health, Harvard University, Boston

1997 Surgeons as Educators Workshop (one week intensive program)  
American College of Surgeons

1996 Program in Clinical Effectiveness (seven week intensive program)  
Harvard University, Boston

1991-1996 General Surgery Residency  
Rush-Presbyterian-St. Luke's Medical Center, Chicago

1990-1991 Research Fellow (Mark Frisse and Michael Kahn, Mentors)  
Department of Pharmacology and Medical Informatics Laboratory,  
Washington University, St. Louis (Dogmatic: Computer-assisted Teaching in  
Autonomic Nervous System Pharmacology). Supported by NIH  
Neuropharmacology Research Training Grant #5T32 N507129-11)

1986-1990 Medicinae Doctoris (MD)  
Washington University, St. Louis

1987 Summer Research Assistant  
University of Illinois at Chicago  
(Subcloning/Sequencing Rabbit Immunoglobulin Genes)

1983-1986 Bachelor of Science, Microbiology (BS)  
University of Illinois, Champaign-Urbana  
(1985-1986 Study Abroad: Trinity College, Dublin, Ireland)

**ACADEMIC APPOINTMENTS**

2017-current Professor (clarification: Visiting status while under academic review)  
Department of Biomedical Informatics  
University of Pittsburgh School of Medicine

2012-2016 Research Associate (Professor)  
Department of Surgery  
University of Chicago (clarification: research affiliate with rank of professor)

2011-2016 Davis Family Chair of Informatics  
NorthShore University HealthSystem (clarification: health system endowed chair)

2007-2011 Associate Professor  
Departments of Surgery, Radiology, and the Collegiate Division  
Biological Sciences Division, University of Chicago

2003-2011 Senior Fellow  
Computation Institute of University of Chicago and Argonne National  
Laboratory

2001-2007 Assistant Professor  
Section of General Surgery, Department of Surgery,  
Biological Sciences Division, University of Chicago

2000-2001 Adjunct Appointment  
Department of Radiology,  
University of Illinois at Chicago (UIC) College of Medicine

1999-2001 Adjunct Appointment  
Department of Bioengineering, UIC College of Engineering

1997-1999 Adjunct Appointment  
Graduate School of Library and Information Science,  
University of Illinois at Urbana-Champaign

1996-2001 Assistant Professor of Health Informatics  
School of Biomedical and Health Information Sciences,  
UIC College of Health & Human Dev. Sciences

1996-2001 Assistant Professor of Surgery  
Division of General Surgery, Department of Surgery,  
UIC College of Medicine

#### **ADMINISTRATIVE APPOINTMENTS**

2017-current Chief Research Informatics Officer  
University of Pittsburgh School of Medicine

2016-2017 Chief Medical Informatics Officer  
Tempus Health, Inc.

2016-2017 Chief Medical Informatics Officer  
Kanter Health Foundation

2011-2016 Vice President, Biomedical Research Informatics  
Head, Center for Biomedical Research Informatics  
Research Institute, NorthShore University HealthSystem

2006-2011 Associate Director, Computation Institute  
University of Chicago and Argonne National Laboratory

2004-2008 Director, Biomedical Informatics Core, U. of Chicago Biological Sciences Div.

2002-2011 Scientific Director, Chicago Biomedical Consortium

2001-2008 Director, Center for Clinical Information (CCI), U. of Chicago Medical Center

1998-2001 Co-Director, UIC Virtual Reality in Medicine Laboratory (VRMedLab)

1997-2001 Physician Informatician, University of Illinois at Chicago (UIC) Medical Center

#### **LICENSURE/CERTIFICATION/CLINICAL SERVICE**

2001-2003 General Surgery Attending at The University of Chicago

1996-2001 General Surgery Attending at The University of Illinois at Chicago  
 1997-2007 Certified, American Board of Surgery  
 1995 Advanced Trauma Life Support  
 Rush-Presbyterian-St. Luke's Medical Center, Chicago  
 1991, 1995 Advanced Cardiac Life Support  
 Rush-Presbyterian-St. Luke's Medical Center, Chicago  
 1993-current Licensed Physician and Surgeon, State of Illinois  
 1992 Diplomate of the National Board of Medical Examiners

### **NATIONAL ADVISORY BOARDS AND STUDY SECTIONS**

2016 NIH Steering Committee Global Rare Disease Patient Registry Data Repository (GRDR) by NIH's National Center for Advancing Translational Sciences in conjunction with Harvard Medical School's DBMI  
 2013 Proposal Review for Patient Centered Outcomes Research Institute (PCORI)  
 2012 Grant Proposal Review for Alberta Innovates (Alberta, Canada)  
 2010 Chair, Computational Thinking special emphasis review panel for NLM, NIH  
 2010 Fermi Research Alliance, LLC Visiting Committee for Fermilab Administrations and Operations Support  
 2010 Insight Toolkit review panel for NLM, NIH  
 2008-2011 Clinical and Translational Science Award Review Committee, NCCR, NIH  
 2007 Roadmap National Centers for Biomedical Computing Program Review  
 National Institutes of Health  
 2006-2011 Board of Scientific Counselors, Lister Hill Center  
 National Library of Medicine, National Institutes of Health  
 2006-2007 Co-Chair HealthGrid: Grid Technologies for Biomedicine Integrated Research Team. March 1-2, 2006, Frederick, MD. Sponsored and hosted by the U.S. Army Medical Research and Materiel Command's (USAMRMC) Telemedicine & Advanced Technology Research Center (TATRC). The outcome of this was to formulate a five-year research and development roadmap for the U.S. HealthGrid.  
 2004-2006 Integrated Advanced Information Management (IAIMS) Review Committee, National Library of Medicine, National Institutes of Health  
 2003 National Aeronautics and Space Administration Peer Review Services  
 2002-2006 Biomedical Library and Informatics Review Committee (BLIRC), National Library of Medicine, National Institutes of Health  
 2001-2016 Biomedical Informatics Training Programs (T15) Review Committee  
 National Library of Medicine, National Institutes of Health  
 1998 Ad Hoc Corresponding Grant Review  
 National Library of Medicine, National Institutes of Health

### **PROFESSIONAL ORGANIZATION ROLES**

2014- Member, Association for Computing Machinery (ACM)  
 2011 Co-Organizer and Program Committee: Workshop on Data Mining for Medicine and HealthCare, held in conjunction with ACM SIGKDD Conference On Knowledge Discovery & Data Mining (KDD 2011), San Diego, CA.  
 2011 Conference General Co-Chair for 27<sup>th</sup> Annual IEEE Computer Based Medical

Systems (CBMS) Symposium, Bristol, UK.

2011- Member, IEEE

2010 Planning Committee: ONCHIT/IOM Workshop Series: Electronic Infrastructure for the Learning Healthcare System: The Road to Continuous Improvement In Health and Health Care.

2010 Session Moderator, HealthGrid 2010, Paris: “Applications”.

2010 Sessions Chair, Upper Midwest Informatics CTSA Consortium, Madison, WI: “Unconference”

2010-2013 Board Member, WHITIA (HealthGreen)

2009-2011 Board of Directors, HealthGrid Association (International)

2009 Panel Moderator, American Medical Informatics Association Summit on Translational Research: “Informatics Concepts, Tools and Techniques to Enable Integrative Translational Research”

2008 Co-Chair Global HealthGrid: e-Science Meets Biomedical Informatics, the 6<sup>th</sup> Annual International HealthGrid conference, Chicago (first held outside Europe).

2007- Fellow, American College of Medical Informatics

2007 Member, Scientific Program Committee, Annual Symposium American Medical Informatics Association

2007-2011 President, HealthGrid.US Alliance. Held panels and workshops on health grids at multiple scientific meetings.

2007-2011 Member, HealthGrid Association

2002 Panel Moderator, American College of Surgeons Congress General Session: “Knowledge at the point of care: Hand-held computing for surgeons”

2000-2006 Member, Regents Committee on Informatics, American College of Surgeons

2000-2001 Alternate Councilor, Chicago Medical Society

2000 Mini-Track Co-Chair for Information Technology, Health Care Track of Hawaii International Conference on System Sciences

1999- Member, Association for Surgical Education

1999- Fellow, American College of Surgeons

1999 Represented the American College of Surgeons at the American Medical Student Association and discussed career plans with medical students.

1998- Member, American Medical Informatics Association

1998- Member, The Illinois Surgical Society, Inc.

