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# DMICE Tracks

## From the Chair

The last nine months have been very “stimulating” for the Department of Medical Informatics & Clinical Epidemiology (DMICE). The economic stimulus



bill, also known as the American Recovery and Reinvestment Act (ARRA) of 2009, has kept the department extraordinarily busy, first in

writing numerous grant proposals and then in carrying out the work on those that were funded. ARRA has provided opportunities for both the informatics and clinical epidemiology sides of the department.

The informatics side of the department has been buoyed mainly by the Health Information Technology for Economic and Clinical Health (HITECH) Act, the portion of ARRA that funds up to \$29 billion to provide incentives for the “meaningful use” of electronic health records. About \$2 billion of that funding is designated for developing the health information technology (HIT) infrastructure, including research and workforce development. As noted in the article to the right, DMICE fared very well in that program, validating our leadership in HIT and informatics

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## DMICE at the National Forefront with Health Information Technology Workforce Development Grants

The Department of Medical Informatics & Clinical Epidemiology continued its national leadership in informatics education with the recent awarding of two grants from the Office of the National Coordinator for Health Information Technology (ONC), totaling \$5.8 million. These grants were part of the programs funded this year under the Health Information Technology for Economic and Clinical Health (HITECH) Act, the portion of the American Recovery and Reinvestment Act (ARRA, also known as the economic stimulus package) that promotes the adoption and “meaningful use” of health information technology (HIT). These grants will not only solidify the department’s national leadership in HIT curriculum development but also bring up to 148 new students to our program over the next three years.

The first of these grants is part of three interrelated programs that collectively aim to rapidly build the front-line workforce to achieve the electronic health record (EHR) adoption goals of the HITECH legislation.

The project DMICE is involved in is the Curriculum Development Centers Program, where five universities (OHSU, Columbia, Duke, Johns Hopkins, and the University of Alabama at Birmingham) have been funded to develop instructional materials for another program, the Community College Consortia to Educate Health Information Technology Professionals Program. The latter program funds five regional consortia to deliver short-term six-month certificate programs that focus on six workforce roles that ONC views as required to achieve the HITECH agenda. About 84 community colleges are in the five regional consortia, all of whom are developing short-term certificate programs around one or more of the workforce roles, which will commence this fall.

Since literally the day the grant was awarded, the curriculum development centers have been hard at work, first planning and now implementing the first version of the instructional materials. (Two additional versions of

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# Thirty-one Students Receive Biomedical Informatics Degrees in 2009-2010 Academic Year

On June 1, 2010, the OHSU School of Medicine held its first combined hooding and graduation ceremony. This academic year of 2009-2010, 31 students received biomedical informatics degrees.

**Emily Campbell, R.N. M.S.**, Portland, OR, received her Ph.D. Her dissertation topic was “A Cognitive Model of Medical Record Coding: Implications for Understanding Inter-Rater Agreement.”

**Two students received a master of science degree (listed with their thesis topic):**

**Nathan Bahr**, Portland, OR  
**Thesis:** “Discovering Synergistic Groups of Researchers for Translational Research”

**Daniel Bottomly**, Portland, OR  
**Thesis:** “An In Silico Assessment of Alternatively Spliced Isoforms in the Mouse Brain Using RNA-SEQ”

**Nine students received a master of biomedical informatics degree (listed with their capstone project):**

**Michael Ames**, Aurora CO  
**Capstone:** “Current Trends and Terminology in Systems Biology and Pathway Research: A Conceptual Roadmap”

**Mark Goodman**, West Linn, OR  
**Capstone:** “Comparison of Deduplication Methods Between Two Immunization Information Systems”

**John Koerner**, Newberg, OR  
**Capstone:** “An Exploration Into Automated Clinical Drug Classification”

**Andi Lushaj**, Madison WI  
**Capstone:** “Remote Usability Evaluation of a Health Coaching Application”

**Beshia Popescu**, Battleground, WA  
**Capstone:** “Designing a Consumer Cancer Information Web Portal: Cowlitiz Cancer Awareness, Resource & Education”

**Dean Smith**, Washington DC  
**Capstone:** “Global Interoperability and Archetype-Based Clinical Information Systems”

**Ellen Torres**, Portland OR  
**Capstone:** “Conception of a SNOMED CT and HL7 V3 standard: Domain Analysis Model for Preoperative Anesthesia”

**Edward VanBaak**, Hartford CT  
**Capstone:** “Cognitive Monitoring and Motor Speed Assessment Using Unobtrusive Computer Keyboard Measures”

**Revati Venkatesh**, Portland, OR  
**Capstone:** “Reporting and Consolidation Tool for Physician Quality Reporting Initiative”

**In addition, 19 students completed graduate certificates in biomedical informatics, a 24-credit-hour program to provide knowledge and skills in the application of information technology to health care:**

**Wessman Adly**, Giza, Egypt  
**Ebtissam Al-Madi**, Saudi Arabia  
**Bonita Altus**, Sheridan, OR  
**Madhavi Bharadwaj**, Beaverton, OR  
**Karming Linda Chan**, Marlton, NJ  
**Ahmed Elagamy**, Giza, Egypt  
**Jeffery Emch**, Portland, OR  
**Tamer Etman**, Cairo, Egypt  
**Samar Ezzeldin**, Beniguet, Egypt  
**Bassima Hammoud**, Beaverton, OR  
**Ji-Hyun Kim**, Hillsboro, OR  
**Christine Klein**, Portland, OR  
**Hanumantha Rao Kolusu**, Clinton, IA  
**Nashwa Konsoh**, Zefta, Egypt  
**Robert Miller**, Sacramento, CA  
**Somaia Mohamed Nasef**, Giza, Egypt  
**Tariq Mohasseb**, Giza, Egypt  
**Christopher Tessier**, Hopkinton, NH  
**Elmer Washington**, Homewood, IL ■

## DMICE Establishes Bioinformatics Division

A Division of Bioinformatics and Computational Biology has been established in the Department of Medical Informatics and Clinical Epidemiology (DMICE). The new division provides a unified and more visible academic home for an array of disparate educational programs, inter-linked activities and collaborative research efforts in bioinformatics and computational biology across OHSU and beyond.

The interdisciplinary coursework includes computer science, informatics, statistics and biology; it draws on inter-institutional faculty expertise at Portland State University as well as OHSU, and is synergistic with work in the Department of Public Health & Preventive Medicine, the Knight Cancer Institute, the Oregon Clinical and Translational Research Institute

and the Kaiser Permanente Center for Health Research.

