

College of Health Sciences Newsletter



Robert Bruno and Patrick Sachs (in glasses), assistant professors at Old Dominion University's School of Medical Diagnostic & Translational Sciences, are pictured conducting lab research.

Duo seeks success on cellular level

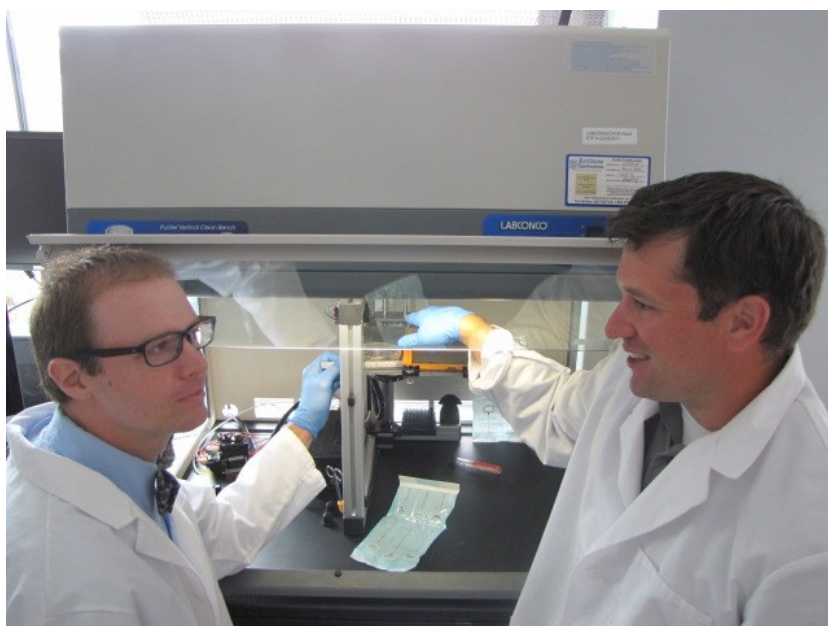
Assistant professors receive grant in their quest to better diagnose breast cancer

By Irvin B. Harrell

Actress Angelina Jolie has become a poster child of sorts for elective surgery to address breast and ovarian cancer risks triggered by her family's history of a mutation of the BRCA1 gene. Jolie lost her mother, grandmother and aunt to cancer, and two years after a double mastectomy, she revealed in March that she had her ovaries and fallopian tubes removed.

More than 1,800 mutations in the BRCA1 gene have been identified by researchers. According to the most recent data from the National Cancer Institute,

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Dean's Message

Sailing Uncharted Waters

Welcome to the new academic year! The campus and our college are bustling with enthusiasm as we prepare for new students, faculty and staff to join us in our mission for learning, discovery and caring. Every August, I give the State of the College address as an opportunity to look back on our accomplishments and look forward to our new aspirations. During each of my 5 addresses as dean at ODU, I have used a nautical theme as a salute to our beautiful Virginia coastline, ODU expertise in coastal resiliency and as an anchor for my messaging. This year's address was titled "Sailing Uncharted Waters." You may find the slides from the presentation [here](#).



Dean Shelley Mishoe

I chose this title because it symbolizes our endorsement of a new strategic plan and the ambitious goals we have set for our college to 1) enrich the quality of life for faculty, staff and students, 2) enhance our academic excellence, 3) advance new knowledge, 4) create an interprofessional education and practice culture, 5) engage with the greater community, and 6) promote and entrepreneurial culture.

To achieve our strategic goals, we have identified several college and school objectives. We have already made great strides since endorsement in January. We held the grand opening for a new clinical enterprise, Monarch Physical Therapy, which exceeded its financial and clinical goals under the leadership of Lisa Koperna. A multi-year grant was awarded to Dr. Roy Ogle to launch a new company based on his regenerative medicine research. Under the directorship of Dr. Richard Heller, the bioelectrics faculty achieved one of their highest levels of funding and patents. Under Dr. Muge Akpınar's leadership, the Center for Global Health has flourished with new programs, partnerships and interprofessional education. We are on the verge of having a new PhD Program approved by SCHEV and another on its way for submission. This is just a snapshot of some of our exciting achievements!

