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# DMICE Tracks

## From the Chair

Welcome to Issue 3 of *DMICE Tracks*, the newsletter of the OHSU

Department of Medical Informatics and Clinical Epidemiology. We have



just completed another successful academic year for DMICE, and were particularly proud when graduates of

our various programs marched across the stage at the School of Medicine Hooding Ceremony and OHSU Commencement on June 1st.

This has also been a particular gratifying year for myself. Not only have I and others in the department been very active in international activities (see main story of this issue), I have also achieved some significant national recognition, mostly speaking about the value of electronic health records and their interoperability.

The first nationally visible activity was the authoring of an editorial in the November 11, 2004 issue of *Journal of the American Medical Association* (JAMA). The editorial discussed the benefits and barriers to electronic health records and interoperability, noting that tremendous benefit has been shown for their use but considerable barriers remain,

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## The International Reach of DMICE

Although DMICE is well-known for its work nationally, its international accomplishments are less apparent. It turns out that the department is very successful on the international stage. This article describes hosted events, funded grants, invited talks by faculty, publications, and other projects on an international scale.

### Hosted Events

Each of the past three years, DMICE has hosted an international conference in Portland. The first was in July 2002, when the Joint Conference on Digital Libraries was held in Portland. DMICE professor and chair William R. Hersh, M.D., served as the general conference chair. Over 400 people from 19 countries attended the meeting.

In April 2003, the International Medical Informatics Association Working Group on Education meeting, Teach Globally, Learn Locally: Innovations in Health and Biomedical Informatics Education in the 21st Century, was also held in Portland. Hersh again served as the general conference chair, with DMICE associate professor Paul Gorman, M.D., serving as program chair. The conference brought together 85 attendees from 15 countries. The best papers submitted to the conference were published in a special issue of *International Journal of Medical Informatics*, including one on computer science curricula for informatics

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## Department Partners with AMIA to Train Health Care Workers in Medical Informatics

The Department of Medical Informatics and Clinical Epidemiology will partner with the American Medical Informatics Association (AMIA) in their 10 X 10 program, an ambitious effort to train 10,000 health care professionals in applied health and medical informatics by 2010.

“One of the most important factors in successful health care information technology implementations is an informed and engaged community of users. This program aims to educate local leaders at the interface of clinical and information technology staff,” said William R. Hersh, M.D., DMICE professor and chair.

The AMIA 10x10 program at OHSU, which will begin in July 2005, is a 12-week course that will prepare students as leaders in health and biomedicine information technology. The pilot program will consist of online courses that include readings, online lectures, interactive discussion and self-assessment tests. Students will study electronic and personal health records, computer-based physician order entry

systems, health information exchange, standards and terminology, and health care quality and error prevention.

The program culminates in an intensive in-person session, which will bring students together to integrate the material, present course projects, and meet field leaders. Visiting faculty from selected nationally recognized informatics training programs also will participate. The first in-person session will be held in conjunction with this year’s AMIA Annual Symposium in Washington, D.C.

Graduates of the 10x10 program will be ready for work with hospitals and clinics, health product vendors and manufacturers, and other universities. They will also be able to use the course as a launching pad for further studies in the OHSU graduate program.

“Our goal in providing this course is to provide a broad survey of biomedical informatics as well as a detailed understanding of the use of information technology in health and biomedicine,” said Hersh who will lead the pilot program at OHSU.

## International Reach

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students by DMICE assistant professor Judith Logan, M.D., M.S., and informatics postdoctoral fellow Susan Price, M.D., M.S.

This past September, DMICE hosted another conference, Information Technology in Healthcare: Sociotechnical Approaches. The general conference chairs were Gorman and Jos Aarts of Erasmus University, Rotterdam. This conference brought together over 60 researchers from 16 countries, who presented scientific papers regarding the interaction and interdepen-

dence of healthcare organizations and the information technologies being deployed in them. This conference, too, will result in a special issue of the *International Journal of Medical Informatics*, to be published in 2006 and edited by Gorman and Aarts.

Aarts has already spent nearly a year at DMICE working on his Ph.D. dissertation. Another DMICE faculty, associate professor Joan Ash, Ph.D., is of the three professors on the inner doctoral committee for Aarts’ Ph.D. from Erasmus University. She will be going to Rotterdam in the fall of 2005 to attend his dissertation defense.

## Funded Grants

In addition to hosting conferences, DMICE faculty are also involved in externally funded research grants that feature international collaboration.

Hersh currently has a research grant from the National Science Foundation in collaboration with Henning Müller, Ph.D., of the University of Geneva Hospital in the area of image retrieval. The project goal is to improve the capability and the evaluation of systems that search for online images. Hersh will be giving presentations about the project this fall at two international meetings in Vienna, Austria, and Ljubljana, Slovenia.

