JOHNS HOPKINS MEDICINE

Dome

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INSIDE

"Redonda's extraordinary combination of exceptional medical prowess, years of progressive administrative experience, and the well-earned respect of senior clinical and administrative leadership will serve us all well."

RONALD R. PETERSON on the appointment of **REDONDA MILLER** as new president of The Johns Hopkins Hospital. She is the first female in this role since the hospital was founded in 1889. See p. 3 for more on Miller.

PAUL ZWOLAK

The Fortress Protecting the Castle

Chief Information Security Officer Darren Lacey keeps hackers off the network.

Learn more about the strategic priority for PEOPLE online at hopkinsmedicine.org/strategic_plan.

EVERY DAY AND AND ALL NIGHT LONG, spammers, scammers, crooks, spies and robots jiggle the doorknobs on the Johns Hopkins Medicine computer network, trying to find a way in.

Darren Lacey, chief information security officer, leads a team working hard to stay one virtual deadbolt ahead in the high-stakes world of cybersecurity.

In a mild Oklahoma twang, he declares that Johns Hopkins is up to the task. Also responsible for protecting most of The Johns Hopkins University, Lacey packs a laptop that can monitor both Johns Hopkins networks in real time and instant-message staff members when something looks suspicious.

With the recent ransomware attacks on hospital networks around the nation, discussions of data security are never far away. Lacey recently paused his patrol to talk with *Dome* about the state of network security at Johns Hopkins.

Q: It seems as if hospitals increasingly are a target of hackers.

A: I believe attackers are going after hospitals because they see a lot of them with unpatched vulnerabilities. They seem to be coming after health care because we're an easy target, or at least easier than banks. Whether compromising health care data is their purpose is an open question. In our analysis of attacks over the years, we see little to indicate patient data have been singled out.

Q: The recent attacks on hospitals across the nation seem to be motivated by money. Tell us about ransomware. How does it work?

(continued on page 4)

CHIEF PERSPECTIVES

Diversity in Medicine Has Measurable Benefits

PAUL B. ROTHMAN, M.D.
DEAN OF THE MEDICAL FACULTY
CEO, JOHNS HOPKINS MEDICINE

I recently read a provocative article proposing that the term "diversity"—through overuse and insincere usage—has become an empty signifier for many people.

As leaders of an academic health center, we use that word a lot—from our Strategic Plan to our statement of core values to myriad corporate communications. The way to make sure that the term does not get diluted is to back it up with meaningful action.

For example, at Johns Hopkins Medicine, we recently created and filled two new executive roles: James Page as chief diversity officer and Lisa Cooper as vice president for health care equity. Additionally, we have:

- Created a fund for retaining underrepresented minority faculty members.
- Required that a formal search committee become part of the hiring process for every leadership position in our health system and stipulated that each member of the committee complete training in unconscious bias.
- Vastly expanded our STEM (science, technology, engineering and mathematics) internship programs for youths from low socioeconomic backgrounds and launched a new initiative to hire locally in Baltimore City.

Our commitment to diversity goes beyond whom we recruit and enroll, however. Drawing upon our racial and cultural differences is crucial to executing our mission to improve health.

We all know that social and cultural factors play a major role in health and illness. At Johns Hopkins, we drill this into trainees with the Genes to Society curriculum. It is important to develop cultural competencies in care providers to help them respect patients' values and habits, and to bridge gaps in understanding their concerns.

While racial and ethnic minorities make up 26 percent of the total U.S. population, only about 6 percent of practicing physicians and 9 percent of nurses are Latino, African-American or Native American.

In Baltimore, where 65 percent of the population is African-American and where the Latino population has increased by nearly 50 percent in the last six years, there is a similar disconnect between providers and patients.

We are in the process of building a diverse workforce capable of relating to our patients and speaking their language, both literally and figuratively. This is not just about fairness—diversity in medicine has measurable benefits.

Studies show that students trained at diverse schools are more comfortable treating patients from a wide range of ethnic backgrounds. When the physician is the same race as the patient, patients report higher levels of trust and satisfaction. The visits even last longer—by 2.2 minutes, on average. When patients enter our hospitals, they want to see staff members and physicians who resemble them.

All of this matters if we are going to start chipping away at the troubling health disparities we see in this region. Maryland has the nation's highest median income, yet it ranks 33rd among U.S. states for geographic health disparities. White babies born in Baltimore City have a life expectancy that's six years longer than their African-American counterparts.

We need to partner with community organizations and actively build relationships with those who may not trust the medical establishment. Another crucial step is examining our own practices to ensure we are providing the same level of care for all who enter our hospitals.

In a city with excellent health care infrastructure and two premier academic medical institutions, far too many members of our community don't get the health care they need. Our commitment to diversity is also a pledge to change that. ■

PEOPLE

New Senior VP for Nursing Announced

Deborah Baker will become senior vice president for nursing for the Johns Hopkins Health System on July 1. The first to hold this new position, she will also continue to serve as the vice president of nursing and patient care services for The Johns Hopkins Hospital, a role she has held since September 2015.

FRED DUBS

As the health system's first senior vice president for nursing, Baker will partner with the chief nursing officers at Johns Hopkins' five other hospitals to ensure integration of services and alignment with the health system's strategic goals and objectives.

"Throughout her accomplished career here, Deb has exhibited a talent for building coalitions and leading in complex environments, leveraging her extensive institutional and clinical knowledge, and developing constructive business relationships across diverse groups," Ronald R. Peterson, president of The Johns Hopkins Hospital and Health System, said in announcing Baker's promotion.

Baker earned her bachelor's, master's and doctoral degrees from the Johns Hopkins University School of Nursing. She joined the staff of The Johns Hopkins Hospital in 1992 as a clinical nurse in the Department of Surgery, quickly demonstrating her leadership ability and advancing to hold a number of increasingly responsible clinical and administrative positions in the hospital. Last year, she became the hospital's interim vice president of nursing and patient care services.

—Staff report

PERFORMANCE

Solar Energy Comes to the East Baltimore Campus

On a drive to the Eastern Shore, along with the acres of corn and soy, you may observe an expansive field of glistening panels at the corner of routes 50 and 404 in Queen Anne's County. The 98-acre site is a solar farm, built to provide solar energy 60 miles away to the East Baltimore medical campus.

The solar farm's 43,000 panels will supply power to The Johns Hopkins Hospital and the schools of medicine, public health and nursing buildings. It will produce 13 megawatts of solar energy.