Shannon McWeeney, Ph.D., associate professor, and director of the bioinformatics and computational biology track in the DMICE biomedical informatics graduate program, which forms the core of the new division, has been named the division's head.

“Dr. McWeeney is uniquely qualified for this role,” said William Hersh, M.D., professor and chair, DMICE. “She has distinguished herself with her research on statistical and computational methodologies for functional genomics data such as gene expression and in proteomics, which have had applications in studies of diabetes, cancer and alcoholism. I am confident that Dr. McWeeney will mold this division into a nationally prominent center of excellence.” ■

## Summer Interns Contribute to Faculty Research Programs

The summer of 2010 saw the fourth year of the DMICE internship program for college students. For the second year, many of the interns were funded through the American Recovery and Reinvestment Act (ARRA) supplement to our National Library of Medicine (NLM)-funded informatics fellowship.

Elaine Wilcox of Milwaukie, OR from Oregon State University, worked with associate professor Holly Jimison, Ph.D., on her project involving health coaching to prevent cognitive decline in the elderly. A student from Pacific University, Brandon Oshiro of Forest Grove, OR also worked with Dr. Jimison. “The summer internship gave me valuable experience and knowledge of the whole research process,” Oshiro said.

Both Jane Albertson from Portland, OR a 2010 graduate of Willamette University, and Irene Varghese of Portland, OR a student at Pacific University, worked with David Dorr, M.D., M.S., associate professor, and his Care Management Plus team. Albertson found that the internship made her more confident in her ability to complete tasks independently. “The OHSU staff facilitated this learning process through their eagerness to answer questions, willingness to teach, and desire to challenge me by posing stimulating questions,” Albertson said.

Mara Rosenberg of Portland, OR is an undergraduate from Brandeis University. This summer she worked with assistant professor Eilis Boudreau, M.D., Ph.D., in her biophonics lab, helping Dr. Boudreau to observe mouse cerebral blood flow after alcohol injection. The experience allowed Rosenberg to learn the process of designing, funding and executing a research study.

From Portland, OR Gabe Buckmaster will attend Santa Clara University this fall. He spent the summer



*First row (left to right): Jane Albertson, Mara Rosenberg, Karen Echon, Kelly Boccia. Second row: Michael Shah, Elaine Wilcox, Brandon Oshiro, Gabe Buckmaster, faculty lead David Dorr, M.D., M.S., Irene Varghese, Joe Wasserman.*

working with associate professor Judith Logan, M.D., M.S., and was able to learn the C-Sharp programming language while working with Logan on her research project, searching medical databases using the data entry application as the search interface.

Also working with Logan was Sean O’Halloran from Portland, OR, a student at University of Denver, who worked on the Clinical Outcomes Research Initiative for a second summer.

Alla Khalitova assisted associate professor Karen Eden, Ph.D., with her project developing a fertility preservation decision aid for adolescents and young adults with cancer. Khalitova is from Portland, OR and attends Lewis & Clark College.

A 2009 graduate of Reed College, Joe Wasserman of Portland, OR participated in the Physician Order Entry Team (POET) work, headed by professor Joan Ash, Ph.D. Through his work on investigating the social in a sociotechnical system, Wasserman had a goal of gaining experience in qualitative research methods. “Not only did I gain valuable experience while working with knowledgeable

practitioners, but my contributions were valued as part of an interdisciplinary team,” Wasserman noted.

Jayashree Kalpathy-Cramer, Ph.D., instructor, had two summer interns: Karen Echon from Portland, OR and University of Portland, worked on non-parametric snakes while Michael Shah from Columbus, OH and The Ohio State University worked on tools for radiation oncology.

Along with the interns, Kelly Boccia, a master’s student in information technology management at Harvard University, spent the summer at DMICE in a Short-Term Trainee Position, funded by NLM. She worked with Kalpathy-Cramer on visualization software and its use in medical imaging.

Irene Varghese summed up many of the benefits of the DMICE summer internship program: “I’m really grateful for this wonderful opportunity. My summer research experience has been amazing. I have enjoyed working with a wonderful group of people, acquire valuable skills and knowledge and also group as a person.” ■

## Faculty Focus: Shannon McWeeney, PhD

At OHSU, associate professor Shannon McWeeney, Ph.D., wears many hats, and DMICE is fortunate that two of them include serving as head of the new DMICE Division of Bioinformatics and Computational Biology as well as architect of the bioinformatics and computational biology track in the biomedical informatics education program.

McWeeney is well prepared for leading bioinformatics. Coming from a background in zoology, she received her Ph.D. in statistical genetics from University California at Berkeley, followed by a post-doc at the Penn Center for Bioinformatics, where she also received an M.S.E. in computational biology. McWeeney came to OHSU in 2002 where she joined the Division of Biostatistics in the Department of Public Health and Preventive Medicine

Translational Bioinformatics is defined as the development of analytic, storage, and interpretive methods to optimize the transformation of the increasingly voluminous genetic, genomic, and biological data into diagnostics and therapeutics for medicine. With recognition that a key component of this translation is computational biology, the underlying algorithmic and quantitative framework, McWeeney designed a rigorous and innovative curriculum that led to the formation of another track in our existing biomedical informatics program (a designated National Library of Medicine University-based Biomedical Informatics Research Training Program), the Bioinformatics and Computational Biology (BCB) track.

At the heart of the program McWeeney designed is the emphasis on the quantitative foundation necessary for the development and domain-specific application of data-analytical and theoretical methods, mathematical modeling, and computational simulation techniques to



“Dr. McWeeney has shown the expertise and leadership to not only make scientific advances in bioinformatics and computational biology, but also disseminate her expertise through educational and service activities. As advances in genomics and related areas impact clinical medicine, her work will improve human health and educate the next generation of leaders to implement those accomplishments and extend them in new and diverse directions.”

– William Hersh, M.D.

address key research bottlenecks and move the clinical and translation enterprise forward. Active areas of study in the track include data analysis and integration methods for functional genomics, text mining and information retrieval, imaging and computational neuroscience.

This track remains dynamic and responsive, offering our students a unique educational opportunity and allowing us to dispense the key concepts and methodologies that will

be relevant for the next generation of technology and medicine. One of the strengths of our program, which sets it apart nationally, is the active engagement in our health sciences setting which allows students to gain an understanding of how various computational approaches can be applied in a clinical/translational setting.

