

Vital Signs

Boonshoft
School of Medicine
WRIGHT STATE UNIVERSITY

9

Needle and the damage done:

In my 25 years of doing substance abuse research here I've never seen anything like this...

15

Nerve center:

I told the neurologist, 'I'm having a stroke. These are my symptoms.' I wasn't all upset about it.

36

Age old question:

How old is your skeleton? It seems like a simple question. As old as you are, right? Not exactly.



From the Dean

In this edition of *Vital Signs*, we tackle a tough issue—the increase in heroin and prescription drug abuse and deaths, both locally and nationwide. There are no easy answers to this national epidemic, but researchers and physicians at the Boonshoft School of Medicine are working with officials at the state and local levels to fully understand the problem in an effort to develop better policies and treatment options.

We also highlight another epidemic that many had feared would threaten our nation—Ebola. Currently raging in Western Africa, this terrifying disease seemed to be making a beachhead in the United States, raising alarms nationwide. But our strong public health system has managed to contain the threat before it exploded. You can read about the local and statewide response and the role played by our Master of Public Health program in creating and maintaining our region’s strong public health system.

In other stories, you’ll meet Debra Mayes, a neuroscientist and faculty member who overcame a massive stroke at the age of 28 to continue her research into neurodegenerative and neuropsychiatric diseases. You’ll also learn about second-year student Aaron Palmer, who grew up in a housing project in Akron and taught himself auto repair to pay for his undergraduate degree and pursue his dream of medical school. Now one of our top-ranked students, he hopes to become a neurosurgeon.

And finally, it was my joy to sit down with several of our outstanding women faculty members for a lively discussion about women in medicine in conjunction with the AMA’s Women in Medicine month in September.

Thank you all for your generous support of the Boonshoft School of Medicine. I wish you a wonderful holiday with family and friends and look forward to working with you in the new year.

Marjorie A Bowman

Marjorie A Bowman, M.D., M.P.A.
Dean



What’s Inside



Changing face of medicine: It was a man’s world when I was in medical school in the early 1980’s. On hospital rounds it was assumed I was a nurse.

Health care in the heartland: In some of the rural practices, our physician population is aging, including myself. We realize we have to replace ourselves.

The fixer: My father never graduated from high school. But he was always my hero.

Ventures of the heart: I was not sure I wanted to be a doctor. But I always wanted to help people.

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Vital Signs

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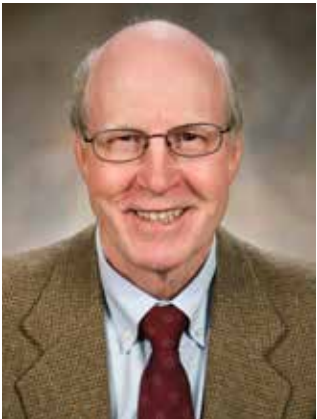
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Boonshoft School of Medicine



Snapshots

WSU trustees award rank of University Professor to Ronald Markert

The Wright State University Board of Trustees has awarded the rank of University Professor to Ronald J. Markert, Ph.D. Trained as an educational psychologist, Markert has over 40 years of experience in U.S. medical schools, including 28 years at the Boonshoft School of Medicine (from 1980 to 2000 and from 2006 to 2014).



Markert is currently professor and vice chair for research in the Department of Internal Medicine and holds secondary appointments in the Departments of Surgery and Orthopaedic Surgery, Sports Medicine, and Rehabilitation.

He has had a distinguished career as a teacher, medical educator, and researcher in academic and clinical medicine. As a teacher of evidence-based medicine at Wright State, he was selected as Teacher of the Year six times and was designated the Robert J. Kegerreis Distinguished Professor of Teaching from 1995 to 1998. In 2000 Markert received the prestigious Glaser Distinguished Teacher Award, the highest recognition for medical school teaching in the United States and Canada, from the Association of American Medical Colleges and Alpha Omega Alpha.

Markert has excelled as a researcher and writer. He has contributed more than 250 papers in peer-reviewed journals and has coauthored more than 300 presentations at international, national, regional, and state societies. Since his return to Wright State eight years ago, he has consulted on more than 500 research investigations

He also serves as reviewer/consultant for *Journal of the American Medical Association* (JAMA), *Academic Medicine*, *Teaching and Learning in Medicine*, and the *Journal of Graduate Medical Education*.

"Markert's productivity in the field of medical science and education are remarkable by any standards," said Marjorie Bowman, M.D., M.P.A., dean.



Col. Kent McDonald, M.D., receives Raymond F. Longacre Award

Department of Psychiatry assistant professor recognized with highest award in aerospace medicine

The Aerospace Medical Association named Col. Kent McDonald, M.D., the recipient of the Raymond F. Longacre Award, the highest award in aerospace medicine, for advancing the understanding of aviator personality, unique environmental stressors, and their impact on optimal performance.

An assistant professor in the Department of Psychiatry at the Boonshoft School of Medicine, McDonald also is the chief of the Neuropsychiatry Branch, Aeromedical Consultation Service, U.S. Air Force School of Aerospace Medicine at Wright-Patterson Air Force Base.

McDonald's work fostered a collaborative, highly effective and operational research-oriented environment that resulted in comprehensive changes benefitting the U.S. Air Force, aircrew, flight surgeons, and mental health personnel, according to Col. Daniel Van Syoc, M.D., M.P.H., USAF, MC, CFS (Ret.), deputy chief, Aeromedical Consultation Service, Wright-Patterson Air Force Base.

Van Syoc said McDonald's team established innovative research and translated that knowledge into new personnel and operations policy. His team's work resulted in multiple publications, presentations at international conferences, and cutting-edge instruction in courses in aerospace medicine, psychiatry, and psychology.

The award honors the memory of Maj. Raymond F. Longacre. The international award is given annually for outstanding accomplishment in the psychological and psychiatric aspects of aerospace medicine. The Aerospace Medical Association presented the award to McDonald in May at its 85th Annual Scientific Meeting in San Diego.

Neuroscience Institute adds Dayton Children's Hospital, pediatric research to neuroscience venture



Dean Bowman makes a point at the news conference announcing the new affiliation.

The Wright State University & Premier Health Neuroscience Institute, together with Dayton Children's Hospital, have announced the affiliation of Dayton Children's with the institute to boost pediatric neuroscience research in the region and enhance pediatric care.

Dayton Children's clinicians and researchers will formally participate in a broad range of research and educational programs with the members of the Wright State University & Premier Health Neuroscience Institute.

The affiliation broadens the institute's research programs and infrastructure by creating the Dayton Children's Professorship of Pediatric Neuroscience. The new professor will focus on research into pediatric neurological disorders as well as providing clinical care at the hospital.

"We are so excited to be joining our partners in the Neuroscience Institute. Dayton Children's is the only facility in this region whose sole mission is the health care of our children—so it's critical for us to put a larger focus on pediatric neurosciences and the brain development of our children," said Deborah Feldman, president and CEO of Dayton Children's Hospital.

The Neuroscience Institute was founded by Wright State and Premier Health in 2010 through a series of long-term investments. The Neuroscience Institute conducts cutting-edge, grant-funded neuroscience research and related clinical trials; attracts talented physician scientists and researchers; and enhances neurological care in areas of critical need for a growing patient population in the region.

The Neuroscience Institute has made great strides since its formation, including the development of a new Department of Neurology and Neurology Residency Program created in partnership by the Boonshoft School of Medicine and Premier Health. The new department has attracted top clinical neurologists to the region to improve patient care in the community.

"From its inception in 2010, the Wright State University & Premier Health Neuroscience Institute has made impressive progress that has been of benefit to patients from across the region and beyond. We welcome Dayton Children's Hospital and look forward to continuing on a path of innovation and collaboration for many years to come," said Jim Pancoast, president and CEO of Premier Health.

The institute has also successfully attracted new research funding, receiving \$4.6 million from the National Institutes of Health in 2013 to improve the movement of badly injured limbs. And a \$37 million Neuroscience Engineering Collaboration building is scheduled to open on Wright State's campus in March 2015 to house researchers and the institute.

The affiliation builds on Dayton Children's existing partnerships with Wright State's Boonshoft School of Medicine.

"Dayton Children's Hospital and Premier Health hospitals serve as vital teaching hospitals, helping us train the next generation of physicians, and are home to many of our residency programs," said Marjorie Bowman, M.D., M.P.A., dean. "This new affiliation will build on those longstanding partnerships and help to speed the transfer of research discoveries from bench to bedside."

Dayton Children's has committed to investing support for the pediatric neuroscience professorship for a minimum of five years, as well as laboratory start-up costs, to attract new research funding focused on pediatric neurological disorders, ranging from epilepsy to movement disorders. A national search to hire a talented physician-scientist for the professorship is underway.

"This new partnership with Dayton Children's Hospital gives us even greater visibility in the world of neuroscience and neurology," said Tim Cope, Ph.D., director of the Neuroscience Institute and chair and professor of neuroscience, cell biology and physiology at Wright State. "This unique collaboration allows us to improve and expand our ability to attract top-notch physicians and researchers to the Dayton region and to further strengthen our competitiveness for attracting federal and other research funding and support."

Gary LeRoy, M.D., honored as Family Medicine Educator of the Year



The Ohio Academy of Family Physicians (OAFP) has honored Gary L. LeRoy, M.D., with its 2014 Family Medicine Educator of the Year Award.

LeRoy has been practicing medicine for 22 years. He serves as associate dean for student affairs and admissions and associate professor of family medicine at the Boonshoft School of Medicine, and as a staff physician at Community Health Centers of Greater Dayton/East Dayton Health Center.

“Dr. LeRoy models what a family physician should be. He walks the talk. He takes the time to talk with and mentor students in their student and leadership roles,”

said Therese Zink, M.D., chair of the Department of Family Medicine.

In addition to serving as a mentor to students, LeRoy serves on the medical school’s academic curriculum and admissions committees. He is a member of the Wright State University Academy of Medicine, and he sees patients at Reach Out of Montgomery County, a free clinic for the underserved and underinsured.

Extremely active in the Dayton community, LeRoy not only teaches his medical students the clinical side of medicine, he also shows the students how to care about patients and advocate for them. Through his actions, he teaches his students to serve their community.

“I appreciate that Dr. LeRoy took time not only to teach me about the medical side of being a physician, but also to teach me how to be a patient advocate,” said Kara Yutzy, a medical student.

In addition to the East Dayton Health Center and Reach Out of Montgomery County, LeRoy

serves the community as the chief medical consultant for Dayton Public Schools, a volunteer with the American Red Cross, and a volunteer at St. Vincent de Paul Homeless Shelter.

“As a life-long Daytonian and public servant for 37 years, I know no one has given more of themselves to help others,” said James Gross, health commissioner of Montgomery County. “It is my hope that the medical students at Wright State realize at some point in their lives that having Dr. LeRoy as a mentor was a gift, a very rare and valuable gift. He has been a gift to me.”

LeRoy is a well-known and highly respected leader at the local, state, and national levels. Some of his leadership roles include: serving as a board member of the Montgomery County Board of Health, Hospice of Dayton, and the Wright State University Alumni Association; immediate past chair of the Dayton Foundation; a member of the Care Source Quality Assurance Committee; past president of the Ohio Academy of Family

Physicians; and one of Ohio’s physician delegates to the American Academy of Family Physicians.

Ted Wymyslo, M.D., chief medical officer for the Ohio Association of Community Health Centers and immediate past director of the Ohio Department of Health, has watched LeRoy’s career unfold over the years.

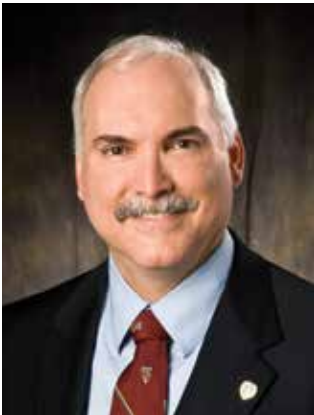
“He made a difficult decision to forego traditional private practice in order to address the health needs of the underserved in Dayton,” Wymyslo said. “His character and teaching abilities made him a natural for advancement into a greater teaching role with the Wright State University Boonshoft School of Medicine, ultimately leading to his current leadership position in the dean’s office. I can think of no greater role model for our future physicians, and have a great appreciation for his many sacrifices along the way.”

The OAFP is a statewide professional association with more than 4,600 members.

President and CEO of Wright State Physicians elected to American College of Physician Executives board of directors

Alan P. Marco, M.D., M.M.M., FACPE, president and CEO of Wright State Physicians, was one of three new members to be elected to the 2014-2015 board of directors of the American College of Physician Executives (ACPE).

Marco also serves as associate dean for faculty and clinical affairs at the Boonshoft School of Medicine.



The ACPE’s board nominating committee reviewed more than 60 applications. The nominating committee selected Marco and two other candidates, and APCE members overwhelming approved the nominees in an online election in March.

The ACPE is the nation’s largest health care organization for physician leaders. The organization has more than 11,000 members, including chief executive officers, chief medical officers, vice presidents of medical affairs, medical directors, and other physician leaders from more than 45 countries.

Marco has been with Wright State Physicians since September 2013. He came to Wright State from the University of Toledo College of Medicine and Life Sciences, where he served as professor and chair of the Department of Anesthesiology and director of the residency training program in anesthesiology.

A graduate of Johns Hopkins University, he received his medical training at the Johns Hopkins University School of Medicine and his training in anesthesiology at the Johns Hopkins Hospital. He earned a Master of Medical Management degree from Carnegie Mellon University in 2000.



(From left) Paul Hershberger, Ph.D., director of behavioral science, WSU Family Medicine Residency Program; Reid Blackwelder, M.D., AAFP president; Therese Zink, M.D., M.P.H., chair, WSU Department of Family Medicine; and F. Stuart Leeds, M.D., assistant professor of family medicine; attended the Society of Teachers of Family Medicine Annual Spring Conference where the award was presented.

Boonshoft School of Medicine receives AAFP Top 10 Award for second consecutive year

For the second year in a row, the Boonshoft School of Medicine received an American Academy of Family Physicians (AAFP) Top 10 Award for its consistent contributions to building the family physician workforce.

The award was presented in May during the Society of Teachers of Family Medicine Annual Spring Conference in San Antonio. Each year, the AAFP presents its Family Medicine Top 10 Awards to honor medical schools that—during a three-year period—graduated the greatest percentage of students who chose first-year family medicine residency positions.

At Wright State, 15.9 percent of medical graduates entered family medicine over the last three years. Along with Wright State, Oregon Health & Science University School of Medicine, University of Missouri School of Medicine, University of Minnesota Medical School, and University of Wisconsin School of Medicine and Public Health were some of the schools that received a Top 10 Award out of 129 medical schools.

At a time when the United States is facing a shortage of primary care physicians, filling the family physician workforce pipeline is vital to the health of Americans, according to AAFP President Reid Blackwelder, M.D.

RISE.SHINE.
The Campaign for Wright State University

Wright State announces \$150 million fundraising campaign featuring Academy Award-winning actor Tom Hanks

Hollywood superstar Tom Hanks will help lead a \$150 million fundraising campaign for Wright State University that promises to further elevate the school’s prominence by expanding scholarships, attracting more

top-flight faculty, and supporting construction of state-of-the-art facilities.

Rise.Shine. The Campaign for Wright State University was formally announced by President David R. Hopkins on Saturday, Oct. 18, before 600 students, faculty, staff, donors, and other special guests at the Wright State University Nutter Center.

“This campaign is all about student success. It will change Wright State forever and the generation of students to come,” said Hopkins. “It’s going to grow our prominence and relevance in 21st century education.”

Spearheading the Rise.Shine. campaign are cochairs

Amanda Wright Lane, great grandniece of university namesakes Wilbur and Orville Wright, and Hanks, an Academy Award-winning actor, producer, and director.

“Wright State is a rising leader in 21st century higher education,” Hanks said. “From groundbreaking research to world-class fine and performing arts, this university truly has a mission that matters.”

“This is our time to shine,” Hopkins said. “People are going to be talking about Wright State not only in this community, but across the state and nation. Our time is now.”

For more information about Rise.Shine. The Campaign for Wright State University, visit rise.shine.wright.edu.

Timothy Broderick, M.D., named chief scientist for the Wright State Research Institute

Timothy Broderick, M.D., has been named chief scientist at the Wright State Research Institute (WSRI), where he will be responsible for growing the institute's portfolio for basic and applied research and development.

Broderick will lead the day-to-day scientific research of WSRI, with a specific focus on the development of solutions to near-term, currently identified challenges, as well as longer-term, envisioned research needs that are consistent with the university's academic mission, strategic plan, and research. Broderick will also join the Boonshoft School of Medicine faculty as professor of surgery.

A surgeon and researcher, Broderick most recently served as a program manager at the Defense Advanced Research Projects Agency since 2010.

He has also served the U.S. Army Telemedicine and Advanced Technology Research Center, within the National Aeronautics and Space Administration's (NASA) Medical Informatics and Technology Applications Consortium, and the National

Space Biomedical Research Institute External Advisory Council. He has developed high-impact biotechnology for the Department of Defense and NASA that has translated into improvements in patient care.

Broderick spent seven years as professor of surgery and biomedical engineering at the University of Cincinnati and was founder and director of its Center for Surgical Innovation.

"We are delighted to have Dr. Broderick join the Wright State team," said Marjorie Bowman, M.D., dean of the Boonshoft School of Medicine. "With his proven track record of aggressively developing high impact biomedical technologies and moving new research discoveries to market, he will greatly enhance our ability to provide real-world solutions to the world's medical problems."

Broderick will report to Dennis Andersh, CEO of the Wright State Applied Research Corporation (WSARC). WSARC is a component unit of Wright State responsible for providing support, leading and enabling the university and WSRI to grow its portfolio

of basic and applied research and development.

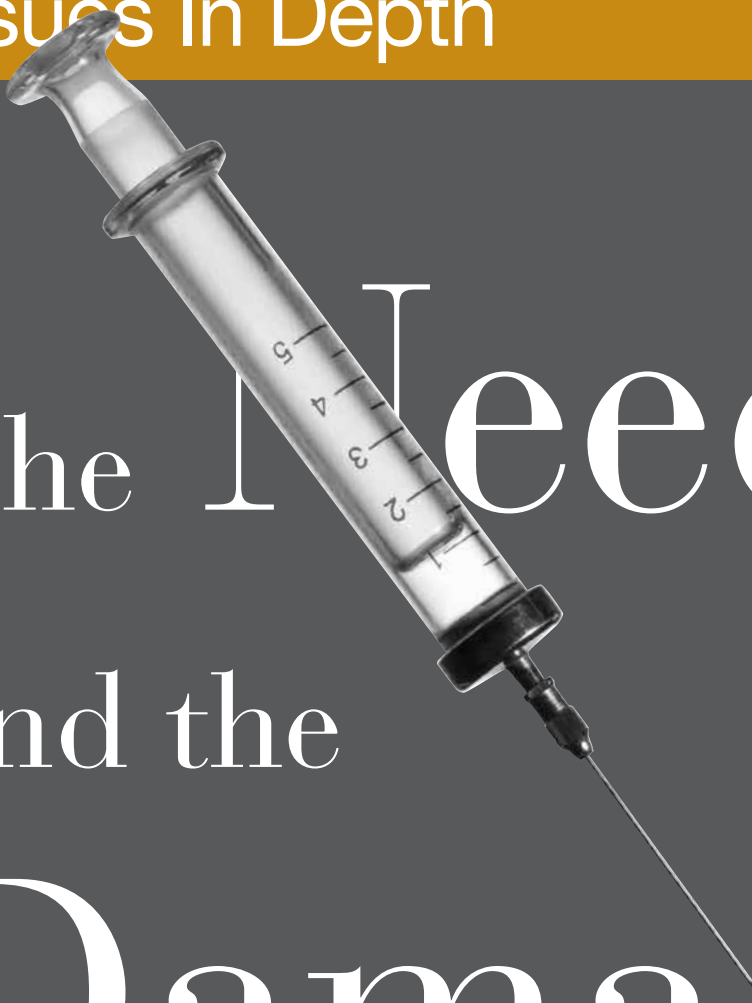
"Dr. Broderick has been an interdisciplinary team leader throughout his career, as well as a results-driven problem solver," Andersh said. "As a physician, professor, and researcher, Dr. Broderick has a proven and diverse portfolio of success. With such vast experience, Dr. Broderick will be able to work seamlessly with all of our program managers, scientists, and researchers, as well as Boonshoft School of Medicine and WSU researchers."

