

# The Medical Record

Simulation Education for Improved Professional Practice

A Newsletter of the Richard A. Henson Medical Simulation Center • Salisbury University

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## A Message from Dean Kelly Fiala

On July 1, 2018, the College of Health and Human Services was created. I have the privilege of serving as the transitional dean for the new college. Since beginning in this role, I have had the opportunity to learn so much about our dynamic academic programs and grant activities from the dedicated faculty, staff and students. Some of the most exciting work is happening at the Richard A. Henson Medical Simulation Center! During my visits to the Sim Center, I have witnessed a constant stream of activity supporting student learning and community outreach. The mission and goals of the center truly align with the ideas that led to the formation of the new college. The primary focus of the center is to enhance student learning through simulation and interdisciplinary education in order to improve patient care. In addition, the center offers



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an avenue for increased research and scholarship and community continuing education opportunities. We are fortunate to have Dr. Lisa Seldomridge and Catherine Neighbors at the helm. Dr. Seldomridge currently directs the center and was part of the visionary team that sought funding through grant and donor contributions to advocate for its creation. Neighbors serves as the simulation coordinator and is the only Certified Healthcare Simulation

Educator on Maryland's Eastern Shore. Both women have participated in a variety of scholarly activities related to medical simulation and use their knowledge and skills to keep Salisbury University on the cutting edge of simulation education. We are eager to engage even more programs, students and faculty in activities housed in the Richard A. Henson Medical Simulation Center, and we welcome collaborations with the community.

## Neighbors Delivers Oral Presentation at the World Conference for the Human Patient Simulation Network February 2019

Among the over 1,000 international attendees at the 2019 World Conference for the Human Patient Simulation Network (HPSN) were Dr. Lisa Seldomridge and Catherine Neighbors. The HPSN World Conference brings the international simulation community together to share knowledge, explore the latest innovations in healthcare simulation education and

offer collaborative workshops.

Neighbors' presentation, "Developing Documentation Skills During Simulation: A High Tech, Low Cost Solution," discussed the significance of incorporating documentation practices into healthcare simulation experiences. She spoke of the challenges associated with simulated documentation and shared the software

package that she developed to meet the needs of the learners at Salisbury University. Neighbors' presentation offered suggestions for implementing documentation into multidisciplinary healthcare simulation experiences and discussed several methods of evaluation.

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# Neighbors and Seldomridge Represent SU at International Meeting for Simulation in Healthcare January 2019

Salisbury University's Richard A. Henson Medical Simulation Center was represented at the Society of Simulation in Healthcare's 2019 International Meeting on Simulation in Healthcare in San Antonio in January. Dr. Lisa Seldomridge and Catherine Neighbors were among the nearly 3,200 attendees from around the world.

Neighbors presented "A Creative Approach to the Challenges of Electronic Health Record Documentation During Simulation." She discussed the importance of documentation during simulation

experiences and showcased a sophisticated software package that she developed for learners at SU's Simulation Center.

Neighbors also was recognized at the President's Ball for her recent certification as a Certified Healthcare Simulation Educator (CHSE) by the society. She is the first and only person on Maryland's Eastern Shore to earn CHSE certification to date.



Lisa Seldomridge and Catherine Neighbors

## Faculty Research Corner

### Using Toolkits and Standardized Patient Experiences to Teach Essential Skills in Mental Health Nursing

*Debra Webster, Lisa Seldomridge, Amanda Willey, School of Nursing*

Presented at: George Washington University Simulation Conference, March 2019

Using Toolkits and Standardized Patient Experiences to Teach Essential Skills in Mental Health Nursing is a multi-year project taking place at Salisbury University. The need for this instructional innovation emerged from concerns about limitations on undergraduate nursing student experiences with individuals with common mental health issues.

**Overview:** Standardized Patient Experiences (SPEs), encounters with trained actors who portray various mental health conditions, allow reliable and consistent student learning in a safe environment. Toolkits were designed to meet a core skill set and provide a standardized approach with learning objectives, pre-SPE activities, assignments, video vignettes, feedback

rubrics and suggested post-SPE activities. Topics included: therapeutic communication in a mental health setting, managing hallucinations and delusions, addressing safety for suicidal patients, setting limits with the manic patient, monitoring addictions, providing patient/family centered care for the individual with dementia, and assessing trauma. Additionally, toolkits focused on building leadership skills: collaboration with interprofessional teams, advocacy and conflict management.

Each student completed the toolkits and participated in four SPEs. Debriefing was led by faculty. Students also reviewed their own video-recordings and completed self-reflections.

