SPRING/SUMMER 2016

DREXEL UNIVERSITY

College of Medicine

MEDICAL EDUCATION FOR A NEW **GENERATION**

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Joining together to support students

Gertrude E. Hight, MD, WMC '65, was a successful psychiatrist who loved the arts, and supported music, ballet and theater in her hometown of Sarasota. She also cared deeply about the physicians who would follow in her footsteps, and through The Gertrude E. Hight Trust, directed a bequest of \$50,000 to establish a scholarship in her name.



Named endowed scholarships directed to a specific school or college now require an initial commitment of \$100,000. Gertrude's gift of \$50,000 was matched dollar for dollar by **The Schleyer Family Matching Gift Challenge for Scholarships in Medicine**. The Schleyer Family Match allows students to follow their passion in medicine and allows donors to double the impact of their gift.

The Gertrude E. Hight, MD, WMC '65, and Schleyer Family Matching Gift Scholarship will provide support for third- or fourth-year medical students who plan to become primary care physicians in medically underserved communities in Philadelphia and throughout Pennsylvania. This includes family medicine, pediatrics, and obstetrics and gynecology.

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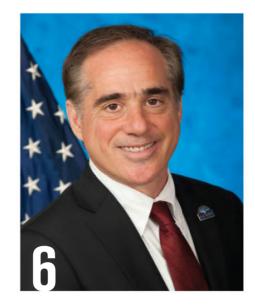


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ON THE COVER: Seniors (I-r) Teri Miller, Saira Ahmed and Jasmine Lemmons have logged many hours in the 10,000-square-foot sim center at Queen Lane.

Photo: Peter Olson



PROFILE

DAVID SHULKIN, MD, MCP '86 Undersecretary for Health David Shulkin, MD, is charged with transforming our veterans health care system. He was ready for the challenge.

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Melissa Manners showed the molecular link between MeCP2 and pain.

What Goes Into a New Curriculum



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Faculty and students in three work groups



LETTERS

Dear Reader,

This is the fifth issue of the College of Medicine Alumni Magazine, and we're looking for a little feedback.

When we launched Volume 1, Number 1, Winter/Spring 2014, our goals were simple: to communicate to the alumni of Drexel University College of Medicine and its predecessor schools the sense of continuity we have in carrying forward their legacy; to tell interesting stories about alumni and current students; and to foster pride in this shared community.

But meaningful communication is a two-way street, and we'd like to hear from you. What articles in this issue, or others, caught your eye? Which was your favorite? What or who would you like to read more about? Do you have specific story suggestions?

Please take a moment to email me at jtracy@ drexelmed.edu and let me know what you think.

Sincerely,

tem Tracy

Jean Tracy, Editor

WE WELCOME Your letters Correspondence may be mailed to Editor, Drexel University College of Medicine Alumni Magazine, 1601 Cherry Street, Suite 11484, Philadelphia, PA 19102, or emailed to jtracy@drexelmed.edu. Please include your contact information. The magazine staff reserves the right to edit for space and style.





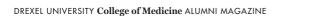
HEALERS

College of Medicine

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DOCTORS OF ARTS

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Problem-Solving Skills for A Changing Environment

Dear Alumni,

I am delighted to give you a preview of the exciting medical education redesign to be implemented in August of 2017 — the first in more than a decade. Our students always rank among the best nationally for the quality of their patient-centered care, and we fully expect that focus, and the value of our medical education program, to be strengthened with the implementation of new teaching and learning methods in the coming vears.

The new curriculum will

- Consolidate the best elements of the current two-track system into a single program.
- Reduce the number of required classes in favor of courses that integrate several disciplines.
- Increase the amount of active learning, with diminished reliance on lectures, and instead use class time for working in teams to apply knowledge to clinical cases.
- Provide students with opportunities to earn concentrations from other schools within Drexel, such as population health, informatics or business.
- Continue our longstanding focus on community engagement and service.

Medical knowledge is changing so rapidly that if we say, "We're going to teach you everything you need to know," the facts will be different in five years. Instead, we are giving students models of how the body works and skills in problem solving and lifelong learning.

The curriculum emphasizes early and frequent clinical exposure, team learning, community and civic engagement, and cultural competence. The new curriculum will be supported technologically by Drexel-developed iPad applications and the College's state-of-the-art Simulation Center and Clinical Education Center.

Because graduates will need to understand more about the greater world of health and health care, we are collaborating with other Drexel schools and colleges to offer cuttingedge courses in areas such as health informatics, population health, patient safety, biotechnology, health care systems and financing, and principles of translational research.

Read more about the new curriculum, beginning on page 8, and you'll understand why we call it "Foundations and Frontiers."

Cordially,

1 her le

Valerie Weber, MD Vice Dean for Educational Affairs



Clare Coda examines a young patient in Uganda as her father looks on.



THE GIFTS OF GIVING: DR. LOUIS CODA & FAMILY

By Catherine McCorkle

It's not unusual for a physician to travel overseas and engage in medical mission work. It's not so unusual for a doctor to sustain that work, to return and build relationships with those abroad. Louis Coda, MD, HU '85, has had his family with him during a lifetime of medical mission work. What may be unusual was the opportunity he had last year to work side by side in Uganda with his daughter, Clare Coda, MD '15, now a resident at the University of Maryland. Service, along with medicine, has become a family business.

Both of Louis Coda's parents (Evis J. Coda, MD '47, and Rosemary K. Coda, RN '47) graduated from Hahnemann, so while growing up in Los Angeles, he always had medicine as a professional example. Yet, he says, "I was actually thinking about going into religious life, though something never quite sat right with that."

He attended UCLA, majoring in biology, but had no set plan for life afterwards. A family friend, a Jesuit priest, suggested he consider the Jesuit Volunteer Corps, a two-year service immersion program. "I looked into it," Coda says, "and doors just kept opening, so I went through." He ended up working at a boys' home in Bethel, Alaska. "That's where I met my wife [Martha, a social worker], and that changed my plan." His next thought was, "Well, now I've got to get a job."

LEARNING WHAT'S OF VALUE

Although Coda hadn't considered the medical profession as a younger man, his biology background put him in good standing. He attended Hahnemann, his parents' alma mater. After a residency in internal medicine and pediatrics at Wright State University, Coda learned about the Mission Doctors Association, a Catholic organization based in Los Angeles that connects doctors and their families with overseas hospitals.

Two years later, he and his family were at St. Mary's Hospital in Papua New Guinea. His daughters, Clare and Teresa, were 18 months and 6 months old, respectively. A son, John, would be born there.