Broderick has flown on the NASA KC-135 parabolic laboratory (also know as the "vomit comet") and dived in the NASA Extreme Environment Mission Operations to develop advanced surgical technologies for long-duration space flight.

He earned his M.D. at the University of Cincinnati College of Medicine and completed his residency at the Medical College of Virginia at Virginia Commonwealth University, where he also served as chief resident in general surgery.



Issues In Depth



The Needle and the Damage Done

Boonshoft researchers find number of overdose deaths in 2013 ‘unprecedented’

The lowest point in Jack Lunderman III’s drug-use career came in March this year, when just two days out of his second stint at an inpatient drug rehabilitation program, the 26-year-old Oakwood man injected a half gram of heroin into his wrist, wandered downstairs to the living room, plopped into a recliner, and died.

When his parents noticed their son’s head drop and his cigarette fall into his lap, they rushed to his side, found no pulse, and started CPR, reviving their son just as paramedics arrived. The EMT squad raced Lunderman to Miami Valley Hospital in downtown Dayton, where he was treated and released some 36 hours later.

“We have patients in our richest neighborhoods standing in line for treatment with patients from our poorest neighborhoods.”

For sure the experience rattled Lunderman and his parents, but it couldn’t shake Lunderman’s addiction to heroin and the “warm blanket” of comfort and tranquility the drug offered with each hit.

“The scariest part about it was the next day I was using again—I was right back doing the same thing that had just killed me,” Lunderman reflected one September evening this year. “I thought about it for a while and said to myself, ‘Holy crap, this thing wants to kill me and I can’t stop doing it!’”

‘Tip of the iceberg’

Had Lunderman’s parents not saved his life, he would have become another statistic in a growing trend that downright frightens the health care and substance abuse treatment community, law enforcement, elected and other public officials, and any family touched by substance abuse: More people in Montgomery County and across the state are dying from accidental prescription drug and heroin overdoses than at any time in recent history.

In Montgomery County alone, 226 people died of an unintentional drug overdose last year, up 33 percent from 2012, according to the annual Poisoning Death Review report prepared by the Boonshoft School of Medicine Center for Interventions, Treatment and Addictions Research (CITAR). More than half of those cases (132) involved heroin.

The report, prepared in collaboration with Public Health—Dayton & Montgomery County (PHDMC) and the Montgomery County Coroner’s Office, states unintentional drug overdose deaths have increased continuously in the county since 2010, but the increase of 64 deaths from 2012 through 2013 is unprecedented. Moreover, the jump doubled the increase of 32 additional unintentional drug overdoses from 2011 to 2012.

“In my 25 years of doing substance abuse research here I’ve seen nothing like this in terms of the increases,” said CITAR Director Robert Carlson, Ph.D., who helped prepare the report as part of the Preventing Unintentional Drug Poisoning Project, funded this year by PHDMC and the Ohio Department of Health, with injury prevention block grant funds from the Centers for Disease Control and Prevention (CDC).

The numbers for 2014 look bleaker still, according to Ryan Peirson, M.D., assistant professor of psychiatry and chief clinical officer for the Alcohol, Drug Addiction, and Mental Health Services Board for Montgomery County.

“We were up to 125 deaths by the end of June this year, and we’re on pace in 2014 to meet or exceed the number of deaths in 2013,” Peirson said. “In addition to the deaths, we estimate that as many as 500 people in this area end up in the emergency room every year due to an unintentional overdose. That might not sound like a lot, but it means that more than one person a day has an overdose just in Montgomery County.”

Illicit opioid’s reach is far and wide, crossing several demographics, Peirson added. “We have patients in our richest neighborhoods standing in line for treatment with patients from our poorest neighborhoods.”

Statewide, Ohio Attorney General Mike DeWine’s office said at least 900 people, or about 17 a week, died from heroin-related overdoses in 2013, and those are just the cases that came to the state’s attention. The *Dayton Daily News* found nearly 300 heroin-related deaths between January 2013 and June 2014 in just three southwest Ohio counties—Montgomery, Butler, and Clark—according to an article published in July.

It’s the same story nationwide, as data from the CDC show 4,102 people died as an unintended consequence of heroin overdoses in 2011 (the most recent year for which data are available), compared to 2,789 deaths in 2010—a 47 percent increase in a single year.

Said Carlson: “Drug epidemics tend to go in cycles, and one would think this cycle would eventually decline, but I see no evidence of it in the near future, I just don’t. We have these precipitous increases in overdose deaths, and I think it’s just the tip of the iceberg.”

Twin epidemics

Carlson and experts around the country attribute the rising use of heroin to the declining availability and demand for prescription opioids. “It’s readily available and it’s much less expensive than pain pills,” Carlson said from his office in the Medical Sciences Building.

“We have been documenting the rise of these twin epidemics since at least 2002,” he said. “There was a huge public outcry a few years ago over the number of overdose deaths attributed to pharmaceutical opioids, so there was pressure to cut back on prescriptions. That made prescription painkillers more expensive and harder to find, so when the demand for those drugs leveled off, the demand for heroin took off. It’s all market driven.”

Lunderman said he used to spend \$30 or more a pill for the painkiller Percocet, and he would consume about six pills a day. Heroin, on the other hand, would cost him anywhere from \$5 to \$10 a “cap,” about a tenth of a gram.



Jack Lunderman III — “The scariest part about it was the next day I was using again—I was right back doing the same thing that had just killed me.”

At CITAR, Carlson and his associates are in the data analysis stage of a research project that began in 2009 involving young adults in Columbus who were misusing prescription painkillers. The thesis was to see who transitioned to heroin dependence over the following three years.

The group also conducted a pilot study in Columbus to study heroin and pharmaceutical opiate users who were self-medicating with buprenorphine (Suboxone® and Subutex®), a drug that can mitigate opioid withdrawal. The research found a growing trend of illicit use.

Instead of seeking professional treatment, which is expensive, users are buying the drug off the street from users who obtained the drug through legitimate prescriptions. One problem, notes CITAR Associate Director Raminta Daniulaityte, Ph.D., is that by sharing or selling part of a prescription, neither the seller nor the buyer is receiving an adequate dosage for effective treatment.

“There is a strong belief that they only need to take a small amount and it will work,” Daniulaityte said. “It’s a very hot commodity. People want to do something about their addiction on their own, and buprenorphine is a big thing right now.”

CITAR also is involved in a web-based project to understand attitudes and behaviors related to illicit buprenorphine use. Funded by the National Institute on Drug Abuse, the study is a collaborative effort between CITAR and the Ohio Center of Excellence in Knowledge-enabled Computing (Kno.e.sis) at Wright State.

Daniulaityte and Amit Sheth, Ph.D., professor of computer science and engineering, LexisNexis Ohio Eminent Scholar, and Kno.e.sis Center director, are principal investigators of the study. They’re gleaning information from web forums of drug users who share their experiences and post unsolicited, unfiltered, and anonymous questions, comments, and opinions about various drugs.

“We want to learn more about the population that is using it for nonmedical purposes and how they use it,” Daniulaityte said.

CITAR and Kno.e.sis developed an application, PREDOSE (Prescription Drug abuse Online-Surveillance and Epidemiology), that helps researchers access, retrieve, and analyze user-generated content about illicit drug use on various web forums. The application currently contains more than one million posts.

An unexpected finding has been the extra-medical use of loperamide (Imodium®), a nonprescription medication used to treat diarrhea. Illicit drug users have been posting on various web forums that they use loperamide to self-treat a wide range of opioid withdrawal symptoms. “That was surprising,” Daniulaityte said. “Nobody really knew that was happening, but since then we have found increasing reports of adverse health effects associated with such use, such as heart arrhythmias.”

Continued on page 13.



Running, perseverance keep Wright State student focused, off drugs

See Valerie Brodbeck run.

See her run through the woods on Wright State’s campus, through Sugarcreek MetroPark on another day, or on the streets of Oakwood on yet another. Watch the long-haired brunette, fit as a decathlete, run hard and focused, pushing through stress and pain, some 40 miles a week, always moving forward, forward, forward, leaving her drug life and heroin addiction in the dust.

She runs for clarity and peace of mind, the equanimity she yearned for in a near decade of drug dependence. She runs for son Harrison, age two. She runs for her parents and the people who support her. In short, she runs for her life.

“I’m addicted to running,” said Brodbeck, 30, smiling at her word choice in her Oakwood living room this September. “It’s all about balance for me, making sure I help other people, making sure I take care of my physical health and take care of my son, and making sure I’m a good mom.”

A senior majoring in social work, Brodbeck plans to graduate with her bachelor’s degree in May, then enter

graduate school next fall at Wright State to earn a master’s in social work. From there, she wants to be a mental health counselor, helping others overcome their demons, no matter the sort.

She certainly has the resume for it.

Growing up the only child in an affluent family in Oakwood, Brodbeck said she had a “great childhood.” Her drug-use career began as many do, sampling alcohol and marijuana in high school then quickly becoming addicted. “I was smoking pot every day,” she recalled.

In the early 2000s, Brodbeck’s worried parents, sent her to a Utah residential center purported to help struggling teens. The center has since closed following numerous lawsuits and media reports documenting abusive treatment and squalid conditions.

After a little more than two years at the center, Brodbeck returned to Oakwood feeling institutionalized, brainwashed, and disconnected from her friends and school. She called a friend to get high; the friend obliged, serving up marijuana and cocaine.

“Within three days I was homeless,” Brodbeck recalled. Her parents had kicked her out, taking the tough-love approach. So Brodbeck couch hopped for a while, worked odd jobs, took some classes at Sinclair Community College, and continued her drug journey along the way.

Then she tried heroin, and all felt right in the world.

“It’s like you’re being sucked into the middle of the earth,” she remembered. “You feel really heavy, but in a good way. Nothing else matters. You’re just here in this bubble, feeling safe and comfortable. You don’t have any worries, you don’t have any problems, you don’t remember anything that’s bad. It just numbs you. You feel nothing, and at that time I liked that.”

“I had to have it everyday,” she said. “You need it like you need to breathe.”

In the years that followed, Brodbeck’s life was all about “the chase,” a daily obsession to score heroin. Not just for the euphoric high it produced, but to ward off the excruciating pain and sickness that came with withdrawal.

She watched drug friends overdose, then be revived by paramedics. One died in her arms. She survived a bout with endocarditis, an infection of the inner lining of the heart, even though she walked away from the hospital in search of another score as doctors and nurses pleaded with her, “If you leave here, you will die.” She lived through homelessness and hunger, violence, and other horrors she prefers to keep to herself, all the while yearning for sobriety, an end to the nightmare.

“I would cry all the time because I wanted to be clean,” said Brodbeck, who tried inpatient drug and alcohol treatment programs seven times by September 1, 2010, the start of her clean and sober life.

“The best part of my day is waking up and not having the chase,” she said. “Now when I wake up in the morning, the day is mine.”

Today, Brodbeck is a student intern for a local behavioral health center. She also volunteers for charities such as Homefull, which serves the homeless in Dayton, and The Good Deeds Project, an online-based community movement that promotes random acts of kindness to bring about positive change in the world.

“Honestly, living through addiction and going through that hell and being that low, I just feel like the whole world has opened up to me now,” Brodbeck said, smiling. “I feel like I’m doing the right thing, that things are falling into place, and I know now I can get through anything.”

— Anthony Gottschlich

The work at CITAR is fascinating, Carlson said, and never-ending.

“Drug abuse and drug addiction are not going to go away,” he said. “There’s no magic bullet for it.”

Getting hooked

Heroin is an opioid drug that is synthesized from morphine, a naturally occurring substance extracted from the seed pod of the Asian opium poppy plant. It usually appears as a white or brown powder or as a black sticky substance, known as “black tar heroin.” It is diluted with other drugs or with sugar, starch, powdered milk, or quinine before injecting, smoking, or snorting it.

Lunderman said the first time he tried heroin he felt an instantaneous rush of extreme euphoria, followed by a state of relaxing bliss.

“The first time I tried it, it was over—I was all in,” Lunderman recalled of that moment four years ago. “It’s the perfect feeling; it’s like this warm blanket all over your body. It calms your thoughts. You just feel so at peace and comfortable that nothing can bother you. The problems in your life just go away.”

“With every other drug you have to give something back,” he continued. “With alcohol, it’s hangovers; with crack, it’s paranoia. But with heroin, it’s all good—until you get addicted.”

Other physical symptoms of heroin include drowsiness, respiratory depression, constricted pupils, clammy skin, nausea, and dry mouth. That’s on a good day. If an addict is unsuccessful in his daily chase for the drug, the withdrawal symptoms can be brutal, involving vomiting, diarrhea, and muscle spasms. “It’s like your worst flu times 20,” Lunderman said.

Overdose occurs when the opioid floods too many opioid receptors in the brain, slowing the brain’s respiratory center, leading to a decreased breathing rate or respiratory arrest, which can quickly progress to cardiac arrest and death.

Dennis Mann, M.D., Ph.D., an emergency department physician at Miami Valley Hospital (MVH) and director of toxicology for Wright State’s Department of Emergency Medicine, said he usually sees at least one person a shift (but often several) who has overdosed on heroin or is going through withdrawal.

Mann said the usual treatment protocol involves naloxone (Narcan®), a medication known as an overdose reversal agent. Naloxone works by kicking opiates off the opioid receptors and taking their place. This awakens the brain’s respiratory center and restores breathing, provided the person overdosing has not slipped into cardiac arrest, in which case naloxone is ineffective and of no use.

“We started a Narcan distribution program at MVH in recent years,” Mann said. “The program allows for the free distribution of a Narcan resuscitation kit to persons presenting with symptoms consistent with an opiate overdose. These people are at very high risk of subsequent overdoses and death.”

The kit contains a two-milligram syringe of Narcan, a mucosal atomization device, and instructional materials. A training session is provided as well.

Community response

Similarly, medical, public health, and law enforcement communities in the Dayton region and across the state are actively participating in a Narcan kit distribution program called Project DAWN (Deaths Avoided with Naloxone), which allows police officers, opioid users, and friends and family of users to carry life saving naloxone kits with them.

East End Community Services in Dayton has hosted education programs on administering the drug through nasal mist. (East Dayton has the distinction of having two of the zip code areas with the greatest number of accidental drug overdose deaths in the county.)

County leaders have expanded naloxone distribution with the goal of arming every police officer in the county with a kit. They’ve put up billboards with heroin warnings, formed coalitions to study abuse and

“With every other drug you have to give something back. With alcohol, it’s hangovers; with crack, it’s paranoia. But with heroin, it’s all good—until you get addicted.”

prevention and to educate addicts and the public on the epidemic. They’ve also initiated a program to assist opiate-addicted moms.

One new local effort with Boonshoft guidance is Brigid’s Path (brigidspath.org), a nonprofit whose goal is to provide inpatient medical care for drug-exposed newborns, nonjudgmental support for mothers, and education services to improve family outcomes. Its leaders say Brigid’s Path can relieve the financial burden on Ohio taxpayers by operating at a fraction of traditional hospitalization costs. Neonatologist Marc Belcastro, D.O., a Boonshoft clinical associate professor, serves as its medical director.

Jim Gross, the county’s health commissioner and a Wright State graduate, said he’s encouraged that public officials across the county are working together to address the opioid overdose epidemic.

“Clearly, this integration aims to provide our citizens with holistic services, rather than a fragmented and ineffective approach,” Gross said. “Action needs to flow swiftly and prudently, because we are losing a loved one every day.”

At the state level, Attorney General DeWine has created a Heroin Unit that includes investigators, lawyers, and drug abuse awareness specialists working together to combat issues associated with the epidemic, such as crime, addiction, and overdose deaths. DeWine’s office also has hosted several community forums, hired people to help with

community outreach, and met with Boonshoft School of Medicine experts and researchers to gather information about the epidemic.

Grassroots efforts needed

In announcing his heroin task force last year, DeWine said, “We have to fight this epidemic at the grassroots level, community by community, neighborhood by neighborhood.”

One such effort is Families of Addicts (foadayton.com), founded last year by Lori Erion, a Dayton-area resident in long-term recovery from alcohol and drugs and the mother of a recovering heroin addict. The group meets Wednesday evenings at the Lutheran Church of Our Savior in Oakwood,

“We want to reduce the stigma of addiction and work to ensure this community has adequate treatment and recovery support services, because right now, it does not.”

where its members share personal stories of despair and hope and plan community outreach and support efforts, ways to help others touched by addiction find “a pathway to peace.”

“Our stories have power,” said Erion, echoing the group’s mantra. “What we’re trying to do is get our stories out there to help people and policy makers better understand addiction and the value of recovery, that this is a public health issue that deserves their attention and resources. We want to reduce the stigma of addiction and work to ensure this community has adequate treatment and recovery support services, because right now, it does not.”

Low points, lots of them

Jack Lunderman, an FOA member, said his drug-use career started in junior high when he was 13 and tried alcohol while hanging out with friends. Within a week, he tried marijuana and was hooked. Within a year, he discovered cocaine and that hooked him, too. The habits were costly, though, and Lunderman would lie, cheat, and steal from friends, students, stores, and his parents to support them.

In the early going, Lunderman and his friends got their drugs from older students, he said. But as soon as one of them could drive, they bypassed the middlemen, piled into a minivan, and drove through the streets of West Dayton to get the drugs themselves. It became a frequent, sometimes harrowing, journey.

At 21, he tried crack cocaine. “As soon as you take that first hit, you’re out in the stratosphere for 30 seconds, you feel super energized and powerful, and when you come down you come down real hard. After that, it becomes an obsession to get that high again. You’ll smoke it all day, and you cannot stop until your money’s all gone.”

After that, he tried Percocet. But Percocet was costly. Lunderman would spend up to \$250 on the drug a day. At 23, a friend encouraged him to try heroin. In pursuit of the drug, the lying, cheating, and stealing continued. He was robbed multiple times, beaten, and pistol whipped by a drug dealer. And on one blazing July day in 2012, after scoring a hit that knocked him to sleep, Lunderman awoke six hours later and remembered he left his dog, Maya, in his car with the windows rolled up. By the time Lunderman got to his car, it was too late.

“It was horrible. It just made my drug addiction worse because I just wanted to numb it out,” he said, dropping his head.

Still, the drug use continued, even through two stints in a Columbus-area rehab center. It wasn’t until a few days after his temporary death earlier this year (he didn’t know the heroin he took that day was cut with illicit fentanyl, another rising issue in the drug-use world) that he sought treatment again. “I just realized there was nothing left,” he said. He stayed for 22 days.

