TATRC TIMES

September 2015 • Volume I, No. 3 (Qtr. 4)

U.S. Senator Richard Durbin visits the U.S. Army Medical Research & Materiel Command

U.S. Senator Richard "Dick" Durbin (D) of Illinois, visited Fort Detrick on July 13th in an effort to learn more about medical research initiatives being developed at MRMC that support our Warfighters. Durbin's July visit was a follow-on to a June 2015 meeting of his staff, Dr. Beth Wilker, Health Policy Advisor, and Dr. Jasmine Hunt, Science Advisor.

"We understood the importance of the work being done here," Hunt said. "We wanted to make sure that Senator Durbin came and saw first-hand the research being conducted by USAMRMC scientists and the impact on the Soldier."

Kenneth Bertram, M.D., Ph.D., USAMRMC Principal Assistant for Acquisition, kicked off the technology tour at TATRC's tent facility by providing Durbin and members of his staff with a brief on the organization's unique capabilities as well as a historical overview of USAMRMC's research efforts.

Mr. Harvey Magee, TATRC's Medical Modeling & Simulation Innovation Center (MMSIC)'s Lab Manager, gave a hands-on demonstration and interactive briefing of the maxillo-facial manikin representing a gunshot wound scenario used for simulation training. The manikin project was one of over twenty key technical and scientific demonstrations given to Senator Durbin each highlight how MRMC supports our men and women in uniform.

As Senate Minority Whip, Durbin is vice-chairman of the Senate Appropriations Defense Committee. This visit allowed Senator Durbin to interact and discuss various aspects of the command's research programs and speak directly with top subject

Continued on page 2

MMSIC Lab Manager, Harvey Magee, showcases the latest advancements in medical simulation and training to Sen. Durbin. ***Photo: J. Adam Wyatt, TATRC***

Senator Durbin addresses the group of MRMC staff and applauds them for their contributions to military medicine. ***Photo: J. Adam Wyatt, TATRC***

IN THIS ISSUE:

Durbin Visit

Continued from page 1

matter experts.

Before leaving Fort Detrick, Durbin shared that he has been a longtime supporter of military medicine and that he saw the value in the research being conducted here. He thanked the researchers for all that they do in support of the Warfighter and took a group photo with the team at the conclusion of the visit.

TATRC Participates at 4th Annual OSEHRA Open Source Summit

Ms. Betty Levine, Lab Manager of TATRC's Health Technology and Innovation Center (HTIC), attended and moderated the 4th Annual OSEHRA Open Source Summit July 29th-31st 2015 in Bethesda, MD. The goals of the Summit were to showcase major VistA efforts in the global market, highlight VA progress in open source code intake and policy, facilitate community participation in VistA code convergence based on OSEHRA VistA, and to move the Open Source conversation beyond VistA to include new and emerging issues which encompass population health, analytics, and interoperability.

Dr. Seong Ki Mun, long time supporter and colleague of TATRC, is the President and CEO of OSEHRA, who continues to promote the OSEHRA mission which is to "build and support an open source community of users, developers, service providers, and researchers engaged in advancing electronic health record software and related health information technology."

The Honorable Robert A. McDonald, U.S. Secretary of Veteran's Affairs delivers keynote address

The Summit was a robust mix of plenary sessions, educational tutorials, and engaging presentations. Ms. Levine served as the program co-chair along with TATRC Alumnus, COL (Ret.) Hon Pak. Along with a team of six program committee members, they reviewed over 70 submissions to select the best for presentation at the Summit. The Honorable Robert A. McDonald, U.S. Secretary of Veteran's Affairs, delivered a riveting keynote address where he spoke frankly about the future of Veteran's healthcare and issues related to interoperability. He introduced the VA's plan to reform the agency and improve the delivery of care to the nation's Veterans.

The second plenary session focused on Emerging Technologies in healthcare, including wearable devices and bio-implants that could impact the health and well-being of our Service Members. Many of the speakers and session chairs were current or former awardees of USAMRMC funding or TATRC Alumni. Specific topics of interest to the Military Health System (MHS), included: identity management, visualization, interoperability, and integration strategies. Ms. Levine moderated a session focused on the use of Open Source Methods and Tools. Speakers during this session presented on Service-Oriented Reference Architecture, a usability study and building a vibrant and sustainable Open Source Community for Healthcare.

OSEHRA President and CEO Dr. Seong Ki Mun kicks off the opening session.

Discovering new Open Source Tools is one of HTIC's main goals. Being involved in the Open Source community is critical to ensuring TATRC is at the forefront of technological development. Ms. Levine concluded, "As the DoD and VA move towards improving interoperability, Open Source Tools and Methods are essential and necessary to insuring success. The OSEHRA Summit and OSEHRA Community is an excellent resource for learning about state-of-the-art Open Source Technologies."

James B. Peake, Former U.S. Secretary of Veterans Affairs and 40th Surgeon General of the U.S. Army discusses emerging technologies and healthcare.

mHIC Research Findings Featured in Special Edition of the Journal of the American Medical Informatics Association

What makes a mobile health initiative successful? There is a plethora of mobile apps available out there to patients, but achieving long term sustained use of these tools over time is the challenging part.

Little is known about whether patients with specific challenges, including traumatic brain injury (TBI), post-traumatic stress (PTS) and/or behavioral health (BH) issues will adopt and use a mobile application in a sustained fashion.

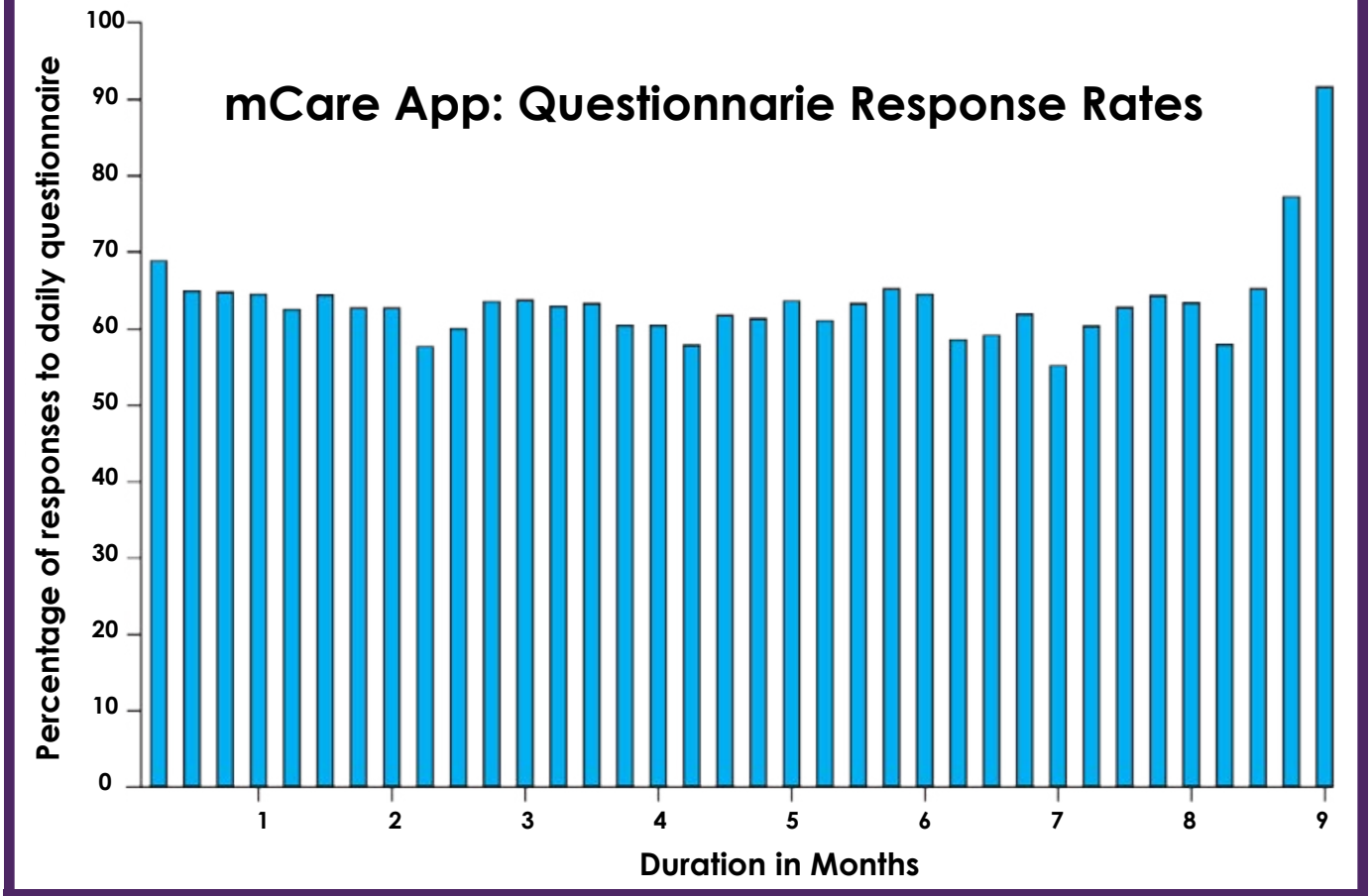
TATRC's Mobile Health Innovation Center (mHIC) recently completed a comprehensive analysis of clinical research data using the mCare mobile application to augment standard care for wounded warriors. Part of this analysis included a focused evaluation of patient engagement with the mCare mobile app, with a subanalysis of special populations, including TBI, PTS and BH.