McWeeney has been key in facilitating and coordinating this engagement. Basic science and clinical faculty provide use cases and problem scenarios that serve as a 10-week class project in the Research Methods in Bioinformatics and Computational Biology Course (taught by assistant Eilis Boudreau, Ph.D.) and can be further developed for thesis study.

McWeeney teaches three DMICE courses: BMI 550/650, Bioinformatics and Computational Biology I: Algorithms (with David Maier, Ph.D., at Portland State University); BMI 551/651, Bioinformatics and Computational Biology II: Statistical Methods (with associate professor Kemal Sonmez, Ph.D.); and BMI 553/653, Readings in Bioinformatics and Computational Biology (with instructor Beth Wilmot, Ph.D.).

She also serves as a member of bioinformatics thesis and dissertation committees. In 2010, when McWeeney was named head of the new division, she turned the reigns for directing the track over to Sonmez. The two work closely in oversight of the program.

According to Hersh, “Dr. McWeeney has shown the expertise and leadership to not only make scientific advances in bioinformatics and computational biology, but also disseminate her expertise through her educational and service activities. As advances in genomics and related areas impact clinical medicine, her work will improve human health and educate the next generation of leaders

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## Evidence-based Practice Center Receives \$6 Million in Stimulus Funds for Comparative Effectiveness Research

The Clinical Epidemiology side of DMICE has received major American Recovery and Reinvestment Act (ARRA) funding through a \$6 million award to the Oregon Evidence-based Practice Center (EPC) from the Agency for Healthcare Research and Quality (AHRQ).

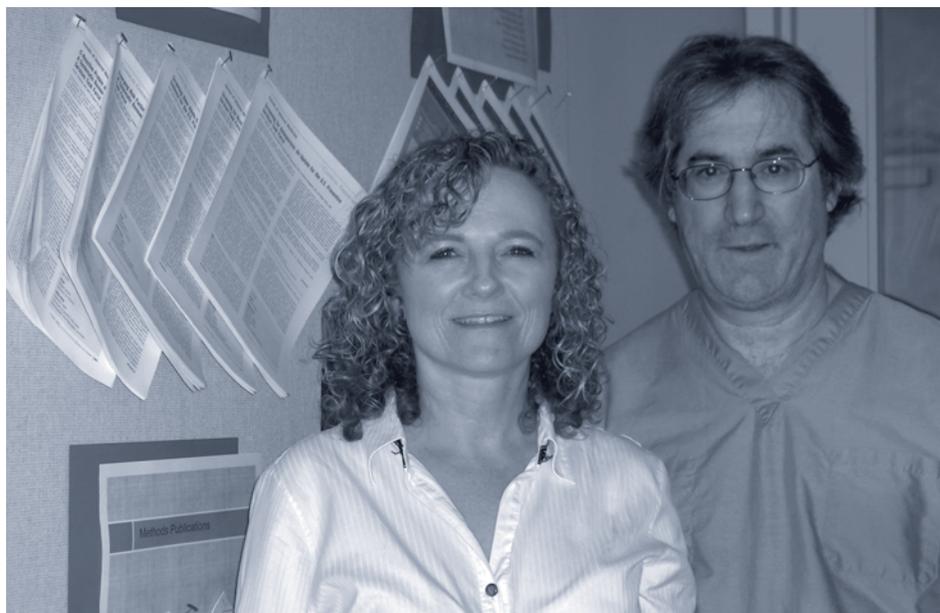
As one of eight federally-funded comprehensive comparative effectiveness review centers, the Oregon EPC Comparative Effectiveness Research Center (CERC) is one of two cross cutting Centers, with topic areas including care delivery, management and coordination, prevention, and behavioral interventions.

“The ARRA funds are intended to expand capacity at the Oregon EPC and support a senior leadership core, topic development, comparative effectiveness reviews, and future research needs delineation,” said Mark Helfand, M.D., M.P.H., M.S., EPC director. “We are pleased to have Dr. Jeanne-Marie Guise serve as principal investigator of the CERC as well as an associate director of the EPC.”

Guise, associate professor of obstetrics and gynecology and medical informatics and clinical epidemiology, leads a team of OHSU faculty and research staff who will work on the three-year project.

“I am honored to be working with such a talented and dedicated group of investigators and research staff,” Guise said. “We welcome the opportunities to continue and expand our work in bringing forth evidence to inform decision making. We are excited about our enhanced capacity to conduct comparative effectiveness and train future generations of researchers at the Oregon EPC.”

Topics submitted to AHRQ for consideration as comparative effectiveness reviews are prioritized according to appropriateness, impor-



*Jeanne-Marie Guise, M.D., M.P.H., serves as principal investigator of the Comparative Effectiveness Research Center while Mark Helfand, M.D., M.P.H., M.S., directs the Oregon Evidence-based Practice Center.*

tance, desirability of new research, potential impact, and capacity. AHRQ assigns high priority topics for topic refinement (formulation of key research questions) and comparative effectiveness review.

Current CERC topics at the Oregon EPC include comparative effectiveness of case management for adults with medical illness and complex care needs, comparative effectiveness of breathing exercises and/or retraining techniques in the treatment of asthma, and screening and treatment of Hepatitis C.

In addition to evidence reviews, the Oregon EPC is conducting two future research projects to understand how to engage stakeholders in the identification and prioritization of research.

The first, developing a future research agenda to reduce risk of primary breast cancer in women, engaged stakeholders in setting priorities to address research gaps identified in a previous CER produced by the

Oregon EPC. A second project now explores methods used in engaging stakeholders to prioritize research.

In addition to Guise and Helfand, OHSU team members include David Hickam, M.D., M.P.H., Roger Chou, M.D., Somnath Saha, M.D., M.P.H., David Buckley, M.D., M.P.H., and Rochelle Fu, Ph.D. Also working on the CERC are Christen O’Haire, Ph.D., Elaine Graham, M.L.S., Erika Nakamoto, M.S., Erika K. Barth Cottrell, M.P.P., Ph.D., Martha Schechtel, R.N., and Lia LaBrant, B.A., B.S., M.D. Candidate.

The project also involves Oregon EPC staff at Kaiser Permanente Center for Health Research, whose team is led by Evelyn Whitlock, M.D., M.P.H., also an associate director of the Oregon EPC.

Comparative effectiveness research is the conduct and synthesis of systematic research comparing different interventions and strategies to prevent, diagnose, treat and monitor health conditions. ■

# Faculty/Staff Update

## Awards and achievements

Congratulations to **Aaron M. Cohen, M.D., M.S.**, and **David A. Dorr, M.D., M.S.**, who both were promoted from assistant to associate professor on July 1, 2010!

