VERC News

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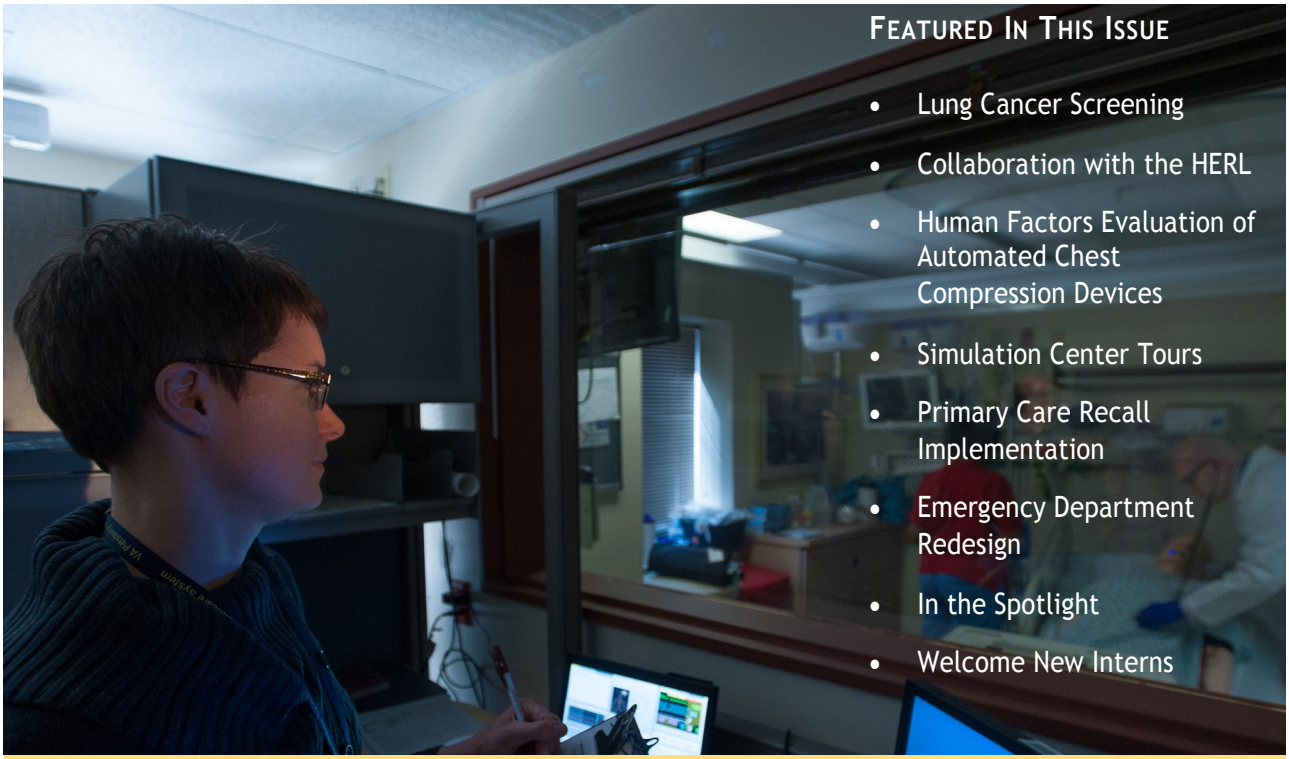
Veterans Engineering Resource Center
VA Pittsburgh Healthcare System



Featured In This Issue

Jamie Estock watching a simulation through the one-way glass that allows the programmers to observe the procedures taking place and properly manipulate the patient model's vitals in response

Lung Cancer Screening

Lung cancer is the leading cause of cancer death in Veterans. A study conducted by the National Lung Screening Trial published in the New England Journal of Medicine in 2011 demonstrated that using computer tomography (CT) scans statistically reduced lung cancer death by 20% among older current or former heavy smokers. Based on this report, the Veterans Health Administration launched the Lung Cancer Screening (LCS) project coordinated by Linda Kinsinger, Chief Consultant for Preventive Medicine at the VHA National Center for Health Promotion and Disease Prevention.

