Nursing innovations change lives. Will you lead with us?

Duke University
School of Nursing
According to the Institute of Medicine, western medicine has entered a new era—the era of the nurse.

We have always looked to nurses to be advocates for patients and their families. Today, nurses are directing the efforts of entire teams of caregivers, delivering coordinated care that is centered around the patient. This important role for nurses has the power to transform the practice of medicine—here at home and around the world.

Nurse scientists are developing innovations in care delivery based on scientific evidence of what works. We are learning that nursing innovations can impact treatment success, prolong quality of life, and improve cost effectiveness. These nursing innovations change lives.

Just as western medicine has arrived at the era of the nurse, Duke University School of Nursing has reached a new era.
height—largest enrollment, most prestigious faculty, best national ranking, and greatest amount of federal funding for nursing research—in our history.

We believe this is Duke Nursing’s time to lead. We seek to grow historic strengths in caring for the elderly, the chronically ill, and sick children. We seek to advance nursing science in genetics and global health. And we are committed to continuing a long tradition of educating the thinking nurse—men and women empowered to lead change in health and medicine.

In these pages, you will meet just a few of the Duke nurses who are leading discovery, care, and nursing education. They—and we—seek your partnership. Please join us, and together we will move Duke Nursing Forward for a healthier world.
Our country and the world face a crisis in health care, with widespread chronic disease, aging populations, geographic and economic barriers to care, and the growing complexity of care for survivors of cancer and other diseases.

The School of Nursing pioneered and continues to lead in discovery and care. Our faculty are conducting scientific research to discover better models of care. They are leading the implementation of global and community health initiatives to improve cost effectiveness and quality of life for people at home and abroad. Now more than ever, the world needs Duke nursing research.
AT THE HEART OF EVERY DUKE NURSING INNOVATION IS A PASSION TO DELIVER

the best care in the most compassionate manner to everyone who needs it. To succeed, we seek philanthropic investment in permanent endowments for faculty support and research, capital funding for a new building and equipment, and funds that can be put to work immediately for nursing research that improves patient care.
“We’re curing children, which is wonderful. But you can’t stop worrying about the children who have survived.”

Marilyn Hockenberry

Research coordinator Angel Barnes works with children participating in a study about side effects of chemotherapy.
When Marilyn Hockenberry first began working as a nurse practitioner 30 years ago, only half of children with cancer survived. No one focused much on the side effects of chemotherapy; they were too busy trying to save young lives.

But caregivers like Hockenberry knew from experience that chemotherapy caused some serious side effects, including cognitive decline. “We would often hear a mother say, ‘In first and second grade, he was fine, no problems. Then he got leukemia, and a year later, he can’t do a math problem,’” she says. “They’re cured of their leukemia, but they have difficulties with learning, major problems with math, lots of issues with being able to go on to college and being able to go on to careers.”

Today, more than 87 percent of all children who have cancer are cured. So nurse researchers are focusing on fine-tuning treatment to not only cure the child, but to avoid long-term side effects of chemotherapy.

Studies conducted by Hockenberry, PhD, RN, PNP-BC, FAAN, the Bessie Baker Professor of Nursing, suggest some of that decline can be prevented. She found that an intervention started early in treatment—one-on-one tutoring using creative techniques to teach math and reinforce basic math skills—significantly improved the decline in math skills. “We used to think, we’ll wait until the child is done with treatment, and we’ll worry about school then. But that may be too late,” she says.

Hockenberry and a colleague, Ki Moore, DNSc, RN, FAAN, a professor in the college of nursing at the University of Arizona, have linked these cognitive changes to injury of the central nervous system. They can track injury by measuring levels of certain chemicals in the cerebrospinal fluid, including a chemical called F2 isoprostane, which rises when brain or nervous system tissue is injured. Using samples that are normally collected to measure chemotherapy effectiveness, the researchers measured F2 and other markers, before, during, and after chemotherapy.

“We have discovered really acute elevations with F2 isoprostanes during the most intensive times of treatment. Then we associate these biomarkers with the cognitive and academic outcomes in these children,” Hockenberry says. “And we’ve found that those kids who have the most intense, acute tissue injury never really go on to recover. It’s a permanent change that is associated with long-term cognitive and academic outcomes.”

