

# CURRICULUM VITAE

**Brian D. Athey, Ph.D.**  
**Collegiate Professor (Designate), Computational Medicine  
and Bioinformatics**  
**Professor, Department of Psychiatry and  
Department of Internal Medicine**  
**Chair (Designate), Computational Medicine and Bioinformatics**  
**Director Academic Informatics**  
**Associate Director, Informatics and IT,**  
**Michigan Institute for Clinical Health Research (MICHR)**  
**University of Michigan Medical School**  
**2065 Palmer Commons**  
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### **EDUCATION**

- 1976-1977 St. John's College; Annapolis, MD (Major: Classical Studies)
- 1980-1982 B.S. (Major: Biochemistry; Minors: Physics and Mathematics)  
University of Michigan-Dearborn; Dearborn, MI
- 1982-1990 Ph.D. (Cellular and Molecular Biology: Biophysics Concentration)  
Advisor: Professor John P. Langmore  
Dissertation Title: "Chromatin Fibers are Left-handed Double Helicies"  
University of Michigan; Ann Arbor, MI

### **PREDOCTORAL TRAINING**

- 1983-1985 National Institutes of Health Predoctoral Fellowship  
Cellular and Molecular Biology (CMB) Training Program: Biophysics  
Concentration  
Mentors: Professors John P. Langmore and Martha L. Ludwig  
University of Michigan Medical School; Ann Arbor, MI

### **POSTDOCTORAL TRAINING**

- 1990-1991 NIH Postdoctoral Fellowship  
Developmental Biology Training Program  
Mentors: Professors Bruce M. Carlson and Michael J. Welsh  
University of Michigan Medical School; Ann Arbor, MI
- 1991-1993 NIH Postdoctoral Fellowship  
Chemical and Hearing Senses Training Program  
Mentors: Professors Richard A. Altshuler and David J. Anderson  
Kresge Hearing Research Institute  
University of Michigan Medical School; Ann Arbor, MI

## **SENIOR POSTDOCTORAL TRAINING**

1998            CNS Anatomy Course, St. Hugh's College, University of Oxford (UK)

## **ACADEMIC APPOINTMENTS**

1991-1993    Adjunct Lecturer, Department of Biology  
University of Michigan

1995-1998    Assistant Professor, Department of Anatomy and Cell Biology (ACB)  
University of Michigan Medical School

1997-2000    Assistant Professor, Graduate Program in Medical Illustration  
University of Michigan School of Art and Design

1997-2003    Visiting Assistant Professor, Optical Engineering (with Professor Emmett Leith)  
Electrical Engineering and Computer Science (EECS)  
College of Engineering  
University of Michigan

1998-2003    Assistant Professor, Department of Cell and Developmental Biology  
University of Michigan Medical School

1998-2003    Assistant Professor and Founding Member  
Center for Biologic Nanotechnology  
Department of Internal Medicine, Division of Allergy and Immunology  
University of Michigan Medical School

2003-2008    Associate Professor, Biomedical Informatics  
Department of Psychiatry and Comprehensive Depression Center  
University of Michigan Medical School

2003- 2008    Associate Professor  
Michigan Nanotechnology Institute for Medicine and Biological Sciences (M  
NIMBS)  
Department of Internal Medicine, Division of Allergy and Immunology  
University of Michigan Medical School

2003- 2005    Visiting Associate Professor of Computer Science and Engineering (CSE  
Division)  
Electrical Engineering and Computer Science (EECS)  
College of Engineering  
University of Michigan

2003-2005    Visiting Associate Professor of Optical Engineering (with Professor Emmett  
Leith)  
Electrical Engineering and Computer Science (EECS)  
College of Engineering  
University of Michigan

- 2005- 2008 Associate Professor, Bioinformatics and Computational Biology  
Bioinformatics Graduate Program  
Center for Computational Medicine and Bioinformatics (CCMB)  
University of Michigan Medical School
- 2008- Professor, Biomedical Informatics  
Department of Psychiatry and Comprehensive Depression Center  
University of Michigan Medical School
- 2008- Professor, Bioinformatics and Computational Biology  
Bioinformatics Graduate Program  
Center for Computational Medicine and Bioinformatics (CCMB)  
University of Michigan Medical School
- 2008- Professor, Biophysics  
Michigan Nanotechnology Institute for Medicine and Biological Sciences (M-  
NIMBS)  
Department of Internal Medicine, Division of Allergy and Immunology  
University of Michigan Medical School
- 2009- Collegiate Professor (Designate), Computational Medicine and Bioinformatics  
Department

## **RESEARCH APPOINTMENTS**

- 1994-1995 Research Investigator, Department of Anatomy and Cell Biology

## **ADMINISTRATIVE APPOINTMENTS**

- 2000-2001 Academic Liaison, Research and Instructional Computing for the Health  
Sciences; Office of the Chief Information Officer (CIO)  
University of Michigan
- 2001 Interim Director, Michigan Center for Biological Information (MCBI)  
Office of the Vice President for Research (OVPR)  
University of Michigan
- 2001-2006 Director, Michigan Center for Biological Information (MCBI)  
Office of the Vice President for Research (OVPR)  
University of Michigan  
(Absorbed into the UM Center for Computational Medicine and Bioinformatics,  
CCMB, in 2006)
- 2003-2006 Director, Biomedical Informatics Core  
Department of Psychiatry and Comprehensive Depression Center  
University of Michigan Medical School
- 2005- Section Head, Bioinformatics and Laboratories

Department of Psychiatry  
University of Michigan Medical School

- 2005-2009 Associate Director and Co-founder (with Gilbert Omenn)  
UM Center for Computational Medicine and Bioinformatics (CCMB)  
University of Michigan Medical School
- 2006- Director of Information Technology (IT)  
Department of Psychiatry  
University of Michigan Medical School
- 2006- Director, Biomedical Informatics Program  
University of Michigan CTSA, Michigan Institute for Clinical and Health  
Research (MICHHR)
- 2009- Chair Designate, Computational Medicine and Bioinformatics
- 2009- Director, Academic Informatics (Medical School)

## **INDUSTRIAL POSITIONS**

- 1995-1997 Director, Biomedical Imaging Programs  
Environmental Research Institute of Michigan (ERIM); Ann Arbor, MI

## **RESEARCH INTERESTS**

- 1. ‘Integrative Biomedical Informatics’ and ‘Translational Bioinformatics’:** This research thrust is leading to increased understanding of systems models and mechanisms of human health and disease, and will contribute to our understanding of the basis of ‘individualized medicine’. These new disciplines involve integration of diverse bioinformatics data-types and information bases into disease-specific models and networks, allowing a researcher to explore the systems properties and complexity of biological and biomedical systems. This relies heavily on computer and information sciences, biostatistics, and bioinformatics.

This is a new research thrust for me, started in the last four years, and is already quite productive, leading to several significant team-science based grant and contract activities I lead. The major efforts are 1) the NIH National Center for Integrative Biomedical Informatics, NCIBI.org; and 2) the Biomedical Informatics Program of the UM Clinical and Translational Sciences Award (CTSA) in the Michigan Institute for Clinical and Health Research (MICHHR).

- 2. Computational Multiscale Modeling and Simulation of Macroscopic and Microscopic Biological Systems:** This research thrust has two components: 1) A ‘macroscopic’ Human Systems Biology (HSB) modeling and simulation thrust, building from earlier work on the NIH Visible Human Project (Anatomy), and the DARPA Virtual Soldier Project (Physiology, Function, Pathology); and 2) A ‘Microscopic’ cellular systems approach to further understand the hierarchal nature of the structure, function,

and dynamics of the eukaryotic chromatin fiber. These are both long-standing research interests, and both involve multiscale theory, systems modeling, computer image processing, ontological descriptions and machine learning for extension and linkage to other informational components, cutting-edge integrative biomedical informatics, and experimental verification using epigenomic and structural biology.

- 3. Interdisciplinary Team Science.** I am a natural leader of interdisciplinary science teams which include combinations of experts from biology, medicine, bioinformatics, computer science, information science, bioengineering, mathematics, statistics, systems modeling, and complexity science. I will continue to pursue ‘big science’ and ‘small science’ in this fashion, collaborating with experts from diverse fields of knowledge related to research thrusts 1 and 2. I will also continue to teach interdisciplinary science at the graduate level, using bioinformatics, computational biology, and clinical informatics as touchstones.

