Columbia Medicine

Columbia University Vagelos College of Physicians & Surgeons

SPRING/SUMMER 2019

His Generation's Greatest

250 years after his birth, David Hosack is remembered for multiple talents.

Using Precision Medicine to Help the Youngest

Sequencing successes, still rare, hold promise for pediatric medicine.

Learning From What Goes Wrong

Simulation Center's manikins, mock emergency scenarios, and standardized patients prepare tomorrow's physicians and surgeons.


JÖRG MEYER

Dear Readers,

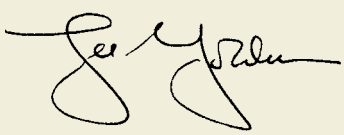
In this first *Columbia Medicine* issue of 2019, I want to share some exciting news about VP&S that will have an impact on this year and beyond.

This calendar year we are delighted to welcome new leadership to the medical center executive team, to the Herbert Irving Comprehensive Cancer Center, and to our Department of Pharmacology. To the roles of chief operating officer for Columbia University Irving Medical Center and CEO of ColumbiaDoctors, our faculty practice organization, we welcomed the outgoing lieutenant governor of Colorado, **Donna Lynne**, DrPH. The recruitment of Dr. Lynne has allowed her to return to New York City, where she earned a doctorate from Columbia's Mailman School of Public Health and spent 20 years in New York City government, including leadership roles in the NYC Health and Hospitals Corp. **Anil Rustgi**, MD, a leading cancer researcher who studies gastrointestinal tumors, joined us as director of the Herbert Irving Comprehensive Cancer Center after spending 20 years at the University of Pennsylvania. His reputation as a consensus builder who can work across disciplines and organizational boundaries will help us lead this important program shared with NewYork-Presbyterian Hospital. **Cory Abate-Shen**, PhD, a pioneer in cancer biology research, is the new chair of our Department of Pharmacology. This new appointment for Dr. Abate-Shen, who has filled several leadership roles throughout VP&S, will enable even more of our medical students, graduate students, postdoctoral researchers, and faculty to benefit from her knowledge and vision as scientist, mentor, and faculty leader. We also named **William McKoy** to succeed the now-retired Joanne Quan as senior vice president and chief financial officer of CUIMC; as vice president of budget and planning since 2012, he oversaw the medical center's $2.5 billion operating budget.

Also this year we have undertaken a process to review the medical school curriculum, which was highly innovative at the time it was introduced but now is a decade old. The curriculum, which led to analogous changes by a number of other medical schools, remains outstanding, but our school has changed in the past decade and we have a responsibility to ensure that our curriculum changes along with it. For example, the Vagelos Education Center's simulation center, which is profiled in this issue, provides opportunities we could not even imagine a decade ago. Now is the time for us also to consider integrated curricula, interprofessional education, progressive assessment, and competency-based grading as part of our comprehensive reassessment of the curriculum as a whole.

I am also pleased to report that we are implementing a set of recommendations made by two dean's advisory committees—one on diversity and inclusion, the other on women faculty—to strengthen our culture of inclusivity. We have made significant progress in diversity and gender equity among our students and faculty, and we are committed to building on this progress to be the best possible place for all of our trainees, faculty, and staff. Putting these recommendations in action—they are described inside this issue—will help us recommit to our core values and make a profound difference in the lives of members of our community and the patients who benefit from our research, clinical expertise, and educational programs.

With best wishes,



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Vol. 39 No. 1
Spring/Summer 2019

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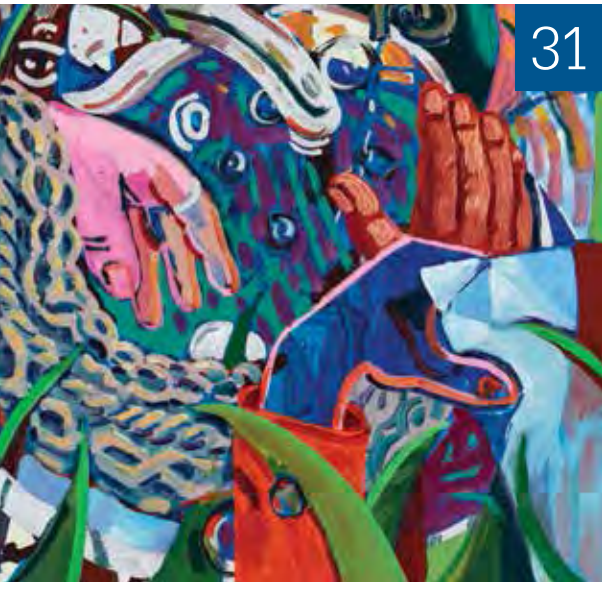
departments



features

Learning From What Goes Wrong

By Joseph Neighbor

Inside the Mary and Michael Jaharis Simulation Center in the Vagelos Education Center are all the tools students need to learn and practice skills they will use as doctors. The center consolidates activities that had been scattered across the medical center campus and introduces new ones, including an onsite standardized patients program.

Adding Hope to List of Diagnostic Tests for Sick Children

By Alla Katsnelson

Clinicians increasingly use precision medicine's exome sequencing to diagnose—and sometimes cure—hospitalized children.

David Hosack: Pioneer in Medicine—and Doctor at History's Most Famous Duel

By Victoria Johnson, PhD

The author of "American Eden: David Hosack, Botany, and Medicine in the Garden of the Early Republic" provides a look at a mostly forgotten Columbia faculty member by describing periods of his life that explain his importance during his lifetime and in our medical school's history.

ON THE COVER: When the Vagelos Education Center opened in 2016, it offered more than a beautiful building that has enhanced the Upper Manhattan skyline. It also provided a centralized home for state-of-the-art simulation. Photo by Jörg Meyer. Article, Page 10.

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Columbia Medicine is published twice a year for alumni, faculty, students, and other supporters of the Columbia University Vagelos College of Physicians & Surgeons. It is published by the college and the VP&S Alumni Association through the VP&S Office of Communications. Additional content can be found in the online edition at columbiamedicinemagazine.org.

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Faculty and staff should contact their departmental administrators to update their addresses, which are obtained through the Columbia University personnel system.

All others with address changes should contact VP&S Communications at 212-305-3900 or columbiamedicine@columbia.edu.

Letters

Identifying with Contributors

I was absolutely delighted with the poem by Marilyn Heins'55 (Fall/Winter 2018 issue). I'm nearly 20 years behind her and still have my tears, but I can identify with so much of what she wrote.

I also very much appreciated Michael Weiner's contribution in the same issue. I, too, am being treated for cancer, and I don't see myself "battling" it any more than he does. I certainly imagine the chemotherapy doing valiant battle with tumor cells, but I'm a rather passive participant in that process. At any rate, there was again much I could identify with in this piece.

Mary Jeanne Buttrey'74
Via email

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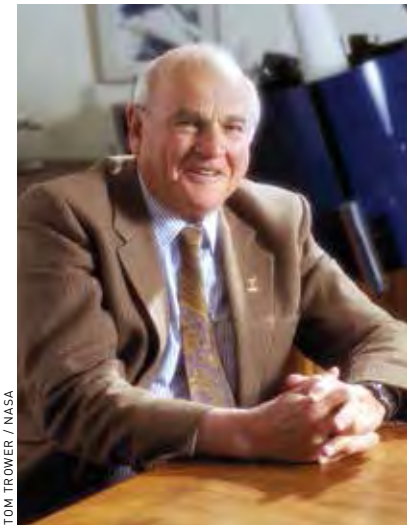
Sidenote



TOM TROWER / NASA

Google Doodle Campaign to Recognize Barry Blumberg

NOhep, the global movement to eliminate viral hepatitis, has begun a campaign to persuade Google to recognize VP&S alumnus Baruch "Barry" Blumberg'51 with a Google Doodle on July 28—World Hepatitis Day and Dr. Blumberg's birthday.

Dr. Blumberg developed the vaccine for hepatitis B and received a Nobel Prize for his pioneering work. NOhep launched the campaign to raise awareness of viral hepatitis while recognizing the achievements of Dr. Blumberg.

To add your voice to the campaign, fill out a form at the NOhep website, www.nohep.org/world-hepatitis-day-google-doodle/.

Virginia Apgar'33 was honored with a Google Doodle last year on the 109th anniversary of her birth. Learn more about Google Doodles at www.google.com/doodles.

News from around the Vagelos College of Physicians & Surgeons

VP&S news

VP&S Launches Additional Initiatives to Support Faculty Careers

Over the past decade, VP&S has worked with input from faculty to create an environment that supports the success of all faculty. Two committees recently were convened to discuss specific career issues of special relevance to women and diverse faculty.

Lee Goldman, MD, executive vice president and dean of the faculties of health sciences and medicine, convened the Dean's Advisory Committee for Women Faculty and the Dean's Advisory Committee for Faculty Diversity & Inclusion in April 2018, asking committee members to develop recommendations that would strengthen ongoing efforts to be sure all faculty have equal opportunities for career success at VP&S. At a meeting with committee members earlier this year, Dr. Goldman reviewed the recommendations submitted jointly by the two committees, accepted them in full, and pledged to provide the resources needed to implement them.

Chief among the recommendations is creation of an Office for Women and Diverse Faculty, which could open over the summer.

The committees also recommended that the school:

- Expand the work of successful faculty development programs, such as the Virginia Kneeland Frantz Society for Women Faculty and the Kenneth A. Forde Diversity Alliance.
- Require each department to submit an annual diversity update.
- Emphasize broad engagement with faculty and the VP&S community around issues of gender and diversity.
- Further expand implicit bias training.
- Seek funding to create an endowment to expand leadership training and other ongoing development programs for women and diverse faculty.

The committees also recommended that the dean strengthen the medical school's existing successful initiatives, such as regular salary equity reviews, expanded parental leave, and work/life services, including child care options.

Convening the committees was part of the medical school's ongoing effort in recent years to be sure that career development needs of women, diverse faculty, and all faculty are well served. Earlier efforts have resulted in measurable progress. For example, 47% of faculty at VP&S are women compared with the national average of 39%. Even at the highest ranks, 29% of our professors are women compared with 25% nationally, and 35% of the medical school's tenure-track faculty are women, well above our peer group of medical schools. Diverse faculty compose 11% of our faculty, compared with 8% nationally. Analyses also have been conducted to assure equivalent promotion rates and salary equity for women and men. VP&S has been a leading participant in ongoing university-wide efforts to recruit women and diverse faculty and recently committed another $50 million to these ongoing programs.

"We value equity, diversity, and inclusion at the Vagelos College of Physicians and Surgeons because an inclusive culture is important in educating the next generation of physicians and scientists, in culturally competent patient care, and in pursuing research that will change the practice of medicine for everyone. Our student body has been half women for many years, and our percentage of diverse medical students has been at the top of our peer group," Dr. Goldman says. "The faculty committee members devoted considerable time, effort, and dedication to studying the issues as they relate to faculty and developing thoughtful recommendations. We have made much progress in recent years, but I enthusiastically support these recommendations to enhance our efforts and have committed the requested resources to be sure they are implemented expeditiously."

