

TSNRP ★ news

From the Director

FALL/WINTER 2015



COL Michael Schlicher

Dear Colleagues,
 Military nursing research that explores clinical phenomena and develops tests and interventions to address the most pressing clinical problems must be a priority in order to produce the knowledge necessary to guide our practice and improve patient outcomes. As the only congressionally funded nursing research program dedicated to supporting military nursing research and evidence-based practice, the TriService Nursing Research Program (TSNRP) is a means to this end. Additionally, TSNRP offers professional development and educational opportunities for military nurses, ranging from basic research development to our extremely popular Research and Evidence-Based Practice Dissemination Course. As our military health care system transitions to a *system for health*, TSNRP-funded nurse scientists and researchers continue to play a vital role in shaping its success by translating discoveries into best practices and health benefits for our military—as evidenced by the exceptional scientists highlighted in this newsletter.

In this issue, from the Air Force, we highlight Lt Col Antoinette Shinn, PhD, and her contribution to military nursing science through her work on a novel approach to detecting tissue changes in response to embedded fragments and how these metals react in the body. Initial findings from Lt Col Shinn’s experimental study suggest that PET-CT (positron emission

tomography–computed tomography) imaging is a viable tool for tissue surveillance. Her study also reinforced the need for clinicians to obtain a comprehensive patient history.

From the Army, we highlight MAJ(P) Ann Ketz, PhD, and her interventional study to better understand the mechanisms of phantom pain and to explore novel treatments, such as photobiomodulation, to control or reduce neuropathic pain. Results of her study indicated that photobiomodulation was definitely effective (in a controlled animal model) and that it may have additional therapeutic benefits.

From the Navy, we hear from CDR Eric Bopp, PhD, CRNA, who outlines an essential degree element required of all certified registered nurse anesthetist (CRNA) students attending the Uniformed Services University of the Health Sciences CRNA doctor of nursing practice program: the completion of a Scholarly Inquiry Project designed to address a clinical or system problem. CDR Bopp provides an informative discussion on the different approaches being taken to manage students’ scholarly work at various clinical sites throughout the Navy.

Additionally, we take a close-up look behind the scenes with CRNA Clinical Phase II instructor MAJ John Buonora, PhD, CRNA, and his remarkable contributions to nursing science. MAJ Buonora is exploring the challenges of diagnosing and monitoring mild traumatic brain injury (mTBI) and searching for plasma biomarkers to assess neurologic injury, monitor pathogenesis, and predict mTBI patients’ vulnerability to neurologic outcomes. Finally, we show a snapshot of ongoing research by Lt Col Jennifer Hatzfeld, PhD, and her team with their landmark study *Workings Dogs for Wounded Warriors*.

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TSNRP News is published twice each year by the TriService Nursing Research Program. It is available online at www.usuhs.edu/tsnrp/newsletters.

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From the Director, *continued*

In September, TSNRP ended its fiscal year 2015 educational program with much enthusiasm at the Research and Evidence-Based Practice Dissemination Course. More than 400 nurses from all three Services assembled to discuss creative ideas, share interdisciplinary scientific approaches, and present the latest in military nursing research and evidence. Highlights included more than 150 posters and podium presentations as well as keynote lectures from key military nursing leaders, such as MG Jimmie Keenan, AN, USA, Chief of the Army Nurse Corps. Also in attendance were RADM Rebecca McCormick-Boyle, NC, USN, Director of the Navy Nurse Corps; Col Stephen (Keith) Donaldson, USAF, NC, Deputy Director of the Air Force Nurse Corps; and COL Vinette Gordon, AN, USA, Deputy Chief of the Army Nurse Corps. In addition, TSNRP was honored to have in attendance BG Kyung-Hye Choi, Superintendent of the Korean Armed Forces Nursing Academy. BG Choi was the first foreign flag officer to attend our research course. World-renowned qualitative and mixed-methods expert Margie Sandelowski, PhD, FAAN, presented a special guest lecture, and closing the course was a special presentation on high reliability organizations (HROs)

by professor Suzanne Gordon, author of *Beyond the Check List: What Else Health Care Can Learn from Aviation Teamwork and Safety*. Overall, the course provided an excellent forum for sharing innovative ideas and establishing new networking opportunities. It also provided an opportunity for the TSNRP research interest groups (RIGs) to meet in person and develop strategies for continued success; this edition of the newsletter includes highlights of the RIG meetings. All who attended were challenged to find new ways to “create the science and advance our practice.”

Once again, I’m sure you will agree with me that the accomplishments and contributions from all our TSNRP scientists and researchers continue to lead the way in point-of-care research and evidence-based practice for improved health promotion and quality of care across the military.

Happiest of holidays!

COL Michael Schlicher, PhD, AN, USA

TSNRP Says Farewell to MAJ(P) Richard Clark

Early this summer, TSNRP bade a sad but fond farewell to MAJ(P) Richard Clark, AN, USA, who had been serving as the program’s first Informatics Research Fellow. MAJ(P) Clark was instrumental in analyzing and implementing information technology (IT) and management solutions for TSNRP, working to establish the Military Women’s Health Research Database and implement a video platform for all TSNRP media. In addition to his IT duties, MAJ(P) Clark contributed greatly to the program’s strategic marketing campaign by helping to implement the Executive Director’s new initiatives, such as the Research and Evidence-Based Practice Dissemination Course, and by managing the continuing nursing education component offered under the TSNRP Resource Center. “MAJ(P) Clark was a vital

component of the TSNRP success over the last 2 years; we were very fortunate to have him join our team and even more fortunate he came with such expertise and professionalism,” Executive Director COL Michael Schlicher, PhD, said during MAJ(P) Clark’s farewell.

COL Schlicher explained that the Executive Board of Directors (EBOD) beta-tested the authorization to add an additional military Service member at TSNRP. Unfortunately, the authorization was for only 2 years. However, based on MAJ(P) Clark’s exceptional performance and the Executive Director’s recommendation for the position to be continued, the EBOD expects to refill the position when the new Executive Director takes office in 2016.

MAJ(P) Clark returned to San Antonio, Texas, where he is now the Chief Medical Informatics Officer at Brooke Army Medical Center.



COL Vinette Gordon and MAJ(P) Clark



A Novel Approach to Detect Tissue Changes from Embedded Shrapnel

Lt Col Antoinette Shinn, USAF, NC

More than 50,000 U.S. military members have been wounded since the Global War on Terrorism began. Many combat injuries were the result of explosive munitions, such as rockets, mortars, and improvised explosive devices. These weapons of destruction leave numerous victims with retained or embedded metal, also known as shrapnel, in their bodies. Shrapnel injuries are not exclusive to the military. Multiple pipe bomb explosions in Atlanta's Centennial Olympic Park wounded more than 100 people, and the bomb detonations at the Boston Marathon injured more than 250. Increased civil unrest and terrorist attacks around the globe have resulted in a growing population of patients with retained metal in their bodies. Removing all shrapnel from a patient is not always possible or in the patient's best interest. I have seen this firsthand as a perioperative nurse deployed to Afghanistan and caring for wounded warriors in medical treatment facilities stateside. In the operating room, we are required to send any shrapnel removed from a patient to the lab for analysis. The truth is that some metals are toxic, and little is known about their long-term health effects. Therefore, medical surveillance of shrapnel wound victims must remain a priority.

As a doctoral student at the University of Maryland, I had the unique opportunity to spend a research rotation in the Toxic Embedded Fragment Surveillance Center (TEFSC). The center was established by the Department of Veterans Affairs as a hub for tracking and surveillance of post-deployment Operation Iraqi Freedom and Operation Enduring Freedom veterans with retained metal fragments. I was amazed by the work being done, the nurses who were a vital part of the interdisciplinary

team, and just how little we really know about how embedded metals react in the body. The surveillance program included periodic X-rays of TEFSC registry members to identify and assess changes in fragment location, size, and shape. Change in the shape of some implanted metals is associated with oxidation that researchers have observed before tumor formation in animal studies. If clinicians identified changes in fragment shape or appearance via X-ray, they recommended immediate surgical removal of the fragment. I wondered if there was a better way to detect potentially harmful changes. I thought, "By the time you find a tumor, it may already be too late." The issue aroused my curiosity and led to my dissertation.

My 2011 TSNRP-funded dissertation, "Cellular Changes in Response to Embedded Fragments: An Animal Surveillance Model," was an attempt to determine whether positron emission tomography-computed tomography (PET-CT) could identify pathological changes in the soft tissue surrounding toxic metal fragments earlier than X-rays can. Small animal PET-CT is a noninvasive, three-dimensional nuclear imaging procedure. The technology is comparable to large PET-CT used on humans and provides a bridge to translate imaging experiments across species. Radiolabeled tracers used with PET-CT imaging allow for examination of abnormal changes in tissue associated with the progression of certain cancers. We used 18F-fluoro-2-deoxy-D-glucose (FDG), an analogue of glucose and the most commonly used radionuclide with PET-CT imaging. Cells with high glucose demands, such as brain cells, liver cells, and many types of cancer cells, have high tracer uptake. John Kalinich, PhD, and Christy Emond



Lt Col Antoinette Shinn

at the Armed Forces Radiobiology Research Institute trained me to perform the metal pellet implantation technique, and I replicated their small animal shrapnel injury model with 32 male Fischer 344 rats. The toxic metal pellets were a weapons-grade heavy metal tungsten alloy (HMTA; 91.1% tungsten, 6% nickel, and 2.9% cobalt), and the control metal was tantalum (Ta; 99.95% tantalum). I used an experimental design with repeated measures over 16 weeks. Rats were randomly assigned to the HMTA, Ta, or sham control group. Two pellets were implanted in the right hind leg gastrocnemius muscle, and the animals were X-rayed and scanned at five time points (weeks 1, 7, 10, 13, and 16) after the implantation surgery. A subset of animals was sacrificed at each time point for histopathology. Necropsies were performed and groups were compared.

The results were interesting. I found a significant difference in FDG uptake between the Ta and HMTA groups ($Z = 1.73, p = .005$). There was also a significant change in FDG uptake over the 16-week period within the HMTA group ($X^2 [4] = 15.07, p = .005$) but not in the Ta group ($X^2 [4] = 7.07, p = .132$). No identifiable change within the control metal group over the 16 weeks was noted. The HMTA



Research Spotlight, *continued*

group showed a steady increase in FDG uptake over that time. This corresponded with the PET-CT images. Bright areas of increased illumination were easily identifiable on the PET images in the area of the pellets in one HMTA animal as early as week 7 and in the rest of the animals through week 16. No bright areas were found on any of the Ta control metal scans. Histology was used as the gold standard. Although the animals had no palpable tumors, an independent pathologist, blinded to the different implant groups, evaluated the histology slides. He identified the tissue slides from the HMTA group as cancerous as early as 7 days after pellet implantation. All of the HMTA animals had cancer near

the pellet site, whereas none of the Ta animals developed cancer.

The X-rays confirmed that the metal pellets were implanted and that they moved from week to week in both groups. They offered no indication of the aggressive malignancy that was destroying the skeletal muscle or changes in the pellets' appearance or shape. The small animal PET-CT had a sensitivity of 86%, a specificity of 100%, and an area under the curve of .938 by week 16. These findings support using PET-CT imaging as a tool in the surveillance of retained metal, especially if toxic metals, such as known carcinogens like nickel or cobalt, are suspected. In this short 16-week period, the HMTA and Ta groups had few identifiable differences aside from their urine metal levels, PET-CT images, and tracer up quantification.