## **GRANT/CONTRACT SUPPORT**

### *Current*

9/08-6/09 3UL1RR024153-03S1 (Becich, Michael)  
Michigan Institute for Clinical & Health Research  
Administrative Supplement for CTSA Consortium Project  
“CTSA Inventory Resource Web Presence (CIRWP)”

The objective of this project is to create a web-accessible and queryable inventory of research resources of the CTSA informatics consortium. This inventory resource will serve as a demonstration prototype that enables tool and data sharing within the CTSA, and will promote synergies between various components of the CTSA consortium.

Role: Co-I \$75,000 Total Costs

11/08-7/09 U54 DA021519-02S2 (NCIBI supplement)  
“Building Bridges with the University of Wisconsin-Milwaukee”

To create a special “building bridges” postdoctoral fellowship training opportunity with the University of Wisconsin-Milwaukee to extend the capability of NCIBI to augment the molecular interactions database with information obtained from biomedical images, legends, figures and tables.

Role: PI \$86,372 Total Costs

9/08-7/09 3 U54 DA021519 04S2 (Athey, Brian D)  
“NCIBI Building Bridges: BioIMAGE – Intelligent seMantic Analysis of Biomedical Images”

Develop a representation to map experiments to knowledge, and to associate experiments and knowledge to images. Develop a computational framework or

automatically mapping between experiments to knowledge, and for associating the mapping to images.

Role: PI           \$99,997 Total Costs

8/08-7/09       3 U54 DA021519 04S1 (Athey, Brian D)  
“Support and Development of Biosite Maps for NCBCs”

Coordinate development efforts across all NCBCs for the development and deployment of Biositemaps. Focus on alignment of ontology to various tool types and application development space user-computer interface components including visualization and the development of FAQ and user help guides.

Role: PI           \$50,000 Total Costs

7/05-6/10       T32 GM070449 (Athey, Brian D)  
“Training Program in Bioinformatics”

This is a multidisciplinary graduate training program in bioinformatics and computational molecular biology drawing faculty participation on a campus-wide basis. Computational bioscience has emerged as a new multidisciplinary field contributing to all aspects of biology and medicine; there is an urgent need for scientists skilled in bioinformatics and computational biology, in order to be able to participate this emerging and vibrant field.

Role: PI           \$1,225,579 Total Costs

9/05-7/10       1 U54 DA021519-03A1 (Athey, Brian D.)  
National Institute of Health  
“National Center for Integrative Biomedical Informatics (NCIBI)”

Focus is biomedical informatics data integration and modeling, including advanced biomedical Information Retrieval (IR) to accelerate NIH-funded research in complex and chronic biomedical diseases. This is one of the seven NIH National Centers for Biomedical Computing (NCBC).

Role: PI           \$18.7M Total Costs with additional \$1.5M cost-share.

8/07-5/11       1 R01 DK079084-01 (Burant, Charles)  
National Institute of Health  
“Using Systems Biology to Understand Islet Adaptation and Failure in Diabetes”

The goals of this project are to combine novel metabolomic analysis techniques with bioinformatics to identify the way in which pancreatic islets adapt to differences in nutrient mix and supply.

Role: Co-I           \$2.64M Total Costs

9/07-5/12       UL1 RR024986-01 (Pienta, Kenneth)  
NIH / NCRR  
“Michigan Institute for Clinical and Health Research (MICHR)”

The University of Michigan Clinical and Translational Science Award (UM CTSA) focuses on supporting and facilitating clinical and translational "team science."

Role: Co-I, Director of the Biomedical Informatics Program (BIP)  
\$71.1M Total Costs

**Accepted**

A11 R01 AI08106201-A1(He, Oliver)

NIH R01

“Ontology-based Information Network to Support Vaccine Research”

Role: Co-I

\$1,889,225 Total Cost

**Pending**

9/09-09/14

(Merajver, Sofia D.)

“Physical Sciences of Integrated Cancer Systems (PhysOnc Center)”

Cooperative mechanism to establish a Center as part of a national network to study the physics of cancer, including signaling integration, cellular motion, and angiogenesis.

Role: Co-I

\$28,162,111 Total Cost

**Recent**

1998-1999

“University of Michigan Next Generation Internet Implementation to Serve Visible Human Datasets: Phase I.” NIH-National Library of Medicine Contract. **Athey BD**, PI; 15% effort; \$66K Direct Costs.

1999-2002

“Nanomolecular Therapeutics for Cancer.” National Cancer Institute Contract. J.R. Baker, Jr., PI; **Athey BD**, Co-I; 20% effort; Task 3 - Imaging Component, \$720K Direct Costs.

2002-2004

“Novel Technologies for Noninvasive Detection, Diagnosis of Cancer.” National Cancer Institute–National Institutes of Health. Imaging subproject. **Athey BD**, Co-I; 20% effort. \$339K Direct Costs.

1999-2003

“University of Michigan Next Generation Internet (NGI) Implementation to Serve Visible Human Datasets: Phase II”. NIH-National Library of Medicine (NLM) Contract #N01-LM-0-3511. **Athey BD**, PI; 50% effort. \$4.95M Direct Costs.

2002-2004

“MEDC 270—Development of a Comprehensive Simulation-based Computer Software System Environment for Designing DNA-based Microarrays.” Michigan Economic Development Corporation; **Athey BD**, PI; 0% effort; \$52K Direct Costs.

2003-2006

BAA 02-03 Addendum 4. The Virtual Soldier. “Core Development Integration and Demonstration of the DARPA Virtual Soldier.” Defense Advanced Research Projects Agency. Cooperative Agreement Contract W81XH-04-0012. **Athey BD**, PI; 50% effort. Phase I. 20 months. \$9.96M Direct Costs.

2004-2007

N01-LM-3-3512 (Dev, Parvati)

National Institutes of Health - NLM

Advanced Network Infrastructure for Distributed Learning and Collaborative Research (HAVnet).

- The major goal is establishing an Internet-based collaboration medical education teaching capability as part of the NLM SII program: subcontractor to Stanford University. **Athey, BD, PI**; subcontract. \$121K Total Costs.
- 2004-2007 BAA-RM-04-23 (Clauw, Daniel)  
National Institutes of Health - NHLBI  
Michigan Clinical Research Collaboratory (MCRC): An Integrated Academic-Community Research Enterprise.  
The major goal of this contract is to develop an “Honest Broker” system which will allow for the interaction of several distinct domains of the translational research medical record. **Athey, BD, Co-I**; \$3.05M Total Costs. No-cost extension through Dec. 2007.
- 2001-2008 GR-238 (Athey, Brian D.)  
Michigan Economic Development Corporation (MEDC)  
“The Michigan Center for Biological Information (MCBI)”  
The major goal of this project is to provide statewide bioinformatics and computational biology capabilities to the Michigan Core Technology Alliance infrastructure partners and institutions. **Athey, BD, PI**; \$10.3M Total Costs. No-cost extension through Aug. 2008.
- 2006-2008 U54 DA021519-02S1 (NCIBI supplement)  
"Improved Gene Pathway Assertions Using NLP (Natural Language Processing) of Biomedical Literature and SAGA (Sequence Alignment by Genetic Algorithm)". **Athey, BD, PI**; \$99.4K Total Costs.
- 2004-2009 2 R01 AI 37141 (Baker, James R. Jr.)  
National Institutes of Health-NIAID  
“Apoptosis in Thyroiditis”  
The major goal of this effort is to provide bioinformatics support for Dr. Baker’s project. **Athey, BD, Co-I**; \$1.7M Total Costs.

**Past**

- 1992-1994 “Further Development of the Laser Scanning Confocal Microscopy/Digital Microscopy and Scientific Visualization Facility.” University of Michigan Office of Vice President for Research. **Athey BD** and D.J. Anderson, Co-Is; 0% effort; \$90K Direct Costs.
- 1993-1995 “Cellular Pathophysiology of Acute Renal Failure.” NIH-RO1. J.M. Weinberg, PI; **Athey BD, Co-I**; 5% effort. \$50K annual Direct Costs.
- 1993-1994 “An Image-Based Repository of Bio-Medical Imagery.” NIH/NLM HPCC Demonstration Project. NIH-RO1. W.B. Panko, PI; **Athey BD, Co-I**; 20% effort; \$200K Direct Costs. (2 of 3 years: PI moved).
- 1994-1995 “Development of Data Processing Methodology for the Visible Human/Embryo Projects I: Fourier Encoding of Contours.” Advanced Research Projects Agency (ARPA). **Athey BD, PI**; 20% effort; \$25K Direct Costs.
- 1994 “Feasibility Study of Sorbinil-Treated Sural Nerve Biopsies.” B.M. Carlson, PI; **Athey BD, Co-I**; 10% effort; \$100K Direct Costs.
- 1994-1995 “The Integration of Kodak Photo CD Technology into a Modern Biomedical Digital Imaging Environment.” **Athey BD, M. Pao, and A. Warner, Co-Is**; 0% effort; \$25K Direct Costs.

