Department of RESEARCH PROGRAMS at Walter Reed National Military Medical Center

VOLUME 2, ISSUE 1 *Excellence in Military Medical Research* JANUARY 2015

This month we have an exciting newsletter which highlights the great research efforts that are ongoing in our Command. Of note, Dr. Sumana Dey recently received a $169,000 grant from AAMTI to study the utility of the MALDI-TOF Mass Spectrometer in the diagnosis of Leishmaniasis. Dr. Dey submitted this work with help from CDR Danko and COL Weina. Also we highlight the changing of the guard in CNCSI from COL Ashley (who is preparing for retirement) to CDR Jason McGuire who is one of our newer members of the Nursing Research Cell.

With a heavy heart, we bid farewell to Ms. Mary Kelleher. She will be assuming a new position at NIH in the Office of the Director for Science Policy. She has been with WRAMC DCI and WRNMMC DRP for the past 5 years and has served admirably as the HPA and Director of IRB Operations. We wish her well in her new job and will miss her sorely. Hopefully we can leverage her move to help foster future partnership ventures between NIH and WRNMMC. Debarati Dasgupta will very capably serve as the Acting Director of IRB Operations and HPA in Mary's absence.

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Finally, this month we also welcome our new Chief of the Business Cell, Dr. Jasleen Shant. Dr. Shant comes to us from WRAIR and has a very strong background in Technology Transfer. We look forward to her leadership in taking the Business Cell to the next level. I hope you enjoy this issue.

LCDR Ruben D. Acosta, MC, USN
Chief, Research Protocol Development
Deputy Chief, DRP

Research Administration

Jeremy Nelson
Administrator
Directorate of Education, Training, & Research

The Civilian Human Resources Center is changing its Office Hours.

Effective 11 January 2015, the CHRC will accept Walk-In Customers from 07:00-16:00 on Tuesdays and Thursdays. Mondays, Wednesdays, and Fridays CHRC staff members will be available by Scheduled Appointment Only. If you have any questions, or to schedule an appointment, please contact CHRC at dha.bethesda.ncr-medical.mbx.ncr-md-chrc@mail.mil or at (301) 319-8387.

Biomedical Research Laboratory (BRL)

CDR Janine R. Danko, MD, MPH FACP
Chief, Biomedical Research Lab

BRL Team Receives New Research Funding for Novel *Leishmaniasis* Diagnostics Work

In late December, the announcement of a new award from the Advanced Medical Technology Initiative (AAMTI) to the Biomedical Research Laboratory was made.

AAMTI is an Office of the (Army) Surgeon General-funded program under the U.S. Army Medical Research and Materiel Command (USAMRMC), initiated in 1999. The key objectives of the AAMTI are to:

- Demonstrate Advanced Medical Technologies and their Impact on Cost, Access and Quality of Care
- Provide Senior Army Medical Leadership with Medical Tech-Watch Capabilities
- Encourage Medical Technology Entrepreneurship by Funding AMEDD Technology Innovators

Each FY $5,000,000 in P8 funds are available to transfer to Army Medical facilities to enable technology demonstrations. The USAMRMC's Telemedicine and Advanced Technology Research Center (TATRC) manages programs related to existing DoD or Army R&D programs and advanced technology efforts. TATRC's goal is to translate research into new products to advance the care of the nation's warfighters through a partnership of academia, industry and our sister services or other government entities facilitating relationships, partnerships and collaborations which lead to solutions to military-relevant problems.

The BRL proposal selected for funding is entitled, "The Use of MALDI-TOF Mass Spectrometry to Decrease Time to Diagnosis for Cutaneous Leishmaniasis." COL Weina (DRP Chief), CDR Danko and Dr. Sumana Dey (BRL) authored the proposal. The proposal is focused on improving the diagnostics for cutaneous leishmaniasis, which is a disease caused by a small parasite called **Leishmania**. This parasite causes disfiguring skin lesions that last for months or years. There are many different subtypes of **Leishmania.** Treating physicians must know as soon as possible which subtype of **Leishmania** is involved to propose the best treatment. Since it is impossible to differentiate the **Leishmania** subtypes microscopically, the identification of the culprit subtype currently requires complex, expensive typing methods, the results of which are generally obtained several weeks after the diagnosis. This project proposes to evaluate the ability of a new method using mass spectrometry to differentiate **Leishmania** subtypes and develop proteomic profiles of each species. The characteristic peaks for each species will be identified to help in screening of the *Leishmania* subtypes. This new method aims to develop a faster diagnostic technology for this parasitic infection which allow for a more timely start to appropriate therapies.