“Counselors tell us the only options we have if you don’t get clean are jails, institutions, or death,” Lunderman said. “Well, I’ve been to jail, I’ve been to institutions, and I’ve died. I’ve been there, but I got back into treatment and I’ve been sober since March 24.” **VS**

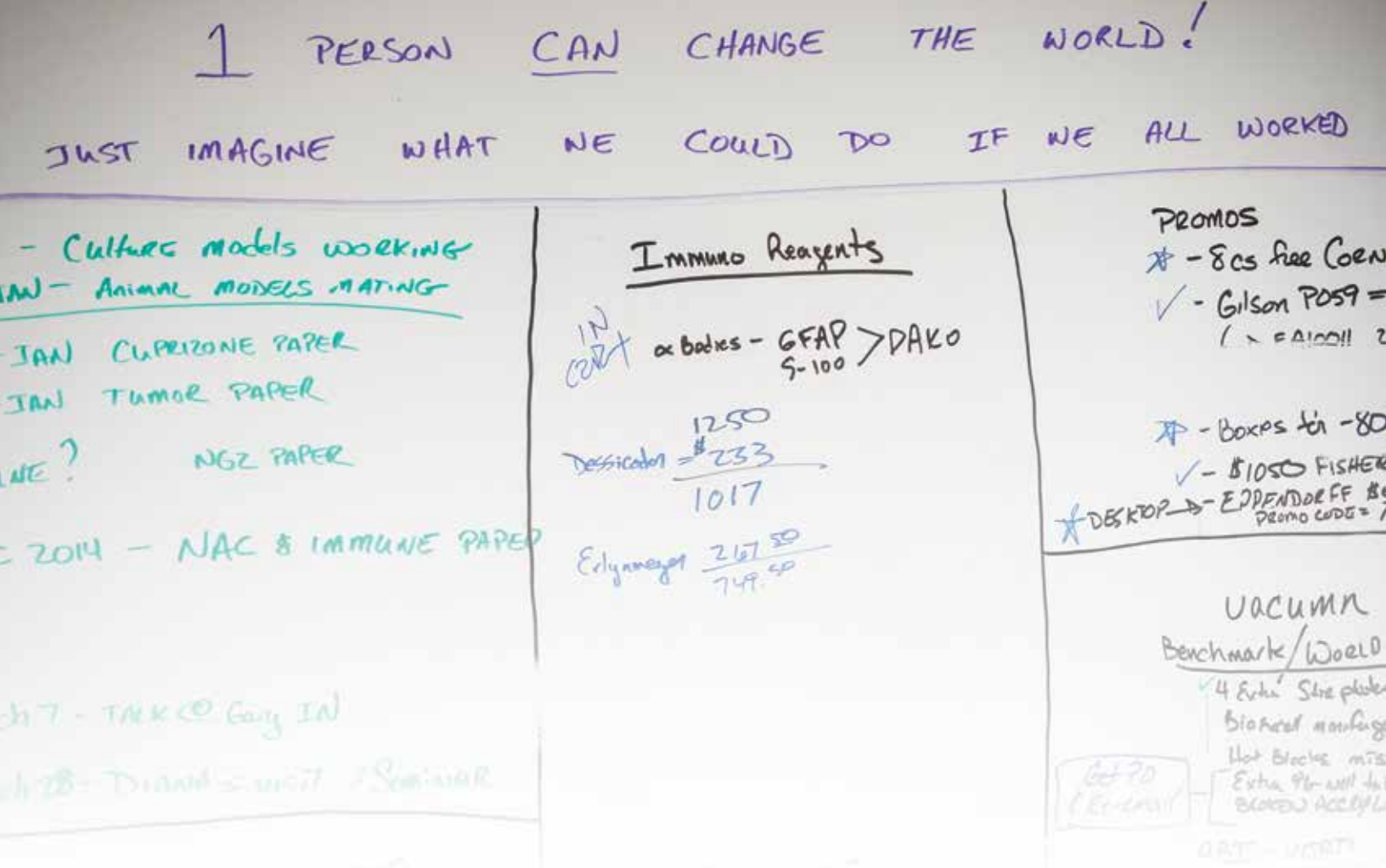
— Anthony Gottschlich

Faculty in Focus



NERVE CENTER

Neuroscience researcher brings unique talents, perspective



A massive stroke at age 28 gives neuroscientist Debra Mayes unique insight into recovering from nerve damage

When she was seven years old, Debra Ann Mayes found a daddy longlegs with a couple of legs missing. She kept it alive in the backyard of her home in the Ohio River town of Jeffersonville, Indiana, feeding it flies. When the insect’s legs grew back, she was amazed.

A few years later, one of Mayes’ cousins was in shop class and accidentally cut off her finger. Surgeons in Louisville were able to sew it back together, restoring feeling and movement.

“Not too long after that, I started hearing about spinal cord patients and wondered why a damaged spinal cord couldn’t grow back,” said Mayes, an assistant professor of neuroscience, cell biology and physiology.

“That was a huge question for me. Everybody told me it was impossible.”

Today, the researcher at the Wright State University and Premier Health Neuroscience Institute is working on making the impossible possible.

Mayes approaches science by identifying and explaining fundamental cellular patterns or paradoxes that have not been noticed or have been inadequately addressed by current theory or paradigms. Her work bridges fields in a way that generates unique insights across different disciplines.

Mayes has been told that she is the face of the future, that she can push boundaries and

develop and integrate knowledge and technologies in ways previously overlooked.

“However, I have also been told that integrating cellular and molecular signaling using a systems approach is impossible—being too broad,” she said. “I will prove these naysayers wrong.”

Mayes’ current project is to find out how to prevent and repair nerve damage from a disease that can cause behavior and developmental problems in children. But her project to-do list includes research into the neurology of the brain and the circulatory, skeletal, and metabolic systems.

“Everybody here is doing good hard-core science, and everybody cares about what they’re doing,” said Mayes, who arrived at Wright State in August 2013. “To be able to work in this environment allows you to flourish. There are so many projects that I want to do.”

Mayes obtained her bachelor’s degree with honors in psychology from Indiana University, carrying a heavy load of neuroscience courses.

“I realized that I loved neuroscience. I liked the cognitive part, but I really liked the molecular side of it,” she said. “Why does that behavior happen, and how can you modulate things?”

She began working on her Ph.D. at the University of Arkansas, where she helped identify a molecule that advanced knowledge about the growth of nerves in the spinal cord.

It’s a stroke. It was fascinating

Then it happened. The 28-year-old researcher suffered a massive stroke, losing all sensation and motor movement on the left side of her body. She was rushed to the emergency room.

“I told the neurologist, ‘I’m having a stroke. These are my symptoms.’ I wasn’t all upset about it,” Mayes recalled.

“‘He said, ‘Why aren’t you hysterical?’

“I said, ‘It’s a stroke.’ It was fascinating.”

For a neuroscientist working on regeneration, having a stroke gave Mayes a window view from the inside out. During her rehabilitation, she was able to tap into the knowledge

and experience of fellow patients with spinal cord injuries and also came to realize the key role physical therapy plays in recovering from nerve damage.

“It brought up things I hadn’t considered,” she said. “It added layers to my knowledge I would not have gotten.”

It took Mayes—who has since regained virtually all of her sensation and motor skills—about two months to relearn how to walk.

“I would just continue walking until my muscles gave out,” she said. “Even if you can get nerves to regenerate, the muscles still need physical therapy to function.”

She returned to her lab at Arkansas and obtained her Ph.D. in neuroscience and developmental biology, doing cancer research that required learning genetics and cancer biology and biochemistry. Then she did postdoctoral work at Cincinnati Children’s Hospital Medical Center before coming to Wright State.

“While many suggested I leave science after the stroke,” Mayes said, “I have never given up the attitude that has allowed me to fully recover, persevere, and will enable me to sustain a productive, impactful scientific career.”

American Society for Neurochemistry-Neuro Award

Last year, Mayes was chosen as the American Society for Neurochemistry-Neuro Award winner from among 30,000 attendees in Cancun, Mexico. She has also helped initiate a collaborative neural tumor tissue bank with neurosurgeons at Premier Health and Dayton Children’s Hospital.

Mayes is currently investigating neurofibromatosis type 1 (NF1), a genetic disease that produces tumors in the nerve cells of children. NF1 can lead to autism, hyperactivity, learning and memory difficulties, as well as heart and bone issues. She has discovered that antioxidants hold promise for treating the disease.

“I told the neurologist, ‘I’m having a stroke. These are my symptoms. I wasn’t all upset about it,’”

“We’re not there yet,” she said. “There’s a lot to do just on the tumor aspect.”

Mayes says her current work has the potential to identify and explain commonalities between all neurodegenerative and neuropsychiatric diseases. That will eventually enable her to study and develop new therapeutic tools to combat these diseases.

The lab in which Mayes works is currently focusing upon the translational potential of diet, exercise, and antioxidant therapies to control metabolism-regulated cellular junctions. Because all antioxidants affect not only metabolism but also blood platelet aggregation and immunology, the lab plans to eventually branch out into all three fields to examine the totality of these basic biology questions using a systems approach.

“It would be difficult to successfully complete all of the work I plan at any other institution,” Mayes said. “We have phenomenal scientists here in Dayton.”

Because of her wide and varied experience, Mayes brings a unique expertise to the study of neurological therapy and regeneration.

“It’s one big puzzle. You have to understand each piece at a time,” she said. “As a group, we’re going to help each other put it all together.” **VS**

— Jim Hannah

Child's play

Boonshoft School of Medicine students
learn the art of healing from 35 kindergartners



Last May, guided by 13 faculty physicians, 52 med students learned the art of conducting physical exams with the help of 35 kindergartners, as part of a partnership between the medical school, Dayton Public Schools (DPS), and DPS school nurses.

The Kiser Elementary School kindergartners helped the first-year medical students in the Introduction to Clinical Medicine course learn how the physical exam differs from an adult to a child.

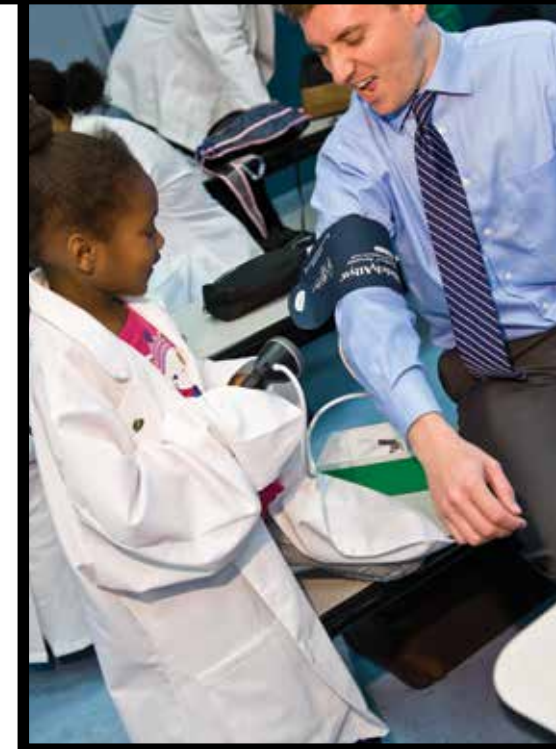
The children and the school benefit as well, according to Bruce Binder, M.D., Ph.D.,

A.B.F.M., director, Skills Assessment & Training Center, and vice chair, undergraduate medical education, family medicine.

"Through the years various infections, high blood pressure, heart murmurs, and more have been picked up during this exercise," he said. "It also allows the children to see 'physicians' in an enjoyable setting, which can help reduce their fear of going to the doctor. Plus, it introduces the medical students to a wonderful service organization, and some of them wind up volunteering there on a regular basis."

Following an introduction to the school, the community, the roles of school nurses, and the health issues that are encountered at a K-8 school, the medical students moved to the school cafeteria where they conducted a nonthreatening, noninvasive physical exam on each child under the supervision of 13 faculty physicians.

The children joined in and examined the med students as well, listening to their hearts with a stethoscope or peering into their ears with the otoscope. This project has conducted annual visits to elementary schools throughout Dayton since 1996 and has been held exclusively at Kiser since 2010.



The changing face of medicine

Dean Bowman leads roundtable discussion about women in medicine

In 1849, Elizabeth Blackwell, M.D., became the first woman to earn a U.S. medical degree. Since then, women have been changing the face of medicine.

Each September, the American Medical Association (AMA) celebrates Women in Medicine Month, honoring influential women physician leaders. This year's theme, "Women in Medicine: Innovators and Leaders Changing Health Care," reaffirmed the AMA's commitment to increasing the influence of women physicians and advocating for women's health issues.

In celebration, the medical school's first woman dean, Marjorie Bowman, M.D., M.P.A., and several of our medical school women faculty members joined in an informal roundtable discussion about their experience as women physicians and the importance of women physicians in health care.



(Left to right) Drs. Sheela Barhan, Brenda Roman, Mary McCarthy, and Marjorie Bowman discuss life as women in medicine. (Not pictured: Dr. Therese Zink)

Q: What attracted you to medicine?

Barhan: I was initially fascinated with science and biology. I enjoyed learning about how body systems functioned and malfunctioned. Being able to fix problems and help people live better was the ultimate positive reinforcement that helped me pursue a career in medicine. Later I found that I particularly enjoyed applying this knowledge and skill in the primary care and reproductive care of women.

McCarthy: I always loved biology, and the biology of human beings was the most fascinating. To be able to care for and cure a fellow human being is the greatest of all honors.

Roman: Love of science, combined with a desire to help people. Since my family heritage was in farming and teaching, I did not know any physicians other than my pediatrician growing up—and it really was my high school guidance counselor who encouraged me to consider becoming a physician.

Zink: I grew up on a farm just outside Dayton where my backyard became my biology lab. I delivered lambs, butchered lambs, took organs in to school for show and tell. I was intrigued. I did well in science in high school. My father was a dentist. I started helping him in the office when his staff took vacations during the summer while I was in middle school and junior high. I knew I didn't want to be limited to people's mouths.

Bowman: I also grew up on a farm, although it was a dairy farm. My extended family had little access to health care, and I felt I wanted to make a difference in ensuring that people had access to not only health care, but excellent health care. Medicine combined my strong interest in science with understanding the needs of populations of people, i.e., all of the aspects of all of the social-economic-psychological determinants of health.

Q: What challenges, if any, did you face as a woman in medicine?

Barhan: Taking personal time is the biggest challenge I have faced. A career in medicine is time consuming, easily encompassing 60 hours a week and sometimes significantly more. Adding family responsibilities to any demanding career easily consumes the remaining time. Giving myself permission to take personal time, from time that ends up being given to others, is the biggest challenge for me.

Roman: Fortunately I attended medical school in an era when there were no major barriers—and I am eternally grateful for those women a generation or two before me who were often the "first" ones. However, I had few female role models in academic medicine; in fact, when interviewing for my first job after residency at a medical school, I inquired about flexibility for part-time employment, as I was pregnant at the time. I received

a lecture about how academia requires full-time dedication, and that I would never have a successful career in academia. Fortunately, I found a more flexible environment at Wright State—and after 22 years (including my first 10 as a part-time faculty member), I think most would say that I have indeed been successful!

Zink: It was a man's world when I was in medical school in the early 1980's. One-fourth of my class were women. On hospital rounds, it was assumed I was a nurse. I learned how to interrupt so I could get my point made when I was at a meeting where most of the attendees were men.

Bowman: I had the amazing opportunity to be the first woman chair of a clinical department at the University of Pennsylvania School of Medicine starting in 1996—but the school had been existence since 1765—that about sums up the issues for women in medicine!

Q: What advice would you give to women considering a career in medicine?

Barhan: Practice being assertive and authoritative early on. Practice challenging the norm if you don't like it, or at least ask more questions and be heard. For some it comes easy, but for the majority of women, being quiet and agreeable is the default attitude because society responds to those likeable traits with positive reinforcement such that women carry these attitudes for life. With practice—and it really takes a lot of practice, because they'll occasionally get frowns—women can become better negotiators, and ultimately they will then get more satisfaction out of their career.

McCarthy: Reach for your dream!

Roman: Go for it! Being a physician is a wonderful privilege, and I really can't imagine a more personally satisfying career, despite the challenges.

Zink: It is a wonderful career with many options today. It is important to have a female perspective as we face the challenges in medicine today. It is a privilege to help people through the best and worst of times. We need to make health care accessible to all citizens.

Bowman: Don't think about the fact you are a woman most of the time. Remember, you are the excellent physician, the person that patient needs all of the time. Yes, I am the first woman *this*, and the first woman *that*, but being a woman is not how I get mutual goals met.

Q: What changes, if any, have you seen in how women physicians are treated by their peers, administrators, and/or patients?

Barhan: Patients have become more accustomed to women physicians. They believe in them and their abilities more now than 20 years ago when I got started. I am an ob-gyn and although one might think that women prefer to see women gynecologists, actually that was uncommon in the beginning of my career. I remembered patients asking to bring in the male member of the group, for *their* opinion and expertise. I remember patients asking if I was *really* the doctor. This hardly happens anymore.

McCarthy: In surgery, I have seen more women enter the field and other women are very supportive. We have a higher percentage of women faculty in our surgical program than any other program in the country. I proposed making the Association of Women Surgeons (an informal group brought together by Dr. Patricia Numann that met at the ACS) a formal society, and the following year it became a reality! My WSU colleague, Margaret Dunn, and I have both been presidents of this society. There is increasing acceptance of the role of women in surgery, but some challenges persist.

Roman: By and large, I feel that as more women have entered medicine, stereotypical comments about the role of women have diminished.

Zink: Women are more part of the mainstream. More women are in leadership positions.

Q: What accomplishment are you most proud of as a physician?

Barhan: Being an educator gives me the most satisfaction of all. I have the privilege and ability to educate two very important groups. For one, the next generation of physicians and two, the collegial environment in which I practice allows me to stay current so that I can be the best educator of my patients so they can make choices that are right for them.

McCarthy: Saving lives for a living. One of my friends has this posted in his trauma room (in Latin). Also my daughter Alison, who is in medical school.

Roman: On a patient level, it is simply knowing that I have made a difference in the lives of my patients, allowing them to feel hopeful again. In academia, I am most proud when I see our students succeed. With my involvement in the curriculum over many years, I hope that students not only have a solid foundation of knowledge and skills, but most importantly, leave with a curiosity about patients and strive to make a difference in their lives.

Zink: Having a voice in how medicine needs to change, teaching and mentoring the next generation of physicians. Giving voice to the value of reflection to help us be better physicians, to own what works and does not work about what we do and how we respond. To reflect on how what I do, affects me and helps me bring more compassion to who I am as a physician. Currently the great need in medicine is in primary care, but the U.S. system and training incentivizes students toward specialties. Being active on the state

and national level over the years for U.S. health care reform and moving toward national health insurance.

Bowman: Being able to drive to success across the entire spectrum of medicine—from one-on-one patient care, to community health, to public health, to political influences on medicine, to educational leadership—all to bring true care to the health of people.

Q: How do you feel you have made a difference as a woman in medicine?

Barhan: I try to be a positive and successful role model for medical students. I remember the strong impact my best teachers made on me as a medical student and resident in training. Some people are never forgotten because they're just that good. I try to emulate the same because I know that many students are watching and they deserve good role models.

McCarthy: Recognition of the family and personal aspects of physicians and their influence on the profession as a whole. Attention to factors influencing burnout and other parts of the physician.

Roman: I hope I have been a role model to students and psychiatric residents, both men and women—that one can “have it all” in being successful in a career while enjoying family and friends. While some might say that I have been successful at “balancing my personal life and my career,” I like the metaphor that I have a number of different balls to juggle—and that some of them are rubber and some are glass. The rubber balls symbolize projects, people, or aspects of my life that can be dropped and will bounce back, so no harm done. The glass balls were those that couldn't be ignored for long, but at times, could be carefully placed aside for a bit in order to finish a project before a deadline, for example.

Zink: I am a role model to younger women. I demonstrate a collaborative style. I demonstrate compassion, and empathy for all my co-workers and colleagues.

Bowman: I know that I am a role model for others, as one of the few deans who is a woman, and by the volumes of calls I get to mentor other women for success inside and outside of medicine. Yet most of my success is not by emphasizing my gender, but by emphasizing my desires and goals, which are universal strivings, something I try to instill in all of my mentees, no matter the race, gender, or socioeconomic status. It is not about my gender, it is about quality of care, quality of education, and meeting the needs of the entire population.

Q: Has the increase in the number of women physicians changed the delivery or quality of health care? If so, how?

Barhan: It has changed for the better. Women are, by nature, facilitating in conversation. It has been shown in research studies that this communication style allows physicians to *partner* with their patients. Patients are more likely to divulge barriers to care, and this partnership style helps patients identify their problems and participate in their own solutions. I feel that having more women physicians has been an influence for this positive change among all physicians, male and female.

Bowman: I agree. On average women doctors provide the same quality of care for people as men doctors, yet, on average, women doctors are a little different in style and emphasis. For some people, at the right time and place, or for

the right element, or the willingness for a patient to share a specific important aspect of their personal history, a woman doctor can be the best choice. We just need to be there and do it! Women in leadership are generally somewhat more collaborative and participative. Organizational leadership studies continue to find that style may well be what works best in today's environment.

Roman: Studies have shown that women spend more time with their patients, are sued less than their male counterparts, and generally demonstrate greater empathy.

Zink: Women have demanded more options about practice, saner hours, part-time positions, and time for family. This has benefited both men and women.

McCarthy: Yes, healthier physicians make for healthier patients. **VS**



Marjorie Bowman, M.D., M.P.A., has been the dean of the Boonshoft School of Medicine since October 2012. She has worked in the U.S. Department of Health and Human

Services, and served as a commissioned officer in the U.S. Public Health Service. At Georgetown University School of Medicine, she served as assistant dean and as division director for family medicine. She also served as chair of the Department of Family and Community Medicine at Wake Forest University for 10 years prior to moving to the University of Pennsylvania in 1996, where she was professor and founding chair of the Department of Family Medicine and Community Health and director of the university's Center for Public Health Initiatives.