**Findings:** Using rubrics, faculty provided formative and summative feedback to students. This consisted of observation of therapeutic communication skills, the assessment/management of patients with mental health diagnoses, and the application of leadership skills. Growth was noted in students' communication and leadership skills and ability to care for patients with common mental health issues.

**Recommendations/Implications:** Use of SPEs and toolkit activities was highly effective in helping students meet a core skill set in mental health nursing and leadership. Implementing these activities with registered nurses is recommended to evaluate their utility in a different setting.

# Neighbors and Hauck Represent SU at the Debriefing for Meaningful Learning Workshop

## April 2019

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In April, the Richard A. Henson Medical Simulation Center sent two representatives, Brad Hauck and Catherine Neighbors, to the National League of Nursing's (NLN) Workshop on Debriefing for Meaningful Learning (DML). The workshop was held on Friday-Saturday, April 12-13, and was hosted by George Washington's School of Nursing in partnership with Debra Mayberry of NLN. This is a workshop that the NLN reportedly holds yearly to teach nursing faculty and simulation staff the proper method of DML. The main presenter and leader of the DML workshop was Dr. Kristina Dreifuerst,

the creator of the Debriefing for Meaningful Learning method.

Dr. Dreifuerst covered topics ranging from the creation process of DML, why she believes DML is needed in nursing schools, the advantages of debriefing using the DML method, as well as some of the constraints with utilizing DML in your program. Dr. Dreifuerst also spoke with the workshop attendees on how to implement the transition process at the participant's home universities. Hauck and Neighbors attended in an effort to learn about the DML model, obtain resources for faculty who debrief and attempt to model debriefing in

the Simulation Center as well as other programs, such as the Eastern Shore Faculty and Academy Mentorship Initiative (ESFAMI), using the DML method.

If you would like to get more information on utilizing DML in your course effectively and properly, feel free to reach out to Hauck ([bphauck@salisbury.edu](mailto:bphauck@salisbury.edu)) to discuss. DML worksheets and resources were made available to participants and participants of the workshop were given permission to utilize the copyrighted information at their home institutions.

# Seldomridge and Neighbors Invited to Deliver Faculty Lecture Series

## February 2019

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Salisbury University's Center for Extended and Lifelong Learning (CELL) is a program that connects the area residents with the campus by providing professional and leadership development opportunities to the community. Presentations are offered in Salisbury and Ocean Pines and cover a variety of topics and interests.

Dr. Lisa Seldomridge and Catherine Neighbors were speakers for the Spring Faculty Lecture Series in Ocean Pines, MD. Their presentation, "Saving Lives with Medical Simulation," showcased the Simulation Center through a virtual tour of the space, introduced our simulator family and provided an overview of the importance of healthcare simulation education.



The feedback received was terrific! Attendees were so fascinated by the activities of the Simulation Center that they asked to visit the center in person. A follow-up tour and discussion were offered to the CELL participants in

March. Thank you to Jody Dengler from the CELL program for inviting us and for coordinating the events. We look forward to our continued association with CELL.

# Sim Center Celebrates the 40th Anniversary of the Nursing Program

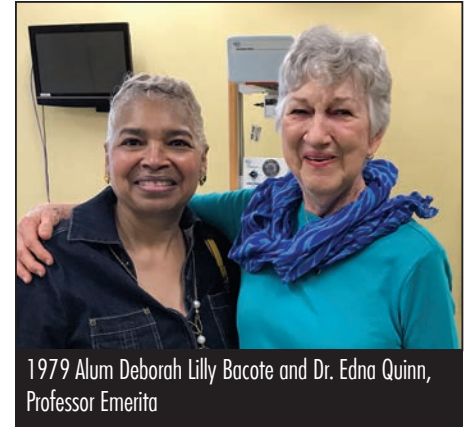
## April 2019

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The Sim Center welcomed alumni and friends for tours in conjunction with the celebration of 40 years of Salisbury University nursing excellence. Over 40 visitors explored the technology and learned

how the Sim Center was being used to teach health professions students. Guest comments included, “this is amazing,” “we never had anything like this when I was a student” and “what a great place.” For those unable to tour, a display was

available during the 40th anniversary networking/dinner with representatives from the Sim Center on-hand to answer questions.



# Sim Smorgasbord Features Faculty Innovation at the Sim Center

## May 2019

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Nine faculty from nursing, respiratory therapy and applied physiology shared how they are using the Sim Center and its technology for improved student learning. Presentations on the use of high-fidelity manikins were given by Drs. Sid Schneider (AHPH), Thomas Lamey and Lisa Joyner (RESP), Bill Campbell and Rita Nutt (NURS). Each described the learning objectives and how the simulation scenario was developed, implemented and evaluated. Additionally, they offered advice for those new to simulation pedagogy.