The analysis found that mCare patient's level of engagement significantly surpassed market trends.

Industry data shows that less than 40% of mobile apps are even opened by users six months after they are downloaded. But the research data shows that over the course of a nine-month study, patients were responding through the mCare app at the same, or even higher rates than they did in the first month of use (see graph below).

Furthermore, the analysis showed there were no statistical differences between special populations (e.g. TBI, PTS and BH) and other mCare users.

The results of this patient engagement analysis are currently in press, and are featured in the September 10, 2015 edition of the *Journal of the American Medical Informatics Association*.



Typical app usage decreases with time after initial download. With the mCare app, we saw a consistent usage rate with a significant increase at the end of the study.

Srinivas Laxminarayan, Ph.D. at TATRC's BHSAI Places 3rd in the MHSRS 2015 Young Investigator Competition

RADM Bruce Doll, MRMC's Deputy Commander (right) presents Dr. Srinivas Laxminarayan (left) 3rd place award in this year's Young Investigator Competition. *Photo: Melissa Myers, USAMRMC Public Affairs*

Dr. Srinivas Laxminarayan, Ph.D. at the Telemedicine & Advanced Technology Research Center (TATRC)'s Biotechnology High Performance Computing Software Applications Institute (BHSAI) was awarded third place at the Military Health System Research Symposium (MHSRS) 2015 Young Investigator Competition for his work on "Preventing Heat Injuries by Predicting Human Core Temperature."

Dr. Laxminarayan's presentation discussed his work on heat injury in the military. Over 2,000 soldiers experience heat injuries every year in the armed forces. What's surprising about that number is that 93% of heat injuries occur outside combat environments. The question at hand is "what can we do to prevent heat injuries in the military?" Through funding from the Defense Medical Research & Development Program of the Defense Health Agency and Military Operational Medicine Research Program, Dr. Laxminarayan and the team discovered through their research that knowledge about the human body's core temperature was a good predictor for heat injury. When the core temperature rises above 38.5 degrees Celsius, it is indicative of a heat injury. Knowing soldier's core temperature would allow for heat injuries to be predicted earlier. In the initial stages of Dr. Laxminarayan's research, core temperature was measured by taking a temperature pill. The pill served as both a thermometer and radio transmitter as it passed through the body. While this method was extremely accurate, it took several hours for the pill to pass through the body and transfer all the relevant data, which proved to be time consuming and a very expensive way of measuring core temperature.

Dr. Laxminarayan presents his findings on heat injury in the military.
Photo: Melissa Myers, USAMRMC Public Affairs

To help with the expense and the time concerns, Dr. Laxminarayan and his team pursued the idea that through the use of a common exercise device, skin temperature, heart rate, and activity levels could be obtained to help create an algorithm that would estimate core temperature. They used this data to develop an estimation model that included not only the information gathered from an exercise device, but also some additional environmental factors like ambient temperatures, amount of clothes being worn at the time, etc. Through this data, the model was created and run to validate the algorithm. The prediction model was able to predict 18 minutes ahead of time if the core temperature was going to reach levels of heat injury. The prediction model has a high sensitivity and specificity.

"The data has shown us that given non-invasive physiological measurements, we can accurately estimate core body temperature and given model estimates, we can accurately predict a rise in core body temperature 18 minutes ahead of time," said Dr. Srinivas Laxminarayan.

Dr. Laxminarayan presented this work to a tri-service committee panel of subject matter experts during the 17 – 20 August 2015 MHSRS Conference in Ft. Lauderdale, FL. He was presented with his award by RADM Bruce Doll, Defense Health Agency Director of Research, Development and Acquisition and Deputy Commander at the U.S. Army Medical Research & Materiel Command. This is the second year in a row that a research scientist from BHSAI has been given an award in the Young Investigator Competition. Dr. Laxminarayan also thanked and acknowledged the collaboration with the U.S. Army Research Institute of Environmental Medicine (USARIEM) and Dr. Mark Buller and Mr. William Pharion. Congratulations to Dr. Laxminarayan and his team!

BHSAI's Chemoinformatics System Deployed for Early-Stage Drug Development

TATRC's Biotechnology High Performance Computing Software Applications Institute (BHSAI) works with the Defense Threat Reduction Agency (DTRA) and its newly established Absorption, Distribution, Metabolism, Excretion and Toxicity (ADMET) Center of Excellence (CoE) to provide research capabilities for developing countermeasures against nerve agents and neurotoxins for Department of Defense (DoD) and civilian use.

The mathematical models developed by the BHSAI are used by advanced drug developers to rapidly evaluate pharmacological and toxicological properties in silico of the drugs under development. Rapidly screening out unsuitable drug candidates is key in allowing only the most promising drugs to go to advanced development.

The research, model development, and generation of informatics capabilities needed to reduce the risk factors associated with drug development is done by BHSAI's Scientific and IT team led by Dr. S. Anders Wallqvist. The BHSAI is also partnering with the U.S. Army Medical Research Institute for Chemical Defense (USAMRICD), working with Drs. Benedict Capacio, Michael Hepperle, and Richard Sweeney at the ADMET CoE. Together, this group is working with DTRA in changing how early identification of adverse effects helps in drug development.

In an effort to tackle potential safety issues early in the process and reduce attrition in drug development, DTRA set up an in-house DoD ADMET CoE at USAMRICD in Edgewood, MD. This new capability is in place to guide the discovery, optimization, and selection of potential Medical Countermeasures (MCMs). These efforts will reduce attrition, costs, and timelines for MCM development. The CoE looks at the early stages of drug development, specifically in vitro assays that are designed to mimic pharmacological and toxicological effects in people to select safe drugs.

