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Bryan Larsen, PhD *Executive Director ICTCR*

Theodore Rooney, DO, FACP
*Director of Clinical Research,
Des Moines University*

Ronald J. Torry, PhD
*Drake Liaison to ICTCR,
Professor, Drake University
College of Pharmacy and
Health Sciences*

Joan McCleish, PhD
*Mercy College Liaison to ICTCR,
Mercy College of Health
Sciences*

Dale Andres, DO
*Chief Medical Officer, Mercy
Medical Center*

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About Us

The ICTCR facilitates patient-centered research through the combined strengths of its founders: Mercy Medical Center, and Des Moines University along with its partners Drake University College of Pharmacy and Health Sciences and Mercy College of Health Sciences and welcomes inquiries from interested clinicians and scientists.

For more information, please call (515) 247-4435.
www.iowatranslationalresearch.org

Signs of Springtime – Local Research Meetings are Blooming in Abundance

ICTCR partner institutions are very busy planning for local spring research symposia and meetings. Although these meetings are attended mostly by faculty and students of the respective educational institutions, several of our Mercy Medical Center medical staff and residents will share their findings at some of these meetings.

MERCY COLLEGE OF HEALTH SCIENCES held its 4th Annual Research Conference on March 9th, was first out of the starting gate with a program highlighting Research Ethics. The guest speaker for this event was Dr. Beth Furlong, JD, PhD, RN who lectured on “Major Ethical Principles and Concept in Research”, “Application of Ethical Principles in Research Studies with Informed Consent”, and “Resources of NIH and IRBs”. There were nearly 100 in attendance at this event.

IOWA ACADEMY OF SCIENCES will meet on the Des Moines University Campus on April 17 and 18. Although abstract submissions have closed, a large number of participants is scheduled and approximately 60 poster presentations and a similar number of platform presentations will take place. This is one of the biggest assemblies of undergraduate students in Iowa. In addition, high school students and their teachers participate in the Junior Academy. This event is critical to the development of interest among students who will be the next generation of scientists, engineers and health professionals. For more information contact: andrew.brittingham@dmu.edu.

DES MOINES UNIVERISTY SPRING RESEARCH SYMPOSIUM will be held at 6PM-9PM on April 23rd. This event is sponsored by the College of Osteopathic Medicine Oncology Club, but poster presentations welcome basic and clinical sciences of all disciplines – not just oncology. This year, special guest speaker will be Dr. Jan Franco. The event is free, but reservations are requested as dinner is provided. Please email Stacey.long@dmu.edu for additional information.

IOWA PHYSIOLOGICAL SOCIETY (Chapter of the American Physiological Society) will hold its 14th annual meeting May 2nd at the Olmstead Center on the Drake University Campus. The meeting organizers are still receiving abstracts and additional information can be gotten from Dr. Ron Torry (ron.torry@drake.edu).

How Mercy Nursing Staff Contributions to Evidence Based Practice

Award-Winning Care as a Result of Self-Management Support by Health Coaches within Mercy Clinics, Inc.

Providing consistent and proactive treatment using Health Coaches and evidence-based standards of care improved the health status of clinic patients with chronic illness and improved childhood immunization rates. Mercy Clinic outcomes exceed national averages, resulting in receipt of the American Medical Group Association *Acclaim Award* in fall 2008.

Evidence-Based Approach to Decreasing Length of Stay in the NICU

Implementing Neighborhood Nursing to enhance continuity of care in the NICU improved length of stay for eight of eleven monitored gestational ages, improved nursing satisfaction (demonstrated by a nursing satisfaction survey) and improved family satisfaction (demonstrated by Picker Patient Satisfaction survey).

Fall Prevention – A Caring Approach

Implementation of a fall prevention program ensured safety for patients > 65 years of age on two medical-surgical units and reduced fall rates below national averages.

Pharmacy Orders Management Scanning (POMS)

Implementation of the Pharmacy Order Management Scanning System reduced time from prescription order to entry in to the pharmacy system, improved paper flow and archival, improved pharmacist coverage and improved clinician satisfaction.

For more information on this program and other nursing advances, contact Julie Weldon (jweldon@mercydesmoines.org)

Literature Citations

Oxford Centre for EBM (2001). *Levels of evidence*. Retrieved January 5, 2009, from <http://www.cebm.net/index.aspx?o=1047>
Sackett, D., Rosenberg, W., Gray, J., Haynes, R., & Richardson, W. (1996). Evidence based medicine: What it is and what it isn't. *BMJ*, 312, 71-72

The Growing Importance of Evidence Based Medicine

Evidence-based medicine is regarded as the best use of available evidence for making health care decisions. Dr. David Sackett (1996) defined evidence-based medicine as, “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research” (p. 71). Evidence-based medicine integrates the use of research and clinical expertise with patient preference.

The Cochrane Collaboration is viewed as a major resource in the evidence-based medicine movement. It was created through the work of Dr. Archie Cochrane, a British epidemiologist, and his efforts to develop up-to-date systematic reviews of randomized controlled trials (RCTs) from all areas of health care. The first Cochrane Centre was opened in Oxford in 1992.