Coda relates an experience that stands out from that time. A mother brought her newborn to the hospital; the baby was at 30 percent of his birth weight. Coda and other hospital staff tried to help, but they were met with one obstacle after another. At one point, they pooled their funds to pay the anesthesiologist so a surgery could be performed. During this whole ordeal, the baby nearly died several times. Finally, after the surgery, with the mother holding the baby, the child passed. Coda felt like a failure.

A few days later, he saw the mother in the fields near the hospital, working to pay off her bill. Eventually, the mother returned to the hospital to speak with him: "'You treated me like a daughter,' she said. 'I'm forever thankful for your having done that.'" Coda continues, "So much of overseas work is all these little things that come together that sort of teach you failure and success. What's of value and what's not of value."

There are many stories like this, as well as many children who live and die, he says. This story, however, "was so touching because it taught me a lot. That's overseas work. It's changing you at a soul level. It's why I can't stay away."

A LIFE OF IMMEDIACY

After Papua New Guinea, the Coda family moved to Pennsylvania, where another son, Anthony, was born. In early 2004, they relocated to Cameroon, in West Africa, for six months. Coda made a brief solo foray to Liberia, but the family would join him again in Uganda in 2009 — except for daughters Clare and Teresa, who were both in college. The family returned to Uganda in 2013, but Clare was now a Drexel medical student.

Finally, in April 2015, Clare joined her father and mother in Uganda through a medical school elective. During the six weeks of her visit, she and her father covered the pediatric ward at Saint Francis Hospital, which had from 30 to 60 children.

Father and daughter both recall a shared experience during their time in Uganda. They were seeing a line of children one at a time as their mothers waited with them in a separate area. A mother of twins ran to the front of the line, holding her child, crying, "My baby." The child had died. "You knew the baby had been alive 10 minutes earlier," Clare observes.

"You don't even have time to mourn," her father says. Since they had a line of children to examine, he reminded his daughter, "You have to keep going."

Twenty minutes later, the mother was back in the doctors' room with her other twin. "Even the mother doesn't get to mourn the child who died. You can see her pain," says Lou Coda. She was the only family member there with her children, and she needed to have the next child seen. "Life and death were much more present," Clare says. "A baby died, but then she had another one — she had to keep doing her job."

Now in her first year of residency, Coda says she would like to return overseas to continue her medical mission work, although that may have to wait until after her training. She is following her father's footsteps in another way, as well — specializing in internal medicine and pediatrics.

Coda senior says he and his wife plan to return to Uganda in 2017. He says that volunteering is simply something they have always done. "All those things that you're given during those times are really priceless. It's a way to be true to yourself. I'm grateful I've had the chance to do all these things," he says. In 2016, the Mission Doctors Association honored Louis and Martha Coda with the Monsignor Brouwers Award for Faith and Service.



Lou Coda, with baby and mother in an ICU, has spent his life in mission work. "You get down to that layer where life is happening," he says.

Clare Coda says her younger siblings, Teresa, John, and Anthony, have been influenced by their parents' example as well. "Ever since [the Jesuit Volunteer Corps], our parents have lived this very interesting lifestyle that focuses on serving other people and thinking outside of yourself," she reflects. "That's what we grew up with. I think you can tell that in all of us and as we've chosen our careers. I feel very lucky to have them as my parents."

After graduation from Juniata College, Clare also volunteered with the Jesuit Volunteer Corps; she was placed in Philadelphia. Along with its focus on service, the program emphasizes living in community and with simplicity. There is the idea that once a person goes through this, they cannot go back to their old way of thinking — they are, in a way, "ruined." Coda observes, "I guess that's what my parents have led in their lifestyle — kind of the JVC aspect of 'ruined for life.' They've been ruined and they ruined it for the rest of us."

Three generations (I-r): Louis Coda, MD, HU '85; Evis J. Coda, MD, HU '47; and Clare Coda, MD '15. Clare's grandmother Rosemary K. Coda, RN '47, also graduated from Hahnemann.

Changing Systems, Changing Lives:

David Shulkin, MD, MCP '86

By Elisa Ludwig

As a physician, entrepreneur and CEO, David Shulkin, MD, MCP '86, has always been driven by the desire to improve patient health and safety. Now as undersecretary for health in the United States Department of Veterans Affairs, he's effecting change on the largest possible scale — serving 8.76 million people annually.

Time of Turnaround

At the Department of Veterans Affairs, Dr. Shulkin has been charged with transforming the country's largest integrated health system, ushering it out of a tumultuous and controversial era. In 2014, CNN reported that at least 40 U.S. veterans had died while waiting for care at the VA facilities in Phoenix, Arizona, and internal investigations revealed that the problem was widespread.

Shulkin was nominated by President Obama and confirmed by the Senate in 2015. For a physician with decades of experience across the private and academic sectors, the challenge of taking on a \$70 billion annual budget and a board of 535 directors (Congress) proved deeply compelling. "I've always been attracted to what I call turnaround situations where I think I can be of help," he says.

In this case, that help means bringing business acumen honed in the private sector to the federal government. It means looking for processes that are cheaper, better and faster. It means questioning the status quo to make sure that the system truly benefits veterans and improves access to care.

A Path to Public Service

Shulkin began preparing for his current role when he applied to the College of Medicine's predecessor Medical College of Pennsylvania. He chose the school for its humane environment and abiding focus on empathy for patients. Medical school not only offered the necessary academic foundation for a career in medicine, but it also gave him his first opportunity to learn about health policy. During the summer of his first year, he went to Washington, D.C., as a health policy fellow and served as staff to the Senate Committee on Aging. "I saw how Washington and health policy can be influenced and influential, and I learned how the whole system functions," he says. "It was a very eye-opening experience."

At MCP, Shulkin also met his wife, Merle Bari, MD, a classmate, whom he cites as having the single biggest impact on his life and work. Dr. Bari is a dermatologist with offices in the Greater Philadelphia area, in Gladwyne, Conshohocken and Roxborough.

In 2002, Shulkin returned to the medical school, now under the Drexel name, serving as chief quality officer of the College and co-chairman of the Department of Medicine. He later became vice dean of the College and helped focus educational and clinical programs as the school found new footing.

Shulkin has held leadership roles at a number of hospitals, including Beth Israel Medical Center, the University of Pennsylvania Health



Distinguished leadership in quality, safety and service

During Alumni Weekend in May, David J. Shulkin, MD, MCP '86, will receive the WMC/MCP Distinguished Alumnus/a Award. The award honors a graduate who is acclaimed for excellent service and accomplishments, professional leadership, or scholarly activity that brings recognition to the medical school and its alumni.