Despite these promising findings, the study had some limitations. This was a small pilot study, and more research needs to be done. Because rats are more sensitive to foreign body- and radiation-induced sarcomas than humans are, the findings from this animal study cannot be directly extrapolated to humans. PET-CT imaging is expensive and may not be financially feasible as a surveillance tool. It also exposes subjects to radiation doses, a risk that must be carefully weighed against the benefits. Furthermore, FDG is only one of a growing list of radionuclides

available that can be used with PET-CT imaging for a variety of purposes and medical conditions, and it may not be the best choice.

This pilot study was extremely rewarding and enlightening. It reinforced the need for health care providers to inquire about patients' history of combat injuries and whether they have retained shrapnel in their bodies. Blast injuries can result in multiple shrapnel injuries that do not all necessarily contain the same materials. Until an embedded fragment is removed and analyzed, it is difficult to determine exactly what exposure occurred. Knowing what the patient has been exposed to gives the health care provider valuable information.

I am extremely grateful to TSNRP for the grant funding provided to support this research. I could not have done this work without the spectacular team of experts assisting me, including my mentor, Christine Kasper, PhD, RN, FAAN, FACS, at the Uniformed Services University of the Health Sciences (USU); Dr. John Kalinich, who provided expertise, equipment, labs, and constant encouragement; Katherine Squibb, PhD, who invited me to explore the TEFSC; my extraordinary dissertation chair, Meg Johantgen, PhD, RN; and Reed Selwyn, PhD, and his phenomenal staff in the Center for Neuroscience and Regenerative Medicine Translational Imaging Facility at USU. ★



Lt Col Antoinette Shinn



1992

- Tri-Service Nursing Research Group (TSNRP) holds first meeting on 8 January at Walter Reed Army Medical Center.
- Awards eight grants, totaling \$974,363.

TSNRP TIMELINE



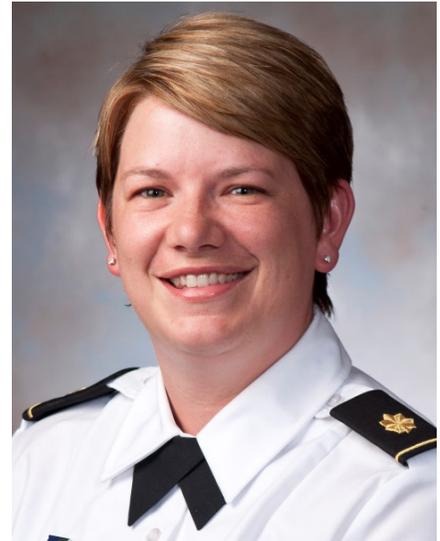
Studying Pain Leads TSNRP Scientist to Explore Alternative Therapy

MAJ(P) Ann Ketz, AN, USA, has been interested in understanding and managing patients' pain throughout her 17 years as an active duty Army nurse. She began her career by providing bedside clinical care to oncology patients, many of whom suffered from intractable pain as a result of their treatment or disease process, and she was inspired to try to determine the best way to provide care and comfort for these patients. She started to investigate ways to incorporate complementary and alternative treatments into clinical practice, becoming a subject matter expert among the health care providers in the hospital. After 6 years of clinical nursing, MAJ(P) Ketz obtained a master's degree and became certified as both an oncology and adult health clinical nurse specialist.

Because the focus of the military medical system had turned to providing care to combat-wounded Service members, for her master's thesis, MAJ(P) Ketz developed and conducted a study titled "The Experience and Management of Phantom Limb Pain in Patients with Traumatic Amputations from Combat Injury." She also completed

coursework and self-directed study to understand more of the mechanisms of phantom pain. Through her thesis project, she learned that most Service members with traumatic amputations experience phantom pain and do not perceive their standard medical treatment to be effective. In addition, they reported that the side effects of their medications were unpleasant and sometimes intolerable. These findings fueled MAJ(P) Ketz's passion to understand the mechanisms of neuropathic pain and to discover novel alternative treatments that are safe, tolerable, and effective for pain control.

Upon completing her master's degree, MAJ(P) Ketz spent 5 years working as an advanced practice nurse at Landstuhl Regional Medical Center in Germany. There, she consulted on patients with pain management issues and complex wounds, educated nursing and medical staff, and participated in policy and process development and improvement. She then became a PhD student at the Uniformed Services University of the Health Sciences, where she completed dissertation work with her research



MAJ(P) Ann Ketz

mentor, Juanita Anders, PhD, of the Department of Anatomy, Physiology, and Genetics. In her dissertation work, which was funded by a TSNRP Graduate Award, MAJ(P) Ketz conducted an experimental study using photobiomodulation, or low-level light therapy, to modulate pain behavior and inflammatory response in an animal model of neuropathic pain. She performed behavioral measures, completed microscopic nerve surgeries, delivered the photobiomodulation protocol to the treatment group, collected and processed tissue, and conducted various biological

1993

- Develops marketing strategies and grant-writing workshops.

1994

- Leadership position begins rotating between the Service branches on a yearly basis.
- Develops guidelines for sponsors to guide novice researchers; guidelines for letters of intent; and forms for interim, annual, and final reports.

1995

- Institute of Medicine reviews TSNRG and recommends continuing the group.
- Uniformed Services University of the Health Sciences (USU) Graduate School of Nursing establishes a working relationship with TSNRG.

1996

- TSNRG is authorized as part of the Department of Defense (DoD) health care program.
- Name changes to TSNRP.
- Civilian nurse researchers join TSNRP scientific merit review panels.



Research Spotlight, *continued*

analyses of the tissue of more than 90 Sprague-Dawley rats over the course of a year. She then completed quantitative data analysis.

MAJ(P) Ketz's study results demonstrated the effectiveness of photobiomodulation as a treatment for mechanical allodynia in an animal model of neuropathic pain. Her findings also indicated that this noninvasive, well-tolerated pain treatment had an anti-inflammatory effect on nerve roots. MAJ(P) Ketz has disseminated her work in poster and invited podium presentations at national and international venues, and she submitted her manuscript to the peer-reviewed journal *Pain*. After presenting at the annual meeting of the North American

Association for Photobiomodulation Therapy, MAJ(P) Ketz received the Tiina Karu Young Investigator Award in Basic Photomedicine Research. The Young Investigator competition included presenters with a variety of experience in basic science and clinical disciplines. Tiina Karu, PhD, DrSci, head of the Laboratory of Laser Biology and Medicine at the Institute on Laser and Informatic Technologies of the Russian Academy of Sciences—whose seminal contributions have formed the foundation for understanding the mechanistic basis of photobiomodulation—presented the award.

MAJ(P) Ketz is now the Deputy Chief of the Center for Nursing Science and Clinical Inquiry at Landstuhl Regional Medical Center. She is continuing her

passion for pain research by serving as the on-site principal investigator for the TSNRP-funded study “Auricular Acupuncture for Sleep and Pain: A Feasibility Study” and as an associate investigator for the TSNRP-funded study “Efficacy and Acceptance of Reiki as a Complementary and Alternative Option for the Management of Pain in Military Healthcare Beneficiaries.” She is currently seeking funding for her next study, applying photobiomodulation therapy in a clinical population of patients with plantar fasciitis. This exploratory study will allow her to obtain data necessary to develop further prospective, randomized controlled trials to compare the effectiveness of optimized photobiomodulation parameters with other, more invasive treatments for plantar fasciitis. One of her research team's long-term goals is to develop photobiomodulation protocols for broad application to other painful and duty-limiting conditions.

MAJ(P) Ketz's work on photobiomodulation aligns with the TSNRP strategic area of Force Health Protection; this innovative therapy has the potential to promote a fit and ready force by returning Service members to duty quickly, reducing health care costs, and promoting operational readiness. ★



MAJ(P) Ann Ketz

1997

- LTC Catherine Schempp becomes TSNRP's first Executive Director.
- Executive Director position begins rotating among branches every 2 to 3 years.
- Develops a mandatory training program for post-award grants management.

1998

- Develops and implements research priorities.

2000

- Lt Col Diep Duong becomes Executive Director.

2001

- Establishes Research Pods or Regional Groups.
- Redefines mission, identifying four goals:
 - Increase military nursing research capacity.
 - Expand the breadth and depth of the research portfolio.
 - Develop partnerships for collaborative research.
 - Build an infrastructure to stimulate and support military nursing research.



Development of a Scholarly Project at a Large Navy Medical Treatment Facility

CDR Eric J. Bopp, NC, USN

The first cohort of doctor of nursing practice (DNP) students in the Registered Nurse Anesthesia (RNA) program at the Uniformed Services University of the Health Sciences (USU) will graduate in May 2016. All RNA students are required to complete a Scholarly Inquiry Project (SIP), which is an evidence-based project designed to address clinical or system problems. In my current capacity as the research director for the RNA clinical training site at Naval Medical Center San Diego (NMCS), I have found SIPs challenging, primarily because my doctoral degree is grounded in research-based design, not DNP methodology. To combat this difficulty, I completed the TSNRP Evidence-Based Practice Course and sought advice from other nurse researchers to help guide RNA students in developing their scholarly projects. In this article, I want to briefly outline the RNA program at USU, present a SIP being developed by our students at NMCS, discuss the approach we have taken to manage RNA scholarly work at our clinical site, and describe how we envision these projects evolving across subsequent RNA cohorts.

The RNA program at USU is a two-phase program; the first 15 months of the program are largely classroom based, and the second portion of

the program (21 months) focuses on clinical application. Research directors at the individual clinical sites identify student SIPs, because we are the most familiar with problems or clinical issues at our respective facilities. Students learn about their particular SIP during the first phase of the program so that they can develop their scholarly project for implementation during the second phase of the program. Because of the structure of our RNA program, we opted to divide one large SIP longitudinally over two RNA cohorts.

The genesis of the class of 2016's DNP SIP followed the implementation of continuous respiratory monitoring (CRM) on inpatient wards at NMCS for patients at risk for respiratory depression. CRM typically encompasses the use of continuous noninvasive capnography and pulse oximetry monitoring technologies. Although education about CRM was provided, most of the nursing staff reported limited working knowledge when using CRM and felt they lacked confidence in caring for patients at risk for respiratory depression. As a result, a knowledge deficit related to CRM became a process improvement priority for the nursing leadership at NMCS as well as the focus of the class of 2016's SIP.



CDR Eric J. Bopp

The primary goal of this SIP was to develop and implement a CRM curriculum guided by current literature and consultation with NMCS nurse researchers and clinical nurse specialists (CNSs). Literature indicated that video podcasts were an effective and sustainable method for presenting educational content on CRM. Ultimately, the CRM curriculum was developed and transcribed into multiple video podcasts, each lasting approximately 10 minutes. The podcasts addressed (1) normal respiratory physiology, (2) risk factors associated with respiratory depression, (3) capnography and pulse oximetry, (4) CRM equipment, and (5) pertinent nursing interventions. For dissemination purposes, the podcasts will be uploaded to the Navy's Learning Management System, a software application designed for educational

2003

- CAPT Patricia Watts Kelley becomes Executive Director.
- Implements the Pilot Project Award program.

2004

- Introduces a new and improved Web site, www.usuhs.mil/tsnnp.

2005

- Institutes a 2-day workshop for prospective researchers who are not yet ready to produce a proposal.





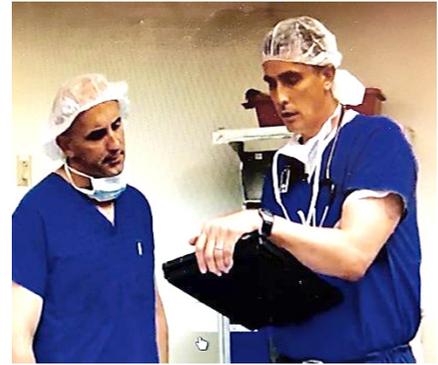
Research Spotlight, *continued*

technology, thus ensuring Navy-wide accessibility, ease of maintenance, and sustainability. Our CRM curriculum is modularized to allow for flexibility in its completion, so it does not have intensive time demands. NMCS D CNSs will evaluate the class of 2016's SIP, assessing its content, quality, and benefits.