The use of standardized patients, trained actors who follow scripts prepared by subject matter experts, was presented by Drs. Debra Webster, Amanda Willey and Judy Jarosinski from the School of Nursing. They described how scripts depicting various



psychiatric disorders were developed and refined, and actors recruited and coached. Student preparatory activities, pre-briefing and debriefing were discussed as essential components of the standardized patient experience.

Dr. Kim Allen presented on the use of standardized patients to help undergraduate nursing students develop

skills in interprofessional collaboration and conflict management.

Attendees commented on the value of hearing what their colleagues were doing at the center and remarked: “I am so impressed with the variety of activities that are taking place here” and “I learned a great deal that I can use with my own students.”

# Colonel Richardson and North Caroline High School Biomedical Programs

May 2019

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**E**ighteen students and two teachers visited the Sim Center for a lively morning exploring simulation technology and health-related

careers. Visitors rotated through three experiences, including an in-depth tour of the Sim Center, a deep-dive into inner workings of the birthing manikin

and the “Who Wants to Be a Health Professional” game. The first-time visitors noted how much they enjoyed their visit.

## Student Research Corner

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### The Effects of a 12-Week Resistance Training Program on Arterial Stiffness in Females: A Pilot Study

*Catherine Raley, Applied Health Physiology*

Arterial stiffness has long been regarded as an indicator of disease and is an independent predictor of cardiovascular events. Several research groups have found positive correlations with chronic resistance, while others have reported no correlations.

This study sought to clarify some of these discrepancies through the investigation of two resistance training models. Accordingly, 30 male, untrained students aged 18-30 years were randomized into one of three groups: control (CON) group (n=10), high-intensity resistance exercise (HI) group (n=10) and high-volume resistance exercise (HV) group (n=10).

Subjects randomized to the whole-body resistance training groups were required to perform strength training exercises three to five days a week for 12 weeks. The exercise regimen consisted of two to three sets of three to eight repetitions (80-90% of one-repetition maximum (1 RM)) for the HI group and three to four sets of 10 to 15 repetitions (50%-70% of 1 RM) for the HV group. Subjects randomized to the control group refrained from resistance training during study period. All subjects were instructed to maintain their normal diet and avoid cardiovascular exercise during the study.

Following the intervention, there was a significant increase in central pulse pressure in there was a significant central pulse pressure difference between the HV and HI group (13.9 vs. -13.5% change;  $P < 0.05$ ). There were no other changes in arterial stiffness indices between the groups. Using a randomly controlled trial with validated measurements of arterial stiffness, chronic resistance training does not influence central arterial stiffness regardless of training volume and load. Our findings support the use of resistance training exercise without undue impact on vascular compliance in otherwise healthy, male populations.

# Eastern Shore Faculty Academy and Mentorship Initiative (ES-FAMI) Has Expanded

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The Eastern Shore Faculty Academy and Mentorship Initiative (ESFAMI) has expanded its program across the state, opening two satellite academies in 2018. The two satellite locations are the Faculty Academy and Mentorship Initiative of Central Maryland at Towson University (FAMI-Towson) and the Faculty Academy and Mentorship Initiative of Western Maryland at University System of Maryland Hagerstown (FAMI-West). ESFAMI will offer six academies per year, twice yearly at each academy location. Along with this expansion, ESFAMI has added Towson University, Allegany College of Maryland, Hood College, Frostburg State University and University System of Maryland Hagerstown as official partner schools.

In January 2019, ESFAMI had 10 participants at the Richard A. Henson Medical Simulation Center complete the academy and are now prepared to transition into part-time faculty nursing

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positions. The ESFAMI academy hired five standardized patient actors to help train the ESFAMI participants. Each ESFAMI participant had simulated encounters with two different standardized patient actors portraying nursing students exhibiting behaviors requiring some intervention. These sessions were video recorded and then debriefed in a large group, facilitated by the veteran faculty facilitators.

In March 2019, FAMI-Towson had 11 participants complete the academy at the Towson University Linthicum Hall Simulation Suites. Similarly to the January 2019 academy, five standardized patient actors were hired to portray nursing students for the FAMI-Towson

participants. Two of the standardized patients were veteran actresses from Salisbury University's Richard A. Henson Medical Simulation Center. They aided the Towson actors with their depth of knowledge and represented the Simulation Center very well through their professional and outstanding performances.