DMICE assistant professor Nancy Carney, Ph.D., also is very active on international research grants:

- Prospective study of outcomes from brain injury in Argentina and cross-cultural comparison of outcomes with U.S. population, funded by the Department of Education, National Institute on Disability and Rehabilitation Research.
- Implementation of Pediatric Brain Injury Guidelines in Argentina using two teaching methods and comparison of outcomes at 6 months post injury, funded by the NIH Fogarty International Center.
- Translation of Pediatric Brain Injury Guidelines into Spanish and dissemination in Argentina, funded by the Integra Foundation.
- Translation of Pediatric Brain Injury Guidelines into Portuguese and dissemination in Latin America, Spain, and Portugal, funded by the Integra Foundation.

Another faculty member who does international work is professor Kent Spackman, M.D., Ph.D. Funded by the College of American Pathologists, Spackman is editor-in-chief of SNOMED International, the leading clinical terminology system worldwide. He routinely collaborates with numerous international colleagues.

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## OHSU Awards 28 Degrees/Certificates in Biomedical Informatics

Sixteen biomedical informatics students received master's degrees and twelve received graduate certificates at the OHSU Commencement Exercises held June 1, 2005 at the Arlene Schnitzer Concert Hall in Portland, Ore. Graduates, along with their thesis titles (for MS students) or capstone projects (for MBI students), are listed below.

### Master of Science in Biomedical Informatics

**Rose Campbell**, Astoria, Ore.

*Comparing Bedside Information Tools: A User-Centered, Task-Oriented Approach*

**Aaron M. Cohen**, Beaverton, Ore.

*Using Symbolic Network Logical Analysis as a Knowledge Extraction Method on MEDLINE Abstracts*

**Surendra Dasari**, Portland, Ore.

*Development and Validation of In Silico Tools for the Identification of Post-Translational Modifications and Sequence Variations in Human Proteins*

**Ted G. Laderas**, Portland, Ore.

*Developing and Validating a Tool for Microarray Cluster Analysis*

**Susan Moy**, Seattle, Wash.

*The Impact of Verbal Orders on Clinical Work Processes: An Exploratory Study*

**Tina D. Purnat**, Velenje, Slovenia,

*Participatory Software Design Processes in a Basic Science Research Setting  
Planning of a Web Site Redesign for a Research Laboratory*

**Veena Seshadri**, Seattle, Wash.

*A Qualitative Study of the Effects of Clinical Information System Upgrades Physicians in an Outpatient Setting*

**Hollis Wright**, Portland, Ore.

*A System for Automated Storage and Analysis of Single Nucleotide Polymorphism Data*

## National Library of Medicine Leaders Visit Department

National Library of Medicine (NLM) staff conducted a site visit at the OHSU Department of Medical Informatics and Clinical Epidemiology on April 21, 2005. Staff visited the campus in conjunction with the NLM-funded training fellowship in medical informatics, which DMICE has had since 1992.



Left to right: William R. Hersh, M.D., professor and chair, DMICE; Harold Schoolman, M.D., former NLM deputy director for research and education; Milton Corn, M.D., director of NLM extramural programs; Charles P. Friedman, Ph.D., NLM senior scholar and program officer; Valerie Florance, Ph.D., deputy director, NLM extramural programs; Kent A. Spackman, M.D., Ph.D., professor of pathology and medical informatics and clinical epidemiology, director of OHSU medical informatics training fellowship.

**Po-Yin Yen**, Hsinchu, Taiwan

*Usability of a Digital Pen and Paper System for Nursing Documentation*

### Master of Biomedical Informatics

**James R. Case**, Portland, Ore.

*Development of a Randomized Controlled Trial Metadata Query Tool and Web Service*

**John H. Cooper**, Portland, Ore.

*Discount Usability Evaluation of an Analytic Hierarchy Process Based Clinical Computer Application*

**John Hawkins**, Damascus, Ore.

*Electronic Health Record Utilization in the State of Oregon*

**Aseem Kumar**, New Delhi, India

*Health Search Tool Evaluation*

**Benjamin H. LeBlanc**, Portland, Ore.

*Depression Screening Using an Optical Mark Reader Interfaced to an Ambulatory Electronic Health Record; A Pilot Experience and Implementation Plan*

**Blake J. Lesselroth**, Portland, Ore.

*The Clinical Questions of Learners According to a Developmental Model*

**Robert H. Posteraro**, Lubbock, Texas

*A PACS Education Presentation*

### Graduate Certificate in Biomedical Informatics

**Rama Aluru**, Hyderabad, India

**Andrew O. Amata**, New York, N.Y.

**Ashish Atreja**, Cleveland, Ohio

**Barbara Boyesen**, Vancouver, Wash.

**Kenneth E. Christensen**, Santa Rosa, Calif.

**Jayashree Kalpathy-Cramer**, Alwarthirunagari, India

**Neal D. Goldstein**, Wilmington, Del.

**Tadaaki Hiruki**, Edmonton, Canada

**Misbah Keen**, Othello, Wash.

**R. Michael Kroeger**, Omaha, Neb.

**Marilyn D. Paterno**, Quincy, Mass.

**Marian E. Shaw**, Boise, Idaho



## Faculty Focus: Holly B. Jimison, Ph.D.

An 80-year-old woman is playing FreeCell, a card game, on her home computer. As she does, the computer is recording and analyzing her moves. Why? The planning and strategy required in this computer game offer a way to collect data and assess various cognitive functions and possibly even provide early detection of cognitive decline. Using technology in this way is a research focus for DMICE assistant professor Holly B. Jimison, Ph.D. Use of technology for home monitoring of health conditions and disease management, particularly detection of cognitive changes in the elderly, has been the focus of grant awards, presentations and publications by Jimison in recent months.