Our enrollment growth in undergraduate programs in the schools of community and environmental health and nursing are impressive, having the largest growth in any program at ODU for this year! Since baseline in 2010 through this past academic year, our doctoral enrollment grew by 11.7%, our master's programs grew by 6% and our degree completion programs grew by 153%. At the same time, our students' first-time pass rates on credentialing exams was 100% for several programs and far exceeded national averages for every program. During the past 2 consecutive years, the college has tripled and double the past fundraising amounts and increased support from alumni, foundations and corporations. Special thanks to Manisha Harrell for her work with me, the chairs council and the office of advance to make this happen. In summary: we are "up" in every major goal for our college. A pretty good start to another academic year and a new strategic plan!

By achieving new heights and improving how we tell our story, we will have even more talented people become involved with our college as board members, donors, students, faculty, alumni and supporters. I look forward to sailing with you in uncharted waters, taking comfort in our many talented people, highly ranked programs and new initiatives. Go monarchs!

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From the Editor

New year brings fresh promise

Welcome back to another exciting school year at the College of Health Sciences!

Given all of the accomplishments over the past year, I'm brimming with optimism at what this one will bring and what stories I'll be able to tell about the accomplishments of our faculty, staff, students, alumni and friends.

President Broderick, in his State of the University Address, tipped his hat to just a few of our college's accomplishments. Our efforts to bring health care to rural areas of the state and our School of Nursing's No. 2 ranking among the nation's online RN to BSN programs were prominently noted.

This school year we will celebrate the college's 30th Anniversary. Those three decades have brought a lot of positive change and growth. We continue to be noticed because of our tenacious spirit and our quest to stay on the cutting edge. Keep your eyes peeled for upcoming 30th anniversary events, and if you see an opportunity for a story about this wonderful college to be told don't hesitate to contact me at iharrell@odu.com or 757-683-4095. Cheers!



Irvin B. Harrell,
Coordinator of Strategy
& Marketing

Heriveaux joins School of Nursing staff

Please welcome Tyisha Heriveaux to the staff of the College of Health Sciences. Heriveaux, who arrived at Old Dominion University in July, will serve as the undergraduate program coordinator for the School of Nursing.

Heriveaux received her Bachelors in English Arts at Hampton University and her Masters of Business Administration at American InterContinental University. She hails from Long Branch, N.J., and says she felt like a good fit for her new job.

“I have always wanted to work in higher education environment,” she said. “ODU is a good school and I have many friends who either attended the university or worked for the university. Everyone that I have spoken with about ODU has only had nice and pleasant things to say about the school.”

When she’s not on the job, Heriveaux enjoys spending time with her husband and 2-year-old son, singing for her church choir, and writing articles and taking photos for her church’s website.



All about the prep work



Just before fall semester is a busy time for Leanne White, the College of Health Sciences director of advising, and college advisors Bethany Armstrong and Jacob Tousignaut. They spend time with incoming students and family making sure they are prepared for the upcoming school year.



School of Medical Diagnostic & Translational Sciences

Duo seeks success on cellular level

(Continued from page 1)

55 to 65 percent of women who inherit the BRCA1 mutation will develop breast cancer by age 70 and 39 percent will develop ovarian cancer by the same age.

Many of the mutations are associated with an increased risk of breast cancer for women and men, as well as several other types of cancer. These mutations are present in every cell in the body and can be passed from generation to generation. But not everyone who inherits a mutation gets cancer. Other genetic, environmental and lifestyle factors also contribute to a person's cancer risk. Still, as a precaution, many people elect to have preventive procedures.