1998- Member, Chicago Surgical Society

1997-2001 Physician Advisor for Physician Order Entry, Cerner Corporation

1997- Member, Association for Academic Surgery

1995- Member, American Medical Association

1995- Member, Illinois State Medical Society

1995- Member, Chicago Medical Society

## **OTHER POSITIONS**

2016-current Associate Editor, Learning Health Systems (Wiley)

2015-current Chair, Learning Health Community: [learninghealth.org](http://learninghealth.org)

2010-2015 Board of Trustees, The Catherine Cook School

2011-2015 Health Professions Council, Western Governors University

## **AWARDS/HONORS**

- 2009-2010 Chan Soon-Shiong Scholar
- 2006 Finalist, CityLIGHTS Award, Illinois I.T. Association (ITA)  
“The CityLIGHTS Award recognizes a business, education, media or government leader whose relentless efforts on behalf of the information technology industry have best promoted its growth and/or awareness of its vitality in Illinois to a range of audiences and raised the stature of the Illinois technology industry.”
- 2004 Most Outstanding Student Poster Presentation (Jesse Ehrenfeld), Charles B. Huggins Research Conference, The University of Chicago Department of Surgery
- 2004 Top Five Poster Prize, Midwest Clinical Conference of Chicago Medical Society
- 2003 Top Five Poster Prize, Midwest Clinical Conference of Chicago Medical Society
- 2002 Most Outstanding Faculty Poster Presentation, Charles B. Huggins Research Conference, The University of Chicago Department of Surgery
- 2001 Class Act Award, University of Illinois at Chicago Medical Center  
“This employee is a role model who continuously demonstrates exceptional competence and compassion in the performance of his/her job responsibilities... an outstanding example of UIC Medical Center’s five values: Respect, Customer Service, Teamwork, Continuous Improvement and Pride.”
- 1999 Jerry and Thelma Stergios Award for Excellence in Basic Science Research, University of Illinois at Chicago, Department of Surgery
- 1996 Resident Teacher of the Year, Department of Surgery  
Rush-Presbyterian-St. Luke's Medical Center, Chicago

## **MANUSCRIPT REVIEWS**

- 2016-current Associate Editor, Learning Health Systems (Wiley)
- 2015-2017 International Journal of Medical Informatics
- 2008-2016 Journal of Biomedical Informatics (JBI)
- 2008-2011 Journal of the American Medical Informatics Association (JAMIA)
- 2011 New England Journal of Medicine (NEJM)
- 2011 Microscopy and Microanalysis
- 2008-2009 IJCARS
- 2008 PLOS Medicine
- 2007 American Medical Informatics Association Annual Symposium
- 2006, 2007 Clinical Anatomy
- 2006 MedNet 2006
- 2006, 2007 Research in Medical Education, Association of American Medical Colleges
- 2005, 2006 Future Generation Computer Systems
- 2004 Artificial Intelligence in Medicine

## **OTHER LOCAL ADMINISTRATIVE COMMITTEE SERVICE**

- 2007 Member, Animal Imaging Working Group of Imaging Initiative of RAC  
Research Advisory Committee, Biological Sciences Division, U. of Chicago
- 2006 Ad hoc member, Committee on Appointments and Promotions, BSD  
University of Chicago
- 2005-2006 Member, Committee on Research Resources, Biological Sciences Division,

University of Chicago  
 2005-2008 Co-Chair, Biological Sciences Division IS Faculty Advisory  
 2003-2007 Member and Chair, University of Chicago Board of Computing  
 Activities and Services (Chair 2005-2007)  
 2003-2011 Member, Executive Committee, Computation Institute  
 University of Chicago and Argonne National Laboratory  
 2003-2004 Directed the ad hoc “Biomedical Informatics Group” at The University of  
 Chicago and Argonne - included activities related to planning an informatics core  
 to support research, managing the group meetings, its listserv, website design,  
 coding, and server.  
 2003-2006 Member, Medication Safety Task Force, U. of Chicago Hospitals  
 2003-2006 Member, Performance Improvement Council, U. of Chicago Hospitals  
 2002-2006 Member, Optime Steering Committee, University of Chicago Hospitals  
 2000-2001 Member, UIC Medical Center Group on Advanced Systems Planning  
 1998-2000 Member, Gemini Executive Implementation Committee (UIC clinical systems)  
 2000-2001 Member, UIC Department of Surgery Research Committee  
 1999-2001 Quality Improvement Representative, UIC Department of Surgery  
 1998-1999 Member, Technology Study Group of UIC College of Medicine CCIA Committee  
 1998 Member, Admitting Infrastructure Team (UIC Medical Center)  
 1996-2005 Interviewer for medical student Match to surgery residency

#### **PEER-REVIEWED PUBLICATIONS**

Curated [bibliography at NCBI/PubMed](#).

Curated [citations at Google Scholar](#).

#### **PEER-REVIEWED ARTICLES**

1. Cousins SB, Silverstein JC, Frisse ME. Query Networks for Medical Information Retrieval - Assigning Probabilistic Relationships. In: Miller, RA, editor. Proceedings 14th Annual Symposium on Computer Applications in Medical Care; 1990 Nov 4-7; Washington, DC. Los Alimitos (CA): IEEE Computer Society Press; 1990. P.800-4.
2. Millikan KW, Silverstein J, Hart V, Blair K, Bines S, Roberts J, Doolas A. A 15-Year Review of Esophagectomy for Carcinoma of the Esophagus and Cardia. Arch Surg. 1995 Jun; 130(6):617-24.
3. Millikan KW, Silverstein JC, Timmerman G, Economou SG. Fractionated Irradiation of the Regenerated Rat Liver. J Surg Res. 1995 Aug; 59(2):229-35.
4. Silverstein JC, Staren E, Velasco J. Thermal Bile Duct Protection During Liver Cryoablation. J Surg Oncol. 1997 Feb;64(2):163-4.
5. Silverstein J, Rubenstein J, Millman A, Panko W. Web-Based Segmentation and Display of 3-Dimensional Radiologic Image Data. Stud Health Technol Inform. 1998;50:53-9.
6. Silverstein JC, Wavak E, Millikan KW. A Prospective Experience with Selective Cholangiography. Am Surg. 1998 Jul; 64(7):654-9.

7. Panko W, Silverstein JC, Lincoln T. Technologies for extracting the full value from electronic patient records. Proceedings of the Hawaii International Conference on System Sciences (HICSS-32). IEEE. 1999 Jan;32:1-9.
8. Rubenstein J, Silverstein J, Panko W. Limitations of Distributed Segmentation of 3-Dimensional Radiologic Image Data. Stud Health Technol Inform. 1999; 62:308-14.
9. Silverstein JC, Shenoy A, Rice CL. Web-based entry, validation, and reporting of resident operative experience. Current Surgery. 1999 March/April;56(3):161-4.
10. Millikan KW, Deziel D, Silverstein JC, Kanjo T, Christein J, Doolas A, Prinz R. Prognostic factors associated with resectable adenocarcinoma of the head of the pancreas. Am Surg. 1999 Jul;65(7):618-24.
11. Pearl RK, Evenhouse R, Rasmussen M, Dech F, Silverstein JC, Prokasy S, Panko WB. The Virtual Pelvic Floor, a Tele-Immersive Educational Environment. Proc AMIA Symp. 1999 Nov 6;;345-348 (J AM MED INFORM ASSN : 345-348 Suppl. S 1999).
12. Zhuming Ai, Balaji K. Gupta, Mary Rasmussen, Ya Ju Lin, Fred Dech, Walter Panko, and Jonathan C. Silverstein. Simulation Of Eye Diseases in a Virtual Environment. Proceedings of the Thirty-Third Annual Hawaii International Conference on System Sciences (CD-ROM), Computer Society Press, 2000.
13. Ai Z, Dech F, Rasmussen M, Silverstein JC. Radiological Tele-Immersion for Next Generation Networks. Stud Health Technol Inform. 2000; 65:4-9.
14. Dech F, Ai Z, Silverstein JC. Manipulation of Volumetric Patient Data in a Distributed Virtual Reality Environment. Stud Health Technol Inform. 2001; 81:119-25.
15. Chhadia A, Dech F, Ai Z, Silverstein JC. Autocolorization of Three-Dimensional Radiological Data. Stud Health Technol Inform. 2001; 81:90-96.
16. Ai Z, Dech F, Silverstein JC, Rasmussen M. Tele-Immersive Medical Education Environment. Stud Health Technol Inform. 2002; 85:24-30.
17. Silverstein JC, Chhadia A, Dech F. Visualization of conserved structures by fusing highly variable datasets. Stud Health Technol Inform. 2002; 85:494-500.
18. Dech F, Silverstein JC. Rigorous Exploration of Medical Data in Collaborative Virtual Reality Applications. IEEE Computer Society Proceedings of 6th Annual Conference on Information Visualisation. 2002; 6:32-38.
19. Silverstein JC, Dech F, Edison M, Jurek P, Helton WS, Espat NJ. Virtual Reality: Immersive Hepatic Surgery Educational Environment (IHSEE). Surgery. 2002 Aug;132(2):274-7.