The project goal is to determine the feasibility of implementing LCS across the VHA. Three deliverables for the project were developed by the VERC: a process flow map for the entire process including screening, tracking and treatment, CPRS screening templates, and a database for Cancer Coordinators to track patients in the program.

VERC team members Robert Monte and Lanxi Tang developed the process map and workflow design based on the input of the clinical team members The CPRS screening templates were built by Pat Akerly from VAPHS and the tracking templates were developed by the Minneapolis VAMC. The database was developed by VERC staff Nicholas Katich, Statistical Assistant, and Howard Bachtel, Data Analyst. Using the information gathered and analyzed using these methods, it was determined that expanding the screening program nationwide could prevent an estimated 166 deaths from lung cancer in just one year. Recently, the project garnered the interest of the Assistant Deputy Under Secretary for Health, Safety and Quality and the LCS team is currently evaluating the program for dissemination across VHA.

Collaboration with the HERL

A terrain simulator developed by the HERL that allows people with impaired balance to practice walking on various surfaces

After a two-day site visit from the Rehabilitation Research & Development office, the Human Engineering Research Laboratories was renewed as a Center of Excellence to continue their work in achieving unencumbered mobility and function for disabled Veterans. With this renewal, the Veteran Engineering Resource Center will begin a 5-year collaborative effort to provide a needs and gaps analysis through Voice of the Customer and Voice of the Process surveys, as well as focus groups, to ensure that the HERL's research is aligned with the needs of our Veterans. Recently, the VERC established its study population, questionnaire content, and methods of administering and analyzing the content. The study population will be a representative sample of wheelchair-bound Veterans, categorized based on the patient's type of assistive device, etiology of disability, and geographical location. The questionnaire content includes subject matter that has been validated by the industry through previous literary publications. Presently, the project has been submitted to the IRB as QI/QA. Upon approval, the questionnaires will be administered, and the information will be relayed to the HERL's R&D department to facilitate their research.

The VERC also has a formal academic partnership with Heinz College at Carnegie Mellon. This upcoming semester, the VERC is working on several collaborative projects with Carnegie Mellon students, including one with the HERL involving the development of a wheelchair maintenance strategy to reduce wheelchair-related injuries.

Human Factors Evaluation of Automated Chest Compression Devices

The VA Pittsburgh CPR Committee is considering the purchase of an automated chest compression device to support the delivery of high-quality CPR during cardiac arrest. Recognizing the importance of measuring the usability and safety of this device before we decide to purchase, the CPR committee is conducting a trial to compare two automated chest compression devices: (1) Zoll's AutoPulse® Non-Invasive Cardiac Support Pump, and (2) Physio-Control's LUCAS® Chest Compression System.

Physio-Control's LUCAS® Chest Compression System in use

A multidisciplinary team at VAPHS, led by VERC team member Jamie Estock, was awarded a Medical Education and Patient Safety (MEPS) grant to conduct a human factors evaluation of a product under consideration for purchase at VA Pittsburgh. Given two of the project's co-investigators are members of CPR committee, we aligned the MEPS project with the chest compression device trial. The goals of the MEPS project team are to: (1) demonstrate a methodological enhancement to the existing process for the trial and evaluation of equipment, and (2) produce unbiased and objective data regarding the potential effect of this device on provider performance and patient safety. This evaluation will be the first head-to-head comparison of the two automated chest compression devices, which will allow VA Pittsburgh to make a more informed purchasing decision. The evaluation will be conducted in September 2014.

Simluation Center Tours

VERC interns and staff were given the opportunity to tour the Simulation Center at the University Drive campus. Visitors were permitted to explore and test the simulation models and tools, such as the dV mimic, a robotic surgery simulation model that provides tactile feedback and includes a three-dimensional viewport to more closely resemble an actual surgical procedure. VERC staff also enjoyed testing out the Bronch Mentor (used for bronchoscopy training) as well as the Lap Mentor (a laparoscopic surgery simulator). Afterwards, interns and staff were invited to observe a tracheotomy simulation using a robotic mannequin with programed functions such as breathing, speaking, and blinking. Each scenario in the simulation involved the medical students encountering a different obstacle while treating the tracheostomy patient. The model's vitals would change based on the medical students' procedures, providing them with experience to prepare them for a similar real-world scenario.