Hockenberry’s team also found that F2 isoprostane levels increased more in some children than in others, suggesting that some children are more sensitive to the toxicity of chemotherapy. They hope testing children for this marker during the initial phase of chemotherapy can determine which children are most at risk for cognitive decline, so caregivers can tailor treatment accordingly.

“Our goal is to maximize treatment and minimize side effects, and to personalize therapy,” Hockenberry says.
Nurses working in neonatal intensive care units frequently have to touch and move their tiny patients, many of whom suffer from a range of health problems, in and out of incubators. This frequent handling, coupled with extremely low birth weight infants’ inability to generate their own heat, makes it difficult to regulate temperature.

Years ago as a neonatal nurse practitioner, Robin Knobel, PhD, RN saw many babies get so cold they became hypothermic, a life-threatening complication. Knobel knew she had to do something to help nurses help these extremely sick babies have a better chance to survive.

“Modern-day technology has everyone focused on the ventilators, the drips, and all of the high-tech things to save these babies,” Knobel says. “I think temperature regulation is one of those simple things that people just don’t pay that much attention to anymore. It really can still have devastating outcomes.”

Knobel is an assistant professor of nursing and a Robert Wood Johnson Foundation Nurse Faculty Scholar, who studies temperature regulation in extremely low birth weight infants. Her current study examines the body temperatures of 30 babies younger than 29 weeks’ gestation during their first 14 days of life.

Unlike older children and adults, extremely low birth weight infants do not have the ability to shiver, which is the way older infants generate heat. Premature infants generate heat metabolically, by constricting the vessels in their feet to send warm blood to their central body. Knobel has found that extremely low birth weight infants...
Leading Discovery & Care

cannot do this. Often their feet are much warmer than their abdomens. This deprives their vital organs of blood and can cause serious damage.

In their research, Knobel and her team use four methods to get a complete picture of a baby’s body temperature. They measure the baby’s abdominal and foot temperature every 14 minutes with a skin surface temperature probe. They also use a special machine to measure blood flow to the baby’s foot.

The third method involves using an infrared camera to take images of the baby once a day for five days. While viewing the resulting black and white infrared images on a computer screen, Knobel can point a cursor to any spot on the image and learn the exact temperature for that part of the baby’s body at that moment in time.

Continuously recording video of each baby in the incubator, the fourth method, allows the team to note when procedures are performed and, in turn, match that with the temperatures recorded at that time.

Knobel expects that all the data collected will help her better understand how handling babies affects their temperatures and determine when it is best—or not best—to move them, feed them, or perform procedures.

She also hopes her work will lead to a new standard of care for keeping premature babies warm. While monitoring the temperature of a baby’s abdomen is standard, measuring both the abdomen and the foot is not. Knobel believes her research shows that monitoring the two temperature areas will give nurses and providers a better sense of the baby’s thermal status.

Changing a standard of care is a huge effort, but Knobel has done it before. Her earlier research on temperature regulation revealed that covering babies with plastic bags up to their necks could enable them to retain heat. This research, along with similar studies at other institutions, led the American Academy of Pediatrics to make placing premature babies in plastic wrap or plastic bags in the delivery room a national standard.

“I think temperature regulation is one of those simple things that people just don’t pay that much attention to anymore. It really can still have devastating outcomes.”

Robin Knobel

LEADING DISCOVERY & CARE
New Clinic Keeps Heart Failure Patients Well—and Out of the Hospital

Across the United States, hospitals and health systems are scrambling to keep their congestive heart failure patients at home and out of the inpatient beds. If they fail, the Centers for Medicare & Medicaid Services (CMS) will reduce their already dwindling reimbursement.

At Duke, a new same-day access clinic is making great strides in improving prevention and outpatient care for heart failure patients. Led by Margaret Bowers, DNP, RN, FNP-BC, assistant professor of nursing, Karol Harshaw-Ellis, DNP, A/GNP, ACNP, a geriatric nurse practitioner and clinical nurse specialist at the Duke Heart Center, and Zubin Eapen, MD, the clinic’s medical director, the clinic opened its doors in September 2012. The three met with representatives from the emergency department, inpatient services, ambulatory care services, and the infusion clinic before fashioning the program to offer same-day appointments to newly-discharged patients who experience a recurrence of symptoms, particularly edema and shortness-of-breath.