Students from the class of 2017 were tasked with the development of a survey to evaluate a nurse's knowledge and confidence following the implementation of the podcast-based CRM curriculum. Also, our students will attend and participate in Nursing Evidence-Based Practice Committee meetings at NMCS D to report on the progress of the SIPs and encourage collaboration with nursing leadership. The students will also submit a proposal to the NMCS D Executive Committee for Nursing Services recommending

that the CRM curriculum be adopted as required training for all nursing and support staff because it directly addresses safety concerns reported by The Joint Commission (http://www.jointcommission.org/assets/1/18/SEA_49_opioids_8_2_12_final.pdf) and the Anesthesia Patient Safety Foundation (http://www.apsf.org/newsletters/html/2011/fall/01_opioid.htm).

We believe the approach we have taken to manage DNP SIPs and mentor students at NMCS D is not only innovative and resourceful but also particularly suitable for large, robust projects that can be developed and implemented longitudinally. One challenge we have is ensuring that our SIP deliverables meet the DNP essentials outlined in the recent American Association of Colleges of Nursing white paper



CAPT (sel) Dennis Spence and CDR Eric J. Bopp

(<http://www.aacn.nche.edu/news/articles/2015/dnp-white-paper>). However, we are confident that the CRM curriculum will be an outstanding learning experience that will greatly improve our nurses' understanding of CRM and better ensure the safety and care of patients at risk of respiratory depression. ★

TSNRP CRNA Scientist Spotlight: MAJ John E. Buonora, AN, USA

MAJ John E. Buonora, AN, USA, is the assistant director of research for the U.S. Army Graduate Program in Anesthesia Nursing (USAGPAN) at Joint Base San Antonio in Texas and an associate professor at Northeastern University, the degree-granting institution for the USAGPAN. MAJ Buonora is also a clinical certified registered nurse anesthetist (CRNA) at San Antonio Military Medical Center. After a 21-year career as a

civilian nurse anesthetist, including serving as president of the Wisconsin Association of Nurse Anesthetists, he joined the Army to care for troops in theater. The Army Nurse Corps (ANC) convinced him that his expertise would be better used in teaching students and conducting research at USAGPAN, and he became a neuroscience PhD student at the Uniformed Services University of the Health Sciences (USU).



MAJ John E. Buonora

In 2013, MAJ Buonora earned his PhD from USU. His dissertation and his subsequent research have focused

2007

- LTC Deborah J. Kenny becomes Executive Director.
- Experiences budget challenges due to congressional delay with defense appropriation funding. No grant awards are funded for the year.

2009

- Col Marla De Jong becomes Executive Director.
- *Battlefield and Disaster Nursing Pocket Guide* is published.
- Receives permanent funding with a \$6 million obligation from Army, Navy, and Air Force Nurse Corps Chiefs.
- Redefines research priorities.

2010

- Develops research interest groups (RIGs).
- Sponsors first Research Strategies for Clinicians course.

2011

- CAPT John P. Maye becomes Executive Director.





on biomarkers in the identification and assessment of mild traumatic brain injury (mTBI).

In one recent project, MAJ Buonora helped to change the way health care providers define mTBI. Using ANC Long-Term Health Education and Training, he and his colleagues developed a traumatic brain injury (TBI) assessment score that can be standardized across clinical settings.

Developing plasma biomarkers for assessing neurologic injury, monitoring pathogenesis, and predicting vulnerability for the development of untoward neurologic outcomes is an important goal for the diagnosis and monitoring of mTBI. Although several biomarker proteins have shown promise, when used individually, these candidates lack adequate sensitivity or specificity for making a definitive diagnosis or identifying patients at risk of subsequent pathology. MAJ Buonora's study evaluated a panel of six recognized and novel biomarker candidates for the assessment of TBI in adults. The researchers selected the six biomarkers based on their relative brain specificities and potential to reflect distinct features of TBI mechanisms. The combined fold-changes in plasma levels of five of the proteins resulted in the formulation of a TBI assessment score that identified mTBI with a sensitivity and specificity of 97% when compared with healthy controls. This research demonstrates that a profile of biomarker responses can be used to formulate a diagnostic score that is sensitive for the detection of mTBI. Because the assessment

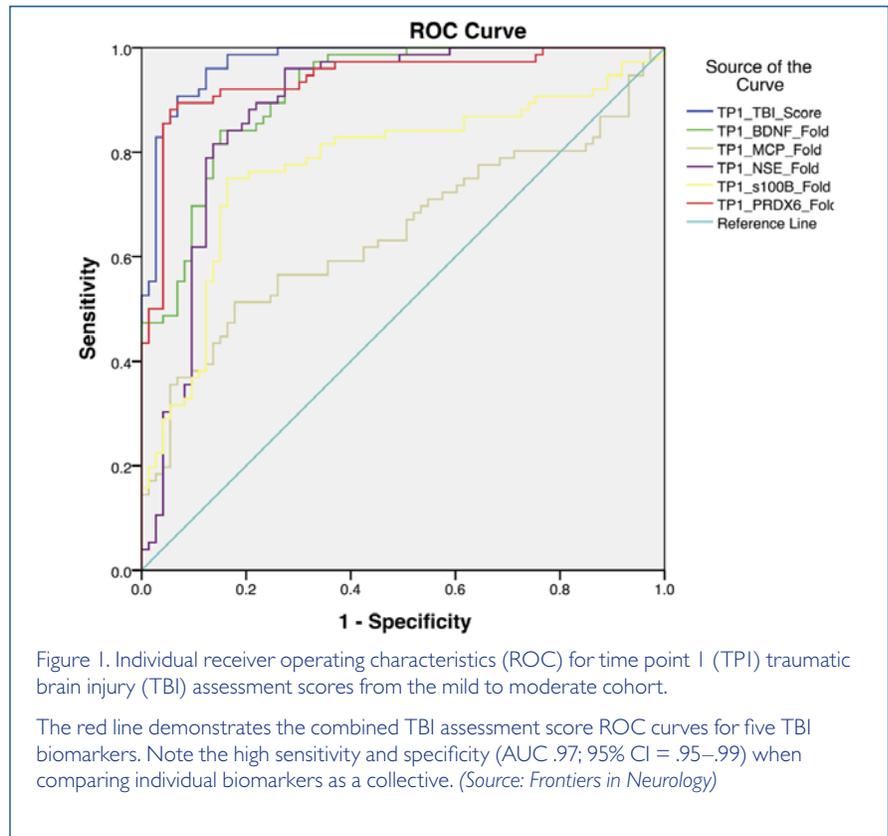


Figure 1. Individual receiver operating characteristics (ROC) for time point I (TPI) traumatic brain injury (TBI) assessment scores from the mild to moderate cohort.

The red line demonstrates the combined TBI assessment score ROC curves for five TBI biomarkers. Note the high sensitivity and specificity (AUC .97; 95% CI = .95–.99) when comparing individual biomarkers as a collective. (Source: *Frontiers in Neurology*)

is based on definitive measures of circulating proteins, it provides an objective assessment of TBI that is easily standardizable across clinical settings. MAJ Buonora's mentor and PhD advisor at USU, Gregory Mueller, PhD, aims to refine this multivariate assessment strategy with additional biomarkers that can effectively assess the spectrum of TBI and identify those at particular risk for developing neuropathologies as a consequence of an mTBI (see figure and table).

MAJ Buonora's abstract and publication can be found in *Frontiers in Neurology* (<http://journal.frontiersin.org/article/10.3389/fneur.2015.00068/abstract>). His work on this project was recognized in the March 2015 issue of the American Association of Nurse Anesthetists (AANA) publication *AANA NewsBulletin* as part of its ongoing series *Discoveries of Distinction*.

2012

- Begins initiative to expand reach of educational programs.

2013

- LTC Michael Schlicher becomes seventh Executive Director.
- Awards \$3.4 million in actual grants despite \$1.4 million budget cut.
- Develops online webinars in response to DoD travel restrictions.
- MAJ Richard Clark becomes first Informatics Fellow.
- Produces first Annual Report.

2014

- Holds Research and Evidence-Based Practice Dissemination Course with more than 250 attendees.
- Women's Health RIG database is brought online at USU.

2015

- Fast Track Award is reclassified.
- New contract that combines TSNRP Resource Center with Grants Management Office is put into place
- Funds more than \$5 million in grants for 2015 alone.
- Research and Evidence-Based Practice Dissemination Course attracts more than 400 attendees.
- All TSNRP courses have their largest attendance to date.



Research Spotlight, *continued*

Protein	Control	Mild to Moderate	Moderate to Severe
BDNF	1	3	4
MCP1/CCL2	1	2	3
NSE	1	2	11
S100b	1	5	9
PRDX6	1	5	5
TBI Score	5	17	32

Table 1. Formulation of a traumatic brain injury (TBI) assessment score

MAJ Buonora’s work was funded by a \$36,000 Graduate Award from TSNRP, and he is currently working with COL (ret) Tomás Eduardo Ceremuga, AN, USA, on a \$506,000 research grant investigating preemptive therapies for post-traumatic stress disorder.

Since graduating from USU, MAJ Buonora has had four manuscripts accepted for publication in peer-reviewed journals, and he is an author on four national presentations and four abstracts. His oral presentation was selected as the Outstanding Research Oral Presentation at the 2013 U.S. Army Medical Department Center

and School (AMEDDC&S) Graduate School Research Day event. He was also selected to present at the AANA Foundation “State of the Science” event at the 2015 AANA Annual Congress in Orlando, Florida.

Along with developing and facilitating basic science research projects for the USAGPAN, MAJ Buonora teaches doctoral-level courses in pharmacology, fundamentals in anesthesia, informatics, and simulation. He is a dedicated faculty member whose contributions make a difference to the students, the program, and the AMEDDC&S mission. MAJ Buonora continues to advance the science of nursing anesthesia with renowned



MAJ Wimmer and MAJ John E. Buonora

scholarly works while mentoring Army and Department of Veterans Affairs nurses. It is with great respect and appreciation that TSNRP supports and collaborates with MAJ Buonora. ★

TSNRP Thanks Outgoing Members of the Executive Board of Directors

TSNRP bids a fond farewell to the outgoing members of our Executive Board of Directors (EBOD): MG Jimmie O. Keenan, Commander of Medical Operations and Chief, Army Nurse Corps; CAPT Annette Beadle, Deputy Director, Navy Nurse Corps, Bureau of Medicine and Surgery; and COL Vinette Gordon, Deputy Chief, Army Nurse Corps.

TSNRP is grateful to the outgoing EBOD members for their

dedication and commitment in supporting and promoting nursing research and evidence-based practice (EBP). All three were dynamic leaders and advocates for TSNRP and recognized that research and EBP are necessary components for developing and sustaining high-reliability organizations. It is with sadness and heartfelt appreciation that we say farewell, and we wish them all the very best in their future endeavors.



MG Jimmie O. Keenan and COL Vinette Gordon



CAPT Annette Beadle



Three Quick and Easy Grant Writing Tips

COL Michael Schlicher, TSNRP Executive Director

In a typical funding year, TSNRP receives 30 or more grant applications, and only the top 10%–20% receive funding support. Here are three basic characteristics to help make your proposal successful:

1. Exceptional relevance
2. Excellent science
3. Exceptional packaging

Let's look at each of these characteristics further.