Ranking levels of evidence through a systematic process provides practitioners with a method to assess the quality of research findings. This type of review provides the best available evidence upon which to make patient care decisions. The review process uses a rating scale of the literature with the highest level obtained through systematic reviews of RCTs that are homogenous in nature, followed by individual RCTs, systematic reviews of homogenous cohort RCTs, individual cohort studies, outcome research, systematic reviews of homogenous case-controlled studies, individual case-controlled studies, case-series, and expert opinion (Oxford Centre for EBM Levels of Evidence, 2001).

Evidence-based medicine requires a lifelong learning commitment that results in an efficient and effective manner to review an ever-growing quantity of health care research.

– *This article was contributed by MCHS Professor, Joan McCleash, PhD, RN. For additional information contact: jmcclish@mercydesmoines.org See sidebar for references cited.*

The Cochrane Library is not a free resource, but your institution may provide you with access as follows:

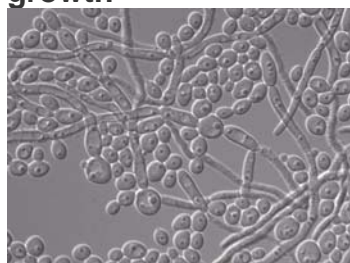
- **Mercy staff:** Log onto MercyNet using your “AU” code, select Leavitt Library Tab and find “Cochrane” along the left side of the page and select. On the Cochrane Library page, use the search box to find the review you want. For full text select the article by clicking the check box and select “record”.
- **DMU staff:** Log onto the Intranet (portal) and select the Library tab. When on the library main page, find the alphabetical listing of online databases. Select Cochrane from this list and find your information by using the search feature.
- **Drake staff:** Contact Sean Stone, Assistant Professor of Librarianship and Pharmacy Science Librarian at 271-2175 or by e-mail at sean.stone@drake.edu
- **Mercy College staff:** Use “AU” login and access just as Mercy employees do.

Taking translational research the “other way” – An example of bringing bedside practice back to the lab bench for a closer look

Martin Schmidt, PhD
DMU Department of
Biochemistry and
Human Nutrition



Candida albicans yeast and hyphal growth



The research described in the article at the right was published late last year:

DeSeta, F. Schmidt, M. Vu, B., Essmann, M. Larsen, B. Antifungal mechanisms supporting boric acid therapy: doi of *Candida* vaginitis. *Journal of Antimicrobial Chemotherapy* December 4 2008 (doi 0.1093/jac/dkn486)

Many standard gynecology textbooks, and even the current CDC Treatment Guidelines for Sexually Transmitted Disease state that daily intravaginal treatment with 600 mg of boric acid may be used for therapy of complicated and drug resistant candidiasis when other more conventional approaches have failed. While clinicians do not resort to this treatment very often, yeast biologists at DMU were intrigued by the fact that almost nothing was known about the mechanism of antifungal action of boric acid.

Using a culture collection of 78 strains originally obtained from clinical specimens, the research team investigated the potency of the antifungal effect (boric acid proved fungistatic) and showed that contrary to opinions in the literature boric acid is not inhibitory to *Candida* due to its weak acid character since many organic acids with lower pK values than that of boric acid were far less inhibitory than boric acid or sodium borate were.

This research also showed that boric acid decreased the ability of yeast to metabolize glucose and also showed that the ergosterol content of the fungal membranes was diminished by growth in very low doses of boric acid. But perhaps of greater importance was the discovery that some of the virulence properties of *Candida albicans* were compromised by exposure to boric acid. The importance of such a finding lies in the fact that even when the microorganism is not killed, its ability to function in a pathogenic mode may be limited, allowing the defenses of the host to dominate the organism.

While most physicians in the US may have limited enthusiasm for this information, the support for an exceedingly inexpensive topical therapy for candidiasis may be of value in poorer parts of the world.

This research, which was engendered first by clinical observations which were translated into laboratory research has led DMU investigator, Dr. Martin Schmidt to study the entire transcriptome of *Candida albicans* exposed to boric acid. These studies are now complete and Dr. Schmidt is evaluating some exciting results of this research. Dr. Schmidt noted that while one would expect a boron transporter gene to be up-regulated upon exposure to boric acid, the genome-wide exploration of messenger RNA indicates that this system is not turned on by boric acid and may not even be present in *Candida*.

Statement of Purpose: The ICTCR is a research enterprise that facilitates productive research collaboration between its partners by sharing intellectual and infrastructure resources for the purpose of advancing patient-centered research that seeks better health for our communities and education and research opportunities for our faculty, staff, students and trainees. We believe the comprehensive training of medical students, residents and other health care professionals must be accompanied by a working knowledge of clinical research methods and best practices and that the best way to accomplish this is through active research endeavors. The ICTCR is dedicated to ethical and compassionate care for all individuals who participate in clinical research studies and actively supports the principles of autonomy, beneficence and justice in clinical research programs.