More than 40 of the nearly 60 people on the committees are women faculty at the medical school. Both committees were supported by Anne Taylor, MD, the medical school's vice dean for academic affairs, and the Office of Faculty Development, Diversity, and Inclusion. Dr. Taylor will be responsible for creating and operating the new Office for Women and Diverse Faculty.

"The work done by these two advisory committees—and Dr. Goldman's immediate acceptance of their recommendations—reveals how strong our commitment is to implementing programs that will build upon the successes we have already achieved in ensuring fairness and equity in our faculty ranks," says Dr. Taylor. "Research shows that diversity in teams improves problem solving and outcomes, and this is especially important at the research bench. One of our responsibilities and opportunities as a research institution is to train a generation of diverse researchers who will examine questions that have broad relevance and make sure the outcomes apply to all populations. Being inclusive is not just a value to aspire to; it's necessary for cultivating the future of medicine."

New Pharmacology Chair: Cory Abate-Shen, PhD

Cory Abate-Shen, PhD, a distinguished scientist whose multidisciplinary research has advanced understanding of the molecular basis of cancer initiation and progression, is the new chair of the Department of Pharmacology at VP&S. She succeeds Robert S. Kass, PhD, who chaired the department since 1995.

JOHN ABBOTT

Dr. Abate-Shen's research focuses on understanding how basic mechanisms that control gene expression and cell identity become impaired during cancer initiation. She also has discovered new mechanisms that promote the spread of cancer and has provided genetic evidence that cancer cells can develop resistance to therapies by reprogramming themselves into a different type of cell. Much of this pioneering research involves the use of genetically engineered mouse models she and her colleagues have developed at Columbia.

Recruited to Columbia in 2007, Dr. Abate-Shen is the Michael and Stella Chernow Professor of Urologic Sciences and professor of pathology & cell biology, medicine, and systems biology. She has served as the leader of the prostate program, associate director, and twice as interim director of the Herbert Irving Comprehensive Cancer Center. She also is an American Cancer Society Research Professor.

Dr. Abate-Shen received her PhD degree from Cornell University and pursued postdoctoral training at the Roche Institute of Molecular Biology. In 1991, she joined Rutgers-Robert Wood Johnson Medical School as an assistant professor and was named professor in 2001. She was appointed chief of a new division of developmental medicine and research in the school's department of medicine in 2002.

Internationalization of Medical Education: Columbia Hosts Global Video Conferences

More than 190 students from 12 countries on four continents participated this year in two large video conferences as part of the 2019 Columbia University Irving Medical Center International Collaboration and Exchange Program, known as "ICE." During the video conferences, which started at the early hours of the morning to accommodate participants in Australia and Asia, students shared presentations on various health care and public health topics. The conferences were hosted by the Hammer Health Sciences Library.

ICE was initiated in 2014 in the Department of Pathology & Cell Biology at VP&S to offer preclinical medical and dental students early international experiences. First-year VP&S and CDM students who participate in the program are able to share knowledge of common subjects with international peers and expand into areas of global health and cultural exchange.

The program, which expands over two semesters, has three parts. During the first and second stages, participating students work in small and later large international groups through videoconferences. For the third part of the program students can travel to the partner institutions and receive lab placements abroad.

"Our goal is to provide medical and dental students a platform for early networking with peers across the world," says Anette Wu, MD, PhD, assistant professor of medical sciences (in medicine) and of pathology & cell biology at VP&S and director of the ICE program. "Their ability to network and collaborate, as future leaders in their fields, can improve our global health care."

Leading Cancer Researcher to Direct Herbert Irving Comprehensive Cancer Center

Anil K. Rustgi, MD, a leading cancer researcher and physician whose career has focused on gastrointestinal tumors, has been named the Herbert and Florence Irving Director of the Herbert Irving Comprehensive Cancer Center at Columbia and NewYork-Presbyterian/Columbia University Irving Medical Center. Dr. Rustgi is also professor of medicine and associate dean of oncology at VP&S.

Dr. Rustgi joined Columbia from the University of Pennsylvania, where he was the T. Grier Miller Professor of Medicine and Genetics, American Cancer Society Research Professor, and chief of gastroenterology. He also co-led the Tumor Biology Program.

BARBARA ALPER

Dr. Rustgi's research focuses on the intrinsic cellular processes and tumor microenvironment that lead to the development, progression, and metastasis of gastrointestinal cancers, including cancer of the esophagus, pancreas, and colon. Dr. Rustgi uses mouse models and 3D culture models to study the role of cancer-causing genes and tumor suppressor genes in the pathogenesis of GI cancers.

Dr. Rustgi graduated summa cum laude from Yale College with a bachelor's degree in molecular biophysics and biochemistry and earned his medical degree at Duke University, where he was elected to Alpha Omega Alpha. He completed an internal medicine residency at Beth Israel Deaconess Medical Center and a GI fellowship at Massachusetts General Hospital. He served as associate professor of medicine at Harvard before joining the University of Pennsylvania in 1998.

Beginning in 2020, Dr. Rustgi will serve as president of the American Pancreatic Association.

Medical students in the Class of 2021 gather for a group photo at the Steven Z. Miller Student Clinician's Ceremony.

Class of 2021 Transitions to Major Clinical Year

The 153-member Class of 2021 marked its transition from the classroom to patient-centered training in hospital and ambulatory settings during the annual Steven Z. Miller Student Clinician's Ceremony in January.

"As you go through each rotation, see each one as a possible future career," said Saundra Curry, MD, professor of anesthesiology at CUMC, who delivered remarks from the clinical faculty. "What you want is what I have: the ability to wake up every morning with a sense of possibility and the joy of going to work."

Gregory Whittemore'21 received the Greg Grove Award, and several other members of the class earned Karl H. Perzin Excellence in Pathology Awards: Alexander Agopyan-Miu, Marco Barber Grossi, Casidhe-Nicole Bethancourt, Ayanna Jacobs, Anastasia Kahan, Barbara Magid, Benjamin Meyer, Trevor Nash, Latoya Stewart, and Lauren Suarez.

Teachers who were honored by the class:

- Wendy Chung, MD, PhD, the Kennedy Family Professor of Pediatrics (in Medicine), received the Fundamentals Outstanding Teaching Award.
- Elizabeth A. Scharle, MD, assistant professor of medicine at CUMC, received the Major Clinical Year Outstanding Teacher Award.
- Dustin Carpenter, MD (Surgery, NYP); Jessica Li, MD (Obstetrics & Gynecology, Stamford Hospital); Alana Mendelsohn, MD (Psychiatry, NYP); Bianca Nguyen, MD (Psychiatry, NYP); Aaron Praiss, MD (Obstetrics & Gynecology, NYP); and Ethan Talbot, MD (Surgery, Bassett Healthcare) received resident teaching awards.

The ceremony is named for the late Steven Z. Miller'84, the Arnold P. Gold Associate Professor of Pediatrics at VP&S, who founded the first transition ceremony. Dr. Miller, a national leader in humanism in medicine, died in a plane crash in 2004 on his way to a workshop on compassionate care.

Library Acquires Third Samuel Bard Manuscript

The Health Sciences Library has acquired a handwritten manuscript by VP&S founder and prominent early American physician Samuel Bard. The 20-page document is the text of an unpublished commencement address given by Dr. Bard to the graduates of the college, probably around 1818.

Dr. Bard, a proponent of lifelong learning, warned his audience of new physicians that "instead, therefore, supposing you have finished, remember you have but begun your studies." He went on to say that "the young man who entertains a high opinion of his present attainments in virtue or knowledge is not likely to improve in either." Dr. Bard urged his audience to be "gentlemen," characterized not by "artificial varnish" but rather by "genuine effusions of a good Heart."

This is the third Bard manuscript acquired by the Health Sciences Library. Several years ago it purchased the draft of his 1811 opening day address, "Discourse on the Importance of Medical Education," and in 2017 it acquired his 1819 report to the New York State Board of Regents, "Remarks on the constitution, government, discipline & expences [sic] of medical schools." In addition, the library has over the past 20 years purchased most of Dr. Bard's published works, including "Enquiry into the nature, cause and cure, of the angina suffocativa, or, sore throat distemper" (1771), an important work on diphtheria; the 1810 French translation of that work; and the first edition (1807) of "Compendium of the theory and practice of midwifery," the first textbook on the subject by an American.

Samuel Bard studied first at King's College (now Columbia) before receiving his medical degree from the University of Edinburgh in 1765. He was one of six physicians in New York City who persuaded King's College in 1767 to establish a medical school, now the Vagelos College of Physicians and Surgeons, the second oldest in the United States. Dr. Bard served as dean and professor of medicine until its closure in 1776 due to the War of Independence. After the newly renamed Columbia College revived the medical school in 1791, he served first as dean and later as president of the college until his death. Bard Hall, the VP&S residence hall, is named for him.

Besides his involvement with the medical school, Dr. Bard was one of the founders in 1771 of New York Hospital, now part of NewYork-Presbyterian Hospital, the primary teaching hospital of VP&S.

"The new manuscript is in generally good condition though it will require treatment by conservators to prevent paper loss," says Stephen E. Novak, head of Archives & Special Collections. "Once this work is complete, the manuscript will be available for study and exhibition."

Medical Students Celebrate Match Results

Match Day, the ultimate goal of the Class of 2019's months-long road to residency, let the 171 VP&S students participating know their destination for residency training. The most popular residencies matched were internal medicine (42 students), pediatrics (22), psychiatry (16), obstetrics & gynecology (15), and ophthalmology (10).

AMELIA PANICO

Read more news, including an article about the experiences of four members of the Class of 2019 as they interviewed for residencies, at **www.columbiamedicinemagazine.org/webextras.**

Student Receives McDonogh Scholarship From Specialty Group

Emery Jamerson'19 received a 2018 Dr. David K. McDonogh Scholarship in Ophthalmology/ENT, an award created to honor the legacy of a man who completed studies at VP&S in the 1800s but was denied a degree because of his race.

Dr. Jamerson was presented with the award in November at a special reception hosted by the National Medical Fellowships, a group that provides scholarships and support for underrepresented minority students in medicine and the health professions.

The Dr. David K. McDonogh Scholarship Fund was created by a group of New York ophthalmologists and ENT physicians who are dedicated to increasing the number of underrepresented physicians interested in ophthalmology/ENT programs. More than half of New York City's population is black or Latino but less than 2% of the city's ophthalmologists and ENT physicians are black or Latino. The fund supports individuals who have black, Afro-Latino, or Native American backgrounds and are enrolled in medical school in the state of New York, have an interest in a career in ophthalmology or ENT specialties, and are committed to academic excellence, research, leadership, and service.

Dr. McDonogh, who was born an enslaved person on a plantation in New Orleans in 1821, became the nation's first African-American physician in ophthalmology/ENT.