“We’re able to treat patients who can receive acute therapies safely in an outpatient environment,” says Bowers. “The key component is having people practicing in the clinic who have a special expertise in the care and management of heart failure patients. We know what to look for, and we’re aware of the social barriers and financial challenges that co-exist in this sick population.”

The majority of patients require intravenous infusions of diuretics to remove the excess fluid, a common CHF problem leading to swelling and shortness of breath. It’s also important to consider a patient’s medications. Most patients, she said, take a minimum of eight medications. When medical complexity is paired with social and financial complexity, including lack of food or transportation, following recommendations such as eating a lower-sodium diet can be difficult.
Since opening last year, the clinic has completed approximately 500 patient encounters. Many patients come from other Duke settings in Durham, but the clinic also serves as a resource for out-of-town providers and patients who don’t have access to infusion equipment and services. Efforts are currently underway to analyze the impact of the clinic’s services.

In addition to infusion services, Bowers and her colleagues spend a great deal of time on patient education, teaching patients about early symptom recognition, dietary adherence, and weight management. The goal, she said, is for patients to understand that CHF is a chronic condition.

“CHF is a forever illness, and managing symptoms, medications, weight, and diet, are the best ways to help patients feel better and live longer,” she said.

So far, based on patient feedback, their efforts have been successful. Patients have expressed appreciation for the clinic, Bowers said, because it offers the convenience of having either same-day or next-day appointments. But, most of all, patients like the clinic because it helps them avoid a hospital admission or re-admission.

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“The key component is having people practicing in the clinic who have a special expertise in the care and management of heart failure patients.”

Margaret Bowers

Zubin Eapen, Margaret Bowers and Karol Harshaw-Ellis with a patient
A construction business owner has hepatitis C, and on top of battling the illness, he must fight fatigue and "brain fog"—memory loss, confusion, and trouble concentrating, caused by both the illness itself and the harsh drugs used to treat it. Because he's a hands-on boss who climbs ladders, this problem could put him at physical risk. His care provider may reach for a familiar tool, such as a sleeping-pill prescription to address fatigue. But what the man may really need is to learn ways to adapt, such as hiring extra help and taking on more of a supervisory role in his business, adjusting his schedule, or asking friends to drive him to work.

Health care in the United States doesn't do very well with helping patients make such changes, says Ruth Anderson, PhD, RN, FAAN, the Virginia Stone Professor of Nursing. "The provider must first really understand the patient's challenges and help them think about how to solve them. It's hard to do that in a ten-minute visit," she says. "Too often, we solve the wrong problem."

To remedy that, Anderson and Sharron Docherty, PhD, CPNP-AC/PC, RN, associate professor of nursing, borrowed an idea that began at Harvard business school—adaptive leadership—and applied it to improving care for patients with chronic illnesses who have cognitive or affective symptoms, such as depression, anxiety, or memory loss. That creative approach earned them a $2.5 million, five-year grant from the National Institutes of Health to create a center of excellence in symptom science. Their center focuses on cognitive/affective symptoms. It's one of only five such centers in the U.S.

In the business world, adaptive leadership means that leaders help employees develop the capacity to solve their own problems. At the new center, which Anderson and Docherty co-direct, they use the idea to support research that recognizes that with cognitive and affective symptoms, the health care provider can't just hand the patient a solution, but must work with the patient to create it. These symptoms don't have easy fixes, and many of them require the patient to learn a new way of doing things. The center supports researchers from nursing, in collaboration with researchers from many other disciplines, to find new
Leading Discovery & Care

$2.5 MILLION NIH GRANT LAUNCHES THE SCHOOL’S EXCELLENCE IN SYMPTOM SCIENCE CENTER

ways to understand and measure cognitive and affective symptoms and the ways that patients adapt to them.

Researchers from across the Duke campus are excited about applying these ideas to patient care. Anderson and Docherty are collaborating with people from the Duke Institute for Brain Sciences, the Department of Psychiatry, and the Division of Nephrology, to name a few.

“Everybody sees the problem, and everybody wants to support those who have a different solution,” Docherty says. “Our way of thinking about health care in the United States does not align naturally with the collaborative nature of care needed by people with chronic illnesses.”