BHSAI's role in the ADMET Center is to develop mathematical models that predict pharmacological and toxicological properties of compounds based on external and internal data repositories. The developed Chemoinformatics System provides basic and advanced compound information for predicting and prioritizing whether or not to synthetize a compound or a particular compound series. "Providing predictive models of the pharmacological and toxicological properties allows us to focus in on the compounds that have the highest chance of succeeding in downstream development," said Dr. Wallqvist. "We can't guarantee success, but we can significantly reduce the haystack of compounds to test. This improves your ability to make sound decisions in drug development."

The technical impacts of this Chemoinformatics System include: the ability to predict ADME/toxicity of new or modified chemicals based on structural information; create mathematical models and store chemical data across DoD chemical defense laboratories; use data from multiple DTRA-funded projects, which will improve model reliability and applicability; and lastly focus on high-priority DoD chemical and biological defense countermeasures.

BHASI's Deputy Director , Dr. S. Anders Wallqvist, serves as senior project lead for the Chemoinformatics System.

The progress of developing the Chemoinformatics System has been astounding. In less than a year, a viable working system has already been established. The computational models and algorithms that are present in this system have been extensively validated by the BHSAI over the last year, a key prerequisite for inclusion in the Chemoinformatics System. DoD researchers at the U.S. Army Medical Research Institute of Infectious Diseases and USAMRICD are already utilizing the system.

User requirements will drive further research and developments of the Chemoinformatics System. Dr. Wallqvist plans to keep the system flexible and open in order to provide the scientific research community with the most advanced mathematical models. "This will be an ongoing, longstanding project that will continue to evolve based on the needs of the community and direction of DTRA's drug development efforts," said Dr. Wallqvist. "Having the flexibility to create and improve our models around compounds that the ADMET Center is interested in allows us to create the most relevant computational models."

The BHSAI Scientific Research Staff includes (seated) Drs. Ruifeng Liu, Patrick Schyman, Jerez Te, and Xueping Yu and the IT and Software Support Staff (standing) Kamal Kumar, John Plaschke, Valmik Desai, Max Khitrov absent from photo, and Dr. Anders Wallqvist.

TATRC Voices Speak at MHSRS 2015

The Department of Defense's premiere scientific meeting, the Military Health System Research Symposium (MHSRS), took place 17-20 August 2015 in sunny Fort Lauderdale, FL. The MHSRS is the DoD's – and the Nation's – only scientific meeting focused completely on the unique medical needs of the Warfighter. The MHSRS conference was stimulating and energizing – filled with cutting-edge scientific, clinical and technical information, presented from many perspectives. The MHSRS is an annual event that is sponsored by the Assistant Secretary of Defense for Health Affairs. The MHSRS provides a scholarly forum for the planning and development of future studies aimed at optimizing care for members of the Uniformed Services in operational settings. It began with a rousing keynote address from Dr. Jonathan Woodson, Assistant Secretary of Defense for Health Affairs, and continued with both platform and poster presentations from government, academic, and industry representatives. Platform presentations and posters were offered in the following areas: Combat Casualty Care, Military Operational Medicine, Clinical and Rehabilitative Medicine, Military Infectious Disease, and Military Simulation and Training.

TATRC was well represented and in full force, as it has been since the 1990's, when this event was an Army sponsored conference formerly known as the Advanced Technology Applications for Combat Casualty Care (ATACCC). Thirteen TATRC representatives actively participated on behalf of TATRC's five major laboratories: Operational Medicine, Mobile Health Innovation Center, Medical Modeling & Simulation Innovation Center, and the Biotechnology High Performance Computing Software Applications Institute (BHSAI).

TATRC's team of subject matter experts in full force representing the enterprise at MHSRS 2015.

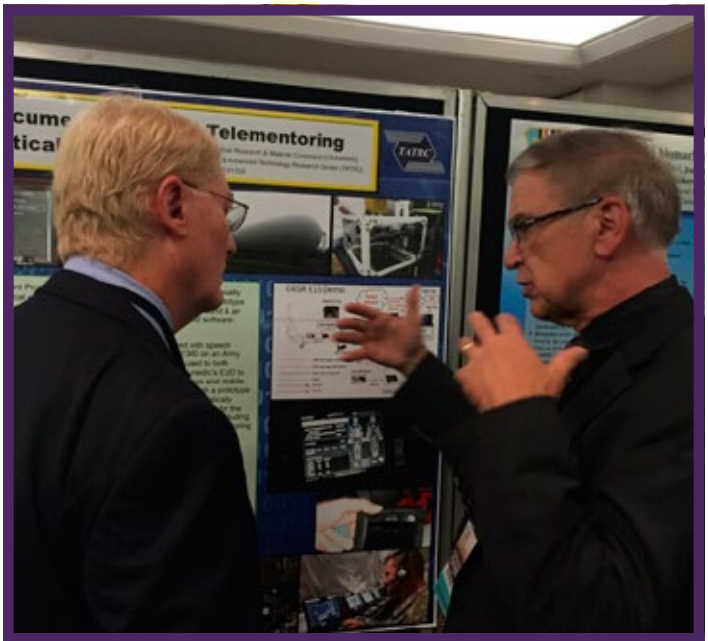
TATRC staff delivered numerous platform presentations. Among those who presented were BHSAI's, Dr. Srinivas Laxminarayan who spoke about "Preventing Heat Injuries by Predicting Human Core Temperature," to Dr. Alexander Mitrophanov who focused on "Computational Modeling Reveals the Contributions of Distinct Signaling Subnetworks to Inflammation Resolution," and Dr. Sridhar Ramakrishnan addressed "A Mathematical Model to Predict Cognitive Performance Decrements Due to Sleep Loss and the Recuperative Effects of Caffeine."

Mr. Ed Kensinger from the Mobile Health Innovation Center (mHIC)spoke about "Improving recall capability within a Combat Support Hospital." He spoke of a solution in which TATRC's mHIC demonstrated use of a hands free communication device that operates on a secure Wi-Fi network to support Combat Support Hospitals (CSH). Since a CSH often encompasses many acres of terrain and doesn't have internal communication capability, getting the right person at the right location to provide care can be a challenge. The current method of sending a "runner" to recall a person to a specific area of the hospital is not ideal. Overall the results were very favorable and the Wi-Fi provided additional capability to improve the overall functionality of the CSH.

Operational Telemedicine's Mr. Nate Fisher presented a poster entitled "Command and Control of Unmanned Aerial Vehicles for Emergency Medical Resupply and Casualty Evacuation," which summarized research efforts being executed by Neya Systems and Kutta Technologies on two separate SBIR Phase II contracts. The poster also summarized past Unmanned Aerial Vehicle research projects by TATRC and their future transition plans. There was specific interest in potentially adapting the human-machine interface application and command and control infrastructure for other missions/applications involving unmanned vehicles.

Mr. Tom Bigott, also of the Operational Telemedicine Lab, presented a poster on the "Patient Physiological Monitoring Using a Field Deployable Calorimic Assay Reader with the Integration of Smartphone Technology of the Nett Warrior Program." Mr. Bigott presented a new portable pocket size lab testing device created in 2014 that tests for the pathogens Cryptosporidium, Giardia, Influenza and Ricin, (water born parasites, virus, and environmental), with additional tests added in 2015 to include Ebola, Strep and Clostridium Difficile. All tests were accomplished using FDA approved test strips.