The National Institute on Standards and Technology has awarded funds to Jimison, as principal investigator, to develop technology that will continuously monitor and detect cognitive changes in elders by unobtrusively integrating cognitively challenging adaptive computer games into their daily lives. This project, in conjunction with a local small business, Spry Learning, uses adaptive analysis algorithms on computer games, such as Free Cell, to monitor cognitive performance on a day-to-day basis to help predict

cognitive changes. If successful, these games will have the additional benefit of providing a mechanism for cognitive intervention, improving cognitive function, and potentially delaying the effects of dementia and Alzheimer's disease.

In a similar project Jimison is conducting a one-year pilot study, funded by the National Institute on Aging, to investigate algorithms for inferring a user's cognitive performance using sensory motor information from users' computer interactions, such as keyboard entry and mouse movements. Finger tapping speed is currently measured as part of traditional cognitive assessments and predicts cognitive decline as much as 10 years in advance. In Jimison's project, routine home monitoring of typing activity within a known context provides similar data on a continuous basis. Her early results indicate that simple measures of login speed provide important features that distinguish cognitively healthy elders from those with mild cognitive impairment. The variability in performance is a key indicator in many of the measures, and this can only be obtained with continuous monitoring techniques.

Jimison is also serving as a co-in-

vestigator on a project funded by Intel to investigate technological solutions for successful aging. Ultimate goals include the prevention of adverse events and the development of assistive cognitive devices. Part of her work with colleagues from Biomedical Engineering and Neurology involves using the feedback from the computer-based cognitive assessments to adapt user interfaces for elders, using tailored hints and assistance when needed.

Jimison is participating in other externally funded research dealing with technology in health care. With funding from the OHSU/OGI School of Engineering, she is applying the use of adaptive signal processing and machine learning techniques to the problem of heart function characterization using combined acoustic and ECG signals. Another project involves development of computer-based systems for more accurate and efficient assessments of core Attention Deficit Hyperactivity Disorder functions.

Finally, through a subcontract with Evalumatrix, Jimison received National Cancer Institute funding to develop and evaluate a health search engine for the Web that enables consumers to obtain tailored online health information according to individual needs and preferences.

Home monitoring to detect cognitive changes has been the focus of several recent presentations as well. Last October Jimison gave an invited talk on technology for successful aging: monitoring computer interactions to detect cognitive changes at the University of Washington's conference, Gerontechnology Today and Tomorrow. She was interviewed by the *Seattle Times* on this topic for an article appearing November 1, 2004.

Last September Jimison, colleagues from Biomedical Engineering, and DMICE doctoral student Adam Wright presented their work on home monitoring of computer interactions for the Early Detection of Dementia at

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# A Student's View on Distance Learning: The Good, the Bad, and the Ugly

By **Mary H. Stanfill**

When I completed my bachelor of science I lived an hour from the college I attended and yet another hour in a different direction from the hospital where I worked. I regularly drove this triangle and thought nothing of it. At that time, it was not unusual for people to commute several hundred miles to work by car, bus, or train, or for a person to work in one state and live in a neighboring state.

That was 20 years ago, and the Internet had not yet been invented. Today, with Internet access readily available in most homes, "commuting" has taken on a whole new meaning. I live in Rapid City, South Dakota, and I work in Chicago, Illinois. Actually, I "virtually" work in Chicago, using the phone and Internet to telecommute. Naturally, when I began exploring masters' programs, I looked for Internet-based programs. Today, I still live in South Dakota and work in Illinois and now I go to school in Oregon as well. I am a distance-learning student in the Master in Biomedical Informatics program at OHSU. While there are advantages to such a program (the "good"), distance learning poses some challenges (the "bad" and the "ugly").

## The Good

Many of the advantages of distance learning are obvious. The option to listen to a lecture at a point in the week most convenient for me is a dream come true. The flexibility of distance learning makes it possible to balance work deadlines with homework due dates. Another key advantage is the ability to access my coursework from any location. All I need is Internet access and I can "go to class." This is critical, as it allows me to work on my

degree and still meet the demands of my job. I travel, on average, about one week each month. No one can afford to miss a week of class every month, but with distance learning that is not an issue. Another, perhaps less obvious advantage, is the time and money that I save commuting to a campus somewhere. With a few mouse clicks, I am "in class." So even if I only have a few minutes, I can check in and get an update on an assignment or an answer to a question I posted. These are just some of the reasons that I can successfully balance career, family and graduate school.