Dr. Jamerson will begin a residency in ophthalmology. During medical school, he worked with Lama Al-Aswad, MD, associate professor of ophthalmology at CUMC, and provided free vision exams to at-risk populations in the New York City area through Columbia's tele-ophthalmology mobile vision unit. He also mentored other students from backgrounds underrepresented in medicine.

"I feel very fortunate to have been recognized by a group of diverse mentors in the field of ophthalmology whom I greatly admire," says Dr. Jamerson. "Inclusion and representation of all groups is extremely important in medicine, as having a diverse physician workforce engenders trust amongst patients and strengthens the therapeutic alliance between patients and their physician. I hope to continue to increase exposure to ophthalmology among underrepresented communities."

News in Brief

Cory Abate-Shen, PhD, and Richard Axel, MD, have been named Fellows of the American Association for the Advancement of Science. Dr. Abate-Shen was selected for her "distinguished contributions to the cancer biology field, particularly for the development of mouse models to understand how basic cellular mechanisms are co-opted in cancer." She is the Michael and Stella Chernow Professor of Urologic Sciences, director of research in the Department of Urology, an associate director of Columbia's Herbert Irving Comprehensive Cancer Center, and leader of the cancer center's prostate program. She also is an American Cancer Society Research Professor. Dr. Axel was selected for "distinguished contributions in the fields of olfaction and neuroscience." He is a University Professor, co-director of Columbia's Zuckerman Mind Brain Behavior Institute, and an investigator at the Howard Hughes Medical Institute. In 2004, Axel won a Nobel Prize for discoveries of odorant receptors and the organization of the olfactory system.

The Columbia University Irving Medical Center has new operations and financial leadership. Donna Lynne, DrPH, has been named senior vice president and chief operating officer of the medical center. She also is CEO of ColumbiaDoctors, the faculty practice organization. Most recently lieutenant governor and chief operating officer for the state of Colorado, Dr. Lynne will oversee all aspects of CUIMC's operations, including information technology, facilities, human resources, communications, and government and community affairs. Dr. Lynne, whose doctorate is from Mailman School of Public Health, has held leadership roles in Kaiser Foundation Health Plan Inc. and Kaiser Foundation Hospitals and spent 20 years working in various positions in New York City government, including serving as senior vice president of the New York City Health and Hospitals Corp.

William "Wil" McKoy has been named senior vice president and chief financial officer of CUIMC upon the retirement of Joanne Quan, who held the position for 12 years. As vice president of budget and planning since 2012, Mr. McKoy oversaw the medical center's $2.5 billion operating budget and $150 million annual capital budget for the four medical center schools and central CUIMC operations.

New devices, procedures, guidelines for clinicians

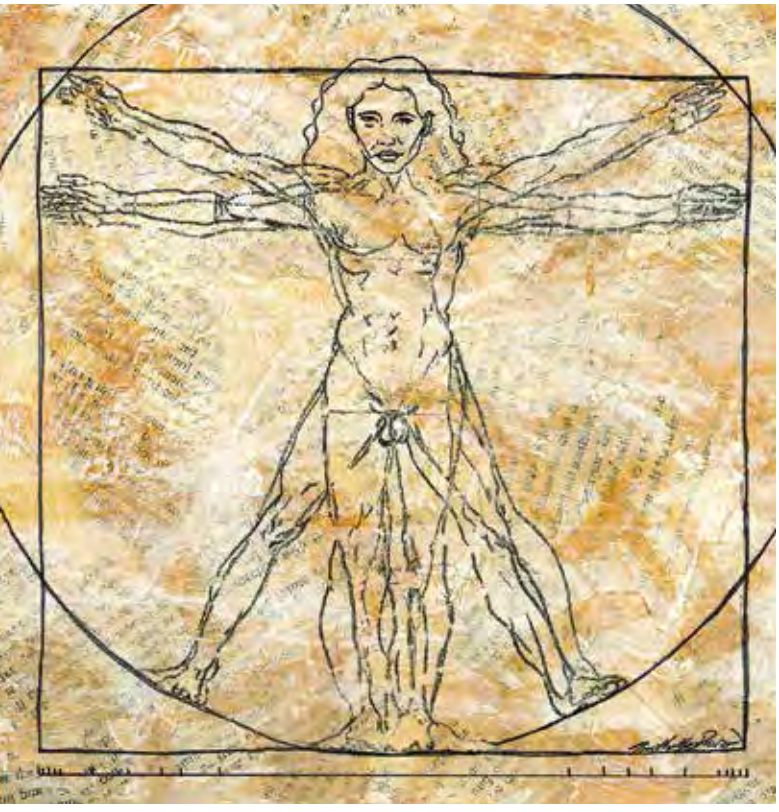
Clinical advances

In Pursuit of an Identity: Gender Identity Program Opens

With growing acceptance of diversity in gender identity and expression, an increasing number of people are declaring themselves transgender, gender nonbinary, or gender nonconforming. The Columbia Gender Identity Program that opened in 2018 helps children, adolescents, and adults find an identity that is representative of them.

"Gender identity is vital to how we view ourselves and present ourselves to the world," says Walter Bockting, PhD, professor of medical psychology, who leads the program with Melina Sevlever, PhD, assistant professor of medical psychology. "Finding an identity that is representative of who we are is not always easy, and it can be especially challenging for those who identify in a way that does not conform to traditional views."

Many gender identity clinics have opened in the past few years, Dr. Bockting says, but the Columbia Gender Identity Program has a particular approach. "We believe that transgender care is not just hormones and surgery. It's really about living your life as a transgender person or as the gender you perceive yourself to be."



NATHALY DAVIS

The majority of transgender, nonbinary, and gender nonconforming children, adolescents, and adults are resilient in the face of prejudice and lead healthy, happy lives. For some, however, stigma can lead to significant mental health concerns, such as anxiety, depression, and suicidality. In addition, some people have an internal struggle around their own identity and the incongruence between their gender identity and their sex assignment at birth.

"Our approach is characterized by understanding that mental health is a very important component of transgender care," says Dr. Sevlever. "Everyone's journey is unique, and we are here to provide affirming support at every step of the way. We provide thoughtful guidance related to questions that can arise regarding gender identity and role, including social transition and gender-affirming medical interventions."

For people who choose medical interventions, the clinic provides access to specialists across Columbia University Irving Medical Center who offer a range of services, including primary and specialty care, hormone therapy, and surgery.

Gender identity is more complex than simply choosing between two options, and people may identify with both genders, neither gender, or describe their gender identity as nonbinary or genderqueer.

"We're now finding evidence from neuroscience that gender may be more of a mosaic of different patterns," says Dr. Bockting. "Our understanding is evolving from the binary narrative of the male versus the female body and brain toward a multidimensional approach, and toward the idea that gender isn't static but can change over time."

Columbia's Gender Identity Program involves families in the care of youth who identify as transgender, gender nonbinary, or gender nonconforming. "When we involve families in treatment," says Dr. Sevlever, "we are able to provide support for family members who may be struggling with complicated feelings about their child's or family member's transition toward a more comfortable gender expression."

The program has experience working with families from various cultural and religious backgrounds. "By providing support through that process, we're able to help them refocus on strengthening and building a relationship with that child or family member," says Dr. Sevlever.

Appointments are available by calling 212-305-6001.

New Hypertension Center Offers Multidisciplinary Expertise

The multidisciplinary Hypertension Center at Columbia University Irving Medical Center offers a team of clinicians who can optimize the diagnosis and treatment of hypertension for patients with difficult-to-manage hypertension.

Columbia has a long history of hypertension research. The studies of the late Thomas Pickering, MD, an internationally renowned hypertension expert, helped establish the concepts of "white-coat" and "masked" hypertension, along with best practices in blood pressure measurement in and out of the office, says Ian M. Kronish, MD, the Florence Irving Associate Professor of Medicine, who directs the center with Daichi Shimbo, MD, associate professor of medicine, and Jai Radhakrishnan, MD, professor of medicine.

"Our central mission of the new center is to improve human health in hypertension including providing state-of-the-art diagnostic testing for high blood pressure and delivering high quality care for patients with hypertension," says Dr. Shimbo.

Advanced diagnostic testing available at the center includes state-of-the-art office blood pressure measurement, out-of-clinic tests such as 24-hour ambulatory and home blood pressure monitoring, pulse wave analysis to assess vascular function assessment, biochemical profiling, diagnostic imaging, and adrenal vein sampling.

The center specializes in the treatment of nocturnal hypertension, uncontrolled and resistant hypertension, secondary hypertension caused by other medical conditions, labile blood pressure, and orthostatic hypotension.

"In addition, we offer comprehensive care for patients with multiple diagnoses, such as kidney disease, that affect the management of hypertension," says Dr. Radhakrishnan.

"Many cardiologists and nephrologists have expertise in hypertension, and we don't want to take over their patients' care," says Dr. Kronish. "We're here to support primary care physicians and other specialists and provide in-depth evaluations, consultations, and treatment plans."

The center's services are available at Columbia's campus on 168th Street and at the ColumbiaDoctors Midtown location on West 51st Street. Appointments at either location can be scheduled by calling 212-342-1273.

Diaphragm Center Provides Specialized Treatment

The chief muscle of inspiration—the drawing in of breath—is the diaphragm, a thin sheet of muscle under the lungs. Most people do not have to think about the diaphragm, but when the diaphragm is paralyzed, breathing becomes labored and difficult.

The primary cause of diaphragm paralysis is damage to the phrenic nerve, which originates in the neck and connects to the diaphragm muscles, says Mark Ginsburg, MD, associate professor of surgery.

Dr. Ginsburg co-directs a new Diaphragm Center at Columbia with Keith Brenner, MD, assistant professor of medicine.

"If there's damage to the phrenic nerve, the muscle doesn't receive the signal generated by the brain to contract, and our ability to breathe can be impaired," says Dr. Ginsburg. "Over time, the muscle thins out, and we essentially stop breathing with that side." Lung capacity can be reduced by 50% in patients with paralysis on one side and by 70% to 80% in those with paralysis on both sides.

Because the center sees more patients with diaphragm paralysis and dysfunction than most other hospitals in the world, its clinicians encounter patients with both common and rare forms of injury.

"The most frequent damage we see is a nerve injured during heart surgery," Dr. Brenner says. The center first monitors such patients for a year or more to see if the nerve can regenerate. But if patients still have symptoms, a minimally invasive surgical procedure called plication can help by tightening the diaphragm and setting it in a lower position to improve inhalation.

"The majority of our patients benefit significantly," says Dr. Ginsburg. "They come to us because they are short of breath. They can't lie down, or sleep in a prone position, or bend down to tie their shoes without struggling. With a relatively simple surgery we can give these people back the breath of life."

Less frequently, diaphragm paralysis is caused by a virus, tumors, autoimmune disorders, or neurological conditions. "These causes are not always easy to identify," Dr. Brenner says. "One of the benefits of our center is that we see a high volume of patients and through experience, we know what the problems are. We have all the diagnostics and experienced colleagues throughout the medical center to consult with."

