



Today. Tomorrow. Together.  
Annual Report 2016





**ON THE COVER:** Autumn light bathes the new University of Iowa Stead Family Children's Hospital. The opening of the new children's hospital in February 2017 caps more than eight years of planning, design, and construction. Every aspect of the \$360 million, 14-level building—from its distinctive oval shape with oversized windows offering panoramic views, to the thoughtful family amenities and standardized room layouts—is designed to deliver advanced pediatric care in a setting focused on children and their families.

Photo provided by Nigel Young/Foster + Partners.

**ON THIS PAGE:** As part of open-house festivities for the new UI Stead Family Children's Hospital, visitors and staff members were invited to pose for impromptu photo ops. Many of the images were shared on UI Stead Family Children's Hospital social media channels.

# From UI Health Care leadership

Today. Tomorrow. Together.

**ACROSS UNIVERSITY OF IOWA HEALTH CARE**, 2016 will be remembered as a year of unique opportunities and extraordinary milestones in medical education, research, and patient care.

In this report, we highlight examples of what we've accomplished, how we're shaping our future, and how great things are possible through collaboration and shared commitment.

The past year was a period of remarkable achievements. At University of Iowa Hospitals and Clinics, we experienced all-time highs in the number of patients treated in our inpatient units and outpatient clinics while continuously striving to maintain the highest levels of quality, safety, and service for our patients, their families, and our employees.

Our research enterprise remains robust, with faculty and staff in the University of Iowa Roy J. and Lucille A. Carver College of Medicine leading and participating in basic science studies that provide greater understanding of human health and disease as well as clinical trials that test the safety and effectiveness of new drugs and medical devices.

We continue to lead by example in the area of medical education—teaching students, medical residents, and fellows the intricacies of medical science and patient-centered care as well as the importance of interdisciplinary collaboration and humanism in every interaction with colleagues, peers, patients, and families.

In our 2016 annual report, we share stories and examples that detail our value to Iowa, the nation, and the world. Across our enterprise—more than 12,000 faculty, staff members, students, residents and fellows, and volunteers—our people bring together the skills, resources, expertise, commitment, and experience to achieve our tripartite mission of research, education, and patient care and service every day.

This report underscores our responsibility—to our mission and those we serve in fulfilling that mission. It's about helping people learn and develop professionally; make discoveries that expand our understanding of human health; and live better and live longer by taking care of themselves and their families.

That's the University of Iowa Health Care promise—to our patients, families, students, employees, and partners—for today, tomorrow, and years to come.



**Jean E. Robillard, MD**  
University of Iowa Vice President for Medical Affairs and Dean, UI Roy J. and Lucille A. Carver College of Medicine



**Patricia Winokur, MD**  
Executive Dean, UI Roy J. and Lucille A. Carver College of Medicine



**Kenneth P. Kates, MBA**  
Associate Vice President, UI Health Care, and CEO, UI Hospitals and Clinics

# University of Iowa Health Care

is Iowa's comprehensive academic medical center, comprised of the UI Roy J. and Lucille A. Carver College of Medicine; UI Hospitals and Clinics; and UI Physicians, the state's largest multispecialty group practice.

## OUR MISSION:

Changing Medicine. Changing Lives.®

UI Health Care is changing medicine through:

- Pioneering discovery
- Innovative interprofessional education
- Delivery of superb clinical care
- An extraordinary patient experience in a multidisciplinary, collaborative, team-based environment

UI Health Care is changing lives by:

- Preventing and curing disease
- Improving health and well-being
- Assuring access to care for people in Iowa and throughout the world

## OUR VISION:

World Class People. World Class Medicine. For Iowa and the World.

World class people.

Building on our greatest strength.

World class medicine.

Creating a new standard of excellence in integrated patient care, research, and education.

For Iowa and the world.

Making a difference in quality of life and health for generations to come.

## OUR VALUES:

### I CARE

Innovation

We seek creative ways to solve problems.

Collaboration

We believe teamwork—guided by compassion and commitment—is the best way to work.

Accountability

We behave ethically, act openly and with integrity in all that we do, taking responsibility for our actions.

Respect

We honor diversity, recognize the worth and dignity of every person, and aim to earn the trust of those we serve.

Excellence

We strive to achieve excellence in all that we do.



## Still the 'One'

Forbes again ranks UI Health Care as top employer

IN MARCH 2016, *Forbes* magazine released its rankings of "America's Best Employers," and University of Iowa Health Care once again was recognized as one of the best workplaces in the nation.

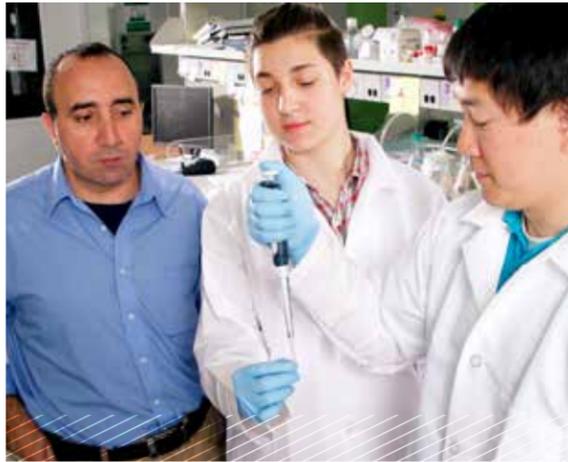
For the second year in a row, UI Health Care was ranked **No. 1 in the health care industry**. Among 500 U.S. employers across 25 industries, UI Health Care was listed as **No. 7 overall**.

The *Forbes* distinction is national recognition from two highly valued sources: our employees and our peers. The ranking reinforces our belief that by working **TOGETHER**, an organization can foster innovation, growth, and success that impacts the world **TODAY** and sets the stage for remarkable results **TOMORROW**. ///

### THE SURVEY ASKED TWO QUESTIONS:

1. On a scale of 0 to 10, how likely would you recommend your employer to someone else?
2. How about other employers in your industry?





### Here today.

Providing expertise in every medical specialty and access to advanced treatments, therapies, and clinical trials—delivered by compassionate, collaborative care teams committed to the highest standards of quality, safety, and service.

Conducting biomedical research that expands our understanding of human health and disease, leads to new diagnostic tests or procedures, and tests the safety and effectiveness of new drugs, devices, and procedures.

Offering medical education programs that emphasize interdisciplinary learning and teamwork, greater integration of coursework and clinical experience, and enhanced opportunities to embrace innovation and changing technologies.

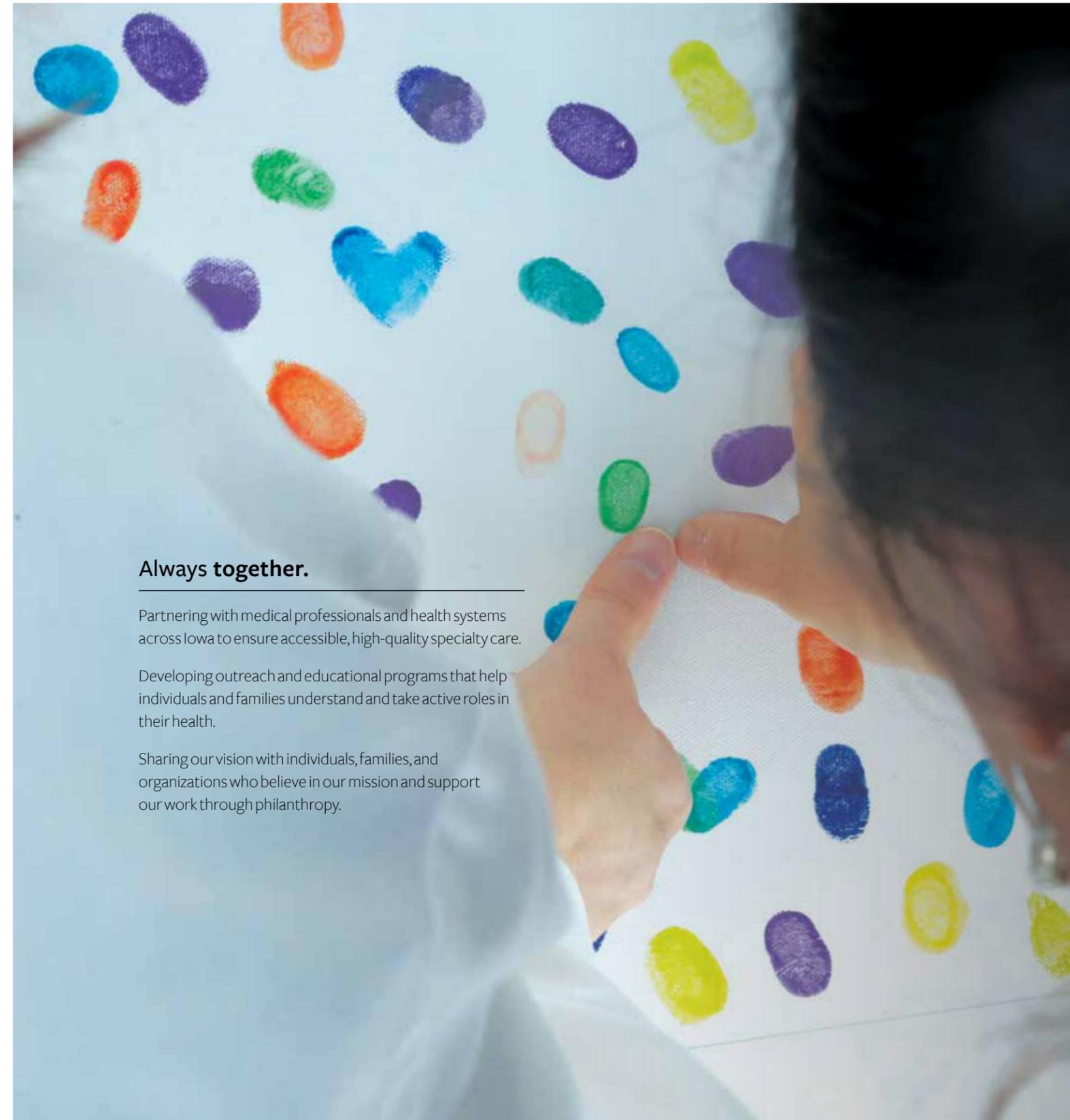


### For tomorrow.

Compassionate care with a commitment to the highest standards of quality, safety, and service for our patients, their families, and our employees.

Shaping the next generation of health care providers, nurturing each student's ability to become an outstanding clinician, scientist, and lifelong learner.

Unlocking the potential of personalized genomic medicine—using personal and family medical history, genetics, and lifestyle factors to detect, predict, and prevent illness and disease.



### Always together.

Partnering with medical professionals and health systems across Iowa to ensure accessible, high-quality specialty care.

Developing outreach and educational programs that help individuals and families understand and take active roles in their health.

Sharing our vision with individuals, families, and organizations who believe in our mission and support our work through philanthropy.

## Iowa-grown

### UI Carver College of Medicine program addresses need for rural doctors

**IN A FEW YEARS,** Shea and Michael Jorgensen will be top recruits for Iowa—not as blue-chip athletes for the Hawkeyes but as doctors for a small community.

The Jorgensens are Iowa natives and fourth-year students in the University of Iowa Carver College of Medicine. Ultimately, they want to practice in rural Iowa—Shea in psychiatry and Michael in family medicine. To help her prepare for a career in a small community, Shea participates in the College's Rural Iowa Scholars Program (CRISP), which embeds rural elements in the medical curriculum. She has worked alongside physician mentors in several of Iowa's smaller communities; learned about rural health issues in an agricultural medicine collaboration with the UI Colleges of Public Health and Nursing; and networked with UI medical students and physicians across the state who favor a small-town practice.

If Shea practices for at least five years in a small Iowa community after completing her medical residency, she is eligible for funding support—up to \$200,000 from the college or the state—to repay student loans.

CRISP launched in 2012 to help Iowa address a projected shortage of physicians. Each year, the program accepts four students from the 152 admitted into the college. Selection is competitive and based on experience with rural life, a commitment to practice in Iowa, an understanding of the roles and responsibilities of a rural physician, and personal characteristics important in the practice of rural medicine.

The initial four medical students involved in CRISP earned their MDs in 2016.

“When I applied (for CRISP), I never thought my mind would stray about practicing in a small community, since I grew up in a small community. Having a rural emphasis in my training helps me stay focused on that,” Shea says. ///



For medical students and Iowa natives Shea and Michael Jorgensen, practicing medicine in a small-town setting is a big priority.



## Enriching opportunities

Programs help prepare students for health careers

**TWO NEW PROGRAMS** at the University of Iowa are helping prepare students from underrepresented groups for careers in health care or graduate work in the biomedical fields.

In fall 2016, UI leaders announced a \$415,000 award from the Robert Wood Johnson Foundation that will bring the Summer Health Professions Education Program (SHPEP) to the UI campus in June 2017. SHPEP is a free summer enrichment program focused on improving access to information and resources for college students interested in the health professions. SHPEP's goal is to strengthen the academic proficiency and career development of students underrepresented in health care and prepare them for future success in a broad array of health professions schools.