20. Silverstein JC, Dech F, Ai Z. Biomedical Tele-Immersion for Next Generation Systems [Peer-reviewed white paper] - Workshop on New Visions for Large-Scale Networks: Research and Applications – This was published as part of a three day event sponsored by the Federal Large Scale Networking Working Group, DARPA, DOE, NASA, NIST, NLM and NSF in 2003 to inform development of long-term research programs within the sponsoring organizations.
21. Dobson HD, Pearl RK, Orsay CP, Rasmussen M, Evenhouse R, Ai Z, Blew G, Dech F, Edison MI, Silverstein JC, Abcarian H. Virtual Reality: new method of teaching anorectal and pelvic floor anatomy. *Dis Colon Rectum* 2003 Mar; 46(3):349-52.
22. Silverstein JC, Dech F, Kouchoukos PL. Enhancing Radiological Volumes with Symbolic Anatomy Using Image Fusion and Collaborative Virtual Reality. *Stud Health Technol Inform.* 2004; 98:347-52.
23. Silverstein JC, Tsirlina V, Dech F, Kouchoukos P, Jurek P. Automated Renderer for Visible Human and Volumetric Scan Segmentations. *Stud Health Technol Inform.* 2005; 111:473-6.
24. Silverstein JC, Dech F, Binns J, Jones D, Papka ME, Stevens R. Distributed Collaborative Radiological Visualization using Access Grid. *Stud Health Technol Inform.* 2005; 111:477-81.
25. Binns J, Dech F, McCrory M, Papka ME, Silverstein JC, Stevens R. Developing a Distributed Collaborative Radiological Visualization Application. *Stud Health Technol Inform.* 2005; 112:70-9.
26. Silverstein JC, Dech F. Precisely Exploring Medical Models and Volumes in Collaborative Virtual Reality. *Presence: Teleoperators & Virtual Environments* (MIT Press) 2005 Feb; 14(1):47-59.
27. Silverstein JC, Ehrenfeld JM, Croft D, Dech F, Small S, Cook S. Tele-Immersion: Preferred Infrastructure for Anatomy Instruction. *Journal of Computing in Higher Education* Fall 2005; 18(1):80-93.
28. Silverstein JC, Amine M, Dech F, Jurek P, Pires I, Tsirlina V, Walsh C. Web-based viewer for systematic combination of anatomy and nomenclature. *Stud Health Technol Inform.* 2006;119:518-22.
29. Silverstein JC, Selkov E, Salud L, Pugh C. Developing Performance Criteria for the e-Pelvis Simulator Using Visual Analysis. *Stud Health Technol Inform.* 2007;125:436-8.
30. Silverstein JC, Walsh C, Dech F, Olsen E, Papka ME, Parsad N, Stevens R. Immersive Virtual Anatomy Course Using a Cluster of Volume Visualization Machines and Passive Stereo. *Stud Health Technol Inform.* 2007;125:439-44.
31. Erberich SG, Silverstein JC, Chervenak A, Schuler R, Nelson M, Kesselman C. Globus MEDICUS - Federation of DICOM Medical Imaging Devices into Healthcare Grids. *Stud Health Technol Inform.* 2007;126:269-278.



32. Erberich SG, Silverstein JC, Chervenak A, Schuler R, Nelson M, Kesselman C. Globus MEDICUS – Protected Health Information in Medical Imaging Grids. *Int J CARS* (2007) 2 (Suppl 1):S297-99
33. Silverstein JC, Walsh C, Dech F, Olson E, Papka ME, Parsad N, Stevens R. Multi-Parallel Open Technology to Enable Collaborative Volume Visualization: How to Create Global Immersive Virtual Anatomy Classrooms. *Stud Health Technol Inform*. 2008;132:463-8.
34. Silverstein JC, Parsad NM, Tsirlina V. Automatic perceptual color map generation for realistic volume visualization. *J Biomed Inform*. 2008;41(6):927–935.
35. Savel TG, Silverstein JC, Hall K, Lenert L. In Response to: What is a Grid? *J Am Med Inform Assoc*. 2008;15(5):705-6.
36. Wang X, Liu L, Fackenthal J, Cummings S, Olopade OI, Hope K, Silverstein JC, Olopade OI. Translational integrity and continuity: Personalized biomedical data integration. *Journal of Biomedical Informatics* 2009 Feb.;42(1):100–112.
37. Roach PB, Roggin KK, Selkov Jr, E, Posner MC, Silverstein JC. The Use of a Novel, Web-based Educational Platform Facilitates Intraoperative Training in a Surgical Oncology Fellowship Program. *Ann Surg Onc*. 2009;16(5):1100-07.
38. Shen Y, Silverstein JC, Roth S. In-hospital complications and mortality after elective spinal fusion surgery in the united states: a study of the nationwide inpatient sample from 2001 to 2005. *Journal of neurosurgical anesthesiology* 2009;21(1):21–30.
39. Roach, Paul B.; Silverstein, JC. Training fellows and core competency: "Making quality certain". *Journal of Surgical Oncology*. 2009;99(2):83-4.
40. Bernstam EV, Hersh WR, Johnson SB, Chute CG, Nguyen H, Sim I, Nahm M, Weiner M, Miller P, DiLaura RP, Overcash M, Lehmann HP, Eichmann D, Athey BD, Scheuermann RH, Anderson N, Starren JB, Harris PA, Smith JW, Barbour E, Silverstein JC, Krusch DA, Nagarajan R and Becich MJ. Synergies and Distinctions between Computational Disciplines in Biomedical Research: Perspective from the Clinical and Translational Science Award Programs. *Acad Med*. 2009 Jul;84(7):964-70.
41. Bernstam EV, William R Hersh, MD; Ida Sim, MD, PhD; David Eichmann, PhD; Jonathan C Silverstein, MD, MS; Jack W Smith, MD, PhD; Michael J Becich, MD, PhD. Unintended consequences of health information technology: a need for biomedical informatics. *J of Biomed Inform*. DOI: 10.1016/j.jbi.2009.05.009
42. Roach PB, Roggin KK, Selkov G Jr, Posner MC, Silverstein JC. Continuous, data-rich appraisal of surgical trainees' operative abilities: A novel approach for measuring performance and providing feedback. *J Surg Educ*. 2009 Sep-Oct;66(5):255-63.

43. Kaspar M, Parsad NM, Silverstein JC. CoWebViz: interactive collaborative sharing of 3D stereoscopic visualization among browsers with no added software. *Proceedings of the 1st ACM International Health Informatics Symposium, IHI '10*, November 11-12, 2010, Arlington, Virginia, USA. (2010) pp. 809-836.
44. Kaspar M, Dech F, Parsad NM, Silverstein JC. Web-Based Stereoscopic Visualization for the Global Anatomy Classroom. *Stud Health Technol Inform*. 2011; 264-70.
45. Chard K, Russell M, Lussier YA, Mendonça EA, Silverstein JC. A Cloud-based Approach to Medical NLP. *AMIA Annu Symp Proc* 2011;2011:207–216.
46. Chard K, Russell M, Lussier YA, Mendonça EA, Silverstein JC. Scalability and Cost of a Cloud-based Approach to Medical NLP. In: *2011 24th International Symposium on Computer-Based Medical Systems (CBMS)*. IEEE; 2011 p. 1–6.
47. Mollberg NM, Parsad NM, Armato SG III, Vigneswaran J, Kindler HL, Sensakovic WF, Sallgia R, Silverstein JC, Vigneswaran WT. Three-Dimensional Stereoscopic Volume Rendering of Malignant Pleural Mesothelioma. *International Surgery*. 2012 Oct 30;97(1):65–70.
48. Makelarski JA, Lindau ST, Fabbre VD, Grogan CM, Sadhu EM, Silverstein JC, et al. Are Your Asset Data as Good as You Think? Conducting a Comprehensive Census of Built Assets to Improve Urban Population Health. *J Urban Health*. 2012 Sep;15. doi:10.1007/s11524-012-9764-9
49. Embi PJ, Tachinardi U, Lussier Y, Starren J, Silverstein J. Integrating Governance of Research Informatics and Health Care IT Across an Enterprise: Experiences from the Trenches. *AMIA Jt Summits Transl Sci Proc*. 2013 Mar 18;2013:60–62. PMID: PMC3845750
50. Kaspar M, Parsad NM, Silverstein JC. An optimized web-based approach for collaborative stereoscopic medical visualization. *Journal of the American Medical Informatics Association*. 2013 Apr 10;20(3):535–43.
51. Cohn JA, Wang CE, Lakeman JC, Silverstein JC, Brendler CB, Novakovic KR, McGuire MS, Helfand BT. Primary care physician PSA screening practices before and after the final U.S. Preventive Services Task Force recommendation. *Urol Oncol*. 2014 Jan;32(1):41.e23–30.
52. Kho AN, Hynes DM, Goel S, Solomonides AE, Price R, Hota B, Sims SA, Bahroos N, Angulo F, Trick WE, Tarlov E, Rachman FD, Hamilton A, Kaleba EO, Badlani S, Volchenboun SL, Silverstein JC, Tobin JN, Schwartz MA, Levine D, Wong JB, Kennedy RH, Krishnan JA, Meltzer DO, Collins JM, Mazany T, CAPriCORN Team. CAPriCORN: Chicago Area Patient-Centered Outcomes Research Network. *Journal of the American Medical Informatics Association*. 2014 Jul;21(4):607–11.
53. Goldberg RP, Gafni-Kane A, Jirschele K, Silver R, Maurer D, Solomonides T, Simmons A, Silverstein J. An Automatic Female Pelvic Medicine and Reconstructive Surgery Registry and Complications Manager Developed in an Electronic Medical Record. *Female Pelvic Medicine & Reconstructive Surgery*. 2014 Sep;:1.