Sheela M. Barhan, M.D., is an associate professor of obstetrics and gynecology and clerkship director for the Women's Health Rotation at the Boonshoft School of

Medicine. She is an active educator of WSU ob-gyn residents in training and medical students alike. Barhan is a member of the Wright State Physicians Obstetrics & Gynecology group and a fellow of the American Congress of Obstetricians and Gynecologists.



Mary C. McCarthy, M.D., is Elizabeth Berry Gray Chair of the Department of Surgery at Boonshoft School of Medicine. She is certified in surgery and surgical critical care and has

expertise in general and trauma surgery and critical care medicine. She is a Fellow of the American College of Surgeons and a member of the Halsted Society, the Society of Critical Care Medicine, and the American Association for the Surgery of Trauma.



Brenda Roman, M.D., is the assistant dean for curriculum and professor and vice chair for education in psychiatry at the Boonshoft School of Medicine. Roman's

clinical work has focused on the college population and the homeless population. Her scholarly work focuses on medical education, curriculum development, and women's mental health issues. In 2013, she completed the prestigious Executive Leadership in Academic Medicine® Program for women.



Therese Zink, M.D., M.P.H., is a native Daytonian, and a professor and chair of the Department of Family Medicine at the Boonshoft School of Medicine. Before

coming to Wright State, Zink was at the University of Minnesota in Minneapolis, where she served as a professor in the Department of Family and Community Medicine and the Rural Physician Associate Program. Her research interests include domestic violence and rural workforce.



Health care in the heartland

Regional partnership tackles health care disparities in rural areas

Rural America is facing a shortage of primary care physicians and health care providers. While almost a fourth of the U.S. population lives in rural America, only about 10 percent of U.S. physicians practice in rural communities, according to the National Rural Health Association.

However, the rural community surrounding Wright State University—Lake Campus in Celina, Ohio, is determined to find a solution.

Led by Robert P. Gill, M.D., a family physician with the Grand Lake Health System, physicians are teaming up with educators from the Boonshoft School of Medicine, Wright State University and Miami Valley College of Nursing and Health, Wright State University—Lake Campus, Cedarville University School of Pharmacy, and local foundations to introduce medical, nursing, and pharmacy students to the possibility of practicing in a rural area.

“In some of the rural practices, our physician population is aging, including myself,” Gill said. “We realize we have to replace ourselves.”

While Grand Lake Physicians Practices actively recruits doctors, Gill thought about other ways to attract clinicians to practice in the area. In the summer of 2013, Gill spoke with

Dean Parmelee, M.D., associate dean for academic affairs at the Boonshoft School of Medicine. That conversation resulted in a collaborative effort now called the Wright Rural Health Initiative.

Opportunity to learn in a rural setting

Through the Wright Rural Health Initiative, medical students have the opportunity to learn the practice of medicine in a rural health setting. The initiative provides a means of collaboration among educators, communities, health care providers, and interprofessional students to increase the number of primary care and primary care clinicians in Ohio’s rural areas.

The Wright Rural Health Initiative advisory group, which includes representatives from Wright State’s medical school, nursing college, and Lake Campus, along with the Grand Lake Health System, Mercer Health, Health Partners of Western Ohio, Cedarville University School of Pharmacy, HealthPath Foundation of Ohio, Western Ohio Educational Foundation, and other community partners, has been meeting throughout the past year to develop and

implement the initiative. A regional summit was held at WSU—Lake Campus last February.

Parmelee explained that part of the Boonshoft School of Medicine’s social mission is to prepare medical students for careers in primary care in underserved areas. “We also want to provide our students opportunities to learn medicine in hospitals, clinics, and practices that provide quality care outside of the more customary academic medical centers and urban systems,” he said. “Our hope for the Wright Rural Health Initiative is to have another very special set of experiences in a very different setting from our urban and suburban health care domains in the Dayton area.”

The rural setting of the five counties that include the Lake Campus and its neighboring health systems is representative of much of Ohio where there is a great shortage of health professionals, including primary care physicians.

“So for the Boonshoft School of Medicine, our students will have this additional learning environment that is both special and is very much a part of our social mission,” Parmelee said. “For the health care systems of the five counties, a program like this will help with the recruitment and retention of physicians, an expectation being that students who have

the experience there would consider practicing there after residency.”

Therese Zink, M.D., M.P.H., chair of the Boonshoft School of Medicine Department of Family Medicine, is an advocate of the Wright Rural Health Initiative. Before she became chair in January 2014, she served as a professor in the Department of Family and Community Medicine and the Rural Physician Associate Program at the University of Minnesota in Minneapolis.

“We have huge needs for health care providers in rural areas,” Zink said. “The Affordable Care Act underlines the need for more family medicine physicians, especially in rural America.”

Exposure to rural areas in medical school key

From her experience at the University of Minnesota, Zink learned that exposure to rural areas during medical school is one of the keys to attracting future doctors to consider practicing in small communities. In addition, offering a rural health care residency makes a difference. She and others are developing relationships with health partners, hospitals, and physicians.

In June, The HealthPath Foundation of Ohio gave a \$73,663 planning grant to the Boonshoft School of Medicine to help develop the rural health training track. The goals of the Wright Rural Health Initiative fit with the foundation’s strategic initiative, Strengthening Ohio’s Safety Net (SOSNet), which seeks to improve health care access for underserved populations, with a primary focus on rural areas, and to enhance the distribution and diversity of the health care workforce.

“The partnership between the Boonshoft School of Medicine, the WSU-Lake Campus and surrounding communities holds great promise for success in providing an excellent experience for medical students in learning about the practice of medicine in a rural environment and the quality of life that this kind of community can provide,” said Theresa Wukusick, executive director of the HealthPath Foundation of Ohio. “In addition, the focus on inclusion of an interprofessional learning component to the project is in alignment with the foundation’s goals and emphasis on the provision of patient-centered, team-based care.”

John Pascoe, M.D., M.P.H., professor of pediatrics at the Boonshoft School of

Medicine, is the principal investigator for the grant. He runs the meetings and harvests and coordinates the ideas. “Everyone involved in this initiative is committed to medical education, helping families, and recruiting physicians into the area,” Pascoe said. “There is a lot of synergy.”

Pascoe and others are working on an implementation grant and will submit it to the HealthPath Foundation in February. If approved, this would be a \$300,000 grant spread over two or three years.

Strengthening ties with regional health partners

In the meantime, the various members of the initiative are working with health partners in the region. “Moving forward, we’ll be strengthening those ties with our health partners north of Dayton, including Grand Lake Health System, Mercer Health, and Health Partners of Western Ohio,” Pascoe said. “Medical, nursing, and pharmacy students will be included in the interprofessional curriculum being developed for the Wright Rural Health Initiative.”

In April 2015, interprofessional students from the WSU Boonshoft School of



Medicine, the WSU College of Nursing and Health, and Cedarville University School of Pharmacy will begin an interdisciplinary curriculum, recognizing the team approach to patient care to achieve optimal health outcomes for patients in a rural setting. In May 2015, Pharm.D. students will begin rotations into the area.

“The WSU College of Nursing and Health is working with the Boonshoft School of Medicine on developing a more structured experience for those nursing students who are focused on working in a rural area,” said Donna Curry, associate dean for graduate programs and professor at the College of Nursing and Health.

Grand Lake Health System is thrilled about the initiative and the possibility of medical students returning after residency. “We’re really excited to work with Wright State to give the medical students exposure to rural medicine,” said Michelle Wasmund, executive director of physician practices. “We have a good health care system. This is a good place to live and work.”

Wasmund said it is challenging to recruit physicians to rural areas. “The majority of physicians prefer to stay in urban or suburban

areas,” she said. “It’s really difficult to get them to consider a rural setting.”

Angela Hale, director of physician services for Mercer Health, another health care services provider in the region, agreed with Wasmund about the challenge of recruiting physicians to a rural area.

“With an aging population of family practice providers in our community, the real issue of having providers to care for our community is becoming critical,” Hale said. “Even though we have local medical schools, the students are not staying here. We hope to change future providers’ understanding of rural health care by providing them with a firsthand look at family practice in a rural community.”

Gill and several of his colleagues have volunteered to be preceptors for the medical students. Under the rural clerkship, students follow physicians on their rounds and interact with the patients. They take time to discuss patient’s cases with the medical students. “We take teaching the students very seriously,” Gill said. “We want them to have the best educational experience.”

Training the next generation of doctors

Gill views this opportunity as a privilege. “We want to give something back to medicine,” he said. “We’re helping to train the next generation of doctors.”

The medical students experience working with a different population of people, who have concerns or illnesses the students might not have been exposed to in an urban or suburban setting.

Jordan Brunswick, a fourth-year medical student, has done rural health clerkships in pediatrics and family medicine. Gill was one of his preceptors. “It was a great learning experience for me to see what the day-to-day life is like for a rural physician,” said Brunswick, who is from Maria Stein, a rural farming community in Mercer County, Ohio. “I was already interested in rural health before doing these rotations. However, the experience confirmed that I would be very comfortable practicing rural medicine.”

During Cody Adkinson’s rural health clerkship, he was introduced to patients who were farmers or factory workers. Under the direction of his family medicine preceptor, Adkinson was able to assist with various family medicine procedures, including local

anesthetic injections, removing skin lesions, and intramuscular and bursa injections. In his pediatric clerkship, he helped with newborn screenings and learned about circumcisions on infants. “I definitely see myself in a rural setting,” he said. “I grew up in Bellevue, Ohio, a small town. I like knowing everyone I see and the friendly environment of a small town.”

Erica Taylor, M.D., director of medical student education for the Boonshoft School of Medicine Department of Pediatrics, described the initiative as an introduction to a population that the medical students might not have seen and considered. “We talk about disparities in health care,” Taylor said. “Rural health is an untapped community we need to serve.”

She explained that this is an opportunity for medical students to determine whether rural health is for them. “It has to be the right fit for the medical doctor and the community,” she said.

A sense of community

Many students report a sense of community, which has embraced them during their experience. “It is obvious that a need is there,” Taylor said. “Our students are too

early in their medical careers to be considered for an immediate position, but we are planting a seed. Our goal is to foster a passion to serve all communities, including this one.”

To help with living expenses, medical, nursing and pharmacy students can stay for free in a four-bedroom townhouse-style apartment at the Lake Campus.

“The Western Ohio Educational Foundation provided a townhouse-style apartment to the medical, nursing, and pharmacy students rent-free because this is a way to help attract those students to the area,” said Julie Miller, development officer of the Western Ohio Educational Foundation. “This eases the students’ burden of finding housing.”

The medical school is also paying for part of the cost of the student housing.

The foundation, which has been committed to the success of the Lake Campus and its students for more than 50 years, offers scholarships to undergraduate students who want to pursue careers in nursing, medicine, and pharmacy.

Recently, the Lake Campus, in conjunction with the Wright State’s nursing college, announced that WSU-Lake Campus will

offer a Bachelor of Science in Nursing four-year degree program in the fall of 2015, pending approval.

Foundations in the community, including the Mercer Health Care Foundation Fund of the Mercer County Civic Foundation, also are excited about the possibilities that the Wright Rural Health Initiative and the four-year nursing program will bring to the region.

John Irmscher, chair of the advisory committee of the Mercer Health Care Foundation Fund, explained that part of the mission of the foundation is to improve health care in Mercer County. The fund is committed to assisting the local hospitals in various ways, including recruitment of physicians and other health care professionals.

“The Mercer Health Care Foundation Fund, under the umbrella of the Mercer County Civic Foundation, is excited about the Wright Rural Health Initiative and the four-year nursing program at Wright State University-Lake Campus,” Irmscher said. “These developments will help us improve health care in Mercer County as more medical, nursing, and pharmacy students are introduced to providing health care in a rural area or small town. This is an investment in our future.” **VS**
—Heather Maurer



Frontline defense

Public health system prepares for battle against Ebola

The largest Ebola epidemic in history began with the death of a small boy named Emile in southern Guinea near the borders of Sierra Leone and Liberia in West Africa.

Just two years old, the toddler fell ill with a fever. He died two days later on December 28, 2013. The mysterious disease soon claimed his three-year-old sister, Philomena, his mother, Sia, and his grandmother, Koumba. Mourners at his grandmother's funeral and a health care worker are believed to have carried the virus to nearby villages, where it spread rapidly. By March 20, 2014, 59 Guinea residents had died of the fever, which Guinea confirmed as Ebola. By the end of March, two cases were reported in Liberia, and in May, Ebola reached Sierra Leone.

On September 20, Thomas Duncan flew from the capital of Liberia, Monrovia, to Dallas, Texas. On September 30, he became

the first person to be diagnosed with Ebola in the U.S. He died a week later in a Dallas hospital. Within days, two nurses who had cared for him tested positive for Ebola.

By the end of October 2014, the World Health Organization (WHO) reported a total of 13,567 suspected cases and 4,960 deaths. Almost all of the cases were in the three countries of Guinea, Liberia, and Sierra Leone.

Could an Ebola epidemic happen here?

The United States is not immune to Ebola. The death of Thomas Duncan, and the infection of the two nurses who treated him, have brought Ebola to the forefront of the national discussion. From news shows to water cooler discussions, Americans are asking whether an Ebola epidemic could happen here.

Fortunately, the United States has a frontline defense against an uncontrolled outbreak of a deadly disease such as Ebola: a strong public health system.

According to James Gross, M.P.H., the health commissioner for Public Health—Dayton & Montgomery County (PHDMC), the U.S. public health system differs from other health systems because it involves local public health departments, hospitals, clinics, health professionals of all types and every level of the local, state, and federal health agencies.

“The U.S. public health system also monitors what is going on regarding the different diseases,” said Gross, who also is a graduate of the Wright State University Master of Public Health (M.P.H.) program. “It monitors how they are being identified, how they are being treated, and the success of stopping their spread. It’s an integrated system that needs all parts to work together.”

That’s not the case in parts of West Africa, Gross said. “The medical care is spotty, the number of facilities is quite limited, and people involved in health care are often not as well trained as they are in the United States,” he said.

Furthermore, the degree of communication from various areas, the labs for medical testing, and the overall quality of care lags behind that found in the United States. “Relatively poor countries cannot match the quality of care found in first world countries,” said Gross, who has served as the PHDMC health commissioner for seven years and serves on the voluntary faculty of the M.P.H. program.

Like PHDMC, public health organizations throughout the United States work to prevent the spread of disease, protect the population against health threats in air, food, and water, promote healthy behaviors, reach out to vulnerable populations, mobilize community action through partnerships, prepare for and respond to public health emergencies, and serve as a public health information resource to physicians and other health care workers.

Infection control practice is key

Thomas Herchline, M.D., professor of internal medicine at the Boonshoft School of Medicine, is an infectious disease expert and also serves as medical director for PHDMC. He explained that much of the spread of Ebola in Africa has been within hospitals or within the homes of families providing care for very ill individuals. In the United States, these patients would have been hospitalized.

“Infection control practices in the United States are dramatically different than in the affected African countries and would be much more effective at preventing spread of the Ebola virus,” said Herchline, who has lectured for the medical school’s Master of Public Health Program, has been a preceptor for M.P.H. students doing their practice placement at PHDMC, and has been an adviser for M.P.H. students completing the culminating experience research project.

Herchline explained that contact tracing, as was done for the Ebola patients in the United States, is key to preventing the spread of disease.

In neighboring Greene County, home to Wright State University, the Greene County Combined Health District (GCCHD) is monitoring the situation through communication with federal, state, and regional partners. It is working closely with area hospitals and monitors hospital data continuously. The public health staff distributes information about personal protective equipment, answers questions, and remains on call to conduct an epidemiological investigation, implement case contact tracing, and arrange for specimen collection to state and federal health diagnostic laboratories.

“While the probability of an outbreak is low, there is the possibility of a case occurring here or elsewhere in the United States,” said Melissa Howell, M.S., M.B.A., M.P.H., R.N., R.S., health commissioner of the Greene County Combined Health District. “There is a possibility that a person could be infected, not yet ill, and travel, unrestricted and unknowingly, to areas where the disease has not yet spread.”

The GCCHD is vigilant in scanning available information for unusual activity. She explained that detection requires trained communicable disease staff and epidemiologists to know what to look for—fever, travel history consistent with the virus, and information that can be ignored. “This level of training to discern and sound an alarm cannot be replaced by computerized decision models,” said Howell, who graduated from the medical school’s M.P.H. program in 2007.

The GCCHD has issued press releases regarding Ebola and has been on several conference calls with the Centers for Disease Control and Prevention (CDC) and the Ohio Department of Health to receive updates. It has provided guidance to those entities that have international travel concerns and disseminated information to hospitals and health care providers.

“While most Americans know public health is important to them, they aren’t always sure

about what is being done to protect them behind the scenes,” she said. “Outbreaks such as Ebola raise awareness of how important it is to have a public health system that works.”

Even without a vaccine for Ebola, public health departments can implement nonpharmaceutical interventions to stop the spread of disease. These include quarantine, isolation, cordon sanitaire (cordonning off areas stricken by the disease), school closures, social distancing measures, targeted pharmaceutical intervention, and social media messaging.

Dallas death a wake-up call

Along with local and state health departments, the U.S. health system has been preparing since late March for the possibility of Ebola in the United States. What happened in Dallas was a wake-up call for hospitals nationwide, said James Ebert, M.D., M.B.A., M.P.H., F.A.A.P., Oscar Boonshoft Chair and director of the Center for Global Health and the Master of Public Health program, and associate professor of community health and pediatrics.

“Health issues anywhere in the world can potentially affect other points in the world quickly due to high speed transportation and shipment of goods,” he said. “However, people can survive Ebola through IV fluids, ventilators, and antibiotics used to address secondary infections.”

In spite of their best efforts, the response of U.S. public health officials to the Ebola threat was not without controversy. After the two Dallas nurses were exposed to Ebola, it seemed as if things were changing every few hours. Thomas Frieden, M.D., M.P.H., director of the CDC, was interviewed daily by the media and testified before the U.S. Congress. On October 17, President Barack Obama appointed Ron Klain as the nation’s Ebola “czar” to manage federal efforts to monitor the deadly virus.

The CDC issued tighter guidelines for health care workers caring for patients with Ebola. Those guidelines address rigorous and repeated training, skin exposure, and supervision by a monitor.

System is working

Public health officials argue that the nation’s local, state, and national public health systems are working to protect Americans from an Ebola epidemic. According to the Ohio Department of Health, the CDC has protocols, professional staff, and a strong network of partners to protect against further spread of disease. When one of the Dallas nurses traveled to Ohio and later developed Ebola, the Ohio Department of Health worked with local health officials in Summit County, Ohio, to identify people with whom the nurse may have had direct contact. Epidemiological staff helped state and local health care officials conduct contact tracing, identifying people the patient may have contacted. To date, no one in Ohio has contracted the Ebola virus.

In the Greater Dayton area, public health officials, with ties to the Boonshoft School of Medicine Master of Public Health program, are behind the scenes working with local hospitals and health providers to provide the public with information.

Public Health—Dayton & Montgomery County provides information about Ebola to local TV stations, newspapers, radio stations, and social media. Gross said the likelihood of an outbreak in Dayton is the same as with any other community that has individuals routinely coming in from West Africa. “Remember, the disease is spread by coming in direct contact with bodily fluids from someone who has Ebola and is showing symptoms,” Gross said. “It is not easily contagious like the flu.”

Ebert explained that the CDC plays a vital role in public health efforts to contain a disease outbreak. “Providing correct timely information helps dispel unnecessary fears,” Ebert said. “The Centers for Disease Control and Prevention is the national leader in public health. Policies should come down from the CDC. The CDC communicates closely with the World Health Organization.”

The threat of Ebola continues to present new challenges, such as weighing the liberty of returning health care workers and public safety. In late October, New York and New Jersey grappled with whether to quarantine

returning health care workers. Nurse Kaci Hickox, who was quarantined in New Jersey in an isolation tent after treating patients from Sierra Leone, defied a quarantine in Maine, arguing that she had no symptoms of the disease and tested negative twice. The CDC updated its Monitoring and Movement Guidance, defining risk levels for people who may have been exposed to Ebola. The guidance recommends stricter actions for higher levels of risk.