The UI Carver College of Medicine, College of Dentistry, College of Public Health, and College of Pharmacy will administer SHPEP at the UI, welcoming 80 students for the six-week program.

A five-year, \$1.2 million award from the Postbaccalaureate Research Education Program (PREP) of the National Institute of General Medical Sciences (part of the National Institutes of Health) to the UI Carver College of Medicine supports five students each year who have earned a bachelor's degree in a biomedically relevant science and who traditionally have been underrepresented in biomedical fields. PREP participants spend a year working as apprentice students in preceptors' UI laboratories, taking part in a structured and customized program of career development activities, seminars, and coursework to enhance their research skills and academic competitiveness for graduate programs. The inaugural class of PREP@Iowa scholars arrived in June 2016. ///



## Planting seeds through STEM

Activities help grow tomorrow's physician-scientists

**OVER THE COURSE OF THE 2015-16 ACADEMIC YEAR**, 303 faculty, staff, and students volunteered more than 1,500 hours to University of Iowa Health Care STEM (science, technology, engineering, and mathematics) programs through partnerships with K-12 educators and community education leaders.

More than 22,500 students—representing 155 schools and community educational organizations from 56 counties across Iowa—participated in UI Health Care STEM education programs over the course of the school year. Activities included tours of research laboratories and health care facilities, classroom presentations, career exploration sessions, and hands-on demonstrations and exhibits.

The programs serve a dual purpose: to pique students' curiosity about careers in health care and inspire them to take an active role in their own health. ///

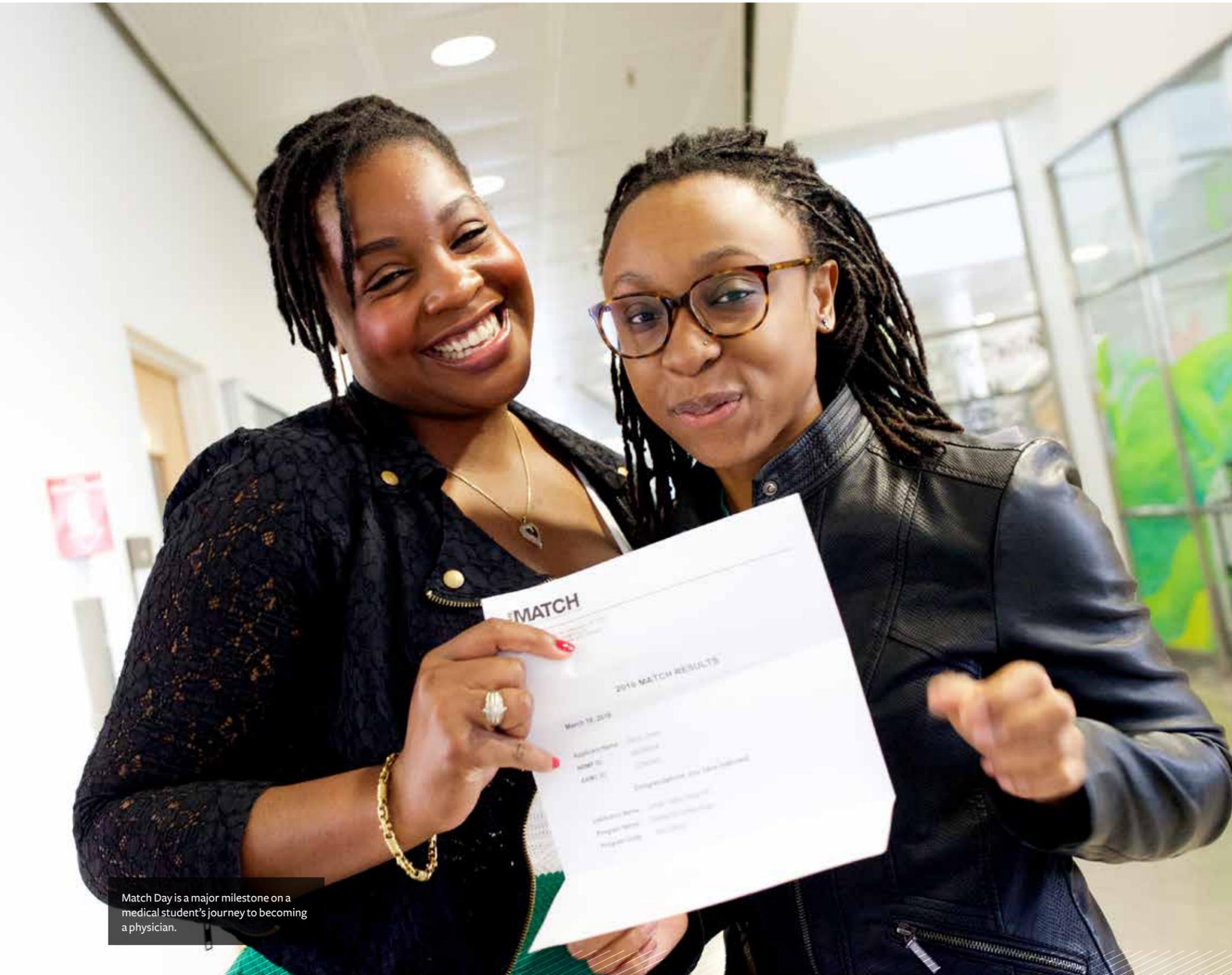
**22,500+**  
students

**1,500+**  
hours

**303**  
volunteers

**155**  
schools and community  
organizations

**56**  
counties



Match Day is a major milestone on a medical student's journey to becoming a physician.

## 'Match Madness'

UI Carver College of Medicine graduates receive residency assignments

**JUST DAYS AFTER THE START OF MARCH MADNESS**—the informal name of the NCAA Men's Division I Basketball Tournament—graduating medical students across the country experienced "Match Madness" as they learned on March 18, 2016, which residency training positions they matched to at the nation's teaching hospitals.

The months prior to Match Day saw these doctors-to-be crisscrossing the country for interviews at hospitals and medical centers where they'd like to do their residency training and then ranking the sites by personal preference, according to the National Residency Matching Program.

Directors of residency programs at institutions around the country create a similar list—their ranking the candidates according to the program's preference. The lists of both the candidates and the programs are entered into a computer, and an algorithm creates a "match," putting candidates with programs.

Students learn a few days before Match Day whether they'd matched at all, and those who haven't matched participate in the Supplemental Offer and Acceptance Program, where unmatched students submit applications to unfilled programs, which rank the students and make offers in a series of rounds. On Match Day, participating medical schools distribute eagerly awaited details at the exact same time.

Among the University of Iowa Carver College of Medicine's 2016 graduating class of 150 students, 52 percent (78 students) chose primary care specialties, which include family medicine, internal medicine, obstetrics and gynecology, and pediatrics. There were 24 matches in family medicine programs, 24 in internal medicine, nine in obstetrics and gynecology, and 21 in pediatrics.

Among the 2016 graduates, 50 will remain in Iowa for their first year of postgraduate training, and 40 of these 50 students will train at UI Hospitals and Clinics. ///

## Education highlights



### Excellence in physician assistant studies

The 2016 graduates of the UI Carver College of Medicine physician assistant program were the first to take 100 percent of their coursework alongside medical students for the first three semesters of the 28-month program. “It is a unique feature of our program to have the medical students and physician assistant students incorporated this way,” says David Asprey, PhD, assistant dean for student affairs and curriculum and chair of the Department of Physician Assistant Studies and Services. Classes preceding this year’s class had approximately two-thirds of their courses side-by-side with medical students, Asprey notes.



### White Coat Ceremony at Hancher

Nearly three weeks before the official opening of the university’s new Hancher Auditorium, the UI Carver College of Medicine held its annual White Coat Ceremony in Hancher’s brand new space. “New” was the theme for 152 first-year medical students as they donned a fresh white lab coat and learned the makeup of their class: 101 Iowa residents, 61 women, an age range of 20-35, and a mix of 36 majors from 73 undergraduate colleges.



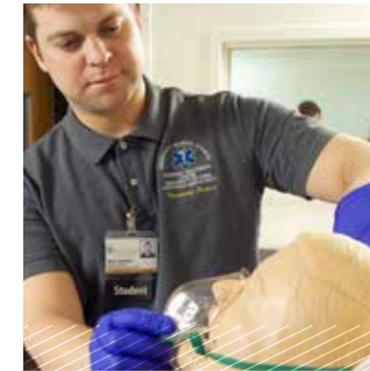
### A medical school business track

The UI Carver College of Medicine added a distinction track in health care delivery science and management. Courses include managerial accounting, human resources, marketing, and negotiations. UI transplant surgeon Alan Reed, MD, MBA, an architect of the program, says medical schools have not historically prepared students for the business of health care. “The time has come to educate students in health care policy, business, leadership, and all of these important things, because this next generation of physicians has to be engaged,” Reed says.



### Hardin named a regional medical library

Health professionals in 10 midwest states, from North Dakota to Kentucky, will look to the UI’s Hardin Library for the Health Sciences as a center for biomedical information and resources for making informed health decisions. The National Library of Medicine named Hardin one of the country’s five regional medical libraries. A \$6.5 million grant will support improved access to academic and consumer information resources for eliminating health disparities.



### Honored for trauma care education

More than 35 years of emergency medical services education puts the Emergency Medical Services Learning Resources Center (EMSLRC) in elite company nationally. The EMSLRC, based in UI Hospitals and Clinics, received recognition for being one of just 15 U.S. sites to have such a well-established record of providing advanced trauma life support courses for health care providers.



### Group spawns medical innovations

New operating room instruments, improved heart procedures, and novel bedside communication devices are some of the breakthroughs developed by students in the Iowa Medical Innovations Group. Each year, groups of students representing engineering, business, law, and medicine collaborate to solve real-world medical care needs brought to them by staff at UI Hospitals and Clinics. Some solutions, like the Noddle—a device that allows bedridden patients who can’t speak to easily communicate with a nurse—find their way from concept to startup venture, guided entirely by the student group.



Holden Comprehensive Cancer Center at the UI initially was one of only 10 sites nationwide invited to host a satellite Cancer Moonshot summit.

## Cancer moonshot

Holden Comprehensive Cancer Center embraces challenge to reach new heights in cancer fight

**DURING HIS 2016 STATE OF THE UNION ADDRESS**, President Barack Obama announced the establishment of a Cancer Moonshot to accelerate cancer research. This game-changing initiative—spurred by Vice President Joe Biden—aims to double the rate of progress in cancer prevention, diagnosis, treatment, and care over the next five years and ultimately end cancer as we know it.

On June 29, 2016, Biden convened a National Cancer Moonshot summit in Washington, D.C., to create action and foster collaboration around the goals of the Cancer Moonshot. Across the nation, more than 250 sites, including Holden Comprehensive Cancer Center at the University of Iowa, held simultaneous satellite summits that brought together oncologists, researchers, cancer survivors, patient advocates, philanthropists, and industry partners to share perspectives and generate ideas.

In his livestreamed opening remarks, Biden implored everyone involved in cancer care and research to find

ways to improve collaboration and data-sharing and break down any institutional, informational, and financial barriers to progress.

That message resonated with the cancer community at the UI, including Mohammad Milhem, MBBS, deputy director for clinical cancer services at Holden Comprehensive Cancer Center, who felt a renewed urgency for his mission to increase access to clinical trials for patients.

Milhem and his colleagues specialize in developing and testing new therapies for melanoma and sarcoma. They are currently testing a new approach for treating sarcoma that combines immunotherapy with standard radiation and surgery in the hope of reducing the risk of metastasis and recurrence.

“For me, a trial is the next therapy. It could be the defining therapy that changes how we practice. It could change the paradigm. It could open doors to new science. It never goes backwards,” Milhem says. ///



Ted Abel, director of the Iowa Neuroscience Institute, joins a longstanding tradition of excellence in neuroscience research at Iowa.

## Transformational support

Carver Charitable Trust grant establishes Iowa Neuroscience Institute

**IN NOVEMBER 2016**, University of Iowa leaders announced a transformational \$45 million grant from the Roy J. Carver Charitable Trust of Muscatine, Iowa, to establish a comprehensive and cross-disciplinary neuroscience research center based in the UI Roy J. and Lucille A. Carver College of Medicine.

The Iowa Neuroscience Institute, approved by the Board of Regents, State of Iowa, is dedicated to advancing knowledge and understanding of the causes, prevention, treatments, and cures for diseases that affect the brain and nervous system. It is led by Ted Abel, PhD, who joined the UI after two decades at the University of Pennsylvania, where he served as the Brush Family Professor of Biology in the Penn School of Arts and Sciences and co-director of the Biological Basis of Behavior Program.

The \$45 million Carver Trust grant brings together scholars from across the university to address some of the most pressing questions in the neurosciences. The grant will support the creation and maintenance of

core neuroscience laboratories; Research Programs of Excellence awarded to institute members demonstrating outstanding research leadership; and five faculty chairs, four professorships, and 10 junior-level investigators.