Ms. Holly Pavliscsak from mHIC, presented two posters. The first was entitled: "Patient Engagement by the Numbers Utilizing mCare in a Randomized Control Trial, and the second was titled "An Objective Assessment of System Usability for mCare: Results of a Randomized, Prospective Evaluation of a Secure Mobile Application for Wounded Warriors." These poster presentations focused on the technological usability of the mCare mobile



Gary Gilbert, Ph.D, Lab Manager for TATRC's Operational Telemedicine Lab, discusses his work on secure medical information in a tactical environment.

application; that is, the interface where patients access the mCare system. This summarized a clinical research study evaluating the effects of a bi-directional mobile intervention with a special emphasis on the impact on patients with mild traumatic brain injury, post-traumatic stress and behavioral health conditions as well as usability of that intervention.

From the BHSAI, two posters were presented. Dr. Sridevi Nagaraja presented on "Computational Models Can Identify Molecular Drug Targets to Resolve Chronic Inflammation in Wounds," and Alexander Mitrophanov, Ph.D., discussed "Experimental Studies Validate Computational Predictions of the Therapeutic Effects of Clotting Factor Supplementation in Coagulopathy."

Two TATRC representatives co-chaired academic sessions. Dr. Jaques Reifman, BHSAI, co-chaired the session on Physiological Monitoring, and Mr. Harvey Magee, MMSIC, co-chaired the academic session on Military Medical Skills Acquisition and Sustainment.

There is no other event related to combat casualty care at which TATRC's research leaders can have such broad and direct interaction with "end users" of technologies around the DoD. This includes: learning what their needs and requirements are, discussing technologies under research and development, and identifying opportunities to support the Warfighter in the future. So why TATRC would send thirteen people to such an event, in consideration of time away from the office as well as travel costs? The answer is straightforward. It's an effective and necessary way to accomplish our mission; that is, to actively foster and shape research in health informatics, telemedicine/m-Health, medical training systems and computational biology.

BioGears® Initiative 'Gears Up' with TATRC's MMSIC for First Ever Conference in North Carolina!

BioGears®, a system now in the Research & Development phase and managed by TATRC's Medical Modeling & Simulation Innovation Center (MMSIC), is an open source development, comprehensive, extensible human physiology engine that can be used as a standalone application, or integrated with simulators, sensor interfaces, and models of all fidelities. The first ever BioGears® conference will be held October 13-14, 2015 at the North Carolina Biotechnology Center with TATRC's own Dr. Thomas "Brett" Talbot delivering the keynote address. Dr. Talbot, the Chief Scientist at the MMSIC and principal medical expert at the USC Institute for Creative Technologies, researches virtual patient and medical virtual reality science.

Dr. Talbot previously helped to create the nation's largest medical education focused research and development program and is an Army veteran and pediatrician with more than 18 years' experience as a simulation developer. Additionally, TATRC's MMSIC Team, in close partnership with Joint Program Committee – 1 (JPC-1), will be actively engaged and involved in a Government Only panel session which will be led and chaired by MMSIC's Director, Mr. Harvey Magee, with support from Dr. Geoff Miller, Research Scientist with MMSIC, and Dr. Kevin Kunkler, Portfolio Manager of JPC-1.

There is no registration fee to attend. The conference will coincide with the BioGears® Beta software build and will provide professionals in the medical modeling and simulation community a focused place to discuss advancing the current state-of-the-art in physiological modeling and biomedical technologies. To register and learn more about the conference, please visit the BioGears® website at: https://www.biogearsengine.com/conference.

biogears

Employee Spotlights

TATRC Welcomes Mr. Gavin Mason to the HTIC team!

Mr. Gavin Mason joins TATRC after serving 24 years in the United States Air Force as a Healthcare Administrator, who also provided contract support to various federal agencies in the area of information technology. Gavin's focus in the Air Force Medical Service was primarily in Health IT, where he started out as a Development, Test, and Evaluation Lead for the Composite Healthcare System before becoming a Chief Information Officer at three Air Force hospitals, a TRICARE Lead Agent, and most recently, at the Major Command level. While at Air Combat Command, Gavin was responsible for all Health IT matters for both in Garrison and deployed operations.

As a contractor, Gavin has supported various IT initiatives, including his last assignment where he served as the project manager for the consolidation of all technology services for DoD Dependent Schools internationally. Prior to that, he was the project manager for more Health IT initiatives, including: MHS Datacenter Consolidation, MHS Application Virtualization, MHS to VA Health Records Scanning, Enterprise Service Bus Analysis of Alternatives, and several others. He was also responsible for consolidating all Major Command IT directorates into the centralized Air Force Medical Operations Agency's Information Services Division, which is now the AF Medical IT execution arm of the DHA.

In his new role, Gavin will support TATRC's HTIC Team remotely, from San Antonio, TX, where he resides with his wife and three children. Mr. Mason is a Certified Professional in Electronic Health Records, Certified Project Management Professional, and a Senior Certified Professional in Healthcare Information and Management Systems. Gavin holds a M.S. in Clinical Informatics from Northwestern University, an MBA in Decision Information Sciences from the University of Florida, and a B.S. in Computer and Information Sciences from the University of Maryland University Campus. The TATRC HTIC Team is excited to have this position filled and looks forward to Gavin's experience and contributions! Welcome, Gavin!

TATRC Announces Employee of the Quarter Mr. Ed Kensinger

As FY2015 comes to an end, it comes with great enthusiasm that the Telemedicine and Advanced Technology Research Center (TATRC) announces and recognizes Mr. Edward E. Kensinger as the newest Employee of the Quarter!

Serving primarily as one of mHIC's Senior project managers, Ed has also diplomatically served as TATRC's Operational Telemedicine Lab's Primary Liaison with the Cyber Command CDID Experimentation Division, Mr. Kensinger has demonstrated a level of dedication and determination that goes above and beyond the normal workday expectations. He has worked tirelessly to establish partnerships and execute a series of demonstrations using the XIRUSS Wi-FI system and the Vocera communication badges in an operational environment.

His indescribable dedication and demonstrated ability to lead, has provided him the opportunity to showcase his skills — most recently at the Joint Readiness Training Center (JRTC) in Fort Polk, Louisiana this past May. This recent endeavor meant that Mr. Kensinger was away from home for the majority of the month, including weekends, and worked under some less than optimal weather conditions. In one instance, while at the JRTC, the Combat Support Hospital had to be relocated due to heavy rains, and Mr. Kensinger spearheaded an effort to relocate and establish the Wi-Fi communications in a matter of hours. His endeavors between April-June 2015 have demonstrated a level of dedication and determination that goes above and beyond the normal workday expectations.

In addition to his hands on engagement, he has also continued to build goodwill between TATRC and other key organizations to ensure that the knowledge gleaned from these exercises will be shared with future requirements. Mr. Kensinger is dual-hatted, supporting both mHIC and the Operational sections of TATRC, and executes his duties in an exemplary fashion.

His efforts are significant and valued by the TATRC family. Thank you for exemplifying true teamwork, professionalism and perhaps, most importantly, a constant smile and an infectious attitude. Congratulations!

Employee Spotlights

Geoffrey Miller is the latest addition to Team TATRC! Geoff is a Research Scientist within TATRC's Medical Modeling Simulation & Innovation Center (MMSIC), and also serves as an Assistant Professor in the School of Health Sciences at Eastern Virginia Medical School (EVMS) in Norfolk, Virginia. Previously, Geoff acted as the Director of the Center for Simulation and Immersive Learning at Eastern Virginia Medical School (EVMS) EVMS. TATRC's MMSIC has been designated by the Assistant Secretary of Defense for Health Affairs as the Technology Consultant for Medical Modeling & Simulation (MM&S) to the Defense Health Agency's Joint Provisional Project Office for Medical Modeling and Simulation. Geoff will play a key role in assessing the maturity of MM&S technologies as they are considered for transition into the Military Health System … and is an integral member of the MMSIC team developing innovative research concepts to improve medical education and training.