This project will be conducted in the Biomedical Research Laboratory. The lab is equipped with a state-of-the-art *4800 plus* MALDI-TOF-MS from Applied Biosystems. The goal of this proposal is to create a reference proteomic spectral database which will allow rapid screening and diagnosis of *Leishmania* from patient samples within a few hours at a military treatment facility through the use of MALDI-TOF-MS.

COL Weina and CDR Danko are both infectious disease physicians and are co-Principal Investigators for this project. They will be overseeing the performance of the project and working closely with Sumana Dey, PhD, and the BRL staff on the experimental design, sample preparation, data analysis, experimental design, and execution of the experiment.

Center for Nursing Science & Clinical Inquiry (CNSCI)

Introducing the new Chief of CNSCI!

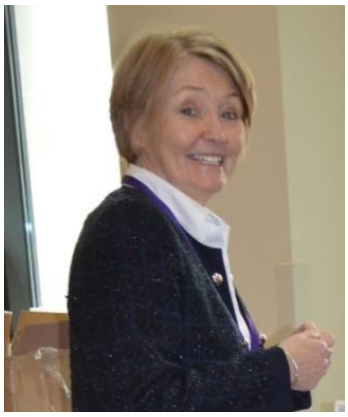
Commander Jason M. McGuire, PhD, CRNA, is the new Chief of the Center of Nursing Science and Clinical Inquiry. CDR McGuire has been with us for several months and comes to DRP after serving as an Assistant Professor in the Nurse Anesthesia Program, Daniel K. Inouye Graduate School of Nursing, Uniformed Services University of the Health Sciences (USUHS). Additionally, CDR McGuire maintains his clinical anesthesia practice as staff in the Departments of Anesthesiology at Walter Reed National Military Medical Center and Kimbrough Ambulatory Care Center, Fort Meade, MD. He maintains his assistant professorship at USUHS, continuing his dedication toward teaching and collaborative research.

As a "Navy brat," CDR McGuire has always called the place where he lays his head "home." He joined the Navy at the ripe age of 17. Rising quickly to the rank of E-4 as a Hospital Corpsman, he completed his BS in Nursing through the ROTC program at the University of Colorado. He completed his MA in anesthesia at Georgetown University and his PhD at the University of San Diego. His past duty assignments include the Naval Medical Center San Diego, USNS Mercy, 1st FSSG 1st MEF USMC, Naval Hospital Camp Pendleton, Naval Hospital Guam, and the National Naval Medical Center.

CDR McGuire is a Certified Registered Nurse Anesthetist (CRNA), while his PhD centered around clinical anesthesia research, investigating the incidence, predictors, and potential treatments for emergence delirium among combat veterans. He is a journal reviewer for several nursing and anesthesia related publications and is a past member of the board of directors for the California Association of Nurse Anesthetists (CANA). His work there culminated in the successful federal regulation "opt-out" of physician supervised nurse anesthesia practice in the State of California. He has published many scholarly articles and scientific manuscripts in emergence delirium, regional anesthesia, and the implications of perioperative obstructive sleep apnea. He is currently in the data collection phase of landmark study here at WRNNMC entitled, "The effectiveness of dexmedetomidine as a prophylactic treatment for emergence delirium among combat veterans with high anxiety: A randomized-controlled trial."

He resides in Olney, MD, with his wife Mary and three children: Catie (12), Molly (10), and James (7). When he is not rooting against Army in the annual Navy-Army football game, he can be found riding his motorcycle up-and-down the eastern seaboard as the Sgt.-At-Arms for the Capital Chapter of the Nam Knights of America Motorcycle Club.

IRB Operations Office



Mary Kelleher
Acting Director, IRB Operations Office

Message from the Human Protections Administrator

For the past five years, it has been my honor and pleasure to serve with so many talented and committed individuals and it is with bittersweet emotion that I transition to a new position at the National Institutes of Health. Thank you to the DRP staff and broader WRNMMC research community for your unwavering support over the years. Please be aware that Debarati Dasgupta has assumed my responsibilities as Acting Human Protections Administrator (HPA). I wish you each the best of luck and "Fair Winds and Following Seas" – Mary

Research Protocol Development

LCDR Ruben D. Acosta, MC, USN
Chief, Research Protocol Development
Deputy Chief, DRP

On a bimonthly basis, a statistical contribution is provided by one of our staff biostatisticians. This month's section was provided by **Minoo Rouhanian, Biostatistician.**

What Study Type to choose?