The Carver Charitable Trust and Roy and Lucille Carver are the largest donors to the UI, with their collective giving totaling more than \$195 million. This gift from the Carver Charitable Trust also is the largest in the UI’s “For Iowa. Forever More.” fundraising campaign, which started in 2008 and continued through December 2016.

“We are profoundly grateful to the Carver Charitable Trust for its vision and support, which allows us to continue our leadership role in biomedical discovery,” says Jean Robillard, MD, vice president for medical affairs and dean of the UI Carver College of Medicine. “It is a privilege to work in partnership with the Carver Charitable Trust and to embark on a new era of scientific innovation made possible through this grant.” ///

## Gene therapy potential

Pig model yields greater understanding of cystic fibrosis

**UNIVERSITY OF IOWA RESEARCHERS** have shown that gene therapy may be a viable approach for treating or preventing lung disease caused by cystic fibrosis (CF).

Working with CF pigs, teams led by Paul McCray Jr., MD, professor of pediatrics, and Joseph Zabner, MD, professor of internal medicine, showed that two different virus-based vectors can restore a working version of a protein—the cystic fibrosis transmembrane conductance regulator (CFTR)—that is faulty in CF to the pigs' airway cells. Moreover, this gene replacement normalizes important aspects of the lung biology and improves the ability of airway secretions to kill bacteria.

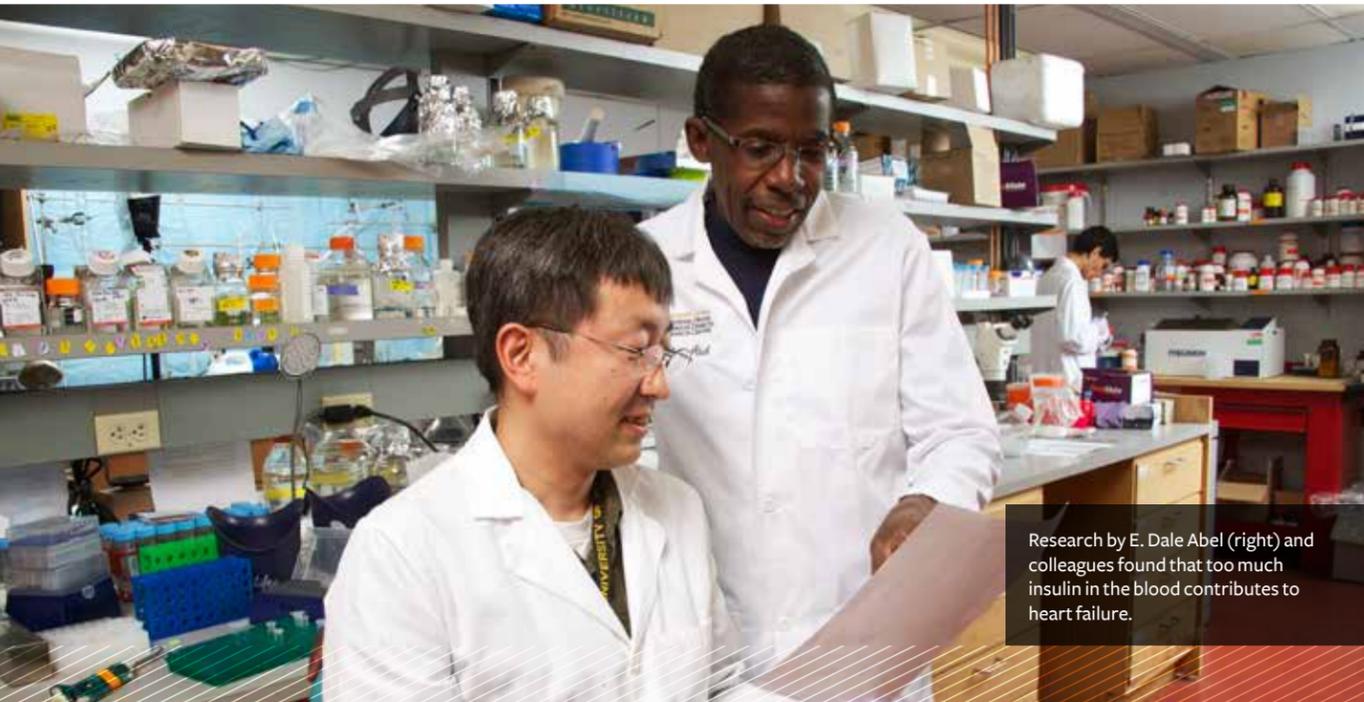
McCray's team used a lentivirus while Zabner's team used an adeno-associated virus (AAV). Both viruses have proved safe for use in humans. However, lentiviruses have not been tested in human lungs, and AAVs do not produce permanent gene expression. The studies were published Sept. 8, 2016, in *JCI Insight*.

The CF pig model, developed by UI and University of Missouri researchers, more closely mimics the human disease than do other animal models. Mice with CF gene mutations don't develop the life-threatening lung disease that affects most people with CF. In a paper published Jan. 29, 2016, in *Science*, UI researchers led by Michael Welsh, MD, professor of internal medicine and director of the Pappajohn Biomedical Institute, identified why this is the case.

In people, pigs, and mice with CF, loss of the CFTR stops the flow of bicarbonate ions. When that happens in people and pigs, the liquid that covers the surfaces of the tracheal and bronchial passages becomes more acidic, which impairs airway defenses against infection. But in mice, the airway liquid does not become more acidic, and CF mice are not prone to infection. The mice are missing a proton pump—which secretes acid into the airways of people and pigs—that is a potential target for new CF therapies. ///



UI investigators Paul McCray, left, and Michael Welsh.



Research by E. Dale Abel (right) and colleagues found that too much insulin in the blood contributes to heart failure.

## How diabetes harms the heart

Study identifies possible drug targets to prevent or treat heart failure

**CARDIOVASCULAR DISEASE** is the leading cause of death in people with diabetes. The risk for heart failure—where the heart can't pump enough blood—is two to three times higher in men and up to five times higher in women with diabetes compared to people without diabetes.

Previous research has implicated high levels of insulin, a hallmark of Type 2 diabetes, as a key factor in heart failure associated with diabetes.

A research team led by E. Dale Abel, MD, PhD, professor and chair of internal medicine in the UI Carver College of Medicine and director of the Fraternal Order of Eagles Diabetes Research Center at the UI, reported that too much insulin in the blood (hyperinsulinemia) contributes to heart failure by triggering a molecular chain reaction that damages heart muscle cells.

Using mice with diabetes, the researchers traced the links of this newly discovered insulin signaling pathway in heart muscle. They showed that blocking the pathway—with the beta blocker drug carvedilol or the antidepressant paroxetine (Paxil)—reverses some of the heart damage and improves heart function in diabetic mice, even without altering metabolic problems such as high blood sugar and high insulin. The findings, published Nov. 4, 2016, in the journal *Circulation*, suggest that these drugs might have potential for preventing or treating heart failure associated with Type 2 diabetes.

“The notion that activating insulin signaling can be damaging in the failing heart has been reinforced by this study,” Abel says. “The main clinical implication for physicians treating patients with diabetes and heart failure is to improve metabolism (blood sugar levels) without getting the insulin levels too high such that it harms the heart.” ///

## New findings in neuroscience

UI investigators explore genetic clues to psychiatric disorders

**JAMES POTASH, MD, MPH**, professor and chair of psychiatry in the University of Iowa Carver College of Medicine, summarizes it best: “This is a very exciting time because we have unprecedented tools that we can use to get to the bottom of what is going wrong in the DNA of bipolar disorders.”

Bipolar disorder is one of several psychiatric conditions being actively pursued by UI researchers through advanced genetic analysis. The list includes autism, schizophrenia, and a resistance to cancer for individuals with autism.

In their study published in the June 2016 issue of *JAMA Psychiatry*, Potash and colleagues from Johns Hopkins University focused on eight families with a history of bipolar disorder. For each of 36 family members, researchers analyzed 50 million nucleotides—the chemical letters in DNA—and began identifying genetic misspellings and patterns to those anomalies that suggest a condition ripe for developing bipolar disorder. In addition, the research indicates bipolar disorder and autism may share genetic roots. ///

**RESEARCH BY PEDIATRIC PATHOLOGIST BENJAMIN DARBRO, MD, PHD**, suggests that people with autism spectrum disorder are 66 percent less likely to suffer from cancer. Previous research shows that people with autism have variations in genes known to cause cancer. Logic suggests these individuals would be more prone to having cancer. Darbro's study indicates that genes implicated in cancer overlap with those that lead to developmental disorders. ///

**STILL OTHER GENETIC OVERLAPS** were reinforced by a study published by UI psychiatrist Andrew Pieper, MD, PhD. Pieper and colleagues from Weill Cornell Medicine created a strain of mice that are missing a gene associated with the creation of neurons in the hippocampus portion of the brain. Death of these neurons has been linked to schizophrenia, depression, and anxiety. Restoring the gene switched on the production of neurons and suggests pathways for treating a range of psychiatric disorders. ///



James Potash, MD, MPH



Benjamin Darbro, MD, PhD



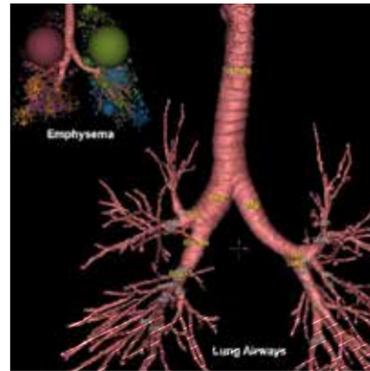
Andrew Pieper, MD, PhD

## Research highlights



### Unlocking cognitive keys in Parkinson's

Brain-signaling deficits associated with Parkinson's disease are responsible for cognitive problems that accompany the movement disorders that characterize the disease. UI neurologist Nandakumar Narayanan, MD, PhD, leads a team of researchers seeking to reveal the neurocircuitry that controls timing in the brain and its link to changes in cognitive processing brought on by the disease. In a recent study, the team showed that brain stimulation of specific neurons at a specific frequency can improve timing in mice that have symptoms similar to Parkinson's disease.



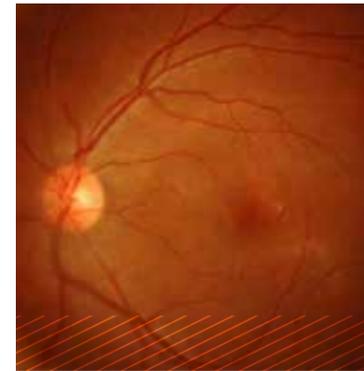
### CT scans shed light on COPD

A national study on chronic obstructive pulmonary disease (COPD) indicates a large number of current and former smokers have COPD-like symptoms without meeting diagnosis criteria measured by standard tests. The study found respiratory symptoms were present in about half the participants despite normal spirometry readings. Spirometry is a test that measures how much air a person breathes and how fast. Eric Hoffman, PhD, director of Iowa's Advanced Pulmonary Physiomic Imaging Laboratory, used computed tomographic (CT) imaging scans of the lung to reveal evidence of underlying lung disease not indicated by spirometry alone.



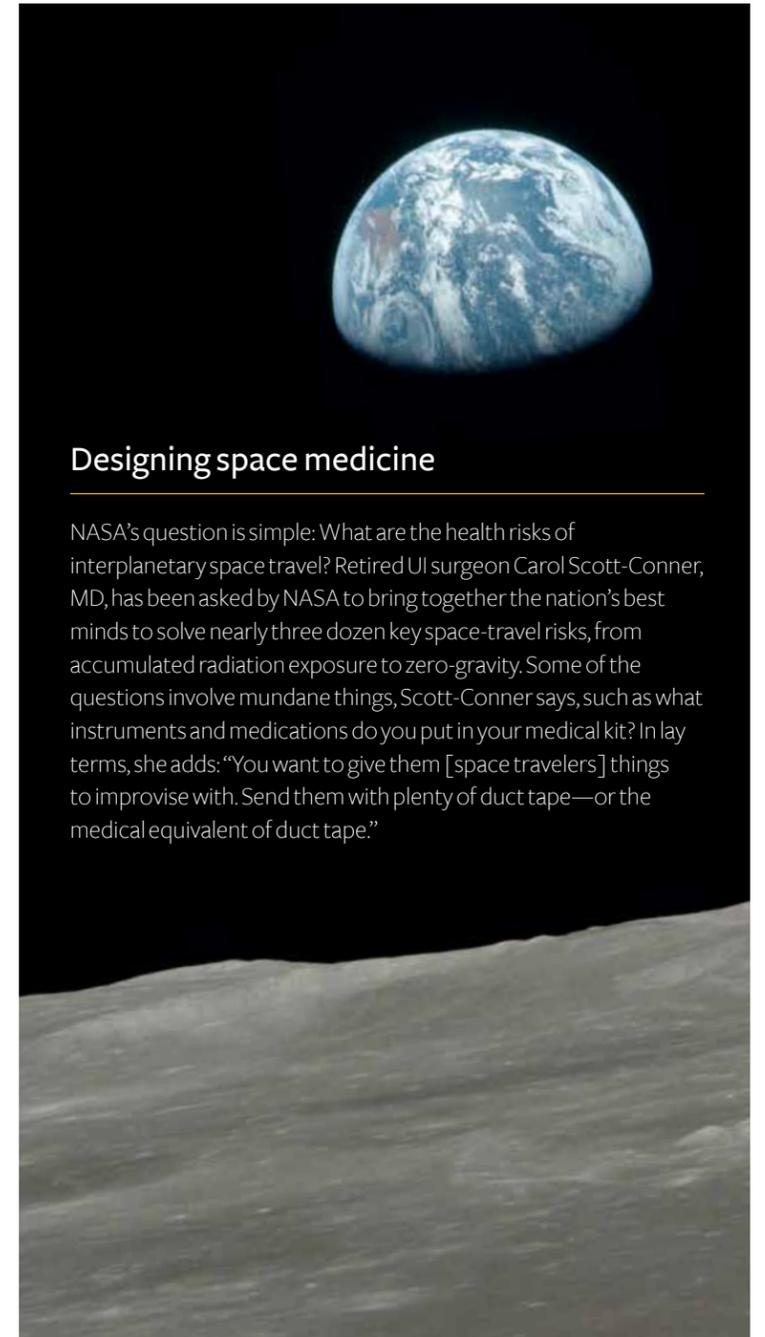
### Clinical trial for type of vitamin B3 shows promise

UI researchers led by Charles Brenner, PhD, professor and chair of biochemistry, conducted the first controlled clinical trial of a newly discovered form of vitamin B3, nicotinamide riboside (NR), showing that the compound is safe for humans. It also increases levels of a cell metabolite known as nicotinamide adenine dinucleotide (NAD+), which has shown multiple health benefits in mice studies such as resistance to weight gain, improved control of blood sugar and cholesterol, reduced nerve damage, and longer lifespan. Having demonstrated safety in the clinical trial of six men and six women, "we are in a position to find out if the health benefits we have seen in animals can be reproduced in people," according to Brenner.