- 1994-1995 “Scalable System for Nerve Biopsy Analysis.” Hoffman-La Roche, LTD (Toronto, Canada). B.M. Carlson, PI; **Athey BD**, Co-I; 20% effort; \$1.56M Direct Costs.
- 1994-1996 “Center for Neural Communication Technology.” NIH-P41. D.J. Anderson, PI; **Athey BD**, Co-I; 5% effort; Project 3. \$95K Direct Costs.
- 1994-1996 “Development and Demonstration of a Networked Telepathology 3-D Imaging, Databasing and Communication System: Phase I.” Advanced Research Projects Agency (ARPA). **Athey BD**, PI; 25% effort; \$420K Direct Costs.
- 1995-1998 “AASERT Graduate Fellowship in Advanced Biomedical Imaging.” Advanced Research Projects Agency (ARPA). **Athey BD**, PI; 0% effort; \$114K Direct Costs.
- 1997 “Feasibility Assessment of Tissue Engineering, Regeneration and Fabrication Technology for Defense Purposes.” The Potomac Institute for Policy Studies. **Athey BD**, PI; 40% effort; \$50K Direct Costs.
- 1998 “Prospect: The Prostate Cancer Decision Support Architecture.” Internal Graduate Student Award from the University of Michigan NIH Prostate SPORE Grant, K.J. Pienta, PI; **Athey BD**, Co-I; 0% effort; \$5K Direct Costs.

## **HONORS AND AWARDS**

- 1983-1985 National Institutes of Health Predoctoral Fellowship  
Cellular and Molecular Biology (CMB) Training Program: Biophysics Concentration  
Mentors: Professors John P. Langmore and Martha L. Ludwig  
University of Michigan Medical School; Ann Arbor, MI
- 1990-1991 National Institutes of Health Postdoctoral Fellowship  
Developmental Biology Training Program  
Mentors: Professors Bruce M. Carlson and Michael J. Welsh  
University of Michigan Medical School; Ann Arbor, MI
- 1991-1993 National Institutes of Health Postdoctoral Fellowship  
Chemical and Hearing Senses Training Program  
Kresge Hearing Research Institute  
Mentors: Professors Richard A. Altshuler and David J. Anderson  
University of Michigan; Ann Arbor, MI
- 2000-2004 Peace Fellowship  
Mentor: Henry C. Kelly  
Federation of American Scientists (FAS.org); Washington, D.C.  
Award for extensive work with DARPA in 1990’s relating to Counter Biological Warfare and Terrorism.
- 2005 Conference Co-Chair (with David J. States); Intelligent Systems for Molecular Biology (ISMB) 13<sup>th</sup> Annual Meeting of the International Society for Computational Biology (ISCB) Detroit, MI.

- 2007 Outstanding Achievement Award for Excellence in Bioinformatics and BioEngineering Research. IEEE 7th International Conference on Bioinformatics and BioEngineering. Boston, MA. October 14, 2007.  
<http://www.cs.gsu.edu/BIBE07/photoposter.php>
- 2008 National Co-chair, CTSA Informatics Operations Committee (with Bill Hersh).
- 2008- National Co-chair, CTSA Informatics Key Function and Operations Sub Committee (with Dan Masys).
- 2008 Outstanding Achievement Award. Worldcomp'08. Las Vegas, Nevada. July 14, 2008. [http://www.world-academy-of-science.org/worldcomp08/ws/keynotes/keynote\\_athey](http://www.world-academy-of-science.org/worldcomp08/ws/keynotes/keynote_athey)
- 2009 Keynote Speaker/Moderator of panel discussion. Biomedical Science and Engineering Center (BSEC). Oak Ridge, TN. March 18-19, 2009.
- 2009 Distinguished Service Award. Conference Keynote Speaker. Worldcomp '09. Las Vegas, Nevada. July 13, 2009.

### **MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

- 1982-1990 Microscopy Society of America
- 1994- Optical Society of America (Ann Arbor, MI branch)
- 1996- Friends of the National Library of Medicine (NLM)
- 1997-2003 American Association of Anatomists (AAA)
- 2000-2004 The Society for Computer Simulation International (SCS)
- 2004- American Medical Informatics Association (AMIA)
- 2005- International Society for Computational Biology (ISCB)
- 2009- American College of Medical Informatics (ACMI-nominated as Fellow)

### **EDITORIAL ADVISORY BOARD**

- 2005- Biomedical Computation Review. Quarterly journal supported by the National Institutes of Health through the NIH Roadmap for Medical Research, Grant U54 GM072970.
- 2008- Consulting Editor, International Journal of Functional Informatics and Personalized Medicine
- 2008- Consulting Editor, International Journal of Computational Biology and Drug Design

### **PEER-REVIEW SERVICES**

- 1995-1999 Ad-hoc Reviewer: Office of Naval Research, Defense Advanced Research Projects Agency (DARPA)
- 2000 Reviewer, Army Research Office (ARO)

- 2000 Reviewer/Panel Member, Bioengineering Research Partnership Grants, Special Study Section, National Eye Institute/National Institutes of Health
- 2001 Reviewer/Panel Member, Bioinformatics Study Section, ITR Small Grant Awards, National Science Foundation
- 2002 Reviewer/Panel Member, Washington Advisory Group (WAG) LLC, Missouri Life Science Research Capacity Contracts Program
- 2002-2004 Reviewer/Panel Member, NIH Computational Biology Study Section ZRG1 SSS-H (01), Center for Scientific Review, National Institutes of Health
- 2003-2005 Reviewer/Panel Member, NIH Neuroinformatics Study Section ZRG1 SSS-E (55), Center for Scientific Review, National Institutes of Health
- 2003-2005 Reviewer/Panel Member, NIH Human Brain Project Study Section Center for Scientific Review, National Institutes of Health
- 2003-2005 Reviewer/Panel Member, Integration of Middleware, NSF-NMIA Panel Review, National Science Foundation
- 2003-2006 Reviewer/Panel Member, NIH Biomedical Computing (BISTI) Review Panel, Center for Scientific Review, National Institutes of Health
- 2005-2006 Ad hoc Reviewer, Army Research Office (ARO)
- 2007 Reviewer/Panel Member, special emphasis panel to review RFA DE-07-009. National Institute of Dental & Craniofacial Research
- 2007 Reviewer, Pilot Award, Michigan Institute for Clinical and Health Research (MICHHR)
- 2007 Reviewer, Bioinformatics/Computational Workshop on Petascale Applications in Biology, IEEE 7th International Symposium on Bioinformatics & Bioengineering (BIBE 2007)
- 2008 Reviewer, Clinical and Translational Science Awards (CTSA) Panel/Scientific Review Group 2008/05 ZRR1 CR-3
- 2008 Reviewer, Experimental Program to Stimulate Competitive Research (EPSCoR) and Institutional Development Awards (IDeA) Programs in South Carolina
- 2009 Reviewer, National Institute of General Medical Sciences (NIGMS), National Institutes of Health Large Scale Collaborative Project. Special emphasis panel 01 ZGM1 PPBC-9 (GL)
- 2009 External Reviewer, The Bioinformatics Component of the institutional CTSA, Rockefeller University.

## **TEACHING ACTIVITIES**

### ***Course Master***

- 2005-2006 Bioinformatics 526: “Introduction to Bioinformatics and Computational Biology.” Rigorous introductory graduate course on fundamental concepts; 4 credit hours (including laboratory). University of Michigan Bioinformatics Graduate Program.
- 2007- Bioinformatics 527: “Introduction to Bioinformatics and Computational Biology.” Reworked curriculum of BI 526 for BI concentrators and quantitatively-focused graduate students; 4 credit hours (including laboratory). University of Michigan Bioinformatics Graduate Program.