A pilot study aims to evaluate the feasibility of protocol implementation and /or to identify and address issues that could occur with respect to future study conceptualization, study design, sample size, sample selection, data collection, data management, and data analysis. In other words, a pilot study could be a study prior to the exploratory study and there is no statistical analysis required or necessarily associated with it. In some cases many outcomes (efficacy, surrogates, biomarkers) are described and thus the study may be better described as an **exploratory study**, where the goal is hypothesis generation or refining existing hypotheses rather than testing feasibility (pilot study).

If you have a hypothesis to test specific factors and their associations in order to give direction to future investigations and to better design the future study, then the exploratory type of study is the recommended path. Many use pilot and exploratory interchangeably but it is not really accurate to do that especially from a statistical perspective. Exploratory research is guided by a set of hypotheses for operational definition and statistical testing such as measuring the degree of association and direction of this association between the variables.

In an exploratory study we attempt to evaluate validity of assumptions vs. a **confirmatory study** where we rigorously test to confirm a pre-specified relationship based on a 1) clearly outlined, understood and defined target population 2) clear key clinical questions, and 3) concise and specific number of questions. For example, confirmatory studies can be used to demonstrate or confirm efficacy, establish a safety profile, investigate benefit/risk, or establish dose-response.

Research Compliance Office

Debarati Dasgupta, MS, CHRC, CIP
Research Compliance Officer

The Research Compliance department wishes everyone a prosperous 2015! We are looking forward to a year of continued partnership as we support the research community by providing directed educational sessions on various aspects of the conduct of quality human subjects research, not-for-cause evaluations of research study files/documents and investigator SOPs, and assistance with self-assessments of research files and documentation.

The Post-Approval Compliance Monitoring (PACM) team has been actively conducting compliance monitoring visits. Compliance monitoring visits are educational in nature and serve to help a research team gauge its compliance with research study requirements as well as with federal and institutional requirements. Findings are shared with research teams using a FINDINGS CHART. Each finding must be addressed with an appropriate Corrective and Preventive Action (CAPA). The development of appropriate CAPAs is an extremely educational exercise for all research team members, and is a valuable tool for process improvement.

WRITING AN EFFECTIVE CORRECTIVE AND PREVENTIVE ACTION PLAN

What is a Corrective and Preventive Action?

A Corrective and Preventive Action is an improvement to processes taken to eliminate causes of non-conformances (e.g., protocol deviations, missing data, etc.). The concept of the CAPA is to focus on the systemic investigation of the root causes of identified problems and/or identified risks in an attempt to prevent their recurrence (or corrective action) or to prevent occurrence (for preventive action).

An effective CAPA must address the following:

1. State the problem or weakness clearly, including the root cause.
   Define the problem –
   - Condition: What is happening?
   - Criteria: What *should* be happening?
   - Cause: Why is the problem occurring?
   - Impact: What is the effect?
   - Resolution: How can this be fixed?
2. Break the solution into simple and measurable actions that address the root cause.
   - What are the regulatory and IRB requirements?
   - What can be reasonably accomplished?
3. Have "owners" who are accountable for results.
   - Should one person be solely accountable?
   - Should two people share the responsibility?
   - Should there be a segregation of duties?
4. Identify accountable persons for each action.
5. Set achievable deadlines.
6. Monitor progress and verify effectiveness.
   - Has information been disseminated to the appropriate study staff?

New Employees

Lorna Moore
Clinical Trials Auditor
Research Compliance Office

Lorna Moore, BSN, MPA, CIM (301-295-6914; lorna.r.moore2.ctr@mail.mil) brings over 18 years' industry experience specializing in quality assurance, regulatory compliance, clinical trials monitoring and risk management. Her experience includes conducting various types of quality assurance audits (e.g., site/investigator audits, internal data audits, fraud and misconduct audits, specialty laboratory audits, and vendor audits) to ensure compliance with Good Clinical Practice (GCP), and federal, state, and local regulatory requirements. Ms. Moore has conducted corporate level GCP, HIPAA, and Fraud and Misconduct training classes. She is a member of the Society of Quality Assurance Professionals (SQA), Regulatory Affairs Professional Society (RAPS), Drug Information Association (DIA) and National Registered Nurses Association.

CPT Franz Frye, PhD
Deputy Director
Biomedical Research Laboratory

CPT Franz Frye will be serving as the Deputy Director of the Biomedical Research Laboratory and as a research chemist. He graduated Hartwick College with a B.S. in Chemistry in 1998 and received his PhD in Inorganic Chemistry from University of Florida in 2007. His undergraduate research projects included metal fate and transport research in ground water and environmental software simulation design. Between undergraduate and graduate school he held positions in solutions and standards manufacturing, environmental testing and hazardous waste disposal. His graduate research focused on thin films and nanoparticles of the photo-magnetic cobalt-iron Prussian Blue analogue. After graduate school, CPT Fry was an adjunct instructor at Bluefield State College and at Hartwick College and became an associate professor at Concord University. He taught courses in General Chemistry, Inorganic Chemistry, Environmental Chemistry Physical Chemistry, Physical Science and Hydrology.