Exceptional relevance signifies a clear and concise emphasis on the study or project's nursing and military relevance and how the study or project as a whole will serve the priorities of TSNRP and the military. This is perhaps one of the most important aspects of an application, and more often than not, the author writes just one or two "generic" sentences relating to relevance. Emphasize nursing and military relevance throughout your proposal whenever possible, such as in the introduction and background sections, and most definitely in the application itself, where it specifically asks for relevance. Additionally, be sure to identify the benefit and/or outcome value from doing this type of study or project. Essentially, you are "selling" your proposal, making every effort to identify and highlight the elements that will support your ability to complete the project successfully should it be funded.

Excellent science means that your application should contain the following three elements at a minimum:

- A basic idea that is novel; significant; and based on sound, logical principles
- An investigational approach that is technically feasible for our military setting and timeline
- A study design that is adequate to achieve an answer



Exceptional packaging refers to following the current call for proposal guidelines for the institution to which you are applying and submitting a flawless package. It does not sit well when applications are received in a format requested by another institution. The entire proposal package should be clear, concise, and well organized, and it should flow logically to facilitate the reader's understanding of the study. Be sure that all of the required documents are attached, all components are addressed, and the budget is adequately explained. Finally, be sure to obtain objective feedback prior to submitting. Have both experts and non-experts review the proposal for you and provide edits or suggestions on areas that might need clarification.

Chances are that if they cannot understand a section, then others will have the same issue. ★

For more in-depth information and training, consider applying for the TSNRP Grant Camp, which is held once a year, usually in July. Attendance is competitive, and applicants must have a workable research or evidence-based practice proposal to work with. For more information, contact Kemia Duncan-Kirby, TSNRP's Deputy Program Manager for Education and Outreach, at 301-319-0598 or kemia.duncan.ctr@usubs.edu.



Training Sherlock Would Love: Naval Medical Center Portsmouth Nurses Delve Deeper into Evidence-Based Practices

Rebecca A. Perron, Naval Medical Center Portsmouth Public Affairs

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2015 Naval Medical Center Portsmouth Evidence-Based Practice Course faculty and participants

Throughout the country, countless medical researchers work to produce and publish the latest “best practices” to improve health care outcomes. But how can clinicians determine which of these practices will be the best for their patients?

That’s where evidence-based practice (EBP) comes in, and it’s the reason Naval Medical Center Portsmouth (NMCP) hosted the TSNRP Evidence-Based Practice Course on 4–5 June. The course trained about two dozen nurses in the process of identifying undesirable outcomes, assessing medical literature, and recommending changes that will improve health care delivery and outcomes.

Undesirable outcomes indicate that better techniques may be available for the delivery of health care that would improve overall health, minimize discomfort, and maximize recovery. For example, new techniques could help reduce sore throats in postoperative patients whose airways were maintained with a breathing tube during surgery.

NMCP has completed dozens of EBP projects, from analyzing morphine usage for postoperative pain control to training milk technicians in

the preparation of formula in the neonatal intensive care unit.

“EBP is a tool that allows you to engage with your practice and with your patient—you are always looking at and observing the outcomes for your patient,” said CAPT(ret) Maggie Richard, NC, USN, the director of professional practice, research, and education at Sinai Hospital in Baltimore and the course’s lead facilitator. “So when you observe an undesirable outcome, your goal as a

registered nurse is to say, ‘I have to intercept the process that’s leading to this outcome and redirect to a better outcome for my patient.’”

Navy, Army, and Air Force health care providers from the Portsmouth area and beyond attended the course, which included discussions of how to conduct EBP, its historical evolution, and how to develop PICO (population, intervention, comparison, outcome) questions to guide EBP projects.

“In the course, we review good and poor examples of EBP, which teaches them the effective and efficient steps of the process,” said CAPT(ret) Richard. “They can become the champion for EBP at their command. They can be a resource to teach their peers the value as well as the process.”

CAPT(ret) Richard challenged each participant to come to the course ready to talk about an issue in his or her area of expertise. The issue could relate to the nurse’s practice or improving outcomes for their patients.



LTC (ret) Deborah Kenny (far right) collaborates with a student work group.



Capt Amanda Fulmer, USAF, NC, a women's health nurse practitioner assigned to the hospital at Joint Base Langley in Hampton, Virginia, came ready to talk about implementing an exercise education program for pregnant patients.

"This is a great way for me to learn about evidence-based research and infuse it into my current program and bring it back to Langley," Capt Fulmer said. "Some of our patients experience complications such as gestational diabetes because they

don't get enough exercise or gain too much weight. My goal is to develop an education program that explains the benefits of exercise, provides resources, and motivates them to exercise, which ultimately will provide healthier outcomes for mom and baby."

Capt Fulmer is in the data-gathering stage of her project. Gathering evidence is a crucial part of the EBP philosophy. According to NMCP's Nursing Research Department head, CDR Craig Cunningham, NC, USN,

there's more to it than just grabbing the latest literature off the shelf and using someone else's best practice.

"To provide the best health care outcomes, you must use evidence to drive your practice," said CDR Cunningham. "What we add is that we must also be measuring the change in outcome to make sure that we are getting the outcome the research demonstrated. When we prove that it's actually the best practice for our patients, it's then that we achieve the culture of EBP that drives patient safety and better outcomes."

By becoming champions of EBP, nurses can bring best practices to patients sooner. "Historically, it takes 15 to 17 years for knowledge to drive practice, so when you pick up a textbook, it's outdated information," said CDR Cunningham. "That's why we started teaching how to find and take the best evidence to the bedside faster, and that's what EBP is all about." ★



CAPT(ret) Maggie Richard collaborates with a student work group.

TSNRP Holds 2015 Research and Evidence-Based Practice Grant Camp

The TSNRP Resource Center offers courses that address the program's mission, "facilitating nursing research to optimize the health of military members and their beneficiaries." The Resource Center hosted its largest Research and Evidence-Based Practice Grant Camp on 20–24 July at the Naval Air Station North Island in San Diego, California. Thirty-two students attended the course, representing three Service branches: Army, Navy, and Air Force. Seasoned researchers and educators facilitated the course, gave lectures, and provided guidance in developing a fundable TSNRP proposal. The faculty members teach at various universities, and all have experience reviewing funded grant applications.

As in previous years, Grant Camp helped students produce and submit a scientifically sound research grant application in response to a TSNRP Call for Proposals on a topic that aligns with one of the TSNRP research priorities: Force Health Protection; Nursing Competencies and Practice; and Leadership, Ethics, and Mentoring. Students received

instruction in quantitative and qualitative research as well as a modest amount of didactic content about grantsmanship. They also spent substantial time during the course applying the didactic content while continuing to write their applications on the appropriate grant application forms. A significant change in this year's course was that there was



Faculty and participants at the 2015 Research and Evidence-Based Practice Grant Camp



Educational Programs, *continued*

more in-depth, one-to-one interaction between faculty and students, which provided students with a better understanding of the proposal outline and submission process.

Because of the emphasis on grantsmanship, attendees were given instruction and direction in the following areas: (1) their chosen topic, (2) the research process, (3) research design, (4) methods, (5) relevant variables, (6) measures, and (7) data analysis. Students also received a 1-minute mock peer review of their topic, in which they responded to questions and received constructive feedback from faculty. Each student's proposed research topic aligned with at least two of the three TSNRP research priorities.

At the conclusion of the course, students were asked to reflect and share their experiences from the week. Some of the comments follow:

“Grant Camp was fantastic! I took away so much from my experience, and I feel like I'm ready to take on the world of grant application!”

—LTJG Maryam Adebayo, NC, USN

“The course was very informative and presented valuable information for someone wanting to apply for a grant. It supplied the information necessary to make the muddy waters of grant application clearer.”

—LTC Elizabeth Kelly, AN, USA

“Overall, incredible course! Knowledgeable, kind, and passionate staff who have the student's best interest at heart. I would highly recommend this training to any of my colleagues.”

—CPT Alexander Heinly, AN, USA

“What a great course this was, with very valuable information and resources—I learned a lot and appreciate being allowed to attend.”

—Col Brenda Morgan, USAF, NC

Mission accomplished! ★

TSNRP Holds 2015 Research Development Course

In April, the 59th Medical Wing hosted the 2015 TSNRP Spring Research Development course at Joint Base San Antonio in Lackland, Texas. The course was truly tri-Service: 40 nurse attendees from around the San Antonio area represented the Army, Navy, and Air Force. Nurses from all patient care backgrounds were treated to 3 days of instruction that introduced the research process with an emphasis on identifying a research question and planning a research

study. Instructors included CAPT(ret) Elizabeth Barker, NC, USN; LTC (ret) Nancy Ryan-Wenger, AN, USAF; and Victoria von Sadowsky, PhD, RN, all from the Ohio State University. Especially exciting for attendees was the interactive nature of the course. By the end of the 3 days, all of the attendees had the opportunity to discuss their specific areas of interest and receive real-time feedback that will help them further develop their topics and research plans. ★



Interactive group lecture



Faculty seated in front row (left to right): LTC (ret) Nancy Ryan-Wenger, CAPT (ret) Elizabeth Barker, and Dr. Victoria von Sadowsky



TSNRP's Research Interest Groups Meet at 2015 Dissemination Course



Standing (left to right): Dr. Elizabeth Kostas-Polston, ILT Annitta Bright, Col Nicole Armitage, CAPT Anita Smith, CDR Lisa Braun, LTC (ret) Nancy Steele, CDR Abigail Marter, CDR Judy Dye, MAJ Ida Montgomery, CDR Jen Buechel, LTC John Meyer, and Lt Col Candy Wilson; seated row (left to right): Maj Kristi Norcross, LTC Leilani Siaki, Lt Col Miev Carhart, COL (ret) Lori Trego, Megan Foradori, and CAPT(ret) Linnea Axman

After spending the year working via conference calls and small subgroup meetings, TSNRP's four research interest groups (RIGs) enjoyed the luxury of meeting in person at this year's Research and Evidence-Based Practice Dissemination Course in San Antonio, Texas.

New to the course this year were RIG symposia—blocks of podium presentations related to the topics of each RIG, with the team's RIG meeting nestled inside. This new format allowed new and existing RIG members to network, share ideas, and hear current research easily, and the symposia were well received by all in attendance.

The **Military Women's Health RIG** (MWHRIG), celebrating its fifth anniversary, was featured in one of the first morning's keynote sessions. The group just completed a systematic review of published military women's health research from 2000 to 2010, which is now in review. The leaders of the group—founding members COL (ret) Lori

Trego, AN, USA, CAPT Jacqueline Rychnovsky, NC, USN, Lt Col Candy Wilson, USAF, NC, and LTC (ret) Nancy Steele, AN, USA; RIG coordinator Megan Foradori; and new leaders CDR Abigail Marter, NC, USN, LTC Leilani Siaki, AN, USA, and Maj Dawn-Kimberely Hopkins, USAF, NC—gave a presentation on the importance of tri-Service teamwork in the RIG's accomplishments, complete with a slideshow of pictures of 5 years' work and friendship. The MWHRIG symposia featured talks on the systematic review's findings as well as work in injuries, human papillomavirus, and deployed health promotion. Following the talks, the team met to discuss the work presented, future collaborations, and ways to promote the group and military women's health to a broader audience in the coming year. The team will work on a systematic review update for work published since 2010 and will continue to hold its popular Military Women's Health Quarterly Updates by phone

(scheduled for the second Thursday of each quarter at 1300 EST).

The **En Route Care RIG** (ERCRIG) symposia featured multiple presentations on the biobehavioral health of en route care (ERC) personnel as well as talks on education, ERC nursing practice, use of therapy dogs, pain, and working with ERC databases. The group had a full room for its RIG meeting, which included a great discussion surrounding its possible next steps: an online ERC literature library, a proposed literature review, and modification recommendations for ERC nurse training and education. The ERCRIG is led by Col (sel) Susan Dukes, USAF, NC, Col Elizabeth Bridges, USAF, NC, and Lt Col Jennifer Hatzfeld, USAF, NC.