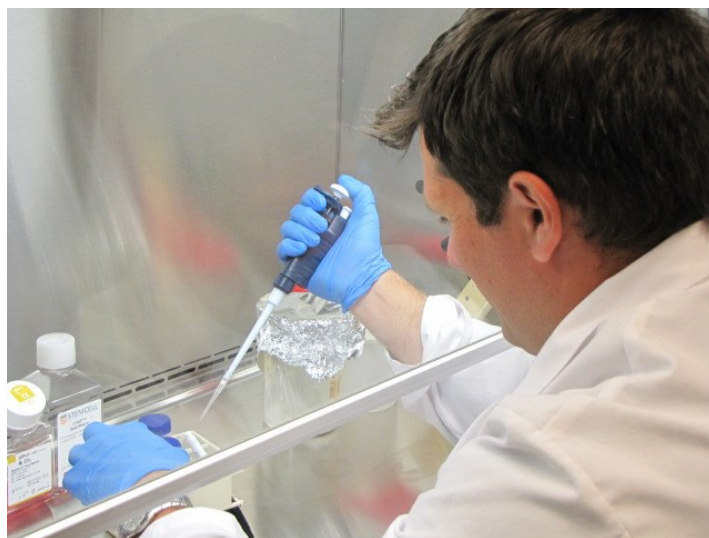
Robert Bruno and Patrick Sachs, assistant professors at Old Dominion University's School of Medical Diagnostic & Translational Sciences, are working on research that could someday eliminate the need for such surgeries.

The two have been exploring the phenomenon of how the microenvironment that surrounds cancer cells can suppress them as well as signal cancerous tumors.

To aid them in their ongoing research, the two scientists recently received a Commonwealth Health Research Board (CHRB) grant. The grant will provide Bruno and Sachs with \$200,000 over two years. ODU was one of seven recipients of this year's grants. After weathering a rigorous selection process, the two made their final pitch before CHRB in May before being selected.

"I was guardedly optimistic about our chances," Bruno said, adding that the pressing nature of their research was one of the reasons for their selection.

The CHRB was established in 1997 to give financial support for human health research in the Commonwealth. The board's primary responsibility is to award grants for human health research, especially for efforts that have the potential of maximizing human health benefits in the Commonwealth.



Shelley Mishoe, dean of the College of Health Sciences, stated that this is the first time ODU has received this highly competitive grant, "which will enhance our faculty's efforts to conduct vital research to promote health in Virginia and around the world."

Their grant's title is "Chimeric mammary models for elucidating microenvironment contributions to tumor suppression and promotion." It involves taking human breast tissue, solubilizing it, and allowing it to form the extracellular matrix where tumors can be introduced. This allows them to study cells in more aggressive 3D interactions like cancer occurs in the body. Their previous research relied on lab mice breast tissue.

Bruno and Sachs believe their research can open the door to preventive medicine and better ways to catch cancer earlier. In the shorter term, their research could improve the diagnostic – providing aggressive treatment to prevent some unnecessary surgeries to remove breasts, ovaries and fallopian tubes because of the risk of cancer. In the longer term, their research could lead to better understanding of how tumors are formed and prevent them altogether.

"This project will allow for us to decipher some of the micro-environmental changes that allow for breast cancers to emerge from their normal, suppressive surroundings," Sachs said. "Findings from these experiments will have broad reaching implications, which will also inform us about how a normal cell, such as a stem cell, is manipulated by its environment to become a mature functional tissue-specific cell type. Future studies will then allow for us to manipulate these environmental controls to not only prevent the emergence of diseases like breast cancer, but also to further our ability to generate engineered tissue in the laboratory."

Bruno, who received his Ph.D. in molecular medicine at the University of Maryland Baltimore, came to Old

Dominion in 2013 as an assistant professor and director of the graduate program in molecular diagnostics at the School of Medical Diagnostic & Translational Sciences.

Sachs received his Ph.D. in human and molecular genetics from the Medical College of Virginia in 2010. He was recruited by ODU in the summer of 2013 by Roy Ogle, chair of the School of Medical Diagnostic & Translational Sciences. At that time, Sachs was working at LifeNet Health in Virginia Beach, a non-profit organ procurement organization providing donation systems for organ transplants.

Sachs says the grant money's importance is threefold. "It gives us the money necessary to carry these studies over into National Institutes of Health funding, it's the first CHRB grant for ODU, and the topic of the grant is an underrepresented subject matter in cancer research," he said.

Bruno and Sachs are a dynamic duo of sorts for the school, and their collaborative qualities have made them exemplary researchers, Ogle said.

"Regenerative medicine is highly collaborative or interprofessional ...," Ogle said. "Rob and Patrick's skill sets complement one another nicely. They have also begun to collaborate with an MD from EVMS, Dr. Vivian Wu. For our school, they demonstrate the power of inter-professional scholarship, which is a great example for colleagues and students."

A change in research philosophy

The signing of the National Cancer Act of 1971 by then-President Richard Nixon tolled the beginning of the nation's war on cancer.