## The Bad

As with any good thing, there are some disadvantages to distance learning. Technical problems are annoying, just as they are for telecommuting in my job. But, as with my job, I have not found them to be too great a hindrance. The Internet always comes back up or the file server is quickly restored. Thankfully, such problems are infrequent. There are some small disadvantages that I had not anticipated. For instance, I have to plan ahead and make sure I am registered and have ordered textbooks before the start of a class so that there is time for books to be delivered by mail. Other disadvantages that I anticipated proved not to be true, such as my concern that I would not have enough interaction with my instructors and classmates. I have been pleasantly surprised by the responsiveness of instructors and teaching assistants. I usually receive an answer to e-mailed questions the same day, always within a day or two. More importantly, I have found that the process of e-mailing a question demands more thought. Often in formulating the question, I discover my

answer. Once or twice I have felt totally lost and frustrated because I could not figure something out on my own. When I finally gave up and asked for help, the response from my instructors was encouraging and helpful. Like any schoolwork, how much you put into it determines how much you get out of it. I have found that I do benefit from my virtual classmates if I make the effort to read and post comments in the discussion threads.

## The Ugly

Actually, it is difficult to think of a disadvantage that I haven't been able to overcome. Once, last year while I was attending and speaking at a conference, I was unable to access the lecture assigned that week in one of my courses. We never did figure out what the problem was, probably something related to the hotel's firewall. Needless to say, it was very inconvenient to return home from a tiring business trip to a family eager to have my attention AND two weeks' worth of coursework to do, but the instructor understood the circumstance and I was able to catch up on my coursework.

Admittedly, there are both advantages and disadvantages of distance learning. But without distance learning I wouldn't be where I am today. It has allowed me to pursue my goal of furthering my education while simultaneously pursuing my career and raising four children. I can work or go to school from anywhere that I can access the Internet. This freedom is the only reason I can pursue graduate school at this time in my life.

*Mary Stanfill works for the American Health Information Management Association as a professional practice manager.*

## International Reach

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Gorman is also part of an Australian grant proposal, *How IT Works in Practice: a Framework for ICT Use in Australian General Practice*.



*Paul Gorman, M.D.*

The principal investigator of the proposal is Teng Liaw, M.B.B.S., Ph.D., of the University of Melbourne. Gorman will serve as a consultant to this proposed study that will examine the use of information and communication technology (ICT) in clinical practice among general practitioners in Victoria, Australia. The resulting clinical model will be formalized using standard modeling terminology.

In addition to research, DMICE also has funding for an international student in its educational program. Funded by the Centers for Disease Control and Prevention (CDC), Tunga Simbini, M.B.Ch.B., of the University of Zimbabwe Medical School is enrolled in the OHSU Master of Biomedical Informatics program. Simbini is mostly taking classes in the distance learning program over the Internet, but will spend a quarter in residence at OHSU this fall. Hersh is serving as his mentor and will visit him in Harare, Zimbabwe later on.

### Invited Talks

DMICE faculty are also active internationally in giving presentations. Hersh has given the following invited international talks this year:

- January 26: Institute for Health Informatics Research, University of Waterloo, Ontario, Grand Challenges for Biomedical Information Retrieval in the 21st Century.
- March 19: European Federation for Medical Informatics, Athens, Greece, The Full Spectrum of Biomedical Informatics Education at OHSU.

- May 12: Fourth Congress of the Hospital de Emergencias Dr. Clemente Alvarez, Rosario, Argentina, Biomedical Informatics: Enabling the Future of Biomedical Research and Clinical Care. (See photo, page 1.)
- June 3: University of Victoria, British Columbia, Who, What, Where, Why, When, and How? The Ignored "Who" Aspect of the Health Care Information Technology Equation.

Hersh also attended a small invited workshop of leaders in the field of information retrieval outside of Melbourne Australia, December 8-10, 2004. He will be leading a tutorial in bioinformatics for information retrieval researchers at the 28th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval on August 15 in Salvador, Brazil. One of his Ph.D. students, Jianji Yang, was selected to an elite group of doctoral students participating in the Doctoral Consortium of the SIGIR meeting.

Spackman has also given several international invited talks in the last year at:

- the HL7 United Kingdom Conference and Exhibition, November 2-3, 2004, London.
- Workshop on Description Logics and Reasoning About Patient Data, sponsored by the Institute for Formal Ontology and Medical Information Science at the University of Saarland, Saarbrücken, Germany, on November 22-23, 2004.
- eHealth Interoperability in Europe Conference, sponsored by the Dutch Ministry of Health in Amsterdam, the Netherlands, on December 15, 2004.

DMICE faculty assistant professor Holly Jimison, Ph.D., gave two invited international presentations this year:

- May 26: Brain Imaging Techniques to Validate Cognitive Assessments, Bogazici University, Istanbul, Turkey.
- June 18: Halmstad University and Chalmers University of Technology,

Centre for Research on Embedded Systems (CERES), Halmstad University, Gothenburg, Sweden.

### Publications

Many DMICE faculty are involved in international publications. One of the most widely cited papers in the medical informatics literature recently was authored by Joan Ash with colleagues Marc Berg, Ph.D., of Erasmus University in Rotterdam, the Netherlands, and Enrico Coiera, M.D., Ph.D., of the University of New South Wales in Sydney, Australia (Some unintended consequences of information technology in health care: the nature of patient care information system-related errors. *Journal of the American Medical Informatics Association*. 2004 Mar-Apr;11(2):104-112.).