As undersecretary for health in the U.S. Department of Veterans Affairs, Dr. Shulkin oversees not only the VA health care system, but also the country's largest graduate medical education program.

A trained health outcomes researcher and former Robert Wood Johnson Foundation Clinical Scholar, Shulkin is a leading expert in health system management, quality and patient safety. He developed the country's first fellowship in quality management and safety; founded a company to help patients select care based on quality; and created the nation's first medical-error tracking system, now used by hundreds of hospitals.

One of the first contributors to pay-for-performance systems, Shulkin was also an innovator in accountable care and population health management. He has held numerous leadership roles in professional societies and on editorial boards, in addition to his positions at academic medical centers and private corporations. He was named one of the 50 Most Influential Physician Executives and Leaders for 2016 by Modern Healthcare.

Throughout his career, Shulkin has maintained his internal medicine practice, staying true to the essence of who he is, a physician seeking to help patients.

System and Temple University Hospital. Most recently, he served as president of Morristown Medical Center and vice president of its parent company, Atlantic Health System.

Shulkin also founded DoctorQuality.com Inc., a startup that was one of the first organizations in the country to use publicly available data to make assessments about the quality of doctors and hospitals.

While all of these roles presented unique and wide-ranging opportunities, Shulkin sees a strong parallel between them — they each allowed him to make an impact on patient care by questioning and then improving the way medicine is managed.

Leading the Way to Change

While he says that no job could quite prepare him for the scope of his new position, Shulkin's entrepreneurial streak and interest in the convergence of business, medicine and management have provided him with a unique skillset. He has already started to reduce wait times at VA medical centers by improving the intake process, identifying priorities and better distinguishing between urgent and routine needs at the front door. In addition to reducing wait times and eliminating wasteful practices, he's working to make the VA a competitive employer to decrease vacancies and attract more top staff.

Yet there's much about the VA he would like to keep as is. He has

spent a lot of time traveling the country and observing the great work at VA facilities. "The VA is a unique national resource, and the type of care we offer, the quality of research we do, the amount of training we offer are all critical to the U.S. health care system," he says. He points to a recent article in the *Journal of the American Medical Association* which showed that the VA has lower mortality rates than do non-VA hospitals in the hospitalization of older men with acute myocardial infarction or heart failure.

It's also something of a homecoming: Shulkin's grandfather was a chief pharmacist at the Madison, Wisconsin, VA, and because Shulkin's father was an army physician (a captain), Shulkin was born on a military base. He says he has always looked for the chance to give back to the country, so he views this job as an honor.

For Shulkin, the sense of personal responsibility runs deep. Even as he helms his post in Washington, he maintains a medical practice, working in the New York City Veterans Administration, where he meets with patients every Friday and listens to their concerns. Staying in touch with medicine informs his management decisions and keeps his focus on what matters most. "At the end of the day, people never want to feel like a number," he says. "They want to be engaged on a personal level. That's what's stuck with me since my days as a medical student, and that's what it means to be a doctor."

EDUCATION FOR A NEW GENERATION

By Elisa Ludwig

No doctor works in isolation, and students need to be prepared for the rapidly changing, increasingly collaborative health care environment of the 21st century.

> A new curriculum — to be launched in August 2017 recalibrates Drexel University College of Medicine's approach to medical education, emphasizing community, cultural competence, team learning and professionalism in preparing students for practice in the real world.

Two years in the making, Foundations and Frontiers will replace the current two-track system, merging the best aspects of both, together with exciting innovations, into one unified program. The new paradigm recognizes the imperative to equip students for a different reality, with both the qualities essential to clinical excellence and the emerging competencies required in today's world.

"We're fundamentally changing how we think about training the physicians of the future," says Valerie Weber, MD, MS, FACP, vice dean for educational affairs. "It's no longer simply about acquiring a body of facts through lectures and reading, and repeating that information back during exams, but about giving students skills to continually apply and update their knowledge."

A RENEWED APPROACH

All photos: Peter Oson

Medicine has changed dramatically over the past few decades due to shifts in financing, organization and the delivery of services. Physicians are increasingly expected to deliver higher quality and more efficient care, and to work in teams. With a continually expanding foundation of "best practices," medical professionals are also expected to stay abreast of the latest information. The existing College of Medicine curriculum focuses on two years of basic science followed by two years of clinical work, with students choosing one of two tracks. Foundations and Frontiers is a single-track, four-year program divided into three phases: Foundations, Applications and Transitions.

> Medical students can come and go by shuttle bus between the Queen Lane Campus and Center City. The Queen Lane lobby is pictured here.

Simulation Center Orientation Game

Drexel's incoming medical students will have the opportunity to prepare for the academic — and technological — challenges ahead with a leadingedge orientation game, developed by Web application developer Greg McGee and Drexel's Technology in Medical Education co-op students. The 3D game offers an entrée to the Simulation Center, where students learn from high-fidelity mannequins.

When students log on from their computer, they encounter the Sim Center's training room, where they learn its basic commands and controls, and meet their virtual team members. From there, they move into a 3D model of the Sim Center with four different clinical scenarios to test out. In each, they are faced with a patient in a critical situation; the objective is to stabilize the patient while working with team members to provide fast and efficient care.

Current students are now testing the program's beta version, and the game will be available for use during the 2016–2017 academic year. Foundations lays the groundwork with basic and clinical science during years one and two. Studies begin with cells and tissues and proceed into organ-based learning blocks with a focus on normal processes. The focus shifts to abnormal processes in year two. Students have early and frequent clinical exposure starting in their first year.

The Applications phase allows students to extend their patient care knowledge and skills to a variety of clinical settings during year three. Students will participate in a transition session to prepare for their clerkships and then pursue rotations in surgery, internal medicine, family medicine, pediatrics, psychiatry, obstetrics and gynecology, and neurology. To enhance the diversity of their clinical experience, students will work with faculty at multiple sites, ranging from metropolitan medical centers to neighborhood practices to rural clinics.

In the final Transitions phase, students focus on advanced clinical preparation for residency. With a Pathway adviser, either focusing on a single discipline or a broader set of experiences, students take both required and elective classes as a gateway to the next phase of their training. Students can also complete a number of elective rotations at non–Drexel-affiliated institutions, including international hospitals, health centers and clinics.