The center also treats patients with other types of diaphragm dysfunction, including people with central sleep apnea and patients with traumatic injuries, ALS, diaphragm hernias, and multiple sclerosis who use respirators to breathe. In these cases, the insertion of a phrenic pacemaker can help patients breathe by signaling the diaphragm to contract.

"Many clinicians are not aware of the options available to treat these disorders," says Dr. Ginsburg. "Through the center, we've been spreading the word, and we're seeing many patients a week from around the globe."

Contact the center at 212-305-3408 or read more at columbiasurgery.org/diaphragm.

Learning From What Goes Wrong

By Joseph Neighbor

Simulation Center's Five Floors Offer Manikins, Mock Emergencies, and Actors as Patients

On any given day, one might find Victoria undergoing yet another complicated childbirth at the Vagelos Education Center (VEC). Perhaps this time it's shoulder dystocia, a rare obstetric emergency in which the infant's shoulder gets stuck on the mother's pelvic bone, causing the baby to retract back into the canal like a turtle's head retreating into its shell.

A small group of third-year medical students hover over Victoria wearing smocks and surgical masks. Some check vitals, while others take turns trying to maneuver the baby out of its perilous position. They are working in a mock operating room identical to the suites at NewYork-Presbyterian just down the road: The equipment is the same, including the crash carts in which each tool is arranged as it would be at the hospital.

The OR suite, like all rooms in the VEC simulation center, is outfitted with several cameras and microphones that feed into an adjacent control room where a simulation technician sits with a laptop. Using software on the laptop, the tech can put Victoria S2200—

Photographs by Jörg Meyer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the lifelike, wireless "high-fidelity" manikin—through dozens of birthing scenarios. One click of the mouse causes her breathing to slow and her pupils to contract. Another click and her pulse jumps. Once the infant—an eight-pound manikin named Super Tory—is successfully delivered, it might cry or coo. Or it could have jaundice.

"We teach scenarios when everything goes right," says David Deitsch, director of operations at the Mary and Michael Jaharis Simulation Center in the VEC, "but it's more important to teach when everything goes wrong. Anything a physician might encounter while delivering a baby we try to replicate here."

Simulated scenarios like this have become an integral part of medical education. Long used for training in other high-risk endeavors, such as aviation or combat, simulation has only recently been applied to a doctor's education in a meaningful way. Whether it's sophisticated manikins like Victoria or virtual reality-based software that guides a surgeon through a complex procedure, simulation-based medical education and its associated technology have now come of age, forming an increasingly significant part of medical school curricula and residency programs.

Arnold Advincula and David Deitsch

"Simulation is the future of what we need to be doing in health care," says Arnold Advincula, MD, the Levine Family Professor of Women's Health in Obstetrics & Gynecology and medical director of the Mary and Michael Jaharis Simulation Center. "This is not a 'nice to have' item. It's a must-have, whether it's about formative training or looking ahead to when students and new graduates are at the hospital seeing patients."

A Home for Simulation

Though simulation has been shown to help students retain information and hone skills while improving patient outcomes by decreasing costly medical errors, VP&S did not have a dedicated space to run simulated scenarios until the VEC opened in August 2016. Before then, medical students traveled to offsite facilities or did "in situ" training in makeshift spaces and unoccupied patient rooms at NYP.

The Vagelos Education Center—14 stories of angular glass and steel—has been covered extensively by architectural publications for its aesthetic qualities and energy-thrifty innovations. But it's more than a lovely building with classrooms, study lounges, administrative suites, and auditorium laced together by an open staircase.

The simulation center, which occupies five floors, is at the heart of the building. The state-of-the-art facility has consolidated many of the activities that had been scattered across the medical center campus and introduced new ones. It hosts fundamentals classes, surgical skills labs, the Ready for Residency course, an anatomy quad, Objective Structured Clinical Examinations (OSCE), and more. Across the four years of

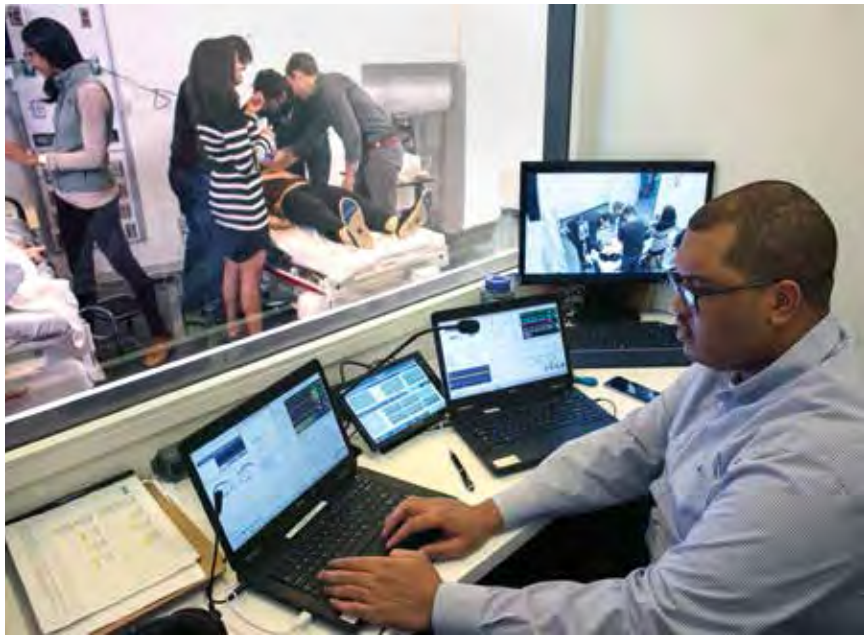
medical school, each student will spend countless hours in the center.

It has become valuable for established health care professionals, too. Unlike most simulation centers, which are owned by either a medical school or a teaching hospital, this one is jointly operated by VP&S and NYP. When the hospital gets new technology, the simulation center gets it, too. In return, the center offers professional development to NYP departments and staff, from surgeons to nurses to residents, giving them the opportunity to experiment with new devices or procedures in a controlled, no-risk environment.

Dr. Advincula, a gynecologist and an expert in minimally invasive surgery, watched the VEC get built from the ground up. As medical director of the simulation center, he, along with a team of associate medical directors, were in charge of everything from laying out spaces to hiring staff to choosing which technology it would feature.

VEC architects had to be efficient in planning space for the building's 125-by-100-foot lot. Likewise within the simulation center each room was designed with flexibility in mind, to support as many disparate activities as possible. In the basement, for instance, a large multipurpose space can be used as a single trauma bay to simulate mass casualty events or partitioned into two patient rooms for mock examinations. The debrief rooms, each with monitors and web cameras for video conferencing, and the two mock operating rooms, which host simulations and surgical skills labs, are similarly adaptable.

To run this space, Dave Deitsch brings 42 years of experience to his role as director of operations. Sean Feuer, the AV manager, was hired from Columbia's School of International and Public Affairs, where he oversaw audio-visual systems. Around them a crew of simulation technicians, lab managers, and coordinators from this emerging field was carefully assembled.



They work with faculty to find the best ways to leverage new educational technology. "This process is still really embryonic," says Dr. Advincula. "There's a great number of faculty who are just now getting exposure to simulation. We know that it's critically important to have them understand how to build a curriculum, how to design these scenarios, and also learn about the technology, so we've been working a lot on professional development. As we get more experience, it's going to make things even better. It's an exciting space to be in."

"You watch somebody do it, then you do it yourself, and all of a sudden you're the expert? That's really an antiquated way of learning."

Now in its third year, the simulation center is hitting its stride. Simulation is included throughout the medical school curriculum, from the first semester, when students are exposed to standardized patients—actors portraying patients—through the Major Clinical Year, when many of the hi-fi simulators are introduced, and beyond.

As faculty and staff experience expands, the scenarios grow ever more refined. The roster of hi-fi manikins—20 in all, capable of blinking, crying, breathing, and showing responses to drugs, CPR, or blunt force trauma—are put to use in more focused and imaginative ways, in situations that seek to capture the intensity of medical situations. This enables students to learn not

only how to apply their budding clinical skills under pressure, but also how to work in a team, how to lead, how to communicate effectively when it matters most.

Scenarios are recorded from multiple angles, to be analyzed by the students in a faculty-led debriefing session afterward. This debriefing is essential to the process, allowing students to assess their performance and put it into context. In this way, simulation is much more than flashy technology; it is a didactic technique that relies on psychology as much as clinical skill.

This style of teaching has the potential to upend the apprenticeship model of "see one, do one, teach one," which has dominated medicine for centuries.

"You watch somebody do it, then you do it yourself, and all of a sudden you're the expert?" says Dr. Advincula. "That's really an antiquated way of learning, because there are complications that only happen once in a while. The likelihood of a medical student spending five weeks on a rotation without ever seeing a shoulder dystocia, for example, is a real possibility."

Therein lies the great benefit of simulation: It is as useful for teaching the common as it is the extraordinarily rare. Now, long before ever touching a patient, students have practiced common clinical techniques endlessly and have been exposed to a multitude of rare conditions a physician might see only once in a lifetime.

New School and Old School

Changes in technology have upped the need for simulation. Practice can give students confidence and dexterity in suturing a wound, but the finesse needed to operate a robot like the da Vinci Xi, which uses a few tiny incisions, a 3D vision system, and small-wristed instruments to perform surgery, is on another plane. Dr. Advincula and other surgeons rely heavily on the da Vinci robot. But with the presence of high-fidelity robotic simulators at the VEC that incorporate augmented reality, VP&S students now have an opportunity to practice on the robot. They can experiment with the robot in a low-stakes, structured environment and soon with the pending delivery of the actual da Vinci Xi robot, VP&S students will be able to experience full immersion into the world of robotic surgery.

Training students in skills, as much as teaching concepts, is critical to the center's mission. During students' final year and a half at VP&S, as they prepare for residency, they return to the center for specialty skills labs. Much of this training utilizes several dozen of the center's low-fidelity task trainers, anatomical models students use to practice specific skills, like inserting an IV or central line.

"There's a huge difference now in the quality of the first-year residents," says Mr. Deitsch. "Simulation plays a big part in that. Students are able to get hands-on training they weren't able to get before."

For more complex procedures, like endoscopic or cardiac surgery, the center has several video-based simulators that pair graphics with haptic sensations, to mimic the feeling of guiding a hose down, say, a digestive tract. Like an app on a phone, these programs can be updated with new modules covering different procedures without changing the hardware.