Hersh and other DMICE faculty have been co-authors on papers published by former students from Australia, Canada, and China, respectively:

- Turpin A, Hersh W. Do clarity scores for queries correlate with user performance?, *Proceedings of the Fifteenth Australasian Database Conference*, Dunedin, New Zealand, 2004, 85-91.
- Tran D, Dubay C, Gorman P, Hersh W. Applying task analysis to describe and facilitate bioinformatics tasks, *MEDINFO 2004*, 818-822.
- Tian X, Hersh W, Logan J, Bennett R. A database for Chinese outpatients with rheumatic diseases, *MEDINFO 2004*, 256-259.

Carney also has several international publications:

- Adelson P, Bratton S, Carney N, et al. Guidelines for the Acute Medical Management of severe traumatic brain injury in infants, children, and adolescents, Spanish and Portuguese versions; English versions published by same authors in *Pediatric Critical Care Medicine*. 2003 Jul;4(3 Suppl).
- Rondina C, Videtta W, Petroni G, et al., Outcomes from severe traumatic brain injury in Argentina, *Journal of Head Trauma Rehabilitation*, 2005, in press.

## Other Projects and Activities

Hersh serves as co-chair of the International Medical Informatics Association Working Group on Education. Spackman collaborates with the United Kingdom National Health Service and other international terminology experts in his role as Chair of the SNOMED International Editorial Board.

Carney will be participating in several upcoming activities:

- Second USA/Cuba Symposium in the Fourth International Congress

on Neurointensivism, Havana, Cuba, May 2006.

- Director of Education and Resource Development, Latin American Brain Injury Consortium (LABIC), facilitating strategic planning meetings with LABIC and its stakeholders during 2005 and 2006.

Finally, it should be noted that students from all over the world come to study biomedical informatics at OHSU. Current and past enrolled students have come from India, China,

Pakistan, Morocco, England, and Australia. The list of countries from which students have taken distance learning courses is even wider, including Bangladesh, New Caledonia Switzerland and Kenya.

In conclusion, it can be seen that DMICE has a vast international reach. Most faculty members enjoy the interactions with international colleagues from around the world, who provide a perspective beyond what can be obtained in the United States. ■

## New Faces

Welcome to new faculty and staff in the Department of Medical Informatics and Clinical Epidemiology!

David Dorr, M.D., M.S., joined the DMICE faculty as an assistant professor in January 2005. An internist, Dorr received his M.D. from Washington University in St. Louis and his M.S. in medical informatics from the University of Utah where he was a National Library of Medicine fellow. He completed his residency in internal medicine at OHSU. Dorr worked previously at Kaiser Permanente in Clackamas, Ore. and at Intermountain Health Care in Salt Lake City. He has been awarded a K22 grant from

the National Library of Medicine (early career development award for informatics) on enhancing guidelines with collaborative care agents.

Karlea Fisher, M.S., coordinates the OHSU medical informatics distance learning program and joins the department from Montana State University where she was director of the health information technology program. Fisher holds an M.S. in information technology from Aspen University and was director of the health information technology program at the Albuquerque Technical Vocational Institute.

Jill Rose has joined the department as an executive assistant to the director of the Oregon Evidence-based Practice

Center. Sarah Lopez, Carol Roberts and Po-Yin Yen, M.S., are research assistants and Barbara Ray an administrative assistant, all working with the EPC's Drug Effectiveness Review Project, while administrative assistant Jayne Schablaske is working with Roger Chou, M.D. on guideline development for the American Pain Society. Jennifer Hinton is the new DMICE administrative assistant and editorial assistant Lauren Saxton is working with Mark Helfand, M.D., M.P.H., on the journal *Medical Decision Making*. Michelle Pappas is a research assistant working with Nancy Carney, Ph.D., on guidelines for traumatic brain injury.



David Dorr



Karlea Fisher



Jill Rose



Sarah Lopez



Carol Roberts



Barbara Ray



Jayne Schablaske



Jennifer Hinton



Lauren Saxton



Michelle Pappas



Po-Yin Yen

# Faculty Update

## Grants and Contracts Awarded

**William Hersh, M.D.**, professor and chair, received a three-year grant from the National Library of Medicine, "Discovering Standards-Based Learning at Point of Care," for development of XML and Web services-based meta-data standards for continuing medical education content.

Hersh was also awarded a two-year supplement to a National Science Foundation ITR grant to develop a resource for the study and evaluation of image retrieval systems. The project is entitled Enhancing Access to Multimodal Information in Biomedicine.

**Karen Eden, Ph.D.**, assistant professor, and Nancy Glass, Ph.D., R.N., assistant professor in the School of Nursing, combined their expertise in patient decision making and domestic violence to obtain foundation funding to create a decision aid for women in domestic violence settings. This decision aid will be for women of Latina and non-Latina backgrounds. They received \$25,000 to conduct the pilot study, Helping Abused Women With Difficult Safety Decisions Via a Computer from the OHSU Center for Women's Health, which runs October 1, 2004 through March 31st, 2006.