In May 2019, ESFAMI and FAMI-West held academies with 10 participants each. The second FAMI of Central Maryland will be held July 31-August 28, and the second FAMI of Western Maryland academy will be held in fall 2019. A total of six academies will be offered at various locations around the state during 2019.

## New Collaboration with School of Social Work April 2019

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On April 9 and 16, 46 graduate students in social work participated in a simulation exercise at the Sim Center. This was part of the required exercises for the SOWK 680 Advanced Practice with Groups class taught in two sections by Dr. Rebecca Anthony and Dr. Mark Shaffer. Social Work 680 is one of four advanced practice courses. It builds upon the liberal arts perspective of understanding people, cultures and patterns of communication. This exercise opportunity gave students

the chance to practice skills they are learning all semester in a simulated environment. The students had the opportunity to co-facilitate a group based on a topic and population of their choosing. They have been working all semester to prepare a group curriculum that they could implement when they begin to practice after graduation.

The simulation event gave them the opportunity to facilitate a group while their peers participated as group members. Students who were not participating in a simulated group were

able to watch the group live via video in a separate room. The groups and observers participated in a debriefing following each simulation and the facilitators were able to receive verbal and written feedback. To culminate the experience, students were able to view the video of their group and then were required to write a reflection paper based on the experience. The feedback from students was largely positive about the experience, and they reported that it gave them a chance to try out ideas in a real setting.

# Best Wishes to Dr. Robert Joyner

The Sim Center bids goodbye to our dear colleague Dr. Robert Joyner who will be taking a position as director of the Richard A. Henson Research Institute at Peninsula Regional Medical Center. Dr. Joyner was instrumental in the development and construction of the Sim Center, serving on the original and expansion design teams. He has been a driving force for interprofessional collaboration in educational endeavors, bringing RESP 458/NURS 458: Critical Care: A Multi-Professional Approach to the Simulation Center. He also facilitated collaborations with UMES' physical

therapy and physician assistant students and a host of community groups. In his role as associate dean of the Henson School of Science and Technology, he provided administrative oversight and championed the cause of simulation pedagogy recruiting local healthcare providers to use the Sim Center for some of their continuing education. With his love of technology, he secured the ASL 5000, a lung simulator that replicates the physiology of various disease states which is used to teach students in respiratory therapy and math.

As one of the first users of the Simulation Center, Dr. Joyner taught

beginning and advanced respiratory therapy students how to manage difficult airways of infants, children and adults, and he helped them complete certifications like NRP, PALS, BLS and ACLS. As a result of his efforts, the Sim Center became a training center for various certifications offered through the American Heart Association.

Dr. Joyner's drive for excellence and attention to detail have helped the Sim Center develop into the outstanding learning environment it is today. His presence will be felt for many years to come and we look forward to many new collaborative endeavors in the future.

# Faculty Development: Best Practices in Using Standardized Patients

May 2019

Experts from MedStar Health System and Greater Baltimore Medical Center (GBMC) presented "Integrating the Association of Standardized Patient Educators (ASPE) Standards of Best Practice" to an audience of faculty and staff from the College of Health and Human Services. These standards were written to ensure the growth, integrity and safe application of SP-based education practices.

Debbie Higgins, M.S., RN, is the simulation coordinator at the H. Norman Baetjer Jr. and Jeanne H. Baetjer Center for Nursing Excellence at Greater Baltimore Medical Center. She discussed the five domains underlying the Standards: safe work environment; case development; SP training for role portrayal, feedback and completion of assessment instruments; program management; and professional development, and she provided examples of how the Standards are integrated into the SP program at GBMC.

Lola Kropkowski, M.S., RN-BC, coordinates the Nurse Residency and Nurse Extern programs at MedStar Union Memorial and MedStar Good Samaritan Hospitals. She engaged participants in an activity writing scripts and enacting those scripts.

Kropkowski and Higgins are both graduates of the Simulation in Education Leaders (SEL) program offered through the Maryland Clinical Simulation Resource Consortium. The event was sponsored by the Toolkits to Enhance Communication Skills for Leadership Development in Nursing



Back row: Lisa Seldomridge, Brad Hauck, Nicole Hall, Amanda Willey, Jen Hart, Catherine Neighbors, Zackery Tyndall. Front row: Kim Allen, Lola Kropkowski, Judy Jarosinski, Debbie Higgins.

Students and Registered Nurses on the Eastern Shore of Maryland grant funded by the Maryland Higher Education Commission Nurse Support Program.