Crisis focuses national attention

Despite the much greater number of deaths from complex health threats such as obesity, diabetes, and heart disease, the public tends to focus on national health issues more when a crisis hits. “Outbreaks capture the concerns of Americans like no other topic,” Howell said. “Fighting infectious disease requires vigilance on the part of public health to scan for threats, respond early and with enough force to counter the spread of disease, and continue to promote the science of public

health in the face of mass concern.”

As for Ebola, she believes the United States is prepared to stop the deadly virus. “President Obama and Thomas Frieden, the director of the CDC, have made this a national priority,” she said. “We are subject to attacks from disease-causing agents, but the U.S. public health system is quick to respond and implement interventions to stop the spread of disease. The public health system is critical to the welfare of people in the United States.”

Despite our worst fears, there have only been two deaths from Ebola in the U.S. since the outbreak began. The public health system has done what it was designed to do. As the battle against Ebola continues, the CDC and the public health system will continue to implement lessons learned and adjust guidelines to better protect Americans.**VS**
—Heather Maurer

Master of Public Health Program equips graduates with leadership skills to better serve the population



The Boonshoft School of Medicine offers a Master of Public Health (M.P.H.) degree program tailored for working public health and other health services professionals in southwestern Ohio who serve more than 2.8 million residents.

The program is designed for in-career professionals as well as traditional undergraduate students, said James Ebert, M.D., M.B.A., M.P.H., F.A.A.P., program director.

“Our program is a community-based public health practice program that prepares people to understand and

address problems of public health in the community,” he said. “Our program offers four specialty areas—emergency preparedness, global health, health promotion and education, and public health management.”

The program matriculated its first class in 2004. The medical school also offers an M.D./M.P.H. dual-degree for medical students. Of the more than 200 graduates of the M.P.H. program, several have become health commissioners and work in public health departments.



James Gross, M.P.H., the health commissioner for Public Health—Dayton & Montgomery County (PHDMC), was one of the first M.P.H. students to graduate from the program in 2005. As the chief executive officer of PHDMC, he oversees about 75 public health programs, 275 employees, and an annual budget of almost \$32 million. While he has worked in public health for more than 30 years, he began his career as a teacher and a coach after completing his undergraduate degree at Wright State University in 1977. Gross, who also serves on the voluntary faculty



of the M.P.H. program, was appointed health commissioner seven years ago and plans to retire in early 2015.

Melissa Howell, M.S., M.B.A., M.P.H., R.N., R.S., health commissioner of the Greene County Combined Health District, is a 2007 graduate of the M.P.H. program. She credits the program with enhancing her communication and leadership skills in public health. With a background in nursing, Howell pursued a career in public health after anthrax letters were discovered in 2001. She has worked as an epidemiologist for PHDMC



and has been a health commissioner in Preble and Greene counties.

“My concentration in the M.P.H. program was in preparedness, which allowed me to explore the public health system beyond the local health district,” she said. “My ability to build lasting partnerships and develop strategies to address issues in public health in the context of global health was improved by attending Wright State’s program.”

Howell, along with a Wright State University nursing professor, developed the Academic Nursing Coalition for



Disaster Preparedness. The regional group that meets for epidemiology, infectious disease, and information technology was developed along the same regional approach model.

“Ideally, we hope to strengthen public health’s ability to translate the return on investment made into public health initiatives, develop dashboards for measuring the impact of initiatives that address complex health issues, and further develop the Public Health Unified National Data System for financial stability of the overall public health system,” she said.



1,000 Words

The culmination of four intense years of sacrifice, sleepless nights, dedication, and just plain hard work pay off in an instant when the Match Day envelope is opened, Kimberly Grannis and her husband, Mike, react when they learn where she will spend the next years of her life as a resident physician.

Photo Will Jones

Mastering research

Student researchers are discovering new ways to help diabetic patients

Master's degree students in the Department of Pharmacology and Toxicology are making discoveries that have the potential to save limbs and reduce kidney failure in diabetes patients.

Led by Khalid Elased, Pharm.D., Ph.D., associate professor, and Nadja Grobe, Ph.D., a research assistant professor, several master's students in the Department of Pharmacology and Toxicology have published their findings in well-known journals, including the *American Journal of Physiology Renal Physiology*, *PLOS ONE* and *Experimental Physiology*, as first authors or coauthors. They also have presented their research results at national conferences such as the American Diabetes Association, American Heart Association, American Society of Nephrology, and the European Society for the Study of Diabetes.

Their research focuses on the mechanisms of cardiovascular and renal, or kidney, complications of diabetes. They have found a urinary biomarker, which is far more reliable than the currently practiced method of finding protein in the urine to identify diabetes. They also

have found that exercise and diet play a key role in resolving diabetes.

"When people are diagnosed with diabetes, physicians tell their patients to exercise and diet," Elased said. "However, many patients do not follow through with exercise and diet."

As a result, patients end up taking medicine to help with diabetes. While the medicine helps with the diabetes, it also can cause the patient to gain weight.

Elased and his students found that exercise is as good as medication. He explained that through exercise, the blood glucose level and kidney function become normal. The urinary biomarker shows that the threat of diabetes has significantly decreased. "The miracle of exercise has been proven," he said. "Even if you don't lose weight at the gym, you are still doing good things metabolically."

Grobe has been instrumental in training the students in Elased's lab. She has been assisting Elased and the students to set up, plan and conduct experiments. The lab has been using



(L-R) Khalid Elased, Pharm.D., Ph.D., associate professor; Laale Alawi, M.S. student, and Nadja Grobe, Ph.D., research assistant professor, at work in the lab.

a sophisticated way of analyzing urine samples through mass spectrometry, an analytical technique used to identify molecules present in solids, liquids, and gases.

The students analyzed urine samples from healthy, untreated diabetic, and treated diabetic mice. They identified a protein that is only excreted in those who have diabetic kidney disease or will eventually develop kidney problems. "The students' findings may lead to the discovery of new noninvasive markers for diabetic kidney disease," Grobe said. "Invasive biopsy samplings may be avoided."

Hari Somineni, one of Elased's master's students, graduated in April 2013 and defended his thesis in May 2013. His first author paper, "Daily exercise training protects against albuminuria and ACE2 shedding in db/db diabetic mice," was published in February 2014 in the *Journal of Endocrinology*, which focuses on endocrine physiology and metabolism. He also was a coauthor of a paper, "Rosiglitazone

treatment of type 2 diabetic db/db mice attenuates urinary albumin and angiotensin converting enzyme 2 excretion," in *PLOS ONE*, an international, peer-reviewed, open-access, online publication.

Somineni, who is now a research assistant at Cincinnati Children's Hospital, also discussed his research at the American Heart Association and the American Diabetes Association annual meetings. "We discovered that physical exercise training is effective in improving type 2 diabetes and associated complications, with no compromising side effects," Somineni said. "Physical training programs should be widely adopted into the medical care system."

Originally from India, Somineni came to the United States to pursue a career in science. "My experience at Wright State gave me the confidence to do significant research," he said. "By working alongside others who share the same goals as me, we will make a difference in the lives of many patients."

Laale Alawi is a current student in the master's program. Originally from Saudi Arabia, she did not know much about research laboratory techniques when she arrived. Elased, Grobe, and students like Somineni inspired and encouraged her.

She also is researching urinary biomarkers for kidney diseases in type 2 diabetes and hypertension, or high blood pressure. Alawi is working on two papers for publication in research journals. "I really love this experience," she said. "I'm trying to use every minute to learn more and more."

Like many other students, Alawi views Elased as more than a professor. He is a mentor. "Dr. Elased is patient and inspiring," said Alawi, who would like to work in a research laboratory after she graduates in the fall of 2014. "He believes in me and encourages me in my research." **VS**

—Heather Maurer

Age old question

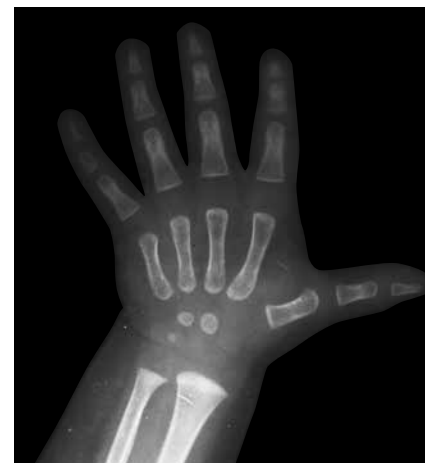
How old is your skeleton? It seems like a simple question. As old as you are, right?

Not exactly.

Dana Duren, Ph.D, director of orthopaedic research for the Department of Orthopaedic Surgery, Sports Medicine, and Rehabilitation, and associate professor in the Division of Morphological Sciences and Biostatistics at Wright State University's Lifespan Health Research Center, said while skeletons develop in the same way, the timing and tempo can vary from person to person. One child may develop early, another later; one may develop rapidly and another at a slower pace. On the outside, it's not easy to tell if an 8-year-old has six years or 12 to finish growing.

For some children, finding out exactly how mature their skeleton is and whether they're done growing is critical. Short stature, for example, can indicate a number of health issues, from hormonal disorders to genetic diseases. Diagnosis and treatment can depend on accurately calculating the age of the child's bones and how much time they have left to grow.

In an age when medical care has seen so many technological advances, Duren said physicians and researchers still evaluate bone age by looking at X-rays, using information gathered from the great-grandparents of today's children.



\$1.6 million grant to update data

Duren and her colleagues hope to change that. The National Institutes of Health's National Institute of Arthritis, Musculoskeletal and Skin Diseases recently awarded a \$1.6 million grant to Duren's team to update the data used to determine bone age, expand the data to include a racially and ethnically diverse population, and more accurately predict whether a child's skeletal maturation will speed up or slow down. A second grant of \$50,000 from the Boonshoft School of Medicine's Translational Research Development Grant program will allow them to create an open-source, semi-automated program to calculate bone age.

Duren's co-investigators include Richard Sherwood, Ph.D, director of the Division of Morphology and Biostatistics; Ramzi Nahhas, Ph.D, a biostatistician with the division; Travis Doom, Ph.D., and Thomas Wischgoll, Ph.D., both associate professors of computer science and engineering; Elizabeth Ey, M.D., a pediatric radiologist and medical director of medical imaging at Dayton Children's Hospital; and Babette Zemel, Ph.D., of the University of Pennsylvania School of Medicine Department of Pediatrics.

Their work will focus on the Fels Method for determining bone age, Duren said, which was originally based on data from Wright State's Fels Longitudinal Study.

The study, started in Yellow Springs, Ohio, in 1929, collected a myriad of information on the growth and development of children. Participants were enrolled before birth and tracked throughout their lives. Many of the original participants had children, grandchildren, and even great-grandchildren followed in the study, as well. The data from the Fels study was used to create the pediatric growth charts used from 1978 to 2000 to monitor a child's growth compared to his or her peers.

The Fels method

In the 1980s, researchers led by Dr. Alex Roche used Fels data to create the Fels Method for determining skeletal maturity, or bone age. Roche's new method used 98 indicators to evaluate a child's left hand and wrist X-ray. The method looks at individual bones to see how many appear on the X-ray, their size, and their shape. Each indicator is assigned a value, and those values go into an algorithm to calculate the bone age. The Fels Method also reports a standard error, an important consideration when bone age is used to determine the course of medical treatment.



"It's a great standard," Duren said, "but is underutilized in clinical practice."

Duren said even Ey, one of her research partners for the project, doesn't use the Fels

Method in her clinical practice. Researchers have tried to automate the process, but with limited success.

Radiologists instead tend to use the older method, Greulich-Pyle, based on a series of hand and wrist X-rays done in the 1930s. The X-rays were compiled into a book, or atlas, based on age. Physicians compare a patient's image to the ones in the book to determine bone age.

The hand and wrist have 27 bones, plus the radius and ulna in the forearm. They begin as mostly cartilage. As the bones undergo ossification, more become visible on the X-ray. Images from older teens and young children don't take as much time to score as images from children from about 10 years old into the early teens.

Ey said most radiologists are trained in the Greulich-Pyle method. While X-rays don't always exactly match the ones in the atlas, she said it comes pretty close and only takes about five minutes. The Fels Method, by comparison, would take her much longer.

"The problem is that each assessor's eye goes to a different thing," Duren said.

With Gruelich-Pyle, two experts could look at the same X-ray from a patient and arrive at two different ages, especially if they focus on different markers.

Duren hopes their work will make the Fels Method as fast and easy for physicians as the Greulich-Pyle.

"We want it to be as accurate as having a human eye on the X-ray, but with the speed of the simpler atlas method," she said.

Diversifying the data

The issues with current bone age calculation go beyond just speed. The children used to set the Greulich-Pyle and Fels standards were Causasian, and even the ones used in the Fels Method would be well into their 40s and 50s by now.



“That’s not what our population looks like today,” Ey said. Physicians realize that affects the accuracy of the bone age calculations.

Sherwood said secular trends show children are maturing earlier and undergoing puberty at younger ages. Puberty and bone development are closely linked, making it possible the way the bones mature are different, as well. Using a 40- or 80-year-old standard may not provide an accurate bone age for today’s children.

The lack of diversity in the initial samples raises issues as well. Researchers don’t know if the bones of an African-American, Asian, or Hispanic child develop at the same rate as a Caucasian child, but still use X-rays of Caucasian children as the standard. Using a Caucasian standard for children of other races could produce an inaccurate bone age.

“We know there are a lot of skeletal differences between African-American and Caucasian children, for example,” Sherwood said. “If you don’t look at (bone growth), you’re never going to know.”

When Ey does a bone age evaluation for a healthy child of normal height, it tends to measure one or more standard deviations above the current standards, a clear sign bone age has shifted, due in part to nutrition improving growth rates.

Their work will do more than just update the data, said Nahhas. They hope to be able to track the variations in how the growth process has changed in the decades since the first images were evaluated.

The Fels Method’s 98 indicators can provide the medical community with a tremendous amount of information about how children grow and mature. Sherwood said maturation of some indicators will likely occur earlier, while others may have slowed down. Pinpointing those changes could provide insight into why children are reaching puberty earlier. In girls, especially, that can stunt their growth, since the hormones released by the onset of menstruation will shut down bone growth soon after. In children with short stature, it limits the window for effective diagnosis and treatment.

Duren and her team will be looking at more than 8,000 hand and wrist X-rays collected from racially diverse groups of children throughout the country between 2002 and 2007. Many of the images will come from the Bone Mineral Density in Childhood Study conducted by the National Institute of Child Health and Human Development.

Duren’s three research assistants, Carol Cottom, Kimberly Lever, and Sharon Lawrence, will evaluate each X-ray by hand using the Fels Method.



FelsXpress will provide faster diagnosis

The Translational Grant from the School of Medicine will allow Doom and Wischgoll to take the information gathered and develop a beta version of a program for computers, phones, and tablets called FelsXpress. The program would provide a faster diagnosis using updated information, something they hope doctors will embrace.

Doom said the goal is to have a physician upload the X-ray, enter the child’s chronological age, and have the computer do all of the work, but still allow the physician to review the information that led to the bone age calculation.

“It can’t be a black box,” Doom said. “They have to be able to understand how it was done.”

Using pattern recognition technology, the program will be able to ask for any additional information and then provide a visual result and an indication of how confident it is in the answer. Doom said that allows the physician to concentrate his or her efforts on the most important indicators for each patient.

“We’re not changing the science,” Doom said. “We want to make (the Fels Method) more accessible.”

Physicians know the data used in the Greulich-Pyle Atlas needs to be updated Ey said, and they also understand the Fels Method is superior. She believes her colleagues will embrace the new data and, hopefully, FelsXpress.

Duren and her team will need to work to get FelsXpress into the right hands.

“People think the Fels Method is too difficult; they don’t want to learn a new method,” Sherwood said. “We have to find a way to show the people who train the radiologists this method is the best.” **VS**

—Shannon Neal

In Residence

Policy matters

Former family medicine chief resident one of two nationwide selected for health policy fellowship

A year ago, Melanie Raffoul, M.D., was the chief resident of the Wright State University Boonshoft School of Medicine Family Residency Program. But today, she is working on health policy and teaching at Georgetown University as one of two people nationwide selected for the 2014-15 Robert L. Phillips Jr. Health Policy Fellowship, a joint research and clinical fellowship program between the Robert Graham Center for Policy Studies in Family Medicine and Primary Care and Georgetown University.

In September, Raffoul moved to Washington, D.C., to begin the one-year, full-time program, which combines scholarly research and clinical practice. She is completing master’s course work in public policy at Georgetown University while engaging in collaborative research with the Graham Center. She also is teaching and working clinically in an urban community health center.

The Robert Graham Center was developed by the American Academy of Family Physicians

(AAFP) with a combined emphasis on research and advocacy for family medicine and primary care. The center is dedicated to improving the health of individuals and populations through enhanced primary care by informing health policy. The center also serves as the national policy center for the AAFP.

“Working in the Washington, D.C., area and developing as a faculty member, while still being given the opportunity to learn, is exciting,” said Raffoul, who earned her



medical degree from the Boonshoft School of Medicine in 2011.

She is developing a health policy research project related to graduate medical education funding. “Working on health policy research and ideas is challenging,” said Raffoul, who wants to work on health care policy, focusing on health disparities for vulnerable populations, especially women and children. “But hearing members of the Robert Graham Center discuss these issues is invigorating.”

She has found that she enjoys the teaching part of the fellowship. At the Georgetown University Medical Center Department of Family Medicine, she is teaching an evidence-based medicine (EBM) course to medical students. In EBM, decisions and policies are based on evidence, not only the beliefs of practitioners, experts, or medical administrators. She also teaches a service-learning class. In addition, she will teach a population medicine class addressing what health care providers do to help provide the best medical care not only for the individual but also for the larger population. She also will teach sessions in the family medicine clerkship.

In addition to her health policy research and teaching, Raffoul is practicing in an urban community health center. She described the experience as being similar to the Five Rivers Health Family Health Center, the federally qualified health center (FQHC) where Boonshoft School of Medicine family medicine residents practice. However, the clinic in Washington, D.C., is bigger and the population involves more immigrants.

Raffoul is no stranger to working with people from different backgrounds. During her

family medicine residency at Wright State, she spent two months abroad working in a medical setting in Beirut, Lebanon, a Palestinian refugee camp, and a clinic serving underserved individuals. “I will always remember the gratitude shown to us by every patient,” she said.

In high school, she spent a few years in London, England, where her father served as a liaison for the U.S. Air Force. “This was one of the best times of my life,” she recalled. “I traveled and saw the world. I learned a lot from my father, who is very diplomatic and engaging. He has excellent intercultural skills.”

Physicians like Raffoul are the future leaders in the development and promotion of primary care health policy, said Andrew Bazemore, M.D., M.P.H., director of the Robert Graham Center. “We were very impressed with Melanie’s history of leadership, active interest in health policy, and global and multicultural perspective and experience,” Bazemore said.

While at Wright State, Raffoul was very active in shaping policy at the state level. She was a member of the Ohio Academy of Family Physicians Legislation and Advocacy Commission. She has worked on educational forums discussing health care policy. As a commission member, she met quarterly with lobbyists, discussing family medicine issues in policy.

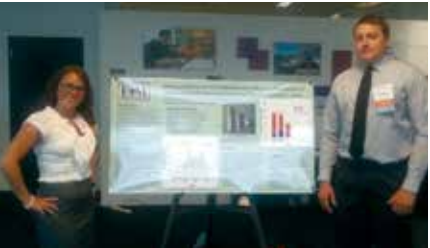
Therese Zink, M.D., M.P.H., chair and professor of the Boonshoft School of Medicine Department of Family Medicine, praised Raffoul’s commitment to a family medicine and health care policy. “The Robert L. Phillips Jr. Health Policy Fellowship will provide her with a unique opportunity to perform health policy-oriented research in Washington, D.C., and interact with federal policymakers,” she said. **VS**

—Heather Maurer

Emergency medicine residents win quiz show at Ohio ACEP assembly



(Top row) Rory Stuart, M.D., Jonathan Henderson, M.D., Devin Burrup, M.D., Derek Broering, M.D., Taylor Baldwin, M.D., and Jeremy Moore, M.D.
(Bottom row) Leo Tanaka, M.D., Sara Birdsong, M.D., and Brian Tucker, M.D.