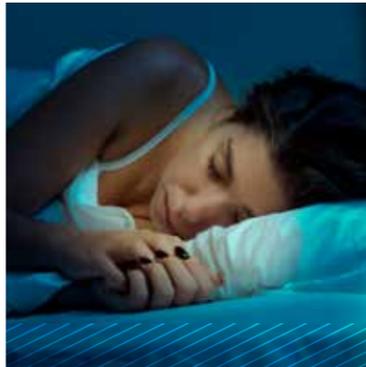
### Gene therapy trial completed

University of Iowa ophthalmologist Stephen Russell, MD, was a key investigator for one of the first Phase 3 gene therapy trials completed for a genetic disease. At one year following treatment, patients receiving gene therapy for the RPE65 mutation-associated inherited retinal dystrophy benefited with a statistically significant improvement in movement and light sensitivity. "The results suggest there will become a greater need for genetic screening of selected populations to identify inherited retinal disease patients who may benefit from genetic therapies," Russell says.



### Designing space medicine

NASA's question is simple: What are the health risks of interplanetary space travel? Retired UI surgeon Carol Scott-Conner, MD, has been asked by NASA to bring together the nation's best minds to solve nearly three dozen key space-travel risks, from accumulated radiation exposure to zero-gravity. Some of the questions involve mundane things, Scott-Conner says, such as what instruments and medications do you put in your medical kit? In lay terms, she adds: "You want to give them [space travelers] things to improvise with. Send them with plenty of duct tape—or the medical equivalent of duct tape."



### Weight loss and a good night's sleep

Preliminary findings by a team led by Mohamad Mokadem, MD, assistant professor of internal medicine, are among the first to show the importance for patients to have a normal circadian rhythm to maximize weight loss following bariatric surgery. The study may help clinicians improve the outcomes following gastric bypass surgery by correcting disruptions to the circadian clock.



### Novel eye inflammation treatment shows merit

Uveitis is an inflammation of the middle layer of eye wall tissue. Standard treatment involves steroids and other powerful drugs that can cause side effects for vision and other body systems. A clinical records review by ophthalmologist Elliott Sohn, MD, indicates a novel approach that includes freezing the damaged tissue shows reduction and, in some cases, resolution of the inflammation, resulting in improved vision.



### Collecting Zika virus information

The U.S. Centers for Disease Control and Prevention has awarded the Iowa Registry for Congenital and Inherited Disorders a grant to rapidly detect microcephaly and other adverse outcomes caused by Zika virus infection. Epidemiologist Paul Romitti, PhD, and pediatrician Daniel Bonthius, MD, PhD, will lead the project to create a rapid response team connecting hospitals, health providers, and public health programs for detecting cases of microcephaly and connecting affected infants and families with health and social services.



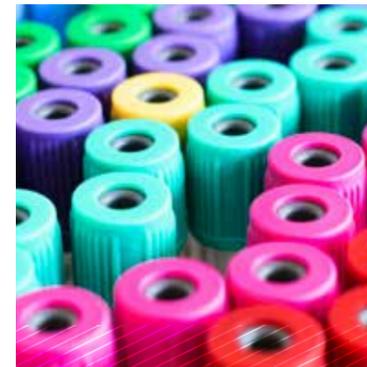
### Study examines diet, multiple sclerosis

The National Multiple Sclerosis Society awarded internal medicine professor Terry Wahls, MD, MBA, a \$1 million grant to compare two dietary approaches to treating MS-related fatigue. One approach is the Wahls Protocol, developed by Wahls over the past decade and based on a Paleolithic diet. The other is the low saturated fat Swank Diet, developed in the 1950s.



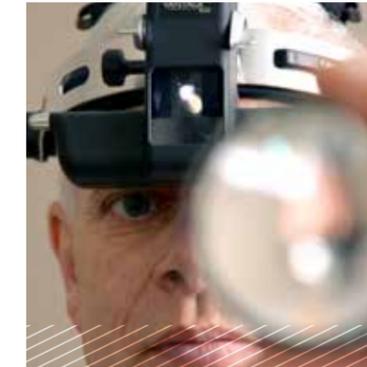
### Finding treatments for blunt chest traumas

The department of defense awarded a two-year grant to Paloma Giangrande, PhD, associate professor of internal medicine and radiation oncology, to study potential treatments for blunt chest traumas. Her focus on injuries at the molecular level could lead to findings of RNA bio-drugs that could be delivered on the battlefield or in intensive care units to patients with chest injuries.



### Questioning the value of the 'rainbow draw'

The majority of extra vials of blood drawn for lab tests are never used, according to a study led by UI pathologist Matthew Krasowski, MD, PhD, and published in the Nov. 7, 2016, issue of *JAMA Internal Medicine*. Krasowski and his study team hope their data will raise awareness and ultimately reduce the practice commonly known as the "rainbow draw," because each vial has a different colored top denoting which test the blood will undergo.



### Pinpointing a disease's earliest signs

Doctors have long held that diabetic retinopathy is caused by damage to the blood vessels in the retina, often leading to a breakdown of the nerve cells in the retina. A team led by UI ophthalmologist Michael Abramoff, MD, PhD, has shown that nerve damage occurs before vascular changes in the onset of this most common cause of irreversible blindness in adults. This new finding may lead to treatments that focus on preventing the nerve damage and thereby preventing retinopathy.



### Lessening the effects of traumatic brain injury

Traumatic brain injury affects nearly 5 million Americans, including a large number of U.S. soldiers. Long-term effects from these injuries include problems with vision, coordination, memory, mood, and thinking. Research led by psychiatrist Andrew Pieper, MD, PhD, suggests protecting axons, the fiber-like projections that connect brain cells, prevents the long-term problems caused by blast-related traumatic brain injury.

## Watchman a 'nifty little device'

New heart procedure lowers stroke risk caused by atrial fibrillation

**RETIRED TEACHER LINDA SLIEFERT** of Muscatine, Iowa, does her homework.

When offered the opportunity to be the first University of Iowa Health Care patient to undergo a new procedure to address the stroke risk posed by atrial fibrillation, she did some studying.

"It was promising," Linda says. "So I went home and thought and thought and thought about it."

Atrial fibrillation causes an irregular heartbeat that in some people allows blood to pool and clot inside the heart. A clot that breaks free and travels to the brain can cause a stroke.

In Linda's case, the clotting occurs mainly in the left atrial appendage (LAA), a small pouch-like area. Complicating her case was her history of brain bleeds, which made it dangerous to use blood thinners to stop the clotting.

UI cardiologists Gardar Sigurdsson, MD, clinical associate professor of internal medicine, and Phillip Horwitz, MD, clinical professor of internal medicine, recommended a new alternative—the Watchman™, a small implant designed to close off the LAA permanently.

The nonsurgical procedure is done via catheter. UI Hospitals and Clinics is one of only two facilities in Iowa to offer it.

Linda consulted with a cousin who is a cardiac surgeon.

"He said, 'Oh, I've done testing on the Watchman. It's a nifty little device.' That convinced me that I should go ahead and do it."

Horwitz performed the procedure in July 2016. A September follow-up showed the Watchman was perfectly in place and doing its job.

Linda's stroke risk is normalized, and her willingness to try something new is making the decision a little easier for others with her condition.///



For some patients with atrial fibrillation, the Watchman device (shown in insert) can reduce the risk of a stroke-causing blood clot.



Sabra Petersen was a good candidate for oncoplastic surgery, which combines plastic surgery and breast oncology techniques.

## Natural appearance

Oncoplastic surgery a good option for some breast cancer patients

**WHEN SABRA PETERSEN OF CAMANCHE, IOWA**, was diagnosed with cancer in her right breast, she had surgery to remove the cancerous tissue. Follow-up tests, however, showed that the cancer went to the edge of the tissue. In other words, some cancer may have been left behind.

Sabra could have had doctors remove more tissue, which likely would have left her right breast misshapen. Or she could have undergone a mastectomy to remove the entire breast.

Instead, she opted for oncoplastic surgery, an operation that would remove the remaining cancer tissue, shape the affected breast, and reduce the size of the unaffected breast to make the two breasts match.

“We remove tissue in the breast to reduce its size. We simply include the cancer in the tissue we remove,” notes Wei Chen, MD, a plastic and reconstructive surgeon at

University of Iowa Hospitals and Clinics. “The benefits are also cosmetic—we’re improving the appearance and removing the cancer at the same time.”

Oncoplastic surgery isn’t the right treatment for every patient, but it’s “a nice option for women who want to be able to save their breasts but who need to have a considerable amount of tissue taken,” says Ingrid Lizarraga, MBBS, a breast oncology surgeon at Holden Comprehensive Cancer Center at the UI.

Sabra was pleased with the results from her oncoplastic procedure.

“Everyone was wonderful in everything they did to take care of me—not only my physical health but my emotional well-being, too,” she says. “The doctors were very thorough in presenting all of the options and let me make the final decision, and then respected that decision.” ///



Organ donation has held special meaning for both Mary Beth Murray and Eric Burge and their families.

## A friend, indeed

Kidney donation gives Davenport man a second chance

**ERIC BURGE OF DAVENPORT, IOWA**, is no stranger to organ transplantation. Eric’s brother, John, received a kidney transplant just a few years before Eric discovered that he also needed a new kidney.

Eric and John have an inherited disorder called polycystic kidney disease, a common hereditary disease in the U.S. that affects more than 700,000 people each year. Many cases require a kidney transplant due to the formation of cyst clusters that destroy healthy tissue.