"On a hot summer day in Baltimore with all the air conditioning capacity online, we use about 65 megawatts of energy," says Sally MacConnell, senior vice president of facilities for the Johns Hopkins Health System. The solar farm output represents about one-fifth of the campus' overall electricity use on a day like this, she says. On a peak day, the electricity used by the 10 million square feet of space on the campus is the equivalent of what is used by 53,000 homes.

In the works for a couple of years, facilities officials pursued an opportunity to take advantage of money-saving solar energy tax credits. MacConnell, along with Anatoly Gimburg, senior director of facilities for the health system, and others negotiated a 20-year lease with SolarCity, the vendor that installed the solar panels.

Depending on the future cost of electricity, the agreement sets a baseline for the cost of electricity produced by the solar farm, which Zachary Bley, the health system's finance manager for facilities management, says could save Johns Hopkins between $2 million and $6 million over the term of the agreement. Those savings will free up funds for other important Johns Hopkins initiatives. Just as important, the solar energy will expand Johns Hopkins' environmental footprint, reducing our reliance on coal energy.

Currently the hospital uses natural gas for about 20 percent of its energy use, has installed numerous green roofs of chives and other plants to absorb rainwater and improve air quality, and implements other sustainability efforts.

How does solar energy work? Solar panels generate electricity using sunlight, which is fed into the electrical grid, offsetting the amount of coal-produced electricity on the grid.

With more academic medical centers across the country moving toward solar energy, MacConnell says, "We may be setting an example for hospitals in the area."

—Janet Anderson

See a video about solar power at Johns Hopkins; visit **bit.ly/solarenergyhopkinseastbalt**.

New Hospital President

Redonda Miller to lead The Johns Hopkins Hospital.

Redonda Miller's deep commitment to her alma mater has paid off. In mid-May, she was named president of The Johns Hopkins Hospital. The first woman in this role, she will assume the post on July 1.

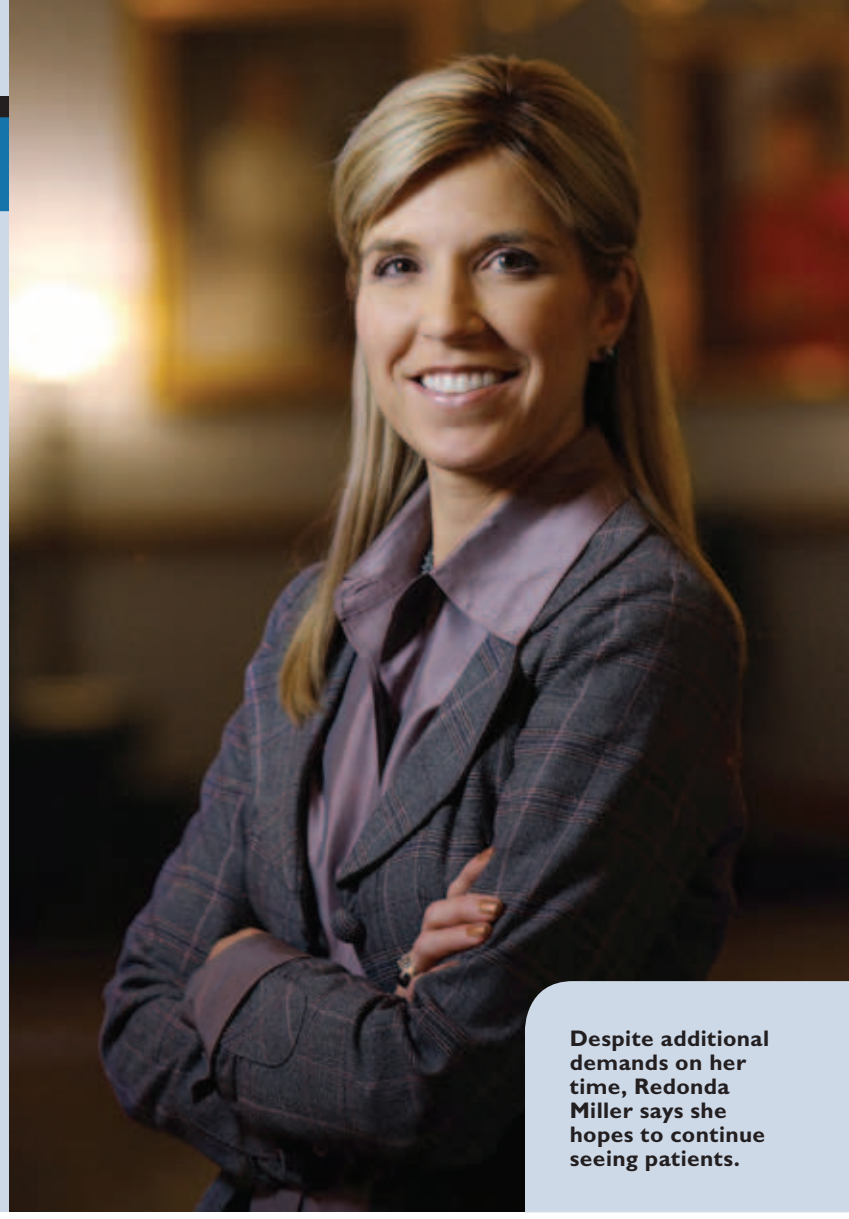
With more than 20 years of service at Johns Hopkins, Miller most recently served as senior vice president of medical affairs for the Johns Hopkins Health System and vice president of medical affairs for The Johns Hopkins Hospital. In the latter role, she was responsible for medical staff administration, pharmacy, health information management, hospital epidemiology and infection control, spiritual care and chaplaincy, and patient safety.

She has also served as associate program director of the Osler Medical Residency Training Program, assistant dean for student affairs for the school of medicine and vice chair of clinical operations for the Department of Medicine.

Miller's "deep understanding and appreciation of The Johns Hopkins Hospital's culture and her working knowledge of the Maryland financial rate-setting system make her extremely well-suited to lead at this time in our history," notes Ronald R. Peterson, outgoing longtime president of the hospital, who will remain as president of the health system and executive vice president of Johns Hopkins Medicine.

"I work with terrific physicians, unbelievable nurses, social workers, physical therapists; every group of care providers in the hospital is top-notch," Miller said, when appointed vice president for medical affairs, in 2009. Her goal was then—and remains—to make "the best" even better.

—Neil A. Grauer



Despite additional demands on her time, Redonda Miller says she hopes to continue seeing patients.