54. Cherenfant J, Talamonti MS, Hall CR, Thurow TA, Gage MK, Stocker SJ, Lapin B, Wang E, Silverstein JC, Mangold K, Odeleye M, Kaul KL, Lamzabi I, Gattuso P, Winchester DJ, Marsh RW, Roggin KK, Bentrem DJ, Baker MS, Prinz RA. Comparison of tumor markers for predicting outcomes after resection of nonfunctioning pancreatic neuroendocrine tumors. *Surgery*. Elsevier Inc; 2014 Dec 1;156(6):1504–11.
55. Zhu Y, Xu Y, Helseth DL Jr, Gulukota K, Yang S, Pesce LL, Mitra R, Müller P, Sengupta S, Guo W, Silverstein JC, Foster I, Parsad N, White KP, Ji Y. Zodiac: A Comprehensive Depiction of Genetic Interactions in Cancer by Integrating TCGA Data. *J Natl Cancer Inst* [Internet]. 2015 Aug;107(8). Available from: <http://dx.doi.org/10.1093/jnci/djv129> PMID: PMC4554190
56. Baldrige AS, Pacheco JA, Aufox SA, Kim K-YA, Silverstein JC, Denham W, Hungness E, Smith ME, Allen NB, Greenland P, Rasmussen-Torvik LJ. Factors Associated With Long-Term Weight Loss Following Bariatric Surgery Using 2 Methods for Repeated Measures Analysis. *Am J Epidemiol*. Oxford Univ Press; 2015 Aug 1;182(3):235–243. PMID: PMC4517695
57. Solomonides A, Goel S, Hynes D, Silverstein JC, Hota B, Trick W, Angulo F, Price R, Sathu E, Zelisko S, Fischer J, Furner B, Hamilton A, Phua J, Brown W, Hohmann SF, Meltzer D, Tarlov E, Weaver FM, Zhang H, Concannon T, Kho A. Patient-Centered Outcomes Research in Practice: The CAPriCORN Infrastructure. *Stud Health Technol Inform*. 2015;216:584–588.
58. Maraganore DM, Frigerio R, Kazmi N, Meyers SL, Sefa M, Walters SA, Silverstein JC. Quality improvement and practice-based research in neurology using the electronic medical record. *Neurol Clin Pract*. 2015 Oct;5(5):419–429. PMID: PMC4634157
59. Rasmussen-Torvik LJ, Baldrige AS, Pacheco JA, Aufox SA, Kim K-YA, Silverstein JC, Denham EW, Hungness E, Smith ME, Greenland P. rs4771122 Predicts Multiple Measures of Long-Term Weight Loss After Bariatric Surgery. *Obes Surg*. 2015 Nov;25(11):2225–2229. PMID: PMC4598314
60. McCray AT, Glaser J, Koppel R, Langlotz CP, Silverstein J. Health IT vendors and the academic community: The 2014 ACMI debate. *J Biomed Inform* [Internet]. 2016 Mar 8; Available from: <http://dx.doi.org/10.1016/j.jbi.2016.03.003> PMID: 26968349
61. Gitelis ME, Kaczynski A, Shear T, Deshur M, Beig M, Sefa M, Silverstein J, Ujiki M. Increasing compliance with the World Health Organization Surgical Safety Checklist—a regional health system’s experience. *Am J Surg* [Internet]. 2016 Aug 16; Available from: <http://dx.doi.org/10.1016/j.amjsurg.2016.07.024> PMID: 27692671
62. Cheng Q, Juen J, Bellam S, Fulara N, Close D, Silverstein JC, Schatz B. Classification Models for Pulmonary Function using Motion Analysis from Phone Sensors. *AMIA Annu Symp Proc*. American Medical Informatics Association; 2016;2016:401. PMID: PMC5333291
63. Friedman CP, Allee NJ, Delaney BC, Flynn AJ, Silverstein JC, Sullivan K, Young KA. The science of Learning Health Systems: Foundations for a new journal. *Learn Health Sys* [Internet].

2017 Jan 1;1(1). Available from: <http://dx.doi.org/10.1002/lrh2.10020>

64. Cheng Q, Juen J, Bellam S, Fulara N, Close D, Silverstein JC, Schatz B. Predicting Pulmonary Function from Phone Sensors. *Telemed J E Health* [Internet]. 2017 Mar 16; Available from: <http://dx.doi.org/10.1089/tmj.2017.0008> PMID: 28300524

#### **PEER-REVIEWED ABSTRACTS/POSTERS**

1. Panko W, Silverstein J, Lincoln T. Computer-mediated Access to the Narrative in the Computer-Based Patient Record [Abstract]. *MEDNET* 97.

2. Dobson H, Pearl RK, Edison M, Orsay C, Evenhouse R, Rasmussen M, Ai Z, Blew G, Dech F, Silverstein JC, Abcarian H. Virtual Reality: new method of teaching anorectal and pelvic floor anatomy. [Poster]. American Society of Colon and Rectal Surgeons Annual Meeting, Boston, 2000.

3. Ehrenfeld J, Croft D, Dech F, Silverstein JC. Utilizing Tele-Immersion Virtual Reality for Anatomy Instruction. [Poster]. Midwest Clinical Conference of Chicago Medical Society, Chicago IL, March 2003. This also won top five prize and was therefore published [abstract] in *Chicago Medicine* No. 106, Vol. 7, Page 20, 2003.

4. Silverstein JC, Ehrenfeld JM, Croft D, Dech F, Small S, Cook S. Tele-Immersion: Preferred Infrastructure for Anatomy Instruction. [Poster]. Midwest Clinical Conference of Chicago Medical Society, Chicago IL, March 2004. This also won top five prize at the Clinical Conference. It was also presented at the AAMC Spring Meeting 2004 and the Pritzker School of Medicine 58th Annual Senior Scientific Session and the Department of Surgery Huggins Research Conference where it also won most outstanding student poster.

5. Silverstein JC, Binns J, Papka M, Parsad N. EMS Telemedicine in the Access Grid: from ambulance to ER [Abstract/Presentation]. Proceedings of the Access Grid Retreat, San Francisco CA, April 2005.

6. Silverstein JC, Papka ME, Small S, Stevens R. The Access Grid: Enabling Infrastructure for Surgical Collaboration [Abstract and Oral Poster]. First Annual Academic Surgical Congress 2006, San Diego, CA. *J Surg Res.* 2006;130(2):286.

7. Silverstein JC, Papka ME, Small S, Stevens R. The Access Grid: Open Source Infrastructure for Biomedical Collaboration [Poster]. American Medical Informatics Association Spring Meeting 2006, Phoenix AZ.

8. Xiaoming Wang, Lili Liu, Maggie Cook, James Fackenthal, Shelley Cummings, Jonathan Silverstein, Ian Foster, Olufunmilayo I Olopade Translational Continuity and Integrity: a personalized biomedical data management system - TraM [Poster]. 2007, NCI's caBIG Meeting.