In September 2014, CPT Frye received his commission. He recently completed the Basic Officer Leaders Course at Fort Sam Houston, and brings a wide knowledge base of analytical techniques and laboratory operations with training in surface techniques, such as atomic force microscopy (AFM) and scanning electron microscopy (SEM) and material characterization, including transmission electron microscopy (TEM), X-Ray methods, and elemental analysis using energy dispersive spectroscopy (EDS), inductively coupled plasma (ICP) and atomic absorption (AA). CPT Frye is excited to work with investigators at WRNMMC.

Jasleen Shant, PhD
Chief, Business Cell

Dr. Jasleen Shant joins us as the Chief of the Business Office. Dr Shant holds a PhD in Microbiology from Post Graduate Institute of Medical Education and Research, Chandigarh, a premier medical institute in India. Dr Shant was Senior Technology Transfer Specialist at Walter Reed Army Institute of Research (WRAIR) before she joined us. She has over five years' experience in technology transfer and over 16 years' experience in medical sciences and medical research management. She also comes with experience from NIAID and University of Maryland in the field of technology transfer and research.

At WRAIR, Dr. Shant dealt with all issues involving technology transfer, medical research management, and research agreements. She has extensive experience in the drafting and negotiation of agreements with outside collaborators. She has analyzed complex technologies for their value to the federal government, and has advised researchers on intellectual property rights and protection regarding the rights and interests of the federal government.

Dr. Shant is really excited for this new opportunity to work at WRNMMC as the Head of Business Office, and looks forward to work with you. Feel free to contact her with any agreements/collaboration-related questions.

CDR Virginia Blackman, PhD
Nurse Scientist, CNSCI

CDR Virginia Schmied Blackman, Nurse Corps, USN, joins CNSCI as a new nurse scientist on a utilization tour after Duty Under Instruction. CDR Blackman completed her PhD in Nursing at the University of California San Francisco (UCSF) in December 2014. Her dissertation research examined pre-hospital and emergency department pain assessment and pain severity, and pre-hospital analgesic use among combat zone trauma patients. Her current projects focus on evaluating long term outcomes associated with early analgesic use after traumatic injury.

While in graduate school, CDR Blackman gained experience on an interventional thirst relief study in ICU patients, assisted with an observational study of device-related pressure ulcers in critical care, and recruited oncology out-patients for symptom management study. While serving as Adult Critical Care Clinical Nurse Specialist at Naval Medical Center Portsmouth, CDR Blackman served as a scientific reviewer. She holds an MS in Critical Care/Trauma Nursing from UCSF (2005) and graduated Georgetown University with a BSN (1995). She is excited to begin her research career at WRNMMC Department of Research Programs.

Monthly Research Roundtable

Dr. Shant was introduced by LCDR Acosta as the new head of Technology Transfer. She discussed how agreement processes worked in the past and how she would like everyone's input on improvement of processes. She would like a more streamlined interaction. She also mentioned that she would like direct input from PIs on the research they do with partners.

Ms. Verna Parchment, Senior Protocol Development Specialist, Research Protocol Development section, presents to researchers.

Ms. Diane Beaner, Research Compliance Specialist, Research Compliance Office, discusses, "Is a Delegation Log Required?"

Department of Education, Training, and Research Strategic Planning Session – 22 JAN 2015

BG Clark visits to share the new design of the Command icon and the way ahead for our strategic plan, which places people at the top.

Participants split up into their respective departments to brainstorm ideas that comply with the hospital's mission statement.

Behind the Scenes – Keeping the Ball Rolling

Erica Reid, CIP
Protocol Development Specialist – Protocol Navigator
Henry M. Jackson Foundation

What role do you play in human subjects' research?

My primary role is to facilitate the review and approval of human subjects' research. I review initial project submissions as well as lifecycle actions for administrative, regulatory, and ethical issues to ensure a smoother approval through the Institutional Review Board (IRB). At the same time, I serve as the first (and primary) point of contact for research teams throughout the review process. And I'm available to the research team at all stages of their project for questions and advice.

What can researchers do to make your role more effective and efficient?

I think the number one thing that members of a research team can do to make my job more effective is stay informed about WRNMMC's research requirements. The processes are evolving to keep pace with regulations and policies.