PEOPLE

ZIKA VIRUS

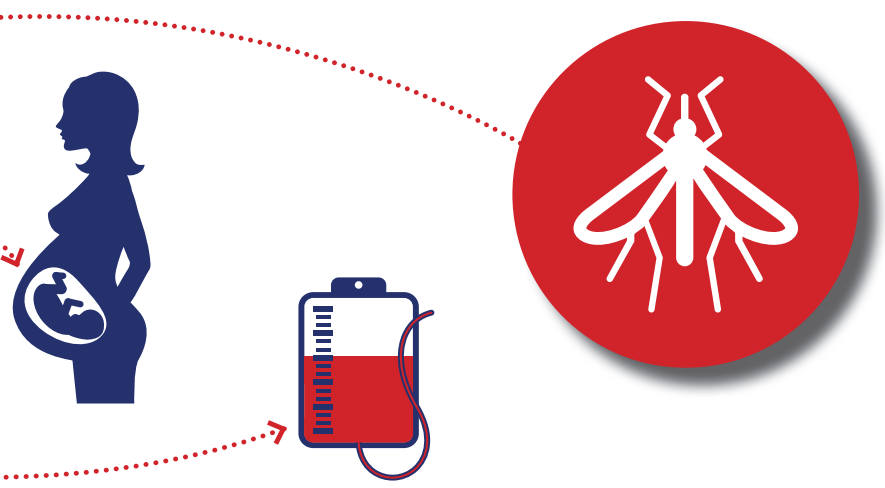
Avoiding mosquito bites is the best way to avoid exposure to Zika virus. Although transmission of the virus is occurring primarily in South and Central America as well as the Caribbean, health experts expect that mosquitoes bearing the virus may appear this summer in the continental United States.

Zika virus is primarily spread through the **BITE OF INFECTED MOSQUITOES.**

MOTHER-TO-BABY & SEXUAL ACTIVITY
If a pregnant woman is bitten by an infected mosquito, the infection can cross the placenta, infecting the fetus.

The virus has also been transmitted sexually.

TRANSFUSION
The virus can also be transmitted through blood transfusion or laboratory exposure.



1 in 5
AFFECTED PEOPLE WILL EXHIBIT SYMPTOMS.

Symptoms of Zika virus are generally mild. People infected with Zika virus rarely need hospitalization.

THE BEST WAY TO PROTECT YOURSELF

USE ENVIRONMENTAL PROTECTION AGENCY-APPROVED BUG SPRAY

WEAR LONG-SLEEVE SHIRTS AND LONG PANTS

STAY INDOORS

For more information, please visit hopkinsmedicine.org/zika-virus/

Source: The Centers for Disease Control

The Fortress Protecting the Castle

(continued from page 1)

A: It's a form of malware that goes in, infects a machine and looks for every place where files may be stored. On an individual machine, it finds files, takes those folders—say, your documents folder—and encrypts it. Then, it also looks for connected file shares, like your H drive. It gathers every file on the H drive and encrypts it. Next, it sends a notice to the user, saying, "All your files are encrypted. If you want your files back, you have to send us a payment."

One way people normally get attacked with ransomware is when someone on the network opens an email attachment that seems benign.

Q: How are we protecting ourselves?

A: We use dozens of different technical controls to combat attacks. One that users might see is when we email or text you a random numeric code to use after you enter a password. That's called a multifactor authentication. This a big deal for both users and systems administrators, as it makes attacks like phishing for passwords less effective. Our attacks dropped off significantly after we had those protections.

JOHNS HOPKINS MEDICINE HAS ABOUT 100,000 DEVICES, INCLUDING SMARTPHONES AND HOME COMPUTERS, ON THE NETWORK ON ANY GIVEN WORKDAY.

Q: How many attempts a day are there to break into Johns Hopkins?

A: We generally block 3 to 5 million intrusion attempts a day—in addition to knocking down spam and things like that.

Ninety-nine percent of these attacks are automated. They are essentially scanning the internet, looking for vulnerabilities. They are not intelligent attacks, as a general matter. It's knocking on doors and rattling doorknobs over and over and over. A substantial proportion of what we block is internal computers on the Johns Hopkins network calling out to sites that are used by attackers as "command and control" systems.

Q: How much happens that you actually worry about?

A: Generally, we investigate 20 or 30 things a day.

Q: How do you and your team keep the network safe?

A: We constantly test our environment. We're constantly running scans and penetration tests to determine any types of vulnerabilities.

Does this mean we employ our own hackers?

A: In the information security business, we call it red teaming and blue teaming. A red team attacks something in the system, and the blue team defends it. Penetration testing tries to find weaknesses that hackers might try to exploit. Once, the goal was to be as stealthy as possible so that no one would know that you were testing them. Now I try to be a little noisier. The goal is for departments to be able to monitor their own systems well enough to see whether they're being attacked. We're looking for someone to come back to us and say, "What the heck is going on with my server, or whatever?"

Q: How big is our cybersecurity staff?

A: About 15 or 20, depending on how you count them. The staff is about 30 percent larger than it was three years ago. And we're still trying to develop it.

Q: Johns Hopkins Medicine has roughly 40,000 employees and thousands of guests using the network. What sort of daily traffic do those numbers generate?

A: Johns Hopkins Medicine has about 100,000 devices, including smartphones and home computers, on the network on any given workday.

Those devices generate not quite 1 billion sessions a day. Today, for instance, we have 830,376,000 successful sessions in the Johns Hopkins Medicine clinical network. That's people at Johns Hopkins connecting with one another and with people on the outside. Every time you log on to a website, you're going to create a session. And your conversation with someone may have multiple sessions in it.

Q: Do that many devices create vulnerabilities? It seems that if we were a building with one door and no windows, we'd be harder to break into.

A: Yes. That's the right metaphor. We're going to be asking people to do a lot of things differently over the next few years. For example, we're going to see increasing restrictions on the kinds of devices that can get on our network. Those devices are going to have to prove that they have their anti-virus software up to date. They're going to have to prove that they're encrypted. And they're not going to have to prove it to you or me; they're going to have to prove it to the network itself.

We have to make sure we have more people using IT-issued and managed devices, especially laptops and workstations.

Q: What can employees do to protect patient privacy and to keep the network safe?

A: Patient privacy is as important as security, and it goes beyond the computer network. Follow the safeguards we have in place. Be mindful of privacy protection when it comes to copying, storing and sharing private information about patients. Don't have private conversations about patients in public places like elevators. Clean your desk and be careful with documents that contain patient information.

As for the computer network, pay attention to things like opening suspicious emails. If one looks fishy, or you don't recognize the sender, please don't open the attachment.

Q: Is it just a 21st-century fact of life that we'll all get hacked at one time or another?