The **Biobehavioral Health RIG** (BHRIG) hosted a series of very popular presentations at its symposia, including talks on access to care, biobehavioral health interventions, sexual misconduct, family studies, provider perceptions, social network analysis, and ethics. During the BHRIG meeting, led by RIG leaders Col (ret) Penny Pierce, USAF, NC, and COL (ret) Linda Yoder, AN, USA, the group talked about its focus on educational opportunities of interest to biobehavioral health researchers and



Left to right: COL (ret) Lori Trego, CAPT Jacqueline Rychnovsky, Maj Dawn-Kimberely Hopkins, and LTC (ret) Nancy Steele



Lt Col Jennifer Hatzfeld addresses the En Route Care Research Interest Group.



LTC (ret) Michael Loughren

the possibility of becoming a source for mentors and grant/paper reviewers for biobehavioral health nurse researchers. A new needs assessment is available

at <https://www.surveymonkey.com/r/6G3DGVY>, and the BHRIG will use the results in planning its activities for the coming year. In the first years of the BHRIG, the group offered short but intense courses in mixed methods and survey design and analysis at the

University of Michigan Institute for Social Research; it may resume these courses in the future.

The **Anesthesia RIG** (ARIG) series stretched for 2 days of the course's podium presentations, featuring work in animal models, anesthesia practices, perioperative care, emergence delirium, competency assessment, and obstetrical care. The ARIG, led by CAPT Lisa Osborne, NC, USN, and CAPT(ret) Chuck Vacchiano, NC, USN, met with all those interested in anesthesia to hear from LCDR John Litchfield, NC, USN, who spoke on the progress of the group in its first year and possible future projects. Attendees expressed interest in working on publishing

articles about militarily relevant topics, a literature review, and projects facilitating the transition to doctor of nursing practice programs.

The great RIG work featured at this year's course inspired a handful of attendees to consider proposing a fifth RIG looking at military families! If you are interested in being a part of this proposal or any of the four existing RIGs, please contact Research Agenda Program Coordinator Megan Foradori at **megan.foradori.ctr@usuhs.edu**. All of the RIGs are looking forward to using the momentum gained at the course for another great year of collaboration and research inquiry. ★

The TSNRP Research and Evidence-Based Practice Dissemination Course: A Winning Combination

CAPT(ret) Civita Allard, USN, NC

TSNRP ended its fiscal year 2015 educational program with much energy and enthusiasm at this September's Research and Evidence-Based Practice (EBP) Dissemination Course. The course, held in San Antonio, Texas, attracted more than 400 attendees this year—a record high for any TSNRP course!

The huge success that began with its launch last year can largely be attributed to the exceptional blend of attendees and speakers who contributed to the event, allowing for collaboration and exchange of ideas across all three major military nursing branches of Service and the Department of Defense.

The course's theme, "Creating the Science, Advancing the Practice," reflected the importance of improving both health care practice and research. Conceptualized and led by TSNRP Executive Director COL Michael Schlicher, PhD, the course once again provided military nurses the opportunity to network and learn



about new and innovative ideas from their colleagues and experts from across the country.

TSNRP developed this course to combine two of our historical research events, the Karen A. Rieder Poster Session and the Phyllis J. Verhonick Course, into one consolidated educational program. The goal is to highlight research and EBP innovations and also stimulate additional research and intervention while fostering collaborative partnerships among tri-Service nursing partners. The TSNRP Research and EBP Dissemination Course is the only dedicated military nursing research venue to showcase, disseminate, and promote the importance of both research and EBP in improving the delivery of health care across the military. Attendees heard stimulating lectures on research and EBP projects throughout the military nursing communities and were also treated to special guest

USAF, NC—presented attendees with an overview of the state of the science. MG Jimmie O. Keenan, AN, USA, Deputy Commanding General of Operations of the Army Medical Command and Chief of the Army Nurse Corps, presented a special guest lecture on “Building a HRO within Military Medicine.” MG Keenan inspired the audience with her dynamic interaction and style. Also in attendance were RADM Rebecca McCormick-Boyle, Commander of the Navy Medicine Education and Training Command and Director of the Navy Nurse Corps; Col Stephen Donaldson, Deputy Director of the Air Force Nurse Corps; and COL Vinette Gordon, Deputy Chief of the Army Nurse Corps. Additionally, TSNRP was honored to have in attendance BG Kyung-Hye Choi, Superintendent of the Korean Armed Forces Nursing Academy. BG Choi was the first foreign flag officer to attend the TSNRP course.

Other presentations included “Research at the Bedside: It Makes a Difference” by Col (ret) Elizabeth Bridges, USAF, NC; “EBP at the Bedside” by Martha Moseley, PhD, RN; “Emerging Trends in Conducting Mixed Methods Interventional Studies” by qualitative and mixed-methods expert Margarete Sandelowski, PhD, RN; “Publishing Perspectives: An Insider’s View” by COL (ret) Bonnie Jennings, AN, USA; and “Characterization of Macrophage/Microglial Activation and Effect of Photobiomodulation—In Neuropathic Pain” by MAJ(P) Ann Ketz, AN, USA. Renowned author Suzanne Gordon closed the course with a special presentation titled “Beyond the Checklist: Bringing HRO Research to Healthcare.”

The course’s poster session showcased more than 100 new and innovative research topics to help improve the health care provided to our military beneficiaries. RADM McCormick-Boyle, BG Choi, COL Gordon, Col Donaldson, and COL

Schlicher oversaw the Poster Award ceremony, recognizing the top three posters in two categories (Research and EBP).

Of special note this year were meetings of the TSNRP research interest groups (RIGs). The Military Women’s Health, Anesthesia, En Route Care, and Biobehavioral Health RIGs met to discuss various points of interest related to their respective research areas, and their meetings provided a forum for topic-specific information dissemination.

Overall, the course was an excellent forum for sharing innovative ideas and for establishing new networking opportunities. Additionally, it provided more than 20 continuing nursing education units (CEs) for attendees, and for the first time, Certified Registered Nurse Anesthetist (CRNA) attendees also received specific CRNA CE. All who attended were challenged to find new ways to “create the science and advance our practice.” ★

TSNRP extends a heartfelt thank you to the Uniformed Services University of the Health Sciences (USU), the Henry M. Jackson Foundation, and the USU Office of the Vice President for Research, whose support and dedication to this program made this course possible.



presentations by world-renowned nursing experts and key military senior leaders.

Following opening remarks by COL Schlicher, the specialty corps leaders—COL Sara Breckenridge-Sproat, AN, USA; CAPT Lisa Osborne, NC, USN; and Col Marla De Jong,

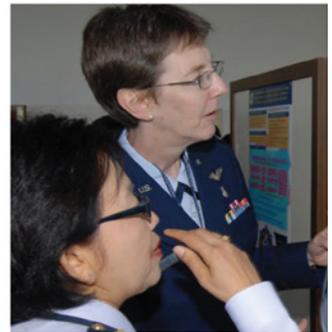
Abstracts for all TSNRP Research and Evidence-Based Practice Dissemination Course presentations will be available on the TSNRP Web site within a few weeks.



Creating the Science, Advancing the Practice

TSNRP held its second Research and Evidence-Based Practice Dissemination Course on 31 August–3 September. Participants shared innovative ideas, presented their research findings, and networked. Take a look at some scenes from the course!







TSNRP Promotes Kemia Duncan-Kirby

TSNRP recently promoted Kemia “Mia” Duncan-Kirby to deputy program manager for education and outreach. Ms. Duncan-Kirby first came to TSNRP in February 2005 as the Resource Center administrative assistant under the mentorship of former Resource Center Program Manager Maria Burcroff. Ms. Burcroff made sure that Ms. Duncan-Kirby gained thorough knowledge of the operations of the Resource Center and TSNRP as a whole, teaching her the Continuing Nursing Education (CNE) process and often challenging her with tasks outside of her scope of work. The two worked closely in planning TSNRP educational courses and outreach events. In April 2007, Ms. Duncan-Kirby left TSNRP to pursue a career as the executive assistant to the CEO of the National Healthy Start Association. To her surprise, in the fall of 2008, then-

Executive Director LTC (ret) Deborah Kenny, AN, USA, asked if she would like to come back to TSNRP as an executive assistant for the Resource Center and Grants Program—an offer that Ms. Duncan-Kirby accepted.

Ms. Duncan-Kirby worked closely with former Resource Center program managers Dawn Lea and Linda Bell during their tenures at TSNRP, ensuring that the Resource Center continued to meet its high standards. In addition to planning educational courses, corresponding with faculty, preparing documents for CNE credits for all TSNRP courses, and undertaking other Resource Center tasks, she became highly adept in Department of Defense military travel procedures, preparing travel orders for hundreds of military nurses and learning the ins and outs of the Defense Travel System. As a result of her commitment, hard work,

qualifications, and dedication to the program and its mission, TSNRP selected Ms. Duncan-Kirby for her new position.



Kemia Duncan-Kirby

Ms. Duncan-Kirby is married and a mother of four children with another on the way. She thoroughly enjoys working with the TSNRP staff and faculty and, most of all, serving TSNRP stakeholders. “I am very humbled and honored to have been selected for this important position,” Ms. Duncan-Kirby said, adding that becoming a program manager had been one of her career goals since she first joined TSNRP. ★

Service Dogs for Wounded Warriors

SSgt Holly Mason, USAF, NC

Reprinted with permission from the 779th Aerospace Medicine Squadron

Wounded warriors passing through the 779th Medical Group Aeromedical Staging Facility (ASF) have the opportunity to participate in a study that examines their stress level and the impact of animal-assisted therapy in reducing stress as they transit the aeromedical system. The ASF serves as the CONUS distribution hub for all branches of the military, dependents, retirees, and deployers returning home.

“This really is a landmark study. There have been no studies published examining the stress levels of our patients as they move through the En Route Care System. The study creates a foundation of knowledge that can be further refined to improve the quality of care given,” said Capt Melissa Simpson, USAF, NC, ASF Flight Chief and associate investigator.

Over a decade of conflict has resulted in high rates of post-traumatic stress symptoms in our wounded warrior population. A team of nurse researchers from the National Capital Region has been awarded funding by TSNRP to conduct a study examining the effects of stress on active duty members traveling from Ramstein Air Base, Germany, to Joint Base Andrews, Maryland.

Phase I of this two-part study was completed on 30 June 2015. During Phase I, 36 active duty members were asked to complete a series of questionnaires and submit saliva samples to establish a baseline stress indicator scale. Results showed that aeromedical patients measured approximately 13% higher than the average stress level.

In Phase II, participants have one 20-minute visit with a certified

therapy dog and its handler to determine the impact the dog has on reducing stress. The ASF has partnered with Fidos For Freedom, a local nonprofit organization, to provide service dogs for the animal-assisted intervention. Research has shown that the use of dogs improves health and well-being to include decreased anxiety. Phase II is projected to run from October 2015 through May 2016.

“Imagine how the patients feel. They have significant injuries and illnesses and have just flown across the ocean and crossed multiple time zones. They are undoubtedly exhausted and stressed. Now they have the opportunity to interact with a service dog, and that’s got to help. We expect this study to show scientifically that this is actually the case,” said Lt Col Kenneth Egerstrom, USAF, NC, 779th Aerospace Medicine Squadron Commander.

“I am excited to have this research study be conducted in our facility.



It has been so well received that funding was expanded to include research of permanent-party and deployed ASF staff members. Our long-term goal is to use the results of the study as leverage for a full-time facility dog,” said Lt Col Egerstrom.