## Funding received

**Jeanne-Marie Guise, M.D., M.P.H.**, associate professor, and **Cynthia Morris, Ph.D., M.P.H.**, professor, received a K12 grant from the Agency for Healthcare Research and Quality, which will train scholars to do research on comparative effectiveness.

**Guise and Morris** also received a three-year KM1 career development grant from the National Cancer Institute for a summer institute in comparative effectiveness research training.

Associate professor **Karen Eden, Ph.D.**, is co-principal investigator on a grant funded by the National Institute of Mental Health that tests an Internet-based intervention to improve mental health outcomes for abused women.

**Aaron Cohen, M.D., M.S.**, associate professor, is co-principal investigator on a National Library of Medicine-funded research grant, "Text Mining Pipeline to Accelerate Systematic Reviews in Evidence-Based Medicine," that will use biomedical text mining methods to decrease the manual process in the literature collection and review process of systematic reviews.

**William R. Hersh, M.D.**, professor and chair, is principal investigator of two grants funded by the Office of the National Coordinator for Health Information Technology (see lead newsletter article).

## Presentation and posters

Professor and chair **William R. Hersh, M.D.**, gave the following presentations:

"Health Information Technology Workforce and its Education: Perspective from the United States," panel at the 6<sup>th</sup> Conference of the Asia Pacific Association for Medical Informatics (APAMI) 2009, Hiroshima, Japan, November 24, 2009.

"Biomedical and Health Informatics – Strategic Importance for 21st Century Medicine," at Mahidol University, Faculty of Medicine, Ramathibodi Hospital, Bangkok, Thailand, January 28, 2010.

"Human Resources Capacity for Health Information Systems in Developing Countries," panel at Prince Mahidol Award Conference, Bangkok, Thailand, January 29, 2010.

"Informatics Now Lives in HITECH World," Health Informatics Grand Rounds, University of Michigan, Ann Arbor, MI, February 26, 2010.

"Overview of CTSA Informatics Activities and Local Efforts at OHSU," panel at AMIA Clinical Research Informatics Summit, San Francisco, CA, March 12, 2010.

"Meaningful Use of Health Information Technology Requires a Competent Workforce," given at the Nevada Health Information Technology Blue Ribbon Task Force, Las Vegas, NV, May 7, 2010.

**Hersh** also gave this talk at the HIMSS Oregon Tech Topic: Career and Education Opportunities in Health IT, Portland, OR, June 10, 2010, and at the IASTED African Conference on Health Informatics, AfricaHI 2010: Science and Technology Applications for Health and Sustainable Development, Gaborone, Botswana, September 6, 2010.

"ARRA, HITECH, and Informatics in Public Health," at the Council of State and Territorial Epidemiologists 2010 Annual

Conference, Portland, OR, June 8, 2010.

Associate professor **Paul Gorman, M.D.**, was co-author/co-presenter of several posters:

"Developing a 'Best Practices' Model for Implementing Shared Decision-Making in Primary Care: The ORPRN Experience," presented at the 37th NAPCRG Annual Meeting in December 2009 in Montreal, Quebec, Canada.

"Fitting Computerized Support into the Workflow: Enhancing Paper-Based Cognitive Aid in a Pediatric Intensive Care Unit," and "Evaluation of Conformity and Regularity of Structured Product Labels," during the AIMA November Annual Symposium in San Francisco, CA in November 2009.

**Gorman** served as a workshop co-convener of "Computer Supported Cooperative Work Research in Healthcare: Past, Present, and Future," at the Computer Supported Cooperative Work conference, February 7, 2010, in Savannah, Georgia.

**Gorman** participated in several discussion panels at the Human Factors and Ergonomics Society 54<sup>th</sup> Annual Meeting San Francisco September 27-October 1, 2010:

"Supporting Cognition and Decision Making in Clinical Work" (panel chair).

"Just What the Doctor Ordered? The Role of Cognitive Decision Support Systems in Clinical Decision-making and Patient Safety."

"Health Care Recovery: How the Science of Human Factors is Challenging Health Care to Move Patient Safety Forward."

"Debate: Is There Low-hanging Fruit in Health Care Human Factors?"

Research assistant **Molly M. King** and associate professor **David A. Dorr, M.D., M.S.**, presented "Effects of Population Tracking and Follow-up on Patient Lipid Profile and Diabetic HbA1c Improvement." in June 2010 at

the AcademyHealth Annual Research Meeting in Boston, MA.

Also as a part of the June 2010 AcademyHealth Annual Research Meeting, **Dorr** chaired a session on “Processes for Care and Disease Management.”

**Rose Relevo, M.L.I.S., M.S.**, Oregon Evidence-based Practice Center librarian, presented a poster, “Using Analytic Frameworks to make sense of complex research queries,” at the Medical Library Association Annual Meeting May 23, 2010, in Washington D.C.

### Publications

**Boudreau E**, Chen G, Li X, Buck K, Hitzemann R, Hickman D. Intraperitoneal catheter placement for pharmacological imaging studies in conscious mice. *Lab Animal*. 2010; 39(1):23-5.

**Chou R**. Development of a screening tool to detect the risk of inappropriate prescription opioid use in patients with chronic pain. *Journal of Pain*. 2010; 11(2):96.

**Chou R**, Chan BKS. Gabapentin versus tricyclics for neuropathic pain. *Journal of General Internal Medicine*. 2009; 24(6):782.

**Chou R**. Generating evidence on spinal cord stimulation for failed back surgery syndrome: Not yet fully charged. *Clinical Journal of Pain*. 2009; 25(7):651.

**Chou R**. Pharmacological management of low back pain. *Drugs*. 2010; 70(4):387-402.

**Chou R**, Shekelle P. Will this patient develop persistent disabling low back pain? *JAMA*. 2010; 303(13):1295-302.

**Chou R**, Aronson N, Atkins D, Ismaila AS, Santaguida P, Smith DH, Whitlock E, Wilt TJ, Moher D. Assessing harms when comparing medical interventions: AHRQ and the Effective Health-Care Program. *Journal of Clinical Epidemiology*. 2010; 63(5):502-512.