A: There's an element of truth in the notion that we're all vulnerable and we're all going to get attacked. But a lot depends on the culture of the organization. Our academic culture is different from, say, a bank, where there's the expectation of complete privacy and airtight security. Our main objective is to tamp down the vulnerabilities and to be good enough at incident response that the bad guys don't go after us as frequently.

Q: Are you worried that hackers will see Johns Hopkins as a challenge?

A: There's this myth that if you work really hard at protection, the bad guys will see you as a challenge and they'll really go after you. There is little evidence for that. They're generally looking for easy pickings.

You know the one about the couple who encounters a bear in the woods? The woman takes off running. The man yells, "This bear can run 30 miles an hour! There's no way you can outrun him!" And the woman yells back, "I don't have to outrun the bear—I just have to outrun you!"

That is the information security world.

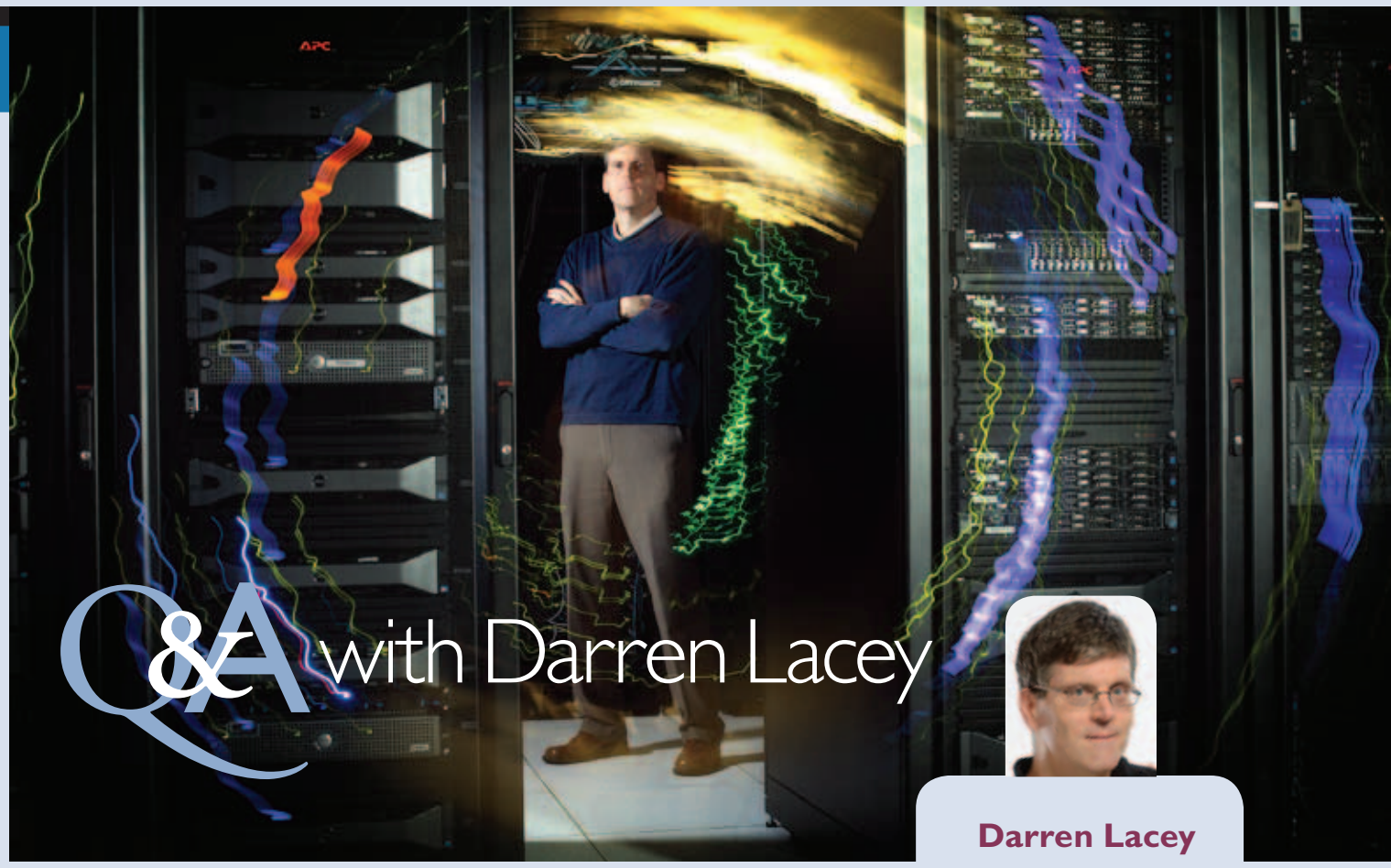
Q: Overall, how concerned should we be about cyber threats?

A: I'm quite optimistic about this. I actually think that not only can we get ahead of it, but we will get ahead of it. This is a difficult technical and organizational problem, and there are smart people working hard to address it.

–Patrick Smith

Some reasons hackers try to break in to academic medical centers include:

- Ransom
- Patient health information
- Patient financial information
- Business intelligence
- Research theft
- Malicious destruction
- Espionage by foreign governments



Darren Lacey

Born in Oklahoma City

Bachelor's degree from Baylor University; law degree from Harvard University

Chief information security officer and director of information technology compliance for The Johns Hopkins University and Johns Hopkins Medicine since 2003

The first executive director of the Johns Hopkins University Information Security Institute, a National Security Agency Center of Academic Excellence in Information Assurance

Data Trust Council Creates Systems for Safe, Smart Data Use

Johns Hopkins nurses find ways to ensure that more patients receive vital medications.

Suppose a faculty member wants to know how The Johns Hopkins Hospital stacks up against national averages on diabetes treatment costs and patient satisfaction.

Until recently, the analysis would require tapping one person for permission to access patient satisfaction scores, another to procure data about costs and a third to collect information about national averages. Johns Hopkins Medicine had no formal procedures for requesting information or ensuring it remained secure.

The Data Trust Council, established in 2013, has taken on the important task of creating systems and policies to ensure Johns Hopkins Medicine data are both useful and safe.

Ten analytics teams, with 140 people total, coordinate the flow of data between categories, including ambulatory quality, hospital operations and research. Working together, the teams "assure we are a data-driven organization with well-coordinated analytic efforts," says Valerie Smothers, Data Trust coordinator for Johns Hopkins Medicine.

As part of that effort, the council created a single portal and process for data requests. The portal routes applications to the appropriate data stewards, keeps track of where the information goes and sets standards for safe storage. In addition, researchers seeking Institutional Review Board (IRB) approval for investigations using Johns Hopkins Medicine data must outline their data use and storage plans in an application reviewed by both the IRB and, under certain conditions, the Data Trust Council.