FRONTIERS

During four 1-week blocks in the Foundations phase, students begin their engagement in the Frontiers component, where they focus on cutting-edge topics in collaboration with Drexel's other colleges, fully taking advantage of the University's offerings. These include health informatics, population health, quality and patient safety, biotechnology, health care systems and financing, and principles of translational research.

In the Transitions phase, fourth-year students can choose advanced studies in one select Frontiers area, including population health, health care administration or health care informatics, with the opportunity to earn a concentration. Alternatively, they can conduct a scholarly project under the direction of a faculty member.

THE CALL FOR CHANGE

Created with input from students, faculty, alumni and medical education experts, Foundations and Frontiers builds on the College of Medicine's legacy of medical excellence and innovation while embracing the larger University's strengths in other areas. It also represents a cultural shift in medical pedagogy that has been observed over the past several years, from didacticism to a learning-by-doing approach. The 2010 Carnegie Foundation for the Advancement of Teaching report Educating Physicians: A Call for Reform of Medical School and Residency examined the issues facing doctors today and offered a blueprint for educational transformation. While the traditional culture of medical education was autonomous, expert-centered and hierarchical, this emerging culture values collaboration, transparency, a service orientation and patient-centered care.

Among the report's recommendations were to immerse students in clinical experiences earlier; integrate basic, clinical and social sciences; create long-running connections with



patients; emphasize teamwork; and allow for continuous improvements in the learning environment.

A FLIPPED CLASSROOM

These principles guided the College of Medicine's development of the new curriculum. Instead of treating medical education as a finite set of teachings, students will be given models of how the body works and the problem-solving skills to engage with the always-evolving science.

"We drew from the Flipped Classroom model, which initially came out of K–12 education," Dr. Weber says. "The idea is to give students the opportunity for knowledge acquisition ahead of time and use class time to apply that learning."

The new curriculum also integrates technology-based learning in a number of ways. The delivery of information caters to tech-savvy learners who tend to be more self-directed, with online video and tutorial components as well as independent assignments to be completed outside of the classroom. Through these technology-enhanced instructional formats, using Drexeldeveloped iPad applications, students can take in information at their own pace before coming to the classroom. They will then use class time to process, integrate and apply their knowledge.

Students will also take advantage of the College of Medicine's state-of-the-art Simulation Center [see sidebar, facing page]. In the Applications phase, students will log their experiences into a smartphone or iPad and support their real-time learning with an online program, videoconferencing for discussion and virtual "web patient encounters."

Learning Societies

Incoming College of Medicine students will have the best of both worlds — the academic foundation from a large, top-rated university, and the more intimate and supportive experience of a small school. Introduced in 2015, Learning Societies foster a sense of community for both students and faculty. The four cohorts were named by last year's first-year students in honor of Philadelphia monuments (The Athenaeum Society, The Liberty Bell Society, The Physick House Society and The Rocky Statue Society). Each first-year student is placed in one of the societies, joining second-year students, faculty directors and faculty mentors.

The Learning Society provides a framework for long-term relationships between students and faculty, encouraging study on a collaborative basis both in class and beyond. Each society is guided by faculty advisers and student representatives who are responsible for coordinating and planning activities, such as community service projects, wellness activities, career advisory events and learning competitions, in addition to social gatherings.

This page: Students will have early and frequent clinical exposure starting in their first year. Below right: A student reviews information in preparation for discussing the case of the week.

> In essence, students will spend fewer hours in traditional lectures, which reflects their growing preference — in recent years, most students have relied on streaming video rather than attending lectures in real time. Instead of nine classes in individual subjects the first year, they will take four, with classes merging disciplines such as genetics, biochemistry and cell biology for a more holistic approach. Courses across the Foundations phase include Molecules to Organs, Human Structure and Function I and II, Foundations of Disease, and Disease Systems I and II, designed to integrate study in the same way the body's systems are integrated.

> Microanatomy course director Haviva Goldman, PhD, for instance, is teaming up with Gross Anatomy course director Dennis DePace, PhD, to develop learning activities for the new curriculum. "We're working to maintain the integrity of our subjects but trying to be creative in our delivery and help students integrate their knowledge so that they come away with what they need to be medical practitioners," Dr. Goldman says.

In anatomy, students will still get the fundamental experience of working with cadavers, but the emphasis will move away from memorization. "We believe thoroughly that the act of dissection is what the students need to understand the threedimensional nature of the anatomy," Goldman says, "but we want to help them focus in on the key points that they'll really need to remember as they move through their careers."

Classwork will emphasize problem solving, as students will be continually prompted to apply their knowledge to clinical cases. Learning will be more collaborative, with teamwork in classes and in small groups formed in a student's Learning Society [see sidebar, page 11]. The goal is to produce doctors who can think critically in a clinical situation and work successfully with interprofessional teams. In a hyper-connected, data-rich environment, doctors may no longer be expected to know everything about everything, but they must know how to find the answers they don't have.

"The reality is that in modern health care, even if you have your own private practice, you are still working with nurses, physician assistants and office staff, and you need to be able to work with that group of people to achieve a common goal," says Michael White, PhD, course director for the Physiology and Nutrition courses. "Everyone on the team has something to say, and the collective knowledge of the team is greater than one

person can provide."

A critical component of the new curriculum is case-based learning, in which small groups of students meet with faculty facilitators to analyze a clinical case. The cases integrate social, behavioral and ethical principles, as well as the basic science being covered that week. The objective is to help increase their clinical reasoning skills and bring basic science to life.

For example, in Human Structure and Function II, one of the cases might be a patient with congestive heart failure. "Students will need to understand what drives the heart rhythm, how the contraction of the heart is controlled, how blood pressure works and what compensatory processes come into play," Dr. White says. "The session won't explain everything to students but will prompt them to investigate what they need to know. Students will be expected to take charge of their education, which in turn will help them become agile thinkers with the ability to constantly integrate new knowledge."

PROFESSIONAL AND PERSONAL GROWTH

Community engagement is another cornerstone of the program. Expanding on the College's longstanding commitment to both community service and patient-centered care, students will participate in the Longitudinal Community Care Practicum, an interprofessional, community-based learning course that offers exposure in multiple dimensions over the course of the first two years of study [see sidebar at right].

As ever, professional formation remains a critical thread in the program. Students will be continually encouraged to develop their empathy and compassion for patients, cultivating skills of mindfulness, self-reflection and self-regulation.