(Right) Residents Jessica Rando, M.D., and Derek Broering, M.D., won Best Poster Award.

Residents from the Department of Emergency Medicine placed first in the Emergency Medicine Residents’ Association (EMRA) Quiz Show in Columbus, Ohio.

The quiz show was part of the 2014 Ohio Emergency Medicine Residents’ Assembly of the Ohio Chapter of the American College of Emergency Physicians (ACEP) held in August. The first-place team included residents Rory Stuart, M.D.; Leo Tanaka, M.D.; Sara Birdsong, M.D.; and Jonathan Henderson, M.D. They competed against nine other emergency resident teams.

Residents Jessica Rando, M.D., and Derek Broering, M.D., also won Best Poster Award for their research, “Intranasal Naloxone Administration by Police First-Responders is Associated with Improved Survival of Opioid Overdose Victims.”

Future Docs



THE PALMER

From fixing cars to fixing people: Aaron Palmer learns auto repair to pave the way to medical school

Aaron Palmer never dreamed he would be at the Boonshoft School of Medicine studying to become a surgeon.

He grew up in project housing in Akron, Ohio, where college degrees were not discussed. The people in his neighborhood were more concerned about paying their electric bills to keep the lights on and

“Even when he was battling cancer, he pushed me to excel academically.”

having enough money for food. To make ends meet, he and his father found discarded washers and dryers at street curbs, fixed them up and sold them at a used appliance store.

A football scholarship paved his way to college, where he fumbled through different majors searching for his purpose. As a student at Walsh College, he shadowed a surgeon. That meeting changed his life. Fascinated by how the surgeon worked with his hands to make a difference in someone's life, he quit football, gave up his scholarship, and devoted his time to taking pre-med classes.

The road to paying for college was difficult. But Palmer was resourceful. He worked 40 hours a week at Auntie Anne's Pretzels in a mall. “It still didn't

cover the expenses,” he said. “Every week, I went into Walsh's financial aid office.”

However, his grades improved. “I was so proud of myself,” he said. “I had gotten serious.”

Then, his father was diagnosed with esophageal cancer. “My father never graduated from high school,” Palmer reflected. “But he was always my hero. Even when he was battling cancer, he pushed me to excel academically.”

At one point, Palmer worked three jobs to pay for college. He would go for a semester and then drop out the next semester because he ran out of money.

He sold his car on Craig's List, and realized he could make a profit buying junk cars, fixing them, and selling them. He read manuals and watched YouTube videos to learn how to fix the cars. He was able to buy a car for \$1,000 and sell it for \$2,000 within a week. He took 10 classes in one semester to catch up on missed classes.

His father died in May 2010. But a year later, Palmer graduated with a 3.16 GPA. His mother, who is pursuing her bachelor's degree in nursing, and his brothers were so proud of him.

“I know everything on my medical school application says I shouldn't be accepted,” he recalled telling the Wright

State interviewer. “But you'll never find someone who will work harder than me.”

The admissions committee was impressed, not only by his come-from-behind life story, but also because he overcame his challenges to earn an acceptable undergraduate GPA and then went on to earn an above average score on the rigorous MCAT exam required for admission into medical schools in the U.S.

After receiving his acceptance letter from Wright State, he laminated it and placed it on his father's grave.

“We are bigger than ourselves. What we do as physicians encompasses so much more than ourselves,” he said. “As future physicians, we have a responsibility to our community to stand as models of leadership and pillars of hope for others. I am very proud to be a part of the Boonshoft School of Medicine, a school that has taken such a proactive role in community service and advancement, especially with the underserved.”

During his first year at the medical school, Palmer immersed himself in various clubs and organizations including Surgery Club, the Student National Medical Association, and Wright State's Multicultural Association for Pre-Med Students. He also taught classes and held tutoring sessions for local students who are preparing for the MCAT.

“Teaching reminds me that the knowledge we acquire

was never ours, and that we have been given the opportunity to learn so much and educate others,” said Palmer. “Without others who believed in me, I would not be where I am today.”

Now one of the top-ranked students in his class, he wants to be a neurosurgeon. “I love how intricate it is. I love working with my hands. I love details,” said the part-time car mechanic who still drives a junk car that he repaired. “In surgery, you get immediate satisfaction. If there is a problem, you can fix it. The

“As future physicians, we have a responsibility to our community to stand as models of leadership and pillars of hope for others.”

whole idea of how the mind works is fascinating to me.”

The Medical Minority Scholarship significantly reduced the burden of paying for medical school. Palmer is grateful for those who supported the scholarship. “Wright State University School of Medicine believed in me as an applicant,” he said. “I will spend the rest of my career doing everything that I can to prove that I am worthy of such trust, honor, and privilege.” **VS**

—Heather Maurer

Future physician-scientists

Udit Singhal is first WSU medical student to be selected for HHMI research fellowship



Udit Singhal, a third-year medical student at Boonshoft School of Medicine, was one of 70 of the nation's top medical and veterinary students selected for the 2014-15 Howard Hughes Medical Institute (HHMI) Medical Research Fellows Program. In addition to Wright State, the fellows were selected from universities such as Harvard, Stanford, Johns Hopkins, University of California San Francisco, Duke, and Yale.

A \$2.8 million annual initiative to increase the training of future physician-scientists, the HHMI Medical Research Fellows Program allows medical, dental, and veterinary students to pursue mentored biomedical research at academic or nonprofit research institutions in the United States. The program provides the students an opportunity to focus on a research project full time and determine how they can incorporate research into their careers. The fellows will put their professional school coursework on hold and will spend the year conducting basic, translational, or applied biomedical research.

Research focuses on prostate cancer

Singhal, a Westerville, Ohio, native, is focusing his research on prostate cancer at the University of Michigan Medical School in the laboratory of Arul M. Chinnaiyan, M.D., Ph.D., an HHMI investigator and the S.P. Hicks Endowed Professor of Pathology and Urology and director of the Michigan Center for Translational Pathology (MCTP).

With Chinnaiyan, Singhal will investigate the mechanisms by which long noncoding RNAs, or ribonucleic acid molecules, influence prostate cancer biology. Also known as lncRNAs, these molecules have been found to be involved in numerous cell processes, including cancer. Chinnaiyan's lab discovered a new lncRNA, which is overexpressed in prostate cancer. Singhal's yearlong research project will focus on understanding how this molecule works.

"I am digging deeper into the mechanism by which this lncRNA works and identifying if there are ways we can exploit its biology for therapeutic interventions," said Singhal, who majored in molecular genetics and

minored in business and economics at Ohio State University, while also working as an undergraduate researcher in the OSU Department of Molecular Genetics. "Understanding this molecule's interactions and behavior will help us develop better therapeutics for patients with prostate cancer."

The program has helped Singhal think scientifically and independently. Before this experience, he had not been in a lab for an extended period of time. His research experience had been fragmented—a day or two here and there. Now, he is learning how to form a research question and answer the question properly with proof through experiments that are soundly designed. "Our goal is to identify a question that we think advances the field of prostate cancer research," he explained. "We then attempt to answer that question through various new technologies and technical experiments."

Through bioinformatic approaches—computer programming and computer-based technology—and basic molecular techniques, he has learned how to analyze large amounts of data.

Identifying predictors of successful outcomes

He also is working on clinical research with the University of Michigan Medical School Department of Urology. While it is different from the basic science research he does in Chinnaiyan's lab, it is also related to prostate cancer. He and other researchers are looking at clinical data from a large database of patients who have had prostate cancer to see if they can identify any trends or predictors of successful outcomes. Ultimately, they hope to determine whether patients who are treated with surgery have better outcomes than those who are treated with radiation for prostate cancer.

"This has been a great experience," Singhal said. "I am focused on my research and am learning how to answer questions that will eventually help patients."

Gary LeRoy, M.D., associate dean for student affairs and admissions, praised Singhal's interest in research. While in medical school at Wright State, Singhal continued to conduct research at the OSU Wexner Medical Center, under the direction of Arnab Chakravarti, M.D., in the Department of Radiation Oncology. "He used his talent and acquired experience in the area of research to become the founder and current president of the Boonshoft School of Medicine Student Interest Group in Oncology," LeRoy said. "He is well respected among his peers."

Singhal's interest in medicine began when he was five years old. He followed his uncle, a surgeon, on rounds in a hospital in India. "I always found it fascinating how much he was looked upon as the leader of the community because he was a physician," he said.

Former pharma sales rep

Before entering medical school, Singhal worked for Eli Lilly and Company in Cleveland as a pharmaceutical primary care sales representative. "I had always wanted to become a physician, but at the same time I wanted to experience something that incorporated my medical and business interests," he said. "Ultimately, the experience reinforced my interest in a career in medicine."

After his first year of medical school at Wright State, he returned to India as part of the school's Global Health Initiative program. He spent three weeks in a hospital in India and assisted in numerous surgeries, interventional procedures, and health care decisions.

As a Wright State medical student, he has been active in several organizations, including Phi Rho Sigma Medical Society. He also has volunteered with Reach Out

of Montgomery County, a nonprofit organization that provides health care services, including prescription assistance, to the underserved and medically uninsured population of Montgomery County.

Singhal is thrilled to be part of a fellowship with Chinnaiyan's laboratory. "The HHMI Medical Research Fellows Program is providing me with a glimpse into what a research career is like," said Singhal, who has met faculty members who are doing what he envisions for his future. "I can see what they are doing and how they got to that point."

He would like to pursue a residency in urology and complete a fellowship in urologic oncology. "Eventually, I hope to practice in a major academic setting, which will enable me to practice clinically in the specific field of urologic oncology," he said. "I want to teach and train future physicians and conduct research in my own lab."

—Heather Maurer

Boonshoft student selected for the American Society of Hematology award program



Ruth Jocelyn Claros, a second-

year medical student at the Boonshoft School of Medicine, was one of 12 medical students nationwide selected for the American Society of Hematology 2014 Minority Medical Student Award Program.

This career-development award program, offered to first- and second-year medical students from the United States and Canada in D.O., M.D., or M.D./Ph.D. programs, is designed to spark minority medical students' interest in the field of hematology. Participants design and implement a hematology-related research project during an eight- to 12-week summer program. Each student participant is paired with a research and career-development mentor, who assists him or her with the execution of projects and offers career guidance

throughout medical school and beyond.

Medical students selected for the 2014 program are conducting research alongside their mentors related to topics ranging from sickle cell disease to acute leukemia, and stem cell transplantation. In addition to Claros, whose research topic is "Analysis of adherence to mercaptopurine in Asian children with ALL," students were selected from nationally ranked universities, including Georgetown University, University of Pennsylvania Perelman School of Medicine, and Ohio State University College of Medicine.

In addition to their participation in the summer research program, participants will receive a \$5,000 research stipend and a travel allowance to attend and present their research at the 56th American Society of Hematology Annual Meeting in San Francisco in December.



Serving the underserved

First-year student Jessica Brown is committed to serving those who need it most



Jessica Brown credits her grandmother with sparking

her interest in medicine. When she was nine, her grandmother suffered a stroke that left her paralyzed. By the time she was 14, her grandmother died from another stroke.

"No one in my family understood what was happening to my grandmother," she said. "My burning desire to understand what happened to my grandmother spurred my interest in medicine."

Today, Brown is attending her first year of medical school at the Boonshoft School of Medicine. She was recently awarded a four-year scholarship from the National

Health Service Corps (NHSC), a Federal government program administered by the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Bureau of Health Workforce.

The NHSC awards scholarships to medical students committed to primary care. In return, the medical students commit to provide primary health care serves in NHSC-approved sites in medically underserved urban, rural, and frontier communities across the United States, including Federally Qualified Health

Centers (FQHC), rural health clinics, and Indian Health Service among others.

Brown, who is from Washington, D.C., plans to serve in an urban area. Her service will begin after she graduates and completes a primary care residency. "I definitely want to serve underserved communities like mine," she said. "If I can help patients like my family understand more about their health, they will be able to focus on prevention and ultimately will live healthier lives."

After her grandmother died, Brown began to notice the health of other friends and family members. Her mother's unchecked arthritis worsened and eventually disabled her. "Her arthritis hindered what she could do," Brown said. "She hasn't been able to work in a long time. This has been tough on our family."

Brown's family did not have a primary care physician that they saw on a regular basis. She noticed that others in her neighborhood struggled with diabetes, hypertension, and cholesterol. Some were addicted to drugs and alcohol. Others got pregnant at a young age. "Almost all of these conditions are treatable or manageable with proper care and education," Brown said.

She also noticed that the children in her neighborhood had health insurance, but their parents and grandparents did not. That observation led her to think about becoming involved in health policy.

"I want to focus on health policy for these communities," she said. "It's more than just

wanting to help. It's personal. I want to make a difference. I want health to be a priority in people's lives. I want them to have a doctor."

So Brown went to North Carolina State University, where she earned a bachelor's degree in biological sciences, and was a member of Student National Medical Association (SNMA), the oldest and largest student-run organization focused on the needs and concerns of medical students of color, and the Minority Association of Pre-Medical Students (MAPS), which represents the undergraduate and postbaccalaureate students of SNMA. That network encouraged her and provided her with opportunities to engage in medical community service and leadership.

She earned her master's degree in forensic medicine at Drexel University. Her experience at Drexel included shadowing the chief medical examiner of Delaware County in Philadelphia. "This experience reinforced the importance of primary care and public health," she said. "Many of the deaths investigated, including drug overdoses, heart attacks, chronic infections, and suicides, were preventable and/or treatable."

She chose to attend the Boonshoft School of Medicine because of the emphasis on primary care, team-based learning, mentorship programs, and alumni association. "When I visited Boonshoft, it felt like I could grow here," she said. "It felt more like a collaboration. It was just an awesome place."

Since arriving at Boonshoft in July, she has thrown herself into her studies. She just finished anatomy class. "It was nine weeks of craziness," she said describing how she studied for her exam, creating diagrams and study sheets. "In anatomy, they say we learn about 10,000 new terms a week, and it's true!"

She also has learned about patient interviewing and is grateful that the first-year students are learning about it first thing. "Some of these questions are very personal," she said. "These are hard questions to ask. But I'm glad we're getting this experience."

While at medical school, Brown hopes to also earn a Master of Public Health through the school's dual-degree M.D./M.P.H. program.

After she completes medical school, Brown plans to go into a primary care residency. Then, she will serve her four years as part of the National Health Service Corps, most likely in an underserved urban setting. She wants to work with an organization that does more than treat illnesses. "I want to be able to help the whole person and determine the other contributing factors of that person's illness," Brown said. "I know that I will serve in an underserved community like mine."

Milestones

2014 Match Day

In March 2014, 102 graduating Boonshoft School of Medicine students learned where they will pursue their residency training.

Gathered with family and friends at the Wright State University Student Union, the students took part in the national event that has become a rite of passage.

Wright State students match in outstanding programs in Dayton, throughout Ohio, and across the country, including the Cleveland Clinic, University of California at San Francisco, Duke University, the Mayo Clinic, University of Pennsylvania, and New York Presbyterian-Columbia.

Paul Adams
Internal Medicine
University of Kentucky Medical Center
Lexington, KY

Prerana Aghamkar
Pediatrics
University of Louisville School of Medicine
Louisville, KY

Lisa Anacker
Psychiatry
University of Michigan Hospitals
Ann Arbor, MI

Michael Anacker
Pediatrics
University of Michigan Hospitals Arbor
Ann Arbor, MI

Luke Andera
Otolaryngology
Geisinger Health System
Danville, PA

Christine Arnold
Obstetrics and Gynecology
Summa Health/NEOMED
Akron, OH

Samarjeet Bajwa
Neurology-PGY2; Internal Medicine-PGY1
UC Irvine Medical Center
Orange, CA

Benjamin Bates
Surgery-General
WSU Boonshoft School of Medicine
Dayton, OH

Erin Bates
Family Medicine
WSU Boonshoft School of Medicine
Dayton, OH

Robert Beaulieu
Transitional Year-PGY1
Mount Carmel Health System
Columbus, OH
Ophthalmology-PGY2
University of Texas Southwestern
Dallas, TX

Nicholas Bellanco
Family Medicine
WSU Boonshoft School of Medicine
Dayton, OH

Douglas Bias
Emergency Medicine
WSU Boonshoft School of Medicine
Dayton, OH

Niyati Bondale
Pediatrics
Cleveland Clinic Foundation
Cleveland, OH

Haley Bowers
Family Medicine
Riverside Methodist Hospital
Columbus, OH

Ronald Brown
Plastic Surgery (Integrated)
University of Rochester/Strong
Memorial
Rochester, NY

Cathleen Bury
Emergency Medicine
Duke University Medical Center
Durham, NC

Matthew Byun
Surgery-PGY1
Mount Carmel Health System
Columbus, OH
Ophthalmology-PGY2
University of Cincinnati
Cincinnati, OH

Maria Carratola
Otolaryngology
Tulane University School of Medicine
New Orleans, LA

Megan Cesta
Obstetrics and Gynecology
Summa Health/NEOMED
Akron, OH

Samuel Corbo
Emergency Medicine
University of Kentucky Medical Center
Lexington, KY

John Corker
Emergency Medicine
University of Texas Southwestern
Dallas, TX

Paul Craig
Radiology-Diagnostic
University of Minnesota Medical
School
Minneapolis, MN

Kyle Davis
Pediatrics
Nationwide Childrens Hospital
Columbus, OH

Jelena Douillard
Pediatrics
Kaiser Permanente
Pasadena, CA

Joel Eidelson
Pediatrics
Harbor-UCLA Medical Center
Torrance, CA

Megan Flanigan
Internal Medicine-PGY1
University of Cincinnati Medical Center
Cincinnati, OH
Phys. Med. & Rehab.-PGY2
Northwestern McGaw/RIC
Chicago, IL

Danielle Fleissig
Pediatrics
University of Rochester/Strong
Memorial
Rochester, NY

Chadwick Garner
Radiology-Diagnostic
Oakwood Hospital
Dearborn, MI

Antimo Gazzillo
Internal Medicine-PGY1
Akron General Medical Center/
NEOMED
Akron, OH
Phys. Med. & Rehab.-PGY2
Indiana University School of
Medicine
Indianapolis, IN

Mark Gelpi
Otolaryngology
Case Western/University Hospitals
Cleveland, OH

David Geottman
Internal Medicine
Wright-Patterson Medical Center
Dayton, OH

Shaina Gerad
Internal Medicine
Indiana University School of
Medicine
Indianapolis, IN

Harrison Gimbel
Family Medicine
Eastern Virginia Medical School
Portsmouth, VA

James Graham
Obstetrics and Gynecology
Summa Health/NEOMED
Akron, OH

Kimberly Grannis
Orthopaedic Surgery
UC San Francisco-Fresno
Fresno, CA

Laura Gruber
Internal Medicine-PGY1
St. Vincent Charity Medical Center
Cleveland, OH
Phys. Med. & Rehab.-PGY2
Ohio State University Medical Center
Columbus, OH

Paul Gruber
Transitional Year-PGY1
Scripps Mercy Hospital
San Diego, CA
Dermatology-PGY2
St. Louis University School of
Medicine
St Louis, MO

Claire Hanson
Pediatrics
WSU Boonshoft School of Medicine
Dayton, OH

Anna Hardy
Anesthesiology
UPMC Medical Education
Pittsburgh, PA

Sara Hawes
Pathology-Anatomic and Clinical
University of Michigan Hospitals
Ann Arbor, MI

Shaina Hecht
Pediatrics
Nationwide Children's Hospital
Columbus, OH

John Herald
Internal Medicine
University of Michigan Hospitals
Ann Arbor, MI

Matthew Hiskey
Pathology-Anatomic and Clinical
Emory University School of
Medicine
Atlanta, GA

Gabrielle Horstman
Neurology
Case Western/University Hospitals
Cleveland, OH

Nicholas Horton
Internal Medicine
Cleveland Clinic Foundation
Cleveland, OH

Ashley Hotz
Internal Medicine
WSU Boonshoft School of Medicine
Dayton, OH

Nicholas Hountras
Internal Medicine/Pediatrics
Grand Rapids Medical Education
Grand Rapids, MI

Christopher Huelsman
Family Medicine
Marshall University School of Medicine
Huntington, WV

Ann Imber
Internal Medicine
Florida Atlantic-Schmidt College of
Medicine
Boca Raton, FL