"If someone is doing something that's not a best practice, such as storing sensitive information on a mobile device, we ask them to work with our information technology specialists to ensure that they're using adequate security," says Smothers.

One major catalyst for creating the council was the rollout of the Epic electronic medical record system, which integrates patient health data for more than 5 million patients at five Johns Hopkins hospitals. But even Epic contains just a fraction of potentially useful information, says Peter Greene, chief medical information officer for Johns Hopkins Medicine and a leader of the Data Trust Council.

Peter Greene

"We're anticipating a future of massive data feeds coming to us in novel ways, including a wide range of physiologic sensors and wearable devices," he says. "It creates wonderful opportunities to better understand the patients. But it also creates real data management and governance challenges."

Looking ahead, the council plans to engineer more robust ways of capturing and tagging data elements using internationally accepted formats, says Christopher Chute, chief health research information officer for Johns Hopkins Medicine. This makes the data "comparable and consistent," he says, so it is easier to combine information from a variety of sources.

"We want to make sure the right people have the right access to the information they need," says Greene. "With the Data Trust Council, we are bringing together pieces of things that many people have been doing for years and ensuring they are coordinated."

–Karen Nitkin

Learn more about the council at **http://intranet.insidehopkinsmedicine.org/data_trust/**.

Can Behavior Change Predict Alzheimer's Onset?

There's no mistaking that Alzheimer's disease poses a major threat: Some 5.3 million Americans live with the disorder—a number likely to double over the next 20 years as baby boomers age.

Well aware of that, a team of Johns Hopkins psychiatrists has spent years teasing out which early patient symptoms foreshadow an Alzheimer's diagnosis. Certain signs of functional loss (problems driving, forgetting to pay bills) or slips in cognition (word loss, forgetfulness) seem most reliable.

Now, growing evidence suggests that psychiatric (behavioral) symptoms can also be Alzheimer's predictors. "For many years, we've been working backward—treating Alzheimer's as a purely cognitive disease," says Paul Rosenberg, associate director of the Johns Hopkins Memory and Alzheimer's Treatment Center. "But behavioral changes can be widespread and disabling," and pose the greatest challenge to caregivers.

"So, when I hear a spouse say, 'My husband has never been a worrier, and now he frets over everything,' or, 'He used to be interested in everything and now has no get-up-and-go,' I have good reason to think Alzheimer's is involved."

The scenario is common enough that Johns Hopkins scientists, working with an international consortium, have coined the term "mild behavioral impairment" (MBI) to describe neuropsychiatric symptoms that can accompany, and possibly even predate, Alzheimer's cognitive lapses.

Source: Paul Rosenberg

In recent clinical studies, Rosenberg, Memory Center Director Constantine Lyketsos and colleagues used the Neuropsychiatric Inventory Questionnaire to reveal trends in several psychiatric symptoms. For example, they found newly irritable or apathetic seniors 30 to 40 percent more likely to develop Alzheimer's. "It wasn't so surprising seeing MBI in people already mildly cognitively impaired," says Rosenberg, "but that risk also applies to those who appear cognitively fine."

The biology underlying Alzheimer's behavioral symptoms is far from clear. But, surely, damage to specific nerve circuits is involved. And they likely overlap other, better-known Alzheimer's pathways, Rosenberg adds, such as those for salience—the ability to judge something's importance.

As for therapy, present research hopes to shed light on how behavioral interventions work. For now, to alleviate symptoms, Rosenberg favors lifestyle changes, like stress reduction programs, yoga and exercise, over traditional psychiatric approaches.

Rosenberg's "big-picture dream," is to nail down who's at risk for Alzheimer's. "Our best chance of making a difference," he says, "is to assess as early as possible." The near future should bring far fewer expensive brain scans and pedigree searches. Instead, he says, "We expect to combine cognitive tests, gene assays and other low-tech ways to diagnose Alzheimer's."

Detecting mild behavioral impairment, of course, will be part of the mix.

–Judy F. Minkove

Learn more about the Johns Hopkins Memory and Alzheimer's Treatment Center at **hopkinsmedicine.org/psychiatry/specialty_areas/memory_center/**.

When Residency Training Is a Family Affair

Two generations of Osler internal medicine trainees compare notes on their experiences.

"I heard her say, 'Doctor, doctor, are you awake?'"

— Rich Ambinder

"I was actually hypomanic at first—it was so exhilarating."

— Alex Ambinder

During the throes of his Osler internal medicine internship, Rich Ambinder recalls falling asleep while listening to a patient's heart. It was 2 a.m. He had been on the wards for roughly 26 hours. "I heard her say, 'Doctor, doctor, are you awake?'"

It was hardly a proud moment, but an instructive one.

The 62-year-old Johns Hopkins Hospital oncologist tends to mention this anecdote whenever he and his son Alex, a third-year Osler resident, discuss their medical training experiences. As the new crop of residents begins on July 1, the Ambinders are among a number of parent/child Osler trainees who can shed light on the challenges—and learning opportunities—that have accompanied their respective residencies.

"I think anyone from a generation earlier thinks there were some valuable things about continuity, seeing patients overnight and very sick patients evolve over a period of time," says Rich. "But I have no doubt that the system I grew up in had many problems."

As examples, he cites frequent 30-hour shifts, limited supervision ("No simulation lab; it was more see one, do one, teach one.") and paper records ("It could take days before the medical records office could locate a patient's history."). Rich also recalls the small number of women in the program 35 years ago.

Since 2003, the Accreditation Council for Graduate Medical Education (ACGME) has imposed duty hour restrictions on medical residents for patient safety reasons. Now residents can work no more than 80 hours per week, and shifts cannot exceed 16 hours.

Alex, who completes his residency this month, says he's found the fatigue of residency manageable. "I was actually hypomanic at first—it was so exhilarating," he says. However, he struggles with the forced handoffs. In the new landscape, "I've had people kicking me out the door when there's a discussion about a patient that I'd like to be a part of," he says. "Yet there's something good about having boundaries."

Some positive things about the program haven't changed, agree father and son: the camaraderie and high-caliber teaching. Unlike the competitive environment in college and medical school, says Rich, "people in the Osler residency make you feel like you're part of a team."

Like his father, Alex will specialize in hematology/oncology. He begins his fellowship in July at Johns Hopkins, where Rich also trained. After completing his first year, Alex will serve as an Osler assistant chief of service. "I hope to foster the same kind of environment that made my residency more enjoyable," he says, "thanks to people who were excited about medicine and respectful of my own sort of learning but pushed me to do better."