Much of the war was waged from the presupposition that cancer was a disease caused by a rogue cell that divided and multiplied until it destroyed its host.

However, almost 10 years before the U.S. launched its war, Dr. D.W. Smithers – who was then at the Royal Marsden Hospital in London – proclaimed: "Cancer is no more a disease of cells than a traffic jam is a disease of cars. A lifetime of study of the internal-combustion engine would not help anyone understand our traffic problems."

It was not until recently that cancer research has taken a turn to address Smithers' once-controversial observations. Bruno and Sachs have made Smithers' words their mantra.

"Breast cancer research to date has largely focused on the internal, genetic changes that lead to uncontrolled cellular growth and function," Sachs said. "A unique aspect of our project is to refocus on the signaling controls found in the microenvironment surrounding the cells. This understudied subject could allow for us to derive better methods of predicting tumor emergence leading to advanced preventative screening."

Center for Global Health

Akpinar-Elci provides expertise in needle stick injuries

Part of the regional role of the Pan American Health Organization/World Health Organization (PAHO/WHO) is to provide technical assistance to the Ministry of Health in strengthening the management and prevention of needle stick and sharps injuries throughout the health sector of The Bahamas.



For this purpose, PAHO sponsored a two-day seminar in Nassau that brought together stakeholders from across the health sector to identify local best practices and to identify a national needle stick/sharps injury management plan and prevention program July 22-23. PAHO invited the Director of Center for Global Health Dr. Muge Akpinar-Elci to provide technical expertise to the workshop and the development of the prevention program. Akpinar-Elci gave two presentations in which she shared her previous best practice experience in needle stick injury prevention through the Caribbean.

According to WHO, it is estimated that one in 10 health care workers worldwide are injured by needle sticks each year, often exposing them to serious or fatal infections. WHO also reports that occupational sharps injuries and related HBV, HCV and HIV infections among Caribbean and Latin American health care workers are the highest in the world.

To respond and reduce occupational exposures to blood-borne pathogens while strengthening regional capacity building, in collaboration with WHO/PAHO and Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health, Akpinar-Elci and colleagues previously implemented regional training programs for needlestick injury prevention among health care workers in the Caribbean. The meeting welcomed about 150 participants and it is expected that this visit will be the beginning of a long collaboration between PAHO/WHO, Bahamas and Old Dominion University.

ODU collaborates to develop cutting-edge blood pressure cuff

By Irvin B. Harrell

High blood pressure, or hypertension, is called the silent killer because it often strikes without warning, leading to heart disease and stroke. One in three adults in the United States (about 70 million people) have high blood pressure, and according to the Centers for Disease Control and Prevention, only about half have the condition under control. Hypertension is credited for an estimated 7.5 million deaths worldwide. The World Health Organization says the medical condition is the second leading cause of maternal mortality worldwide, responsible for 12.8 percent of the total deaths. Diagnosis, prognosis and management are critical with hypertension, which can result in coronary heart disease and stroke.

When Old Dominion's Dr. Muge Akpinar-Elci and Onur Bilgen, of the College of Health Sciences and the Frank Batten College of Engineering and Technology, respectively, first crossed paths with Virginia Beach cardiologist Dr. John Kenerson they didn't realize just how much they had in common and – more importantly – how collaboration could have a positive impact on global hypertension.

Akpinar-Elci, the director of the Old Dominion University's Center for Global Health, came to the College of Health Sciences to launch an innovative initiative that encourages interdisciplinary approaches to addressing global health issues at home and abroad. Bilgen, who has a Ph.D. in mechanical engineering, joined the Mechanical and Aerospace Department at ODU three years ago as an assistant professor. His research focuses on structures, dynamics, fluid mechanics and aerodynamics.

In addition to his work as a cardiologist, Kenerson is also co-founder of Colleagues in Care - a nonprofit organization dedicated to alleviating suffering and building capacities to improve health care services in regions challenged by poverty, resources and complex systemic issues.

Together, the three set out on a mission: Find a way to diagnose hypertension in areas where resources and electricity are scarce.