Assistant professor **David Dorr, M.D., M.S.**, is principal investigator of a National Library of Medicine grant on Enhancing Guidelines with Collaborative Care Agents. With associate professor **Paul Gorman, M.D.**, as a co-investigator, the three-year project seeks to improve clinical care by enhancing collaborative care through computer-supported guidelines and collaborative care managers.

**Paul Gorman, M.D.**, associate professor, is principal investigator of a three-year project, funded by the Agency for Healthcare Research and Quality, to improve the health of frail, chronically ill elders in rural Oregon by implementing and evaluating a Patient-

Centered Medication Information System. The PCMIS will integrate information from disparate information sources to provide accurate, complete and current medication information and thereby reduce medication errors, omissions, duplications, interactions, and adverse effects.

As part of the Evidence-based Practice Center program, the Agency for Healthcare Research and Quality has awarded a ten-month contract to the Oregon EPC to investigate the benefits and safety of analgesics, such as non-steroid anti-inflammatory drugs and acetaminophen (professor **Mark Helfand, M.D., M.P.H.**, principal investigator; assistant professor **Roger Chou, M.D.**, co-investigator). The Oregon EPC has conducted a similar drug review for its Drug Effectiveness Review Project, funded by a consortium of states and other organizations.

The Oregon EPC has also received a \$4 million award from AHRQ to be a Resource Center for other Evidence-based Practice Centers who will be working on comparative evidence reviews of drugs, which was mandated in Section 1013 of the Medicare Modernization Act of 2003. Professor **Mark Helfand, M.D., M.P.H.**, will serve as principal investigator, with professor **David Hickam, M.D., M.P.H.**, assistant professor **Marian McDonagh, Pharm.D.**, and associate professor **Heidi Nelson, M.D., M.P.H.** as co-investigators.

Principal investigator **Cynthia Morris, Ph.D., M.P.H.**, professor and vice-chair, received a five-year renewal of funding from NIH for the Oregon Human Investigations Program. The five-year renewal funds a program to train faculty and fellows in clinical investigation at OHSU. Morris is co-investigator of another NIH-funded project which also received a five-year renewal. Clinical Outcomes Research: An Endoscopic Database (CORI), with professor of medicine David Liberman, M.D., as principal investigator, maintains and utilizes a practice-based

network of endoscopy in the diagnosis, treatment, and management of gastrointestinal disease. Morris is the deputy director of the database. She also is funded through this project to explore practice variation in timing of polyp and colorectal cancer surveillance as related to outcomes.

**Somnath Saha, M.D., M.P.H.**, assistant professor, is consultant on a six-month National Cancer Institute grant on an e-learning course on disparities, culture and health. The project involves development of a computer-based, multimedia tool to educate health care practitioners about racial/ethnic disparities in health care and to pilot test the tool with medical students. This project is intended as the first step in the development of a comprehensive educational program on race, ethnicity, and culture in medicine.

## Faculty News

Professor and vice-chair **Cynthia Morris, Ph.D., M.P.H.**, received the 2004 Medical Research Foundation Mentor Award due to her leadership of the Human Investigations Program, which offers training in clinical research to faculty and fellows.

**Kent Spackman, M.D., Ph.D.**, professor, has been appointed as a member of the Biomedical Library and Informatics Review Committee of the National Library of Medicine through June 30, 2008. The committee is responsible for the initial scientific merit review of grant applications for research in medical and biomedical informatics. Spackman directs DMICE's medical informatics fellowship program, which funds post-doctoral fellows, candidates, and library fellows through a grant from NLM.

Associate professor **Joan Ash, Ph.D.**, is co-editor of an informatics book entitled "Transforming Health Care through Information," second edition, published by Springer. Most of the cases in the book come from her medical informatics organizational behavior course. Fifty-seven OHSU fac-

ulty and staff, primarily from DMICE, are listed as contributors to the book.

For the past year, assistant professor **Tom Yackel, M.D., M.P.H., M.S.**, have been working on the ambulatory electronic health record at OHSU, an integrated suite of products to provide modernized registration, scheduling, health records, and billing to the ambulatory practices. Yackel's role has been co-leading the selection process and the contract negotiations. Epic, the selected EHR, is scheduled to go live in the summer of 2005. Yackel's current role on the project is physician champion, working with Epic, ITG, and the clinical staff to coordinate the implementation. Yackel, along with Ronald Marcum, M.D., received a medical staff award for their efforts in the selection and contracting processes.

**Heidi D. Nelson, M.D., M.P.H.**, associate professor, and **Betsy Haney, M.D.**, assistant professor, presented the evidence report prepared by the Oregon Evidence-based Practice Center at the NIH state-of-the-science conference on management of menopause-related symptoms in March 2005 in Bethesda, Maryland. The evidence report was funded by the Agency for Healthcare Research and Quality. Nelson was the principal investigator of the project.

Associate professor **Jeanne-Marie Guise, M.D., M.P.H.**, was notified by Thomson's Web of Science that one of her papers was in the top 1% of articles, based on the number of times her *BMJ* paper about a systematic review of the incidence and consequences of uterine rupture in women with previous Caesarean section was cited.

#### Publications (by title)

Health care information technology: progress and barriers. Hersh W. *JAMA*. 2004; 292(18):2273-4.

