



I-PrACTISE

Improving PrimARy Care Through
Industrial and Systems Engineering

NEWSLETTER – FALL 2014

SAVE THE DATE: April 12 – 14, 2015

Industrial Engineers, Primary Care clinicians & allied disciplines come join us for expert plenary talks, podium & poster sessions!

THEME: Bringing Science to Policy & Practice

DEADLINE for Poster & Presentation

Submissions is January 31, 2015!

I-PrACTISE Coordinator's Letter:

Welcome to the first I-PrACTISE News-letter, which keeps you up to date with the work of our members and stimulates further collaboration between Industrial Engineering and the professions involved in Primary Health Care. While we have a rich history of collaboration, we have not been systematic in highlighting our activities to our members and this newsletter will help to rectify that. Its usefulness will depend greatly on each of you – we count on you to share your ideas and your successes. Of course we may modify this newsletter as we get feedback, but for starters this issue highlights the work of Chet Fox and Jessica Castner in Buffalo, NY. We will have a “know your colleague” section highlighting some of our members. Finally, we want to provide listings of work presented and published in the context of I-PrACTISE work as well.

The collaboration that became I-PrACTISE began informally in 2000 between Ben-Tzion Karsh, Ph.D., John W. Beasley, MD and Tosha Wetterneck, MD. Since then, there have been some 144 publications and 10 funded research applications. Prior to Professor Karsh's illness and untimely death he and I, as well as a number of others, discussed how we could best keep this transdisciplinary research going. It seemed logical, as a first step, to create a formal entity, hence the “International Collaborative to Improve Primary

I-PrACTISE Mission: To Create a home for scholars & clinicians with interest & expertise in industrial engineering &/or primary care to conduct funded projects directed at improving the quality of primary care for patients, clinicians & staff.

National Advisory Council:

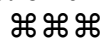
Gail Allen, MD
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Valerie Gilchrist, MD
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David Hahn, MD
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Joy Rodriguez, PhD
Greg Simmons, MS
Christine Sinsky, MD
Steven Waldren MD, MS
Tosha Wetterneck, MD, MS

Special Thanks to Natalie Nguyen, BFA, for our I-PrACTISE logo & to the Department of Family Medicine Small Grants for funding.

(continued from page 1) Care Through Industrial and Systems Engineering” - mercifully shortened to “I-PrACTISE”. The University of Wisconsin Center for Quality and Productivity, headed by Professor Pascale Carayon, provided an administrative home, and we established the Ben-Tzion Karsh Education and Research Fund (visit: <http://www.supportuw.org>, Karsh Fund # 12497635 to help support our work.

We’re well on our way to success. We have had two AHRQ-supported conferences (1R13HS022170, 1R3HS023028), with roughly equal numbers of primary care clinicians and industrial engineers and input from nursing, pharmacy, psychology and even architecture!

I had always seen us as a group with a focus mainly on what can be called “the basic science of primary care” and used the analogy that we really need a fundamental understanding of the cognitive and other tasks of primary care if we are to improve care. An analogy would be to say that we need to have an understanding of cell biology if we are to develop better therapeutic agents. As a bit of a surprise, and a pleasant one, some organizations within Wisconsin have begun to solicit advice about how we can have better policy and implementations, especially around the issue of electronic health records.



Transdisciplinary Research Reports from the field

This issue’s report comes from Chet Fox, MD, Jessica Castner, PhD, RN, CEN, describing their work in Buffalo, New York. Our thanks to them for sharing it.

Collaborations Focus on Asthma Self-Management and Care Transitions Innovations
Researchers from the University at Buffalo (UB)

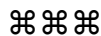
Schools of Nursing and Engineering and Applied Sciences are teaming up with primary care clinics to improve health outcomes. Our collaborative projects focus on developing technology improvements in asthma self-management and chronic disease care transitions.

Our asthma self-management study is supported through the Industrial and Systems Engineering-led HomeBASE Center. HomeBASE is shorthand for Center for Excellence in Home Health and Well-Being through Adaptive Smart Environments (Homebase.org). Both globally and nationally, asthma is a significant cause of morbidity, mortality, unplanned healthcare utilization and costs, and loss of quality of life. There are numerous barriers for people with asthma to follow the gold-standard of asthma self-management. Much of the information used

in primary care to assess asthma relies on subjective recall or best guesses, such as potential triggers or nighttime waking. In addition, studies have demonstrated that only a small fraction of patients can correctly demonstrate techniques to monitor their lung function using peak flow meters for early prevention of asthma attacks. Our pilot study, *Asthma Medical Device for Decision-Support and Symptom Control*, is co-led by Dr. Jessica Castner, PhD, RN from Nursing and Dr. Albert Titus, PhD from Biomedical Engineering. We are developing innovative and easy-to-use automated sensing solutions to objectively monitor lung function and triggers and customized care recommendations. Ongoing work informs design improvements with both primary care and human factors engineering expertise.