**Guise JM**, Denman MA, Emeis C, Marshall N, **Walker M**, Fu R, Janik

## In Memoriam: Richard Dykstra, M.D., M.S.

February 25, 1948 – March 19, 2010

On March 19, 2010, the Provider Order Entry Team (POET), a research team in DMICE led by principal investigator



Joan Ash, Ph.D., lost a longstanding team member and dear friend. Richard H. Dykstra, M.D., M.S., began working with POET in 2002 while a master's student in biomedical informatics at OHSU and a practicing internist at Kaiser Permanente. As the physician researcher on the POET team, Dykstra played an integral role in planning and con-

ducting research funded by both the National Library of Medicine and the Agency for Healthcare Research and Quality.

Just four months before his death, a paper Dykstra first authored won a distinguished paper award at the annual American Medical Informatics Association annual symposium and a week prior to his death, he joined the POET team for a week-long data gathering site visit in Massachusetts. His untimely death during a well-earned Hawaii vacation has been a great loss to POET and to the field of biomedical informatics. ■

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**Helfand M**, Aguilar-Gaxiola SA, Selker HP. Comparative effectiveness research: an approach to avoiding “overgeneralized medicine.” *Clinical and Translational Science*. 2009; 2(6):444-5.

**Helfand M**. Web exclusive white paper series on diagnostic test evaluation. *Medical Decision Making*. 2009; 29(5):634-5.

**Helfand M**. Comparative effectiveness research. *Medical Decision Making*. 2009; 29(6):641.

**Helfand M**. Public involvement improves methods development in comparative effectiveness reviews

(editorial). *Journal of Clinical Epidemiology*. 2010; 63(5):471-3.

**Helfand M, Balsheim H**. Principles for developing guidance: AHRQ and the Effective Health-Care Program. *Journal of Clinical Epidemiology*. 2010; 63(5):484-490.

**Hersh WR**, Margolis A, Quirós F, Otero P. Building a health informatics workforce in developing countries. *Health Affairs*. 2010; 29: 274-277.

**Hersh W**. The health information technology workforce: estimations of demands and a framework for requirements. *Applied Clinical Informatics*. 2010, 1:197-212.

**Hersh W**. *Keeping Up Your Fund of Knowledge: How Teaching Physicians Can Access Clinical Knowledge, Answer Questions, and Develop Skills for Life-Long Learning, in Theory and Practice of Teaching Medicine*, American College of Physicians. 2010:95-114.

**Hersh W**. The health informatics workforce: unanswered questions, needed answers. *Studies in Health Technology & Informatics*.

Continued on Page 9

## DMICE Adds Faculty and Staff to its Educational and Research Programs

With many new funded projects in the department and an ever increasing student population, DMICE has welcomed new faculty and staff to its fold in past months.

The department has several new primary faculty. As a new assistant professor, **Vishnu Mohan, M.B.B.S., M.B.I., M.B.C.S., F.A.C.P.**, serves as faculty lead for the clinician/public health leader track of DMICE's University-based Training (UBT) grant from the Office of the National Coordinator of Health Information Technology (ONC). Mohan will teach BMI 512, Clinical Information Systems, and BMI 560, Design and Evaluation in Health Informatics. Mohan also works with Dr. Joan Ash as the physician collaborator on her POET research project.

Mohan received his master's in biomedical informatics from our program in 2009. He has been an internist with the Legacy Health System for the past seven years and was their associate program director for medical informatics for the past few years.

Assistant professor **Justin Fletcher, Ph.D.**, has joined DMICE as its privacy and security expert, serving as faculty lead for the privacy and security track for the UBT grant. He teaches BMI 571, Organizational Behavior; BMI 549, Privacy and Security; and BMI 542, Computer Networks.

Fletcher received his graduate certification from our program in 2006 and taught Computer Networks for several years as adjunct faculty. He has a background in the software engineering industry, most recently working at Vyatta, Inc. in San Mateo, CA.

**Michael Lieberman, M.D., M.S.** has joined the OHSU Clinical Informatics Department as Associate



*New faculty members Vishnu Mohan, Justin Fletcher and Mike Liberman*

Chief Health Information Officer for Quality and Reporting. His primary appointment is in DMICE with a secondary in the Division of General Internal Medicine and Geriatrics.

Lieberman completed the NLM fellowship in medical informatics and an M.S. degree in 2003 and since then, has been working for GE Healthcare, most recently as their Director of the Medical Quality Improvement Consortium. His primary focus now will be leading OHSU's expanding clinical and quality reporting efforts.

**Bonnie Altus, M.S., R.H.I.T., C.P.H.I.M.S., C.H.P.S.**, is an adjunct instructor working with assistant professor Joanne Valerius to teach some of the Health Information Management courses.

Six new staff have joined DMICE to work on ONC-funded projects. **Vicki Z'berg** is the new project coordinator for the UBT grant while **Laurien Ludwig** is working with her as an administrator coordinator. **Carolina Main** has joined the project as Internship Coordinator.

New staff for the ONC Curriculum Development project include **Corkey Devlin** as project manager while **Shelby Acteson** joins the project from her work with the Sakai team in OHSU Academic Technology. **Christopher Weldon** is the Web specialist for the project.

The Oregon Evidence-based Practice Center has hired many new staff over the past months. **Elaine Graham, M.L.S.**, is the new Operations Manager for the EPC in general as well as the Scientific Resource Center and the Comparative Effectiveness Reviews project.

**Annette Totten, Ph.D.**, is an adjunct research assistant professor who is leading an EPC review on public reporting as a quality improvement strategy.

**Ian Blazina, M.P.H.**, is a research assistant involved with the US Preventive Services Task Force work while **Erika Nakamoto, M.S.**, is a research associate for the Comparative Effectiveness Reviews project.

**Angela Morgan** works for the EPC as a program technician while **Jennifer Mitchell** is a research assistant for the Evidence Reviews and Guidelines Development for the American Pain Society project, led by Roger Chou, M.D.

**Mary Bryant** joined the EPC as peer review coordinator, and **Bernadette Zakher** is a research associate working on US Preventive Services Task Force reviews.

**Barbara Ray** returns to DMICE and the EPC and is working with Dr. Chou as administrative assistant for American Pain Society Evidence Reviews and Guidelines Development.

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## Faculty/Staff Update

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Assistant professor and chief health information officer **Tom Yackel, M.D., M.P.H., MS** was

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# Student/Alumni News

## Jobs/career changes/promotions

Congratulations to alumnus **Glen R. Stream, M.D., (M.B.I. '07)** who has been chosen president-elect of the American Academy of Family Physicians (AAFP). Stream has been a family physician serving the Pacific Northwest for more than 25 years, working at the Rockwood Clinic in Spokane, WA since 1991. At the clinic, he has served as board member, chief privacy officer, medical director of clinical information services, and now as chief medical information officer. Stream previously served for three years as a member of the AAFP Board of Directors.