Shelley Mishoe, dean of the College of Health Sciences, formed the Center for Global Health to facilitate such collaborations to help solve persistent global health problems. "I am so pleased to see this work progress after making the introductions between Drs. Akpinar-Elci and Kenerson so they could discuss potential collaborations with the center and Colleagues in Care."

Kenerson helped form Colleagues in Care in 2010, the year a devastating earthquake hit Haiti, and his nonprofit has been helping Haitians rebuild as well as battle hypertension, the greatest cause of morbidity and mortality among adults there – ahead of HIV, cholera, tuberculosis and malaria combined.

In pursuit of a reliable, less expensive, more accessible, durable and smaller blood pressure device, Bilgen – in collaboration with Kenerson and Akpinar-Elci – is developing a blood pressure cuff that operates on harvested energy generated by the mechanism itself.



Joshua Harden, left, from the Math and Science Academy at Ocean Lakes High School, shares blood pressure data with Dr. Muge Akpinar-Elci, director of the Center for Global Health, and Onur Bilgen, an assistant professor in ODU's Mechanical and Aerospace Department.

"Concerning global health, I know the problems that need attention worldwide, but in many cases I don't know what kind of technology is available," Akpinar-Elci said. "Onur helped me explore such possibilities."

Automatic equipment, which uses electricity to gauge blood pressure, has the advantage of having one unit so less manual dexterity is needed compared to a system that uses a separate gauge and stethoscope. In addition to being easier to use, it minimizes human error and works well for those with hearing or vision loss.

"Fully mechanical (old-fashioned) blood pressure monitoring devices, and modern semi-automatic or fully automatic devices that use electricity to determine pressure have differences in terms of accuracy of measurement, practicality to the doctor, caregiver or patient, and product lifetime," Bilgen said. "A direct comparison is difficult, and advantages/disadvantages depends on the context; however, one can say that electrical semi-automatic and automatic devices are more practical for patients or for non-expert care-givers in home-use applications where resources such as batteries, power source, or replacement devices are not readily available."

Using limited resources, Bilgen and his small crew of lab assistants – incoming ODU engineering freshmen Bryce Horne and Tony Crawford, and Ocena Lakes High School senior Joshua Harden - have been working to determine precisely the amount of energy necessary to power the cuff. Now that they have been able to harness more than enough electricity to power their device, the group is on the verge of marrying the energy-generating mechanism with the blood pressure device. Once that step is complete, the team will focus on getting additional funding to build a prototype. Their paper on the device was recently published in the Journal of Clinical Hypertension.

"The device uses piezoelectricity, which relies on changes in pressure (in this case accelerated air produced in the inflating of a blood pressure cuff) to generate electrical energy," Bilgen said. "Piezoelectricity is found in such items as recording devices, speakers and microphones."

These technologies highlight the importance of catalytic innovation, Kenerson says, which offers simpler solutions aimed at underserved groups.

One of the clear advantages of such a device in developing countries, where 80 percent of hypertension-related diseases occur, is it doesn't rely on electricity, which can be a scarcity. An added bonus of the device Bilgen is developing is it eliminates the need for disposable batteries that end up in landfills.

Kenerson is a huge proponent of collaboration as a means to solve health care issues at home and abroad. One of the maxims of Colleagues in Care is "Knowledge is power. Shared knowledge is transformational." He believes this device will be a product of those words.

Describing the ODU collaboration, he succinctly puts it: "When you think about something that can be done, you need to ask yourself: 'Why not here; why not now?'"



From left: Through a unique collaboration, Onur Bilgen, Dr. Muge Akpinar-Elci and Dr. John Kenerson devised a way to create a blood pressure cuff that generates its own electricity.

Nursing program ranks second nationally in best online list

By Irvin B. Harrell

Old Dominion University's School of Nursing ranked second nationally in the Top 50 Best Value Online RN to BSN Programs of 2015 survey recently conducted by Value College, a website that researches educational quality and costs.

The RN-to-BSN curriculum was created about 25 years ago and was among the first distance learning programs offered at ODU. Since its inception, enrollment in the program has continued to grow. There are currently about 450 students enrolled.

“Students attending the nursing distance learning programs at ODU get so much more than a good value,” said Karen Karlowicz, chair of the School of Nursing. “From academic advising to facilitating practicum experiences in students' home communities, the School of Nursing faculty and staff ensure that every student receives the attention they need to be successful in our programs.”