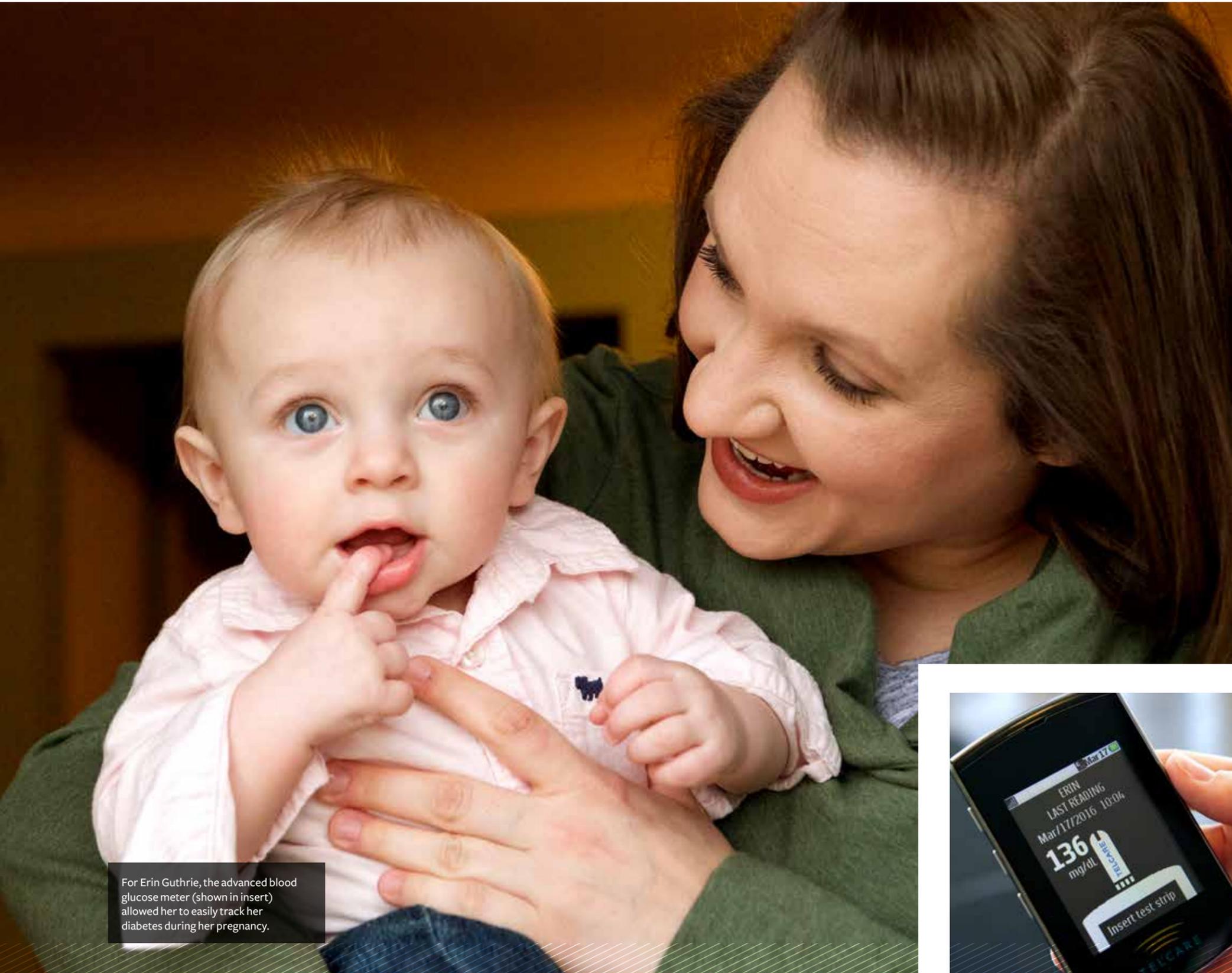
Alan Reed, MD, MBA, director of the UI Organ Transplant Center at University of Iowa Hospitals and Clinics, says many individuals with polycystic kidney disease need a transplant but tend to have a favorable prognosis.

When Eric started having health issues, his lifelong friend, Mary Beth Murray, had a special connection with organ donation and was willing to help.

Mary Beth, who also lives in Davenport, had tried to be a kidney donor twice before—once for her father and once for her sister—but was not a compatible match. Now she was determined to help a friend in need, and this time, the match was right.

On Jan. 3, 2013, Reed performed Eric’s kidney transplant. In June 2016, Eric and Mary Beth traveled to Cleveland, Ohio, as members of Team Iowa at the 2016 Transplant Games of America as a donor/recipient bowling team. Mary Beth also competed alone in track and field events. Together, they celebrated the fact that Mary Beth gave Eric a second chance at life.

“As a recipient, there’s no way to thank [my donor] to that magnitude,” Eric says. ///



For Erin Guthrie, the advanced blood glucose meter (shown in insert) allowed her to easily track her diabetes during her pregnancy.

## In real time

Diabetes program connects pregnant patients and providers using cellular-enabled glucose meter

**ERIN GUTHRIE DEVELOPED** gestational diabetes during her first pregnancy and has been managing Type 2 diabetes since her daughter was born in 2013. When Erin learned she was pregnant with her second child, she chose to receive high-risk pregnancy care at University of Iowa Hospitals and Clinics.

For the first six weeks of her second pregnancy, Erin managed her diabetes traditionally—giving herself insulin injections and checking glucose levels several times a day, tracking her numbers manually, and calling the clinic to report her results.

Then Erin switched to a new UI Department of Obstetrics and Gynecology service that makes it easier for pregnant women with diabetes to communicate with their providers. Patients are given an advanced blood glucose meter that automatically sends results to their care team. No manual tracking is necessary.

“The meter is an FDA-approved device that allows us to see the patient’s blood glucoses in real time,” says Janet Andrews, MD, a maternal and fetal medicine specialist at UI Hospitals and Clinics. “This also gives us the opportunity to make necessary, timely changes to the patient’s medication plan.”

The cellular-enabled TelCare® device does not require patients to have a data plan. Through this secured system, the care team can provide instant feedback and coaching to patients by texting with the glucose meter itself, calling by phone, or sending messages via MyChart, a Web-based service that gives UI Health Care patients instant access to their personal health information.

“To hear feedback not only from the meter but directly from my provider makes me feel more connected and comfortable,” says Erin. ///

## Honors and awards

Excellence in patient care can be measured in many ways. One key indicator is the number of accreditations and honors received by UI Hospital and Clinics in 2016. Here are several notable distinctions.

The **Blood and Marrow Transplant Program** received the highest ranking for survival rates for treatment of blood cancers like leukemia, myeloma, and lymphoma. This is the third year in a row the program received “**outperformer status**” from the **Center for International Blood and Marrow Transplant Research**, placing it in the top 6 percent nationally.

The American College of Surgeons awarded UI Hospitals and Clinics **Breast Health Center a three-year accreditation** for its commitment to provide the highest quality breast care over the full spectrum of breast disease.

It's rare for a hospital to earn the prestigious **Beacon Award for Excellence** from the **American Association of Critical-Care Nurses**. This year, UI Hospitals and Clinics received its fifth Beacon Award. The Cardiovascular Intensive Care Unit now joins the Surgical and Neurosciences Intensive Care Unit, the Medical Intensive Care Unit, the Adult Blood and Marrow Transplant Unit, and the Medical Surgical Cardiology Unit.

The American Heart Association and the American Stroke Association awarded UI Hospitals and Clinics **Comprehensive Stroke Center** the highest award available—the **Gold Plus Achievement Award**. It recognizes the hospital's commitment to providing the latest research-based stroke treatments to speed recovery and reduce death and disability for stroke patients.

**Holden Comprehensive Cancer Center** received the highest designation from the **National Cancer Institute** in renewing its five-year designation as a comprehensive cancer center. NCI-designated comprehensive cancer centers are recognized for their scientific leadership, depth and breadth of research, and impact on their communities. Holden is the only NCI-designated cancer center in Iowa.

For an unprecedented second time, UI Hospitals and Clinics **ECMO program** has been named a **Gold-Level Center of Excellence** by the Extracorporeal Life Support Organization. Iowa's program for maintaining life through this high-tech heart-lung support system, formally known as extracorporeal membrane oxygenation, is one of only 31 in the world to receive this designation.

**UI Hospitals and Clinics and UI Stead Family Children's Hospital** continue to be the state's only hospitals to have specialties ranked by **U.S. News & World Report**. In 2016, ranked adult specialties included otolaryngology, ophthalmology, orthopedics, cancer, urology, neurology and neurosurgery, and gynecology. Children's ranked specialties included cancer, cardiology and heart surgery, diabetes and endocrinology, neonatology, nephrology, orthopedics, pulmonology, and urology.

For the seventh consecutive year, **UI Hospitals and Clinics** has been named a “**Most Wired**” hospital by the American Hospital Association. The award recognizes the hospital's efforts to leverage information technology to improve health care quality and safety.

The highest patient safety and best health outcomes were cited by **Wellmark Blue Cross and Blue Shield** in designating four **UI Hospitals and Clinics** services—maternity care, spine surgery, and knee and hip replacement surgeries—as **Blue Distinction Centers**. These specialties join several other Blue Distinction Centers at Iowa, including transplant, bariatric surgery, and cancer.

## Patient care highlights

### Delivering midwives

UI Hospitals and Clinics is answering the call for more certified nurse-midwives to oversee routine births. Nationally, nurse-midwives attend just more than 8 percent of all births; at UI Hospitals and Clinics they are responsible for more than 20 percent of all routine deliveries. The university's seven certified nurse-midwives are licensed health care providers with a graduate degree in nursing.

### ECMO use rises

UI Hospitals and Clinics remains a national leader in use of ECMO (extracorporeal membrane oxygenation) to assist patients in recovering from a variety of medical and surgical problems. ECMO is a partial heart-lung bypass first developed for infants and later pioneered by the Iowa program for adult use. Recent studies show ECMO to be preferable to mechanical ventilation for a variety of respiratory ailments, including treatment of H1N1 influenza.

### Three decades of HIV/AIDS care

For nearly 30 years, UI Hospitals and Clinics has provided an HIV/AIDS clinic, the state's first and largest such clinic. “A patient today with a new diagnosis of HIV has as good a life expectancy as someone newly diagnosed with diabetes or hypertension,” says Jack Stapleton, MD, the clinic's medical director from the start. Though the disease has no cure, advances in antiviral drug treatment have helped slow the progression of HIV to full-blown AIDS, Stapleton says.

### Two valves in one procedure

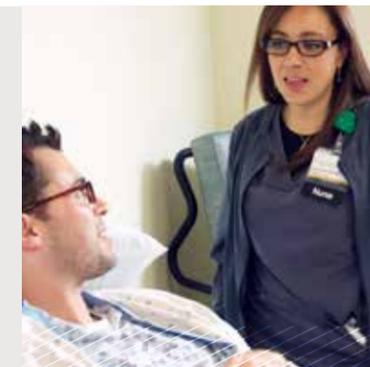
UI cardiac surgeons performed a surgical first by replacing two heart valves at the same time using a catheter procedure. Earlier valve replacements required open-heart surgery, which involved stopping and restarting the heart. Catheterization became the next evolution for heart valve replacement and, until now, had been done only one valve per procedure.



Gwen Beck, MD, and Jean Robillard, MD

### Praise for UIP Clinical Award winners

“Best of all, I feel like we are partners in my care.” That's the sentiment of a primary care patient of Gwen Beck, MD. Beck was one of seven physicians recognized for excellence in patient care through the University of Iowa Physicians (UIP) Clinical Awards. Beck's patient satisfaction scores were the most outstanding among all faculty physicians in internal medicine, with more than 100 comments. Other clinicians honored by UIP this year were Ron Abrons, MD, anesthesia; Jodi Tate, MD, psychiatry; and David Bender, MD, Craig Syrop, MD, MHCDS, and Michael Goodheart, MD, obstetrics and gynecology.



### Short Stay Unit opens

UI Hospitals and Clinics opened a 13-bed unit to better accommodate patients seen in the emergency department needing short-term medical observation. A team of emergency medicine and hospitalist specialists monitors the patients for up to 48 hours to determine the most appropriate treatment, which may include discharge or full admission to a hospital inpatient unit.

## Patient care highlights



### New operating rooms come online

UI Hospitals and Clinics opened four new operating rooms this year, bringing the total to 36. Each room features state-of-the-art design, equipment, and technology to benefit patients. The 25-percent-larger rooms allow for additions of future surgical and diagnostic technology. The new facilities address a growing volume of surgeries: UI surgeons completed more than 21,000 operations last year.



### Comprehensive care at UI Vein Center

With the opening of the UI Vein Center at UI Health Care-Iowa River Landing in Coralville, patients have even greater access to the most advanced treatments and experienced medical team in Iowa. UI Vein Center specialists offer patients a range of treatment options in a convenient, patient-friendly setting. They treat everything from common conditions such as varicose veins to complex problems like deep-vein thrombosis.



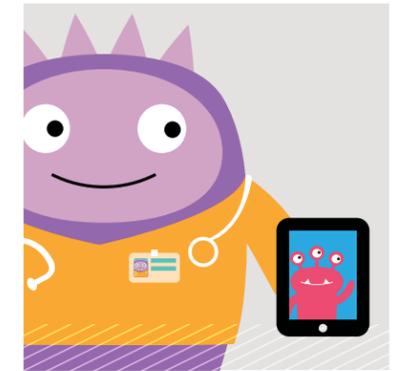
### Data help lower surgical infections

Post-surgical infections affect up to 11 percent of all surgery cases nationally. By using a data model to predict the likelihood of a surgical site infection, UI surgeons were able to reduce infections by nearly 60 percent. The information is calculated during the surgery, allowing the surgeon to take action immediately to head off surgical site infections for those patients most prone to contracting them. The results mean fewer complications following surgery and lower costs overall.



### Cancer care for teens and young adults

Holden Comprehensive Cancer Center and UI Stead Family Children's Hospital have created the Adolescent and Young Adult Cancer Program to focus resources on caring for patients in the 13-to-31 age range. "These are people who are just getting started with their lives, and suddenly they are hit with this incredible storm of a cancer," says George Weiner, MD, director of Holden Comprehensive Cancer Center. "We need to figure out how to treat them medically in the most appropriate way and psychosocially in a way that allows them to get back to their lives as quickly as possible."



### Distraction in Action for painful procedures

Researchers from the UI Hospitals and Clinics Department of Nursing Services and Patient Care and the UI College of Nursing have studied the merits of distraction for young children during painful medical procedures like an IV insertion. Working together, they devised a way to help: a web-based tool called Distraction in Action. Accessible from any smartphone or tablet, the program assists parents and providers by gauging the amount of distress and providing guidance to the parent on an appropriate distraction method.