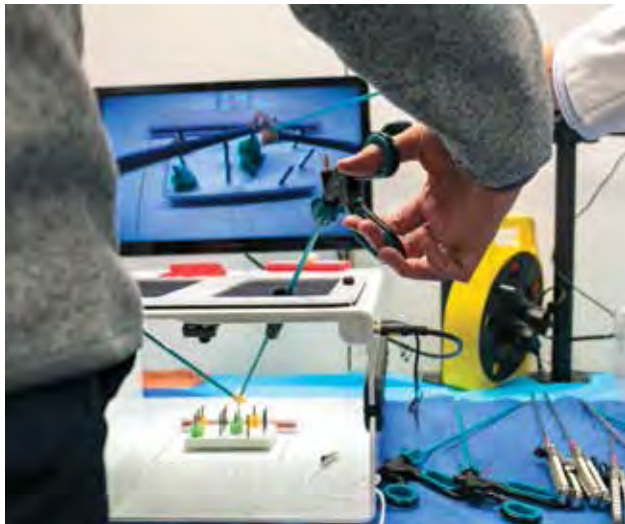
These simulators hint at virtual reality- and augmented reality-based technologies, which are still in their infancy. But experts believe VR and AR will play a major role in how medicine is taught and practiced in the future. Mixed-reality headsets have the potential to transform how anatomy is taught. The simulation center hosts cutting-edge device manufacturers from around the world to run trials of new gadgets, becoming something of a beta test site. The novel technologies might not be ready for primetime use, but they provide a glimpse of the future.

Regardless of new tech's potential, it is not likely to replace the experience of working with human cadavers in the simulation center's state-of-the-art anatomy laboratory. Students use the laboratory to learn basic anatomy, and NYP staff, residents, and fellows use it for advanced surgical skills training.

Standardized Patients

Until the opening of the simulation center in the Vagelos Education Center, VP&S students were sent offsite to prepare for the Step 2 Clinical Skills of the U.S. Medical Licensing Examination that uses standardized patients. Third-year medical students would participate in a day-long clinical assessment program at the Morchand Center of Icahn School of Medicine at Mount Sinai and later at Weill Cornell Medical College.

Each third-year student performed a focused medical evaluation on seven patients during the intense visit at the centers. Students and VP&S faculty members later reviewed the video recording of the performances. This arrangement continued until 2016, when the VEC opened.



Learning From Human "Patients"

In addition to learning to place a central line or replace a hip, students also must learn how to treat humans of all stripes: imperfect, confused, grief-stricken humans, drug-addicted humans, frustrated humans suffering from an illness they don't quite know how to describe.

"How do you tell a patient they have cancer and will only have three months to live?" says Mr. Deitsch. "You can only learn so much from a simulator, or a piece of plastic, or a cadaver. That feedback you get from a live human is crucial to the development of a medical student."

While standardized patients have been part of medical education for years, VP&S only recently started its own formal program, coordinated by an actor who had been a standardized patient for years.

Students are matched with standardized patients, actors drawn from New York's deep well of talent, who portray a multitude of ailments and conditions during the students' OSCEs. These exams take place in 14 specially designed patient rooms throughout the center, each featuring glass so professors and other students can watch the interaction.

The exams seek to mimic a bustling hospital ward, with the student moving frantically from station to station. The actors, who are also trained to evaluate the students, come in all ages and ethnicities and depict all kinds of conditions. Like the manikin-based simulations, these encounters escalate in difficulty, from basic physical exams with an agreeable patient to delivering bad news to a bereaved parent to treating someone who speaks a foreign language. Like OR scenarios, OSCEs are filmed and evaluated in debriefing sessions afterward. And, like all activities in the simulation center, the goal is to help students learn how to move from simulation to real-world care of patients with both competence and confidence.

"You can only learn so much from a simulator, or a piece of plastic, or a cadaver. That feedback you get from a live human is crucial to the development of a medical student."

The simulation center offers everyone an opportunity to learn and refine their skills. Students interact with actors portraying patients to learn doctor-patient communication. They see Victoria or her robotic infant through a difficult childbirth to learn how to handle emergency situations. And they practice the age-old art of anatomical dissection to learn the basics of how their donors lived and died. Faculty, residents, fellows, and medical students can hone skills or learn new ones. Teachers can develop curricula that provide the best learning opportunities for their students then assess what's been learned or what needs to be improved. "Simulation is transforming how we become doctors," says Dr. Advincula. ❖

ADDING HOPE TO LIST OF DIAGNOSTIC TESTS FOR SICK CHILDREN

Precision Medicine's Exome Sequencing Now Routine, Sometimes Life-Changing + By Alla Katsnelson

The baby who arrived in the pediatric intensive care unit one winter day was floppy and too weak to breathe without assistance, having been referred to Columbia so the family could seek the expertise of Darryl De Vivo, MD, a metabolic diseases specialist.

Suspecting a metabolic disease with a genetic cause, Dr. De Vivo and Steve Kernie, MD, chief of pediatric critical care medicine, turned to Columbia's Institute for Genomic Medicine to sequence the child's DNA as quickly as possible.

The results pointed to a mutation that was likely causing the disease. Dr. De Vivo learned of a mouse model that carried this mutation, which accelerated the development of an experi-

Illustration by Davide Bonazzi + Photographs by Jörg Meyer

mental medicine. After consulting with pediatrician James Garvin, MD, PhD, and obtaining FDA approval, the team administered the treatment to the baby, who responded successfully.

"This is a disease that has been described in the literature 20-some times, and no child has survived past 26 months," says Dr. Kernie. Yet this patient, now a walking, talking preschooler, is a sequencing success story.

The medical professionals in the NICU and PICU do not always see this kind of happy ending, but the growing use and influence of precision medicine provide potential for more happy endings. For now, though, sequencing is no panacea for severe childhood illnesses. Successes like the one described above are still a rarity.

Jordan Orange

"The benefits that we are all hoping for—where a genetic diagnosis gives you a new therapeutic option that helps significantly—is still very much the exception," says David Goldstein, PhD, director of the Institute for Genomic Medicine, or IGM. "That's only because we don't yet know how to treat most of these genetic diseases." However, say Dr. Goldstein and other experts, sequencing is an especially powerful tool for diagnosing babies and young children with conditions grave enough to bring them to the ICU.

"Sick children, by their very nature, are much more likely than adults to have a genetic condition. That's just a biological fact," says Wendy Chung, MD, PhD, an expert in precision medicine and rare diseases. "That means that getting their genome sequenced is much more likely to lead to a diagnosis or an improvement in their care. And the younger they are, the more likely it is that we will identify a genetic cause for their symptoms."

As researchers and physicians continue to learn more about the genetic basis of rare diseases, the clinical utility of sequencing will only increase. Because of the location of Columbia and NewYork-Presbyterian in an urban center that attracts some of the most complex perinatal, neonatal, and pediatric cases from throughout the world, precision medicine specialists at the university and hospital are at the forefront of harnessing this technology for the benefit of its youngest patients, sometimes even before they are born.

"What we are doing is building an integrated environment for genetics in the clinic," says Jordan Orange, MD, PhD, chair of pediatrics. "Any baby or child sick enough to warrant being in the ICU deserves to be sequenced. By applying these approaches broadly to the very sick children who come to this institution, we can provide the best outcomes for these patients."

Dr. Orange, who joined Columbia in 2018, is driven by a deep conviction in the power of sequencing in pediatric patients. At his previous position at Baylor College of Medicine in Texas, he worked with Jim Lupski, considered one of the founders of precision medicine, on the first large-scale study to examine the benefits of sequencing children with rare immune diseases called primary immunodeficiency disorders, which are associated with mutations in some 300 genes. Sequencing

could definitively diagnose 40% of these patients, and for a third of those, that diagnosis changed how their doctors took care of them.

Other studies, too, are accumulating to show the value of sequencing in different types of rare diseases, and in the ICU, the conditions kids have are almost always by definition rare. "Quite frankly, we need to make the journey more efficient for such patients," says Dr. Orange.

Kwame Anyane-Yeboa, MD, chief of the clinical genetics division in the Department of Pediatrics, collaborates with the IGM in researching undiagnosed genetic diseases. He has dedicated his career to uncovering the molecular basis for complex and often rare genetic disorders. "In earlier cases," says Dr. Anyane-Yeboa, "we found that sequencing significantly improved our diagnostic ability, and we addressed many practical problems, like patient education, consent, and insurance coverage, that will help us as we sequence more children."

Generally, clinical sequencing involves sequencing just the exome, the 1% of the genome that encodes proteins. In most cases, mutations that cause disease are thought to occur in exons. Exome sequencing can help guide care of prenatal, neonatal, and pediatric patients in many ways.

"Sequencing the genome of children with complex genetic diseases is the best way to elucidate the molecular basis for complex diseases, and in most cases a first step in understanding their diseases," says Dr. Anyane-Yeboa. "Knowledge of the molecular basis for complex diseases leads to better focused care and will ultimately provide a pathway to cure for such diseases."

For the small handful of children, like the patient with metabolic disease, it both identifies the condition and points to an effective treatment. Patients who are confirmed to have certain specific mutations also can become eligible for a clinical trial. In less hopeful cases, identifying a mutation known to be fatal can help the family decide how intensively to pursue treatments and interventions. In addition to providing information on the outcome for a child, sequencing results that reveal the genetic status of a condition also can help guide future reproductive decisions for parents.

As the science advances, the list of conditions for which sequencing can provide important information is growing. Indeed, studies suggest that even babies who present with chronic disease not thought to be within the diagnostic sights of comprehensive sequencing might have some constellation of genetic mutations that make them more susceptible. "Five years ago, we mostly thought about genetic testing for kids with congenital structural anomalies," says Dr. Kernie. "Now we know that kids who are really ill for whatever reason—whether it's a metabolic, immunologic, or neurologic disease or even a predisposition to infectious disease—oftentimes have a genetic component that we really need to understand before we can effectively treat them."

Increasingly, the approach is being extended to the prenatal period in patients for whom ultrasounds detect certain abnormalities. In fact, says Dr. Chung, sequencing prenatally is often preferable, if parents and physicians have reason to suspect a problem. Recent studies, including one

Steve Kernie

Columbia does exome sequencing for any child admitted to the neonatal or pediatric ICU.

published by Columbia researchers in February in the Lancet, support the idea that in certain cases sequencing can add much more information than current prenatal tests offer. "That means before the baby is even born we know what we're dealing with, we have a game plan, we have the right doctors lined up, and we have families who can emotionally prepare and wrap their heads around the situation."

Sometimes, sequencing identifies mutations that have never been described. "It's a bit nerve-racking but scientifically very interesting that we have 20,000 genes in our genome but we only know what diseases about 4,000 of them cause," says Dr. Chung. Novel mutations can leave clinicians and scientists groping for answers, but they also plant the seeds for new scientific discovery that may lead to therapies down the line. "We are still in the learning process. This plane is not completely built, and yet we're flying it—because it offers us some tremendous opportunities. As we say here at Columbia, we don't just practice medicine; we really think about what the next wave of medicine should be, and we develop it."

Kwame Anyane-Yeboa and Wendy Chung

Columbia's commitment to leadership in clinical sequencing—for both children and adults—has a foundation in the Institute for Genomic Medicine created in 2015. Patients thought to have a condition that is at least partially genetic get their exomes sequenced by being enrolled into a research protocol at the IGM. That means the IGM absorbs the costs, which is beneficial for patients because insurance reimbursement is not an issue. However, for the information to become part of a patient's medical record, the identified mutations must be confirmed in a clinical laboratory. That confirmation typically occurs in a clinically accredited laboratory in the Department of Pathology & Cell Biology.