### ***Course Instructor***

- 1990-1993 Biology 516 and 416: “Biophysical Chemistry.” University of Michigan Department of Biology. Course directed toward first year graduate students and undergraduate seniors.
- 1998 Medical Informatics 608: “Medical Informatics: Theory and Practice.” University of Michigan School of Information (designed and taught jointly with A.J. Warner).
- 1997-1998 Biomedical Illustration 622: “Biomedical Graphical Computing for Artists.” University of Michigan School of Art and Design (assisted by A. Ade, GSI)
- 2007- Mathematics 547: “Sequence Analysis”; D.M. Burns, Course master; Athey BD, instructor giving 6-8 lectures on chromatin structure and mechanics.
- 2007- Bioinformatics 525: “Introduction to Bioinformatics.”  
Section 006; “Bioinformatics on the Web.”  
Section 008; “Bioinformatics and Systems Biology”
- 2008- Bioinformatics 555: “Introduction to Clinical Informatics.”

### ***Graduate Short-Course***

- 1991 Anatomy and Cell Biology 850: “A Short-Course in Confocal Microscopy.” A week-long graduate-level introduction to confocal microscopy and related computer image analysis and display techniques.

### ***Graduate Lectures***

- 1991-1993 Anatomy and Cell Biology 530: “Cell Biology.” Invited lectures on “The Structure of Chromatin” and “The Cell Nucleus.”
- 1992-1994 Engineering 503: “Scientific Visualization.” Invited lecturer on “Visualizing Data Obtained from Microscopes.” College of Engineering graduate-level course.
- 1993-1995 Anatomy and Cell Biology 580: “Morphological Methods of Microscopy.” Invited lecturer on “Basic Confocal Imaging: Theory and Practice.” Directed towards second-year health sciences graduate students.
- 2007- Translational Research 508: “Introduction to Biomedical Informatics;”  
“Introduction to Systems Biology”.

### ***Grand Rounds***

- 1996 “Biomedical Diagnostic Imaging.” University of Michigan Comprehensive Cancer Center Grand Rounds, University of Michigan Hospital.
- 2006 “Biomedical Informatics in the 21<sup>st</sup> Century and its Potential to Transform Medical Research and Practice.” University of Michigan Medical School, Department of Psychiatry Grand Rounds. (Oct. 18, 2006).

### ***Departmental Seminars***

- 1991 “Three-dimensional Visualization of Cells and Tissues Using the Confocal Microscope.” Department of Anatomy and Cell Biology.
- 1992 “Confocal Microscopy.” Department of Surgery.
- 1992 “The Light Microscopic Study of Tissues.” Nephrology Division, Department of Internal Medicine.

- 1995 “Medical Informatics, Telemedicine, and the Need for Medical Information Specialists—Opportunities and Challenges.” University of Michigan School of Information.
- 1996 “The Evolution of Microscopy as an Information Science.” University of Michigan School of Information.
- 1998 “Microscopic Holography, Holospaces, and Range Imaging: Recent Results and Future Biological Applications.” University of Michigan Department of Anatomy and Cell Biology.
- 2005 “The DARPA Virtual Soldier Project: Concept and Demonstration.” Bioinformatics Graduate Seminar (April, 2005)
- 2006 “The National Center for Integrative Biomedical Informatics (NCIBI).” Bioinformatics Graduate Program Seminar (Sept. 13, 2006).
- 2007 “Computational and Informatics Approaches to Understanding Physiological and Anatomical Changes During Acute Ballistic Trauma.” Research Discussion. Department of Anesthesiology, University of Michigan (May 16, 2007).

### ***Medical School/Hospital Administration***

- 2001 “Innovative Technologies for Academic Health Centers.” Given twice to: The Health System Executive Committee and the UMHS Information Technology Strategic Advisory Committee (IT-SAC).
- 2001 “Life Sciences and Bioinformatics Activities in Michigan: Overview and Strategic Considerations.” Invited Presentation to the University of Michigan Health System CIO Executive Committee.
- 2003 Michigan Center for Biological Information (MCBI) self-study report given to: 1) The University of Michigan Medical School Administration (Dean and Associate Dean for Research) and the UM VP of Research; and 2) an invited external review committee of bioinformatics experts.

### ***High School Student Mentoring***

- 1998-1999 K.K. Pandya (Greenhills School; Ann Arbor, MI)
- 2001-2003 B. Root (Pioneer High School; Ann Arbor, MI)
- 2001-2002 D. Welsh (Huron High School; Ann Arbor, MI)

### ***Undergraduate Student Mentoring***

- 1991-1993 A. Chien (Department of Physics; with J.M. Weinberg)
- 1998-1999 J. Dixon (Gallaudet University Fellow)

### ***Undergraduate & Graduate Student Group Mentoring***

- 2001-2003 Faculty Leader: University of Michigan Student Chapter, Pugwash International (with support from the University of Michigan Life Sciences Society and Values Program).

### ***Masters Student Mentoring***

- 1993-1994 A.B. Mackersie (M.S., EECS; with D.J. Anderson)
- 1994-1995 P. Ray (MLS, School of Information and Library Studies; with M. Pao and A.J. Warner)
- 1994-1995 P.V. Ketty (M.S., EECS; with D.J. Anderson)
- 1995-1996 J.S. Glick (M.F.A., Medical Illustration; with J.L. Lillie)

- 1995-1996 J. Song (MSI, School of Information; Miranda L. Pao Medical Informatics Student Fellowship; with A.J. Warner)
- 1995-1996 J. Williams (MSI, School of Information; Digital Information Associate Fellow; with A.J. Warner)
- 1995-1996 G. Hsu (M.S., Physiology)
- 1995-1997 H. Fogel (M.S., Biological Sciences)
- 1996 M.A. Nolte (MSI, School of Information; with A.J. Warner)
- 1996 P. McClay (MSI, School of Information; with A.J. Warner)
- 1996-1999 A.S. Ade (M.S., Biological Sciences)
- 2001-2003 G. Durka-Pelok (M.S., Information Sciences; with T. Weymouth)
- 2006- S. R. Pulagiri (Bioinformatics; with D.M. Burns)

### ***Doctoral Student Mentoring***

- 1991-1993 D.-Y. Shieu (Ph.D., EECS; D. J. Anderson, Chair; Athey BD, cognate member)
- 1998-2000 B.S. Hoover (Ph.D., EECS; E.N. Leith, Chair; Athey BD, cognate member)
- 1998-2003 K.D. Mills (Ph.D., EECS; E.N. Leith, Chair; Athey BD, Co-Chair and cognate member)
- 1999-2004 D. Wagner (Ph.D., EECS; F. Jahanian, Chair; Athey BD, cognate member)
- 2000-2003 N. Sowapotowak (Ph.D., EECS; J. Fessler, Chair; Athey BD, cognate member)
- 2001-2003 A. Zimmerman (Ph.D., School of Information; M. Hedstrom, Chair; Athey BD, cognate member)
- 2001-2004 T.J. Hacker (Ph.D., EECS; B. Noble, Co-chair; Athey BD, Co-Chair)
- 2001-2006 W. Chein (Ph.D., EECS; T. Norris, Chair; Athey BD, cognate member; E.N. Leith, Chair, deceased)
- 2003-2005 J. Han (Ph.D. Pre-Candidate, EECS; F. Jahanian, Chair; Athey BD, cognate member)
- 2003-2008 S. Subramanian (Ph.D. Candidate, Bioinformatics; Athey BD, Chair)
- 2003-2008 Y.J. Kim (Ph.D. Candidate, EECS; J. Patel, Chair, Athey BD, Co-Chair)
- 2005-2008 C. Santos (Ph.D. Candidate, Bioinformatics; Athey BD, Chair, D.J. States, Co-Chair)
- 2005-2008 Y. Tian (Ph.D., Candidate, Computer Science and Engineering; Athey BD, Co-Chair with J. Patel)
- 2006- S. Sarntivijai (Ph.D. Pre-Candidate, Bioinformatics; Athey BD, Co-Chair with D.J. States)
- 2008- G. Su (Ph.D., Candidate, Bioinformatics; Athey BD, Co-Chair with Fan Meng)
- 2009- A. Shah (Ph.D., Candidate, Bioinformatics; Athey BD, Co-Chair with Peter Wolfe)