**Joshua Richardson, M.L.I.S. (Ph.D. '10)** starts December 1<sup>st</sup> as an instructor in the Department of Pediatrics, Division of Quality and Medical Informatics, at Weill Cornell Medical College in New York. Richardson will be a participating member of New York State's Division of Quality and Medical Informatics and the Health Information Technology Evaluation Collaborative (HITEC). Responsibilities will include designing and conducting research projects related to health information technology and exchange.

Congratulations to **Michael Ames (M.B.I. '10)** who is now Manager for the Research Informatics Core for the University of Colorado Cancer Center.

In July 2010, **Bimal Desai, M.D., (M.B.I. '08)** was appointed the Chief Medical Information Officer at The Children's Hospital of Philadelphia. Desai commented, "I don't think I could have done it without my training at OHSU!"

**Michelle Morgan (certificate '06)** has accepted a position as the Manager of Quality Integration, Medical Staff Services at Methodist Le Bonheur Healthcare in Memphis.

Congratulations to **Daren Nicholson (M.B.I. '06)** who was appointed project manager at Axolotl Corp. in San Jose, CA.

Certificate student **Seana Zagar, M.S.W.**, recently accepted a paid internship/job at OCHIN, working with Marie Laper on the new Behavioral Health interface for an EPIC product.

## Presentations and posters

**Michael Ames (M.B.I. '10)** presented a poster at the AMIA CRI conference in San Francisco in March: "Modeling Gene Expression Profiles for Querying and Visualization." Ames was also second author on a presentation at the meeting, "Business Process Requirements for Clinical Trials Finance Applications."

M.B. I. student **Harry Enchin** gave a presentation at AMIA 2010 Summit on Translational Bioinformatics, March 11, 2010: "Cytochrome P450 Drug-Drug Interactions in FDA Adverse Event Reports."

Pre-doctoral fellow **Suzi Fei** presented "Assessing the Influence of Genomic Polymorphisms on Quantitative Proteomics" on June 15, 2010, at the NLM Informatics Training Conference in Denver, CO, and "My Dang Genes! Exploring the Utility of Personal Genomics for Informing Healthcare Decisions" on May 1, 2010, at the Mensa Regional Gathering in Vancouver, WA.

Certificate student **Vincent Gibbons, M.D.**, presented "Medical Informatics in the Epilepsy Clinic" to the American Epilepsy Society meeting in Boston December 3, 2009. During that meeting, Gibbons also presented "Medical Informatics in the Epilepsy Clinic" for the 23rd Annual Advances in the Management of Epilepsy & the Epilepsy Clinic.

Certificate student **Luke Rasmussen** presented a poster at the AMIA Translational Bioinformatics Summit in San Francisco March 11, 2010: "Using Self-Reported Data to Determine Relatedness in Biobank Subjects."



*Congratulations to Justin Fossum (certificate '10), who was the first DMICE student in the Health Information Management track to pass the*

*Registered Health Information Administrator (RHIA) exam. The RHIA is a certification given by the American Health Information Management Association and indicates that the person is "an expert in managing patient health information and medical records, administering computer information systems, collecting and analyzing patient data, and using classification systems and medical terminologies."*

## Funding received

**Dan Roach, M.D., (certificate '02)**, Director of Medical Informatics in the Center for Strategic Health Innovation at the University of South Alabama and Assistant Dean of the College of Medicine, is now the director of the Alabama Regional Extension Center. As the principal investigator of this \$7.5 million grant to improve healthcare in Alabama through implementation of electronic health records, he and his group will work with doctors and hospitals in Alabama, providing technical assistance, guidance and information on best practices in converting to an electronic health record system.

## Publications

**Joshua Richardson, M.L.I.S., (Ph.D. '10)** was first author of a paper: **Richardson JE, Ash JS.** The effects of hands-free communication device systems: communication changes in hospital organizations. *Journal of the American Medical Inform Association.* 2010;17(1):91-8.

**Glen Stream, M.D., (M.B.I. '07)** had a recent publication based on work for his capstone project: **Stream G.** Trends in adoption of electronic

*Continued on Page 11*

## Department Receives ARRA Funding for Two Programs in Comparative Effectiveness Research Training



Cynthia D. Morris, Ph.D., M.P.H., professor and vice chair of medical informatics and clinical epidemiology, and professor of medicine, and public health and preventive medicine (left) and Jeanne-Marie Guise, M.D., M.P.H., associate professor of obstetrics and gynecology and medical informatics and clinical epidemiology, will lead two career development programs in comparative effectiveness research.

### Student/Alumni News

Continued from Page 10

health records by family physicians in Washington State. *Informatics in Primary Care*. 2009; 17:145-152.

Pre-doctoral fellow **James “Zephy” McKanna** was first author of a paper: **McKanna JA**, Jimison H, Pavel M. Divided attention in computer game play: analysis utilizing unobtrusive health monitoring. *Conference Proceedings: Annual International Conference of the IEEE Engineering in Medicine & Biology Society*. 2009; 6247-50, 2009.

Former postdoctoral fellow **Heather Hill, D.D.S.**, published a paper: Hill HK, Stewart DC, Ash JS. Health Information Technology Systems profoundly impact users: a case study in a dental school. *Journal of Dental Education*. 2010; 74(4):434-45. ■

**T**his fall DMICE received federal funding for two K career development awards, one from the Agency for Healthcare Research and Quality (AHRQ) and one from the National Cancer Institute (NCI). Both grants were funded by the American Recovery and Reinvestment Act (ARRA).

The AHRQ-funded K12 career development grant will train clinical and health services researchers in the art and science of comparative effectiveness research to produce leaders in national academic, governmental, and other settings.

Directed by Jeanne-Marie Guise, M.D., M.P.H., associate professor of obstetrics and gynecology and medical informatics and clinical epidemiology, the Oregon Comparative Effectiveness K12 Training Program will educate scholars in all the disciplines of evidence-based, patient-centered, real-world research, from small, intensive descriptive studies to large prospective outcome evaluations

of treatment.

Cynthia D. Morris, Ph.D., M.P.H., professor and vice chair of medical informatics and clinical epidemiology, and professor of medicine, and public health and preventive medicine, serves as co-director of the program.