Students will reflect on the impact their medical training has on them personally through discussion and writing. "They will have a chance to process their experiences, such as seeing their cadaver for the first time or experiencing the death of a patient," Vice Dean Weber says. "There are many facets of this experience that can be challenging on a personal level,



Longitudinal Community Care Practicum

Too often, medical students don't have the chance to develop long-term relationships with patients, but an important component of the new curriculum gives them that opportunity. For the first 18 months of their studies, students will participate in the Longitudinal Community Care Practicum. Working alongside nurses and other health professionals, students will get to know patients and follow their care over time, whether it's a pregnancy or treatment for an illness.

Designed to offer a better understanding of the patient experience, the practicum also explores the real-life challenges of the health system. Students will not only gain experiential learning through patient partnerships in nonclinical settings, but they'll also investigate social determinants of health and the consequences of health disparities, and develop on-the-job professional experience through reflection and group inquiry, all of which contribute to professional formation and the curriculum's emphasis on patient-centered care.

and we want to provide the support to help them become excellent clinicians."

Given diverse patient populations and disparities in health care, today's physicians must be culturally competent. Foundations and Frontiers emphasizes the development of these crucial skills from the outset of student learning, with specific threads that help them better understand patients and colleagues from different backgrounds, improve communication and bridge the gap across cultures, biases and belief systems for more effective care.

Last year, as the nation's cohort of new doctors graduated, one in 75 set forth with an MD degree from Drexel. Weber believes the College has a responsibility to ensure the next generation of physicians are competent, compassionate and active learners. "Embracing a new curriculum is not easy, but we have had outstanding input from alumni and faculty. No one has shied away from this process and what it demands. In the end, we all want to improve the health care system, and this transformation will help us continue to turn out top-caliber doctors who can face the new challenges ahead."

Editor's Note: Special thanks to Donna Russo, PhD, HU '89, senior associate dean for curriculum and professor of microbiology and immunology, who provided extensive background information for this article.

Melissa Manners published two papers with her colleagues at Pfizer and two with Medical Diagnostic Laboratories before coming to Drexel. Now she has two first-author publications to her credit, a third paper out for review and another recently submitted.

PROBING THE SENSATION OF PAIN: MELISSA MANNERS, PHD '16

By Jean Tracy

The first-ever National Pain Strategy, commissioned by the Department of Health & Human Services and released in final form in March, is unequivocal on the need for a robust basic and translational research effort to reduce the current burden of pain. The Interagency Pain Research Coordinating Committee, which prepared the strategy, is now charged with creating an agenda to advance pain-related research.

In the College of Medicine's Department of Pharmacology & Physiology, a robust basic research effort has long been underway to find new molecular mechanisms involved in the development and maintenance of pain states. Further understanding of these mechanisms could lead to the identification of new targets for drugs that would be alternatives to anti-inflammatory drugs and opioids.

Melissa Manners, who successfully defended her doctoral thesis in March, has been studying the role of the epigenetic regulator methyl-CpG-binding protein 2 (MeCP2) in modulating pain. Mutations in *MECP2* cause Rett syndrome, and it has been observed that people with Rett syndrome have reduced pain sensitivity. What Manners did was to show the molecular link between MeCP2 and pain.

Children with Rett syndrome (almost exclusively girls) have a number of severe neurological and physical disabilities; the lack of pain sensation has not been a particular focus of the Rett community, but it was of interest to the Drexel researchers. Manners explains: "A classic example is that young girls will chew on their fingers to the point of severe injury. They don't seem to have the ability to sense the pain normally. Where we would sense the pain and stop, they have a very delayed or reduced reaction."

Manners did her thesis research in the laboratory of Seena Ajit, PhD, assistant professor in the Department of Pharmacology & Physiology. The Ajit lab pursues various aspects of epigenetics including DNA methylation, histone modifications, and RNA-mediated gene silencing, all aimed at understanding the molecular mechanisms underlying pain.

Manners was specifically looking at microRNAs and MeCP2. MeCP2 binds differently after nerve injury. "What we've found is that after a nerve injury that causes neuropathic pain, microRNAs that repress MeCP2 are downregulated and MeCP2 is upregulated," Manners explains. "We were interested in investigating this regulatory mechanism, but also wanted to know what these changes in MeCP2 levels meant for gene expression. We found that upregulation of MeCP2 ultimately leads to changes in MeCP2 binding to DNA, and this leads to the dysregulation of many downstream genes. We found many genes that were changed, but the one we focused on was microRNA-126." The researchers found that miR-126 was repressed by MeCP2 in a neuropathic pain model and that the repression of miR-126 led to upregulation of pain targets.

MeCP2 has been well studied in the brain, but the goal of Manners' research was to look at the periphery. The dorsal root ganglia convey noxious stimuli from the periphery to the central nervous system. Previous miRNA profiling of dorsal root ganglia in a neuropathic pain model showed decreased expression of multiple miRNAs predicted to target MeCP2. The researchers confirmed MeCP2 upregulation in the dorsal root ganglia following nerve injury and repression of MeCP2 by miRNAs *in vitro*.

There are just a handful of publications concerning MeCP2 in pain – and two of them are from the Ajit lab. "The link had been hypothesized, but it had not been empirically validated, and certainly not in the periphery," Manners says. Other studies that have been conducted have been in the brain, investigating the *perception* of pain. "But the periphery — the *sensation* of pain — hasn't really been explored till now."

Manners is headed for a postdoctoral fellowship at the University of Pennsylvania, where she will study epigenetic regulators and anxiety in the laboratory of Julie Blendy, PhD. In the Ajit lab, she studied the periphery and spinal cord. In her new lab, she will be studying the brain. "With both experiences, I will have covered the entire nervous system, and that is kind of awesome," she says with a grin.

In the process of finding a good fit, Manners looked at several epigenetics labs at Penn. "I was very fortunate to have a great experience with interviewing there, largely because I was so well prepared here at Drexel," she says. "They were impressed by the research, even the work that was unpublished — they thought it was innovative, interesting — so it was really nice to give a seminar there."

Manners was always interested in science. "My parents have a science background so I was raised with that in mind. I was interested in anything from the environment to planets." In college, she majored in biology. "I loved my labs, and I knew I wanted to be in the lab," she says. "When I found my first lab position, at Pfizer in Princeton, it solidified for me that I wanted to do the research end of science."

She was happily at Pfizer for almost three years and published two papers with her colleagues. Then the Pfizer site where she worked shut down. "I found another job right away, so that wasn't a problem, but from the layoff to the next job, I realized that having a PhD and being able to lead projects was really important to me," she says. "Instead of just participating in projects, I wanted to come up with the projects, and so I applied for the PhD."