# Student Research Corner

## Evaluation of Intensive Care Mechanical Ventilator Response Time During Varying Levels of Inspiratory Effort

*Sarah Donley, Respiratory Therapy*

**Objective:** Mechanical ventilators must be responsive to a patient's variable inspiratory demand. Responsiveness is one attribute used to compare these expensive, but necessary lifesaving devices. Under varying levels of inspiratory effort, triggering performance was compared between the Maquet Servo-i and Respironics Esprit ventilators.

**Methods:** The Ingmar ASL 5000 Breathing Simulator was used to provide normal respiratory mechanics (compliance of 50 mL/cm H<sub>2</sub>O; resistance, 3 cm H<sub>2</sub>O/L/s; spontaneous rate, 15 breaths/min) and inspiratory muscle pressures of 10, 15, and 20 cm H<sub>2</sub>O for 5-minutes each. The simulator was connected to

each ventilator with the same settings (pressure support (PS) of 10 cm H<sub>2</sub>O; positive end-expiratory pressure (PEEP) of 0; and, a trigger flow of 3 L/min). Trigger response time, time from spontaneous effort (SoE) to a minimum pressure (P<sub>min</sub>) and the maximum pressure drop during triggering were collected.

**Results:** The Esprit ventilator trigger response time and time from SoE to a P<sub>min</sub> decreased under conditions of increased inspiratory effort. The Servo-i trigger response time and time from SoE to P<sub>min</sub> increased with rising inspiratory muscle pressure. Both ventilators demonstrated a greater maximum pressure drop

during triggering with each increase in inspiratory muscle pressure. However, for an inspiratory muscle pressure of 15 and 20 cm H<sub>2</sub>O, the drop in pressure was much larger for the Servo-i.

**Conclusions:** Both ventilators are suitable for clinical use; however, the Respironics Esprit ventilator demonstrated better response to a higher ventilatory demand. A potential reason for this is the greater peak inspiratory flow rate (PIFR) capability of the Esprit ventilators. The Esprit's internal flow generator is a turbine and seems to be capable of a faster initial flow than the pneumatic flow design of the Servo-i.

## The Effects of Acute Creatine Supplementation on Arterial Stiffness: A Pilot Study

*Colin Gimblet, Exercise Science*

There is a void in our knowledge on the impact of exercise, in particular creatine monohydrate supplementation, on arterial stiffness (AS) in the major elastic arteries. This study also examined the effects of creatine supplementation on skeletal muscle oxygen saturation (SmO<sub>2</sub>) in the lower leg. Data have indicated that creatine supplementation can result in an increase in lower leg anterior compartment pressure at rest and post exercise. Although the increased pressures seen during these studies were not pathological, this and additional factors associated with creatine supplementation could possibly effect SmO<sub>2</sub> during exercise and recovery. To determine the effects of acute creatine monohydrate supplementation on AS and SmO<sub>2</sub>. 12 male, physically active participants

were randomized in a double-blind fashion to placebo (PL) (n=6, 23±2 yrs) or creatine (CM) (n=6, 21±2 yrs) groups. Subjects received 0.3 g/kg/day creatine monohydrate or placebo in gelatin capsules for 7 days.

Ultrasonography of the carotid artery, applanation tonometry, submaximal exercise tests (10 minute treadmill activity at 3.7 mph and 9% incline) and lower leg pain (analog visual scale and pain test algometer) assessments were conducted at baseline and on day seven of the study period. There were no significant differences between PL and CM in carotid-femoral pulse wave velocity (CF PWV) (4.60±10.42 vs. -2.71±21.20 % change), -stiffness index (5.81±26.3 vs. 1.65±41.35 % change), central pulse pressure (CPP) (-17.38±16.31 vs. 6.05±24.61 % change) and arterial

compliance (AC) (19.79±37.50 vs. 12.48±53.89 % change) (all P>0.05). There were no significant changes in SmO<sub>2</sub> (-7.95±10.24 vs. 29.94±36.13 % change) and peak pain (-6.55±29.87 vs. -12.5±30.62) between PL and CM, respectively (all P>0.05).

Finally, there were also no significant differences in body weight (0.53±0.79 vs. 0.20±0.87 % change), fat mass (-3.40±3.49 vs. -0.23±8.17 % change) and fat-free mass (1.12±0.98 vs. 0.23±0.80 % change) between PL and CM, respectively (all P>0.05). Using a randomly controlled, double-blind trial with validated measurements of AS and SmO<sub>2</sub>, acute creatine supplementation does not appear to impact vascular compliance or oxygen saturation in skeletal muscle in young, otherwise healthy males.