Ashley Ketterer hovering attentively at the bedside of the tracheotomy simulation model

Primary Care Recall Implementation

A graphic representation of the steps in the recall system

The VERC has been working with the Primary Care Department at the Pittsburgh VA to re-implement recall as part of the national initiative to increase access. Recall is a patient scheduling system that automatically generates a letter requesting the recipient to call and schedule an appointment by a certain date. Flexible scheduling closer to the desired follow-update will hopefully increase access and decrease no-shows. The system is also designed with various safety nets to prevent patients from falling through the cracks. However, the Pittsburgh Primary Care Department encountered problems using recall in the past, and the VERC has been working to determine the root source of these issues and prevent them from reoccurring, in addition to developing the optimal implementation strategy.

Emergency Department Redesign

A team composed of VERC personnel and members of the Emergency Department clinical staff are engaged in a redesign project focused on patient flow and improving the patient experience. The project scope is from patient entry to the Emergency Department until either discharge or admission. Project accomplishments so far include developing a process map that defines patient flow for various patient types, conducting voice of the customer and voice of the process, information gathering, and conducting a time study of patient flow. Additionally, a simulation model of baseline conditions has been generated and is in the process of being verified. The simulation will be used to evaluate proposed process changes. Data from the EDIS system (which is used to track patients in the department) is being analyzed in support of the modeling process as well general analytics.

Currently, the team is in the process of identifying sources of waste and dysfunction. When this action is completed, the team will design and implement pilots to test proposed solutions. After evaluation and modification of piloted solutions, the team will define and implement a time phased plan for improving Emergency Department operations.

IN THE SPOTLIGHT

JOSEPH DEUNGER

Joe is a retired U.S. Navy Master Chief Petty Officer who served 25 years on active duty in a wide variety of stations and assignments. During his service, he lived in and visited 37 countries around the world. As a meteorologist and oceanographer, he participated in numerous campaigns and operations during the First Gulf War and counternarcotic operations in S. America. He as also served as an intelligence analyst at the National Security Agency. During his service he earned an A.S. in Criminal Justice from Troy State University and a B.S. in Sociology from Excelsior College in Albany, NY. After retiring from the Navy in 2004, Joe worked for the Army Reserve Family Program and as a project manager for a local Pittsburgh IT company.

Joe has worked on numerous projects at the VERC, including the National Initiative to Reduce Missed Opportunities (NIRMO), the National Cancer Care Collaborative, and VISN 4 Lung Cancer Care Collaborative. He has also coached local teams working on patient flow in the Rainbow Clinic and improvements in Occupational Heath. In 2013, he received a Silver Award as an Outstanding Administrative Employee from the Federal Executive Board Pittsburgh.

Q: **How did you first hear of the VERC and what made you decide to join?**

A: I first came to VERC/Office of Systems Redesign in March 2010 as an intern in the VA's Chapter 31 Vocational Rehabilitation Program. Following a successful internship, I accepted a position as a Program Support Assistant managing several administrative programs and functions and was subsequently selected to fill a vacancy as a Program Specialist managing the VERC's fiscal matters and contracts. I enjoy being a part of an organization whose focus is on the improvement of health care for America's Veterans.

Q: **What lessons have you learned on the job that you keep with you today?**

A: Do not fall victim to "group-think."

No innovation, improvement or any positive change has ever resulted from going along with the crowd. As Malcolm Gladwell noted "innovators share a combination of traits including that of being disagreeable." He stresses that disagreeable doesn't mean obnoxious but, rather, indifferent to the ways others see them. "It's the characteristic that lets innovators pursue breakthrough ideas even when faced with objections and derision." Leaders, managers, and supervisors are most ill-served if all they ever hear is "Yes, that's a great idea."

Q: **What might someone be surprised to learn about you?**

A: I enjoy classical music.

IN THE SPOTLIGHT

RACHEL GOFFMAN

Rachel is a health systems specialist and a national project manager with the VAPHS VERC. She started working part-time at the VERC in January 2010 while attending the University of Pittsburgh where she earned her Master's in Health Administration. Rachel also received a B.S. in Allied Health Sciences from the University of Connecticut in 2007 and is currently seeking Project Management Professional Certification. Prior to working at the VERC, she received extensive training in the healthcare field by working for a congresswoman as a healthcare legislative aid and working as a manager's assistant for the National Prion Surveillance Center.