Using evidence reports: progress and challenges in evidence-based decision making. Helfand M. *Health Affairs*. 2005; 24(1):123-7.

A look back...and ahead. Helfand M. *Medical Decision Making*. 2005; 25(1):8-10.

Physicians' responses to patient-requested cesarean delivery. Ghetti C. Chan BK. Guise JM. *Birth*. 2004; 31(4):280-4.

Factors and forces affecting EHR system adoption: report of a 2004 ACMI discussion. Ash JS. Bates DW *Journal of the American Medical Informatics Association*. 2005; 12(1):8-12.

Endoscopic evaluation of patients with dyspepsia: results from the national endoscopic data repository. Lieberman D. Fennerty MB. Morris CD. Holub J. Eisen G. Sonnenberg A. *Gastroenterology*. 2004; 127(4):1067-75.

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## Holly B. Jimison, Ph.D.

*Continued from Page 1*

the IEEE Engineering in Medicine and Biology Conference in San Francisco. Jimison also spoke on this subject at the Annual Interdisciplinary Conference in Jackson Hole, Wyoming, in February and has an upcoming presentation at Halmstad University in Sweden.

Jimison has been involved with other national and international meetings as well. She served on the Scientific Program Committee and chaired a session at this year's Neural Engineering Conference in Washington, D.C. in March. At that conference, she was named Program Co-Chair for the upcoming Neural Engineering Conference in Hawaii in 2007. In April she discussed Adaptive Interfaces for Health at a workshop on HCI challenges to health assessment at the conference on Computer Human Interactions in Portland, and in May Jimison presented a talk on brain imaging techniques to validate cognitive

assessments at the IEEE-EMBS symposium on Innovative Medical Imaging Modalities in Istanbul, Turkey.

Several recent publications reflect Jimison's work on technology in health care.

Jimison, HB, Pavel, M, McKanna, J, Pavel, J. Unobtrusive Monitoring of Computer Interactions to Detect Cognitive Status in Elders. *IEEE Transactions on Information Technology in Biomedicine*. 2004; 8 (3): 248-52.

Hsu J, Huang J, Fung V, Robertson N, Jimison H, Frankel R. Health Information Technology and Physician-Patient Interactions: Impact of Computers on Communication During Outpatient Primary Care Visits. *Journal of the American Medical Informatics Association*. 2005 Mar 31 pre-print.

Jimison, HB. *Ethical Issues in Consumer Health Informatics, Consumer Health Informatics*, eds., Lewis D, Eysenbach G, Kukafka R, Jimison H. New York: Springer, 2005.

## From the Chair

*Continued from Page 1*

such as financial disincentives, integration with the clinical workflow, lack of interoperability, and concerns about privacy and confidentiality. I noted, however, that several recent events portend a bright future, such as the appointment of David Brailer, M.D., Ph.D., as the first national coordinator for health information technology.

This editorial probably played a role in my being invited in February to be a guest on the National Public Radio show, *Talk of the Nation: Science Friday*. Two other guests and I were interviewed by host Ira Flatow about the national push for increased use of health information technology. You can listen to the show at [http://www.sciencefriday.com/pages/2005/Feb/hour2\\_020405.html](http://www.sciencefriday.com/pages/2005/Feb/hour2_020405.html).

In March, I was appointed Chair of the Medical Informatics Subcommittee of the American College of Physicians (ACP). The ACP is the country's largest medical specialty society, representing the field of internal medicine, and has committed itself to advocating for the proper use of health information technology to benefit health care.

The following month, I had the opportunity to lead a workshop funded by the Centers for Medicare and Medicaid Services (CMS) and Agency for Healthcare Research and Quality on telemedicine. The goal of the workshop held in Rockville, MD, was to review studies of the efficacy of telemedicine and to inform CMS on evaluating the efficacy to make decisions regarding coverage of telemedicine services in the Medicare program.

Changing gears, I am also pleased to report that later this year, we will announce the second DMICE annual giving campaign. Our first campaign was modestly successful, but we hope that this year's campaign will be even

better. You may ask why we are launching a fund-raising drive at a time of unprecedented success of our grant funding and educational programs. The reasons are many.

Despite our success in obtaining grant revenue and tuition, these monies are earmarked for specific expenses of the research projects and educational programs, respectively. Grant funding, while a cornerstone of our departmental revenue, is also fiscally challenging. Most of our grants come from federal sources (e.g., NIH, NLM, and AHRQ), which have very explicit regulations on allowable expenses. Furthermore, these grants are time-limited, so that the money must be spent in a specific period and returned if unspent. In addition, the lead time for applying for a grant, having it reviewed, and receiving the award can be up to a year. Grant funding is also highly competitive, with most programs funding only 10–25% of applications received. Although we get funded at a rate higher than the average, we still write many high-quality proposals that do not get funded. The amount of time it takes to put together proposals, plus the long waiting time for their review, puts an additional strain on our resources.

So although our grants and tuition revenues fund the key activities of the department, they are very restrictive in how the money can be spent and provide little money for investment in the future. For example, faculty occasionally wish to pursue new areas of research, which usually requires learning new techniques or generating preliminary data. Or the department may wish to invest in new educational programs. An example of this is our recent work with leaders in the health information management field (the individuals who run medical records departments in health care organizations), where we hope to develop joint course and degree offerings.