Dr. Goldstein and Kevin Roth, MD, PhD, chair of pathology & cell biology, devised a centralized solution for the two-step process, a single laboratory called the Precision Genomics Laboratory (PGL). The laboratory combines the strengths of both entities: the precision medicine research and high throughput genomic sequencing expertise wielded by Dr. Goldstein's team and the clinical expertise and knowledge of laboratory testing and regulatory and reimbursement issues within Dr. Roth's team.

"The two of us realized that between us we have complementary expertise, and that by combining it we can really move our sequencing efforts from a research setting to a clinically applicable patient-facing setting that would maximally benefit patients," says Dr. Roth. "It's very unusual to have a basic science genomics institute like the IGM partner so closely with clinical laboratories in a pathology department in such a productive fashion. The aim is for Columbia to be able to cover the whole gamut, from initial discovery and analysis all the way to clinical testing mode."

With the genomics laboratory in place, physicians can now do exome sequencing for any child admitted to the neonatal or pediatric ICU, in the same way that the Precision in Pediatric Sequencing program

Vimla Aggarwal, director of the Precision Genomics Laboratory, with other lab leadership, from left, David Goldstein, Kevin Roth, and Steven Spitalnik

has provided genome sequencing for every pediatric cancer patient. Ultimately, says Vimla Aggarwal, MBBS, director of the PGL, the vision is to provide these kids with a rapid sequencing protocol.

With a sequencing protocol in place, improving speed of sequencing will be the next goal. In a review of pediatric ICU admissions data from 2015 and 2016, Dr. Kernie and his colleagues found that although just a small percentage of patients—1% to 2% of the total admitted—were referred for sequencing, the testing yielded a positive diagnosis in a full 25% of them. That number was especially high for certain specific groups of patients under age 2, boosting support for routine sequencing in the youngest patients. But unlike Dr. Kernie's infant patient with metabolic disease, whose sequencing and diagnosis was completed in close to two weeks, the process often took as long as four months. The Precision Genomics Laboratory is working toward a turnaround time of two to three weeks, which would reduce hospital stays and distress for families.

Speed aside, the sequencing that Columbia offers already sets it apart. "When I talk to my colleagues around the country, nobody has the ability to do what I'm doing, which is essentially to offer sequencing to everybody who comes into the pediatric ICU," says Dr. Kernie.

In addition to helping patients, Columbia's growing sequencing capacity is also powering the research engine that will deliver future therapies, work that is often painstakingly slow. "The process may be slow, but there is no doubt that it will pay off," says Dr. Goldstein. "As we slowly find treatments for more and more of these diseases, a higher percentage of the patients diagnosed will be helped by effective treatments." ❖

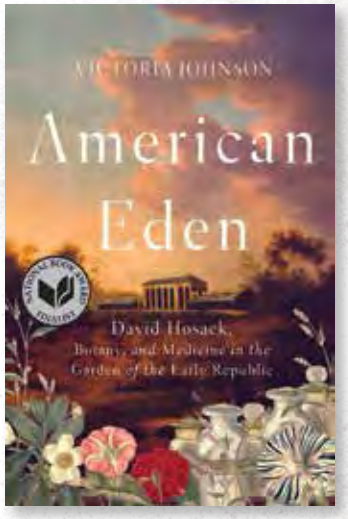
Who's Who

- **Vimla S. Aggarwal, MBBS,** assistant professor of pathology & cell biology (in the Institute for Genomic Medicine) and director of the Precision Genomics Laboratory
- **Kwame Anyane-Yeboa, MD,** professor of pediatrics at CUMC and chief of the Division of Clinical Genetics
- **Wendy Chung, MD, PhD,** the Kennedy Family Professor of Pediatrics (in Medicine)
- **Darryl C. De Vivo, MD,** the Sidney Carter Professor of Neurology, professor of pediatrics, and director emeritus of the pediatric neurology service
- **James H. Garvin Jr., MD, PhD,** professor of pediatrics
- **David Goldstein, PhD,** the John E. Borne Professor of Medical and Surgical Research (in Genetics & Development, in the Institute for Genomic Medicine, and in Neurology), professor of medical sciences (in medicine), and director of the Institute for Genomic Medicine
- **Steven G. Kernie, MD,** professor of pediatrics (in neurology), vice chair for clinical affairs for the Department of Pediatrics, and chief of critical care medicine at NewYork-Presbyterian's Morgan Stanley Children's Hospital
- **Jordan Orange, MD, PhD,** the Reuben S. Carpentier Professor of Pediatrics and chair of the Department of Pediatrics
- **Kevin Roth, MD, PhD,** the Donald W. King, MD, and Mary Elizabeth King Professor of Pathology & Cell Biology and chair of the Department of Pathology & Cell Biology

DAVID HOSACK:

PIONEER IN MEDICINE—AND DOCTOR AT HISTORY'S MOST FAMOUS DUEL

AUTHOR OF "AMERICAN EDEN" DESCRIBES DEFINING MOMENTS OF HOSACK'S LIFE ★ BY VICTORIA JOHNSON, PHD



David Hosack was born in 1769 in Manhattan—making this year the 250th anniversary of his birth. He grew up during the British occupation of the island in the Revolutionary War. In this chaotic world, surrounded by blood, disease, and death, Hosack began dreaming of a career devoted to medicine. At the age of 17, he enrolled as an undergraduate at Columbia College. Soon after, he risked his life to defend the anatomical specimens at Columbia and at New York Hospital during the Doctors' Mob of 1788. Hosack, like a number of other medical students, thought it prudent to leave town for a bit after this unrest, in which at least three people died. The following year he received his BA from the College of New Jersey (later Princeton University). He remained passionately devoted to the progress of medical knowledge the rest of his life, so much so that he would one day conduct an autopsy on his own infant son.

After advanced studies in Philadelphia, Edinburgh, and London, Hosack set up a private practice in New York and joined the Columbia medical faculty with a dual position as professor of *materia medica* and botany. Soon Dr. Samuel Bard, a pillar of Columbia and New York medicine who had treated President George Washington, invited Hosack to become the junior partner in his thriving practice. In 1797, Hosack saved the life of Philip Hamilton, the 15-year-old son of Eliza and Alexander Hamilton, earning the young doctor the trust of one of the nation's most famous and powerful men.

Thanks to his pioneering surgeries and his efforts to introduce gentler, more effective treatments to American medicine than the widely used mercury and bloodletting, Hosack quickly became the most sought-after physician in New York and the most famous American physician of his generation. By the time he suffered a stroke in 1835 at the age of 66 after exerting himself during a fire that devastated a vast swath of the city, Hosack had become so famous that newspapers from New Hampshire to South Carolina ran bulletins about his condition and offered prayers for his recovery. Soon after Hosack's death from that stroke, the American writer Freeman Hunt noted that "[a]s a physician and man of science, his name was universally honoured as the first; as a citizen, his many virtues and excellences of character have made a deep impression upon the hearts of thousands." Hosack's death, Hunt wrote, had "left a blank in the scientific and social world."

What brought David Hosack to the pinnacle of his profession? Here are four defining episodes in a brilliant medical career forged in the tumultuous early years of the nation.

1. "A DIFFERENCE OF OPINION UPON MEDICAL SUBJECTS IS NOT INCOMPATIBLE WITH MEDICAL FRIENDSHIPS"

In 1790, soon after his graduation from Princeton, Hosack moved to Philadelphia to study with Dr. Benjamin Rush, a signatory to the Declaration of Independence and the most famous physician in the

Dr. David Hosack, by John Trumbull, c. 1810, oil on canvas. Used with permission of the Linnean Society of London.

United States. Rush's approach to medicine was iconoclastic, empirical, and restlessly curious, making him the perfect teacher for the inquisitive Hosack. To Hosack's joy, this eminent American scientist agreed to become his mentor, and Hosack spent hours at Rush's side—not only in class and in clinical settings but also as a frequent guest at the family dinner table. Hosack memorized his mentor's personal and professional habits and emulated them for the rest of his life. To maximize time and energy for teaching, medicine, and charity work, Rush arose early, ate sparingly, never touched alcohol, and read late into the night. He loved lively medical debates and encouraged his students to challenge him; Hosack duly criticized Rush's theories in his 1791 medical thesis on cholera morbus. They would disagree even more publicly on the causes and treatment of yellow fever, even as they sent affectionate letters to each other. "Let us show the world," Rush wrote Hosack, "that a difference of opinion upon medical subjects is not incompatible with medical friendships; and in so doing, let us throw the whole odium of the hostility of physicians to each other upon their competition for business and money." Rush called himself Hosack's "friend and brother in the republic of medicine." Hosack, in turn, so admired his mentor that, soon after Rush's death in 1813, he commissioned a portrait of himself seated with a bust of Rush next to him, so that mentor and student looked as though they were continuing their decades-long conversation. Honoring Rush's example, Hosack soon became a beloved mentor to a new generation of American medical students.

2. "MORTIFIED BY MY IGNORANCE": HOSACK DISCOVERS BOTANY

In 1792, Hosack followed in Rush's footsteps by spending a year in advanced study at the great medical faculty in Edinburgh. Hosack signed up for a punishing regimen, attending classes 12 hours a day. He raced from anatomy to midwifery, from pharmacology to chemistry, from clinical observation to dissection. While in Edinburgh, Hosack discovered what would become his life's other great passion—botany.

It happened when one of Hosack's professors invited him on an outing to a botanical garden. As Hosack strolled along listening to the casually erudite conversation around him, he began to panic. Botanical expertise, it seemed, flowed in British veins. Hosack felt, as he later put it, "very much mortified by my ignorance of botany." He had learned about the importance of plant-based medicines during his American medical studies, but he had thought of them mainly as supplies to be purchased from apothecary shops. Now, in Britain, he suddenly grasped that for doctors and medical professors all across Europe, botanical gardens served as encyclopedias, laboratories, and classrooms all rolled into one. After all, most of the medicines known to doctors came from plants.

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David Hosack's Admission Card to Dr. Marshal's Anatomy Course, 1793-94

HOSACK BEGAN TO THINK VERY SERIOUSLY ABOUT TRYING TO FOUND A PUBLIC AMERICAN BOTANICAL GARDEN DEVOTED TO RESEARCH AND TEACHING AND RUN BY THE GOVERNMENT FOR THE NEW CITIZENS OF A YOUNG REPUBLIC.

Yet Hosack also learned that no one really understood just how plant remedies truly worked against particular illnesses—and no one had yet come up with a clear way to discover and isolate new plant-based medicines. Some doctors still subscribed to the so-called Doctrine of Signatures, according to which a medicinal plant was thought to bear the "signature" or symbol of the organ it treated. A plant called lungwort, for example, which has spotted leaves, was thought to resemble lungs and was therefore used to treat lung infections.