### ***Postdoctoral Scholar Mentoring***

- 1991 Dr. G. Avinash (Ph.D., Bioengineering, University of Michigan; with A.L. Nuttal)
- 1993-1994 Dr. C. Viguie (Ph.D. Nutrition, University of California, Berkeley; with B.M. Carlson)
- 1994-1995 Dr. G.D. Guttman (Ph.D., Biophysics; University of California-Berkeley)
- 1999-2002 Dr. I. Lee (Ph.D., Biophysics, Korean National University; with J.R. Baker, Jr.)
- 2002-2005 Dr. A.D. Boyd (M.D., University of Texas Southwestern)
- 2003-2004 Dr. A.A. Dombkowski (Ph.D., University of Michigan)

### ***Fellow and House Officer Mentoring***

- 2005- Dr. J. Norman (M.D., Ph.D., Stanford University); Biomedical Informatics  
2005 Dr. D. Hanauer (M.D., Harvard Medical School); Biomedical Informatics

### ***Visiting Faculty Collaborators (On Sabbatical or Visiting Professors)***

- 1993 G.J. Brakenhoff, Ph.D. (Professor, University of Amsterdam)  
1996 C.E. Schutt, Ph.D. (Professor, Department of Chemistry, Princeton University)  
1997 A.J. Warner, Ph.D. (Associate Professor; University of Michigan, School of Information)  
2002 B. Orr, Ph.D. (Professor, Department of Physics, University of Michigan)  
2002 D.R. Hilbelink, Ph.D. (Professor, Department of Anatomy, University of South Florida)  
2004 K.V. Mardia, Ph.D. (Senior Research Professor, University of Leeds)

## **COMMITTEE AND ADMINISTRATIVE SERVICES**

### ***International***

- 2000-2002 Biological Weapons Working Group, Federation of American Scientists (FAS). Active participant on the FAS Biological Weapons and Toxin Convention (BWTC) Treaty Negotiation Team - an NGO representative to the Geneva Convention.  
2005 Conference Co-Chair (with David J. States); Intelligent Systems for Molecular Biology (ISMB) 13<sup>th</sup> Annual Meeting of the International Society for Computational Biology (ISCB); Detroit, MI.  
2007 Member, Steering Committee – IEEE 7<sup>th</sup> International Symposium on Bioinformatics and Bioengineering (BIBE 2007).

### ***National***

- 1988 Special advisory panel to the National Institute for Dental Research to formulate a plan for an Internet-based head and neck anatomy atlas. Invited member. Organized by the American Association of Anatomists (AAA).  
2000 Discipline Co-leader - Health Sciences Editorial Board for Multimedia Educational Resources for Learning and Online Teaching (MERLOT.org)  
2002 University of Michigan Representative, Coalition for Academic Scientific Computing (CASC); Washington, D.C.  
2006 Integrated Research Team (IRT), U.S. Army Medical Research and Materiel Command (USAMRMC) and Telemedicine and Advanced Technology Research Command (TATRC). Invited participant and speaker.  
2006 Panel member, Computing Research Association (CRA)-NIH Computing Research Challenges in Biomedicine Workshop, National Institute for General Medical Science (NIGMS), June 15-16, 2006. The object of this workshop was to develop a list of action items that will have impact within the NIH and computing communities.  
2007 PubMed Plus: New Directions in Publishing and Data Mining. Society for Neuroscience Leadership Conference. Working Group 1 – “Capturing Experimental Design Metadata in ways that Facilitate Data Mining.” June 18-19, 2007.

- 2008 Co-chair and member, NIH Clinical and Translational Science Awards (CTSA) Informatics Operations Committee. Informatics Key Function Committee (IKFC). (elected 2-year term)
- 2008- Member, External Advisory Board, Irving Institute for Clinical and Translational Research, Columbia University.
- 2008- Co-chair, CTSA Informatics Key Function and Operations Sub Committee (with Dan Masys).
- 2009- Member, External Advisory Board, Center for Clinical and Translational Science Rockefeller University.
- 2009- Advisor, HoIP translation track, The 2009 World Congress in Computer Science Computer Engineering and Applied Computing.
- 2009- Member, Institute of Medicine (IOM), Panel on Grid Computing and Health Information Sharing.

***University of Michigan***

- 1997-1999 Media Union Virtual Reality Committee.
- 2000-2001 Member, the University of Michigan Presidential Information Revolution Commission (PIRC). Infrastructure Subcommittee Co-Chair, Research Subcommittee.
- 2000 University of Michigan/IBM Life Sciences Liaison.
- 2001-2005 Michigan GRID for Research Infrastructure and Development (M-GRID) Co-founder with H.A. Neal and W.R. Martin, and Executive Committee member.
- 2005 UM Presidential Advisory Group (PAG). Invited speaker and participant. October, 2005.
- 2005- Member, Center for Computational Medicine and Biology (CCMB) Executive Committee.
- 2005- Chair, NIH National Center for Integrative Biomedical Informatics (NCIBI) Executive Committee.
- 2006- Member, MSCRIBE Advisory Council.
- 2006-2007 Chair (with Sharon Glozter as Co-Chair), University of Michigan Committee on Research Cyberinfrastructure, sponsored jointly by the Office of the VP Research (OVPR) and Office of the Vice Provost for Academic Information.
- 2007- Member, UM Steering Committee, Institute for Complex Adaptive Matter (ICAM).
- 2009- Member, Michigan Nanotechnology Institute for Medicine and Biological Sciences (MNIMBS), University of Michigan.
- 2009- Member, ORCI Executive Advisory Committee, Office of Research Cyber-infrastructure, Office of Vice President of Research (OVPR).

***University of Michigan Medical School/Health System***

- 1992 Fellowship Selection Committee, Chemical and Hearing Senses Training Grant, Kresge Hearing Research Institute.
- 1997-1999 Medical School Faculty Information Technology Committee.
- 1998-1999 Diagnostic Imaging Advisory Committee.
- 2000-2002 Information Technology Faculty Advisory Committee (IT-FAC).
- 2004 Biomedical Informatics Design Team Member. Lead Designer reporting to Senior Associate Dean for Research and Graduate Studies and UM Associate VP

- Research. Led to creation of Center for Computational Medicine and Biology (CCMB) with Co-founder Gil Omenn.
- 2004- Member, UM Depression Center Steering Committee.
- 2005- Member, UM Depression Center Clinical Informatics Research Group.
- 2005- Non-voting alternate member, Operating Committee for the Endowment for the Basic Sciences (EBS).
- 2005- Member, Curriculum Committee Group, Bioinformatics Graduate Program, Center for Computational Medicine and Bioinformatics (CCMB).
- 2006- Member, UMHS Information Technology Strategic Advisory Committee (IT-SAC).
- 2006- Founder and Leader (with Gil Omenn), Health Informatics Research Organization (HIRO) coordinating group for clinical informatics research activities at UM.
- 2007-2008 Co-Chair (with Glenn Hiller), UMMS Coordinating Research Information Technology (CRIT) Committee.
- 2007- Member, Michigan Institute for Clinical and Health Research (MICHHR) Operating Committee.
- 2009- Member, Information Technology Executive Committee (ITEC), University of Michigan Hospital and Health System.

***Department—University of Michigan***

- 1995-2001 Cell Biology Lab (CBL) and Microscopy and Image Analysis Laboratory (MIAL) Oversight Committee.
- 1999 Anatomy Teaching Laboratory Committee.
- 2005- Psychiatry Department Senior Leadership Council (PSLC).
- 2006- Chair, Department of Psychiatry IT Committee.