# Dream becomes reality

## UI Stead Family Children's Hospital celebration draws thousands

AT THE NOV. 11, 2016, dedication of University of Iowa Stead Family Children's Hospital, 11-year-old twins Berne and Maren Denison of Cedar Falls summed up the importance of the new hospital.

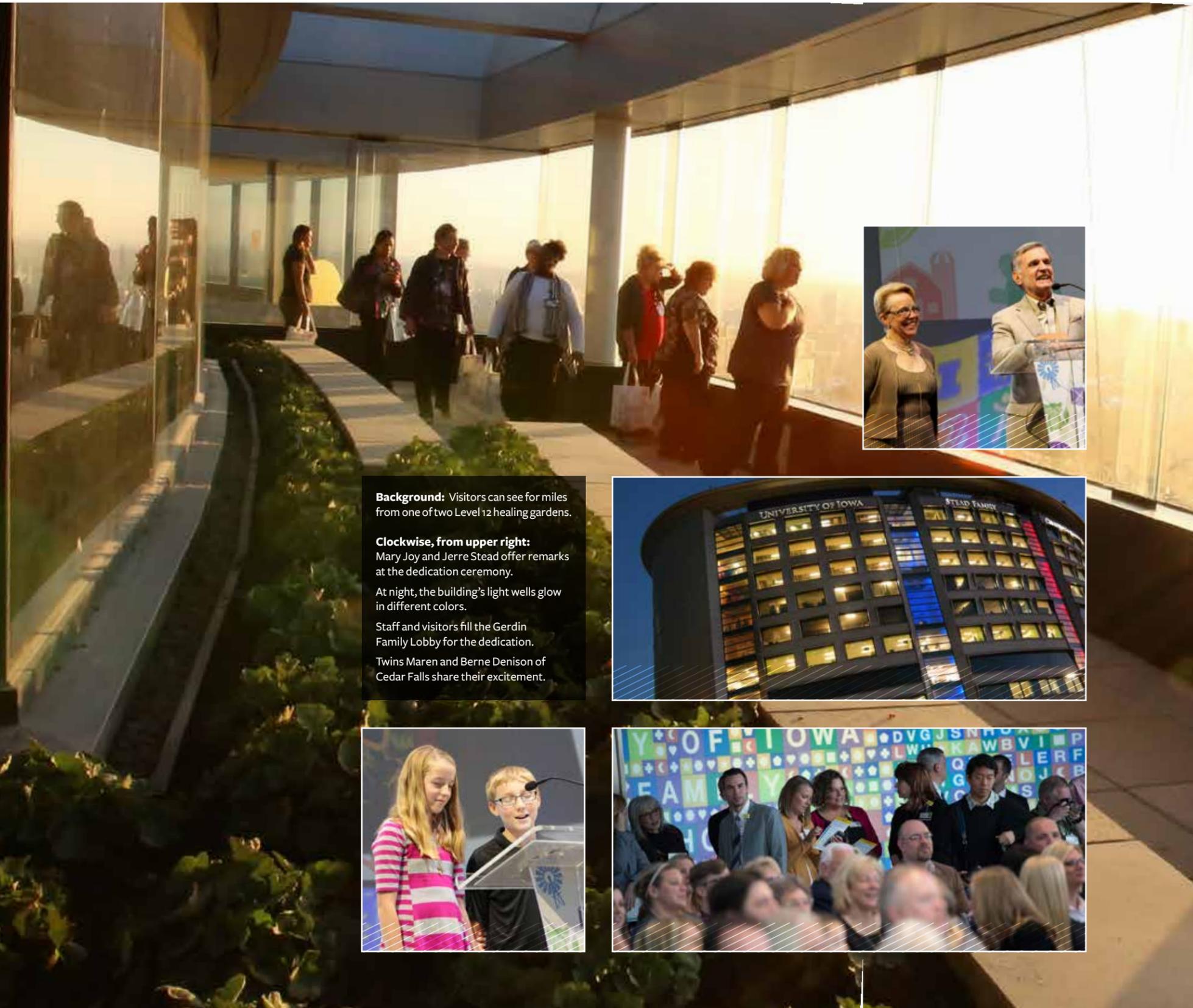
"My mom and dad told me that the people who designed this hospital wanted it to be 'kid-centered,'" said Berne. "We finally figured out what this means." Together, the twins said, "This is our new hospital!" before sharing a high-five.

The Denison twins were among current and former patients, families, donors, employees, state officials, and university leaders who attended the dedication, held in the Gerdin Family Lobby of the new children's hospital. Over the weekend of Nov. 12-13, 2016, thousands of visitors streamed through the new hospital to get a first glimpse of the university's new home for children's medicine.

The Nov. 11 dedication was an opportunity to thank more than 600 faculty, staff, patients, and families for their roles in planning and designing the hospital, as well as hundreds of construction team members for their work. The ceremony also highlighted the role philanthropy played in making the dream of building a world-class children's hospital a reality. More than 11,000 donors from all 50 states contributed to the project.

The dedication marked the official name change of the children's hospital in honor of Jerre and Mary Joy Stead and their extraordinary commitment to children's medicine at the UI. For the Steads—natives of Maquoketa, Iowa, and residents of Scottsdale, Arizona—the word "family" was key. Their children and grandchildren were instrumental in the decision to support the hospital.

"To see turning a dream into a vision into a reality, thanks to everybody here, and what it will do for years and generations to come, is something we can be very proud of and very thankful for," said Jerre Stead. "We're blessed with being part of the world's greatest institution." ///



**Background:** Visitors can see for miles from one of two Level 12 healing gardens.

**Clockwise, from upper right:** Mary Joy and Jerre Stead offer remarks at the dedication ceremony.

At night, the building's light wells glow in different colors.

Staff and visitors fill the Gerdin Family Lobby for the dedication.

Twins Maren and Berne Denison of Cedar Falls share their excitement.





**Clockwise, this page:** Awaiting the ribbon-cutting at the dedication ceremony.

Nick's Theater offers interactive gaming for kids of all ages.

The Butterfield Horses sculpture outside the new hospital creates a striking silhouette.

**Opposite page:** Public elevators in offer lots of room for visitors.

A Siemens SOMATON Drive CT scanner, one of four in the world, uses less radiation and reduces the need for sedation.





Will Kohn, the first patient moved into UI Stead Family Children's Hospital, tries out OneView, an interactive education and entertainment system for patients and families.

**Opposite page, from left:** A young patient settles into a bright new space. Staff members pause for a smile. Mother and child relax and find comfort in their new surroundings.

## A moving experience

### First patients relocate to new UI Stead Family Children's Hospital

**FIFTY-TWO PEDIATRIC PATIENTS** and their families moved into the new University of Iowa Stead Family Children's Hospital on Feb. 25, 2017—marking the official opening of the new children's hospital.

One month later, on March 25, hospital staff transported 33 patients to the new children's hospital, completing the relocation of all pediatric inpatient units to the 14-level, 507,000-square-foot facility.

Six-year-old Will Kohn was the first patient to move into the new hospital on Feb. 25. The son of Chris and Meghan Kohn of Bettendorf, Iowa, Will and his parents settled into their new room on Level 3, which houses the Pediatric Intensive Care Unit (PICU) and Pediatric Cardiac Intensive Care Unit. Will, who was born with a rare heart defect, is waiting for a heart transplant.

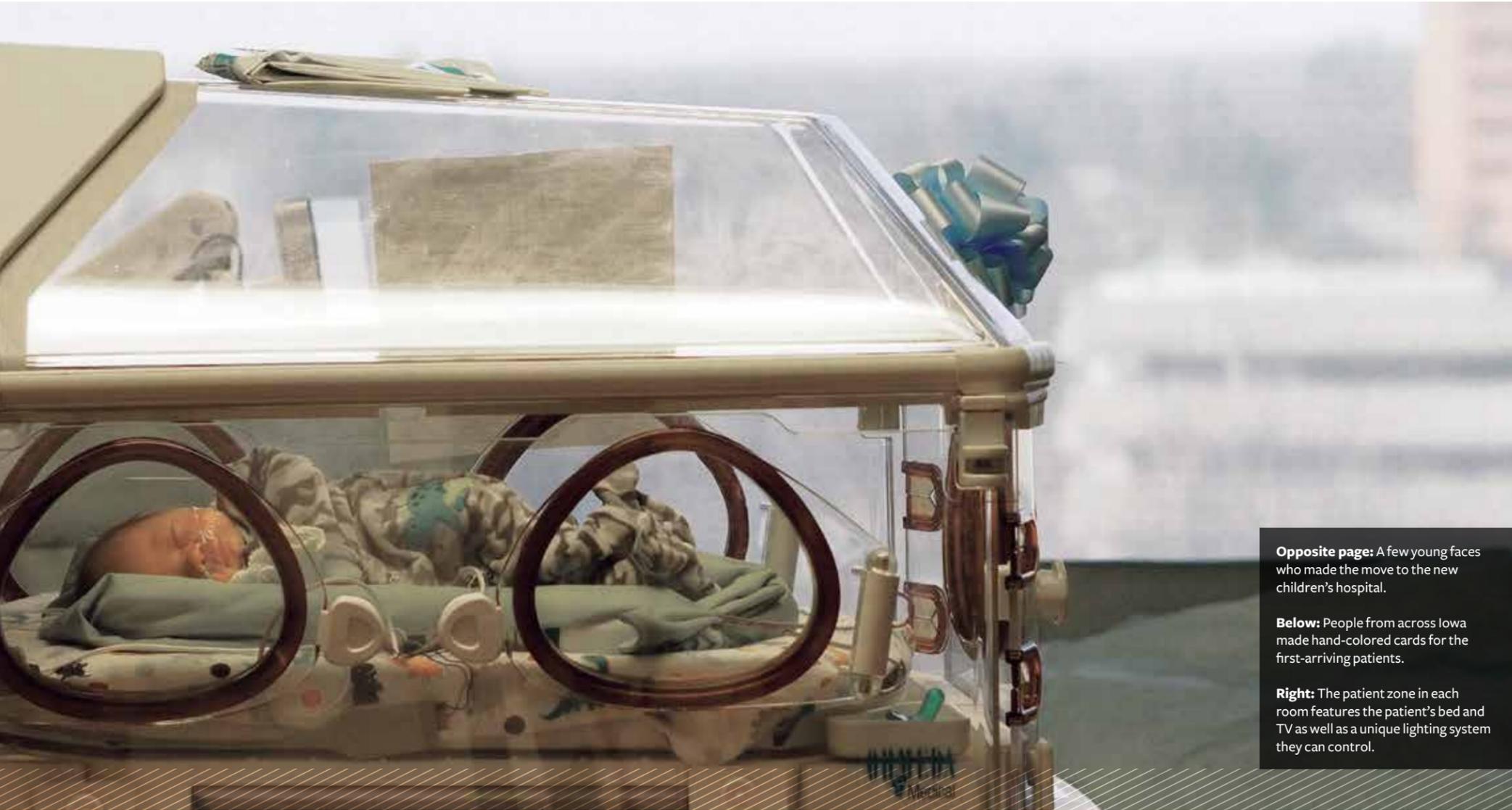
The opening caps more than eight years of planning and building a facility that equips the pediatric health care team with state-of-the-art technologies in an environment that enhances workflow.

Every aspect of the building—from its distinctive oval shape with oversized windows offering panoramic views, to the thoughtful family amenities and standardized room layouts—is designed to deliver advanced care in a setting focused on children and families.

With features that optimize healing—including private inpatient, prep, and recovery rooms—the new hospital consolidates inpatient pediatric care, procedures, imaging, and surgery previously located throughout UI Hospitals and Clinics. By moving pediatric services to a dedicated space, UI Hospitals and Clinics can convert many shared inpatient rooms for adult patients to private rooms as well as increase the capacity of operating rooms and other services for adult patients.

The new UI Stead Family Children's Hospital strengthens the UI Health Care commitment to serve as the center of a statewide system of pediatric care—providing the expertise, resources, and capacity to coordinate advanced specialty services across Iowa for all children. ///





**Opposite page:** A few young faces who made the move to the new children's hospital.

**Below:** People from across Iowa made hand-colored cards for the first-arriving patients.

**Right:** The patient zone in each room features the patient's bed and TV as well as a unique lighting system they can control.



# Commitment to care

‘100 Great Iowa Nurses’ program honors 13 of the University of Iowa’s best

BY GOING ABOVE AND BEYOND to make meaningful contributions to their patients, their colleagues, and their profession, 13 nurses at University of Iowa Hospitals and Clinics were named to the 2016 list of “100 Great Iowa Nurses.”