It's important to stay up to date with the documents in IRBNet – Forms and Templates. I also encourage everyone to schedule Outreach appointments before submitting new projects, read this newsletter, and go to the monthly Research Roundtables. The Roundtables are meetings where you can hear the latest news from DRP and you get a chance to ask any questions you might have.

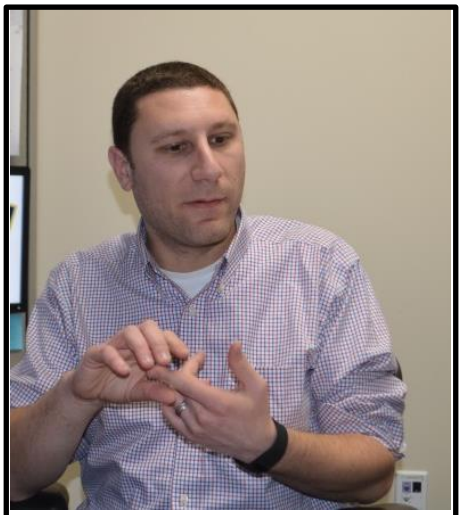
In addition, check in with a member of the protocol development team when preparing a continuing review submission or amendment. We can guide you, provide advice or tips, and update you on current requirements.

Lastly, I'd ask that research teams remain flexible, as we at DRP must remain flexible, with changes in WRNMMC's research environment.

What tips would you offer researchers to get their protocols approved faster or to improve their research?

My advice would be to keep a positive attitude, stay informed, and work closely with a protocol development specialist. It's also helpful to find a mentor or a colleague to partner with; someone who has experience with research at WRNMMC and is able to share the workload.

Investigative Research



Erik J. Wolf, PhD
Senior Research Biomedical Engineer
DoD/VA Extremity Trauma and Amputation Center of Excellence

Our team of researchers are located within the Department of Rehabilitation here at Walter Reed National Military Medical Center. We conduct a wide array of studies aimed at the mitigation, treatment, and rehabilitation of traumatic injuries sustained by service members. In addition, we offer multiple clinical services via the CAREN [Computer Assisted Rehabilitation Environment] and the Gait or Biomechanics Laboratory.

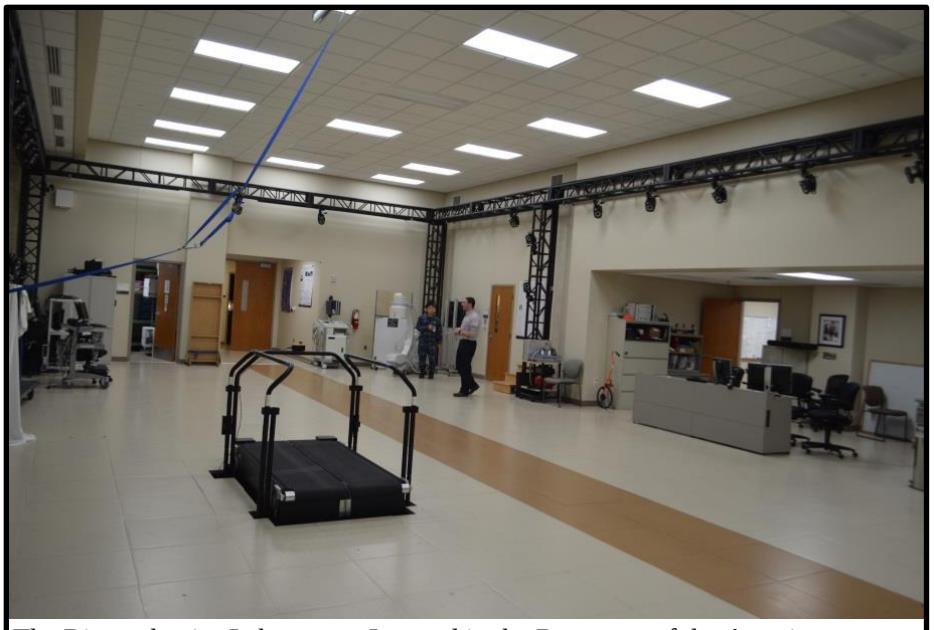
— *Which one?*

The nomenclature is interchangeable; the Gait Lab is sometimes referred to as the Biomechanics Lab. The Virtual Environment Laboratory is where the CAREN is housed. Clinically, we use both labs to offer services to aid in the care clinicians provide to patients. For example, any clinician or physician within WRNMMC can refer their patient to us and we can use the Gait Lab as a tool to examine any gait or movement deviations.