Keith Whitfield, professor of psychology and neuroscience and vice provost for academic affairs, serves as co-chair of the ADAPT Center’s minority advisory board. “People with a wide range of skills are needed to try to address all areas of a person’s life that are affected when they have cognitive dysfunction,” Whitfield says. “This center takes a novel team approach and recognizes that cognitive health is not separate from other aspects of health.”

The NIH award supports four large research projects, but more support is needed. “To really grow the science, we need to support junior scientists in the development of pilot work,” Anderson says. Seed funding to conduct preliminary work that could lead to larger projects is vital.
INNOVATING THE CURRICULUM TO PREPARE LEADERS FOR THE FUTURE: A TRADITION IN THE SCHOOL OF NURSING

Today we are integrating the best of our educational tradition with a new focus on team-based learning, simulation, and exposure to clinical research and real world global and community health settings.
WE ARE EDUCATING NURSING STUDENTS TODAY WHO WILL BE LEADERS in a rapidly changing world of health and medicine. To succeed, we seek philanthropic investment in permanent endowments for faculty support and student scholarships as well as funds that can be put to work immediately in global health education, student research, and initiatives to increase diversity in nursing.
Everyone is aware of worldwide health crises such as the AIDS epidemic, the emergence of new infectious diseases, and the spread of drug-resistant bacteria. But, says Brett Morgan, DNP, CRNA, in much of the developing world another, less well-known, public health emergency exacts a terrible price in human life every day.

“Those of us in the business call it the global anesthesia crisis,” says Morgan, assistant professor and assistant director of the Nurse Anesthesia Program. “It’s not something that draws a lot of media attention like ebola or HIV, but it is a true crisis in the developing world, where there are few anesthesia providers. Surgeons are giving their own anesthesia, or finding laypeople to do it, or else there simply is no access to surgical care because there is no one to administer anesthesia.”

In the United States, there is approximately one anesthesia provider per 4,000 people; in some African nations, the ratio is one provider per one million people. The human costs of that imbalance are devastating. Some two billion people in the world have no access to even the most basic surgical care, and untold numbers die of common conditions such as broken limbs or appendicitis that would be easily treated in the U.S. And even where there is anesthesia available, substandard training, equipment, and conditions often make it dangerous. In the U.S., there is about one anesthesia-related death per 100,000 surgeries; in some parts of the world it’s closer to one in 150.

Morgan and some of his School of Nursing colleagues, along with Duke anesthesiologist Adeyemi Olufolabi, MBBS, are leading an effort to change that in one part of sub-Saharan Africa. In September 2012, Morgan went to Ghana to lay the groundwork for a collaboration between the School of Nursing and Ghana’s University for Development Studies in Tamale. The goal is to identify the nation’s anesthesia needs, establish a program for expanding the force of well-trained nurse anesthetists, and—most importantly—develop a professional nurse anesthetist culture that will survive and grow.

“Right now that doesn’t exist in Ghana,” Morgan said. “Nurse anesthetists in Ghana feel they don’t have the resources, the standards, or the support they need to give safe care. They don’t feel empowered. So we’re ultimately working to not just train people how to do a job, but to develop a profession to serve the people. That’s the big Duke picture.”

It’s a daunting task; Ghana currently has about 350 anesthesia providers, almost all of them nurses, to serve a population of about 26 million people.

Brett Morgan and the chief nurse anesthetist at Korle-Bu Teaching Hospital in Accra, Ghana. Ghana, like most of the developing world, has a severe shortage of anesthesia providers, and Morgan is working with leaders there to build a professional nurse anesthetist program.
of 25 million people. But Morgan and his partners are confident that they can make a difference—a difference that will last. The biggest challenge in any such project, he said, is creating change that will sustain itself long after the volunteers have left.

He and a team of colleagues have made plans to return to Ghana to meet with Ghanaian leaders in relevant fields who can help plant the seeds of sustainability.

“It’s a huge project,” says Morgan. “We don’t have any funding to speak of. Capacity building is hard to get money for. But I’ve always believed that you should never let money be the reason you stop building an idea, because money will find it. It really will. If the idea is good enough and the work is valued, somebody will help you.”

“If the idea is good enough and the work is valued, somebody will help you.”

Brett Morgan
DNP Graduate Develops Effective, Cost Efficient Model of Care for Depression in the Elderly

Homebound elderly people frequently suffer from several chronic diseases. One of the most pervasive conditions is depression. But getting effective therapies to these patients has traditionally been difficult.