The Oregon CER Training Program will enroll four post-doctoral scholars with each appointment lasting three years. Their learning experience features three core elements: a didactic education in comparative effectiveness research, broad-based experiential rotations, and a significant, mentored research experience.

The K12 scholars are Daniel Hartung, Pharm.D., Jessica Weiss, M.D., Erika Cottrell, Ph.D., and Joel Friedlander, M.D.

Another K award in comparative effectiveness research training came from the National Cancer Institute to Guise and Morris, who serve as program co-directors.

The Oregon Institute for Comparative Effectiveness grant will fund a summer institute in comparative effectiveness at OHSU, designed to attract interested individuals from a national audience to receive training in the fundamentals of comparative effectiveness research through a certificate program.

“We are excited that the summer institute will bring together national leaders in comparative effectiveness research to train institutions and individuals on how to conduct this new field of research.” Guise said.

“This will be an important contribution to the federal agenda to increase the capacity for comparative effectiveness research nationwide.”

The KM1 award will fund the summer institute for three years, with several DMICE faculty serving as instructors. ■

## From the Chair

*Continued from Page 1*  
education.

The department also fared well in other HITECH funding. One program is the regional extension centers program that funds 60 centers to provide support for physicians and hospitals adopting electronic health records (EHRs) and achieving their meaningful use. Led by DMICE faculty David Dorr, M.D. M.S., the department will be a partner with OCHIN, Inc. in the Oregon HIT Extension Center (OHITC). Several faculty are also involved with other HITECH grants and other programs.

ARRA also invested in comparative effectiveness research (CER), research that aims to compare “different interventions and strategies to prevent, diagnose, treat and monitor health conditions,” according to the Federal Coordinating Council set up by the legislation. Just as the informatics side of the department was well-poised to compete for HITECH funding, the clinical epidemiology side, especially the Oregon Evidence-based Practice Center, was well-positioned to compete for CER funding (see article on page 10).

Other ARRA funding has provided additional support for the department. Several faculty received grants funded by other federal health agencies, such as the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC). Even our National Library of Medicine Biomedical Informatics Training Grant has been bolstered by a near doubling of fellows and expansion of our summer internship program for college students and college science faculty.

Of course, the accomplishments of the department are not solely limited to obtaining grant funding. I am proud of the myriad of other scholarly, educational, and service activities of the faculty, as docu-

mented elsewhere in this issue of the newsletter. I am also delighted that we have established a new Division of Bioinformatics & Computational Biology, under the capable leadership of associate professor Shannon McWeeney, Ph.D., which will serve as the focus for academic activities in bioinformatics at OHSU.

All of this funding will keep the department quite busy for the next 2-3 years. At least in DMICE, ARRA has achieved its intended effect of job creation, as can be seen from the list of new faculty and staff who have joined to department to run these programs (see page 8).

Alas, this “stimulus” won’t last forever, and we will soon begin a re-vamping of our department strategic planning process, aiming to sustain the programs we are expanding. I am confident that with thoughtful and strategic actions, we can maintain the important research and educational activities we are building now.

We also hope we can engage our colleagues, friends, and alumni in this process as well. To that end, 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>. Another use for gift funds is for our students. Having money for 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.

In closing, I want to express my gratitude for the support DMICE has received from faculty, staff, students, 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. ■

## Shannon McWeeney, PhD

*Continued from Page 5*

to implement those accomplishments and extend them in new and diverse directions.”

Wearing another hat, McWeeney directs the Translational Bioinformatics Program for the Oregon Clinical and Translational Research Institute (OCTRI). The mission of the program is to move the theoretical methods and genome-scale data resources from computational biology into everyday laboratory and clinical research practice and use. As part of OCTRI’s Biomedical Informatics Program, Translational Bioinformatics both creates and applies data-analytical and theoretical methods, mathematical modeling, and computational simulation techniques to the study of biological, behavioral, and social systems, leading to algorithm development and analysis for leading-edge translational and functional genomics investigations.

McWeeney’s last hat is with the Knight Cancer Institute where she directs the Bioinformatics Shared Resource (BISR), which provides informatics support and infrastructure to Knight programs and other shared resources. The BISR also provides informatics consulting, computational resources, and user support to individual basic scientists, clinical researchers and population scientists who are conducting cancer research at OHSU.

BISR and OCTRI Translational Bioinformatics have become a home for DMICE alumni. Lara Fournier, M.S., ‘02, the project manager of the Informatics Shared Resource, is a graduate of the biomedical informatics program, as is Daniel Bottomly, M.S., ‘10, (BCB track), who works as an OCTRI developer.

Hersh adds, “I have personally enjoyed working with Dr. McWeeney and seeing her get the credit she deserves for developing innovative and successful programs.” ■

## Featured Alumnus: Tungamirai Simbini, M.B.Ch.B., M.B.I., '08



DMICE professor and chair William R. Hersh, M.D., (left) caught up with alumnus Tunga Simbini, M.B.Ch.B., M.B.I. '08, at the MEDINFO '10 conference in Cape Town, South Africa, in September 2010.

DMICE alumnus Dr. Tungamirai “Tunga” Simbini, M.B.Ch.B., M.B.I. '08, is working on a variety of health informatics projects in his native Zimbabwe as well as throughout Africa.

Simbini has consulted for the Southern Africa Development Community (SADC) as the lead information and communication technology (ICT) expert in developing a harmonized surveillance database for HIV/AIDS, tuberculosis and malaria to be deployed in 14 SADC member countries: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Swaziland, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe.

At the national level Simbini is working closely with the Zimbabwe Ministry of Health and Child Welfare to develop the country's e-Health strategy and support the deployment of a national health information system.

In the Department of Community Medicine at the University of Zimbabwe, Simbini serves as the principal investigator of an International De-

velopment Research Center (IDRC) funded project entitled Open Architectures Standards and Information Systems (OASIS). This project, being carried out in South Africa, Mozambique and Zimbabwe, promotes open standards and open source solutions in Africa's health systems.

As an entrepreneur, Simbini is a director of the recently launched health information systems company, CyberLife Health Systems ([www.cyberlifeafrica.com](http://www.cyberlifeafrica.com)), which specializes in developing and deploying health care systems for the private sector in Zimbabwe. He is also in the process of setting up a ICT certifications center ([www.certifyafrica.com](http://www.certifyafrica.com)) to train professionals in international certification courses such as Sun certified Java programmers and Microsoft certified professionals.