If you would like more information on the Working Dogs for Wounded Warriors study, please contact the principal investigator, Lt Col Jennifer Hatzfeld, USAF, NC, at jennifer.j.hatzfeld.mil@mail.mil, or associate investigators Capt Simpson or SSgt Holly Mason, USAF, NC, at melissa.c.simpson4.mil@mail.mil or holly.j.mason.mil@mail.mil. ★



Debbie Taylor, a volunteer with Fidos For Freedom, shows her service dog, Mr. Scott, to members of the 779th Medical Group Aeromedical Staging Facility (ASF). The ASF is participating in a study to examine the impact of animal-assisted therapy in reducing stress on wounded warriors. (Photo by Capt Melissa Simpson)

Prolonged Field Care and Nursing Research

Lt Col Jennifer Hatzfeld, USAF, NC, Combat Casualty Care Research Program

“Prolonged field care” is a fairly new term that has emerged from the field of special operations medicine and combat casualty care. It doesn’t have a precise definition, but it covers the medical care that is given, usually by a medic, after the tactical combat casualty care tasks have been completed but before the patient can be transported to surgical capability. In a nontraditional setting without a robust trauma system, medics can provide prolonged field care over a period of a few hours to a few days. The special operations community has established a working group that is gathering recommendations and training scenarios to strengthen this clinical competency and posting them to an easily accessible Web site (<http://prolongedfieldcare.org>).

So what does prolonged field care have to do with nursing research?

The working group has recommended 10 core capabilities that medics need to provide prolonged field care. They include capabilities that are commonly associated with combat casualty care, such as resuscitation, airway management, and pain control. But one important core capability is “nursing measures”—making sure

that the patient is clean, warm, and dry; providing wound care; and preventing skin breakdown. Those are important nursing activities that have direct impact on mortality, as established in part by Florence Nightingale’s work during the Crimean War.

One particular post on the Prolonged Field Care Web site forced me to realize that nursing research has a lot to contribute to this important but evolving area of military medicine. The post highlighted the importance of creating a care plan. After saying that care plans “revolutionized” the way he approached military medicine, the medic wrote, “A care plan for your critically ill or injured patient will be one of the most important things you can possibly do in order to keep your sanity and share your plan with your team.” (You can read the full post at <http://prolongedfieldcare.org/2015/03/30/one-of-the-most-important-pfc-skills-you-can-apply-right-now-create-a-plan-for-care-and-prioritize-your-patients-needs>.)

I know—a *care plan*. That complicated thing that we all were required to create in nursing school, which we try to apply in our day-to-

day clinical practice and know should help us prioritize our interactions with our patients ... if only we had time between taking off physician orders, admitting and discharging other patients, and handling numerous other “emergencies” that come up during a 12-hour shift. Still, it made me realize that the approaches to create and follow a care plan in a hospital setting may or may not be the same ones that could or should be used in prolonged field care. What is the right way to develop a plan of care for a casualty awaiting transport? What nursing diagnoses should apply in the field setting, and what are the best interventions to ensure the best possible outcome for a particular patient? Is it possible to develop and test a tailorable plan of care before a medic would be required to care for that casualty in a far-off place without any additional resources?

These are great nursing challenges, and they are perhaps best answered by nursing scientists and clinical experts with experience managing and monitoring patients over hours and days. With the changing geopolitical dynamics in the world today, we don’t have the luxury of expecting to care for patients who



SGT Ryan Savoy and SPC Caleb Rhodes perform combat casualty care during the Command Sgt. Maj. Jack L. Clark Jr. Army Best Medic Competition in October at Joint Base San Antonio–Camp Bullis.

have been quickly stabilized and transported to definitive surgical care.

Nurses don't often get involved with combat casualty care recommendations that fall outside of the traditional nursing role, but maybe in this case we have a particular perspective and skill set that are perfectly suited to helping

this community further develop its evidence base to provide the best possible care in the prolonged field care setting. This isn't a challenge that will be solved easily or quickly, but the best time to start is now. ★

TRI-SERVICE NURSE CORPS ANNIVERSARIES

2 FEBRUARY 2016

115th Army
Nurse Corps anniversary

13 MAY 2016

108th Navy
Nurse Corps anniversary

1 JULY 2016

67th Air Force
Nurse Corps anniversary

Selections and Awards

TSNRP congratulates the following nurse scientists on their recent selections and awards.

- In July, **CAPT Jacqueline Rychnovsky, NC, USN**, assumed command of the Navy Medicine Research and Development Enterprise at the Naval Medical Research Center in Silver Spring, Maryland
- **CDR Lisa Braun, AN, USA**, received the Anthony DiGuida Delta Mu Research Prize at the Yale University Graduate School of Arts and Science convocation ceremony in May.
- **Lt Col Candy Wilson, USAF, NC**, was selected as the Women's Health Research Interest Group representative for the Health Affairs–Women's Health Issues Working Group.
- The American Academy of Nursing selected **MAJ Chris VanFosson, AN, USA**, as a Jonas Policy Scholar for 2015–2017. MAJ VanFosson, a doctoral student at the University of Texas at Austin, will serve on the Quality Health Care expert panel.



CAPT John Sanders and CAPT Jacqueline Rychnovsky (Photo by Mikelle Smith, Naval Medical Research Center)

Awards and Honors



TSNRP Poster Award Winners

TSNRP congratulates the following poster award winners from the Karen Rieder and Phyllis J. Verhonick Poster Session at the 2015 TSNRP Research and Evidence-Based Practice (EBP) Dissemination Course.

Research

Communication & Understanding: Perceptions of U.S. Navy Women with Abnormal Cervical Cancer Screening & Follow-up Care
 Lisa A. Braun, CDR, NC, USN, PhD, FNP-BC, AFNP, FAANP, Holly Powell Kennedy, PhD, RN, University of North Carolina

Background: Women have used the U.S. military since 1976. Military women, including the effect of the 2014 draft, have experienced a significant increase in the number of women in the military. The Department of Defense (DoD) has a goal to increase the number of women in the military to 25% by 2025. Cervical cancer screening and follow-up care are essential for the health of military women. However, military women often face barriers to accessing cervical cancer screening and follow-up care, including limited access to gynecological services, lack of transportation, and limited knowledge of cervical cancer screening and follow-up care. The purpose of this study was to explore the perceptions of military women with abnormal cervical cancer screening results regarding their knowledge of cervical cancer screening and follow-up care, and to identify barriers to accessing cervical cancer screening and follow-up care.

Method: A qualitative study using focus groups was conducted with 12 military women who had abnormal cervical cancer screening results. The study was conducted at a military medical center. The data were analyzed using thematic analysis.

Findings: The study identified several themes related to military women's perceptions of cervical cancer screening and follow-up care. These themes included: "I didn't understand the results," "I wasn't sure what to do next," "I didn't know where to go for help," and "I didn't know what to expect." The study also identified several barriers to accessing cervical cancer screening and follow-up care, including limited access to gynecological services, lack of transportation, and limited knowledge of cervical cancer screening and follow-up care.

Implication/Practice/Research: The study's findings have implications for military women's health and for the military healthcare system. The study highlights the need for military healthcare providers to provide education and support to military women with abnormal cervical cancer screening results. The study also highlights the need for the military healthcare system to address the barriers to accessing cervical cancer screening and follow-up care.

First Place: **CDR Lisa Braun, NC, USN, and Holly Powell Kennedy, PhD**, "Communication & Understanding: Perceptions of U.S. Navy Women with Abnormal Cervical Cancer Screening & Follow-Up Care"

EBP

IDENTIFYING HIGH FALL RISK PATIENTS
 Capt T. Harroun, RN-BC, USAF; 1st Lt N. del Rio, RN-BC, USAF; 1LT D. Martens, RN, USA; S. Hernandez, RN, CMSRN, SAMMC; M. Ostrander, LVN, SAMMC; MAJ D. Allen, DNP, RN, CCRN, CCSC-BC

PURPOSE: To create educational awareness and staff vigilance concerning patient fall risk identification.

Identification of the Problem: In the first quarter of 2014, 1,976 incidents on a medical wing floor at the first military medical center were reported. Of these, 1,200 were falls. Military medical centers are not exempt from falls and associated fall injury costs. Military medical centers are not exempt from falls and associated fall injury costs. Military medical centers are not exempt from falls and associated fall injury costs. Military medical centers are not exempt from falls and associated fall injury costs.

EBP Question: Population: Hospitalized patients on a floor. Intervention: Yellow cards and fall risk alert. Comparison: Yellow cards and fall risk alert as a visual cue to staff and family members. Research: The intervention has been implemented on the ward and continues to have a positive impact on fall awareness and associated patient safety.

Evidence/Methods: Literature review was completed using the PICOT model. Research indicated that yellow cards (or cards) can be recognized and used by the bedside. All staff members were educated on yellow cards and the fall risk alert. Incidents were tracked by reviewing fall logs and post-incident reviews. High fall risk patients were provided with yellow cards instead of grey cards and a fall risk alert (with one case for transparency) was placed in all patient rooms.

Significance of Findings/Outcomes: Results of the post survey indicated that visual cues had a positive impact on appropriately identifying patient fall risk identification. The survey indicated a 60% increase in staff confidence that they could appropriately identify patient fall risk identification.

Sustenance and Dissemination: Adjustments were made to the fall risk alert and additional education was provided based on staff and family feedback. The initiative has been implemented on the ward and continues to have a positive impact on fall awareness and associated patient safety.

Implications for Military Nursing and Future Research: The project proved successful at the pilot unit and as a result, the initiative is being implemented hospital wide. All the units of interest indicated the intervention has been implemented on every unit. All units will have yellow cards and fall risk alert by December 2015.

First Place: **Capt Teresa Harroun, USAF, NC; 1st Lt Nathan del Rio, USAF, NC; 1LT Dustin Martens, AN, USA; Lt Col Stephen Hernandez, USAF, NC; Michelle B. Ostrander, LVN, SAMMC; and MAJ David Allen, AN, USA**, "Identifying High Fall Risk Patients"

Investigation of the Antidepressant Effects of Curcumin in the Adult Male Sprague Dawley Rat
 CPT Brian Keller, RN, USA; 1LT(P) Fabiola Philippe, AN, USA; Gina Padrón, Julia Ceremuga, and Tomás Ceremuga, PhD

Introduction: Depression is the leading cause of disability in United States. Current antidepressant therapies have limited effectiveness. In 2007, over 50 million adults received hormonal medication use. Since 2007, The Joint Commission required documentation of patient use of any hormonal medication.

Theoretical Framework: Modulation of the GABA_A receptor may potentially lessen behavioral depression in the Central Nervous System (CNS) (Fig 1).

Using the forced swim test (FST), we measured behavioral depression in a rat model (Fig 2).

Decreased stress responses in the CNS leads to decreased behavioral despair like activity.

A decrease in behavioral despair like activity is considered an increased mobility and/or increased frontal cortex output (FFO) in the rat model.

Methods: 50 rats were randomly assigned to one of the following 3 groups: control (vehicle), curcumin 25 mg/kg, curcumin 50 mg/kg, curcumin 100 mg/kg, and curcumin 200 mg/kg.

Results: The curcumin group had a significantly lower mean mobility time when compared to the vehicle group (p < .001).

Conclusions: In addition, a single dose of curcumin did not alter other stress, behavioral despair or depression in this model.

Future Research: Further investigation of the mechanism of action of curcumin, specifically on other neurotransmitter systems and receptor sites.