Helen Selonick Prevas, who completed her Johns Hopkins internal medicine residency in 2012, cut her teeth on Osler folklore. Both of her parents are alums: Martha Selonick, Osler 1979, and Stuart Selonick, Osler 1978. They are currently in private practice. Martha is a cardiologist; Stuart, an oncologist. He has also been teaching outpatient medicine to Osler residents for the past 30 years.

As a youngster, Helen often "hung out" on the wards with her parents. She knew from an early age that she wanted to be a doctor. Now she's about to complete her first year of a fellowship in critical care at the University of Maryland Medical Center.

But between her second and third year, following the birth of her daughter, sleep deprivation hit hard. Even with babysitting support, she says, maintaining a balance was tough. She was on call every fifth night. Thankfully, she says, Osler colleagues were kind about reworking schedules. "We're used to swapping call," she says.

In the 1970s, during her mother's every-other-night-call era, very few female trainees—if any—had children. And, because of the small percentage of women residents back then, Martha Selonick was often presumed to be a nurse. "That still happens," the cardiologist says, noting that her field attracts more men, "but not nearly as much."

The program's latest parent child-duo is Paul Scheel Jr. (Osler 1990), director of the Division of Nephrology, and Paul Scheel III, a recent graduate of Washington University School of Medicine. After looking at multiple residency programs, the junior Scheel says he liked Johns Hopkins most because of its structure and "dedication to excellent teaching"—and because of family, of course.

Chances are he and his father will overlap on cases, as has occurred with the Ambinders. "It's a lot of pressure to live up to my dad's name," says the younger Scheel, "but it's not any more pressure than I already put on myself."

—Judy F. Minkove

OSLER INTERNAL MEDICINE RESIDENCY TRAINING

Time on Duty		
unlimited hours/week	**vs.**	80 hours/week
Gender Representation		
51 men	**vs.**	87 men
4 women	**vs.**	62 women
(an increase of women from 8% to 42%)		
Patient Records		
paper	**vs.**	electronic medical record
Average Patient Length of Stay		
12–14 days	**vs.**	2–3 days

Source: The Johns Hopkins Hospital's Department of Medicine

Osler pride: Martha Selonick, Helen Selonick Prevas and Stuart Selonick reminisce about their training.

Read more about the Osler program at **bit.ly/olsermedtraining**.

The Next Chapters for Marfan Syndrome

A world authority on the genetic disorder offers hope for better treatments.

When Harry "Hal" Dietz was training in pediatric cardiology at Johns Hopkins in the mid-1980s, he found himself increasingly frustrated about how little medicine had to offer for children with Marfan syndrome. The puzzling condition caused his young patients to grow significantly taller than their peers, have defects in organs, ranging from the lungs to the eyes, and—most disconcerting—problems in the heart valves and aorta.

"Many of these children were going on to need multiple cardiac surgeries and experiencing early death," recalls Dietz. "We didn't seem to be making that much of a difference."

That's why Dietz decided to switch his focus, training in genetics to better understand Marfan syndrome. He worked alongside Clair Francomano and Victor McKusick, who launched the nation's first medical genetics division and was among the first to describe the connective tissue disorder.

Dietz's career change has proven fruitful: Over the next 30 years, he and his colleagues discovered the genetic mutation that caused this condition, the regulatory role that the protein produced by this gene provided and that an existing blood pressure medication acts on this pathway, with the potential to slow the rate of aortic enlargement in these patients.

"There's a sense of progress," he says, "but there's also a sense that there's so much more to do."

Between seeing patients with genetic cardiovascular conditions once a week and researching other disorders that fall under this umbrella in his lab—including Loeys-Dietz syndrome, a condition Dietz co-discovered, which shares many of the same features as Marfan syndrome—he has continued adding to the Marfan story.

Dietz's lab is now working to identify the optimal drugs, combination of drugs and doses for the care of Marfan patients.

He and his colleagues are also determined to better understand what happens at every step in the pathway between the gene defect that causes Marfan syndrome and the devastating aortic enlargement that eventually leads to aortic dissection. Part of their research relies heavily on investigating the biochemical events that occur in mouse models for this condition, developed in their lab. However, the team is also exploring this question in human families that carry the Marfan mutation.

"You see striking differences in the severity of disease among family members, despite the fact that they all have the same underlying gene defect," says Dietz—perhaps, he explains, because other genes are modifying the effect of the original mutation.

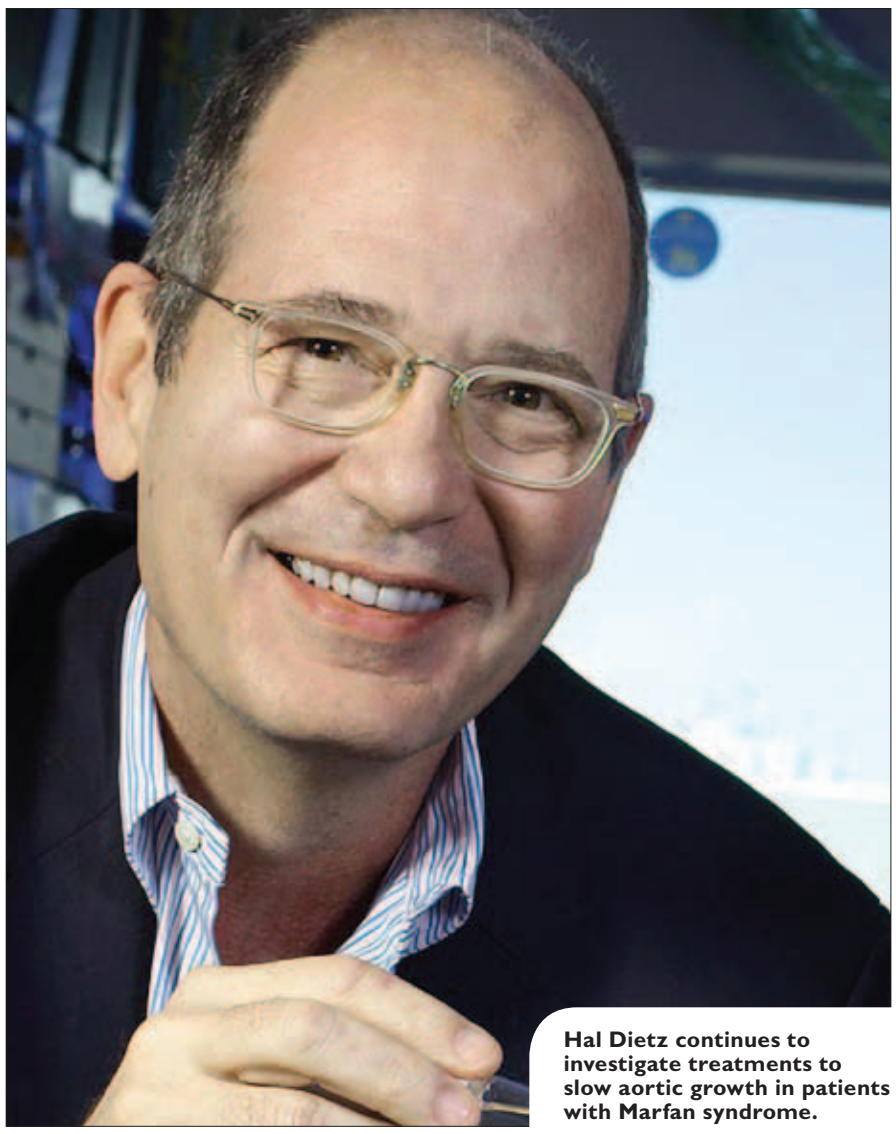
The team's analysis identifies several points along the pathway that appear to be vulnerable to these genetic modifiers. In time, Dietz says, his and other labs hope to develop new treatments that could sway the course of this disease by targeting these vulnerable events.