Another use for gift funds will be for our students. Having money for things such as student travel to scientific meetings and career development activities will improve their education and increase their competitiveness in the job market, which will in turn attract more students. We also hope to raise funds for student scholarships that will allow us to attract more high-achieving students, especially those who have been offered scholarships elsewhere and may not otherwise attend OHSU.

Gift monies will allow us to pursue other opportunities, such as recruiting new faculty and advancing the career development of those already here. They will also allow us to bring in distinguished leaders in the field, who often benefit the entire community by participating in our academia-industry dinners. (This past year, our dinners featured such luminaries as MIT software safety expert Nancy Leveson, Ph.D., and Harvard patient safety expert David Bates, M.D.)

I hope you will consider investing in DMICE. A form for giving is printed in this newsletter, or you can make your gift online at <http://www.ohsu.edu/dmice/giving>. Putting my money where my mouth is, I myself have been giving to the department each month for almost a year.

In closing, I want to express my gratitude for the support DMICE has received from faculty, staff, students, the OHSU leadership, and the community. I hope we can continue our mutually beneficial relationship with all of you, providing leadership and value in our respective fields and being a program you can be proud to be a part of. ■

**Yes!** I support the OHSU Department of Medical Informatics and Clinical Epidemiology as a leader in healing, teaching and discovery.

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For information about the Department of Medical Informatics and Clinical Epidemiology, visit the Web site at [www.ohsu.edu/dmice/](http://www.ohsu.edu/dmice/) or call 503 494-4502.

# Student and Alumni News

Two DMICE doctoral students have had their work accepted for presentation at doctoral consortia at 2005 national/international informatics meetings. Admission to doctoral consortia is a highly competitive process; the consortia provide doctoral students with a forum to meet and discuss their work with each other and experienced biomedical informaticists.

**Ken Guappone, M.D.**, was accepted to the doctoral consortium on organizational issues in medical informatics to be held at the American Medical Informatics Association (AMIA) Annual Symposium to be held this October in Washington, DC.

**Jianji Yang, M.A., M.S.**, was accepted to the doctoral consortium of the ACM SIGIR 2005 Conference on Research and Development in Information Retrieval, which will take place in August in Salvador, Brazil. She will present her work on automatic summarization of gene-gene relations in the biomedical literature.

Doctoral student **Adam Wright** heads to Washington, D.C. this summer to complete an internship in the office of David Brailer, M.D., Ph.D., the National Coordinator for Health Information Technology. In May 2004, President Bush announced a goal that every American would have an electronic health record in ten years and appointed Brailer to carry out this goal. Adam, who has a special interest in informatics policy issues and the development of the National Health Information Network, will participate in developing a strategy to foster the creation of a national network of Regional Health Information Organizations (RHIOs).

**Ashok Areja, M.D., M.P.H.**, a distance learning student in the graduate certificate in medical informatics program, published a paper in *Annals of Internal Medicine* February 1, 2005. In "Responding to the Rofecoxib Withdrawal Crisis: A New Model for

Notifying Patients at Risk and Their Health Care Providers," Areja and his colleagues discussed the electronic health record-based clinical data repository they used to identify and sent letters to more than 11, 500 patients within 24 hours after an important drug withdrawal. The accompanying editorial applauded their innovative use of EHR and suggested that this could be used as a model that may be extended to many situations.

Jain A., Atreja A, Harris CM, Lehmann M, Burns J, Young J. Responding to the Rofecoxib Withdrawal Crisis: A New Model for Notifying Patients at Risk and Their Health Care Providers. *Annals of Internal Medicine* 2005 Feb 1;142(3):182-6.

**Marilyn D. Paterno**, a distance learning student in the master of biomedical informatics program, was an author of a paper on electronic alerts to prevent venous thromboembolism among hospitalized patients, in March 10, 2005 issue of *New England Journal of Medicine*. Paterno, who was responsible for writing much of the program code for the alerts system and setting it up to run in the Brigham and Women's Hospital Clinical Alerting System, works for Partners Health Care Infor-

mation Systems in the Boston area.

Kucher N, Koo S, Quiroz R, Cooper JM, Paterno MD, Soukonnikov B, Goldhaber SZ. Electronic alerts to prevent venous thromboembolism among hospitalized patients. *New England Journal of Medicine* 352(10):969-77, 2005 Mar 10.

**John Cooper, M.B.I.**, a recent master of biomedical informatics graduate, started a full-time position last December as an electronic medical record (EMR) applications specialist with the non-profit Oregon Community Health Information Network in Portland. In February he received Epic EMR product certification and is now working with clinicians to design and build EMRs at community health clinics in Oregon and California.

**Katie Gorris, M.S.**, a recent graduate of the master's of medical informatics program, is currently living in Salt Lake City and working for Intermountain Health Care's Corporate Compliance department as a privacy compliance consultant. She is also teaching Health Care Networks and Databases and Computer Applications in Health Care courses in Weber State University's Health Information Management program.

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