Second Place: **CPT Brian Keller, AN, USA; 1LT(P) Fabiola Philippe, AN, USA; Gina Padrón, Julia Ceremuga, and Tomás Ceremuga, PhD**, "Investigation of the Antidepressant Effects of Curcumin in the Adult Male Sprague Dawley Rat"

The Effectiveness of Interventions to Increase Provider Monitoring of Endotracheal Tube and Laryngeal Mask Airway Cuff Pressures
 CDR Randy Ashman, NC, USN; Susan Appel, PhD; and CDR Arnel J. Barba, NC, USN

BACKGROUND: Endotracheal tube (ETT) and laryngeal mask airway (LMA) cuff pressures are critical to patient safety. However, providers often fail to monitor cuff pressures, leading to complications such as cuff leaks and cuff ruptures. The purpose of this study was to evaluate the effectiveness of interventions to increase provider monitoring of ETT and LMA cuff pressures.

Methods: A quasi-experimental design was used to evaluate the effectiveness of interventions to increase provider monitoring of ETT and LMA cuff pressures. The study was conducted on a medical ward. The interventions included: educational sessions, reminders, and prompts.

Results: The study found that the interventions were effective in increasing provider monitoring of ETT and LMA cuff pressures. The number of ETT and LMA cuff pressure checks increased significantly after the interventions were implemented.

Conclusions: The study's findings have implications for patient safety and for the military healthcare system. The study highlights the need for military healthcare providers to monitor ETT and LMA cuff pressures. The study also highlights the need for the military healthcare system to address the barriers to monitoring ETT and LMA cuff pressures.

Second Place: **CDR Randy Ashman, NC, USN; Susan Appel, PhD; and CDR Arnel J. Barba, NC, USN**, "The Effectiveness of Interventions to Increase Provider Monitoring of Endotracheal Tube and Laryngeal Mask Airway Cuff Pressures"

Resilience, Stress, and Stigma and Barriers to Mental Health Care in Air Force Nursing Staff
 Stephen H. A. Hernandez, Lt Col USAF, RN, PhD, RN; Brenda J. Morgan, Col USAF, NC, PhD; Mark B. Parshall, PhD, RN

Background: The Air Force nursing staff is a diverse and complex population. The staff is exposed to high levels of stress and stigma, which can lead to mental health problems. The purpose of this study was to explore the resilience, stress, and stigma and barriers to mental health care in the Air Force nursing staff.

Methods and Data Analysis: A cross-sectional survey was conducted with 1,000 Air Force nursing staff members. The survey measured resilience, stress, stigma, and barriers to mental health care. The data were analyzed using descriptive statistics and regression analysis.

Results: The study found that the Air Force nursing staff has low levels of resilience, high levels of stress, and high levels of stigma. The study also found that there are several barriers to mental health care, including limited access to mental health services, lack of transportation, and limited knowledge of mental health care.

Conclusions and Implications: The study's findings have implications for the Air Force nursing staff and for the military healthcare system. The study highlights the need for military healthcare providers to provide education and support to the Air Force nursing staff. The study also highlights the need for the military healthcare system to address the barriers to mental health care.

Third Place: **Lt Col Stephen H. A. Hernandez, USAF, NC; Col Brenda J. Morgan, USAF, NC; and Mark B. Parshall, PhD, RN**, "Resilience, Stress, and Stigma and Barriers to Mental Health Care in Air Force Nursing Staff"

Progressive Upward Mobility Protocol (PUMP): Implementing an Early Mobilization Protocol in a Medical Intensive Care Unit
 CPT Joseph Keck, AN, USA; and CPT Alexander Heiny, AN, USA

Purpose: The purpose of this EBP project is to standardize and improve mobilization care through implementation of patient centered mobility protocol in a Medical Intensive Care Unit (MICU).

Cost Savings: The study found that the PUMP protocol resulted in significant cost savings. The number of mechanical ventilation days was reduced, leading to a decrease in the length of stay in the MICU.

Outcomes: The study found that the PUMP protocol resulted in several positive outcomes. These outcomes included: increased patient mobility, decreased mechanical ventilation days, and decreased length of stay in the MICU.

Significance/Background: PUMP contributes to a significant reduction in duration of mechanical ventilation and associated costs. PUMP also contributes to an average savings of \$17.6K per patient hospital stay.

Methods: The MICU model of EBP guided the project. The project was implemented in a Medical Intensive Care Unit. The PUMP protocol was implemented in the MICU. The study was conducted over a 6-month period.

Third Place: **CPT Joseph Keck, AN, USA, and CPT Alexander Heiny, AN, USA**, "Progressive Upward Mobility Protocol (PUMP): Implementing an Early Mobilization Protocol in a Medical Intensive Care Unit"

Published Articles and Presentations by TSNRP Nurse Scientists

Published Articles

Army

Breckenridge-Sproat, S. T., Freeman, J. J., Belew, D. L., Loan, L. L., **McCarthy, M. S., & Patrician, P. A.** (2015). A nursing care redesign framework for system wide improvement: The Patient CaringTouch System. *Clin Nurs Stud* 3(4), 72–78.

Breckenridge-Sproat, S. T., Hill, K., Barr, A., Breckenridge-Sproat, D., & Zugner, S. (2015). Army Medicine in Europe's response to potential Ebola outbreak: A partnership success. *Medical Corps International Forum* 1/2015, 4–7.

Breckenridge-Sproat, S. T., Throop, M. D., Raju, D., Murphy, D. A., **Loan, L. A., & Patrician, P. A.** (2015). Building a unit-level mentored program to sustain a culture of inquiry for evidence-based practice. *Clin Nurs Spec* 29(6), 329–337.

Brown, W. J., & McCarthy, M. S. (2015). Sarcopenia: What every NP needs to know. *J Nurs Pract* 11(8), 753–760.

Buonora, J. E., Mousseau, M., Jacobowitz, D. M., Lazarus, R. C., Yarnell, A. M., Olsen, C. H., Pollard, H. B., Diaz-Arrastia, R., Latour, L., & Mueller, G. P. (2015). Autoimmune profiling reveals peroxiredoxin 6 as a candidate traumatic brain injury biomarker. *J Neurotrauma*, Epub ahead of print.

Buonora, J. E., Yarnell, A. M., Lazarus, R. C., Mousseau, M., Latour, L. L., Rizoli, S. B., Baker, A. J., Rhind, S. G., Diaz-Arrastia, R., & Mueller, G. P. (2015). Multivariate analysis of traumatic brain injury: Development of an assessment score. *Front Neurol* 6, 68.

Finley, B., Hodge, N., & **McCarthy, M. S.** (2015). A cross-sectional survey of evidence-based practices identifies gaps in nurses' knowledge of geriatric

malnutrition. *ARC J Nurs Healthc* 1(1), 22–28.

McCarthy, M. S., & Martindale, R. G. (2015). What's on the menu? Delivering evidence-based nutritional therapy. *Nursing* 45(8), 36–43.

Melvin, K. C., Wenzel, J., & Jennings, B. M. (2015). Strong Army couples: A case study of rekindling marriage after combat deployment. *Res Nurs Health* 38(1), 7–18.

Raju, D., Su, X., & **Patrician, P. A.** (2014). Using item response theory models to evaluate the Practice Environment Scale. *J Nurs Meas* 22(2), 323–341.

Navy

Braun, L., & Kennedy, H. (2015). Communication, knowledge, and fear: Perceptions of U.S. Navy women with abnormal cervical cancer screening and follow-up care. *Nurs Res* 64(2), E3–E4.

Cook, W. A. (2015). Questionable informed consent of vulnerable pregnant research participants in South India: What a staff reminder poster does not say. *Nurs Ethics* 22(2), 264–272.

Domen, R., Connelly, C. D., & Spence, D. (2015). Call-shift fatigue and use of countermeasures and avoidance strategies by Certified Registered Nurse Anesthetists: A national survey. *AANA J* 83(2), 123–131.

Hiebert, J. B., Shen, Q., Thimmesch, A. R., & **Pierce, J. D.** (2015). Traumatic brain injury and mitochondrial dysfunction. *Am J Med Sci* 350(2), 132–138.

Shen, Q., Holloway, N., Thimmesch, A., Wood, J. G., Clancy, R. L., & **Pierce, J. D.** (2014). Ubiquinol decreases hemorrhagic shock/resuscitation-induced microvascular inflammation in rat mesenteric microcirculation. *Physiological Rep* 2(11), e12199.

Spence, D. L., Han, T., **McGuire, J.,** & Couture, D. (In press). Obstructive sleep apnea and the adult perioperative patient. *J Perianesth Nurs*.

Podium Presentations

Army

Breckenridge-Sproat, S. T. (2 October 2015). "A nursing care redesign framework for system wide improvement: The Patient CaringTouch System." International Military Veterans Conference Joining Forces to Restore Lives: Education and Research in Veterans Health, Grange-over-Sands, Cumbria, United Kingdom.

Breckenridge-Sproat, S. T., Freeman, J. J., **Patrician, P. A.,** Loan, L. A., Belew, D. L., **McCarthy, M. S.,** Swiger, P. A., & Dickinson, C. M. (29 July 2015). "PCTS preliminary report to MG Jimmie Keenan, Chief, ANC." Video teleconference.

Breckenridge-Sproat, S. T., Patrician, P. A., Freeman, J. J., **McCarthy, M. S.,** Belew, D. L., & Loan, L. A. (18–20 September 2014). "Development of an instrument to measure diffusion of system-wide nursing practice model innovation." Council for the Advancement of Nursing Science: National State of the Science Congress Meeting, Washington, D.C.

Long, R., Aroniadou-Anderjaska, V., Prager, E., Figueiredo, T., Pidoplichko, V., & Braga, M. (2 May 2015). "The pathophysiological deficits in the hippocampus after repeated isoflurane exposure." Pennsylvania Association of Nurse Anesthetists Spring Symposium, Hershey, Pennsylvania.

Patrician, P. (15 June 2015). "Does workload intensity mediate the relationship between nurse staffing and adverse patient events?" AcademyHealth Annual Research Meeting, Minneapolis, Minnesota.



Siaki, L.A. (9–12 April 2014). “Professional nursing practice: Optimizing ambulatory healthcare.” Western Institute of Nursing Annual Communicating Nursing Research Conference, Seattle, Washington.

Yoder, L. (25–28 February 2015). “Behavioral health symptoms of military nurses who provided en route care during Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF).” Southern Nursing Research Society Annual Conference, Tampa, Florida.

Navy

Braun, L. (13 June 2015). “Abnormal cervical cancer screenings in a military population: Notification & impact on follow-up care.” American Association of Nurse Practitioners National Conference, New Orleans, Louisiana.

Marter, A. (11 November 2015). “Use of spirituality and social support to help families under stress.” Sigma Theta Tau International 43rd Biennial Convention, Las Vegas, Nevada.

Pierce, J. (12 May 2015). “Researchers: The guardians of science.” Third Annual Faye G. Abdellah Lecture, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

Wall, P. (9–14 June 2015). “Temporal sequence and relationships between sleep disorders, mental disorders and traumatic brain injury in deployed military members.” American Association of Nurse Practitioners National Conference, New Orleans, Louisiana.

Air Force

Hernandez, S., Morgan, B., & Parshall, M. (April 2015). “Resilience, stigma and barriers to mental health care in Air Force nursing staff.” Western Institute of Nursing 48th Annual Communicating Nursing Research Conference, Albuquerque, New Mexico.

Weis, K. (24 April 2015). “Building a theory-based intervention: A plenary program of research for improving birth session outcomes, Mentors Offering Maternal Support

(M.O.M.S.)” Sigma Theta Tau, Epsilon Nu Chapter, Linda Corson Jones Scholarship Day, New Orleans, Louisiana.

Wilson, C., & Corrigan, R. (3 December 2014). “Military medics’ insight into providing women’s health services.” AMSUS Annual Continuing Education Meeting, Washington, D.C.

Poster Presentations

Army

Hopkinson, S., Garner, B., & Ladwig, J. (2015). “Cranial electrotherapy stimulation (CES) in military beneficiaries with insomnia: A pilot study.” European African Military Nursing Exchange, Garmisch, Germany.