Manners knows that she wants to stay in an active research role but finds it hard to say whether her future lies in industry or academia. "I have loved both environments, and I'm open to either. That position is unusual, I know, but I think because I've seen the good and bad in both, I'm more likely to go where there's a great opportunity. There's a great opportunity at Penn right now, and I'm going to go with that."

In the third year of her doctoral program, Manners gave birth to a daughter, and she is now expecting her second child. "In a few years I'll have to see what's out there and what makes sense," she says. "Being employed and work-life balance are both important to me."



FOOTBALL HELPS FUND AN EDUCATION

By Jon Caroulis

America faced many shortages during World War II: sugar, gasoline, even offensive linemen. The Philadelphia Eagles needed a guard in 1944, and there weren't many available. That's when two-way player, and later assistant coach, Bucko Kilroy told Head Coach Greasy Neale, "What you need is in a classroom on Broad Street." He was referring to Michael Mandarino, a childhood friend who was entering the third year of his medical school education at Hahnemann.

Mandarino was a "Little All American" while he played for La Salle College, and when the Eagles called, it was an offer he couldn't pass up.

The money he earned from playing with the Eagles (\$200 a game) helped pay Mandarino's Hahnemann tuition, says his son, Michael Mandarino, Jr., MD, a 1972 Hahnemann graduate.

The senior Mandarino was taking classes at Hahnemann daily from 8 a.m. to 5 p.m. "Back then, everybody on the team had a day job, so they practiced under the lights from 6 p.m. to 9 p.m.," the son explains.

"In the 1945 Eagles team picture, my father is sitting there, and he looks like a kid on Christmas morning," says Mandarino Jr. "He was having the time of his life. He had everything he loved — medicine and football."

While Mandarino loved playing, he was always serious about his medical education, says his son. There's a photograph of the team traveling on an airplane, he says, and everyone is laughing and having fun, but his father is reading a textbook.

Hahnemann students back then had to be on call for weekends, and they were paid \$25. When it was Mandarino's turn to work the weekend, he traded his on-call duty to other students: they got extra money, and Mandarino was free to play football.

During one season, Coach Neale told Mandarino to play tackle after their starter was injured. Neale said, "If you are smart enough to be a doctor, you are smart enough to learn two sets of plays." The following week, both Eagles centers were injured, so Neale told Mandarino that he "should be smart enough to learn three sets of plays," and he played center.

NEW TEAMS AND POSITIONS

Because of the war, medical students went year-round and graduated in three years. Mandarino graduated in 1945, just as the war was ending. After he began his orthopedic surgery residency at Hahnemann, he played for the Eagles' minor league team in Wilmington, Del., under an assumed name.

When the Korean War broke out, Mandarino was called into the Army Air Force. He spent two years as chief of orthopedics at Sampson Air Force Base in Geneva, N.Y., where he treated practically every soldier who needed orthopedic care, says his son. When his tour was up, the Army, using the "emergency" powers prompted by the war, extended his service another year.

From 1953 until 1962, Mandarino served as team physician and orthopedic consultant for the Eagles. In 1954, he received his certification from the American Board of Orthopedic Surgeons. In 1956, he became a fellow of the American Academy of Orthopedic Surgeons.

THE FUTURE IN PLASTICS

In the late 1950s, Mandarino became famous for developing the use of a polyurethane polymer to repair fractured and diseased bones. Called Ostamer (then a trademark of the William S. Merrell Company), the rigid polyurethane foam could be poured in liquid form. Mandarino presented a report on 35 cases at the 1959

Mandarino Sr. and Jr. at Franklin Field: like his father, the son played guard.

American Medical Association annual meeting and subsequently published several articles on the Ostamer technique.

"He read an article in *Time* magazine about how airplane wings were attached to the body of the plane with a plastic substance. He figured, if it could keep wings on an airplane while in flight, it could keep broken bones together," says Mandarino Jr. Ostamer, he points out, "is the forerunner of what's being used today."

Mandarino Jr. also played college football, when he was an undergraduate at the University of Pennsylvania. He says his father (who died in 1985) was his inspiration to attend Hahnemann and to become an orthopedic doctor. "I was born at Hahnemann, I did my residency there, my wife [Terry L. Mandarino, RN, HU '69] went there," he says. "I guess I'm a Hahne-maniac."

And like his father, he treats athletes.

Careers Outside The Clinic

Some physicians find rewarding careers in alternative paths to clinical practice. They discover niches in the pharmaceutical world, health care administration, and research, among other fields. Three alumni of the College of Medicine and its predecessor institutions represent many who take pride in doing work that makes a significant impact on the health and wellness of a broad spectrum of patients, as well as the field of health care in general. Here are their stories.

Charles Tressler, MD, HU '80

Senior Director, Safety Risk Management Lead Pfizer



Early in my career, when I was in clinical practice as an ophthalmologist at Walter Reed Army Medical Center, my day was built around taking care of patients, answering their questions,

writing prescriptions, the ebb and flow of life in the office. I wondered sometimes if there was a connection between patients in terms of the problems they were presenting, but by the time I started thinking about it, the phone rang, or I had to be off to the next patient, answering other questions.

I wondered how to reconcile my desire to have a continual learning of the latest medical information and still have my hand in clinical medicine.

One day, I got a call out of the blue from a pharmaceutical recruiter asking if I'd be interested in a research and development position involving new medications and devices for the treatment of ophthalmic diseases. What a stroke of luck that was! My undergraduate degree was in pharmacy so this was a natural interest for me.

I took the position and was responsible for reviewing the new ophthalmic medicines in development and in the company's pipeline, trying to determine which of these drugs could make it from the bench to the bedside or if better alternatives to current treatment were possible. I enjoyed my involvement in clinical studies because I could see firsthand the results patients were having with new medications.

After working for Pharmacia, Pfizer and Merck, I returned to Pfizer, where I've been since 2006, first in research and development and now in safety surveillance and risk management. I migrated to the safety side because many drugs on the market have some type of adverse ocular events. I was asked to evaluate these events, consider how to manage them, and how to design studies to assess the level of risk.

Also in this role, I ensure that the correct terminology is used to describe adverse events so we don't create unnecessary chaos. For example, staff members would use the word *blindness* to describe an adverse event when they might just mean blurred vision. I also provide guidance for study design for the assessment of ophthalmic adverse events associated with drugs in development.