A second collaborative study focuses on chronic disease care transitions. All too often, primary care practices are unaware when patients with multiple chronic diseases are discharged from the acute hospital back into the community, a situation which may result in readmission before primary care follow-up. Coordinating transitions: using Health Information Technology to Improve Chronic Disease Outcomes, is a pilot study that aims to prevent unnecessary readmissions through

incorporation of two-way health information exchange between the hospital, Regional Health Information Organization (RHIO) and the primary care office. Led by Dr. Sharon Hewner, PhD, RN, from Nursing, the study includes key collaborators Dr. Li Lin, PhD from Industrial and Systems Engineering and Dr. Chet Fox, MD from Family Medicine. At the core of this initiative is a nurse care coordinator in the primary care practice who makes outreach phone calls to patients with chronic disease within 72 hours of discharge. The care coordinator receives a discharge alert from the RHIO about current discharges. If the patient has multiple chronic diseases, the alert will trigger a decision support tool which investigates social risk factors that would complicate care in the community. Information about the risk factors is stored in the Continuity of Care Document which is available at the RHIO for subsequent admissions or emergency department visits. The pilot project, currently under consideration for funding by the Agency for Healthcare Quality and Research (AHRQ), makes the primary care practice a focal point for avoiding readmissions and improving care to individuals with complex chronic care needs.



MEMBERS' PUBLICATIONS

Richelle J. Koopman, MD, MS is pleased to announce their new book "Inspired EHRs: Designing for Clinicians", published online July 1, 2014 and available **free** at inspiredEHRs.org

I-PrACTISE members John Beasley, MD, Ann Schoofs Hundt, PhD, & Linsey Steege, PhD served on the national advisory panel for the book. It has an entire chapter on Human Factors in EHR design.

For other I-PrACTISE Publications, see: www.fammed.wisc.edu/i-practise/publications

Someone You Should Know:



Enid Montague, PhD

Enid Montague received MS and PhD degrees in Industrial and Systems Engineering from Virginia Tech in 2008, specializing in human factors and ergonomics engineering, the future professoriate, women's studies and human computer interaction. Dr. Montague is currently an Assistant Professor and at Northwestern University's Feinberg School of Medicine and director of the Wellness and Health Enhancement Engineering Laboratory (WHEEL). Dr. Montague has received numerous awards for her research including the Francis Research Fellowship for research that emphasizes "longer, safer and healthier lives" and a K12 early career award from that National Institutes of Health (NIH) to explore trust in health care systems.

Dr. Montague's research uses human factors and human-computer interaction methodologies, design principles and theories to understand health care systems to promote safety and patient-centered care. At present, Dr. Montague explores the role of trust between people and technologies in health care work systems. She looks at organizational and design factors that effect both workers and patients with the overall goal of understanding technology mediated interactions and designing new and effective health technologies.

Assistant Professor
Division of General Internal Medicine
Feinberg School of Medicine
Northwestern University
Email: enid.montague@northwestern.edu
Phone: 312/503.6454
Web: enidmontague.com

TRANSITIONS



G T Holman, PhD

G. Talley Holman is the new Senior eHealth Systems Analyst in the Division for Practice Advancement at the American Academy of Family Physicians. Dr. Holman is an industrial engineer who has worked in health care for more than 10 years. His work at the AAFP will

Contacts:

John W. Beasley, MD

Email: John.Beasley@fammed.wisc.edu

Phone: 608/263-7373

Patricia D. Greene, BS

Email: Patricia.Greene@fammed.wisc.edu

Phone: 608/265-3170

Fax: 608/263:5813

Patricia Greene is the Program Manager for the I-PrACTISE Initiative. Please inform her of any contact or employment transitions. We also appreciate knowing about your ongoing research enterprises to keep our national coalition abreast of current trends.

<http://www.fammed.wisc.edu/i-practise>

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focus on application of human factors, ergonomics and lean system to primary care. Dr. Holman came to the AAFP from the University of Louisville where he was an Assistant Professor in [Industrial Engineering](#) and the Director of the Center for Ergonomics. Other notable aspects of Dr. Holman's background include time as a research associate in the [Center for Quality and Safety Improvement](#) at the University of Wisconsin-Madison, where he worked after completing his doctorate at Auburn University. At Auburn, Dr. Holman was part of the [National Institute for Occupational Safety and Health Deep South Center](#) for six years. Additionally, Dr. Holman worked in lean manufacturing as a manager for Shaw Industries for five years, as well as spending a short extent with Delta Airlines.



Ben-Tzion Karsh, PhD

KARSH Education & Research Fund

Industrial and Systems Engineering (IsyE) Professor Ben-Tzion (Bentzi) Karsh, PhD, was passionate about how human interaction with technology can improve healthcare safety and quality. Academicians, clinicians, and patients consider his research to be among the best in the world, though tragically, his 2012 death cut his work short.

Dr. Karsh's legacy lives on through I-PrACTISE, a collaboration of experts in IsyE, family medicine, internal medicine, and related disciplines. They are developing new collaborative research that will improve healthcare quality efficiency, effectiveness and safety. Through the Ben-Tzion Karsh Education and Research Fund, we can continue this important work. But we need your support.

www.fammed.wisc.edu/i-practise/karsh-education-research-fund