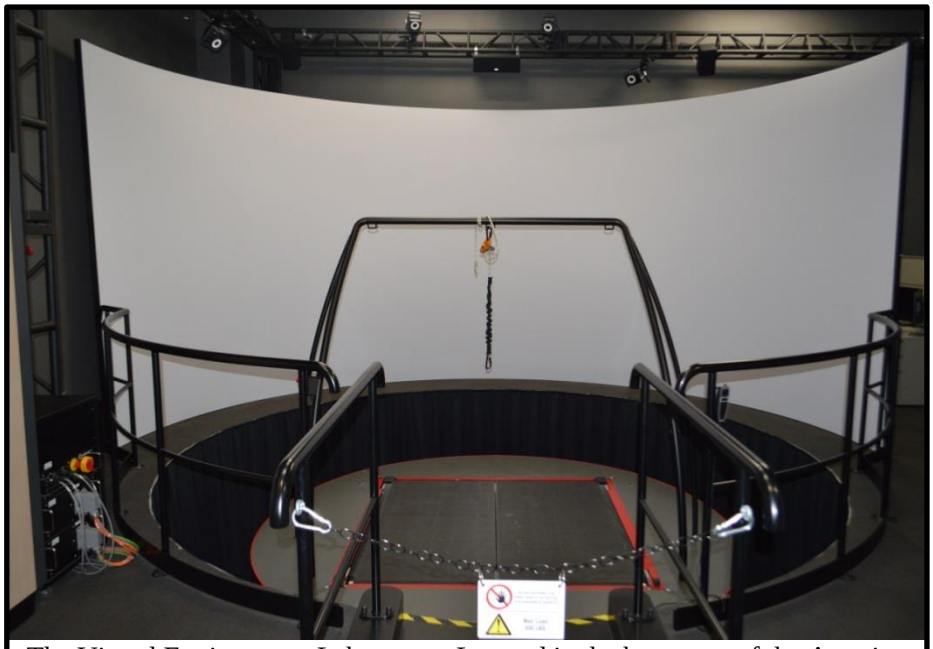
— *So "gait" means "walk?"*

Exactly. Using advanced motion capture technology within the Gait Lab, our Research Physical Therapists and Gait Lab Specialists can observe the patient very precisely as they walk or run. We are then able to process and interpret the myriad of data that we collect, translate it to the clinical problems that the clinicians are reporting, and subsequently provide specific information that can be used to help drive the rehabilitation program forward. Additionally, we have other instrumentation available to us which we use to answer clinical and research questions: a metabolic analyzer used to evaluate oxygen consumption which is a measure of gait efficiency, a electromyography system used to measure muscle activity, an electroencephalogram used to measure brain activity, an in-shoe pressure system used to measure foot pressures during gait, and a digital fluoroscope capable of recording dynamic x-rays.

In the CAREN, we're providing more of an adjunct to therapy. We see patients referred from a variety of services, for example physical therapy and occupational therapy, and what we're doing in this virtual environment is adjunct to the care being received in those clinics. We can do a lot of things in the CAREN that can't be done in the traditional clinic setting. For example, we can have patients walk without their assistive devices over uneven terrain, hunt in a forest, or ski down a mountain side – all of which are done within a projected virtual environment with the safety of a harness system. Furthermore, our team has expertise in the development of new applications. We often work with clinicians to design new applications to target the therapy that they would like to enact for individual patients.



The Biomechanics Laboratory: Located in the Basement of the America Building of WRNMMC, the Biomechanics Laboratory is a 1,200 square foot space comprised of a 27 camera motion capture system, 6 6-degree-of-freedom force platforms, a dual-belt instrumented treadmill with 2 6-degree-of-freedom force platforms and 2 3-degree-of-freedom instrumented handrails.