This career path has enabled me to practice medicine without having to worry about the business of medicine. In addition to my work at Pfizer, I am a clinical instructor in a glaucoma clinic at Yale University School of Medicine where I teach residents a few times a month. It's very rewarding to work with younger doctors, to be challenged by them in the ways we treat patients, and to be able to share learned experiences from time in medical practice. Seeing patients in the clinic also helps to keep you current, and that carries value when you render a professional opinion with colleagues.

Pursuing this career path has made me feel more fulfilled as a physician, clinician and scientist. I have the opportunity every day to practice not only medicine, but also the art of getting along with people to accomplish something beyond the walls in which I work. I work in a collaborative environment where foundations are built across medicine and across other disciplines in life. That's been very rewarding. You can do a lot of good using your training and experience to help other physicians in a direct way to provide better patient care on a daily basis.

On a personal note, I am also very proud and fulfilled by my family. My wife, Gloria DiBiase Tressler, is a 1979 alumna of Drexel with a master's degree in clinical microbiology. We have two sons, Nicholas and Michael C. Tressler, MD '08, who practices endocrinology.

Rupal Khurmi, MD '03

Medical Director, Clinical Medical Affairs AbbVie



Both my parents are physicians, but I wanted nothing to do with medicine. I loved science, but I did not want to be a doctor, and I definitely did not want to marry a doctor. I ended up doing both!

After studying French and German for eight years in the U.S. and abroad, I went to Georgetown University as a German major. What I really liked was the neurolinguistics aspect, so I changed my major to linguistics, and I did neurolinguistics research with Alzheimer's and Parkinson's patients at the Georgetown Center for Cognitive and Computational Science.

I graduated with strong science and language backgrounds, and became a pharmaceutical sales rep right out of college. I loved it. I worked on Merck's new products team and launched several drugs, including Singulair and Vioxx. When the clinical development team came to train us on the data, I remember thinking, "Wait! Doctors can do this?" My only knowledge of being a physician was from my parents' experience: they're on call, in the office, at the hospital, on the phone ... When I discovered this alternate career path, I decided to go to medical school. I did a post-baccalaureate program at Harvard before coming to Drexel (then MCP Hahnemann).

My husband [Narjeet "Sunny" Khurmi, MD '02] and I went to the University of Arizona for our residencies — his in anesthesia, mine in pediatrics. After residency, I started a fellowship in neonatology. I absolutely loved the NICU, but it wasn't a good fit for our family. For me it was very important, having grown up in a two-physician household, to find that balance, so I left my fellowship and worked as a pediatric hospitalist in Tucson.

Two years later, we moved to Chicago, and I entered the Physician Development Program at Abbott Laboratories, a leadership development program where I gained a lot of experience. I worked in the Phase I unit, where we do the first in-human testing; with the renal team on post-marketing pediatric studies; and in pharmacovigilance, on clinical and post-marketing safety. For my elective, I chose medical communications. One of my projects was to write a Dear Healthcare Provider letter that was mailed to 300,000 physicians.

After I completed the program, I became associate medical director for Global Medical Communications at Abbott — my dream job, combining my linguistics, sales and medical backgrounds. I managed a team that oversaw the medical review of all patient materials, commercials and safety information that went out for numerous products — a medication for thyroid, all of our cardiovascular drugs, and one for low testosterone.

When Abbott split into two companies (Abbott/AbbVie), they created a new organization at AbbVie called Medical Affairs. I saw that as an opportunity to grow. For the next two years, I job-shared with a colleague who also had small children, working three days a week, then four. I'm no longer job-sharing, but I remain at 80 percent.

What I love about what I do now is the greater reach of my job. I reach a much larger population through the publications we put out and the interactions we have with providers than I would if I were seeing patients one by one. I also love that I am constantly being pushed to do more than I would think I could do. I work on disease states that I was not trained on as a pediatrician, such as low testosterone or pancreatic cancer. Also, it is gratifying to work with people who always put the patient first. At the end of the day, it's about patients caring for them and getting the best treatments out as fast as possible.

In Medical Affairs, I work with a variety of internal people, people in the regulatory units

that interact with the FDA, as well as legal and compliance, medical reviewers, pharmacists, nurses, other physicians, medical science liaisons and our commercial team. Externally, I interact with physicians, nurse practitioners, physician assistants, dietitians ... I ask for expert opinions or guidance. I ask what they're seeing in their day-to-day work, what patients want, what's missing. We discuss post-marketing research and other new studies they think might be needed.

Medical Affairs is a bridge between the commercial and medical aspects of the business, which are strictly separated. As a physician in Medical Affairs, my work is guided by ethics. It is about providing the scientific base for the products on which I work and bridging between the external scientific community and our internal community.

Two years ago, we moved back to Arizona, and I now have my office in my home. Every four to six weeks, I spend four days at AbbVie headquarters in Chicago. To date I have worked on more than 25 drugs. I have learned so much, I have been published, and there are still so many directions that I could go. I actually don't think I would ever go back to patient care.

Brian Holzer, MD, MCPHU '01 President HM Home and Community Services (Highmark Health)



I went to medical school with every intention of becoming a practicing clinician. But I found myself drawn to the business side of health care. At first, I wanted to do both — become a clinician and handle some

form of administrative responsibilities. But there were very few role models at that time and the concept of leaving clinical medicine was more unusual than it is today. I really didn't have a clear idea about how to go about it.

After graduation, I completed a transitional internship in the University of Pennsylvania Health System. I loved that experience and it was a difficult decision, but ultimately I decided to pursue an MBA at The Wharton School. It was just instinct and intuition that told me I'd be happier on the business side of medicine than in clinical medicine.

After Wharton, I was accepted into a commercial leadership program at Amgen, a biotech company where new MBA graduates go into a rotation program for three years. My very first job was as a sales rep in New York City with zero sales experience. All of a sudden I was getting thrown out of doctors' offices because they said I was wasting their time. It was incredibly humbling, but not a day goes by that I don't draw on that experience. Sales is so important to business and it gave me a chance to fully explore what it means to drive behavior through effective sales techniques. I also learned the basic blocking and tackling needed to be successful in a company, and that has differentiated me in the places I've worked.

At Amgen, I was drawn to the concept of specialty injectables and high science. I thought it was a great application of my medical background. I spent eight years there in biotech, and then went to Spectrum Pharmaceuticals, where I was executive director of brand management, managing two commercially approved oncology products and several late-stage drug development programs. It was a very rewarding experience, but I realized that I was more drawn to general management and operations than the sales and marketing that dominate at pharma and biotech companies.