Hicham Ismail
Transitional Year-PGY1
St. Mary Mercy Hospital
Detroit, MI
Radiology-Diagnostic-PGY2;
University of Cincinnati Medical Center
Cincinnati, OH

Bryan Jacobs
Pediatrics
Wright-Patterson Medical Center
Dayton, OH

Deanne Jacobs
Surgery-General
Wright-Patterson Medical Center
Dayton, OH

Danial Jilani
Transitional Year-PGY1
Riverside Methodist Hospital
Columbus
Radiology-Diagnostic-PGY2
University of Chicago Medical Center
Chicago, IL

Lorraine Kiger
Pediatrics
UPMC Medical Education
Pittsburgh, PA

Edwin Kim
Surgery-General
Arrowhead Regional Medical Center
Colton, CA

Jared Klein
Pediatrics
Virginia Commonwealth University
Richmond, VA

Christopher Kohls
Emergency Medicine
Palmetto Health Richland
Columbia, SC

Paul Krebs
Family Medicine
WSU Boonshoft School of Medicine
Dayton, OH

Michelle Kurian
Internal Medicine
St. Vincent Hospital Center
Indianapolis, IN

Isabel Kwan
Pediatrics
Harbor-UCLA Medical Center
Torrance, CA

Elise Kwizera
Internal Medicine
WSU Boonshoft School of Medicine
Dayton, OH

Russell Lacey
Transitional Year-PGY1
Kettering Medical Center
Kettering, OH
Phys. Med. & Rehab.-PGY2
Virginia Commonwealth University
Richmond, VA

Miriam Lader
Pediatrics
WSU Boonshoft School of Medicine
Dayton, OH

John Latorre
Emergency Medicine
Akron General Medical Center/
NEOMED
Akron, OH

Samantha Latorre
Psychiatry
Case Western/University Hospitals
Cleveland, OH

Douglas Laurain
Transitional Year-PGY1
Henry Ford Health System
Detroit, MI
Dermatology-PGY2
University of South Florida College
of Medicine
Tampa, FL

Teresa Lee
Pediatrics
Inova Fairfax Hospital
Falls Church, VA

Megan Little
Pediatrics
Grand Rapids Medical Education
Grand Rapids, MI

Kevin Magone
Orthopaedic Surgery
McLaren Regional Medical Center
Flint, MI

Elizabeth Markus
Internal Medicine
University of Kentucky Medical Center
Lexington, KY

Andrew McBride
Family Medicine
Hospital of the University of
Pennsylvania
Philadelphia, PA

John McLain
Surgery-General
University of Tennessee Graduate
School of Medicine
Knoxville, TN

Natasha Mehta
Transitional Year-PGY1
Kettering Medical Center
Kettering, OH
Phys. Med. & Rehab.-PGY2
Rutgers-New Jersey Medical School
Newark, NJ

Abigail Monnig
Transitional Year-PGY1
Kettering Medical Center
Kettering, OH
Anesthesiology-PGY2
Emory University School of
Medicine
Atlanta, GA

John Muriithi
Internal Medicine
University of Cincinnati Medical Center
Cincinnati, OH

Daniel Noble
Obstetrics and Gynecology
Summa Health/NEOMED
Akron, OH

Sarah Oros
Internal Medicine/Psychiatry
Medical University of South Carolina
Charleston, SC

Graham Pallante
Orthopaedic Surgery
Mayo School of Graduate Medical
Education
Rochester, MN

Yojan Patel
Emergency Medicine
Akron General Medical Center/
NEOMED
Akron, OH

Melissa Perrino
Pediatrics
University of Tennessee College of
Medicine
Memphis, TN

Michael Perry
Pediatrics
Nationwide Children's Hospital
Columbus, OH

Meredith Pesce
Pediatrics
New York Presbyterian Hospital-
Columbia
New York, NY

Koriann Reed
Surgery-Preliminary
Riverside Methodist Hospital
Columbus, OH

Mary Runkle
Transitional Year-PGY1
Kettering Medical Center
Kettering, OH
Ophthalmology-PGY2
Indiana University School of Medicine
Indianapolis, IN

Andrew Russeau
Surgery-General
UIC/Metro Group Hospitals
Chicago, IL

Angeline Sabol
Internal Medicine
Mayo School of Graduate Medical
Education
Rochester, MN

Justin Sandver
Psychiatry
Maine Medical Center
Portland, ME

Bradley Scherer
Pediatrics
Indiana University School of Medicine
Indianapolis, IN

Aaron Schneider
Surgery-General
Wright-Patterson Medical Center
Dayton, OH

Lucy Shi
Internal Medicine
Oregon Health & Science University
Portland, OR

Trevor Short
Internal Medicine
Ohio State University Medical Center
Columbus, OH

Peter Shorten
Orthopaedic Surgery
University of Vermont/Fletcher Allen
Burlington, VT

Jessica Stephens
Surgery-General
East Tennessee State University
Johnson City, TN

Arvind Suguness
Internal Medicine
Dartmouth-Hitchcock Medical Center
Lebanon, NH

Riyad Tayim
Surgery-General
WSU Boonshoft School of Medicine
Dayton, OH

Ashley Taylor
Surgery-General-PGY1
WSU Boonshoft School of Medicine
Dayton, OH
Anesthesiology-PGY2
Henry Ford Health System
Detroit, MI

Lauren Taylor
Pediatrics
Indiana University School of Medicine
Indianapolis, IN

Catherine Ulman
Dermatology
Ohio State University Medical Center
Columbus, OH

Hillary Voss
Pediatrics
WSU Boonshoft School of Medicine
Dayton, OH

Ashleigh Welko
Pediatrics
UPMC Medical Education
Pittsburgh, PA

Jessica Woznick
Family Medicine
WSU Boonshoft School of Medicine
Dayton, OH

Elizabeth Yeager
Family Medicine
Marshall University School of Medicine
Huntington, WV

2014 Graduation



One hundred and five members of the Boonshoft School of Medicine class of 2014 received their M.D. degrees during the school's commencement ceremony at the Benjamin and Marian Schuster Performing Arts Center on May 23.

Gregory Toussaint, M.D., associate professor of pediatrics and medical director, inpatient general pediatrics at Dayton Children's Hospital, delivered the commencement address.

In addition to the degrees, several special awards and honors were presented during the ceremony:

Appreciation Award—

Howard M. Part, M.D., the fifth dean of the Boonshoft School of Medicine

For his exceptional leadership in support of students and medical education.

Dean's Award—

Paul A. Krebs

For demonstrating a commitment to academic excellence, embodying empathy and compassion toward others, exemplifying personal integrity and professionalism, and earning the respect and trust of classmates and faculty.

The Arnold P. Gold Foundation's Leonard Tow Humanism in Medicine Award—

Elizabeth A. Markus (graduate) and Brenda Roman, M.D., professor, psychiatry, and assistant dean for curriculum development (faculty)

For consistently demonstrating compassion and empathy in the delivery of care to patients.

Teaching Excellence Award—

Gregory Toussaint, M.D., associate professor, pediatrics

For displaying outstanding professional skill and pride in discharging his instructional duties.



Milestones

2014 Convocation

The Boonshoft School of Medicine welcomed 110 new students during the Convocation and White Coat Ceremony last July, formally marking the start of their medical education.

During the ceremony, students took their first oath of professional medical ethics, concluding with the words, “I commit myself to a lifelong journey of learning how to cure, relieve, and comfort with humility and compassion.”

Each student also received a white coat—a traditional symbol of the medical profession—personalized with his or her name and the medical school patch.

This is the second year that each student also received a stethoscope engraved with the words “Excel in Leaving a Mark,” thanks to the Jason Madachy Foundation, Neal Barney, M.D., class of 1983, and other alumni. The foundation has given hundreds of stethoscopes to medical students nationwide in honor of Jason Madachy, who died tragically in June 2007 just before he was about to start medical school at Marshall University.

The class of 2018 was selected from a group of more than 3,600 applicants. Educated at various universities across Ohio, including Case Western Reserve University, Ohio State University, and Wittenberg University, members of the incoming class also hail from Brown University, Cornell University, Duke University, UCLA, and University of Notre Dame, among others.

From volunteering at homeless shelters to building houses for Habitat for Humanity, they already have shown a strong commitment to community service both at home and abroad. Several have taken mission trips with their churches, sororities, or fraternities. One student volunteered at a smallpox/ polio immunization clinic in Togo, Africa. In the United States, others have volunteered at after-school programs, outreach programs, nursing homes, HIV intervention programs, and the Red Cross.

Forty-eight percent are women, while 52 percent are men. Seventy percent speak more than one language, including American Sign Language, Arabic, French, and Spanish.



Ventures of the heart

Louis A. Cannon, M.D. '84, leads the way in cardiac, orthopaedic device innovation



After graduating from Wittenberg University in 1980, Louis Cannon was faced with a life-altering choice—work in the family furniture sales business or pursue a career in medicine.

Cannon chose the latter and enrolled in medical school at Wright State University. “I was not sure I wanted to be a doctor. But I always wanted to help people,” said Cannon, who is now recognized as one of the top 100 cardiovascular specialists in the United States. “I always wanted to be in control of my own destiny.”

He fell in love with the science of medicine and being able to help patients in their greatest time of need. “Looking back, I wouldn’t change it at all,” said Cannon, who is originally from the Boston area but moved to Bexley, Ohio, near Columbus during eighth grade.

His residency training in internal and emergency medicine at Akron General Medical Center in Akron, Ohio, led him to the field of cardiology. “I learned that what I was best at was taking care of patients during their greatest time of need. What more critical time than when they were having a heart attack?” said Cannon, whose current research focuses on drugs that reduce blockages from forming inside heart stents and the use of ultrasound to open blockages that are completely obstructed.

After his combined internal and emergency medicine residency, he completed fellowships in invasive and interventional cardiology at the University of Cincinnati Medical Center. He and his wife, Sally, moved to Michigan, where he began his career as a cardiologist. “We came to Michigan because we fell in love with the beauty of Michigan,” said Cannon, who credits his wife and three grown children with being very understanding of his demanding schedule. “I started a research center and became engulfed in cardiac research.”

Cannon, who is board certified in internal medicine, cardiovascular disease, and interventional cardiology, is past president and founder of The Michigan CardioVascular Institute (MCVI) in Saginaw. In 2004, he accepted a position as the program director of the Northern Michigan Hospital Heart and Vascular Institute. He also serves as president of the Cardiac & Vascular Research Center of Northern Michigan and is the senior program director of McLaren Northern Michigan Heart and Vascular Institute.

He is a fellow of the American College of Cardiology, the American College of Chest Physicians, the American College of Physicians, the American College of Angiology, the American Association of Emergency Physicians, and the Society for Cardiovascular Angiography & Interventions.

Cannon, who has published hundreds of abstracts, manuscripts, textbook chapters and editorials—including 10 in the prestigious *New England Journal of Medicine*—has more than two decades of clinical trial experience using cutting-edge technologies to treat cardiovascular disease. In 2003, he founded BioStar Ventures, a venture capital investment fund focusing on cutting-edge innovation in medical devices based in Petoskey, Michigan. Through this venture capital partnership created by physicians and business leaders, Cannon has participated in the start up and development of several developing biotechnological or emerging health care companies. BioStar Ventures is on its third fund, earmarked for \$100 million in international investments in cardiovascular and orthopaedic diseases.

He was inspired to start BioStar Ventures during an angioplasty, a non-surgical procedure used to open narrow or blocked arteries. As he was trying to open a blocked artery by inflating a balloon in the artery, causing low blood flow itself downstream, he thought there must be an easier way. So, he developed a device called the “Hemo-Cannon” as a method of pushing blood flow through the catheter to oxygenate tissue downstream from the balloon. “Physicians who are involved in device innovation and integration have a leg up because we can see what the patient needs and what the physician needs,” said Cannon, who has been inducted into Who’s Who in American and

World Wide Medicine and has served on the board of governors of the Michigan Chapter of the American College of Cardiology.

One of his best friends from medical school, Alan Davis, M.D., an orthopaedic surgeon at the Cleveland Clinic, serves as a medical venture partner and advisor with BioStar Ventures. “He is my thought leader, friend, and trusted partner in regards to insight into orthopaedic devices,” said Cannon, who also serves on advisory boards for several Fortune 500 companies, including Medtronic, Abbott, and Boston Scientific. “That just speaks to the friendships and the quality of people you meet at medical school.”

Cannon, who has two U.S. medical device patents, credits Wright State with inspiring his interest in intellectual property and product development. He learned counseling techniques and saw some innovative engineering that was being done with paralyzed patients. All of that left an impression on him.

“Wright State was less traditional. It was more patient-focused,” said Cannon, who was recognized in March 2014 by Wright State with an outstanding alumni award. “It was OK to think outside the box. It was OK to be different. We were encouraged to be creative.”

VS

—Heather Maurer

Jane Lynch, M.D., '84, on the frontlines attacking type 2 diabetes in children, youth

was drawn
to pediatric
endocrinology
from early on for both
the clinical and research
challenges,” she said.

When Jane Lynch attended Oakwood High School in Dayton, a friend of hers had type 1 diabetes. She knew when her friend needed insulin. She would look for signs of low blood sugar—sweating, shakiness, weakness, hunger, or confusion.

Her friend’s diabetes sparked her interest in the disease. As an undergraduate at Indiana University, she majored in microbiology and genetics. Her advisor persuaded her to apply to medical school to become a medical researcher.

While at Wright State University School of Medicine, Lynch prepared for a career in pediatric endocrinology. “In medical school, I

She and her classmates sometimes went back to her parents’ home in Oakwood, where Bill and Jackie Lockwood would cook out for their daughter’s medical school friends. Her parents got to know many of her classmates. In addition, medical school was where she met her husband, retired U.S. Air Force Col. James Lynch, who was originally from San Antonio but stationed at Wright-Patterson Air Force Base. “He always calls me his war bride,” she said.

Following her graduation from medical school in 1984, she went to St. Louis Children’s Hospital for an internship in pediatrics. She completed her final two years of pediatrics residency at UT Southwest Children’s Medical Center in Dallas and a two-year fellowship in genetics, endocrinol-

ogy and metabolism at Children’s Hospital of Oklahoma to be near her husband when he was transferred to Tinker Air Force Base in Oklahoma. She completed her final year of fellowship in pediatric endocrine/child psychology with a grant to look at the impact of chronic disease (diabetes) on families at Massachusetts General Hospital in Boston, before joining the pediatric endocrine faculty.

Lynch joined the pediatric endocrine faculty at Children’s National Health System in Washington, D.C., for three years during her husband’s assignment at the Pentagon. When he was transferred back to Wright-Patterson Air Force Base, she joined Pediatric Associates of Dayton and served as an adjunct faculty member at the Boonshoft School of Medicine.

In 2005, Lynch, her husband and their two sons moved to San Antonio, where she became an investigator with the TODAY study, a nationwide research study dedicated to finding the best ways to treat young people with type 2 diabetes. She currently is a professor of pediatrics and the fellowship director for pediatric endocrinology at the School of Medicine at The University of Texas Health Science Center in San Antonio.

As a pediatric endocrinologist, Lynch treats children who have hormone disorders, which include issues with growth, puberty, or diabetes. The TODAY study is the first large intervention study in youth-onset type 2 diabetes. In type 2 diabetes, the body does not use insulin properly. Over time, the pancreas cannot make enough insulin to keep the blood glucose levels normal. This can result in damage to the eyes, kidneys, or heart.

In the past 10 years, type 2 diabetes has begun appearing in children and adolescents. “Type 2 diabetes is often much more aggressive in children than adults,” she said.

She explained that the blood vessels and the hearts of these patients are very stiff from the exposure to sugar. “Heart disease is the number one killer in these patients,” she said. “Their degree of early hypertension is an ominous sign, and these patients are having early cardiac and kidney complications.”

The rise in type 2 diabetes in children and adolescents is a consequence of the rising rates of obesity in youth, Lynch explained. She attributes it to a combination of genetics and a child’s environment. Lower socio-economic factors also play a role.

In San Antonio, type 2 diabetes is prevalent in the Hispanic population. Several factors contribute to the disease. Children can’t play outdoors because they live in unsafe neighborhoods. In addition, the food served in the home might not be nutritional. Children also tend to drink sugary drinks, such as colas and juice. Lynch has noticed that the research shows that local children gain weight during the summer when they are hot and drinking sugared beverages. “We’re big believers in encouraging water,” Lynch said. “Sweet drinks make you crave more sweets.”

To combat type 2 diabetes, Lynch and others are working with families. “Once the children are diagnosed with type 2 diabetes, they need to take medications to make the insulin more effective, in addition to improving diet and exercise,” she said. “Studies suggest that a cocktail of medicines may be important early on in the disease.”

Type 2 diabetes rarely reverses. Prevention is the key. Lynch argues that prevention starts in the womb. When a fetus is developing, the mother’s diet impacts the developing baby. She also recommends that mothers breastfeed their babies. During the toddler years, juice should be limited. Sugary drinks like colas should not be given to toddlers and young children.

While it is hard to balance teaching medical students, conducting research, and seeing patients, Lynch loves what she does. “Endocrine is really a nice mix of science. There is much research that really needs to be done,” said Lynch. “At the same time, we are applying what we are learning to improve kids’ lives. We’re using insulin pumps and technology that really makes a difference in letting kids be kids. They can be safe and still play.”

—Heather Maurer



In Memoriam



B. Laurel Elder, Ph.D., associate professor in the Department of Pathology, passed away peacefully on October 2, 2014.

Elder was an esteemed teacher, researcher, laboratory clinician, and chair of the *Institutional Review Board* at Wright State University. She came to

Wright State in 1986 to serve as an adjunct associate professor of microbiology and immunology. She was named associate professor in the Departments of Pathology and Internal Medicine in 2005.

In addition to her impressive list of published research, Dr. Elder had an extensive record of service to the university, her profession, and her community. She served on the Step 1 Microbiology Committee for the National Board of Medical Examiners since 2011, the B1 Curriculum Committee in the medical school since 2005, and as chair of the committee from 2010-2012. She also provided invaluable service as a member of the Wright State University Institutional Review Board since 1989 and as its chair since 2005.

She was beloved as a teacher by her students at the medical school and was honored by them with the Teaching Excellence Award in 2010, 2009, 2004, and 1998.

She was a member of the American Society of Microbiology, the American Society for Tropical Medicine and Hygiene, and the South Central Association for Clinical Microbiology.

Elder earned her Ph.D. in medical microbiology from the University of Vermont and was a postdoctoral fellow in clinical and public health microbiology at the Mayo Clinic. She was certified as a Diplomate in Public Health and Clinical Microbiology by the American Board of Medical Microbiology and as a medical technologist by the American Society for Clinical Pathology.

She also served as an elder at Sugarcreek Presbyterian Church and vicemoderator of the Presbytery of the Miami Valley.

The B. Laurel Elder Memorial Scholarship Fund has been established to honor her contributions to the medical school and her commitment to improving health care in developing countries. The fund will award scholarships to fourth-year Wright State medical students who have completed requirements for the global health certificate and have significant financial need. Donations may be made to the Wright State University Foundation. For more information, contact Angela Clements in the advancement office (angela.clements@wright.edu).



W.J. "Jack" Lewis, M.D., clinical professor emeritus of family medicine at the Boonshoft School of Medicine, died on April 5, 2014. He was 89.

He was part of a group of people who were involved in the development of the medical school in the early 1970s. Passionate about medical education,

he was thrilled to be a part of a new kind of medical school—one that emphasized primary care education. He enjoyed teaching ethics to medical students.

"To me, however, it is a once-in-a-lifetime opportunity to participate in a unique experiment based upon principles in which I believe," he wrote in a May 1977 article in the *Ohio State Medical Association Journal*.

Born in Indiana in 1924, his hometown doctor in Princeton, Indiana, inspired him to become a family physician. He earned his undergraduate degree at DePauw University and then went on to medical school at Indiana University, where he met his wife, Ann, who was studying to be a nurse. The couple was married for 63 years and had four children. He served his country honorably during World War II in the medical corps, beginning in Africa and then in Italy.

His family describes Lewis as an old-fashioned family medicine doctor, who had a listening ear and was a confidant to thousands. His patients would come to him for a sore shoulder or another ailment, but they would tell him a lot more. He took phone calls at his Kettering home and remained a doctor-on-call for the rest of his life.