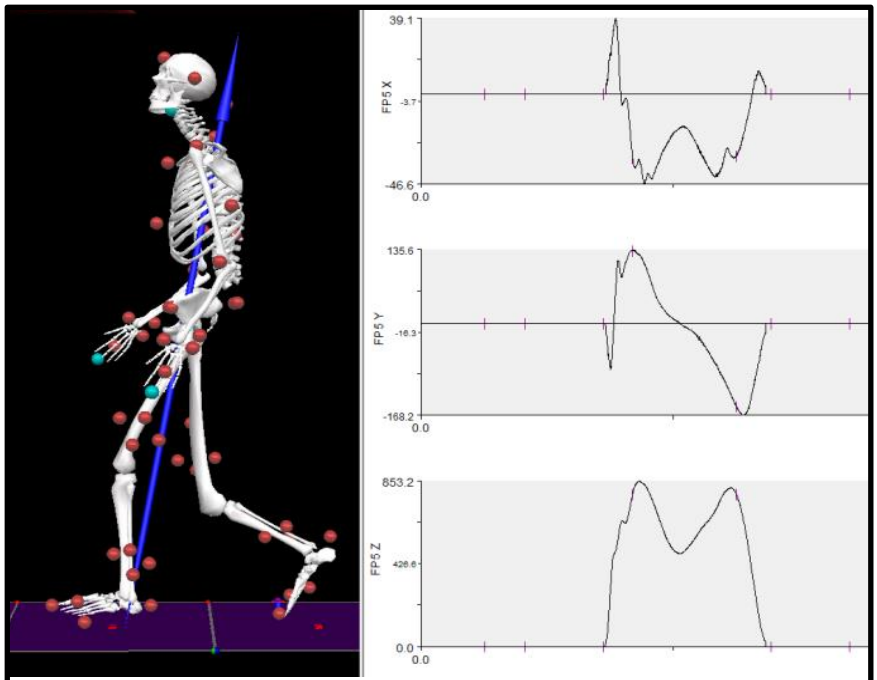
The Virtual Environment Laboratory: Located in the basement of the America Building of WRNMMC, the Virtual Environment Laboratory houses the CAREN system which is a 6-degree-of-freedom motion platform which contains an instrumented dual-belt treadmill with 2 6-degree-of-freedom force platforms that synchronizes in real time with a virtual environment projected onto a 180-degree curved screen. A 12 camera motion capture system tracks the movement of retro-reflective markers worn by the participant, and allows interaction with the virtual scene.

The CAREN and Gait Lab certainly offer a unique platform for providing care compared to the traditional clinician's appointment.

In addition to providing a clinical service, the CAREN and Gait Lab are utilized by our group in a variety of research projects, including efforts aimed at examining the effect of next generation prosthetic technologies and/or new physical therapy interventions on the patient's function. For example, in patients with unilateral amputation, we're very interested in understanding the impact that amputation puts on their remaining limb. For service members with amputation or limb trauma their contralateral limb remains their best mode of mobility despite the significant advancements in prosthetic technology that have been made in recent years. Thus, we want to investigate ways that patients can optimize their abilities, but do so in a way that preserves the overall health of the limb so that they are able to rely on it for years to come.

As such, we have active research projects that are investigating different ways of reducing the impact to that limb via new technologies or targeted training interventions. One such training intervention uses the CAREN to provide biofeedback, in essence giving patients real time information on how they're performing so they can actually change their performance towards the goal as they walk.

—Fix it while it's happening.



An example of raw marker data collected by the motion capture system and the processed model that evaluated kinematics and kinetics.

December 2014 WRNMMC Publications

(Provided by the Darnall Medical Library)
WRNMMC authors are in bold.