Not anymore. Research conducted by Rose Madden-Baer, DNP, a graduate of the Doctor of Nursing Practice (DNP) program, revealed it is possible to effectively relieve depressive symptoms in homebound elderly people in a financially sustainable way. Duke’s DNP program, launched in 2008, was the first in North Carolina. DNPs are nurse leaders who have the critical skills to translate evidence-based practice into new models of care.

“This research is critical because it’s targeted to people who are typically frail and have difficulty accessing services,” said Eleanor McConnell, PhD, RN, GCNS, BC, Madden-Baer’s Duke advisor and an associate professor of nursing. “And, if their depression isn’t treated, they’ll suffer. The symptoms of their other chronic conditions could worsen.”

Madden-Baer, who works with Visiting Nurse Service of New York, has been featured in the New York Times and the Huffington Post.

In some cases, she says, patients resist treatment. But there are other challenges, as well. Medicare maintains complex regulatory and reimbursement requirements for in-home depression therapies, and any home health nurses providing the services must have the proper training to provide treatment in a consistent manner.

She has designed a first-of-its-kind program—based on a combination of behavioral and medication therapies—to connect home health nurses, doctors, and other mental health professionals in new ways to actively address depression in these homebound individuals.

“I really think this is a program that never existed elsewhere. Until now, it’s been completely unknown if it were possible that this could be done by home health agencies,” says Madden-Baer. “This study has given other interested groups a blueprint.”

Initially, the program included two part-time psychiatrists and five psychiatric nurse practitioners. Today, the number of NPs providing psychiatric services in the home
has grown to 27, Madden-Baer said. The study team also changed how services were billed to lower or eliminate the possibility of a reimbursement denial.

The study results were exceptionally strong, with the research team hitting every desired target. Out of 600 homebound elderly enrolled and evaluated, 597 were referred for psychiatric evaluation, and 546 were admitted to a facility. Every patient completed a pre-treatment Geriatric Depression Scale (GDS) assessment, and 99 percent repeated it post-treatment. On average, patients improved, demonstrating a 3-point drop in their GDS scores; and, out of a desired 30-percent adoption rate among nurses who received special training, the study achieved 29.2 percent.

The program was also successful from a financial perspective—there were no payer denials during the study period, and program revenue exceeded budget goals by 8 percent.

Other health care leaders have recognized the program as an initiative that provides meaningful evaluations and can be replicated with specific guidance. Consequently, the program’s success continues to grow as it spreads nationwide. Adoption and implementation rates are rising, she said, and an increasing number of doctors recognize the efficacy and utility of the program.

Madden-Baer and McConnell believe this kind of program will result not only in the development of new models of care and a new service line, but it could also lead to unequivocal practice changes for all nurses involved with mental health.

“She’s laid the cornerstone for expanding access to mental health services for depression among people who otherwise have a very difficult time getting access,” said McConnell. “She’s demonstrated a proof-of-concept that you can implement these services in a way that is consistent with Medicare payment roles, and she’s already demonstrated in a large, real-world setting that when using her model, people get better.”

“This research is critical because it’s targeted to people who are typically frail and have difficulty accessing services.” Eleanor McConnell
As a child, Shedeline Charles never doubted a college education and a successful career would be part of her future, despite what some might expect of children growing up in low-income neighborhoods like hers. The Ft. Lauderdale, Fla., native credits her parents with giving her the confidence to pursue her dreams. Haitian immigrants, Charles’ parents didn’t have the chance to complete school beyond the second or third grade, but they didn’t let that stop their five children from appreciating the value of an education.

Though inheriting this “immigrant mentality,” as she calls it, from her parents has driven her to do her best and set high goals, Charles had never considered getting a degree outside of Florida. That is, until a friend introduced her to a unique program at Duke University School of Nursing.

At the time, the friend was enrolled in Making a Difference in Nursing (MADIN), a three-part program initially funded by The Duke Endowment and later by a government grant, designed to attract economically disadvantaged, high-achieving minority students into nursing. The friend, who attended the University of Florida in Gainesville with Charles, spoke highly of the program, and Charles was more than eager to apply.

“It was the first time I had heard of a program trying to increase diversity in nursing,” says Charles, whose dream of becoming a nurse was influenced her own experiences—both good and bad—as a sickle cell patient who was frequently hospitalized as a child. “The health care field has to mirror all communities, and it’s important to open doors for people within those communities.”