Hosack caught fire with a passion to advance medical botany. He moved to London to study for a full year with the greatest British botanists, including Sir Joseph Banks, the famous explorer and president of the Royal Society of London, and James Edward Smith, the president of the Linnean Society of London. When Hosack sailed home in the summer of 1794, he was one of the best-trained botanists in America. In his Columbia lectures, Hosack insisted to his students that the United States deserved doctors just as knowledgeable and skilled as Europe's, but he found it deeply frustrating that he had no botanical garden to teach them in.

It was around now, in 1797, that Hosack saved Philip Hamilton's life from a terrible fever. He did so with the help of a medicinal plant: Peruvian bark, made from the cinchona tree, native to the Andes. In the wake of this success, Hosack began to think very seriously about trying to found a botanical garden. He knew of the important garden and nursery of the Bartram family near Philadelphia, founded in 1728 (and still beautifully preserved today). But what Hosack had in mind was a different kind of institution: a public American botanical garden devoted to research and teaching and run by the government for the new citizens of a young Republic.

He lobbied friends, colleagues, and politicians for the money he needed to buy land, build greenhouses, hire gardeners, and collect plants from all over the continent and the world. Many people

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Elgin Botanic Garden

around him could not grasp what he was trying to do, and some mocked him publicly. They could not see what was apparent to Hosack—that the systematic scientific understanding of the chemical nature of plants and other remedies was about to emerge as the foundation of modern medicine. This would require a dedicated research facility.

After several fruitless years of lobbying for funds from Columbia and the state of New York, Hosack began buying up a parcel of 20 acres of Manhattan farmland. It was located on a country lane called the Middle Road, about three miles north of what was then the northern boundary of New York City. Hosack founded the garden at great expense to himself, eventually spending more than a million in today's dollars on it, all out of his own pocket. He wrote to contacts around the nation and the world pleading for seeds, living plants, and dried specimens—every kind of plant he could get his hands on. He wanted medicinal plants, of course, but also agricultural, commercially useful, and ornamental plants. Hosack named his garden the Elgin Botanic Garden, after his father's hometown of Elgin, Scotland. Over the next decade he amassed more than 3,000 species of plants and began training a generation of medical students in pharmacology, medical botany, patient care, and the scientific method.

3. LOSS MOTIVATES HIM TO SPECIALIZE IN OBSTETRICS

Hosack's triumphant rescue of Alexander and Eliza Hamilton's son Philip in 1797 came on the heels of great personal loss. Hosack's young wife, Kitty, had died in 1796 during childbirth. The baby had also died—making this the second infant Hosack had lost by the age of 26. His clinical skills had not been enough to save Kitty and the baby. Hosack channeled his helplessness into a professional focus on obstetrics, painting vivid scenes in his Columbia lectures of the overwhelming chaos of childbirth. He told his students that before they entered the delivery room, they must possess complete mental mastery of the birthing process. Once there, they would have "no time for much reflexion much less for consulting books." He told them it was a matter of life and death that they memorize everything about the reproductive organs—"not merely the soft parts" but also "the structure and configuration of the bones of the pelvis." He argued that childbirth so fully engaged the whole female body "by means of its membranes, nerves, and blood vessels" that giving birth was "almost one of the vital functions," like breathing and circulation. He told his students that the physician must radiate confidence both "to yourself" and "to your patient or her friends" because the least uncertainty "manifested by you is observed by them." They should speak to the mother in a calm, respectful tone while at the same time taking charge.

Hosack believed that every woman, rich or poor, deserved good obstetric care. He began to think about founding a "lying-in" hospital, devoted to helping women give birth safely even if they could not afford to have a doctor making regular house calls. If a doctor's own wife and baby couldn't survive childbirth, what was happening in the almshouse, in the boardinghouses, and in all the miserable shacks at the edges of the city? Hosack helped launch a subscription campaign to fund the new hospital, and his friend Alexander Hamilton was among the first subscribers.

Marrubium vulgare L. (horehound), a medicinal plant collected in 1806 on the grounds of the Elgin Botanic Garden

Yet there was little Hosack could do for a beloved child when bullets were fired. In 1801, at the age of 19, Philip Hamilton fought a duel to defend his father's honor. Hosack was at Philip's bedside with Eliza and Alexander as Philip lay dying of his injuries.

4. A DUEL NOW KNOWN AROUND THE WORLD

By now, Hosack was not only the Hamiltons' family physician, he was also Aaron Burr's. In the early summer of 1804, when Hamilton and Burr became embroiled in a war of written words that culminated in Burr challenging Hamilton to a duel, these two bitter foes could agree, at least, on the fact that Hosack was the logical choice to be the attending physician at the duel.

On July 11, 1804, Hosack stepped into a boat at the edge of the Hudson with Hamilton and Hamilton's "second" for the duel, a trusted friend named Nathaniel Pendleton who served as Hamilton's representative in the duel negotiations. When the oarsmen had rowed them to the New Jersey side of the river, Hamilton and Pendleton disappeared into the underbrush to climb to the dueling ground higher up the hillside, where Burr and his second, William P. Van Ness, were waiting. Hosack was left behind on the shore below the dueling ground so he would not be an eyewitness to the duel in the case of legal proceedings.

HOSACK HEARD A SHOT RING OUT, AND THEN ANOTHER, AND THEN HE HEARD SOMEONE SHOUTING HIS NAME. HE RACED THROUGH THE UNDERBRUSH UP TO THE DUELING GROUND, WHERE HE SAW A SIGHT HE WOULD REMEMBER UNTIL THE END OF HIS DAYS.

After a few minutes, Hosack heard a shot ring out, and then another, and then he heard someone shouting his name. He raced through the underbrush up to the dueling ground, where he saw a sight he would remember until the end of his days. Hamilton was lying on the ground, gravely wounded and half-cradled in Pendleton's arms. Hamilton's face looked to Hosack like a "countenance of death." Hosack struggled to keep Hamilton alive as the oarsmen rowed them back to New York City. After a terrible night, Hamilton died at about 2 o'clock on the afternoon of July 12, with Hosack among those at his bedside. Hosack was asked to perform the autopsy on his friend. Tracing the path of Burr's bullet through Hamilton's abdomen, Hosack found a mass of clotted blood, and behind that, under his fingers, he could feel Hamilton's shattered spine.

Hosack was stricken at Hamilton's death, but he lived by a strict medical principle of staying politically neutral about his patients. Hosack insisted to a friend that "science knows not party politics." Remarkably, this principle of scientific neutrality allowed him to remain close with Aaron Burr after the duel. When Burr fled to Europe in 1808, after yet more political scandal, Hosack cared for Burr's beloved daughter, Theodosia, during a terrible illness. Burr died in 1836, nine months after Hosack succumbed to a stroke. In a tidy twist of fate, it fell to one of Hosack's sons, Dr. Alexander Hosack, to care for Burr in *his* last illness.

A NAME FORGOTTEN BUT A LEGACY PRESERVED

David Hosack's name has largely been forgotten. But his soaring ambitions changed Columbia forever. In 1811, the state of New York purchased Hosack's pioneering garden from him for the public benefit and renamed it the State Botanic Garden. He had finally realized his dream of a public research institution. Before long, the legislators realized they had no experience in running a botanical garden and turned it over to Columbia College, which prudently held onto the property even as the boundaries of the city moved northward up the island. By the 1870s, Hosack's former garden was blanketed in apartment buildings and townhouses. In the 1920s, that land, still owned by Columbia, caught the eye of John D. Rockefeller Jr., who had grown up on 54th Street.

Columbia University was by now located uptown on a beautiful McKim, Mead, and White campus, built in part with proceeds from the sale of a parcel of Hosack's former garden property. Columbia agreed to lease John D. Rockefeller Jr. 11 acres for more than $3 million a year. By the end of the 1930s, he and his partners had built 14 buildings; the tallest one, 30 Rockefeller Plaza, shot 70 stories into the air from Hosack's former fields of grain. Radio City Music Hall was built over the former footprint of Hosack's conservatory.

In 1985, Columbia sold its property to the Rockefeller Group for more than $400 million. Hosack's great creation—the Elgin Botanic Garden—had long since disappeared into oblivion, both physically and in our national memory. But not before he had conducted some of the earliest systematic pharmacological research in the United States and trained the next generation of American medical students, both at the garden and in his wildly popular Columbia courses. ❖

Victoria Johnson is an associate professor of urban policy and planning at Hunter College of the City University of New York. She holds an undergraduate degree from Yale and a doctorate from Columbia. *This article is based on her most recent book, "American Eden: David Hosack, Botany, and Medicine in the Garden of the Early Republic" (Liveright/W.W. Norton, 2018), which was a runner-up for a 2019 Pulitzer Prize, one of five finalists for the 2018 National Book Award in nonfiction, and a New York Times Notable Book of 2018. In addition to her own research for "American Eden," Dr. Johnson used the following resources for this article: Freeman Hunt's "Letters about the Hudson River" (1836); Dr. Hosack's 1791 "Inaugural Dissertation on Cholera Morbus"; letters from Dr. Rush to Dr. Hosack; James Harrar's "The Story of the Lying-In Hospital of the City of New York" (1938); and Christine Chapman Robbins' "David Hosack: Citizen of New York" (1964). For more information about David Hosack's life and work, go to americaneden.org.*

Alumni News & notes

By Marianne Wolff'52, Alumni Editor, and Bonita Eaton Enochs, Editor

1954

P. Roy Vagelos received two awards recently. He received the Lifetime Achievement Award 2018 at the first Xiong'An International Health Forum in Hebei, China. The award was given by the Shenzhen World Health Foundation in recognition of his contributions to solving major health problems in China and Africa while serving as chair and CEO of Merck & Co. Merck, which developed the technology to produce the hepatitis B vaccine, received no profit from the sale of the technology to China, where hepatitis B was a major public health threat. The second award, the National Equal Justice Award, was presented to Roy and his wife, Diana, at the NAACP Legal Defense and Educational Fund's annual awards dinner. The awards dinner celebrates individuals who are driven by the same principles of equality and justice that guide the Legal Defense and Educational Fund's work.

1955

Sylvia and Richard Cruess received the 2018 Abraham Flexner Award for Distinguished Service to Medical Education from the Association of American Medical Colleges. The award is AAMC's most prestigious honor. It was established in 1958 to recognize extraordinary individual contributions to medical schools and to the medical education community as a whole. They were honored during a ceremony in November at AAMC's annual meeting in Austin, Texas. They were cited for changing medicine's understanding of professionalism and the role of the physician in the 21st century. Sylvia, an endocrinologist, served as director of the Metabolic Day Centre and as vice president (medical) of the Royal Victoria Hospital in Montreal. She is professor of medicine at McGill and an Officer of the Order of Canada and an officer of l'Ordre national du Québec and is professor of orthopedic surgery at McGill.

Sylvia'55 and Richard Cruess'55

1957

See Alumni in Print to read about a book of short stories written by George M. Burnell. George, a retired psychiatrist, lives in Palm Desert, California.