Eventually, he says, Marfan patients may be able to live free of the fear that their bodies could fail them, while still avoiding multiple life-changing surgeries.

"The Marfan story is far from over," adds Dietz. "Our lab continues to add to this aggressive research domain."

—Christen Brownlee

> "EVENTUALLY, MARFAN PATIENTS MAY BE ABLE TO LIVE FREE OF THE FEAR THAT THEIR BODIES COULD FAIL THEM, WHILE STILL AVOIDING MULTIPLE LIFE-CHANGING SURGERIES. THE MARFAN STORY IS FAR FROM OVER."
>
> —HAL DIETZ



Hal Dietz continues to investigate treatments to slow aortic growth in patients with Marfan syndrome.

Marfan Facts

- About 1 in 5,000 people have Marfan syndrome. This includes men and women of all races and ethnic groups.
- Roughly 3 out of 4 people with Marfan syndrome inherit it. Other people have a spontaneous mutation, meaning that they are the first in their family to have the condition.
- People are born with Marfan syndrome, but they may not notice any features until later in life. However, Marfan syndrome features can appear at any age, including in infants and young children. Marfan syndrome features and medical problems can get worse as people age.

Source: The Marfan Foundation

United Way Triumph

Since 2004, Johns Hopkins Medicine has exceeded its annual United Way campaign fundraising goal. Thanks to widespread participation, generous contributions and creative fundraising, the enterprise surpassed its 2015 goal of $1.73 million to help improve life for families and communities. These funds have translated into tangible support for myriad programs, including the 2-1-1 Maryland United Way Helpline, which answers more than 450,000 calls for help each year in Maryland, the District of Columbia and Virginia. Over the past five years, 9.1 million meals have been distributed to low-income families across central Maryland. Nearly 2,300 people facing homelessness received much-needed resources at Project Homeless Connect events in 2015. Watch a brief video that captures the spirit of employees celebrating the success of this year's campaign at bit.ly/2015UnitedWayJHMthankyou.

Conserving Medical Products

As national shortages affect the availability of items like IV solution for rehydration therapy, Johns Hopkins Medicine is working to conserve such products. "When we make a concerted effort, we can do a very good job of reducing waste in our health system," says Thomas Galloway, director of clinical value analysis for the health system's supply chain shared services and a registered nurse. Clinicians are now asked to conserve as much IV solution as they can, he says, switching to oral hydration when a patient is able to swallow liquids.

Operating room nurses, surgeons and one of the health system's vendors recently worked together to redesign surgical supply packs to include fewer items that are used less frequently. That way, when a pack is opened at the start of a surgery, there's less likelihood that tools inside will go to waste. Learn more about continuing efforts to conserve products and minimize costs systemwide at intranet.insidehopkinsmedicine.org/supply-chain/the-link.

'Visionary Leader' Honored

Ronald R. Peterson, president of The Johns Hopkins Hospital and Health System and executive vice president of Johns Hopkins Medicine, has received the Baltimore Washington Corridor Chamber of Commerce's 2016 Freeman Hrabowski Visionary Leader Award. The award recognizes Peterson's "strong and beneficial presence on the economy and quality of life" in the Baltimore/Washington area.

Senior VP for Nursing for JHHS

Deborah Baker, D.N.P., C.R.N.P., will become senior vice president for nursing for the Johns Hopkins Health System on July 1. The first to hold this new position, she will also continue to serve as vice president of nursing and patient care services for The Johns Hopkins Hospital, a role she's held since September 2015.

Salk Award

Solomon Snyder, M.D., D.Phil., D.Sc., professor of neuroscience, has received the Salk Institute's Medal for Research Excellence, an award bestowed just twice before in the institute's 55-year history. Recognized as a giant of modern neurosurgery, Snyder has defined the basic pharmacology of most of the brain's neurotransmitters, their receptors and their transporters. His discoveries have been translated into important therapies.

NAS Honors

Kenneth Kinzler, Ph.D., professor of oncology and co-director of cancer research at the Ludwig Center in the Johns Hopkins Kimmel Cancer Center, and **Geraldine Seydoux, Ph.D.**, professor of molecular biology and genetics and a Howard Hughes Medical Institute investigator, have been elected to the National Academy of Sciences.

AAP Recognition

Peter Agre, M.D., director of the Johns Hopkins Malaria Research Institute, professor of biological chemistry and 2003 Nobel Prize-winner for his discovery of aquaporin proteins, has received the 2016 Kober Medal, the highest honor bestowed by the American Association of Physicians (AAP). In addition, seven Johns Hopkins physicians were elected to the AAP this year. The honorees include **William Bishai, M.D., Ph.D.**, professor of medicine and co-director of the Johns Hopkins Center for Tuberculosis Research; and **Richard Chaisson, M.D.**, professor of medicine, director of the Center for AIDS Research and co-director of the Center for Tuberculosis Research. Also recognized were **Josef Coresh, M.D., Ph.D.**, director of the Cardiovascular Disease Epidemiology Training Program; **Elizabeth Jaffee, M.D.**, professor of pathology and oncology and deputy director of the Johns Hopkins Kimmel Cancer Center; and **Peter Pronovost, M.D., Ph.D.**, director of the Armstrong Institute for Patient Safety and Quality and senior vice president for patient safety and quality. In addition, **Robert Siliciano, M.D., Ph.D.**, professor of medicine and of molecular biology and genetics; and **Suzanne Topalian, M.D.**, director of the Melanoma Program, and associate director of the Bloomberg-Kimmel Institute for Cancer Immunotherapy.