Recruited primarily from historically black colleges and universities and minority-serving institutions, MADIN students must meet the criteria for admission to Duke’s 16-month accelerated bachelor of science in nursing (BSN) degree program.

The first part of the MADIN program is a six-week residential summer session designed to cultivate and enhance leadership and interest in professional nursing. The friend, who attended the University of Florida in Gainesville with Charles, spoke highly of the program, and Charles was more than eager to apply.

Charles says receiving reassurance and encouragement from nursing students with backgrounds similar to hers during the summer session was beneficial. She also was impressed with the
“The health care field has to mirror all communities, and it’s important to open doors for people within those communities.”

—Shedeline Charles

faculty, who she says created a welcoming, supportive environment.

“I liked that they motivate you to plan beyond a BSN degree,” Charles says of the Duke nursing faculty. She says she was encouraged to think through her long-term career plan. “We also got to meet nursing leaders like the president of the National Black Nurses Association,” she says.

Since being admitted to the BSN program in 2012, Charles has earned scholarships from the Robert Wood Johnson Foundation and Duke University School of Nursing.

Charles hopes to eventually get an advanced degree in nursing and teach. In her more immediate future, after graduating from Duke in December 2013, she looks forward to a career in community health and continuing to raise awareness about sickle cell disease, as she did previously while hosting events for a Florida group called Stop the Sickle Cycle.
BRINGING NURSING AND MEDICAL STUDENTS TOGETHER IMPROVES PATIENT SAFETY

The patient came into the emergency room complaining of headache, dizziness, and numbness in the left side of his body—classic symptoms of a stroke. Phillip Cobrand, RN, the nurse assigned to him, knew that for stroke patients, every minute counts; the sooner treatment could begin, the better his chances of recovery.

Cobrand started to suggest preliminary steps to Noah Kalman, the physician on duty—but then he caught himself and stayed his tongue.

“I actually started to say, ‘We need…’ but I had to stop myself,” Cobrand said a short while later. “I had to tell myself, ‘Wait, I can’t do that—he’s the doctor.’”

That sort of missed communication, which in the real world could have serious consequences for the patient, was among the issues addressed by the interdisciplinary simulation exercise that Cobrand and Kalman—actually students in the School of Nursing and the School of Medicine, respectively—were taking part in.

Almost 200 students from the two schools participated in the two-day collaboration, designed and organized by Kathleen Turner, DNP, RN, an assistant professor of nursing. It was only the second time the two schools had come together for an interdisciplinary educational experience.

Karen Frush, MD, Duke University Health System’s Chief Patient Safety Officer, told the students that mistakes in communication between medical team members, or between team members and patients, are a contributing factor in the majority of patient deaths due to medical error.

“This stuff really matters,” Frush said. “Our ability to work as highly performing teams, and to include patients in those teams, makes all the difference in the world in outcomes. A highly performing team is one that creates an environment of mutual respect in which everyone on the team feels free to speak up.”

Turner designed the experience based on principles established in TeamSTEPPS, a communication- and teamwork-building program for health care workers. Duke is one of five medical centers nationwide that serves as a teaching center for TeamSTEPPS.

“What we want participants to practice is conversation and collaboration among the members of the health care team: doctors, nurses, and patients,” Turner said. “There is so much value in having them all present in the same room talking to each other. We set this experience up to promote those conversations and help our students see the value that each of those perspectives has in patient care.”
“What we want participants to practice is conversation and collaboration among the members of the health care team: doctors, nurses, and patients."

Kathleen Turner

Participants worked in three-member groups, including both nursing and medical students, to run through two 15-minute simulations that were meant to test not their clinical knowledge but to raise their awareness of the importance of communicating clearly. Afterward, they gathered for both small-group and whole-group debriefings to discuss the many issues and lessons the exercises revealed. They also discussed some of the differences in educational experience between nursing students, who said they felt free to ask questions of their clinical leaders, and medical students, who said they felt considerably more constrained during rounds.

The participating students from each school learned a great deal about their counterparts, and about the value of communicating openly and clearly. The challenge, they said, will be to take those lessons with them after graduation.