**CONSULTING POSITIONS**

- 1988 Virogen Laboratories, Inc.; Ann Arbor, MI  
Automated, Molecular Biology-based Viral Detection Systems
- 1993-1995 Convex Computer Corporation; Richardson, TX  
Medical Image Processing, Storage and Retrieval
- 1995 I-MED Link, Inc.; Bethesda, MD  
Internationally Distributed Telemedical School Networking
- 1995-1996 Hoffmann-La Roche, LTD; Toronto, Canada  
Medical Image Processing
- 1996 Meridian Instruments, Inc.; Okemos, MI  
Laser Scanning Confocal Microscopy
- 1997 LaBat-Anderson Consulting, Inc.; McLean, VA  
Secondary Reviewer for Medical Free-Electron Laser Grants Program Office of Naval Research
- 1997-1999 Potomac Institute for Policy Studies; Arlington, VA  
Technology Consultant for DARPA Unconventional Pathogen Counter-measures Program
- 1999-2000 Innervision Imaging, Inc.; Farmington Hills, MI  
Microscopic Laparoscopy
- 2000 Telemed, Inc.; Annapolis, MD

	High Performance Medical Modeling and Simulation for Surgical Trauma Applications
2000	Ethereal Technologies, Inc.; Ann Arbor, MI 3-D Display Technology
2001-2003	Altarum Institute; Ann Arbor, MI Novel Medical and Life Sciences Applications
2002	U.S. Army Medical Research and Material Command; Ft. Detrick, MD CBNR Responsiveness Training Network Architecture
2004	University of Hawaii; Honolulu, HI Bioterrorism and Computer Modeling
2004-2006	University Clinical, Education and Research Associates (UCERA) Biophotonics and Biosensors University of Hawaii; Honolulu, HI
2008	NIH Office of Portfolio Analysis and Strategic Initiatives (OPASI) Office of the Director of the National Institutes of Health (NIH); Bethesda, MD. Special Advisor to the Director.
2008-2009	NIH Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI). Special Advisor to the Director.
2009-	NIH Center for Information Technology (CIT). Special Advisor to NIH CIO.

## **VISITING PROFESSORSHIPS, SEMINARS AND EXTRAMURAL INVITED PRESENTATIONS**

1. "Envisioning Information," Institute Faculty, visiting professorship and invited participant in the Prairie Festival, The Land Institute. Salina, KS. May 1992.
2. "A Systems Approach to Visualizing Confocal Microscopy Data in Three Dimensions," extramural departmental seminar. Department of Biomedical Engineering, University of California–San Diego. March 1993.
3. "An Efficient Surface Rendering Technique Using Fourier Descriptors to Visualize Three-Dimensional Biomedical Image Data Sets," Invited extramural presentation, IEEE 36<sup>th</sup> Midwest Symposium. August 1993.
4. "Visualizing 3-D Biological Structure Using the Confocal Microscope," invited extramural presentation, Optical Society of America, Michigan Chapter. Ann Arbor, MI. 1994.
5. "Confocal Microscopy of Tissues and Cells of Clinical Interest," extramural departmental seminar, Department of Biology, Oakland University, Rochester, MI. 1994.
6. "A Networked Computer System to Visualize Reconstructed Embryos in Three Dimensions," invited extramural presentation, NICHD Workshop on Computer-Assisted Embryo Imaging. National Institutes of Health. May 1994.
7. "A Modern Imaging Collaboratory for Anatomy," invited extramural presentation and plenary speaker, FASEB meeting, Atlanta, GA. May 1995.
8. "Medicine and Terabits," invited extramural presentation and guest faculty, University of Michigan College of Engineering/State of Michigan Joint Conference (with Wistra Institute/Republic of Germany) on Ultra Highspeed Optical Networks. October 1996.
9. "Using the Visible Human as an Image Database Locator," invited extramural presentation, National Library of Medicine First Annual Conference on the Visible Human, October, 1996.

10. "Tissue Imaging," invited extramural presentation, Defense Science Research Council, November, 1996.
11. "Semi-Automated Electron Microscopy Service for Pathology," guest faculty and member/plenary lecturer, First Annual Conference on Anatomic Pathology Informatics, Imaging, and the Internet. Visiting Professorship and conference co-founder (now in 10<sup>th</sup> year). University of Pittsburgh Medical Center. November 1996.
12. "GIS and Medicine: New Frontiers." A half-day workshop organized by *Athey BD* and given to the University of Michigan research community. Funded by the University of Michigan Office of the Vice-President for Research and the Rackham School of Graduate Studies. March 1997. Organizer and visiting Professorship.
13. "Multi- and Hyper-spectral Geo-sensing Capabilities Transferred to the Microscope and Mesoscope," invited extramural presentation and guest faculty, First International Conference of Multispectral Microscopy, Warner-Lambert, Parke-Davis Research Division. June 1997.
14. "Visualizing the Patten Embryological Collection," invited extramural presentation, National Institute of Child Health and Development. October 1997.
15. "Modeling of Biological Systems (MOBS)," visiting professorship and invited participant, course planning session. Woods Hole Marine Biological Laboratory. R. Silver, Course Director, supported by the Burroughs Wellcome Foundation. January and March 1998.
16. "The Visible Human Female WWW Browser and the Next Generation Internet (NGI)," invited extramural presentation, 2nd Visible Human Conference, Bethesda, MD. October 1998.
17. "A Virtual Reality System for Human Gross Anatomy Instruction," invited extramural presentation, Medicine Meets Virtual Reality 7; San Francisco, CA. January 1999.
18. "NGI Delivery of Visible Human Data in Support of Anatomy Training," invited extramural presentation, Pittsburgh Supercomputing Center Speaker Series, Carnegie Mellon University, Pittsburgh, PA. April 1999.
19. "Nanoscale Platforms for Therapeutic Delivery," invited extramural presentation. Defense Sciences Research Council. September 1999.
20. "High Performance Landmark Driven Navigation of the Visible Human," invited extramural presentation, AIPR, Cosmos Club, Washington, D.C. October 1999.
21. "Visualization and Manipulation of Visible Human Datasets Using the Next Generation Internet (Internet2)," invited extramural presentation, Metropolitan Washington Computer Assisted Surgery Society. March 2000.
22. "Postmodern Anatomy and its Enabling Technologies," member of the conference organizing committee and invited extramural presenter, First Annual Digital Human Workshop, National Library of Medicine. 2000.
23. "Visible Human Project Distributed Visualization," only NIH selectee, invited extramural presentation (with T.J. Hacker), NGI/NREN Workshop V, Gigabit Networking: The End-to-End View. NASA Ames Research Center, Moffett Field, CA. This conference was organized by the White House Presidential Information Technology Advisory Committee (PITAC), and the NASA National Research and Education Network (NREN). August 14-16, 2000.
24. "Towards a Visible Human National Educational Collaboratory," invited extramural presentation, The Third Visible Human Project Conference, NLM, Bethesda, MD. Oct 6<sup>th</sup>, 2000.

25. "Directed Nano-Dendrimeric Modeling and Simulation." invited extramural presentations, given 3 times: 1) National Cancer Institute Unconventional Innovations Program (UIP) PI Meeting; 2) The Midwest Clinical Society (Chicago, IL), and 3) the BioMEMS and Biomedical Nanotechnology 2000 Conference, Columbus, OH; October 2000.
26. "21<sup>st</sup> Century Pathology Informatics and Integration into the Emerging Hospital Information System," keynote address, invited extramural presentation, American College of Pathology, San Diego, CA. October 2000.
27. "Account Allocations on the Grid," invited extramural presentation, First Global Grid Forum & European Data-grid Conference, Account Models Research Group. Amsterdam, Netherlands. March 4-9, 2001.
28. "Michigan's Emerging Position in the Global Information Infrastructure for the Life Sciences," Invited extramural presentation. Van Andel Research Institute. March 2001.
29. "How to Move from Static to Something Moving End-to-End or The How? And Why? Of Infrastructure," Invited extramural presentation, Internet2 National Meeting, Washington, D.C. April 2001.
30. "Michigan-Based Imaging Capabilities to Respond to Terrorist Threats," invited extramural presentation – Government. Private briefing given to Senator Carl Levin, Ranking Member: Senate Armed Services Committee. November 2001.
31. "Grid Computing Solutions for the Physical and Life Sciences," Invited extramural presentation, SC2001 Sun HPC Consortium, Denver, CO. November 11, 2001.
32. "A Methodology for Account Management in Grid Computing Environments," Invited extramural presentation, SC2001 Grid 2001 Workshop, Denver, CO. November 12, 2001.
33. "Application Responsibilities in End-to-End Network Performance," invited extramural presentation, SC2001 Internet2 End-to-End Performance Workshop, Denver, CO. November 15, 2001.
34. "Maximizing End-to-End Network Performance," invited extramural presentation, High Energy/Nuclear Physics Internet2 Working Group, Ann Arbor, MI. October 5, 2001.
35. "Deploying Scalable Information Infrastructure (SII) End-to-End: The Role of Middleware and Standards," Invited extramural presentation, International Conference on Virtual Worlds and Simulation, San Antonio, TX. January 27-31, 2002.
36. "Deploying Scalable Information Infrastructure (SII) End-to-End: The Role of Middleware and Standards," invited extramural presentation made to the Surgeon Generals of all the U.S. Military Services – Government, U.S. Department of Defense ASBREM off-year TARA review. Baltimore, MD. February 13-14, 2002.
37. "The End-to-End Performance Effects of Parallel TCP Sockets on a Lossy Wide-Area Network," invited extramural presentation, IEEE-CS/ACM International Parallel and Distributed Processing Symposium (IPDPS), April 2002.
38. "Simplification and Diversity: An Ecosystem Mimic to the Rapid, Robust Scalable Information Infrastructure (SII) Deployment of CBNR Trauma Environments," invited briefing for White House input – Government, special seminar to Dr. Robert Foster, Director of Biosystems, DDR&E, Undersecretary of Defense for S&T. April 2002.
39. "How to Avoid Spaghetti While Scaling Just-in-Time Training Capabilities," visiting professorship, NASA/MITAC Conference on Just-in-Time Training in Medicine. Virginia Commonwealth University. May 13, 2002.
40. "The Michigan Center for Biological Information (MCBI)." Invited extramural presentation, Michigan Life Sciences Corridor Biotechnology Symposium, Lansing, MI. May 14, 2002.