1. **Brietzke SE, Pusz MD**. An anatomically based analysis of objectively measured pediatric snoring: a pilot study. *Otolaryngol Head Neck Surg*. 2014 Dec 30. pii: 0194599814564543. [Epub ahead of print]
2. Casey K, **Sabino J,** Weiss J, Kumar A, **Valerio I**. Limb salvage after vascular reconstruction followed by tissue transfer during the Global War on Terror. J *Vasc Surg.* 2014. pii: S0741-5214(14)01967-3.
3. Chadwick JL, **Sridhara S**, **Goodrich J**, Mitchell AO, Gessler EM. Humanitarian otolaryngology: a navy hospital ship experience. *Otolaryngol Head Neck Surg*. 2014;151(6):960-2.
4. Clark RA, Marler AT, Lin CK, et al. A review of anomalous origination of a coronary artery from an opposite sinus of Valsalva (ACAOS) impact on major adverse cardiovascular events based on coronary computerized tomography angiography: a 6-year single center review. *Ther Adv Cardiovasc Dis*. 2014;8(6):237-41.
   WRNMMC Authors: **Villines TC, Hulten EA**
5. **Contestable JJ, Edhegard KD, Meyerle JH**. Bullous systemic lupus erythematosus: a review and update to diagnosis and treatment. *Am J Clin Dermatol*. 2014;15(6):517-24.
6. Cooper SP, Alamgir H, Whitworth KW, et al. The department of defense epidemiologic and economic burden of hearing loss study. *Mil Med*. 2014;179(12):1458-1464.
   WRNMMC Author: **Senchak AJ**
7. Dickens JF, Owens BD, Cameron KL, et al. Return to play and recurrent instability after in-season anterior shoulder instability: a prospective multicenter study. *Am J Sports Med*. 2014;42(12):2842-50.
   WRNMMC Author: **Kilcoyne K**
8. **Engel CC, Cordova EH**, Benedek DM, et al. Randomized effectiveness trial of a brief course of acupuncture for posttraumatic stress disorder. *Med Care*. 2014;52 Suppl 5:S57-64.
   Additional WRNMMC Authors: **Liu X, Gore KL, Freed MC**
9. **George R,** Shah R, Bulas D, Kline S, Alexander S, Reilly BK. The delivered promise of prenatal imaging and a challenge to the utility of sildenafil for severe lymphatic malformations. *Int J Pediatr Otorhinolaryngol*. 2014 Dec 10. pii: S0165-5876(14)00653-3. [Epub ahead of print]
10. Green RC, Christensen KD, Cupples LA, et al. A randomized non-inferiority trial of condensed protocols for genetic risk disclosure of Alzheimer's disease. *Alzheimers Dement*. 2014. pii: S1552-5260(14)02870-2. [Epub ahead of print]
    WRNMMC Author: **Fasaye GA**
11. **Hainsworth JB, Shishido A, Theeler BJ, Carroll CG, Fasano RE**. Treatment responsive GABA(B)-receptor limbic encephalitis presenting as new-onset super-refractory status epilepticus (NORSE) in a deployed U.S. soldier. *Epileptic Disord*. 2014 Dec 3. [Epub ahead of print]
12. Harrison AG, Armstrong IT, Harrison LE, **Lange RT**, Iverson GL. Comparing Canadian and American normative scores on the Wechsler adult intelligence scale-fourth edition. *Arch Clin Neuropsychol*. 2014;29(8):737-46.
13. Ivins BJ, **Lange RT**, Cole WR, Kane R, Schwab KA, **Iverson GL**. Using base rates of low scores to interpret the ANAM4 TBI-MIL battery following mild traumatic brain injury. *Arch Clin Neuropsychol.* 2014 Dec 19. pii: acu072. [Epub ahead of print]
14. **Iwanoff CJ1, Barbier HM, Massengill JC**, Lombardini ED, Christensen CL, Buller JL, **Gruber DD**. Laparoscopic colpotomy using monopolar electrocautery: does power really matter? *Female Pelvic Med Reconstr Surg*. 2014 Dec 17. [Epub ahead of print]
15. Khodr ZG, Sherman ME, Pfeiffer RM, et al. Circulating sex hormones and terminal duct lobular unit involution of the normal breast. *Cancer Epidemiol Biomarkers Prev*. 2014;23(12):2765-73.
    WRNMMC Author: **Caban JJ**
16. **Lande RG**. Stress in service members. *Psychiatr Clin North Am*. 2014;37(4):547-560.
17. **Lowery WJ, Stany MP, Phippen NT**, et al. Survival advantage of marriage in uterine cancer patients contrasts poor outcome for widows: a surveillance, epidemiology and end results study. *Gynecol Oncol*. 2014. pii: S0090-8258(14)01624-2. [Epub ahead of print]
    Additional WRNMMC Authors: **Bunch KP, Oliver KE, Hamilton CA**
18. **Lucas DJ**, Ejaz A, Bischof DA, Schneider EB, Pawlik TM. Variation in readmission by hospital after colorectal cancer surgery. *JAMA Surg*.;149(12):1272-7.
19. **Morgan WE, Morgan CP**. Chiropractic care of a patient with neurogenic heterotopic ossification of the anterior longitudinal ligament after traumatic brain injury: a case report. *J Chiropr Med*. 2014;13(4):260-265.
20. Rosen LB, Pereira NR, Figueiredo C, et al. Nocardia-induced GM-CSF is neutralized by autoantibodies in disseminated/extrapulmonary nocardiosis. *Clin Infect Dis*. 2014 Dec 3.[Epub ahead of print]
    WRNMMC Authors: **Fiske LC, Ressner RA**
21. Schoepfer AM, Straumann A, Panczak R, et al. Development and validation of a symptom-based activity index for adults with eosinophilic esophagitis. *Gastroenterology*. 2014;147(6):1255-1266.e21.
    WRNMMC Author: **Moawad FJ**
22. Schurman J, **Brungart D**, Gordon-Salant S. Effects of masker type, sentence context, and listener age on speech recognition performance in 1-back listening tasks. *J Acoust Soc Am*. 2014;136(6):3337.
23. **Sheffield BM, Schuchman G, Bernstein JG**. Trimodal speech perception: how residual acoustic hearing supplements cochlear-implant consonant recognition in the presence of visual cues. *Ear Hear*. 2014 Dec 15. [Epub ahead of print]
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Feedback on the Newsletter

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Appendix 1 – Brain Assessment Research Laboratory Concussion Study