The School of Nursing's RN-to-BSN curriculum encourages students to use course assignments to explore practice or leadership issues in the workplace. Through the program, students are able to reflect on and synergize their class materials into a portfolio that demonstrates mastery of core competencies. Students in the program have a full-time or part-time option, with the former providing a one-year completion time.

The School of Nursing is one of five schools in the College of Health Sciences. Shelley Mishoe, dean of the college, said the ranking reflects just one facet of the top-notch school.

“This distinction is a reflection on ODU's innovation in education and the longstanding partnership between the Office of Distance Learning and the College of Health Sciences to promote the talented, creative and dedicated work of our faculty,” Mishoe said. “I commend the teamwork of the nursing faculty for this well-deserved distinction.”

In its research, Value College considered only accredited nursing schools, either through the Accreditation Commission for Education in Nursing ([ACEN](#)) or the Commission on Collegiate Nursing Association ([CCNE](#)). Its ranking factored in three metrics:

- Payscale's 2015 College ROI Report by Healthcare Career criteria
- U.S. News & World Report's national rankings
- Credit per hour tuition rate as reported by each individual college.

“Not only is ODU Online affordable for both Virginia residents and non-residents, but online students get the full support of the College of Health Sciences' School of Nursing, with courses taught by the same quality faculty and mentorship available through both synchronous and asynchronous instruction,” according to Value College's website. “With a well-developed support system that younger online programs can't offer, ODU Online makes sure it provides students with an excellent education that translates to a top college value.”

Top 10

The following nursing programs were ranked as the best value online RN to BSN programs of 2015.

1. Drexel University
2. **Old Dominion University**
3. University of St. Francis, Joliet
4. Boise State University
5. Ohio University
6. University of Texas at Arlington
7. University of Central Florida
8. Florida International University
9. East Carolina University
10. Arizona State University

Rebecca Poston appointed to Virginia Board of Nursing

By Irvin B. Harrell

Rebecca Poston, who has been a lecturer with Old Dominion University's School of Nursing since 2010 and an assistant professor since January 2015, prides herself in having the "dream job."

Besides teaching nursing students and doing research in the College of Health Sciences, she also works as a pediatric nurse practitioner at Children's Hospital of The King's Daughters (CHKD).

"Not only do I get to work in an educational setting, but CHKD allows me to continue engagement with patients and families in a face-to-face, real-time way and that to me is a priority in terms of staying abreast of new modes of treatment and technology and what's happening on the ground," she said.

But her dedication to healthcare doesn't stop there. Poston was recently appointed by Gov. Terry McAuliffe to the Virginia Board of Nursing, where she will be able to have an impact on the future on nursing in the state of Virginia. The four-year, prestigious appointment was a welcomed surprise for Poston.

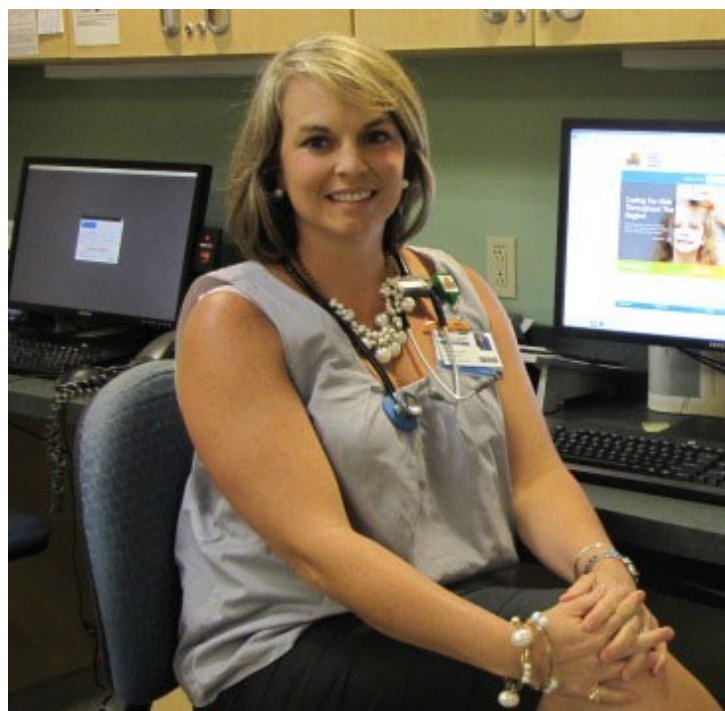
Poston, who is married to Norfolk's Commissioner of Revenue C. Evans Poston Jr., says she has found herself from time to time in political circles and has expressed an interest in serving on a state board. More than a year ago, she submitted her CV to the Secretary of the Commonwealth's appointments repository/website, and in July she received a phone call notifying her of the appointment.