He practiced for 37 years with Lou Haley, M.D., in the Dayton suburb of Oakwood. He was chief of staff at Kettering Medical Center and was president of the Montgomery County Medical Society. He was involved with the Ohio State Medical Association and was elected to the Board of Directors of the American Medical Association. He founded and directed an all-physicians' glee club that performed locally and nationally for more than 30 years.

Lewis was involved with the Physicians Charitable Foundation of the Miami Valley, serving as its president several times and participating on the distribution committee. The foundation has given a total of \$185,000 to the Boonshoft School of Medicine since 1999. Most recently, the foundation gave \$75,000 to the medical school's Skills Assessment & Training Center. The money will be used for technical equipment in the training of medical students and other health care professionals. Lewis will be recognized with a plaque in the Skills Assessment & Training Center.

Lewis is survived by his wife, Ann; their four children, Bill Lewis, Kathy Dierkes, Megan Haddox, and Jill Lewis; and seven grandchildren.

Stanley R. Mohler, M.D., founding director of the Wright State Aerospace Medicine Residency Program and professor emeritus, of community health, passed away September 15, 2014, in Westmoreland Hospital, Greensburg, Pennsylvania. He was 86.

Mohler was born September 30, 1927, in Amarillo, Texas. He developed his two great passions, airplanes and medicine, as a young boy. He combined this love into his specialty of aerospace medicine.

After two years of service in the U.S. Army and graduation from the University of Texas Medical Branch, Galveston, Texas, in 1956, Mohler interned for the U.S. Public Health Service in San Francisco. Subsequently, he was a medical officer at the Center for Aging Research, National Institutes of Health, in Bethesda, Maryland.

From 1961 to 1965, Mohler was director of the Federal Aviation Administration's Civil Aeromedical Institute (CAMI) in Oklahoma City. From 1966 to 1978, he was chief of the Aeromedical Applications Division of the Federal Aviation Administration in Washington, D.C.

Mohler served as founding director of the Wright State University Aerospace Medicine Residency Program, from 1978 to 2004, and professor and vice chair of community health.

As director of the Aerospace Medicine Residency Program, Mohler helped train more than 100 physicians to support present and future spaceflight initiatives.

Mohler held airline transport pilot and flight instructor certificates. He served as a member of the medical advisory panels of the Experimental Aircraft Association (EAA) and the Aircraft Owners and Pilots Association (AOPA), a member of NASA's Aerospace Medicine Advisory Committee, president and fellow of the Aerospace Medical Association (ASMA), and member and secretary/treasurer of the American Board of Preventive Medicine (ABPM).

He was the author of several books including *Wiley Post, His Winnie Mae, and the World's First Pressure Suit* (with Bobby H. Johnson) and *Medication and Flying: A Pilot's Guide*.

Mohler is survived by his wife of 61 years, Ursula, a daughter, two sons, and three grandchildren.

Robert (Bob) Weisman, Ph.D., passed away on July 2, 2014, at age 77. As a department chair, associate dean, interim dean, and consummate faculty member, Weisman served the university and the medical school for more than 30 years.

Weisman was recruited as the inaugural chair of the Department of Biochemistry, joining Wright State as professor and chair of the department in January 1977. Previously, he held faculty positions at the University of Texas Health Sciences Center, San Antonio, and the Medical College of Pennsylvania, Philadelphia.

A native of Kingston, New York, he received his Bachelor of Science (with honors) in pharmacy from Union College in Tennessee, and his Ph.D. in biochemistry from the Massachusetts Institute of Technology. He also held a staff fellowship at the National Institutes of Health and visiting professorships at the University of California-San Francisco and Washington University—St. Louis, in the fields of nuclear magnetic resonance and positron emission tomography—fields that are now mainstays for biomedical research.

In 1985, Weisman's skills in these fledgling areas enabled him to help establish the Kettering-Scott/Wright State University Magnetic Resonance Laboratory, bringing together scientists and clinicians in the medical school and Kettering Medical Center. He served as the initial director of this laboratory and recruited several new scientists to spearhead biomedical research at Wright State using magnetic resonance technologies.

While serving as chair of biochemistry and director of the newly created magnetic resonance laboratory, he also served as director of the new Biomedical Sciences Ph.D. Program, a multidisciplinary program involving multiple academic departments across the school of medicine, the College of Science and Mathematics, and the College of Engineering and Computer Science.

Weisman stepped down as chair in 1989 after 12 years of service. Following a sabbatical at Washington University, he continued on as a faculty member and in new leadership positions in both the medical school and College of Science and Mathematics. During this time he served as associate dean in the medical school, driving forward the biomedical research enterprise, and as assistant, associate, and interim dean in the College of Science and Mathematics.

Even after retirement in 2004, Weisman came back to help the department by teaching medical school courses.

Passionate about classical music, Weisman was a classical music disc jockey at WDPR radio for 22 years. He is survived by his wife of 23 years, Beverly Guterman, their children, and family and friends.

Alumni Notes

We're proud of our alumni and graduates of our residency programs and want to spread the word about your achievements. If you have professional news or personal updates to share—or simply want to stay in touch—please contact the Office of Advancement at som_adv@wright.edu or 937.245.7610.

1981

John Dimar II, M.D., is an orthopedic surgeon at Norton Leatherman Spine Care and Norton Spine Care. He is also a clinical professor with the Department of Orthopedic Surgery, chief pediatric orthopedic surgeon at Kosair Children's Hospital in Louisville, and director of resident basic science education at the University of Louisville School of Medicine.

1982/83

Lori Remeika, M.D., '82, and husband, Craig Wolfe, M.D., '83, are both practicing internal medicine in Marshfield, Wisconsin.

1984

Alan Davis, M.D., and Pamela Davis, M.D., live in Cleveland and have five children. Alan is a foot and ankle surgeon practicing at the Cleveland Clinic Westlake Family Health Center. He is the former chair of the St. John West Shore Hospital Department of Orthopaedics, and joined the Cleveland Clinic from his private practice in Westlake in 1999. Pamela is a dermatologist with MetroHealth and also serves as an associate professor in the Department of Dermatology at Case Western Reserve University. They welcomed their first grandchild, a boy, in 2014.

Richard Stockelman, M.D., is an orthopaedic surgeon with the Colorado Springs Orthopaedic Group specializing in simple and complex problems of the shoulder and the knee. He and his wife, Anne, are the proud parents of four children, and all are active participants in the community of Colorado Springs.

Louis Cannon, M.D., FACA, FCCP, FACC, FACP, is a recognized leader in cardiovascular research and development having been named in the Top 100 CardioVascular Specialists in America. Currently, he serves as president of the Cardiac and Vascular Research Center of Northern Michigan. He and his wife, Sally, have three children and live in Charlevoix, Michigan.

Helene McGarey Wechsler, M.D., is the founder of Scottsdale Private Physicians LLC., a concierge medical practice that allows her to provide each patient with undivided and unhurried attention. Dr. Wechsler comes from a family with a long tradition in medicine. Her maternal grandparents, parents, and two brothers, including David McGarey, '87, are doctors. She is the proud mother of two sons and enjoys hiking, gardening, and reading.

Ann Bevelhimer, M.D., is a family physician with Lakemoor Family Physicians in Knoxville, Tennessee. Her clinical interests include women's health, pediatrics, and preventative health. She and her husband, Mark, have two children: Nathan and Samuel. In her free time, Bevelhimer enjoys jogging, soccer, boating, reading, camping, and outdoor activities.

George Herman, M.D., and Parmie Herman, M.D., own Auglaize Family Practice in Wapakoneta, Ohio. They are the proud parents of two children: Beth, who graduated from The Ohio State University College of Medicine and is now in a family medicine residency at the University of Kentucky, and David, who is a current medical student at the Boonshoft School of Medicine.

Robert Shrake, M.D., is a market medical director in Ohio, Indiana, and Kentucky with United Healthcare. He is married and has three adult children.

Marlene Willen, M.D., is a dermatologist and Mohs surgeon with Northcoast Dermatology Associates Inc., in Cleveland. Prior to this position, she was chair of the Department of Dermatology at Case Western Reserve University for 10 years. She and her husband, Michael, D.D.S., have three children. Her son, Benjamin, is in his first year as a medical student at the Boonshoft School of Medicine.

1987

Michael Muha, M.D., is an orthopaedic surgeon with subspecialization in disorders of the upper extremity at the Orthopaedic Institute of Ohio in Lima, Ohio. He has also earned certificates of added qualifications in hand surgery, as well as sports medicine.

1987/88

Robert Deters, M.D., '87, is a physical medicine and rehabilitation physician in Shrewsbury, Massachusetts. His wife, **Jean Casello Deters, M.D., '88**, is the medical director and owner of RenovoMD, a sound medical aesthetics practice offering a portfolio of noninvasive facial and body treatments based on "Science, Beauty and Wellness." They have two sons and enjoy traveling.

1990

Robert Mott, M.D., M.P.H., FACPM, is a physician on the Global Medical Team for Procter & Gamble in Cincinnati. He recently started this position after retiring from a long career in the Army specializing in preventive medicine.

1991

Deborah Miller, M.D., is the family medicine residency director for the University of Chicago Department of Family Medicine. She also serves as a family medicine physician with the Northshore Medical Group in Glenview, Illinois.

1994

Thomas Fritinger, M.D., practices family medicine at the Ogden Veterans Affairs Outpatient Clinic in Ogden, Utah. He married and has three daughters.

1996

Tiffany Hall, M.D., is a practicing at Premier Ob/Gyn in Dayton. In addition, she is the medical director for Revitalize MD MedSpa & Laser Center in Springboro. Hall has most recently founded Shopgiving.com, a shopping site that enables shoppers to contribute to their favorite local charity and/or scholarship fund. She is married and has two daughters.

William Wong, M.D., M.P.H., FACP, is medical director for the Chicago Fire Department and has spent his entire career in public health. He is also a major in the Illinois Air National Guard.

Rick Chadha, M.D., is a gastroenterologist with O'Rielly Medical Consultants in Palos Heights, Illinois. He and his wife, Vishali, have two children and live in Burr Ridge, Illinois.

Efrem McAdoo, M.D., is an emergency physician with Adventist Health and medical director for Anthem Blue Cross Blue Shield in Chicago. He and his wife, Nakia McAdoo, CRNA, have three sons and live in Elmhurst, Illinois.

1997

Michelle Milic, M.D., has joined MedStar Health in Washington, D.C., as an internist specializing in critical care and hospice and palliative care.

1999

Megan Baker-Ruppel, M.D., is an associate professor of surgery and surgery program director at Comprehensive Breast Care at Hollings Cancer Center, Medical University of South Carolina. She attributes the mentoring and encouragement of the following Boonshoft School of Medicine faculty with her success: Drs. Barney, Dunn, McCarthy, and Johnson.

Rebecca Rastetter, M.D., practices at Whitney Pediatric and Adolescent Medicine in Hamden, Connecticut. She has two children, Reese Puchalski (11) and Corinne Puchalski (9). She is a clinical instructor at Yale University and an assistant professor at Quinnipiac University.

Cynthia Villacis, M.D., of Edgewood, Kentucky, is a family physician at HealthSource of Ohio.

2000

Anup Patel, M.D., is an attending pediatric neurologist and associate program director of the Neurology Residency Program at Nationwide Children's Hospital. In addition, he is an assistant professor of clinical pediatrics and neurology at The Ohio State University College of Medicine. He is married and has two young children.

2002

Baljinder Bathla, M.D., is a cofounder of Chicago Sports and Spine, a multidisciplinary pain management clinic with multiple locations throughout Chicago. Bathla also serves on the executive board of directors for Awassa Children's Project, an Ethiopian orphanage for children orphaned from HIV in Ethiopia and provided medical care in Haiti after the earthquake of 2010, the Asian tsunami of 2004, and Hurricane Katrina. He and his wife, Sagina Hanjrah, M.D., live in Chicago with their two children.

Joanne McKell, M.D., lives in the Ukrainian Village located just outside of downtown Chicago with her husband and two young children. She is a pulmonary and critical care physician at Mercy Health and Medical Center.

Loretta Riley, M.D., is a psychiatrist at the Denver Health Medical Center and an instructor at the University of Colorado School of Medicine.

Jennifer Vargas, M.D., and Ramon Alvarez, M.D., live in Riverside, Illinois, with their two children. Jennifer is a family physician at Alivio Medical Center, a bilingual medical clinic that serves the underserved. Ramon is a psychiatrist at the Dreyer Medical Clinic specializing in psychopharmacology, neuropsychiatry, adult psychiatry.

2005

Katharine Conway, M.D., M.P.H., is an assistant professor of family medicine for the Boonshoft School of Medicine. She completed her residency and Master of Public Health at University Hospitals Case Medical Center in Cleveland and focused her studies and clinical experience on global health and underserved populations.

2006

Dovilan Logan Wyatt, M.D., is an ophthalmologist in Chicago. She lives on the west side of Chicago with her husband, Patrick, an IT consultant. They have two children, a 19-year-old daughter who is attending Brown University and an 8-year-old son.

2007

Dr. Brian Harmych, M.D., a facial plastic surgeon specializing in cosmetic and reconstructive procedures for the face and neck, has opened his practice, Harmych Facial Plastic Surgery, on Chagrin Boulevard, in Pepper Pike, Ohio.

2009

Laura Rust, M.D., is a pediatric emergency medicine fellow and clinical informaticist at Nationwide Children's Hospital in Columbus, Ohio.

In Memoriam

Donald Lan Wamsley, M.D., '87, passed away May 10, 2014, at Kettering Medical Center. Wamsley is survived by his wife, Denise, his parents, and four sons, James, Andrew, Samuel, and Joseph. He was a practicing neurologist in the Dayton area for 21 years. For more information: newcomerdayton.com/obituary.aspx?src=value&obitid=83988



Dieter E. Nevels, M.B.A., appointed executive director and CFO of Boonshoft School of Medicine

Dieter E. Nevels, M.B.A., has been appointed executive director and chief financial officer of the Boonshoft School of Medicine. He replaced John Bale, M.Acc., who retired after 28 years of service to the medical school.

Nevels has almost 30 years of broad-based experience in all aspects of corporate and medical school finance and business operations, ranging from strategic planning and analysis to valuations of merger/acquisition targets.

He served as the director of finance and budget with the Feinberg School of Medicine at Northwestern University since 2006. While at Feinberg he successfully streamlined operational procedures, developed bottom-up budgeting procedures, analyzed proposed program expansion/development, and identified ways to improve the operational results for the medical school.

Prior to joining Feinberg, Nevels' career spanned numerous types of businesses, ranging from for-profit, free-standing medical services to manufacturing and animal husbandry.

Jeffrey B. Travers, M.D., Ph.D., named professor and chair of pharmacology and toxicology

Jeffrey B. Travers, M.D., Ph.D., has been named professor and chair, Department of Pharmacology and Toxicology, and professor, Department of Dermatology, effective Feb. 1, 2015.

Travers comes to Wright State from the Indiana University (IU) School of Medicine, where he has been a faculty member since 1995. At IU, he held positions in the Departments of Dermatology, Pharmacology and Toxicology, and Pediatrics. He served as residency director for dermatology, and director of the Indiana University-Purdue University Indianapolis (IUPUI) Signature Center for Atopic Dermatitis. He was a member of the Institutional Review Committee and the IU School of Medicine's Scientific Advisory Council. For nine years he also served as the chair of the Department of Dermatology, before stepping down to refocus on his basic science research in 2010.

Travers has published approximately 200 peer-reviewed research papers, which have been cited nearly 2,000 times. His total funding from the NIH has been more than \$7.5 million, and he has received more than \$1.3 million from the Department of Veterans Affairs (VA) for his research. He is currently the principal investigator on three NIH grants.

Travers earned his M.D. and Ph.D. at the Ohio State University, served his residency in dermatology at the University of Colorado, and completed a postdoctoral fellowship in immunodermatology at the National Jewish Center for Immunology and Respiratory Medicine in Denver.



From Vietnam to the American dream

The Vietnam War ended with the withdrawal of U.S. forces in 1973 and the unification of Vietnam under Communist control two years later. More than 3 million people were killed in the conflict, including as many as 2 million civilians on both sides, some 1.1 million North Vietnamese and Viet Cong fighters, between 200,000 and 250,000 South Vietnamese soldiers, and more than 58,000 Americans. Waves of refugees fled the country in the aftermath of the war, including the families of two Boonshoft School of Medicine students.

Brian Dinh's parents arrived in the U.S. with \$26

In 1980, Brian Dinh's parents were forced to flee from Vietnam with nothing but a small suitcase and almost no money. After two years, his parents arrived in the United States with only \$26.

Dinh credits a Dayton woman, Jenny McConnell, with changing their lives. She provided his parents with money and a home and helped finance his father's education at the University of Dayton, where he received a master's degree in electrical engineering.

While his parents helped pay for some of his undergraduate education, Dinh still carried a significant amount of debt into medical school.

Despite his debt, Dinh, a fourth-year medical student, has a passion for helping others in Third World countries. He has received scholarships that have helped finance his medical mission trips. He took a month-long medical mission trip to Vietnam after his first year. "I have seen how many people in different parts of the world continue to have little access to medical care," he said. "I plan to enter the field of internal medicine and to someday travel to Third World countries to help provide care for a month each year."

Because of additional scholarships he has received, he will be able to afford another medical mission trip to Peru in February 2015.

Thao Tran dedicates her life to medicine after her mother survives cancer

When Thao Tran was born, she lived in an impoverished neighborhood in Vietnam marked by violence. Her father had grown up during the Vietnam War. But her aunt and uncle were able to flee the country in 1975 as boat people.

In 1993 when she was two years old, Tran and her family immigrated to Dayton. Life was better, but it was a struggle. Uneducated, her father could only get work sewing garments. She wore hand-me-downs and ate the reduced lunch at school.

Despite the family's poverty, her father encouraged her to get her education. Her teachers encouraged her. But adversity struck her family again. Her mother was diagnosed with cancer. Determined to help her mother, she became her mother's interpreter at doctor's appointments. Eventually, her mother was declared cancer free. Tran dedicated her life to medicine in thanksgiving for her mother's recovery.

Tran, a third-year medical student, plans to go into primary care medicine and serve the Medicaid population in Dayton. She received the Boonshoft Scholars Scholarship and Choose Ohio First Primary Care Scholarship.

"I am going to work as hard as I can to be the best doctor I can be," she said. "I know my calling is to reach out to people with limited income and few resources."



Your support can give students like Dinh and Tran an opportunity to fulfill their potential, pursue their dreams, and prepare for a lifetime of service to their patients, their communities, and the world. The life-changing impact of your contribution is almost limitless. **So please visit med.wright.edu/giving to make your gift to the Boonshoft School of Medicine today.**



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Save the Dates

WELL Welcome to Education, Life and Leisure

Join the Boonshoft School of Medicine for our second annual WELL (Welcome to Education, Life, and Leisure) Weekend in Napa Valley March 19-22, 2015. The Villagio Inn and Spa is nestled among the verdant rolling hills and vines of wine country and just steps from the dining tables of America's most celebrated chefs in the legendary Epicurean walking town of Yountville. This year's event will feature a two-day CME symposium, a cooking demonstration at the Culinary Institute of America, a wine tasting at the V Wine Cellar, and more!

Program Fee per person: \$250

For more information including registration and hotel information, please visit the website: med.wright.edu/well

Academy of Medicine Dinner

April 29, 2015



Special Guest: Nick Mangold

Recognized as one of the National Football League's best offensive linemen, Nick Mangold first established himself during his days as a three-sport athlete at Archbishop Alter High School.

Having grown up in Centerville, Ohio, Nick played both offense and defense for the Knights and was named first-team All-Ohio his senior year. After graduation, he was selected to play in the U.S. Army All-American Bowl.

He continued his career at The Ohio State University, where he was a three-year starter and co-captain his senior season. A two-time All-Big Ten selection, as well as an Outland Trophy finalist and a finalist for the Rimington Trophy. He was drafted in the first round (29th overall) by the New York Jets in 2006 and was the first player ever to start the entire season at center for the organization.

After his rookie season, he was named to the All-Rookie team and garnered AFC Rookie of the Year consideration, despite playing an often overlooked position. He has since been selected to the Pro Bowl five times and named All-Pro twice.

Register online at med.wright.edu/academy