Geoff joined EVMS in January of 2011, and managed the expansion of simulation-based educational activities, curriculum development and educational outcomes and translational research. Prior to his EVMS position, Geoff was the Associate Director of Research and Curriculum Development for the Division of Prehospital and Emergency Healthcare at the Michael S. Gordon Center for Research in Medical Education (GCRME), University of Miami Miller School of Medicine.

Jump starting his career in public safety as a paramedic firefighter 26 years ago, Geoff has worked in patient simulation, interactive multimedia computer learning systems, medical and healthcare education, and terrorism and disaster medical response and management for the past 21 years. He is active in the areas of applied outcomes research in education, with an emphasis on the creation and improvement of methods of clinical competence assessment using advanced educational technology and simulation. Currently , Geoff develops, implements, disseminates and evaluates innovative healthcare curricula and assessment systems that are used by a wide range of providers, schools and U.S. Army Forward Surgical Teams throughout the United States and internationally. Most recently, Geoff has worked in the invention and development of innovative, automated and immersive simulation technology which was recognized by the National Academies of Sciences, Institute of Medicine as the Lead Innovator at the Global Forum on Innovation in Health Professional Education.

Geoff is actively engaged in scholarly research and publications in Emergency Medical Systems (EMS) practice and healthcare education. He has co-authored several books including the "National Incident Management System: Principles and Practice" and "Arrhythmia Recognition: The Art of Interpretation." Geoff is a frequent author in emergency medical services and emergency care journals, having authored and co-authored numerous articles. He is a frequently invited speaker at state, national and international conferences. Geoff is looking forward to being part of the "MedSim Team" in his new role here at TATRC!

Welcome aboard Geoff Miller!

TATRC's MMSIC Lab Hires New Research Scientist

Successful Year-end Closeout for TATRC's RM Team

As we close out FY 15, we would like to acknowledge the hard work of the TATRC Resource Management team. The TATRC Resource Management team is comprised of 4 outstanding individuals: Led by Mr. Greg Dempsey as the Chief of RM, Dawn Petruzzello, Courtney Kentrus, and Kati Weaver are also key contributing members. Greg is responsible for resource management at TATRC and responds to guidance from TATRC's Director and his leadership team. He advises the leadership on all matters that are resource management related and supervises the daily RM operations. Each of the other members of the team has specific responsibilities and areas of expertise but the strength of this group is how they collectively support the

Continued on page 10

TATRC's Resource Management Team pulls together to ensure all year-end deadlines are met.

TATRC's mHIC Team Participates in Post-Traumatic Osteoarthritis (PTOA) Mobile Health Kick-Off Meeting

On June 8th, 2015, TATRC's Mobile Health Innovation Center (mHIC) staff, Jeanette Little and Holly Pavliscsak, participated in a kick-off meeting for a new project at the University of North Carolina at Chapel Hill. In attendance was Dr. Kenneth L. Cameron, Director of Orthopedic Research, Keller Army Community Hospital, West Point, NY and a team of subject matter experts from the Departments of Epidemiology and Orthopedics, University of North Carolina at Chapel Hill, NC. This project, titled "Using a Telehealth Platform to Deliver Innovative Therapeutic Care for Military Service Members at High Risk for Post-Traumatic Osteoarthritis," was funded by the TATRC managed AMEDD Advanced Medical Technology Initiative overseen by Mr. John Winston who serves as the Program Director.

The highly experienced team of experts from UNC included: Dr. Steve Marshall, Ms. Mary Alice Nocera, Dr. Kelly Allen, Dr. Yvonne Golightly, Dr. Amanda Nelson and Dr. Brian Pietrosimone.

The goal of this project is to facilitate ongoing follow-up care in military service members with a history of traumatic knee joint injury who are at risk for PTOA. This follow-up care will include clinical advice on modification of physical training activities, long term rehabilitation strategies and other key tools designed to delay or avoid the onset of PTOA, for cadets at West Point who experience knee injuries during their academic tour.

Using the mCare Application and the supporting Mobile Health Care Environment Research system developed by TATRC, the intent will be to create and evaluate a virtual knee joint health clinic that delivers innovative follow-up care to limit the progression to PTOA.

The proposed project has the potential to improve the access and quality of care among those at increased risk for PTOA, while also reducing the long-term costs of PTOA treatment and potentially, rates of disability discharge from PTOA. If successful, this project could efficiently implement an innovative model for the management of this chronic condition and alter the clinical trajectory of this progressive, degenerative joint disease in high risk military populations.

Jeanette Little, Laboratory Manager for mHIC said, "The TATRC mHIC team is pleased to have the opportunity to partner with others to address strategies on the long term joint health of active duty servicemen and women through mobile health."

RM Team

Continued from page 9

TATRC mission. They epitomize the word "team" as they support each other and work seamlessly to provide outstanding customer support. Their daily performance is selfless and extremely customer focused. They are technically proficient, hardworking and dedicated to providing the best support possible. During this fiscal year, they worked hard to insure all TATRC requirements were identified and that the necessary documents were prepared and executed in a timely fashion. They have submitted approximately one hundred PR's to USAMRAA, valued at over $11M, as well as all of the necessary supporting documents. They interact with the staff at USAMRAA to facilitate the award process and insure awards are made. Additionally, this tight-knit team has reconciled TATRC accounts, monitored TATRC funding and advised TATRC program managers and other customers. They have acted as advocates for TATRC customers with USAMRAA, MRMC and other outside organizations. They support all TATRC personnel and manpower actions, prepare for MRMC PBACs and coordinate and facilitate all actions with MRMC RM and the DCSPER. During this busy time period, they have processed IPA packets, personnel actions, transitions from contractors and IPAs to civil servants, in and out processing. All of TATRC personnel, military, civilian, IPA, and contractors, have been supported professionally and with an emphasis on minimizing disruptions to the mission. This team worked with customers to assist in developing requirements, preparing SOWs, IGCEs and other customer requirements. Each of them are SME's in their specific areas, but the real value that they bring to the enterprise is their ability to function as a high performing team focused on making TATRC better! Way to go, TEAM RM, on a successful and smooth year end close out!

HTIC Receives Long-Awaited ATO Certification!

TATRC's Health Technology Innovation Center's (HTIC) Early Stage Platform (ESP) for Research and Development (R&D) has received its "Authority to Operate" (ATO) as a MAC III Public network. The ATO certifies that the ESP is compliant with established security requirements and is approved to operate using a prescribed set of safeguards that are compatible with MAC III Public environment. The ESP provides an alternative to working on live MHS production systems for the development of prototypes, and to test integration of software applications.

The ESP is populated with a fully synthetic set of patient data which is computer-generated, and does not rely on any real, de-identified, or anonymized data. The ESP is capable of supporting projects within a virtual environment, where each project is isolated within a secure and scalable virtual container. The ESP system and staff supports test versions of DoD medical systems including Open Source and Windows Operating Systems applications.

TATRC's ESP was developed to provide the HTIC and its partners with access to a development, integration, and test environment, that includes test versions of existing MHS electronic record systems. Each R&D project within the ESP is assigned remote access to a virtualized software development, integration, and test space with associated development, test, configuration management, and collaboration tools. TATRC's ESP is now available to collaborate with academic, government, and commercial partners to conduct early research and development of products to support the electronic health record. You may contact the HTIC staff to determine the most effective collaboration strategy directly via email at: htic_team@tatrc.