Finally, Simbini is working in collaboration with the Telemedicine Department of the University of KwaZulu-Natal in South Africa to develop biomedical informatics courses for the University of Zimbabwe, funded by a Fogarty International Center Informatics Training in Global Health grant. ■

## DMICE Adds Faculty/Staff

*Continued from Page 10*

Working with Susan Norris, M.D., M.P.H., M.Sc., associate professor are **Haley Holmer, M.P.H.**, research associate, and **Lauren Ogden**, research assistant, on two of Norris' projects: Conflict of Interest in Guidelines Development and Evidence Reviews for Guidelines Development.

**Shelley Selph, M.D., M.P.H.**, is a new Post Doctoral Research Fellow for the EPC and the Drug Effectiveness Review Project.

Other new DMICE staff include **Pamela Lam**, a senior research assistant working for associate professor Paul Gorman, M.D., and **Doug Rhoton**, who is working with David Dorr, M.D., M.S., as a programmer on his Care Management Plus project.

We also welcome back **Susan Wingenfeld** to DMICE. Susan is now the front desk administrative assistant. ■

## Faculty/Staff Update

*Continued from Page 7*

featured in HIsTALK Interviews in February 2010 (available at <http://histalk2.com/2010/02/18/histalk-interviews-tom-yackel>).

### Personal Notes

In March 2010, **Rose Campbell** was married and changed her name to **Rose Relevo**. Congratulations!

Congratulations to department director **Anne Marshall** whose daughter Isabelle Anne Marshall was born September 12, 2010. Isabelle weighed 6 lbs., 2 oz. and was 19" long. ■



## HITECH Grants

*Continued from Page 1*

the curriculum will follow on during the two years of the project.) The five universities are each developing four “components,” which are roughly equivalent to semester-long courses, for a total of 20. Each community college will be free to use all, some, or none of the instructional materials we are developing. ONC has designated a “set table” of these components for six workforce roles to which the community college certificate programs will teach.

The OHSU Curriculum Development Center was further designated as the National Training and Dissemination Center (NTDC) for the Curriculum Development Centers. This gave us additional funding to organize a training event for community college faculty in the use of the materials and to develop a dissemination Web site to host them and collect feedback. The training event took place over August 9-11, 2010, in Portland. About 210 community college faculty attended the event, where they received training in the use of the materials. The event also featured other sessions on education-related issues, such as implementing distance learning in health IT and how to manage classes that comprise students with IT backgrounds and those with healthcare backgrounds.

The NTDC is also tasked with hosting a dissemination Web site that faculty from the 84 community college partners can access to download the curricular materials. The faculty will either be able to use the materials “out of the box” or mix and match pieces of them with other curricula at their institutions. All of the materials are distance learning-oriented, not only slides and lesson plans but also voice-over-slide narrations.

Another project that the Curriculum Development Centers project touches on is the Competency Examination for Individuals Completing

Non-Degree Training Program, which will assess the competencies attained by graduates in the community college programs for the six workforce roles.

DMICE was also funded in the fourth and final workforce development program, the University-Based Training (UBT) Program. This program will fund longer (but still short-term) study in six additional workforce roles in university settings. OHSU is one of nine universities or consortia thereof (OHSU, Colorado, Columbia, Duke, George Washington, Indiana, Johns Hopkins, Minnesota, and Texas Tech) that will be using the grant to subsidize students in Type 1 (one year or less) and Type 2 (1-2 year) programs.

We are implementing the UBT grant as a source of financial aid for our existing graduate programs. (More information can be found on our web site, which has a new redirection URL, [www.informatics-scholarship.info](http://www.informatics-scholarship.info)) Type 1 students are funded to complete our Graduate Certificate Program in one year, while Type 2 students will be funded to complete the Master of Biomedical Informatics (MBI) program in 18 months of full-time study. As OHSU is on an academic quarter system, with four quarters of equal length, Type 1 students will need to take an average of two classes per quarter to complete the program in one year. This is more than the typical student in the program who works full-time and would find more than one course at a time challenging. The MBI program requires 52 credits, with 46 in courses (about 16 three-credit courses) and six in a capstone project. To do the MBI in 18 months will require full-time enrollment over six consecutive quarters. While the regular MBI program can be done online (with students required to complete two on-campus short courses during their studies), ONC-funded students will need to be on-campus students.

The OHSU UBT grant will allow 135 Graduate Certificate and 13 MBI students to be funded over three years. We have completed two cycles of applications already for the certificate program and one for the master’s program. Twelve students started the certificate program in the summer term. We enrolled 35 certificate and 8 MBI students in the fall. Another round of certificate program applications will take place this fall for admission in the winter quarter and continue in the spring. A second round of MBI applications will take place for the fall of 2011.

We are also adding other features to the program for ONC-funded students. They will be required to do a practicum (certificate students, one quarter) or internship (MBI students, 2-3 quarters, and can comprise the capstone project if accompanied by a write-up). Distance students will be required to arrange their own practicum experiences, with our guidance. We are working with healthcare organizations, industry, regional extension centers, and others to make these experiences available. We are also putting in place a career counseling service for these students.

Now that the final rules for meaningful use are out, the state health information exchanges and regional extension centers are being launched, research and demonstration are funded by the SHARP and Beacon programs respectively, and the academic programs for workforce development are starting up, all of the major pieces of HITECH are in place. The grand experiment is beginning! Projects like this never quite turn out as you expect, but we are certain that healthcare will be better from all of this, and we are quite confident that a more robust educational infrastructure will emerge from the workforce development programs. ■

**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.

## National Library of Medicine Fellows Meeting



Fellows and faculty from the DMICE Informatics Fellowship attended the annual meeting held for fellows of all 18 programs funded by National Library of Medicine. The meeting was held at the University of Colorado School of Medicine in Aurora, CO June 15-16, 2010.

*Row 1 (left to right): Heather Hill, Damian Borbolla, Yves Vimignon, Michael Mooney, Patty Yao, Tracie Nettleton. Row 2: Joan Ash, Ted Laderas, William Hersh, Suzi Fe. Row 3: Shaim Essaid, Justin Fletcher, Kyle Ambert, Joshua Richardson, Matthew Brush, Steven Bedrick, Karen Eden, James McCormack, Alexi Panchenko.*

## DMICE Tracks

*DMICE Tracks*, the newsletter of the OHSU Department of Medical Informatics & Clinical Epidemiology, is published several times per year.

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