9. JC Silverstein, N Parsad, F Dech, J Philips, S Small, E Olson, ME Papka, R Stevens. Distributed Collaborative Biomedicine Including Shared Volume Visualization [Abstract/Presentation]. Access Grid Retreat. Chicago, May 15, 2007.

10. N. Parsad, M. Millis, M. Vannier, F. Dech, E. Olson, M. Papka, J. Silverstein, Real-time Automated Hepatic Explant Volumetrics on a Stereoscopic Three-Dimensional Parallelized Visualization Cluster [Abstract/Presentation]. *Int J CARS* (2007) 2 (Suppl 1):S488
11. S Small, J Silverstein, K Metis. Application of the Access Grid to Immersive Medical Simulation and Visualization [Abstract/Presentation]. *CompMed* 2007. Montreal, Canada. May 16, 2007.
12. J Silverstein, N Parsad, F Dech, E Olson, M Papka, S Small. Immersive Virtual Surgical Anatomy: Real Time Manipulation of Three Dimensional Visualization via a High Performance Graphics Cluster [Abstract/Poster]. *CompMed* 2007. Montreal, Canada. May 16, 2007.
13. Erberich, et al. RSNA2007 #5007317: Patient Centric Authorization for Cross Enterprise Healthcare Information Exchange in HealthGrids
14. Sadhu EM, Parsad NM, Silverstein JS. A perceptual spectral coloring system for computed tomography image representation [Poster]. *AMIA* 2009.
15. Balach T, Roach P, Selkov E, Silverstein J, Peabody T. Orthopaedic Trainee Procedural Competency Assessment with the Surgical Training and Assessment Tool [Poster]. *AAOS Annual Meeting*. March 9-13, 2010.
16. Parsad NM, et al. Virtual Surgical Planning for Pleural Mesothelioma. Interactive volume visualization and automated quantification of pleural tumors on a 3D stereoscopic graphics cluster [Abstract/Presentation]. 10th International Conference of the International Mesothelioma Interest Group (IMIG2010) August 31 to September 3, Kyoto, Japan.
17. Leigh A Baumgart, Kristen J Vogel Postula, Shaun A Walters, Jonathan C Silverstein, William A Knaus. Cancer risk assessment using an automated electronic patient-facing tool for the collection and evaluation of family history [Internet]. *J. Clin. Oncol.* 2016. p. (suppl; abstr e13055). Available from: <http://meetinglibrary.asco.org/content/166518-176>

#### **NON-PEER-REVIEWED ORIGINAL PUBLICATIONS**

1. Millikan K, Silverstein J, Staren E, Solerno C, Doolas A. Surgical Treatment of Complicated Hydatid Liver Cysts. *Surgical Rounds*. 1995 August: 306-10.
2. Silverstein J, Dorio P, Doolas A, Millikan K. 104 Consecutive Nonthoracotomy Resections of the Esophagus for Carcinoma [Abstract]. *Gastroenterology* 1996 April;110 (4 Suppl):A1419.
3. Silverstein JC, Rothschild A. Clinical perspectives on the modern laboratory. *Clin Lab Med*. 1999 Jun; 19(2):421-32.
4. Silverstein JC, Dech F, Edison M, Jurek P, Helton WS, Espat NJ. Virtual Reality: Immersive Hepatic Surgery Educational Environment (IHSEE). [Poster]. University of Chicago Depart-

ment of Surgery Huggins Research Conference, May 10, 2002. This poster won Huggins research conference award “Most Outstanding Faculty Poster Presentation”.

5. Silverstein JC, Croft D, Dech F, Ehrenfeld J. Utilizing Tele-Immersion Virtual Reality for Anatomy Instruction. [Poster]. AAMC Annual Meeting, San Francisco, CA, November 2002.

6. Silverstein JC, Dech F. Collaborative Exploration of Medical Data in VR. [Stereoscopy Presentation]. Medicine Meets Virtual Reality 11; January 25, 2003.

7. Silverstein JC, Dech F, Binns J, Jones D, Papka ME, Stevens R. Distributed Collaborative Radiological Visualization using Access Grid [Poster]. University of Chicago Department of Surgery Huggins Research Conference 2005.

8. Kratz M, Silverstein JC, Dev P, Dugan J, Bilofsky H, Legre Y. HealthGrid: An International Initiative for Collaborative eHealth [Poster]. National Centers for Biomedical Computing All Hands Meeting, July 17-19 2006, Bethesda MD.

9. Erberich SG, Silverstein JC, Daher N. Open-Source Grid Opens Nationwide Image Exchange. Imaging Technology News. March 2007;47(2).

10. Roach PB, Roggin KK, Selkov E, Dignam J, Posner MC, Silverstein JC. The Surgical Training and Assessment System [Abstract/Presentation]. University of Chicago Department of Surgery Huggins Research Conference; May 5, 2007.

11. Silverstein JC, Walsh C, Dech F, Olson E, Papka M, Parsad N, Stevens R. Immersive Virtual Anatomy Course Using Cluster of Volume Visualization Machines and Passive Stereo [Poster]. University of Chicago Department of Surgery Huggins Research Conference; May 5, 2007.

12. Parsad NM, Milis MJ, Vannier MW, Dech F, Olson E, Papka M, Silverstein JC. Real-time Automated Hepatic Explant Volumetrics on a Stereoscopic, Three-Dimensional Parallelized Visualization Cluster [Abstract/Presentation]. University of Chicago Department of Surgery Huggins Research Conference; May 5, 2007.

13. Kratz M, Silverstein J, Dev P: Co-Chairs. Integrated Research Team Final Report HealthGrid: Grid Technologies for Biomedicine, March 2006. Published December 2007 by Telemedicine & Advanced Technology Research Center of the U.S. Army Medical Research and Materiel Command. See [http://www.tatrc.org/conferences/website\\_healthgrid05/index.html](http://www.tatrc.org/conferences/website_healthgrid05/index.html) This was also reprinted In: T. Solomonides, J.C. Silverstein, J. Saltz, Y. Legré, M. Kratz, I. Foster, V. Breton and J.R. Beck. Global Healthgrid: e-Science Meets Biomedical Informatics. Proceedings of HealthGrid 2008. Volume 138; Studies in Health Technology and Informatics, June 2008. IOS Press. 300 pp., hardcover.

## **BOOK CHAPTERS**

1. Silverstein JC. Biostatistics and Data management. In: Deziel D, et al, editors. Rush University Review of Surgery. 3rd ed. Philadelphia: WB Saunders; 2000.

2. Silverstein JC. Pre-operative Bleeding Disorders. In: Millikan KW, Saclarides TJ, editors. Common Surgical Diseases: A Handbook for Rounds and On-call Problems. New York: Springer-Verlag, New York, Inc.; 1997.
3. Silverstein JC. Intraoperative Coagulopathy. In: Millikan KW, Saclarides TJ, editors. Common Surgical Diseases: A Handbook for Rounds and On-call Problems. New York: Springer-Verlag, New York, Inc.; 1997.
4. Silverstein JC, Rice CL. Economic Issues in Surgery. In: Corson, Williamson, editors. Surgery. Mosby; 2001.
5. Shuhaiber J., Silverstein J. Management of Preoperative Bleeding Disorders-Intraoperative Coagulopathy. In: Myers J, Millikan KW, Saclarides TJ, editors. Common Surgical Diseases: An Algorithmic Approach to Problem Solving 2<sup>nd</sup> Edition. Springer, New York. 2008.
6. Silverstein JC, Foster IT. Computer Architectures for Health Care and Biomedicine. In: Shortliffe EH, Cimino JJ, editors. Biomedical Informatics: Computer Applications in Health Care and Biomedicine (Fourth Edition). Springer, New York. 2014. pp 149-184.

#### **BOOK/PROCEEDING/JOURNAL EDITOR**

1. T. Solomonides, J.C. Silverstein, J. Saltz, Y. Legré, M. Kratz, I. Foster, V. Breton and J.R. Beck. Global Healthgrid: e-Science Meets Biomedical Informatics. Proceedings of HealthGrid 2008. Volume 138; Studies in Health Technology and Informatics, June 2008. IOS Press. 300 pp., hardcover.