ESP Lab Manager, Ms. Ollie Gray, stated that "This is a real game changer! By obtaining this certification, it now opens the door for TATRC's HTIC Team and their partners to showcase successful R&D development that bring value to the MHS and its beneficiaries."

Congratulations to HTIC's ESP staff for their efforts in obtaining this highly sought after and long-awaited certification!

HTIC's ESP team of developers meet regularly to ensure security requirements are met and to properly test the integration of software applications. From left: Susan Rouse, Peter Franson, John Orzechowski, Steven Thomas, Ollie Gray, and Young Lim.

TATRC Participates at the Annual DHITS Conference

Several key members from the TATRC team attended and actively participated in the 2015 Defense Health Information Technology Symposium (DHITS), 18-20 August in Orlando, Florida. This event was a key opportunity for members of the TATRC team to directly interface and engage with IT experts on issues related to current and further technology operations within the military healthcare system.

During the conference, The Electronic Health Record (EHR) Modernization effort was a major topic at this three day event, as senior leaders of the Defense Health Agency (DHA), Army, Navy and Air Force provided keynote addresses to more than 1,700 attendees.

The TATRC contingent in the DHA exhibit area

Supplementing the Conference were a variety of well attended, tech-savvy breakout sessions covering the following topics: EHR Modernization; Legacy Applications; Interoperability & Healthcare Operations; HIT Support; Informatics; Analytics; Business and Governance; and Capitalizing on Emerging Technology.

TATRC's Director, COL Daniel Kral, gave a formal presentation on "Telehealth: Addressing Emerging Capability Gaps and Challenging Existing Doctrine." He also participated in an interactive panel discussion entitled: "Implementing Innovation at the Military Health System" along with CAPT Paul Miller, Director of the Pacific Joint Technology Innovation Center, Dr. Steve Steffensen Chief of Innovation

Ms Betty Levine of TATRC's HTIC Lab discusses new innovations in health IT with visiting exhibitors.

for the MHS, and Mr. Andrew Jacobs of the DHA. This session was moderated by LTC Mark Mellott, Chief of Research and Development for Health Information Technology at the DHA and was standing room only.

Additionally, Ms. Ollie Gray, a member of TATRC's HTIC team, served as a moderator for the breakout session on "Capitalizing on Emerging Technology." HTIC Lab Manager, Ms. Betty Levine, stated that: "Attendance and participation at this meeting helped us identify gaps and unmet requirements in Health IT and thus identify areas ripe for new research."

In addition to contributing to the scientific program, TATRC had a strong presence in the exhibit hall, as part of a larger DHA exhibit. Core capabilities of TATRC's five Intramural Labs were showcased and highlighted to both the military and vendor partners through the exhibit hall.

"The symposium provided numerous opportunities for direct engagement and discourse with key leaders from the DHA Mobile Health Working group," said Ms. Jeanette Little, TATRC's mHIC Lab Manager.

DHITS conference attendees on their way to the opening session led by LTG Douglas J. Robb.

TATRC's mHIC Research Study Starts Patient Recruitment

When a Soldier is assigned to a Warrior-in-Transition Unit (WTU), they are required to establish recovery and reintegration goals, which are used to track their progress over their journey, regardless of whether it returns them to duty, or results in a migration outside of the military. The goals are personalized for each patient, but are organized into the following major categories: Career, Emotional, Family, Physical, Spiritual and Social.

Once established, the Soldier uses these goals and their associated milestones to track their progression tool throughout their recovery and transition phase. To be effective, these goals and associated milestones must be routinely updated. To date, the means by which a patient establishes, tracks and or updates these goals with their case management team is through a web portal, accessible using Army Knowledge Online (AKO). An evaluation of the CTP goals across a mobile application will provide valuable information with regard to the ability of mobile technology to potentially affect behavior change and improve compliance with the CTP requirements.

Establishing a means to access and update a patient's recovery and integration goal through their mobile phone has been identified as an important outreach tool by the WTU staff. As a result, the TATRC mHIC team integrated recovery and reintegration goal tools into the Mobile Health Care Environment, and its associated secure mobile application, mCare.

In August 2015, the TATRC mHIC team received final approvals to begin patient recruitment for a Joint Program Committee - 1 funded research study on recovery and reintegration goal awareness for Warriors in Transition, using mobile technologies via the Mobile Health Care Environment Research (MHCE-R) system.

This new research effort is a follow-on to an initial research project, the Evaluation and Impact of mCare, a Cell Phone Based Bi-Directional Messaging System, on the Case Management Care of Traumatic Brain Injury Patients Assigned to Community Based Warrior in Transition Units Study. This follow-on study aims to evaluate Soldier preferences and compliance with regard to using either a mobile interface or a web-based interface.

The study will be conducted as a multi-center, open-label randomized trial, with 90 patient study participants (total) from Community Care Units at Fort Benning and Stewart.

Dr. Johnie Tillman will act as the Principal Investigator for this 12 week study entitled: Assessing Preferences of Collecting CTP Goals Information through a Mobile Secure Messaging Platform Versus a Web Based Online Interface.

The study participants are randomized into two groups. The experimental group will receive the mCare mobile application intervention and access the traditional process for goal tracking via the AKO web-based interface, and the control group will only receive access to the AKO web-based interface.

Forty-five study participants will download the mCare application onto their personal cellular phones, which provides them with secure access to the MHCE-R system. Goals assessment questionnaires will be sent out on a weekly basis to the experimental group for a course of 12 weeks through their personal cell phones.

Each of the two groups will be assessed by the System Usability Scale at the end of the study. Study participants will also be assessed by the General Well-Being Schedule at both the start and conclusion of the study. This follow-on study aims to evaluate Soldier preferences and compliance with regard to utilization of either a mobile interface or a web-based interface.

TATRC's mHIC Lab Manager, Ms. Jeanette Little, concluded, "The TATRC mHIC team is excited to begin patient recruitment for this project. This follow-on research effort is part of an overall strategy to expand the TATRC body of knowledge on best practices for connection with patients between clinical encounters."

Operational Telemedicine's Advanced Technology Evaluation Returns to Joint Base McGuire-Dix-Lakehurst (JBMDL), NJ July 2015

This past June 22 through July 18, 2015, TATRC's Operational Telemedicine team participated in the U.S. Army Communications-Electronics Research, Development and Engineering Center (CERDEC) Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Ground Activity (CGA) Advanced Technology Evaluation, and Event 2015 at Joint Base McGuire-Dix-Lakehurst (JBMBL), NJ.

Staff from the Operational Telemedicine Lab conducted advanced concept demonstrations and operational user evaluations on prototype technologies. These technologies aid in the dismounted, mounted, and flight medic in the generation and processing of point of injury and patient transport information for the Theater electronic health record. The technology evaluations were performed in a simulated combat environment by an infantry squad with an embedded medic while performing tactical operations. The focus was on wireless patient monitoring, electronic documentation of care, and telementoring from the point of injury through pre-hospital evacuation, (both ground and air) to forward medical treatment facilities operating within the Infantry Brigade Combat Team (BCT) area of operations.

