Furthering the IAIMS Vision: The UMDNJ Informatics Institute

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UMDNJ: The Virtual University of the Health Sciences

- New Jersey's university of the health sciences.
- The nation's largest public university of the health sciences with five regional campuses in Camden, New Brunswick/Piscataway, Newark, Scotch Plains and Stratford.
- Four-fold mission of excellence in education, research, healthcare delivery and community service.
- More than 12,000 full-time faculty and staff.
- More than 100 specialized centers and institutes.
- More than 200 education and healthcare affiliations throughout New Jersey.
UMDNJ: The Virtual University of the Health Sciences

- Eight schools:
  - New Jersey Medical School
  - Robert Wood Johnson Medical School
  - School of Osteopathic Medicine
  - New Jersey Dental School
  - Graduate School of Biomedical Sciences
  - School of Health Related Professions
  - School of Nursing
  - School of Public Health

- More than 5,000 students in more than 50 degree and certificate programs

- Approximately 1,000 degrees and certificates conferred annually, with an alumni body of more than 17,000

- 2,000+ students have enrolled in WebCT academic courses, with seven distance education degree programs offered
History of IAIMS at UMDNJ

• May 1994 - AcITAC established Pre-IAIMS Planning Partnership
• June 1995 - IAIMS Planning Grant Submitted to NLM
• September 1996 - IAIMS Planning Grant awarded
• September 1999 - Final Grant Report & IAIMS Strategic Plan Completed
• March 2000 - IAIMS Operational Phase Grant submitted
• June 2001 - IAIMS Operational Phase Grant resubmitted
• May 2002 - IAIMS Operational Phase Grant funded
UMDNJ IAIMS Vision

- Envision and articulate the future of UMDNJ as the “Virtual University of the Health Sciences”
  - A collaborative electronic environment spanning the state and incorporating all elements of the academic enterprise
  - Transparent, system-wide access to all vital information resources
Dimensions of the “Virtual University of the Health Sciences”

- **Education**: Teaching and learning anytime, anywhere
- **Research**: Intercampus collaborative clinical and basic sciences research
- **Patient Care Services**: Faster and smarter patient care decisions through the use of clinical information systems
- **Community Service**: Virtual access to expanded health information for New Jersey residents
UMDNJ Mission Statement Revised to Reflect Emergence of the “Virtual University of the Health Sciences”

Excerpt from the new mission statement:
“…Providing education, research and service programs at campuses…and communities throughout the state, and nationally and internationally through advanced communication and information technologies, UMDNJ seeks to meet the needs of our diverse constituencies and improve the health and quality of life of the citizens of New Jersey and society at large.”

Approved by the Board of Trustees, 3/18/03
IAIMS Project Leadership

Principal Investigator: Robert A. Saporito, DDS, Sr. VP for Academic Affairs

Co-Principal Investigator: William J. Welsh, PhD, Informatics Institute Director

Co-Directors:
• Susan B. Mettlen, EdD, VP for IST
• Judith S. Cohn, MLS, Assoc. VP for Scholarly Information/University Librarian
• David Gibson, EdD, Dean, SHRP
• Julie O’Sullivan Maillet, PhD, Chair, AcITAC

Project Evaluator: Pamela Matheson, PhD, Assoc. Dean of Planning and Assessment, NJDS

Project Coordinator: Laura P. Barrett, MLS

Project Assistant: Michael D. Greene, MBA
Focus of IAIMS Operational Phase

- **Goal 1: Build** – Develop an integrated enterprise-wide information infrastructure and delivery system to meet the needs of a statewide educational, research and health-care delivery system

- **Goal 2: Access** – Enhance utilization of critical educational, research, clinical and administrative information resources

- **Goal 3: Integrate** – Foster integration of innovative information resources

- **Goal 4: Coordinate** – Establish the Informatics Institute to garner the research, educational, and scholarly information resources of the University

- **Goal 5: Serve** – Deliver state-of-the-art information services both within and beyond the University community
Informatics Institute: Home of the IAIMS Project

Goal 3: Integrate
- Open-architecture clinical information systems
- Faculty Development
- Interdisciplinary multimedia teaching cases
- Educational technology minigrants
- Research support

Goal 4: Coordinate
- Informatics academic programs
- Informatics research programs
- Informatics tools & resources
- Informatics integration
- Administrative infrastructure & facilities
Role of the Academic Information Technology Advisory Committee (AcITAC)

- Provide advice & counsel to IAIMS Project
- Sponsor faculty development workshops and symposia jointly with IST & University Libraries
- Oversee faculty educational technology minigrants
- Guide development of interdisciplinary case-based learning programs & Web-based modules
Vision of the UMDNJ Informatics Institute