#### **INVITED COLLOQUIA**

1. March 1997 – “An Overview of Medical Informatics” – Guest Lecturer – Rush-Presbyterian-St. Luke’s Department of Surgery Grand Rounds, Chicago
2. November 1997 – “Introduction to The Virtual Reality in Medicine Laboratory” – University of Illinois Board of Trustees Meeting, Chicago
3. March 1998 – “Computer Technology in Assessing Health” – Plenary Session Speech for the 20<sup>th</sup> Annual Research Forum for the College of Associated Health Professions, UIC, Chicago
4. May 11 and 12, 1999 – “Enriching the Teacher: Linking Teaching, Technology and Creativity” – Faculty Enrichment Days, College of Pharmacy, UIC, Chicago
5. May 26, 1999 – “Web-based Resident Case Log System” – Presented to the Accreditation Council on Graduate Medical Education Committee on CPT as advisory, Chicago
6. May 26, 1999, November 29, 2000 – “The Virtual Reality in Medicine Laboratory” – Presented at the faculty research forum of the UIC Department of Surgery, Chicago
7. October 23, 1999 – “Medical and Surgical Procedures for the Primary Care Office” - CME course under COMPASS Medical Education Network, Chicago

8. April 26, 2000 – “Virtual Reality in the Next Generation of Surgical Education” – Demonstration in the VRMedLab for the Urban Universities Portfolio Project including Provosts of participating Universities, Chicago
9. June 21, 2000 – “The New Virtual Temporal Bone” – Demonstration in the VRMedLab for the Department of Otolaryngology-Head and Neck Surgery Resident Research Symposium, Chicago
10. July 7, 2000 – “The CAVE and Medical Virtual Reality” – Presentation representing UIC campus for a University-wide presentation to the National Science Foundation office for Legislative and Public Affairs, Chicago
11. August 22, 2000 – “Web-based Resident Case Log System” – Educational demonstration given for all general surgery residents at Northwestern University Department of Surgery, Chicago
12. October 17, 2000 – “Computerized Physician Order Entry” – Healthcare Leadership Forum of the Cerner Health Conference 2000
13. October 20-21, 2000 – Faculty for “Course in Advanced Laparoscopic Surgery” – UIC Minimally Invasive Surgery Center
14. October 24, 2000 – “Virtual Reality Surgery: the Future has Arrived” – Invited Address at the American College of Surgeons 86<sup>th</sup> Clinical Congress Informatics Program – Health Care on the Internet in the New Millennium, Chicago
15. January 17, 2001 – “Virtual Reality Surgery: the Future has Arrived” – Northwestern University Surgery Grand Rounds, Chicago
16. January 31, 2001 – “Biomedical Tele-Immersion” – Research Seminar, UIC Division of Gastroenterology
17. March 13, 2001 – “Biomedical Tele-Immersion for Next Generation Systems” - Workshop on New Visions for Large-Scale Networks: Research and Applications – This was part of a prestigious invited three day event sponsored by the Federal Large Scale Networking Working Group, DARPA, DOE, NASA, NIST, NLM and NSF with the purpose of informing development of long-term research programs within the sponsoring organizations.
18. May 3, 2001 – “Computerized Physician Order Entry at UIC” – Cerner Corporation’s Midwest Regional User Group Meeting in Milwaukee
19. November 2, 2001 – “Virtual Reality in Surgery” – “Brave New World” keynote speaker and panelist - New York State Board for Professional Medical Conduct biennial meeting in Albany



20. April 14, 2002 – “Overview of Medical Informatics and Its Impact on Practitioners” – Postgraduate Course in Informatics – American College of Surgeons Spring Meeting, San Diego
21. April 17, 2002 – “Informatics” – Department of Surgery Grand Rounds – The University of Chicago
22. April 18, 2002 – “Immersive Virtual Reality Environments” - Resuscitation And Bioengineering Science Conference - Argonne National Laboratory, Chicago
23. May 15, 2002 – “Biomedical and Health Informatics” – guest lecture in graduate course: Medical Informatics (CSPP 56425) – University of Chicago Department of Computer Science
24. August 20, 2002 – “Next Generation Biomedical Collaboration Applications” – 2002 Bradley University Conference, Peoria, IL
25. September 20, 2002 – “Surgical Informatics: Tele-Immersion in Medical Education” - Illinois Surgical Society Annual Meeting, Urbana, IL
26. November 20, 2002 – “Advanced Biomedical Tele-Collaboration” – The University of Chicago/Argonne National Laboratories Brown Bag Lunch Series – (also at Supercomputing 2002 Conference through the Access Grid)
27. March 3, 2003 – “Advanced Biomedical Tele-Collaboration” – Case Western Reserve University Internet2 Day, Cleveland, Ohio
28. April 13, 2003 – “Wireless connectivity technologies for handheld computing” – American College of Surgeons Spring Meeting Postgraduate Course “Mobile And Wireless Computing: Practical Applications”, New York, New York.
29. April 16, 2003 – “Advanced Biomedical Collaboration” – Argonne National Laboratory, Keynote at Access Grid Retreat 2003, Argonne, IL
30. June 11, 2003 – “Biomedical and Health Informatics” – guest lecture in graduate course: Medical Informatics (CSPP 56425) – University of Chicago Department of Computer Science
31. June 22, 2003 – “Advanced Biomedical Collaboration” – Seattle, Washington - invited talk at the Workshop on Advanced Collaborative Environments in association with the Global Grid Forum 8 and High Performance Distributed Computing 12 conferences.
32. August 28, 2003 – “Biomedical Tele-Immersion for the Next Generation Internet” – Bethesda, Maryland – National Library of Medicine Next Generation Internet Reverse Site Visit (also simulcast on the Internet).
33. October 21, 2003 – “Wireless connectivity technologies for handheld computing” – American College of Surgeons Clinical Congress Postgraduate Course “Mobile And Wireless Computing: Practical Applications”, Chicago, IL.

34. October 21, 2003 – “Patient Safety Promises of Clinical Information Systems” – American College of Surgeons Clinical Congress - General Session on Patient Safety, Chicago, IL.
35. April 25, 2004 – “Wireless connectivity technologies for handheld computing” – American College of Surgeons Clinical Congress Postgraduate Course “Mobile And Wireless Computing: Practical Applications”, Chicago, IL.
36. May 21, 2004 – Represented Grid Computing in Panel: “Emerging Technologies for Telemedicine and Clinical Decision Support” - “Future Directions for Telemedicine: An International Symposium on Program Evaluation Strategies and Techniques, Emerging Technologies, and Interoperability”, University of Michigan Campus, Ann Arbor, MI.
37. September 16, 2004 – Speaker at the U.S. President’s Information Technology Advisory Committee (PITAC) Subcommittee on Computation Science – Discussed opinions on what is most important for the future of computational science as it relates to biomedical issues, Chicago, IL.
38. October 12, 2004 – Panelist at “Mobile at Hopkins” Conference : “Where Are We Going? Five Information Officers Discuss Mobile Technology And Health Care”, Johns Hopkins Hospital, Baltimore, MD.
39. March 13, 2005 – “Healthcare and Life Sciences Standards Overview and Implications” – Jill Kaufman, PhD from IBM spoke in Seoul Korea at the Life Sciences Grid Research Group with Jonathan Silverstein co-authoring the presentation and presenting via Access Grid from Chicago
40. April 6, 2005 – “Virtual Reality in Surgical Education” – Surgery Department Grand Rounds, The University of Chicago
41. April 18, 2005 – “Wireless connectivity technologies for handheld computing” – American College of Surgeons Spring Meeting Postgraduate Course “Mobile And Wireless Computing: Practical Applications”, Chicago, IL
42. April 25, 2005 – “Virtual Reality for Surgical Education” – Southern Society of Clinical Surgeons, The University of Chicago
43. September 27, 2005 – “Urban Lambda Grids for Advanced Biomedical Collaboration” – in panel: “Bridging the Challenges: Medicine Meets the LambdaGrid” at iGrid 2005, San Diego, CA.
44. January 24, 2006 - “Collaborative Immersive Virtual Environments” - in panel: “Enabling Technologies for Simulation: Impact and Influence on Medical Training and Education” at Telemedicine and Advanced Technology Research Center day of Medicine Meets Virtual Reality conference, Long Beach, CA.