Recipients of the annual award are nominated by patients, coworkers, friends, and family members. The 2016 honorees were chosen from a field of more than 400 candidates. A panel of nursing professionals, including past honorees, chose the candidates who would receive the award. ///

## 2016 University of Iowa nurses on the 100 Great Iowa Nurses list:

**ANNE BYE, BSN, RN, CPN**  
Staff Nurse, Children’s and Women’s Services

**ELIZABETH FAINE, MSN, ARNP, PNP**  
Nurse Practitioner, Department of Orthopedics

**LISA GERARD, RN**  
Staff Nurse, Pediatric Specialty Clinic

**BRENDA HAAG, BSN, RN-BC**  
Nurse Clinician, Fetal Heart Program

**TRUDY LAFFOON, MA, RN-BC**  
Nurse Manager, Medicine Specialty Clinic/Pain Clinic

**MICHELLE MATHIAS, BSN, RN**  
Clinical Coordinator, Perioperative Nursing Division

**JUDY A. MILLER, MA, RN, ARNP**  
Advanced Registered Nurse Practitioner, Medical Genetics, Department of Pediatrics, UI Stead Family Children’s Hospital

**GERALYN QUINN, MSN, RN, OCN**  
Nurse Manager, Holden Comprehensive Cancer Center

**KENNETH J. REMPHER, PHD, RN, MBA, CENP**  
Chief Nursing Officer

**STEPHANIE STEWART, MSN, RNC-NIC**  
Nursing Practice Leader, Children’s and Women’s Services

**CHRISTINA TROUT, MSN, RN**  
Clinical Service Specialist, Department of Pediatrics-Neuromuscular Program

**STEPHANY WALK, BSN, RN**  
Staff Nurse, Pediatric Intensive Care Unit

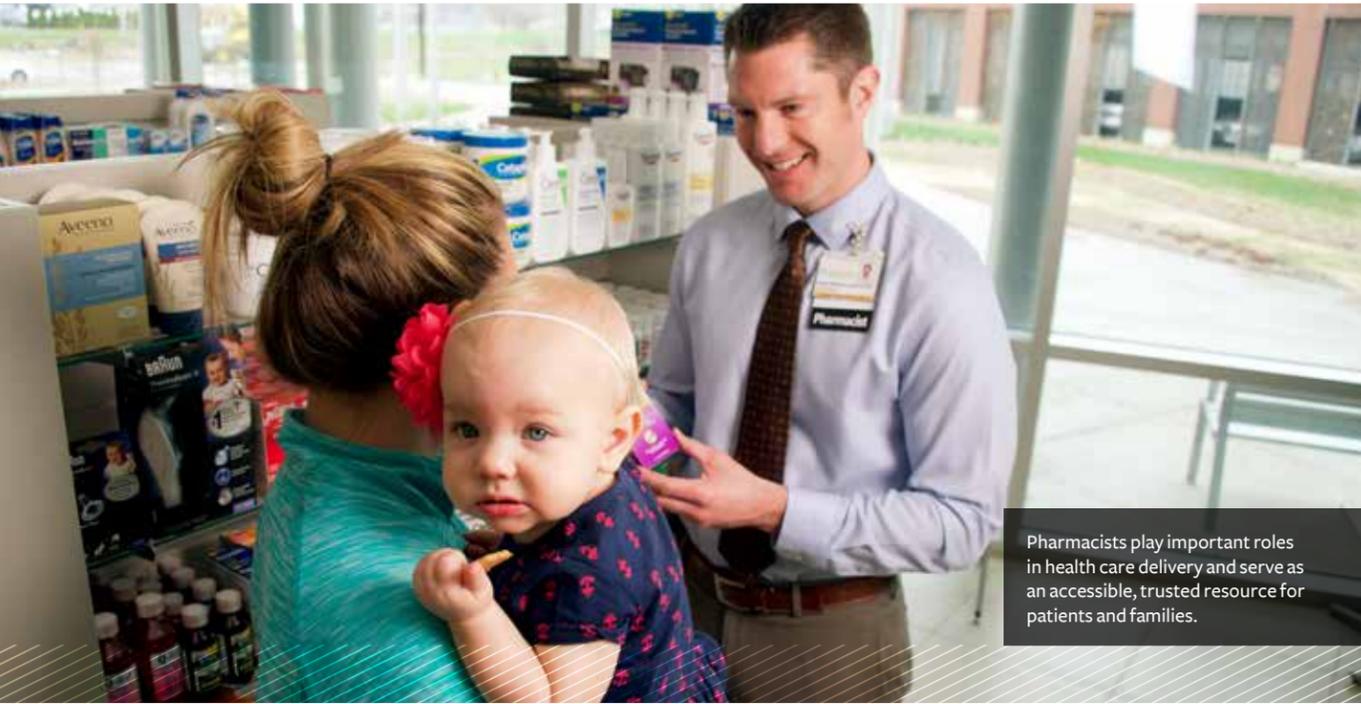
**LARAMIE WALL, BSN, RN**  
Staff Nurse, ECMO



**Front row, from left:** Anne Bye, Stephany Walk, Christina Trout, Trudy Laffoon.

**Middle row, from left:** Stephanie Stewart, GERALYN QUINN, JUDY A. MILLER, Michelle Mathias, Lisa Gerard, Kenneth Rempher.

**Top row, from left:** Laramie Wall, Elizabeth Faine, Brenda Haag.



Pharmacists play important roles in health care delivery and serve as an accessible, trusted resource for patients and families.

## Prescription for service

Collaboration, quality, and safety key to Department of Pharmaceutical Care

**WORKING WITH INTERDISCIPLINARY CARE TEAMS,** UI Health Care pharmacy staff direct medication use and distribution for adult and pediatric patients staying in the hospital, visiting outpatient clinics, and being discharged with prescriptions filled at our network of ambulatory care pharmacies. Pharmacists also support patients referred to clinical services including pain management, anticoagulation, antimicrobial stewardship, or pharmacotherapy that focus on specific medication needs.

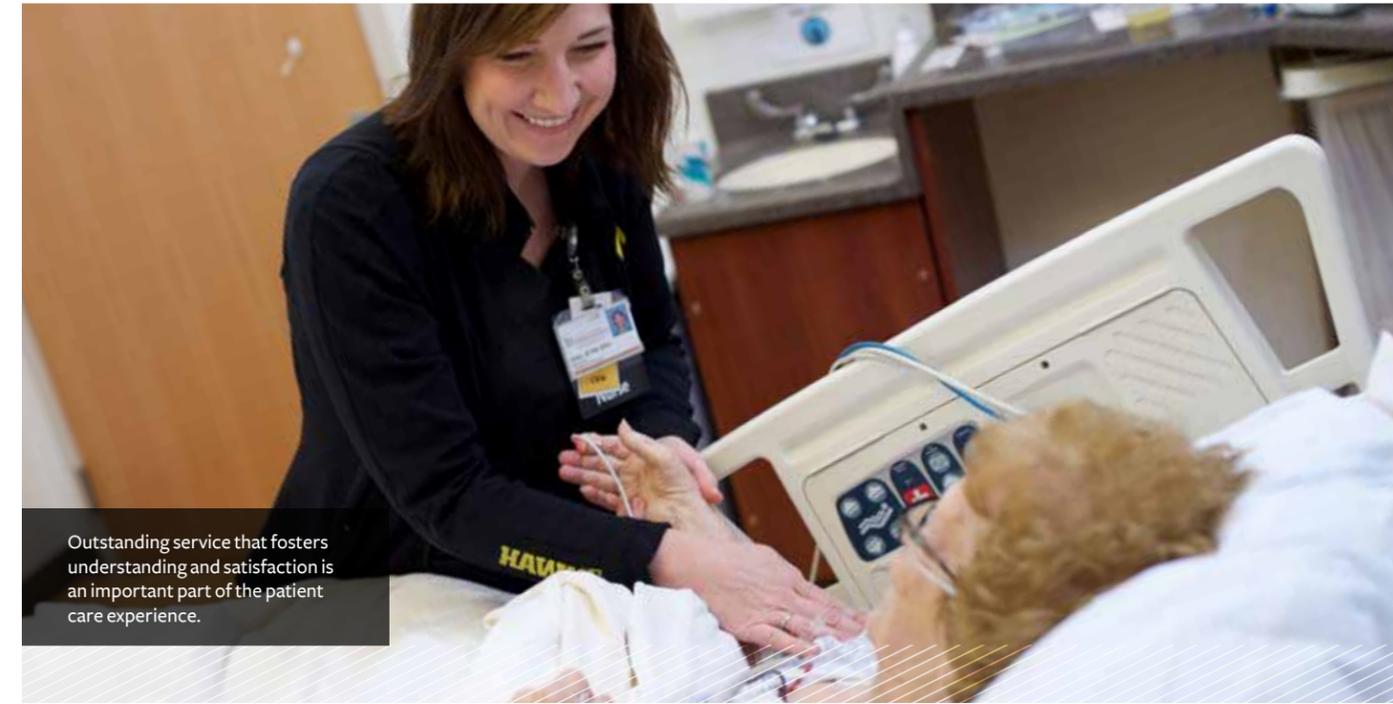
Advanced automation and technology are used in all areas to enhance efficiency, quality, and safety of care. Innovations in clinical research at UI Hospitals and Clinics are supported by the Investigational Drug Services pharmacy.

In Specialty Pharmacy Services, which is accredited by health care quality leaders URAC and The Joint Commission, pharmacists work with care teams treating a variety of conditions requiring close monitoring of medications. Cases typically include cancer, infertility, hemophilia, skin disorders, and rheumatic, cardiovascular, and liver diseases.

To help support the health care workforce of the future, pharmacists train postdoctoral resident pharmacists through programs accredited by the American Society of Health-System Pharmacists. Pharmacists also teach resident and student pharmacists in the classroom and on experiential rotations through the UI College of Pharmacy. ///

### FY16 pharmacy stats

Total staff	450
Medication doses processed	5.5 M
Prescriptions processed	276,500
Postdoctoral resident pharmacists	18
Student and resident pharmacist training experiences	600+
Research study (IRB-approved) protocols managed by Investigational Drug Services	400



Outstanding service that fosters understanding and satisfaction is an important part of the patient care experience.

## Excellence every time

Fostering a culture of service across UI Health Care

**AN EXCELLENT PATIENT EXPERIENCE** is about more than amenities, clean rooms, and quiet hours. It is also about connecting with patients, visitors, and colleagues in an empathetic, meaningful way that exemplifies a helpful and healing environment.

UI Health Care has reaffirmed its commitment to patients, their families, and its care teams through several initiatives. For example, Compassionate Connected Care (C3) training for all staff enhances communication skills that portray empathy, teamwork, and clarity of information shared.

New programs like C3 join ongoing initiatives from the Office of the Patient Experience, putting patients first. For example, service ambassadors circulate throughout UI Hospitals and Clinics to assist patients and visitors with navigation; patient and guest relations specialists help patients and families connect with UI Hospitals and Clinics staff to find resolutions when their health care experience is not what they expected; and patient education specialists focus on health literacy and plain language communication to help patients and families understand medical conditions, health promotion, and illness and injury prevention. ///



### Bringing the arts to the hospital

Throughout the year, the first-floor atrium in the John Colloton Pavilion at UI Hospitals and Clinics is transformed into a performance space. In December, the day after his packed Hancher Auditorium concert, world-renowned pianist Emanuel Ax entertained hospital patients, visitors, and staff with a free concert of Chopin and Beethoven favorites.



### Bearing up for treatment

Letting children take charge of their teddy bear's care helps them learn about the care they will receive. That's the philosophy behind the UI Stead Family Children's Hospital Teddy Bear Clinic, operated by UI medical students and a team of volunteers. From check-in, to taking X-rays and vitals, to performing a procedure, kids are encouraged to try things out themselves to take away some of the anxiety over their own treatment.



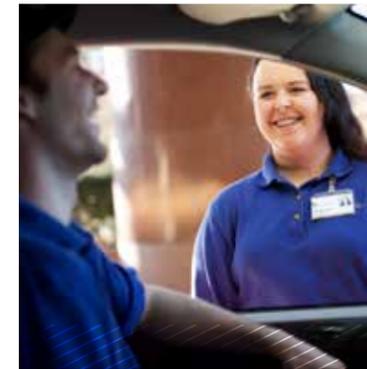
### Teaching future music therapists

Research shows that music used therapeutically can promote physical and mental health. Music therapy has been an integral part of care plans at UI Hospitals and Clinics since the start of the profession. UI music therapists also play an important part in training new professionals. Two interns each year accompany staff therapists, using music activities to address patients' physical, psychological, cognitive, and social issues.



### Culturally responsive care in any language

When caregivers and patients don't speak the same language, staff members from Interpretation and Translation Services at UI Hospitals and Clinics step in. The hospital's three Spanish interpreters rely on a bank of 25 freelance interpreters who assist with about 30 additional languages. The most frequent requests are for Spanish, French, Swahili, and Arabic interpreters. In emergency situations, providers can turn to a phone system that connects them with a speaker proficient in the appropriate language to help patients and family members receive appropriate instructions and better understand their care.



### Helping patients, visitors in finding their way

For 20 years, the Patient Escort Service has helped UI Hospitals and Clinics patients and visitors make their way from parking ramps to clinics, labs, imaging, and other service areas around the hospital. A typical day sees 260 transport requests, 175 riders on one of the PAT Mobile indoor golf carts, and an additional 120 requests for wheelchairs. An electronic nerve center assures transport requests are met within minutes by the team's staff, students, and volunteers.