The CERDEC CGA provided TATRC with a significant venue to fully assess and validate next-generation network technologies and facilitate C4ISR technological maturation. CGA provided reliable data about technical performance which enables senior Army leaders to make informed decisions to shape the Army's future force and network. Medics from U.S. Army Medical Research and Materiel Command, Fort Detrick, the 75th Ranger Regiment, Fort Benning, GA, National Guard 343rd Medical Company (Ground Ambulance), Richmond, VA and the U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL, supported the evaluation and provided exceptional feedback on the use and effectiveness of the prototypes advanced technologies. The prototypes allowed for the generating and processing of patient medical information, which resulted in additional targeted improvements to several of the processes and projects.

TATRC Director COL Dan Kral (Left) demonstrates Telemedicine reach-back capabilities at the C4ISR event.

Over a four-week period at JBMDL Range 1, TATRC conducted Network Setup, Telemedicine prototype Integration, and Combat Medic Training, culminating in a week long Evaluation where all activities (patient monitoring, encounter documentation, networking, and telementoring) were choreographed together with a series of operational exercises in the field with an infantry squad.

This year's networks included:

- Short and long range Ultra Wideband (UWB)
- Military 4G LTE mobile cellular base station with extended range using the aerostat Persistent Ground Surveillance System blimp
- BCT tactical radio networks, using both the Soldier Radio Waveform and the Wideband Network Waveform (WNW)

Medical information exchange prototype capabilities evaluated this year included:

- UWB wireless connectivity for medical applications on the Nett Warrior Samsung Galaxy Note II smart phone (referred to as the End User Device (EUD))
- UWB enabled military Peltor headset
- UWB enabled pulse oximeter
- UWB enabled Compensatory Reserve Index pulse oximeter
- UWB transfer of the electronic DD Form 1380 Tactical Combat Casualty Care (eTC3) card from one medic's EUD to another's, and from a ground medic's EUD through a Puma antenna on the MEDEVAC helicopter to the flight medic's EUD
- Stand-alone speech-to-text application with auto-parsing of data into the eTC3

Continued on page 15

C4ISR Event

Continued from page 14

- Tempus Pro telemedicine device with newly added Ultrasound and Video Laryngoscope capabilities
- Calorimic hand-held Laboratory Assay Reader from the Edgewood Chemical & Biological Center, integrated by CERDEC with the Nett Warrior EUD for alerts transmitted and posted to a Command Dashboard
- Cross Domain Solution from the Army Cyber Center which enabled classified information to traverse the network to the unclassified portion of the network
- Product Manager Medical Communications for Combat Casualty Care AHLTA Health Assessment Lite Operations electronic health record

During the evaluation exercises, dismounted, mounted, and flight medics utilized current and future capability sets containing the prototype medical capabilities listed above. Gary Gilbert, PhD, stated "This was the first time at C4ISR that the WNW radio was officially placed onto a UH-60 Black Hawk helicopter and evaluated in an exercise transmitting from the helicopter, to a simulated Brigade Medical Company (BMC). Additionally, the MEDEVAC helicopter radio, itself part of the Brigade mid-tier (battalion & above) WNW mesh network, relayed communications from the military ground ambulance to the BMC."

Gary Gilbert, PhD, TATRC's Operational Telemedicine Lab Manager, fields questions from the audience at the C4ISR event.

As part of the four week exercise, TATRC culminated the evaluation by hosting its 2nd Annual "Visitor's Day" on Wednesday, 15 July 2015. The Visitor's Day provided an opportunity for invited guests to observe technical and operational assessments of medical care

Medics load a wounded soldier into a Blackhawk helicopter during a simulated scenario. INSERT: telemedicine program running on a typical smart phone.

Roles I and II, and Telemedicine technologies along with research prototypes, being used by combat medics during small unit elements of an Infantry BCT. The subject matter experts and research partners provided prototype technology briefings and the soldiers conducted operational field demonstrations. Both ground and air medics transmitted eTC3 cards and Tempus Pro telemetry data over the tactical radios and 4G LTE networks to the Battalion Aid Station and BMC as they worked through realistic casualty scenarios generated by the research and evaluation team. This event allowed visitors to view these prototypes in use during a full field scenario and medical encounter. Guests were able to observe as ground and flight medics, as well as Physician's Assistants, used and provided feedback on several prototype capabilities developed as part of both Army and Defense Health Agency (DHA) Small Business Innovation Research and DHA Joint Program Committee – 1 & 6 funded TATRC Telemedicine projects. Additionally, attendees were able to take in the interactive Unmanned Air Vehicle (UAV) demonstration where the eTC3 was transferred from one EUD through the UAV to a second EUD.

TATRC's Operational Telemedicine evaluation was a great success thanks to its many partners involved in the exercise. A special thanks and acknowledgement goes out to our colleagues at: CERDEC Space and Terrestrial Communications Directorate, U. S. Army Edgewood Chemical Biological Center, U.S. Army Medical Communications for Combat Casualty Care, U.S. Army Capability Development Integration Directorate -Experimentation Network Battle Lab supported by Advatech Pacific, U.S. Army Institute of Surgical Research, Starix Corporation, Think A Move Ltd., and Tresys Technology.

TATRC's HTIC Developers Create a Free, Trial Fitness Tracker in support of the Performance TRIAD

TATRC's HTIC software developers have successfully created and launched the TATRC Fitness Tracker. There are numerous applications available to monitor fitness, nutrition and sleep. Many require the purchase of pricey fitness tracker devices to monitor activities related to the performance TRIAD which focuses on fitness, nutrition and sleep.

This free trial, web-based initiative will provide a central site to monitor not only individual fitness and nutrition goals, but also addresses how team participation and team goals can motivate individuals to embrace the goals of the Performance TRIAD.

The web-based prototype was developed to track individual fitness goals, as well as team oriented activities. This prototype promotes access via a variety of internet capable devices anywhere in the world, provided the user has internet connectivity.

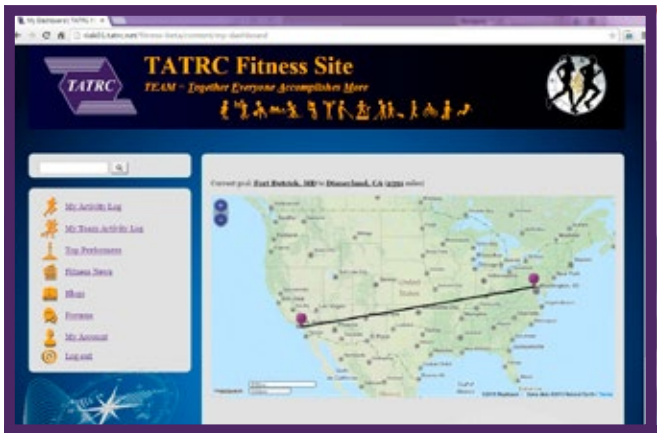
This application was developed in-house by TATRC's own HTIC Software Developers, Kim Pham and Chrisjan Matser with guidance from Betty Levine, HTIC Lab Manager, and Ollie Gray, HTIC Research Program Manager.

Whether your activity is running, biking, walking, swimming or even gardening, the tracker will convert and translate your specific activities into miles and calories burned. The tracker was designed to help staff stay motivated and to see how their variety of activities translates into miles, as they begin the "trip" from Fort Detrick and then navigate the globe.

The tracker also offers several other user friendly, health related features including: opportunities to post and share motivational articles on fitness, nutrition and sleep, as well as share individual blogs to motivate section team members and fellow TATRC personnel. The tracker will also feature key information related to the Army Surgeon General's Performance TRIAD, which promotes a healthy and fit force through a comprehensive plan to improve Soldier readiness and increase resilience through public health initiatives and leadership engagement.