41. "Bioinformatics and IT Infrastructure for the Life Sciences," visiting professorship and speaker, CIMIT and the Harvard/MIT HST Program, Boston, MA. July 16, 2002.
42. "Experiences Using Web100 for Visible Human Testbeds," invited extramural presentation, Web100 Evaluator's Workshop, Boulder, CO. Aug. 1, 2002
43. "UM BioGrid Update," invited extramural presentation and onference organizer, given at Michigan Center for Biological Information (MCBI), to state-wide audience. Sept. 17, 2002.
44. "The Visible Human Today," plenary speaker, invited extramural presentation, iGrid 2002 Conference. Amsterdam, Netherlands. September 26, 2002.
45. "Bioinformatics and Bioimaging IT Infrastructure: What is the MCBI and the CTA?" seminar, the 1st Annual Conference of Pathology Bioinformatics, University of Michigan. November 13, 2002.
46. "Future Needs for Bioinformatics, Computational Biology, Bioengineering, and Biomedical Imaging Requiring Next Generation Supercomputing," invited extramural presentation – Government, DARPA High Productivity Computing Systems (HPCS) Workshop, Arlington, VA. January 17, 2003.
47. "Future Needs for Bioinformatics, Computational Biology, Bioengineering, and Biomedical Imaging Requiring Next Generation BioGrids," visiting professorship, SURA Biogrid Workshop Research Triangle Park, NC. January 29, 2003.
48. "Future Needs for Bioinformatics, Computational Biology, and Health Sciences Informatics Requiring Next Generation BioGrids," invited extramural presentation – Government, Tripler Army Medical Center (TAMC), Honolulu, HI. February 27, 2003.
49. "Optimizing H.P. Computing Grid Resources for the Bioterrorism Application," invited extramural presentation – Government, U.S. Army DoD Pacific Command. Bioterrorism Retreat, Maui High Performance Computing Center (MHPCC). Maui, HI. March 1, 2003.
50. "Lessons Learned: 12 Years of the Visible Human at the University of Michigan," invited extramural presentation, Plenary panel talk, FASEB. April 18, 2003.
51. "MCBI's Plans: Biological Data Integration," conference organizer, invited extramural presentation, Michigan Center for Biological Information (MCBI) Retreat, Lansing, MI. August 20, 2003.
52. "Next Generation Internet (NGI) Implementation to Serve Visible Human Datasets Phase II: Development of Test Beds," invited extramural presentation, NLM/NGI Visible Human Reverse Site Visit, Bethesda, MD. August 26, 2003.
53. "Life Sciences Informatics Grids: Myth, Reality and Promise," visiting professorship, Scientific Computing Workshop - WSU: Plenary Lecture, Detroit, MI. September 19, 2003.
54. "Modeling and Simulation to Enhance Bioterrorism Preparedness," invited extramural presentation – Government, BioTerrorism Summit, Honolulu, HI. October 20, 2003.
55. "Funding opportunities for Bioinformatics US Army OntoExpress," invited extramural presentation – Government, USAMRMC Bioinformatics Workshop, Fort Detrick, MD. November 4, 2003.
56. "SEWG: Human Aided Information Processing Systems for Data Exploration, Analysis and Decision Making," invited extramural presentation - Government, DARPA Systems Engineering Working Group, Palo Alto, CA. March 3, 2004.
57. "Information Technology Security as Intertwined with Privacy and Confidentiality in Biomedical Research," Invited extramural presentation, 12th annual University of Miami Conference, Clinical Ethics: Debates, Decisions, Solutions. Miami, FL. April 16, 2004.

58. "The DARPA Virtual Soldier Program: Presentation to members of the Michigan Congressional Delegation," invited extramural presentation - Government, July 14, 2004
59. "Challenges of HIPAA Regulations in Academic Biomedical Research," invited extramural presentation. MedInfo 2004. Sept. 7-11, 2004.
60. "Clinical Research Information Fabric: A Federated Clinical Research Infrastructure Approach," invited extramural presentation. A.D. Boyd, D.A. Junscher, K.A. Smith, A.C. Bliton, J.C. Ogden, D.A. Williams, *Athey BD*, J.F. Greden, and D.C. Clauw. Inventory and Evaluation of Clinical Research Networks (IECRN) Conference. Rockville, MD. May 31, 2004.
61. "Walden: A Scalable Solution for Grid Account Management," Kirschner BA, Hacker TJ, Adamson WA, and *Athey BD*, invited extramural presentation at the 5<sup>th</sup> International Workshop on Grid Computing (GRID 2004). Pittsburgh, PA. November 8, 2004.
62. "The Virtual Soldier Project," invited extramural presentation, keynote address plenary lecture, Medicine Meets Virtual Reality (MMVR). January 27, 2005.
63. "The Challenges of Big 'Science' and the Limits of the Individual," visiting professorship, IUPS Physiome Project, <http://nbc.net/physiome/schedule.htm>. San Diego, CA. March 30, 2005.
64. "The DARPA Virtual Soldier Project and Human Systems Biology." visiting professorship, Computational Physiology: From Genome to Physiome. San Diego, CA. March 30, 2005.
65. "Biophotonics and Biosensors: Applications to Medicine - Lessons from Michigan," visiting professorship and keynote address, Emerging Technology Seminar. University of Hawaii-Manoa, Honolulu, HI. April 14, 2005.
66. Opening and Closing Addresses. 13<sup>th</sup> International Society of Molecular Biology Annual Meeting. Conference Co-organizer, invited extramural presentation. June 25-29, 2005.
67. "The DARPA Virtual Soldier Program. A Multiscale Experiment, Modeling, Simulation R&D Program," invited extramural presentation - Government. US Army Research Office (ARO) Workshop - 'Multiscale Phenomenon: Experiment, Theory, and Modeling.' Closed strategy meeting. Army Research Office Headquarters. Research Triangle Park, Durham, NC. July 17, 2005.
68. "The Challenges of Big Science and the Limits of the Individual: Case Studies of the NLM Visible Human and the DARPA Virtual Soldier Projects," invited extramural presentation, American Medical Informatics Association (AMIA). Washington, D.C. October 23, 2005.
69. "The Virtual Patient, the Digital Human, and Integrative Biomedical Informatics," invited extramural presentation, Medicine Meets Virtual Reality (MMVR-14). Long Beach, CA. January 26, 2006.
70. "An 'Honest Broker' Mechanism to maintain Privacy for Patient Care and Academic Medical Research," Boyd AD, Hosner C, Hunscher DA, *Athey BD*, Clauw DJ, Green LA. Presentation to Health Care Information Security Working Group, International Medical Informatics Association, Dijon, France. April 28, 2006.
71. "A Multiscale Experimental, Modeling and Simulation R&D Program," invited extramural presentation, Society for Medical Innovation and Technology (SMIT), Asilomar, CA. May 11, 2006.
72. "Multiscale Modeling, Systems Biology, and the Digital Human Project - Statistical Perspectives," visiting professorship, Plenary Keynote Lecture. Leeds 25<sup>th</sup> Annual Statistical Research Workshop (LASR), University of Leeds, Leeds United Kingdom. July 4, 2006.