45. June 9, 2006 - "Immersive Virtual Anatomy" - Grand Rounds, Department of Obstetrics and Gynecology, University of Chicago
46. August 1, 2006 - "Intersections of Computation Across the Biomedical Spectrum" - Keynote speaker at fifth annual Great Lakes Bioinformatics Retreat of the Michigan Center for Biological Information.
47. November 12, 2006 - "From Health (Biomedical Chaos) and Grid (Decomposition and Integration) to HealthGrid" - Panel presentation in HealthGrid Workshop of American Medical Informatics Association 2006, Washington D.C.
48. December 5, 2006 - "From Health (Biomedical Chaos) and Grid (Decomposition and Integration) to HealthGrid" - Panel presentation in HealthGrid Workshop of Internet2 Members Meeting 2006, Chicago.
49. February 1, 2007 - "Immersive Virtual Anatomy" - Section of Otolaryngology, Head and Neck Surgery Small Group Research Meeting - University of Chicago Department of Surgery.
50. February 8, 2007 - "From Health (Biomedical Chaos) and Grid (Decomposition and Integration) to HealthGrid" - Panel presentation in HealthGrid Workshop of Medicine Meets Virtual Reality Meeting 2007, Long Beach, CA.
51. February 9, 2007 - "Distributed Medical Visualization" - Panel presentation: 3D Interactive Real-Time Surgical Education on the Web, at Medicine Meets Virtual Reality Meeting 2007, Long Beach, CA.
52. June 7, 2007 - "Globus MEDICUS - Federation of DICOM Imaging Devices into HealthGrids" - GridAsia 2007, Singapore.
53. July 11, 2007 - "Simulation Labs" - Chicago Academic Medicine Program (CAMP), Multicultural Affairs, Pritzker School of Medicine, University of Chicago.
54. September 7, 2007 - "HealthGrid: Grid Technologies for Biomedicine" - 2007 International Brain Mapping and Intraoperative Surgical Planning Society (IBMISPS) Meeting - Washington D.C.
55. September 26, 2007 - "Immersive Virtual Anatomy via Computational Grids" - Department of Surgery research conference - Chicago.
56. October 4, 2007 - HealthGrid.US Alliance: HealthGrid developments in the United States - Keynote and panel discussion at Enabling Grids for E-science (EGEE) - Budapest, Hungary.
57. Oct 9, 2007 - "Wireless connectivity technologies for handheld computing" - American College of Surgeons Clinical Congress Postgraduate Course "Mobile And Wireless Computing: Practical Applications", New Orleans.

58. Nov 10, 2007 - "HealthGrid Applications" - AMIA 2007 Tutorial "HealthGrids", Chicago.
59. January 31, 2008 - Workshop on HealthGrids - "Open Grid Standards" - MMVR 2008, Long Beach, CA.
60. February 1, 2008 - Panelist - "Overcoming Leonardo's Constraint: When Does Stereoscopy Contribute to Medical Visualization?" - MMVR 2008, Long Beach, CA.
61. March, 11, 2008 - Panelist - "HealthGrid: Grid Technologies for Translational Bioinformatics" - 2008 AMIA Summit on Translational Bioinformatics, San Francisco, CA.
62. April 9, 2008 - Panelist - "CIOs: Challenges of Supporting the Research Community" - Clinical Research Forum 2008 IT Roundtable Meeting, Washington D.C.
63. April 9, 2008 - Visiting Lecture Series - "Virtual Reality for Anatomic Education and Surgical Planning" - Lister Hill National Center for Biomedical Communications, NLM, Washington D.C.
64. May 8, 2008 - Panel Moderator - "Clinical Research Informatics and Interoperability" - Re-Engineering the Clinical Research Enterprise Clinical Research Networks Meeting of the NIH Roadmap for Medical Research, NIH, Washington D.C.
65. July 9, 2008 - Guest Lecturer - "Internet-based real-time communication in the OR" - In: "The next revolution in surgery: imaging, robotics, materials and energy", Summer Course of Universidad Complutense Madrid, El Escorial, Spain.
66. September 18, 2008 - Keynote Speaker - "Advanced Computation for Personalized Surgical Treatment Planning" - at "pHealth: Personalized Health Technologies and Comparative Effectiveness." An EU-US Conference and White Paper. Norfolk, VA.
67. May 4, 2009 - Speaker - "Approaches to Accelerating Imaging Research" - In: Prevent Cancer Foundation Lung Cancer Workshop VI: Application of High Resolution CT Imaging Data to Lung Cancer Drug Development: Measuring Progress. Washington D.C.
68. July 1, 2009 - Keynote - "HealthGrid Principles for HealthGrid Principals" - HealthGrid 2009, Berlin, Germany.
69. October 20, 2009 - Seminar on Cloud/Grid Computing - National Institutes of Health/National Library of Medicine, Washington D.C.
70. November 18, 2009 - Grid Technology Transforming Healthcare - in Masterworks Session HPC in Modern Medicine - SC 2009, Portland, OR.
71. May 1, 2010 - The South Side of Chicago: Go To Place for Urban Health - at eChicago 2010: Seizing the Broadband Moment - Chicago, IL.

72. May 13, 2010 - Speaker - "Imaging Databases and Infrastructural Developments" - In: Prevent Cancer Foundation Lung Cancer Workshop VII: Application of High Resolution CT Imaging Data to Lung Cancer Drug Development: Measuring Progress. Washington, D.C.
72. July 27, 2010 - Speaker - "Grids, Federation, Clouds, and the Learning Healthcare System" - at ONCHIT/IOM Workshop #1 of Series: Electronic Infrastructure for the Learning Healthcare System: The Road to Continuous Improvement in Health and Health Care. Washington, D.C.
73. August 16, 2010 - Speaker - "Looking forward: the impact Of clinical informatics on quality" - Microsoft Health Solutions Group, Chicago, IL
74. October 18, 2010 - Speaker - "Clinical informatics of the Future" - Workshop on 'Petascale Computing and Personalized medicine", NCSA, University of Illinois, Urbana-Champaign, IL
75. May 23, 2011 - Speaker - "Selected User Scenarios of Smntx: A Cloud-based Approach to Medical NLP" - Security Roundtable for Cloud-Deployed Clinical Natural Language Processing, Seattle, WA. Sponsored by ONCHIT SHARP Area 4 - Secondary use of EHR data.
76. May 25, 2011 - Guest Lecturer - "Clinical Informatics of the future" - The Graduate Program in Health Administration and policy" - University of Chicago.
77. July 11, 2011 - Speaker - "Data Warehouses: Utilization and Unique Opportunities" - The Midwest Consortium (MC) for education and research collaboration - University of illinois at Chicago.
78. October 5, 2011 - Lecturer - "Distributed Parallel Medical Volume Visualization" - Computation of Imaging-based Science seminar/Course, Director Gordon Kindleman - University of Chicago.
79. October 12, 2011 - Lecturer - "The Future of Clinical and research informatics" - Biomedical Informatics course of Nitesh Chawla - University of Notre Dame.
80. April 12, 2012 - Invited Speaker - "Medical Informatics Role in Patient Safety and Quality Improvement" - American Academy of Orthopedic Surgery Board of Directors - Portland, OR.
81. April 24, 2012 - Invited Speaker - "Mock Debate: Research Data in Epic" - Epic Research Advisory Council - Verona, WI.
82. October 24, 2012 - Invited Speaker - "Practice-based evidence: using electronic medical records to improve population health" - Institute of Medicine Chicago, Leadership Breakfast - Chicago, IL
83. March 20, 2013 - Accepted Panel Speaker - "Integrating Governance of Research Informatics and Health Care IT Across an Enterprise: Experiences from the Trenches" - AMia 4th Annual summit on clinical research informatics - san francisco, CA.

84. June 26, 2013 - Invited Speaker - "Predictive Modeling for Health Systems" - INFORMS Healthcare 2013, Chicago, IL.
85. November 5, 2013 Invited Speaker - "Big Data and Predictive Modeling for Health Systems" - U.S. News and World Report "Hospitals of Tomorrow" summit - Washington, D.C.
86. December 4, 2013 - Invited Speaker - "Predictive Modeling for Health Systems" - National Predictive Modeling Summit - Washington D.C.
87. April 2, 2014 - Invited Speaker - "Structured Clinical Documentation System" - Epic Research Advisory Council - Verona, WI.
88. April 10, 2014 - Invited Speaker - "Big Data and Predictive Modeling for Health Systems" - UIUC computational science and engineering annual meeting - Urbana, IL.
89. May 6, 2014 - Invited speaker - "Healthcare Informatics: The Living Laboratory" - XLDB-Healthcare workshop - Stonybrook, NY.
90. June 2, 2014 - Invited Speaker - "Using Predictive Analytics to Drive Improvements in Health and Costs" - Predictive Analytics: Providing Novel Approaches to Enhance Outcomes Research Leveraging Big and Complex Data (sponsored by IMS health) - ISPOR annual meeting - Montreal, Ca.
91. June 11, 2014 - Invited speaker - "3D Printing for Surgery" - Chicago Innovation Mentors - Chicago, IL.
92. June 26, 2014 - Invited Speaker - "Big Data, Optimization, and Individualized Medicine at NorthShore" - Baxter Healthcare - IL.
93. September 19, 2014 - Invited Panelist - "Patient Portals: Effective Approaches and Future Trends" - HIT Connect Accountable Care and Health IT Strategies Summit - Chicago, IL.
94. November 11, 2014 - Invited Speaker - "Health system and data use: big problems, big ideas" - Big Problems, Big Ideas, and the Polsky Center at Booth School of Business, University of Chicago - Chicago, IL.
95. November 18, 2014 - Invited Debater - "against: The lack of interaction and collaboration between health IT vendors and academic clinical informatics units is stifling innovation and will continue to have a detrimental effect on the evolution of commercial products." - ACmi debate - amia annual symposium - Washington, Dc.
96. March 13, 2015 - Invited Speaker - "Leadership Conference: Connecting the Accomplishments toward the Learning Health System and Accelerating our Progress Together in 2015" - Webinar hosted by Joseph H. Kanter Family Foundation - Miami, FL.