• Foster integration of informatics into UMDNJ’s programs of research, teaching and patient care
• Coordinate development of academic degree and certificate programs in informatics disciplines
• Provide state-of-the-art informatics tools and resources to support the research and education enterprises
• Establish the administrative infrastructure and facilities to spearhead collaborative research initiatives in informatics
The Informatics Institute of the University of Medicine and Dentistry of New Jersey is dedicated to the pursuit of excellence in education, theoretical and applied research and clinical applications related to informatics. As a Statewide Center, the UMDNJ Informatics Institute offers leadership, provides support and promotes collaborative relationships throughout the University and beyond to advance and integrate the knowledge, science and practice of informatics.
Informatics Institute Leadership

Director:
• William J. Welsh, PhD

Associate Directors:
• Education: Bruce Byrne, PhD
• Research: David Foran, PhD
• Clinical Informatics:
  Frank Sonnenberg, MD
Institute Goals and Functions

Education

• Work with schools and departments in developing academic programs incorporating informatics disciplines
• Create and maintain new informatics courses
• Provide informatics-related training to students, faculty and staff
Degree and Certificate-Granting Academic Programs in Informatics

• **SHRP Academic Programs**
  – Ph.D. and M.S. degree programs in Biomedical Informatics
  – Certificate in Health Care Informatics
  – M.D./M.S. (w/RWJMS) and D.M.D./M.S. (w/NJDS) degrees in Biomedical Informatics

• **School of Nursing Informatics Program**
  – M.S.N. for Nursing Informatics Specialists (joint w/NJIT)

• **Joint UMDNJ/Rutgers University Program**
  – Ph.D. in Computational Biology

• **UMDNJ Graduate Program in Bioinformatics**
Graduate Program in Bioinformatics at UMDNJ

- Offers Ph.D. and M.S. degrees with concentration in Bioinformatics
- Taken in concert with existing graduate programs at GSBS
- First students admitted in Fall 2001; courses currently offered on Newark & Piscataway campuses, with 55 enrolled
- Offer bioinformatics courses to working professionals enrolled in Cont-Ed Masters in Biomedical Sciences Program
Institute Goals and Functions

Research

• Promote research collaborations in informatics with government, academic and corporate partners
• Inventory the University’s portfolio of informatics tools and talent
• Link students and mentors in informatics-related research
Representative Informatics Research Mentors

• Dr. William Welsh: *Computer-Aided Drug Discovery; Protein Modeling*
• Dr. Frank Sonnenberg: *Clinical Information Systems; Electronic Medical Records*
• Dr. David Foran: *Tissue Microarrays; Computer-Assisted Diagnosis; Telemedicine*
• Dr. Scott Diehl: *NJDS Center for Pharmacogenomics & Complex Disease Research*
• Dr. Patricia Soteropoulos: *Director, Center for Applied Genomics*
• Dr. Hong Li: *NJMS Proteomics Center*
• Dr. Panos Georgopoulos: *UMDNJ Center for Exposure and Risk Modeling (CERM)*
• Dr. John Kerrigan: *Molecular Modeling; Computational Chemistry*
• Dr. Ming Ouyang: *Novel Approaches for Analysis of Microarray Data*
• Dr. Honghua Li: *High-throughput Genome-scale Analysis*
• Dr. Lin Yan: *Use of Proteomics to Investigate Heart Disease*
Institute Goals and Functions

Clinical Informatics

• Support the development of innovative & fundable clinical informatics research projects
  ➢ Dr. Foran: computer-based screening system to discriminate among various forms of leukemia and lymphoma
  ➢ Drs. Sonnenberg (RWJMS), Norris (NJMS), Gecys (SOM): Dynamic Tobacco Registry which uses Logician EMR to capture & register patient smoking status
  ➢ Institute for Clinical Research & Training: Clinical Trials Central (CTC)

• Pursue collaborations with academic and corporate partners in the area of clinical informatics research
Outreach Initiatives

- Educational Technology Symposium, *Technology May be the Answer, But What is the Question?* - May 3, 2002
- Aventis Pharmaceutical Research Presentation - January 24, 2003
- MIT Alumni Conference - February 19, 2003
- Loyola University Health System IAIMS Program - March 26, 2003
- Informatics Research Symposium - May 9, 2003
- IAIMS Consortium Meeting - May 27/28, 2003
Relevant UMDNJ Web sites

University Home Page
http://www.umdnj.edu

University Libraries
http://www.umdnj.edu/librweb

Healthy New Jersey consumer health
http://www.healthynj.org

Clinical Trials Central
http://www2.umdnj.edu/%7Ectcapp/public _ct/cti_gateway.html

Virtual Library for Distance Learning
http://www.umdnj.edu/delibweb

IAIMS Project
http://www.umdnj.edu/iaimsweb

Faculty Development
http://www.umdnj.edu/itgweb/facdev

Educational Technology Minigrants
http://www.umdnj.edu/minigweb

Master Educators’ Guild
http://www.umdnj.edu/megweb

Graduate Program in Bioinformatics
http://gsbs.umdnj.edu/bioinformatics/

Research Symposium presentations
http://www.umdnj.edu/rcompweb/Research_ Symposium
Discussion, Q & A