For more information on the Fitness Tracker or to learn how you can use it, please contact our HTIC Team via e-mail at: ollie.b.gray.civ@mail.mil

Or, to preview the Fitness Tracker yourself, please click on the link to test it out: http:// tatrc-fit.org, and create an account!



The prototype Fitness Tracker website offers goals and challenges for team competition.

This Quarter's TATRC TRIVIA...

Who was the very FIRST Director of TATRC? (HINT: TATRC's name at the time was MATMO)

Stay tuned for the answer in our next issue!

Answer to Last Issue's TATRC TRIVIA...

Q: TATRC was originally established in 1991, but not under the name TATRC. What was the first name for the organization that became better known as the DoD's "Telemedicine Test Bed"?

A: TATRC's name at the time was MATMO! Medical Advanced Technology Management Office.

Update on TATRC's Synthetic Patient Data Project

TATRC's Health Technology Innovation Center (HTIC), working collaboratively in conjunction with industry partners, has created the ability to generate "on demand" synthetic, military patient data to provide patient data which can be used for software application development and to test hypotheses for research and development initiatives.

Starting with a commercial product, the Dynamic Data Generator(TM), the application was enabled to model treatment of military personnel and families, at Military Treatment Facilities (MTF). Military specific patient characteristics include: Rank, Grade, PATCAT, Formatted Member ID, TRICARE as payer organization, address within MTF county, and specialties constrained to the specific MTF model, and more.

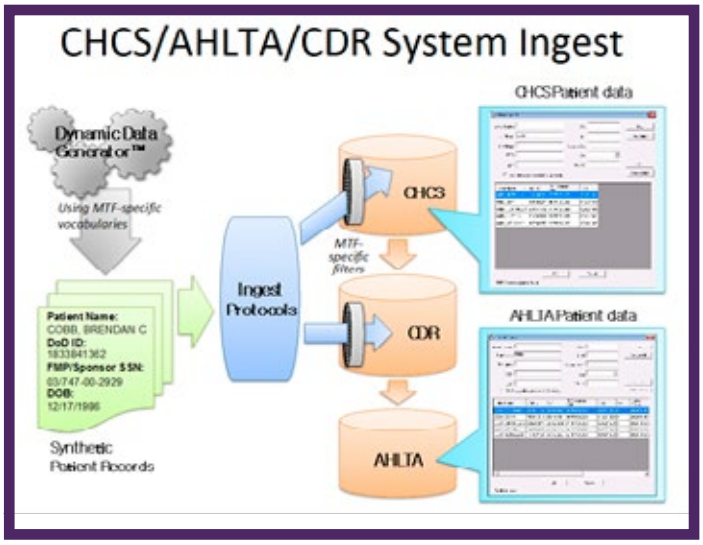
The patient records generated are realistic, and longitudinally consistent respecting the constraints of time and space. The records have a valid range of demographics, family relationships, conditions, therapies, outcomes, and more. Prevalent military condition episodes of care such as Post Traumatic Stress Disorder, Traumatic Brain Injury, and amputations are modeled.

The Dynamic Data Generator (DDG) generates fully synthetic (artificial) patient data without any access to data sources having Protected Health Information (PHI). This data eliminates the management of risk associated with test records by Institutional Review Boards and Office of Human Research Protections. The development and testing is unencumbered by the risk and fear of utilizing PHI because the data cannot be re-identified (since it was never real) like traditional, de-identified solutions, regardless of the sophistication of the de-identification. This inherent feature of fully synthetic data significantly reduces the costs associated with managing such risk.

The DDG generates data sets of realistic patient encounters with the following characteristics:

- Statistical accuracy per definition
- Scalable for patients, encounters, timeframe
- Internally and longitudinally consistent at an individual level
- Reflects a valid range of patients with regards to demographics, familial relationships, medical conditions, therapies, and clinical outcomes.

A significant achievement from the project's efforts was that it allowed a script-assisted ingest of the generated patient data into the Composite Health Care System/AHLTA Central Data Repository (CDR). Successful ingest requires appropriate schema (domains, data elements) and protocols, a challenging development itself. To ingest with an acceptable yield, specific MTF vocabularies must be used or the data will be rejected. CHCS and CDR data repositories require different vocabularies at each MTF. We came to learn that it also requires data that conforms to CHCS/AHLTA clinical data integrity constraints, that the clinics, specialties, and geographic locations are appropriate for the MTF of interest, and that clinical concepts (drugs, labs, etc.) are controlled to match those available at the target MTF, while maintaining coherent treatment scenarios. Without these characteristics, the data will not be ingested. Content matters! With this new capability, generation and ingest of thirty-eight thousand encounters, labs, and pharmacy visits for two thousand patients over six years of observations into the Pacific Joint Information Technology Center's Great Lakes system was successfully demonstrated.



Generated data will be available for TATRC research partners. Institutional review boards often have stringent restrictions on the use of de-identified PHI because there may be a chance that the information can be re-identified. There may also be questions or concerns about the quality of the de-identification process. As research and development efforts proceed with the development of applications to augment the electronic health records, synthetic data will eliminate the need to acquire data use agreements which are required for the use of de-identified data.

Patient identity matching is just one of many possible research projects that could be conducted using the synthetic data. The DDG generates rich patient encounter data with consistency across time and disparate data stores. Realistic variations can be introduced to make patient identity matching more difficult. DDG technology allows for the controlled introduction of name variations (i.e., Gray vs. Grey), address changes, incomplete records, errors like misspellings, etc. These patient data sets include ground truth that can be used to tune and optimize identity matching algorithms.

Ms. Ollie Gray, Deputy Director, HTIC stated, "when I came to TATRC almost five years ago, I was tasked as a nurse

Continued on page 18

Synthetic Patient Data

Continued from page 17

to begin building a data set from scratch of fictional patients, that had realistic demographics, diagnoses and clinical results. We realized very quickly that it was a monumental task, and we found a vendor called ExactData, that had 80% of the capabilities that we needed. After the contract was awarded, our TATRC team worked side by side with Base Technologies and their subcontractor, ExactData, to build a synthetic patient data set that meets the needs of the military health system for research and development efforts. TATRC is excited to be the first agency in the government to highlight the thousands of patients that have realistic, longitudinal data produced by the ExactData Dynamic Data Generator. Our ability to ingest this data into a Research & Development Electronic Health Record environment has opened up numerous possibilities for the development efforts of our HTIC developers and our partners. We look forward to continuing to enhance and augment the data for future research initiatives with our research partners."

For additional information on this project, please contact the HTIC team via email at: htic_team@tatrc.

Let's Get Social!

For more information on TATRC and its many initiatives, visit: www.tatrc.org or call 301.619.7927

Don't Miss an Issue! Sign up and get the TATRC Times every Quarter!

To Subscribe and be added to our mailing list, please e-mail Lori DeBernardis at:

lori.a.debernardis.ctr@mail.mil

Upcoming Events:

12-14 October: NATO Symposium on "Health Surveillance and Informatics in Missions: Multidisciplinary Approaches and Perspectives;" Paris, France

* * * * *

13-14 October: BioGears® Conference; North Carolina Biotechnology Center, Research Triangle Park, Raleigh/Durham, NC

* * * * *

8 -11 November: mHealth Summit 2015; Gaylord National Resort & Convention Center, Washington, DC

* * * * *

30 November - 4 December: I/ITSEC 2015; Orange County Convention Center, Orlando, FL

* * * * *

1 - 4 December: 2015 AMSUS Annual Meeting; Henry B. Gonzalez Convention Center, San Antonio, TX