73. “Two Biomedical Research Paradigms and Emerging Issues,” invited extramural presentation, Science Commons Symposium at the National Academy of Sciences (NAS). Oct. 3, 2006.
74. “The Emergence of Human Systems Biology and its Origins in the Visible Human Project,” visiting professorship. Plenary Keynote Lecture, Keck Center 16<sup>th</sup> Annual Research Conference, Texas Medical Center, Houston, TX. October 13, 2006.
75. “From the 20<sup>th</sup> Century to 'Flatland': Computational Medicine and Biology in the 21<sup>st</sup> Century,” invited extramural presentation to IBM Research and Life Sciences Executive Leadership, Wadsworth Labs, White Plains, NY. October 24, 2006
76. “Diabetes Research Opportunities in Collaboration with the NIH National Center for Biomedical Informatics (NCIBI),” invited extramural presentation, NIDDK Diabetes Research and Training Center Directors Annual Meeting. November 1, 2006.
77. “The Clinical Translational Sciences Award (CTSA) and Informatics,” invited extramural presentation, American Medical Informatics Association (AMIA) 2006. Brian Athey and Joel Saltz, Panel Co-Chairs. November 13, 2006.
78. “The Future of the NLM Visible Human,” invited participant, Planning Meeting: Visible Human Project: Scope and Scale for the Future. Bethesda, MD. Jan. 16, 2007.
79. “From the 20<sup>th</sup> Century to 'Flatland' - Fissures in the Biomedical Knowledge Landscape: Challenges, Opportunities, and Responsibilities,” invited extramural presentation, Designing Cyberinfrastructure for Collaboration and Innovation. Emerging Frameworks and Strategies for Enabling and Controlling Knowledge. National Academy of Engineering, Washington, D.C. Jan 29-30, 2007.
80. “Towards Personalized Medicine in Surgery: Anatomical Variation, Multiscale Data, and Bringing Together Practice, Education, and Training,” invited extramural presentation, and Panel: Interactive Real-Time Surgical Education on the Web: Exploring the New Paradigm in the Age of Google. Medicine Meets Virtual Reality. Long Beach, CA. Feb. 15, 2007
81. “Biomedical Informatics in the 21<sup>st</sup> Century and its Potential to Transform Biomedical Research and Practice,” invited extramural presentation, Scientific Computing Institute (SCI), University of Utah. May, 2007.
82. “The NIH National Center for Biomedical Informatics - Overview and Collaborative Opportunities,” Invited extramural Platform presentation, INDY 2007 Midwest Regional Bioinformatics Conference. Indianapolis, IN. May 31, 2007.
83. “Integrating Biomedical Informatics: Overview and Collaborative Opportunities with the NIH National Center for Integrative Biomedical Informatics (NCIBI),” NBCR Summer Institute, Cyberinfrastructure & Multiscale Modeling, visiting professorship, UCSD. LaJolla, CA. July 30, 2007.
84. “The NIH National Center for Biomedical Informatics (NCIBI)--Integrating Biomedical Informatics: Overview and Collaborative Opportunities.” IMSCCS 2007: Cyberinfrastructure-enabled Computational Science. Keynote Address. University of Iowa, Iowa City, IA. August 8, 2007.
85. “Federating and Growing High Performance Computing and Data Environments to Support Research at the University of Michigan Medical School.” Harvard Biomedical HPC Leadership Summit 2007. Invited plenary presentation. October 1, 2007.
86. “The NIH National Center for Biomedical Informatics (NCIBI)--Integrating Biomedical Informatics: Overview and Collaborative Opportunities.” IEEE 7th International

- Symposium on BioInformatics and BioEngineering (BIBE). Keynote Address. October 14, 2007.
87. "Interoperable Informatics Systems in Cancer Center Collaborative Networks." American Association of Cancer Institutes Annual Meeting. Invited plenary presentation. October 29, 2007.
  88. "Introduction to a Systems View of Biology, Toolbox for Systems Biology American Society of Nephology." Invited plenary presentation. San Francisco, CA. November 3, 2007.
  89. "Digital Biomedical Research Driving IT Transformation at the University of Michigan Medical School and Health System – Preventative Medicine for Security Leaks." Clinical Research Forum IT Roundtable. Invited plenary presentation. Washington, DC. November 5, 2007.
  90. "Collaborate to Compete – An Introduction to the NIH National Center for Integrative Biomedical Informatics (NCIBI)." NIDA Genetics Consortium Meeting. Invited presentation. Rockville, MD. November 27, 2007.
  91. "Application and Architectural Challenges in Basic, Clinical, and Translational Research (Panel)." caGrid Roadmap Workshop. Invited presentation. Columbus, OH. February 20, 2008.
  92. "Integrative Biomedical Informatics' – What Has Been Done and What is Left to Do?" Electrical Engineering and Computer Science Department Colloquium Seminar at Case Western Reserve University. Invited presentation. March 4, 2008.
  93. "The NIH National Center for Integrative Biomedical Informatics (NCIBI)." Co-chair of the National Biomedical Computing Centers (NCBC's) plenary panel. San Francisco, CA. March 10, 2008.
  94. *Athey, BD, Becich M, Ellisman M, Saltz J (2008) S03-Panel: Towards a Set of Unified NIH Computational, Data, and Community Infrastructures to Support Translational Bioinformatics. AMIA 2008 Summit on Translational Bioinformatics Conference. San Francisco, CA. March 10-12, 2008.*
  95. "The Emerging Field of Translational Bioinformatics – A National Perspective." Worldcomp '08. Keynote Address. Las Vegas, Nevada. July 14, 2008.
  96. "Working Group Report #3 Data Mining and Analytics." AMIA Invitational Conference reporter. Reston, VA. September 15, 2008.
  97. "The Emerging Field of Translational Bioinformatics – A National Perspective." Second Annual Midwest Symposium on Computational Biology & Bioinformatics. Member of the advisory committee. Urbana-Champaign, IL. October 4, 2008.
  98. "The Emerging Field of Translational Bioinformatics-A National Perspective." Indiana University School of Informatics Colloquia. Invited presentation. Indianapolis, Indiana. October 10, 2008.
  99. "Integrative Biomedical Informatics as a Means to Accelerate Clinical and Translational Research." US Critical Illness and Injury Trials Group. Invited presentation. Bethesda, MD. November 19, 2008.
  100. "The Emergence of Translational Bioinformatics – A National Perspective". Bioinformatics and Systems Biology. Invited presentation. Boston, MA. December 11, 2008.
  101. "Translational Bioinformatics in Support of Real and Virtual Patients". The 17<sup>th</sup> Annual MMVR Conference NextMed: Design for/the Well Being. Invited presentation. Long Beach, California. January 20, 2009.

102. “The Emerging Field of Translational Bioinformatics-Lessons from the CTSA”. Georgetown University Biomedical Informatics Group. Invited presentation. Washington, DC. January 28, 2009.
103. “Key Function Committee Overview”. NCRR Advisory Council. Invited presentation. Bethesda, Maryland. February 12, 2009.
104. “Keeping up with Bioinformatics and Computational Biology-Where have we been? Where are we going?” First Annual ORNL Biomedical Science and Engineering Conference. Keynote Address. Oak Ridge, Tennessee. March 14, 2009.
105. “Keeping up with Bioinformatics and Computational Biology as applied to Biomedicine—Where has it been? Where is it going?” Bioinformatics Symposium. Keynote Address. Columbia, South Carolina. April 14, 2009.
106. “Data Explosion and Complexity in Bioinformatics (aka Cellular Systems Biology).” SBE&S Conference. US National Academy of Sciences (NAS). Keynote Address. Washington, DC. April 22, 2009.
107. “Data Explosion and Complexity in Bioinformatics (aka Cellular Systems Biology).” Worldcomp '09. Keynote Address. Las Vegas, Nevada. July 13, 2009.

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- 1998 Patent Disclosure, USPTO: “Dynamic Brace to Relieve Carpal Tunnel Syndrome.”
- 2008 Disclosure to UM tech transfer for patent application, “Genes and their interactions related to bipolar disorder diagnosis and treatment.” (contributors: I. Lee, H Chen, M McInnis)
- 2008 Patent Disclosure, USPTO: “BioSearch 2D, a novel analysis tool for Biomedical Literature and portfolios” (contributors: D. States, C. Santos and A. Ade).

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  - Center for Computational Medicine and Biology (CCMB): [ccmb.med.umich.edu](http://ccmb.med.umich.edu)
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