97. March 18, 2015 - Invited Speaker - “Structured Clinical Documentation System” - Epic Expert Group Meeting - Verona, WI.
98. May 18, 2015 - Invited Speaker - “The Power in Patterns: How Big Data is Improving Patient Care” - NorthShore Next: Innovations in Medicine series - MATTER - Chicago, IL
99. November 8, 2015 - Invited speaker - “Learning Health Systems Consortia: Maximizing Shared Data Using Electronic Health Records” - NHRI-ToMMo Conference: Genomics, Biobanking and Learning Health Systems - Taipei, Taiwan.
100. March 24, 2016 - Invited Speaker - “Consistent and Complete Data at Scale” - 2016 Kanter Health Annual Meeting - Miami, FL.
101. April 6, 2016 - Invited Guest and Speaker - “Creating the Future of Medicine at NorthShore: What, Why, and How?” - Aurora Research Institute - Milwaukee, WI
102. April 20, 2016 - Invited Capricorn panelist - “Building a Patient Centered Research Network” - iBio Index - Evanston, IL
103. August 4, 2016 - Invited Speaker - “Predictive Modeling Integrated in Healthcare, Toward the Learning Health System” - Big Data in Health Workshop, Computation Institute & Center for Health Administration Studies - Chicago, IL
104. August 29, 2016 - Panelist - “Short Talks and Discussion: Three Domains; Health, Education, and Communities” - Computing Community Consortium Cyber-Social Learning Systems Workshop 1 - Seattle, WA

## **RESEARCH/EDUCATION FUNDING**

- 2015-2018 CAPriCORN: Chicago Area Patient Centered Outcomes Research Network PCORI Sub-award \$500,000 (Site PI)
- 2015-2020 Quality Improvement and Practice Based Research in Neurology Using the Electronic Medical Record  
Agency for Healthcare Research and Quality (grant # 1 R01 HS024057-01)  
\$1.2M (Informatics Lead)
- 2015 Automation of CT Measurement of Lean Body Mass  
Baxter Healthcare Corporation \$85,500 (PI)
- 2014-2015 Chicago HIT Regional Extension Center (CHITREC)  
DHHS/ONCHIT Sub-award \$409,000 (Site PI)
- 2014-2015 CAPriCORN: Chicago Area Patient Centered Outcomes Research Network PCORI Sub-award \$500,000 (Site PI)
- 2012-2015 Integrated Inpatient/Outpatient Care for Patients at High Risk of Hospitalization  
DHHS/CMS \$49,000 (Site PI)
- 2011-2015 Chicago Biomedical Consortium  
Searle Funds of The Chicago Community Trust  
\$25,000,000 (one of three PIs - “Scientific Director”)
- 2010-2012 Chicago Health and Aging Services Exchange

2010-2011 NIH Recovery Act Limited Competition (RC4) \$100,000 (Co-PI - Technical lead)  
 Real-Time Community Resource Mapping Project  
 Chicago Community Trust \$100,000 (Co-PI - Technical lead)

2010-2012 Chicago HIT Regional Extension Center (CHITREC)  
 DHHS/ONCHIT Sub-award \$26,981 (Co-PI - South Side liaison)

2009-2014 Biomedical Informatics Research Network Coordinating Center (BIRN-CC)  
 NIH/NCRR/USC UChicago Sub-award \$4,999,610 (Co-PI/Executive Committee)

2009-2011 Re-Engineering Translational Research at The University of Chicago (CTSA)  
 ARRA Administrative Supplement in Support of CTSA Translational (T1 and T2)  
 Research - NIH/National Center for Research Resources  
 \$2,000,000 (Informatics Director/Supplement PI)

2009-2010 Chan Soon-Shiong Scholar Support  
 Patrick Soon-Shiong \$500,000 (one of three PIs)

2008-2009 Center for Health Informatics (CHI)  
 St John's Hospital/USC UChicago Sub-award \$750,000 (Co-PI)

2009-2012 Innovative Cryo-STEM for Element-Specific Imaging of Cells and Tissues  
 Searle Funds of The Chicago Community Trust  
 Chicago Biomedical Consortium Spark Award \$380,000 (one of three PIs)

2008-2009 Collaboratory for Surgical and Perioperative Innovation (CSPI)  
 Provost's Academic Technology Innovation Program \$50,000 (Investigator)

2007-2012 Re-Engineering Translational Research at The University of Chicago (CTSA)  
 NIH/National Center for Research Resources \$23,000,000 (Informatics Director)

2007-2008 Mathematics for Systems Biology.  
 Joint Theory Institute of Argonne National Laboratory and University of  
 Chicago Multidisciplinary Theory Investigations LDRD project  
 \$25,000 (Natalia Maltsev and Jonathan Silverstein, PIs)

2006-2008 Immersive simulation team training impact on rescue, recovery, and safety culture  
 AHRQ grant. \$248,497 (Significant Contributor-Resource Person)

2006-2011 SPOR in Breast Cancer  
 NIH/NCI grant. \$2,295,384 (Co-Director, Analytic and Informatics Core)

2006-2008 Quality-Based Surgical Training: The Surgical Training and Assessment Tool  
 U. Chicago Graduate Medical Education Committee and Dept. of Surgery  
 \$40,000 (Faculty PI with Oncology Fellow Paul Roach, MD, PI)

2006-2010 Chicago Biomedical Consortium  
 Searle Funds of The Chicago Community Trust  
 \$25,000,000 (one of three PIs - "Scientific Director")

2004-2009 National Microbial Pathogen Data Resource Center  
 NIH/NIAID contract ~\$18,000,000 (Investigator)

2004-2006 Proteomics/Bioinformatics Demonstration Project  
 Searle Funds of The Chicago Community Trust and Universities: Northwestern,  
 UIC, University of Chicago. \$1,950,000 (one of three Principal Investigators)

2002-2007 Advanced Biomedical Collaboration Testbed in Surgery, Anesthesia, and Emer-  
 gency Medicine (ABC Testbed)  
 NIH/NLM contract. \$3,487,139 (Principal Investigator)

2002-2003 Tele-Immersion: Optimal Virtual Reality Infrastructure for Instruction and Self  
 Study. UC Provost's Program for Academic Technology Innovation.



2002-2003 \$25,000 (Principal Investigator)  
 Virtual Reality: Immersive Hepatic Surgery Educational Environment (IHSEE).  
 Charles B. Huggins Research Conference award “Most Outstanding Faculty  
 Poster Presentation”. \$10,000 (Principal Investigator)  
 2001-2003 Distance Learning in Minimally Invasive Surgery  
 Ethicon Endosurgery, Inc. \$1,507,000 (Investigator in 2001 only)  
 2000-2005 Systematic Combination of Anatomy and Nomenclature;  
 R01 NIH/NLM \$548,217 (Principal Investigator)  
 2000 Development of a Web-based System for Evaluating Laparoscopic Skills of Sur-  
 gical Residents. Society of American Gastrointestinal Endoscopic Surgeons  
 (SAGES) \$15,000 (Investigator)  
 1999-2002 Biomedical Tele-immersion for the Next Generation Internet;  
 NIH/NLM Contract \$1,040,000 (Principal Investigator)  
 1998-2001 Surgical Education Laboratory  
 United States Surgical Corporation \$1,200,000 (Co-Principal)  
 1998-1999 Biomedical Tele-immersion for the Next Generation Internet;  
 NIH/NLM Contract \$100,000 (Principal Investigator)

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