At the VERC, Rachel's responsibilities including being a national project manager, mentoring students and young professional project managers, and providing overall project and administrative support. Her primary responsibility is leading and developing the National Initiative to Reduce Missed Opportunities (NIRMO). She has also worked on other projects including, but not limited to, implementing a teledermatology program at VA Pittsburgh, co-coordinating for the Southeast region of the Patient Aligned Care Team, and leading an initiative to examine the number of schedulers each facility has based on the recommendation of the Government Accountability office.

Q: **How did you first hear of the VERC and what made you decide to join?**

A: I first heard about the Systems Redesign program through my operations research class at the University of Pittsburgh. I was assigned a project to implement a call center with Behavioral Health and Bob Monte was the facilitator assigned to the project. Bob talked about a new department that was starting at the VA called the Veterans Engineering Resource Center (VERC). Knowing that the VA has established a great mission in serving our nations heroes, I knew I could make a difference if decided to join the VERC.

Q: **What lessons have you learned on the job that you keep with you today?**

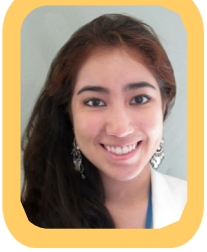
A: I have learned so many lessons throughout my time at the VERC. I think the most meaningful lesson I have learned is that there are multiple ways of completing a project. I have learned to not get bogged down in the details of how something is completed as long as you get to the end result.

Q: **What might someone be surprised to learn about you?**

A: I started a Sorority at the University of Connecticut. It started with 3 people and by the time I graduated, it had 125.

WELCOME NEW INTERNS

Rebeccah Berk



Rebeccah (Becky) Berk graduated from Carnegie Mellon University this past May with a B.S. in Biological Sciences and a minor in Creative Writing. She is currently continuing her studies at Carnegie Mellon's Heinz College, pursuing a Masters degree in Healthcare Policy and Management. In the future, she hopes to go into hospital administration and believes that this internship will help her gain more experience as well as develop her understanding of hospital systems. Her interests lie in health policy and community health, with emphasis on promoting personal responsibility and education. She also enjoys marketing and design and hopes to continue to develop her skills in those areas. Becky also loves reading, writing, travelling and has discovered a burgeoning passion for cooking to accompany her well-established passion for eating.

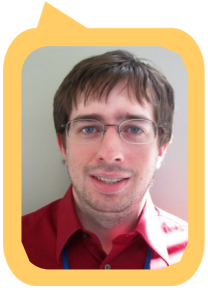
Joshua Churchtown

Joshua Churchtown has been a professional student since 2010 and is earning his M.S. in Information Systems Policy & Management at Carnegie Mellon University. He received his undergraduate degree from the David Eccles School of Business at the University of Utah in Information Systems. Back in the day when Joshua had a life (before winning a wife, toddler, dog and mortgage), he loved to rock climb, and snowboard. Present interests include long walks on the beach, tender moments, Nicolas Sparks' novels made into movies, and brewing beer at home. Future career goals include reaching a directorship at an intelligence agency, completing a Ph.D., and launching a colocation data center. Joshua also joined the Utah National Guard in 1999 and medically separated from the military in 2014.

Kelli Crosby

Kelli Crosby is a Ph.D. Candidate studying industrial & systems engineering at Binghamton University. In 2013, she received her M.S. in industrial & systems engineering-health systems from Binghamton University where her thesis research addresses an optimal open access scheduling and fixed appointment scheduling model to offset low show rates and increase clinic profit, using analytical modeling. In 2010, she received her B.S in industrial engineering from Northeastern University. Prior to the start of her graduate work, she has worked in manufacturing at Raytheon Integrated Defense Systems, Johnson & Johnson Consumer Products Company, and at Barry Controls-Defense Industry as a Quality Engineer. As a member of Alpha Kappa Alpha Sorority, Kelli enjoys participating in community outreach, in addition to skydiving, travelling, yoga, event planning, and practicing holistic health. Although currently an intern, she anticipates continuing on at the VERC as a post-masters graduate Fellow in September.