### Promoting healing with quiet and courtesy

The same way libraries quiet visitors to help patrons study, care units at UI Hospitals and Clinics quiet things down to help patients heal. HUSH (Help Us Support Healing) is in place throughout inpatient care areas. The quiet initiative observes hours each day (12:30 to 2 p.m.) when lights are dimmed, patient stimuli are reduced, and hallway conversations are kept soft. Evidenced-based practice shows quiet measures promote a healthier environment for patient comfort and recovery.



### 'Frozen' gesture warms a young patient's heart

The patient was a little girl from Texas who loved the movie "Frozen" and had never had the chance to play in the snow. Her wintertime wish was realized when staff at UI Stead Family Children's Hospital brought a snowbank's worth of the wintry white stuff to her room and gave her permission to build her Olaf, her favorite snowman from the movie. The results were magical for the patient, her family, and the staff.



### Service Star for forging a special connection

Each month, UI Hospitals and Clinics awards a Service Star to a staff member whose efforts to enhance the patient experience go above and beyond the norm. Far from patient care areas, machinist Michael Neville uses heavy equipment to create medical instruments for surgical and diagnostic procedures. When Lisa Miguel, a child life specialist, recognized a seriously ill teenager's interest in large-scale machines, a connection was made. After assuring complete safety for the young man and his father, the pair received a VIP tour of the machine shop. The visit did wonders for the patient, his family, and the medical instruments team. When the young man had to be readmitted a few weeks later, the medical instruments team forged a set of tags with the word "Love" and the teen's name. According to Miguel, the thoughtful gesture was a turning point in the patient's eventual recovery.

**\$231 MILLION+**  
in provided community benefits

## Advancing our commitment

Programs, services increase access and improve health status

UNIVERSITY OF IOWA HEALTH CARE provided more than \$231 million in community benefits to more than 644,000 Iowans, according to the most recent annual assessment of community benefits reported to the Iowa Hospital Association (IHA).

The community benefit data is submitted to IHA as part of a larger effort to report services that exceed mission-driven patient care activities and provide a measurable increase in health care access and the availability of health care resources. All 118 of Iowa's hospitals contribute annually to the IHA report.

Community benefits are programs or activities that provide treatment or promote health and healing as a response to identified community needs and meet at least one of these objectives:

- Improve access to health care services
- Enhance population health
- Advance increased general knowledge
- Relieve or reduce the burden of government to improve health



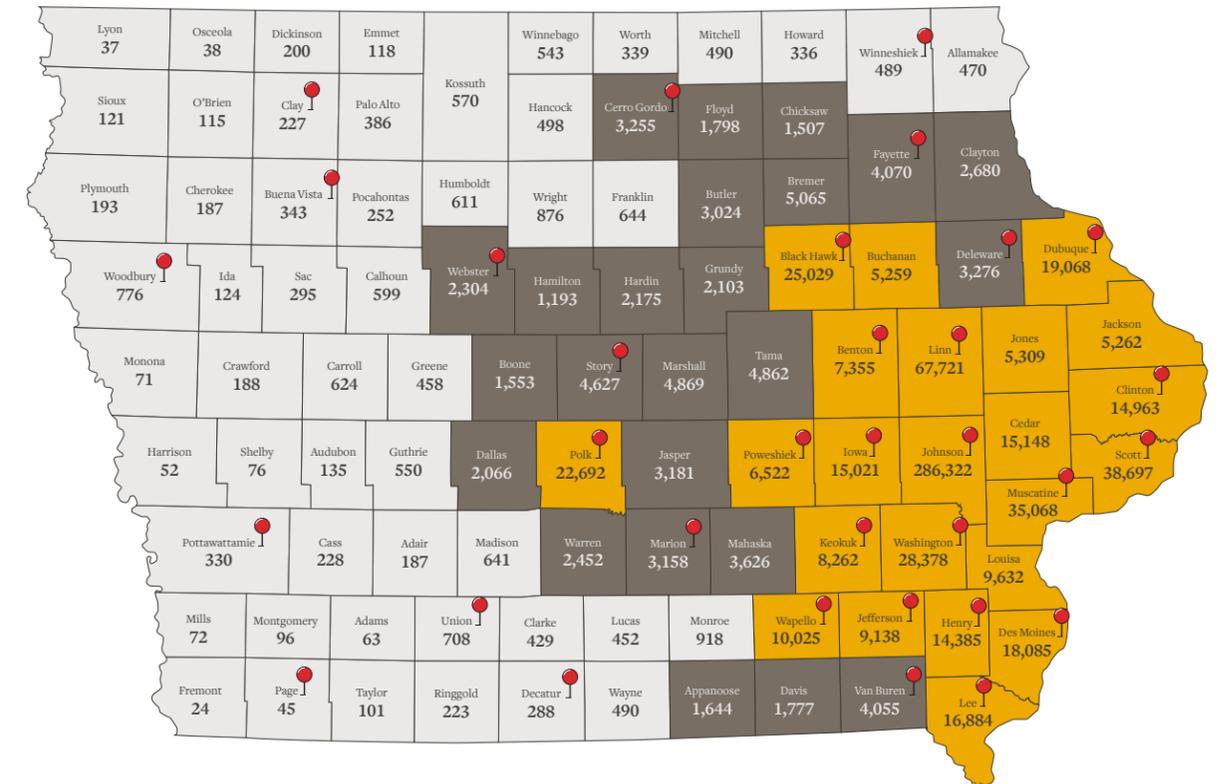
### Community benefits contributions

Community health improvement services	\$6,743,603
Health professions education	\$6,532,722
Subsidized health services	\$112,368
Research	\$55,128,454
Financial and in-kind contributions	\$205,086
Community-building activities	\$186,947
Community benefit operations	\$52,230
Financial assistance	\$13,729,893
Government-sponsored health care	\$25,595,257
Unpaid cost of Medicare	\$123,550,245
<b>Total community benefits</b>	<b>\$231,836,810</b>

## Caring for Iowans

UI Health Care serves patients and communities statewide

IN FISCAL YEAR 2016, University of Iowa Health Care services treated patients from all 99 Iowa counties for a total of 777,627 patient visits involving Iowans. In FY 2016, Iowans made up 92 percent of UI Health Care's total patient visit volume. A front door to UI Health Care specialty services is present in 98 Iowa communities located in the 35 counties flagged in the map below.



1 - 1,000 patients served

1,001 - 5,000 patients served

More than 5,000 patients served

UI Health Care clinics locations

# Service record

Fiscal Year 2016

## Bed and clinic complements

Inpatient Beds	761
Intensive Care	182
Acute Care	579

## Human resources

Staff Physicians and Dentists	893
Resident Physicians and Dentists	555
Fellow Physicians	215

---

**Subtotal** **1,663**

Professional Nurses	2,141
Other Professional Staff	2,609
Other Hospital Staff	2,884

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**Total Staff** **9,297**

## Educational programs

University Health Science College	
Students in Training	1,605
Medical Students	664
Dental Students	81
Nursing Students	341
Pharmacy Students	519
Resident and Fellow Physicians and Dentists in Training	770
Other Iowa Health Profession Students in Training	1,717

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**Total in Health Education at UI Hospitals and Clinics** **4,092**

## Patient services

Acute Adult and Children Admissions	33,117
Newborn Nursery	1,783

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**Total Acute Admissions** **34,900**

Acute Adult and Children Patient Days of Care	218,920
Newborn Nursery	3,926

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**Total Acute Patients Days of Care** **222,846**

UI Hospitals and Clinics Visits	803,539
Outreach and UICMS Clinic Visits	158,391

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**Total Clinic Visits** **961,930**

Births	2,254
Emergency-Trauma Center Visits	58,607
Major Surgical Operations	30,877
Cardiac Operations	613
Organ and Tissue Transplants	565
Bone Marrow	188
Cornea	247
Heart	14
Kidney	76
Liver	18
Lung	10
Pancreas	6
Minor Surgical Procedures	130,635
Digestive Disease Procedures	16,997
Cochlear Implants	103
In Vitro Fertilization/Related Procedures	986
Fetal Diagnosis and Therapy Procedures	190

## Patient services (continued)

Cardiac Catheterization Procedures	4,765
Adult	3,459
Child	1,306
Cardiac Electrophysiology	1,724
Units of Blood Products Transfused	22,403
Days of Ventilator Care	29,071
Pulmonary Diagnostic Procedures	14,273
Hyperbaric Oxygen Treatments	2,866
Radiographic Examinations and Treatments	316,854
Diagnostic	221,983
PET Scan	4,491
Head and Whole Body Scans	53,248
Magnetic Resonance Imaging	28,957
Nuclear Medicine	8,175
Radiation Oncology Treatments	38,950
Electrocardiograms (EKG)	65,374
Echocardiograms (ECHO)	27,079
Electroencephalograms (EEG)	5,976
Electromyograms (EMG)	2,334
Laboratory Tests	5,455,604

Pharmacy Orders	2,240,000
Social Service Consultations	220,887
Volunteer Service Hours	110,689
Renal Dialysis Treatments	29,310
Meals Served	2,593,606
Pounds of Laundry Processed	6,163,743

## Patients Transported by

Air and Mobile Critical Care Services	1,079
Helicopter Service	796
Mobile Ground Unit	283

# Consolidated financial information

Fiscal Year 2016

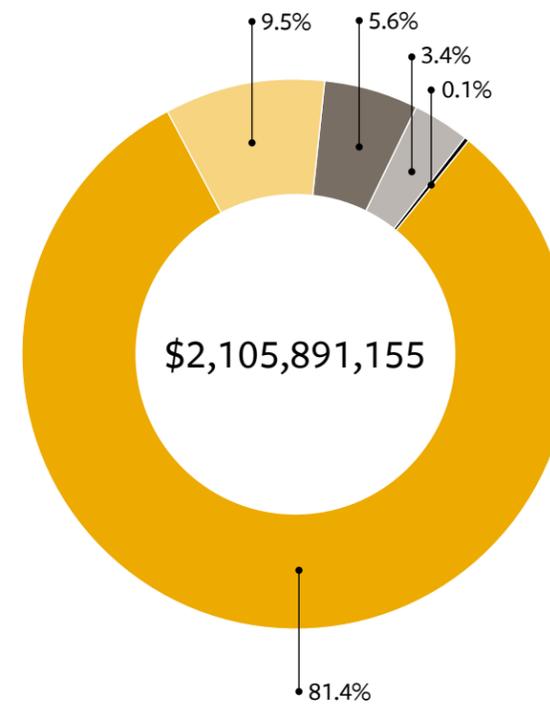
## Revenue

Patient care	\$1,714,749,441	81.4%
Extramural funding	\$199,992,827	9.5%
Other operating revenue	\$118,092,806	5.6%
General education funds	\$70,618,886	3.4%
State appropriations	\$2,437,195	0.1%
<b>Total</b>	<b>\$2,105,891,155</b>	<b>100.0%</b>

## Expenses

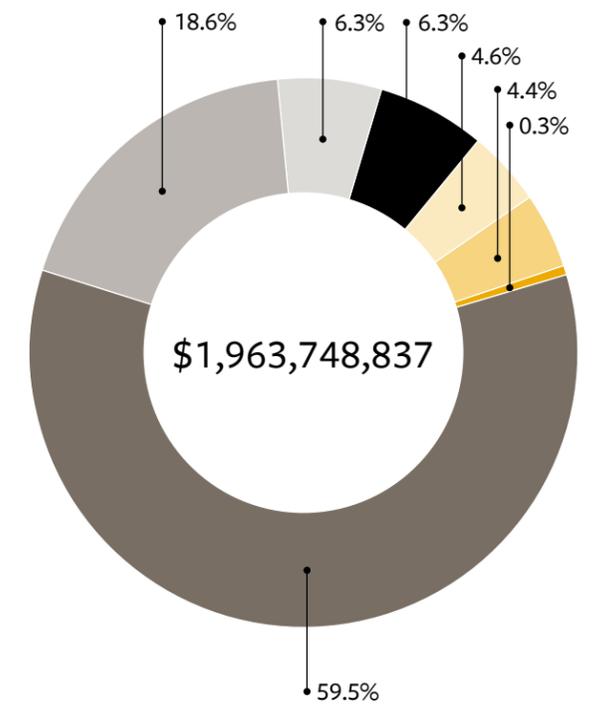
Personnel	\$1,169,533,704	59.5%
Faculty	\$323,739,146	27.6%
Professional and scientific staff	\$297,845,197	25.5%
SEIU	\$281,464,041	24.1%
Merit staff	\$171,774,866	14.7%
Residents, fellows, and postdoctoral scholars/fellows	\$59,774,866	5.1%
Other	\$34,936,129	3.0%
Supplies	\$364,342,972	18.6%
Licenses, fees, and other operating expenses	\$124,311,396	6.3%
Occupancy, billings, and overhead	\$123,231,057	6.3%
Repairs and maintenance	\$89,357,157	4.6%
Depreciation, amortization, and interest	\$86,716,593	4.4%
Services (Insurance)	\$6,255,958	0.3%
<b>Total</b>	<b>\$1,963,748,837</b>	<b>100.0%</b>

Fiscal Year 2016 Revenue



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# Today. Tomorrow. Together.

## 2016 Annual Report

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