ASCI Honors

Elia Duh, M.D., professor of ophthalmology, and **Gregory Kirk, M.D., Ph.D., M.P.H.**, professor of medicine and oncology and vice chair for clinical and translational research, have been elected to the American Society for Clinical Investigation (ASCI). In addition, **Kieren Marr, M.D.**, professor of medicine and oncology and medical director of the Transplant and Oncology Infectious Diseases Program, has been elected to the ASCI Council.

Notable Nurses

Six nurses from The Johns Hopkins Hospital were chosen to receive 2016 Excellence in Nursing Awards from *Baltimore* magazine: **Jacqueline Bradstock, B.S.N., R.N.**, a nurse clinician in cardiovascular care; **Stephanie Brown, B.S.N., R.N., C.P.N.**, a pediatric nurse clinician; **Brigid Carey, M.S.N., A.C.N.P.**, an acute care nurse practitioner; **Danielle Koceski, B.S.N., R.N.**, senior clinical nurse in the Division of Gastroenterology and Hepatology; **Anna Recchio, R.N.**, head nurse in oncology; and **Patricia Underland, R.N., M.S., C.R.N.P.**, a nurse practitioner in the Hemophilia Treatment Center.

EAST BALTIMORE

New President of The Johns Hopkins Hospital

Redonda Miller, M.D., M.B.A., will become the 11th president of The Johns Hopkins Hospital on July 1. She is currently the senior vice president of medical affairs for the Johns Hopkins Health System and vice president of medical affairs for the hospital. Miller is the first woman to hold the post.

Edward "Eddie" Gormley, C.Ph.T., an automation specialist in the Harry and Jeanette Weinberg Building's pharmacy, has received the Hematology/Oncology Pharmacy Association's 2016 National Pharmacy Technician of the Year Award.

Kenneth Grant, M.S., vice president of general services for The Johns Hopkins Hospital and vice president of supply chain management for the Johns Hopkins Health System, has been named the Most Inclusive Health Care Group Executive for Minority Businesses by the Maryland Washington Minority Companies Association.

Pradeep Ramulu, M.D., Ph.D., associate professor of ophthalmology, has received the Light House Guild's 2016 Pisart Award. The $30,000 award recognizes early-career physicians and scientists whose work has the potential to influence the understanding of vision loss, the treatment of eye disease or the rehabilitation of people with vision loss.

Linda Regan, M.D., assistant professor of emergency medicine and director of the Emergency Medicine Residency Program, has received the 2016 Director of the Year Award from the Emergency Medicine Residents' Association. She is the first woman to receive this award since its inception 16 years ago.

Janet Serwint, M.D., professor of pediatrics and director of the Pediatric Residency Program, has received the Association of Pediatric Program Directors' 2016 Walter W. Tunnessen, Jr. MD Award for the Advancement of Pediatric Resident Education. The award is named for a renowned Johns Hopkins pediatric diagnostician and rheumatologist.

JOHNS HOPKINS BAYVIEW MEDICAL CENTER

April Holmes, a medication technician for Hopkins ElderPlus, a voluntary health program that helps coordinate all needed health care services for older individuals so they can continue living in the community, has been named one of the 2016 Baltimore's Top Neighborhood Moms by Baltimore Mayor Stephanie Rawlings-Blake.

Laura Megan Morrison, M.S., R.N., P.C.C.N., has been named patient care manager of the 28-bed progressive care unit.

HOWARD COUNTY GENERAL HOSPITAL

Matthew Levy, D.O., M.Sc., associate professor of emergency medicine, and **Asa Margolis, D.O., M.P.H.**, assistant professor of emergency medicine, have been named to leadership positions in the Howard County Department of Fire and Rescue Services (HCDFRS). Both physicians will remain on the medical faculty and will treat emergency cases at Howard County General in addition to assuming their new duties. Levy has been named medical director of HCDFRS, and Margolis has been chosen as HCDFRS's associate medical director.

SUBURBAN HOSPITAL

Fadwa Natour, R.N., nicknamed "the bed czar" for her role as the nursing supervisor responsible for maintaining patient flow throughout the hospital, has been named the 2015 Healthcare Council of the National Capital Area's Employee of the Year for Suburban Hospital.

SIBLEY MEMORIAL HOSPITAL

Timothy Chamberlain, director of biomedical services, and **Suzanne Dutton, M.S.N.**, the medical center's first coordinator of NICHE (Nurses Improving Care for Healthsystem Elders), have received the 2015 Healthcare Council of the National Capital Area Employee of the Year Award for Sibley.

Carol Shannon has been named vice president of the Sibley Memorial Hospital Foundation. She will be responsible for planning, managing and implementing all of the hospital's fundraising activities. Before joining Sibley, Shannon spent 11 years as chief development officer at Catholic Charities, where she led a $75 million capital campaign.

JOHNS HOPKINS MEDICINE INTERNATIONAL

Anita Moore, M.P.A., has been appointed chief population health officer for Johns Hopkins Aramco Healthcare (JHAH) in Saudi Arabia. She will help to make JHAH a leader in integrating population health management to address a range of factors that impact broader communities. Her work will also support JHAH's efforts to deliver individualized care to 360,000 Saudi Aramco employees and their families.

CLASS ACTS: A recent conversation in a math class proved transformative for Clayton Smith, left. During a break in the class, sponsored by the Johns Hopkins Skills Enhancement Program, the former truck driver discussed opportunities for advancement with his classmate Joenathan Long, right. Smith, who was working in linen delivery, hoped to find work with patients. That's when Long, a radiology transport associate, mentioned that a job similar to his had just opened in his department. Aided by a Johns Hopkins Project REACH career coach, Smith spruced up his resume and applied to be a patient transport associate. Meanwhile, Long gave his manager, Corey Rhames, a heads up about Smith. Rhames was immediately impressed when he met the 53-year-old man and offered him the job on the spot. Now, both classmates are transporting patients and will also study medical terminology together twice a week. Smith aspires to become a nurse, while Long is pursuing a career in materials management. Learn more about the Skills Enhancement Program at **bit.ly/JHHskillsenhancement or contact Barbara Edwards at 410-614-0273.**

Dome

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