Patrician, P. A., McCarthy, M. S., Breckenridge-Sproat, S. T., Freeman, J. J., Belew, D. L., & Loan, L. A. (4–5 November 2014). “Transforming military nursing: A systems based approach.” American Nurses Association Staffing Conference, New Orleans, Louisiana.

Rivers, F. (14 May 2015). “Behavioral health symptoms of military nurses who provided enroute care during Operations Iraqi Freedom (OIF) and Enduring Freedom.” Womack Army Medical Center Research Symposium, Fort Bragg, North Carolina.

Navy

Buechel, J. (23–27 July 2015). “HPV knowledge and HPV vaccine uptake among U.S Navy personnel 18–26 years of age.” Sigma Theta Tau International 26th International Nursing Research Congress, San Juan, Puerto Rico. ★

CDR Jason McGuire, NC, USN, and **Lt Col Jennifer Hatzfeld, USAF, NC,** were interviewed for the article “Nursing research: Nurses know best,” published this year in issue 522 of *Nature*. Written by Kendall Powell, the article highlights the importance of nursing research.

Newly Published Final Reports

Congratulations to the following military nurse researchers for completing the Final Report process. Their Final Reports were assigned NTIS accession numbers and entered into the DTIC, NTIS, and CINAHL databases.

- CAPT Linnea M. Axman, NC, USN. *An Evidence Based Practice Protocol: Back to Bundle of Nursing Care*, TSNRP study N08-703, NTIS accession # PB2015-105600, DTIC accession # ADA622964.
- CDR Carole Daniel, NC, USN. *The Effect of Psychosocial Factors on Acute and Persistent Pain Following Childbirth*, TSNRP study N12-008, NTIS accession # pending, DTIC accession # pending.
- Col (ret) Arthur Don Johnson, USAF, NC. *The Effects of Hemostatic Agents and Hypothermia Control in a Porcine Model*, TSNRP study N09-C01, NTIS accession # PB2015-105656, DTIC accession # ADA622978.
- COL Paul Lewis, AN, USA. *Effect of Smoking Cessation on Healing and Rehabilitation*, TSNRP study N09-P09, NTIS accession # PB2015-105661, DTIC accession # pending.
- LTC Leilani Siaki, AN, USA. *Evaluation of a Professional Practice Model in the Ambulatory Care Setting*, TSNRP study N10-C04, NTIS accession # PB2015-101278, DTIC accession # ADA622413.
- COL Lori Trego, AN, USA; CAPT Jacqueline Rychnovsky, NC, USN; Lt Col Candy Wilson, USAF, NC; LTC (ret) Nancy Steele, AN, USA; and the Consortium on the Health and Readiness of Servicewomen. *A Systematic Review of the Literature on Military Women’s Health, 2000–2010*, TSNRP study N15-010, NTIS accession # PB2015-105601, DTIC accession # ADA622646.
- CDR Pamela Wall, NC, USN. *Retrospective Study: Sleep, Mental Disorders, and TBI in Deployed Military Members*, TSNRP study N13-P14, NTIS accession # PB2015-104103, DTIC accession # ADA616308. ★

COL (ret) Linda Yoder Elected President of the Academy of Medical-Surgical Nurses

COL (ret) Linda H. Yoder, AN, USA, associate professor at the University of Texas at Austin, has been elected president of the Academy of Medical-Surgical Nurses (AMSN). She began her term in September 2015, when she was inducted during the 24th Annual AMSN Convention in Las Vegas, Nevada.

COL (ret) Yoder has been an AMSN member for more than 21 years and is one of the association's most respected leaders. She has served in various roles at the local, regional, and national levels and has worked as a medical-surgical nurse and educator for more than 25 years. COL (ret) Yoder is a prominent nurse scientist across the civilian and military nursing communities. Her areas of research have included examining the nursing work environment for staff nurses; career development for

nurses; and quality of life in patients with chronic illnesses, such as cancer and cardiovascular and pulmonary disease.

COL (ret) Yoder has long been an advocate for military nursing and for TSNRP, where she serves as a scientific reviewer, a faculty member for the Research and Evidence-Based Practice Grant Camp, and a mentor and consultant for many PhD/DNP students. TSNRP congratulates COL (ret) Yoder on her new appointment! ★



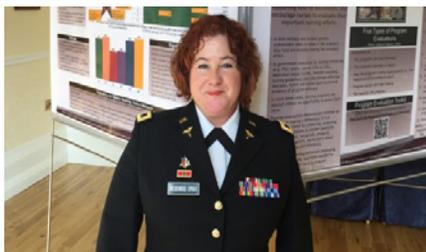
COL (ret) Linda Yoder

COL Breckenridge-Sproat Presents at Joining Forces Across the Atlantic to Restore Lives Conference

On 2 October, COL Sara Breckenridge-Sproat, AN, USA, Regional Nurse Executive for the European Regional Medical Command, attended the Joining Forces Across the Atlantic to Restore Lives: Research, Education and Practice for Military and Veterans Health Conference in Cumbria, United Kingdom. The goal of the conference was to bring together international experts in military and veterans research, education, and health and social care and to

showcase advances in research designed to meet the needs of veterans and their families.

COL Breckenridge-Sproat led a breakout session titled "Nursing Care Redesign Framework for System Wide Improvement: The Patient CaringTouch System" and presented two scientific posters. Her research was very well received, and she fielded numerous requests for more information on the Patient CaringTouch system and for reprints of her published manuscript. ★



COL Sara Breckenridge-Sproat with her poster presentations



A regimental honor guard opened the meeting.

Col (sel) Susan Dukes Newly Appointed

In July, Lt Gen Mark Ediger, USAF, appointed Col (sel) Susan F. Dukes, USAF, NC, as the Military Consultant to the Surgeon



Col (sel) Susan F. Dukes

General for Nursing Research. Col (sel) Dukes is Chief of the Aircrew Selection, Performance, and Aeromedical Evacuation Research Division at the U.S. Air Force School of Aerospace Medicine at Wright-Patterson Air Force Base in Ohio. In this role, she oversees the Acquisitions and Research Nursing Fellowship. Her previous experience includes serving as the En Route Care Research Area Manager for the Air Force Medical Service Research and Technology Advisory Board, the Joint En Route Care Research Task Area Manager for patient safety, a JPC-6 En Route Care Committee member, and an Air Mobility Command Aeromedical Evacuation Research Oversight Committee member. In addition, Col (sel) Dukes is the former Deputy Director of the deployed Joint Combat Casualty Research Team. A certified Critical Care Clinical Nurse Specialist with numerous publications to her name, she has 5 years' experience as a nurse scientist, routinely serves on scientific and programmatic review panels, and is currently principal or associate investigator on 15 studies. TSNRP congratulates Col (sel) Dukes on her new appointment.



TSNRP Welcomes Brandie Peterson

Brandie Peterson joined TSNRP in early September as an executive assistant. Ms. Peterson's background has been primarily in the private sector, where she worked in financial services, health care, information technology, and fundraising. She recently completed a master's degree in communications at the University of Maryland, College Park. Ms. Peterson brings a strong background in executive and program support to her work with TSNRP. ★



Brandie Peterson

Promotions

The following military nurse scientists recently received promotions in military rank. Please join us in congratulating these exceptional military nurses.

Army

- LTC Carla Dickinson selected for O-6
- LTC Susan Hopkinson selected for O-6
- LTC Elizabeth Mann-Salinas selected for O-6
- LTC Ann Nayback-Beebe selected for O-6
- LTC Angela Simmons selected for O-6
- MAJ(P) Richard Clark selected for O-5
- MAJ(P) Ann Ketz selected for O-5

Navy

- Robert Hawkins to CAPT
- CDR Dennis Spence selected for O-6

Air Force

- Nicole Armitage to Col
- Cheryl Lockhart to Lt Col
- Teresa Harroun to Maj

Retirements

Please join us in wishing the very best to the following nurse scientists, who have joined the ranks of the recently retired!

- MG Jimmie O. Keenan, AN, USA
- CAPT Annette Beadle, NC, USN
- COL Lori Trego, AN, USA
- LTC Felecia Rivers, AN, USA
- MAJ Lauren Otto, AN, USA

Newly Funded Studies

TSNRP recently awarded grants to the military nurse scientists listed below. These grants will enable them to conduct research or evidence-based practice projects on their respective topics. Please join us in congratulating these new TSNRP grant recipients.

Army

LTC (ret) Michael Loughren, AN, USA, "Optimizing Pharmacologic Treatment in Trauma"

MAJ Michael Neill, AN, USA, "Identification of Whole Blood RNA Markers for TBI Magnitude and Temporal Dynamics"

CPT Charles Reuter, AN, USARNG, "Evaluation of the Validity of Cholesterol as a Biomarker for Suicide in Veterans"

MAJ Young Yauger, AN, USA, "Iron Activation of Cellular Oxidases: Modulation of Neuronal Viability (In Vitro)"

Navy

CDR Heather King, NC, USN, "Global Health Engagement Missions: Lessons Learned Aboard US Naval Hospital Ships"

LCDR John Litchfield, NC, USN, "Influence of Isoflurane on the Integrity of the Blood Brain Barrier in Rats"

CAPT Lisa Osborne, NC, USN, "Implementation and Evaluation of the Obstetric Hemorrhage Patient Safety Bundle"

CAPT Jacqueline Rychnovsky, NC, USN, "Congressional WHRIG Military Women's Health Gaps Study"; Command Directed

CAPT Jacqueline Rychnovsky, NC, USN, "PHASE 2: Congressional WHRIG Military Women's Health Gaps Study"; Command Directed

Air Force

Lt Col Deborah Jones, USAF, NC, "Military Children's Perceptions of Parents' Frequent Missile Base Deployments"

Lt Col Cheryl Lockhart, USAF, NC, "Implementation of an Evidence-Based Geriatric Guideline on a Military Trauma ICU"

Col (ret) Laura Talbot, USAF, NC, "Trial of Self-Managed Approaches for Patellofemoral Pain Syndrome in Active Duty"



Events and Deadlines

Calendar

June 2016

Evidence-Based Practice (EBP) Course

9–10 June 2016
Joint Base San Antonio-Lackland
San Antonio, Texas

July 2016

Research and EBP Grant Camp

11–15 July 2016
Naval Air Station North Island
San Diego, California

August 2016

Research and EBP Dissemination Course

Dates and location TBD

Know Your Research Specialty Leaders

Your research specialty leaders are a valuable resource for current research requirements and initiatives throughout the military, the U.S. Department of Defense, and the Federal Nursing Services.

U.S. Army

COL Sara Breckenridge-Sproat, AN, USA, PhD, RN

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U.S. Navy

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U.S. Air Force

Col (sel) Susan Dukes, USAF, NC, PhD, CCNS

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TSNRP would like to thank **Col Marla De Jong, USAF, NC**, for her dedication and support to TSNRP over the past 4 years in her role as the Air Force Specialty Leader.

TSNRP Bids Farewell to Linda Bell



Linda Bell

Linda Bell recently announced her departure from the TSNRP Resource Center, where she had served as program manager since 2014. During her tenure, Ms. Bell aided in providing high-quality educational courses to military nurses in various military installations. She worked diligently with the Uniformed Services University of the Health Sciences to obtain Department of Defense approval for all TSNRP-sponsored courses. In addition, she helped coordinate the first and second annual Research and Evidence-Based Practice Dissemination Courses under the direction of TSNRP Executive Director COL Michael Schlicher, PhD, to ensure that military nurses' research and accomplishments received the recognition they deserved. Ms. Bell's work helped TSNRP develop and promote its mission. TSNRP sincerely appreciates her service and wishes her all the best and "safe journeys" in her future endeavors.



Fostering excellence in military nursing through science