"This is a huge honor," she said. "I was able to get my feet wet in a City Council appointment to the Norfolk Interagency Consortium, which oversees local and state funding for at-risk youth. This appointment takes it to the next level.

"I hope to bring the perspective of educator/clinician/citizen to the board. I'm looking forward to learning from people across the state."

Shelley Mishoe, dean of the College of Health Sciences, said Poston "will undoubtedly represent our college well in her service to the commonwealth and the profession" in her role on the Board of Nursing. "Rebecca is a natural leader who can organize people and priorities to make things happen for the betterment of the team and community," Mishoe said.

In July, Poston also received the college's G.W. Hirschfeld Award for her work with Interprofessional Education and Practice. She serves on the Advisory



Committee for Interprofessional Education at the college.

Poston attributes a high school experience with her career choices. At that time, she volunteered for Operation Smile and was able to go on a medical mission to Russia with the nonprofit dedicated to helping children with cleft lip and cleft palate problems.

There Poston says she "had the opportunity to see doctors, nurses, speech pathologists, dental hygienists in an interprofessional group make huge difference in a short amount of time on children's lives. And that experience is imprinted on my heart and my brain, and it never went away."

After earning a Bachelor of Science in Nursing at the University of Virginia in 2003, Poston came to ODU, pursued the pediatric nurse practitioner tract, and received her Masters of Science in Nursing in 2005. She received her Ph.D. in Nursing from the University of Virginia in 2012.

The married mother of a 2- and 5-year-old, grew up in the Ghent area of Norfolk and has remained connected to the community.

"The ODU community is my community. I grew up here. I was part of the last graduating class of pediatric nurse practitioners here," she said. "This is where I wanted to be."

Poston says her time spent working at the College of Health Sciences has had a profound effect on her educational enrichment. "Your colleagues rub off on you," she said.

Calendar of Events

September

- 7 Labor Day-University Closed
- 8 ODU 85th Anniversary Celebration, 8:00 am-5:00 pm
- 15 CoHS Welcome Back Picnic, 11:30 am-1:30 pm
Location: Health Sciences Lawn 47th Street
- 18 Physical Therapy White Coat Ceremony, 3:30 pm
Location: University Theater, Health Sciences Building
- 23 & 26 CE Course: Dental Radiation Safety Certification
- 30 Program Directors Luncheon, 12:00-1:00 pm
Location: HS Computer Lab, Room 3014

October

- 10-13 Fall Student Break
- 21 & 24 CE Course: Dental Radiation Safety Certification
- 15 CoHS Advisory Board Meeting, 8:30-10:30 am
Location: President's Dining Room, Webb Center (member only)
- 20 Dean's Student Advisory Committee Luncheon, 12:00 pm-1:00 pm
Location: 2114 Health Sciences Building

November

- 2 Nursing White Coat Ceremony, 4:30-6:30 pm
- 3 Alpha Eta Induction Ceremony, 12:30-1:30 pm
Location: James Lynn Room, Webb Center
- 25 University Closes 12 noon for Thanksgiving Holiday
- 26-27 Thanksgiving Holiday-University Closed

December

- 1 CoHS Holiday Luncheon Celebration, 11:10 am-1:30 pm
Location: Ted Convocation Center, Multipurpose Room
- TBD Upsilon Phi Delta Induction Ceremony (health management students)
- 4 Classes End
- 5-11 Final Exams
- 12 Fall Commencement
Location: Ted Convocation Center
- 24-Jan 1 University Closed for the Holidays

All Smiles



College of Health Sciences Dean Shelley Mishoe poses with Devon Taylor, one of the college's graduates, after she delivered her State of the College address on Aug. 19. Taylor is an Intern at a nearby hospital.