“It was really good to hear their perspectives,” nursing student Julie Buster said of the medical students. “If I could work with these guys, we’d be an awesome team. It gave me the confidence that I need to be able to speak up and do what I’ve been taught.”
EDUCATING NURSES FOR CLINICAL GENETICS PRACTICE

Learning how to discuss genetic test results with patients could drastically change the health care delivery model, and all health care providers must be prepared to use new genetic tools effectively.

A new pilot elective class introduced by the School of Nursing focuses on the fundamentals of genomics and how they apply to personalized medicine. The implications for quality of patient care are considerable.

“If nurses truly understand how genomics impacts health risk at the forefront and know how to evaluate it, they can be much better at approaching these topics with patients,” says Jennifer Dungan, PhD, RN, who co-teaches the course with Sara Katsanis, MS, an associate in research at the Duke Institute for Genome Sciences and Policy. “Rather than being reactive to patients, they can proactively reach out and determine if this information is important to them, what it means, and what to focus on.”

The first part of the class focuses on fundamental genomic principles, such as human genetic variation, bioinformatics, ethical and social issues, and the principles of genomic testing. But it’s the second half of the semester that really opened students’ eyes to how genomic test results can directly impact health care.

In addition to hearing from clinical and research experts, students had the option, but weren’t required, to complete a free, anonymous genetic testing panel from 23andMe. After receiving the results, they used skills they mastered earlier in the class to evaluate their own genetic risk through the website of the direct-to-consumer company that analyzed the tests. Students who didn’t submit samples used data from mock patients.
Students gained the perspective of patients. They discussed how to convey genetic results and put them into the proper context. Even more important, they learned where to find additional information in existing literature.

“I think getting the resources is one of the biggest takeaways from the class. It’s having the knowledge of where to turn,” said Ann Miller, an accelerated bachelor of science in nursing student who took the class. “A lot of physicians and nurses don’t know about this stuff. Being the only person or one of a few who know and understand is a huge asset.”

Extensive curricular revisions are now underway that will thread genetic and genomic information through bachelor’s, master’s, and doctoral tracks in nursing. Dungan says this will eliminate the need for an elective class and would turn nursing graduates into some of the most knowledgeable and effective providers in their communities.
“What an exciting time to be a Duke nursing alumna! Through the campaign we have an opportunity to make a real impact on nursing and health around the world. Gifts to the campaign can support the cutting-edge research and clinical innovations being done by our faculty, state-of-the-art educational technology and programs, and most importantly scholarships to support the outstanding men and women who seek to attend the School of Nursing.”

Joan M. Stanley, BSN’71, PhD, CRNP, FAAN, FAANP
President, Nursing Alumni Council
As part of Duke Medicine’s historic $1.2 billion campaign, Duke University School of Nursing seeks **$43 million** to fund initiatives to improve health at home and around the world. We need your help to succeed. We seek philanthropic investment across two key areas. Will you lead with us?

**LEADING DISCOVERY & CARE**

The School of Nursing pioneered and continues to lead in discovery and care. Our faculty are conducting scientific research to discover better models of care. They are leading the implementation of global and community health initiatives to improve cost effectiveness and quality of life for people at home and abroad. Now more than ever, the world needs Duke nursing research.

To succeed, we seek philanthropic investment in endowments for faculty, research, global health, and programmatic initiatives; current-use funding for research and faculty development; and capital for a new building and equipment.

**LEADING EDUCATION**

We are educating nursing students today who will be leaders in a rapidly changing world of health and medicine. To succeed, we seek endowments for faculty, scholarships, and educational initiatives, and current-use funds for global health education opportunities, student research, and initiatives to improve the diversity of the future nursing workforce.

“Duke Nursing enjoys the powerful combination of being a globally recognized nursing school embedded in the world class platform of Duke Medicine. This is a competitive advantage for the school, allowing it to create differentiated training, research, and clinical practice. And this comes at a time when nursing plays a central role in the evolution of health care. The relevance of supporting Duke Nursing has never been clearer or more rewarding.”

Charles C. “Charlie” McIlvaine, T’87, MBA
Chair, Nursing Board of Advisors
Duke University School of Nursing is prominently located at the entrance to Duke’s world-class medical campus.
If you no longer wish Duke Medicine to contact you regarding fund raising or giving opportunities, you may opt out by contacting us by mail, phone or e-mail. That contact information is listed below:

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