I returned to my hometown of Pittsburgh, where a lot was happening in the local health care landscape. Highmark Inc. had purchased the Allegheny Health Network. This was the first time in the U.S. that an insurance company bought a health system and combined financing where the payer was leading the integration. A chance meeting with the new CEO at the Allegheny Health Network gave me an opportunity to join this new enterprise in 2013.

My responsibility was to build out a post-acute care network, which is an emerging trend in health care right now, to control the cost of what happens after patients leave the hospital. This is a very unmanaged space today, and there are unnecessary costs and utilization. Now I'm in a new role as president of Highmark Health's Home and Community Services, to essentially redefine the delivery of post-acute care through quality service and cost, but also by finding ways to pay for value rather than volume. This model helps the hospital reduce unnecessarily longer stays and helps to reduce readmissions because post-hospital care will be better coordinated and of higher quality as patients flow through the post-acute care space.

As I look back over the past 15 years, I paved my own path at a time when it wasn't clear. I've taken appropriate risks with my career, and I've acquired a diverse set of skills related to health care. My career has afforded me instinct and intuition when it comes to providing new approaches to older problems.

Students start medical school so young. It's important to remember that there are alternative paths, and it is worth it to stay true to yourself and open to opportunities you might not have prepared for or thought about before.



Linda Berardi-Demo, EdD, joined the College of Medicine in September 2015 as associate dean for admissions and enrollment. With extensive experience in medical school admissions at The Commonwealth Medical College and the University of Pittsburgh, she is already transforming the College's admissions processes. Berardi-Demo obtained her master's degree in public administration and her doctorate in administrative and policy studies from the University of Pittsburgh.

Linda Berardi-Demo, EdD

Associate Dean for Admissions and Enrollment

WHAT ATTRACTED YOU TO Drexel University College of Medicine?

I was attracted by the school's collaborative environment and progressive leadership. Dean Schidlow, Dr. [Valerie] Weber and their colleagues are a dynamic group of people who understand what medical schools must do to meet the needs of health care in the coming years. I was equally impressed with the school's long history of commitment to diversity, community interaction and putting students first.

WHAT PLANS DO YOU HAVE to improve the admissions experience?

Drexel receives an overwhelming number of applications. Our current first-year class of 262 began with 15,281 applicants, which is almost one-third of those who applied to all medical schools nationwide. Each year, we interview about 1,100 applicants. Despite these large numbers, we want to personalize the process more for each applicant.

We have a student advisory group of first- and second-year students who are helping us to make the applicant experience much better. The group made suggestions about the interview day — easy fixes like offering a catered lunch and meeting with applicants in a smaller room. Our students talk with the applicants and participate in the interview evaluation. They also conduct tours and host prospective students. Last fall, we started making personal phone calls to students when they were accepted as well as emailing their acceptance letters. In addition, we produced a welcome video with Dean Schidlow that we send to each accepted student. I received very positive messages from the accepted students about that. In the coming year, we'll send personalized emails to accepted students that will mention the things the admissions committee really liked about their application.

A few years ago, the College served as a pilot school in an initiative of the Association of American Medical Colleges to integrate holistic review in the admissions process. We've asked them to come back this year to discuss how we can continue to align our admissions policies with our mission and values.

HOW DO YOU WHITTLE DOWN the applicant pool to 1,100 for interviews?

Certainly we look at academic thresholds. But what we're really looking for is a student who has some connection to the work we do. We're looking for students who can show us evidence of their commitment to service. We're also looking to increase our diversity — diversity of thought, socioeconomic background and ethnicity — so that we can educate physicians who can take care of a diverse patient population.

WHAT SCREENING PROCESSES do you use?

Our Admissions Committee is composed of faculty from around the College. Faculty members read each application, looking at all the academic metrics as well as non-academic information, such as service record, letters of recommendation, experience in clinical work, and personal characteristics and background. Then they decide who would be best to bring to campus for an interview. It's a purposefully labor-intensive process. We feel it's important for someone to look at every single application. We're bringing in new software tools to help faculty members do this work more easily.

IS THERE ANOTHER INITIATIVE you would highlight?

In January 2016, we hosted the annual meeting of a local network of pre-health advisers. The 80 advisers who attended were impressed with our facilities and the welcoming feeling at Queen Lane. We'll continue to do that type of outreach.

This spring, we are hosting accepted student events on campus and at our clinical campus at Allegheny General Hospital in Pittsburgh. The excitement and warmth of the DUCoM community is something we want students and their families to experience firsthand. We plan to do more of that.

CALLING ALL CLASSES ENDING IN 1 OR 6 ALUMNI WEEKEND 2016

Thursday, May 19, 2016

• Classes of 1966 Dinner at Union League of Philadelphia

Friday, May 20, 2016

- 50 Year Classes Attend Commencement
- 50 Year and Grand Classes Celebration Luncheon
- Classes of 1991 Silver Dragon Reunion Induction Ceremony
- All Reunion Classes Reception in Dinosaur Hall

Saturday, May 21, 2016

- Saturday Series: Moving Forward with Simulation
- Dean's Award Luncheon

Register Today for Alumni Weekend!

All alumni and guests are welcome!

Registration is required for all events. Please register by May 10, 2016.

- **Online:** Register and pay online at drexel.edu/medicine/alumniweekend for you and your guest. All major credit cards accepted.
- **Phone:** Register yourself and your guest, and make arrangements to send in payment via check, or a staff member will assist you in completing your registration and processing your secure credit card payment. Call 215.762.2371 from 8 a.m. to 5 p.m.





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Alumni Calendar

JUNE

Beyond Medicine Alumni Reception Hotel Monaco, Philadelphia drexel.edu/medicine/alumni/events



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Family Fun Day The Academy of Natural Sciences of Drexel University drexel.edu/medicine/alumni/events

AUGUST

White Coat Ceremony Hilton Philadelphia City Avenue

OCTOBER 20

Discovery Day Pennsylvania Convention Center

NOVEMBER

Society for Neuroscience Drexel University Alumni Event San Diego drexel.edu/medicine/alumni/events

MAY 11-13 Drexel Neurosciences Institute

Inaugural Neurosciences Conterence Atlantic City, NJ drexel.edu/medicine/dniconference

19-21

Alumni Weekend drexel.edu/medicine/alumniweekend

Surgical Residency Alumni Lecture and Lunch drexel.edu/medicine/alumni/events

Details: Email medical.alumni@drexel.edu or call 215.762.2371