Robert Kosarowich



Robert Kosarowich is a candidate for the Master of Science in Health Care Policy and Management degree from the Heinz College at Carnegie Mellon University. He previously graduated from the University of Pittsburgh with degrees in bioengineering and political science. While at the VERC, he hopes to better understand how to manipulate data in a way that can support meaningful action and what goes into a systems redesign project. He's also interested in identifying what elements comprise the cost of health care and how that knowledge can be used to inform healthcare decisions. Outside of the healthcare world, he's still trying to find meaning in his life following the conclusion of the 2014 FIFA World Cup.

Airan Li

Airan Li is currently pursuing her Master's Degree from University of Pittsburgh in Bioengineering. Prior to her time at Pitt, she received her Bachelors in Biomedical Engineering from Southeast University in China. At the VERC, Airan hopes to gain real world experience by working with a multidisciplinary team and apply her skills to a variety of challenges in the healthcare field. In her free time, she loves watching basketball and jogging.

WELCOME NEW INTERNS

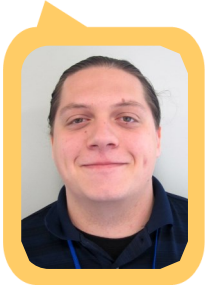
Berryhill McCarty

Berryhill McCarty recently graduated from Carnegie Mellon University with a degree in Biological Sciences/Neuroscience Track with an additional major in English Literature. She is currently pursuing her Masters in Health Care Policy and Management from Heinz College at Carnegie Mellon before applying to medical school. She hopes that her internship with the VERC will provide her with some firsthand experience on what it takes for a healthcare system to run smoothly and efficiently. She is particularly interested in the relationships and interactions between hospital administrators and physician providers. In her free time, Berryhill likes to read. She loves to travel and adventure outdoors, especially with her canine and equine companions. When she isn't reading or traveling about the globe she raises honeybees in her backyard and plots her next adventure. She believes happiness is the most important factor in healthy living.

Divya Narain

Divya Narain is a second year Master's student at Carnegie Mellon University pursuing Healthcare Policy and Management. She previously obtained a B.E (Honors) Biotechnology from Birla Institute of Technology and Science (BITS) - Pilani, Dubai. Choosing this field has particularly widened her analytical scope and has helped her probe further into biotechnologically significant applications. She also involved herself into various research projects, which enhanced her knowledge and opportunities in the realm. Her work experience includes a management internship, and a two-month research experience in Dubai, U.A.E. Besides academics, she likes to keep herself involved in other activities. She is currently the executive board member of the Heinz Consulting Club, as well as the Admissions Ambassador representing the HCPM pool.

Joshua Schumacher



Joshua Schumacher is graduating in August as an Industrial Engineer from University of Pittsburgh's Swanson School of Engineering, with a Certificate in Six Sigma Analysis, Black Belt level, and a strong focus in Health System Engineering. If he does not continue on with the VERC after graduation, he plans to pursue a more traditional full time role in Industrial Engineering. Joshua has a passion for emergency services and is trained in firefighting, emergency medical services, and technical rescue including vehicle, rope, swift water, and hazardous materials. His goal is to one day combine his technical skills with his passion for emergency services and manage large-scale emergency responses and the planning behind those large incidents.

Nicole Shannon

Nicole Shannon is from Bethel Park, Pennsylvania, and is currently pursuing her Bachelor's Degree from North Carolina State University in Industrial Engineering. Her goals at the VERC are to gain an understanding about the healthcare field, and to engage herself in all that she can early in her career. She plans on using her knowledge to help make the healthcare system for Veterans a better one. In Nicole's free time, she enjoys listening to music, traveling, and playing softball.

Brandon Sherman

Brandon Sherman is from Randolph, New Jersey and is currently pursuing a double major in Statistics and Mathematics at the University of Pittsburgh as part of a five-year combined Bachelor's/Master's program in Statistics. At his internship he hopes to improve his statistical skillset and to use it to improve the lives of veterans everywhere. Brandon's academic interests include Bayesian statistics, data mining, machine learning, and functional programming. In his free time, Brandon enjoys listening to jazz and competing in trivia competitions.

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