1958

See Alumni in Print to read about a book written by Lawrence W. Norton. Larry, emeritus professor of surgery at the University of Colorado School of Medicine in Denver, worked in a mission hospital in India for five years before returning to Denver for a career in academic surgery and a devotion to his pastime, sailing. In addition to his new book, which describes sailing, he wrote a trilogy of books that trace his surgical training, his work in India, and his years of teaching in medical schools in America and abroad.

Lawrence W. Norton'58

1959

Kenneth A. Forde'59 was named one of four 2018 Icons in Surgery by the American College of Surgeons. A presentation honoring his life and accomplishments was delivered at the 2018 ACS clinical congress in October.

Norbert Hirschhorn'62

1962

See Alumni in Print to read about a collection of poems by Norbert Hirschhorn. Norbert, now retired, joined the Public Health Service after graduation from medical school. He was assigned to a cholera research lab in East Pakistan, where he conducted research on cholera and other diarrheal diseases and demonstrated the proof of concept of oral rehydration therapy, a life-saving treatment for adults and children suffering fluid loss from cholera and other infectious diarrheal illnesses. More recently he conducted research on tobacco control and examined once-secret, now publicly available tobacco industry documents. In retirement he lives in London and devotes himself to writing and publishing poetry and literary book reviews.

1970

The American Gastroenterological Association has given its 2019 Distinguished Achievement Award in Basic Science to Harry B. Greenberg. He was recognized for work that contributed to the development of rotavirus vaccines and increased physicians' understanding of viral pathogenesis, particularly rotavirus, norovirus, and hepatitis. Harry is associate

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dean for research at Stanford University School of Medicine, where he is professor of medicine and of microbiology & immunology and a member of Bio-X, the Maternal & Child Health Research Institute, and the Stanford Cancer Institute. The recognition awards were presented during Digestive Disease Week, May 18-21, 2019, in San Diego.

1973

See Alumni in Print to read about a book written by Edward Tabor. Ed is vice president for North American regulatory affairs for Fresenius Kabi, a manufacturer of parenteral nutrition products and other injectable pharmaceuticals.

1975

Valerie W. Rusch is the 2018-19 president-elect of the American College of Surgeons. A thoracic surgeon, Valerie is vice chair for clinical research in surgery, the

Valerie W. Rusch'75

Miner Family Chair in Intrathoracic Cancers, and attending surgeon at Memorial Sloan Kettering Cancer Center in New York City. She also is professor of surgery at Weill Cornell Medicine. She received the 2018 American College of Surgeons Distinguished Service Award at the group's October clinical congress.

1980 MD/1978 PhD

Ruth S. Weinstock received a national award from the American College of Physicians during a scientific conference in Philadelphia in April. Ruth was awarded the Samuel Eichold II Memorial

Ruth S. Weinstock'80

Award for Contributions in Diabetes. Her research over the past 25 years has focused on the study of new approaches to prevent and manage diabetes mellitus and its complications. She is a SUNY Distinguished Service Professor and chief of the Division of Endocrinology, Diabetes and Metabolism in the Department of Medicine at SUNY Upstate Medical University in Syracuse, New York. She also is medical director of the clinical research unit and medical director of the Joslin Diabetes Center, which she helped establish at Upstate to serve more than 20 counties in upstate New York.

1980

Natalia Kanem, United Nations Under-Secretary-General and executive director of UNFPA, the United Nations sexual and reproductive health and rights agency, presented the annual Bonni Curran Memorial Lecture to open the 12th annual Family of Woman Film Festival in Sun Valley, Idaho, in February.

1981

Ron Cohen wrote that the company he founded and leads, Acorda Therapeutics, received an "early Christmas present" when he received news shortly before Christmas 2018 that the FDA had approved the company's drug for people with Parkinson's disease who suffer from "off" periods. "Off" episodes or periods are defined as the return of Parkinson's symptoms that result from low levels of dopamine between doses of oral carbidopa/levodopa, the standard oral baseline Parkinson's treatment. The drug's approval was effective Jan. 5, 2019.

See Alumni in Print to read about a book written by Velma Scantlebury. The first African-American transplant surgeon in the United States, she helped to launch a living kidney donor program at Pitt. She is now at Christiana Care in Wilmington, Delaware, where she is associate chief of transplant surgery. She has performed more than 2,000 transplants.

1983

Tim Wang received the 2019 William Beaumont Prize in Gastroenterology from the American Gastroenterological Association. The prize recognizes the contributions he has made to the understanding and practice of modern gastroenterology and digestive science, specifically his identification of the mechanisms and cellular origins of Barrett's esophagus and gastroesophageal cancer. Former president of the AGA Institute, Tim is chief of the division of digestive and liver diseases and the Dorothy L. and Daniel H. Silberberg Professor of Medicine at VP&S. The 2019 recognition awards were presented in San Diego in May during Digestive Disease Week.

1985

After years of clinical experience, Paul Spector formed Pantheon and Meaningful Fitness and has spent the past 15 years focusing on preventive health, behavioral change, motivation, aging, meaningful goal-setting, and how to apply scientific advances to maximize both physical and psychological peak fitness. Paul works with private clients and corporations in New York City and Hudson. He is a regular contributor to the Huffington Post, where he reports on the often confusing and contradictory news on health. He has written on a wide range of topics

Paul Spector'85

including the effect of sedentary behavior on health and cognition, diet and depression, blood sugar levels and brain function, anti-aging techniques, cancer detection, and new research on muscle.

1986

Susana Morales received a 2018 Hispanic Health Leadership Award in November from the National Hispanic Health Foundation. She was one of four individuals honored for contributions toward improving the health of Hispanic communities. Susana is associate professor of clinical medicine and vice chair for diversity for the Department of Medicine at Weill Cornell Medicine and director of the Diversity Center of Excellence of the Cornell Center for Health Equity.


Anne Armstrong-Coben'89


Steven Artandi'95


Brian Su'03

1989

Anne Armstrong-Coben was appointed interim senior associate dean for admissions at Vagelos College of Physicians and Surgeons in August 2018.

1991

See Alumni in Print to read about a book co-authored by Marc Eisenberg. Marc is associate professor of medicine at VP&S and an attending physician in cardiology at NewYork-Presbyterian/Columbia. He is a Fellow of the American College of Cardiology.


Marc Eisenberg'91

1995 MD/PhD

Steven Artandi has been appointed director of the Stanford Cancer Institute. He is professor of medicine and of biochemistry at Stanford's School of Medicine. Steven, who holds the Jerome and Daisy Low Gilbert Professorship, is an oncologist and cancer biologist whose research focuses on the role played by the enzyme telomerase in cancer, aging, and stem cell biology.

2000

See Alumni in Print to read about the latest book written by Jennifer Ashton. Jennifer is chief medical correspondent for ABC News and an ob/gyn with a private practice in New Jersey. She also is board-certified in obesity medicine and has an MS degree in nutrition from Columbia.


Jennifer Ashton'00

2003

See Alumni in Print to read about a book written by Andrew Bomback. Andy is associate professor of medicine at VP&S and a writer.

Brian Su was one of three individuals elected in November to the board of the Marin Healthcare District in California. He will serve a four-year term on the board, which is charged with promoting the health and welfare of the district's communities. He is serving as secretary of the board. Brian is a spine surgeon at California Orthopedics and Spine and medical director of spine surgery at Marin General Hospital. After graduating from VP&S, Brian completed an orthopedic surgery residency at Columbia and a spine surgery fellowship at the Rothman Institute, Thomas Jefferson University. Brian and his wife, Thomasina, have lived in Marin since 2009.

2005

Hani Sbitany was featured in a New York Times article about a surgical technique for breast reconstruction. He helped research and develop the technique to help women after they have a mastectomy for breast cancer. The article was featured in the Sept. 17, 2018, issue of the New York Times. Hani is associate professor of surgery in the Division of Plastic and Reconstructive Surgery at the University of California, San Francisco.

2007

Aaron S. Lord has been appointed chief of neurology at NYU Langone Hospital–Brooklyn. He was previously chief of neurocritical care at NYU School of Medicine and medical director of the neurosciences intensive care and step down units at NYU Langone's Tisch Hospital in Manhattan. He also is an assistant professor of neurology and neurosurgery at NYU.

2011

See Alumni in Print to read about a book co-authored by Christopher Kelly. Chris is a senior clinical fellow in cardiology at Columbia, where he completed his internship and residency and served as chief resident. He received an MS degree in biostatistics in 2018 from the Mailman School of Public Health.


Christopher Kelly'11

House Staff Alumni

Clifton K. Meador, a medicine resident under Robert Loeb from 1955 to 1957, has published a revised edition of his book, "A Little Book of Doctors' Rules III for Oslerian Clinicians." The first edition was published in 1992. The 375 rules included in the book are intended to help physicians uncover the cause of hidden symptoms when first contact doesn't reveal a patient's diagnosis. "Many diseases and causes of symptoms cannot be 'seen' but must be 'heard' from the patient's story and life history," Clifton says. He is professor of medicine emeritus at Vanderbilt University School of Medicine.

JULIA HICKEY

Sharon Madanes and her daughter, Sage, in her painting studio

Sharon Madanes'19: A Physician Painter

By Julia Hickey

In the paintings of Sharon Madanes'19, limbs and torsos take precedence over faces, as banal actions like washing, pointing, and twisting are linchpins upon which the entire experience of a hospital turns. Her highly saturated hues and frenetic marks reveal an uninhibited flourish. No doubt that, while completing the requisite study hours and clinical rounds, moments in front of a canvas were precious. She made many small and large-scale works during medical school, which were exhibited in New York City, Los Angeles, and London galleries.

"The Checklist," oil and acrylic on panel, 16"x16", 2016

Artists Sharon Madanes and Julia Hickey met in art school as undergraduates, where they shared a painting studio. Overlapping again for a semester at VP&S, with Ms. Hickey as the incoming staff writer for the VP&S Alumni Association, was a coincidence too timely to pass up, so the two took a long walk through Washington Heights on a cold January afternoon to talk about painting and medicine and the possible shape of a physician painter's life.

Julia Hickey (JH): What's in your studio now?
Sharon Madanes (SM): I am making a lot of work about the experience of waiting. Maybe it's because I am in this state of limbo, finishing residency interviews and waiting for the match. But I think that waiting is such a large part of medicine and the patient experience. I read this book called "Eros and Illness" that Rita Charon, the Columbia scholar who initiated the field of narrative medicine, recommended to me. In this book, David Morris talks about living with a wife who has Alzheimer's. He describes it as "intransitive waiting." It's not about waiting for something, but waiting as an active state of being, with no object. It's an idea I am thinking about a lot. Right now that is manifested as paintings of waiting spaces and waiting by hospital beds. I am also really interested in this idea of being inside and outside of something at the same time. One thing that's really interesting about medical training is that you wear different hats and pretend to be something you are not for a short period of time. It's really a rare and unique thing to say "Oh, I am going to play an ob/gyn for six weeks" or pretend to be a pediatrician or surgeon. You completely wear that identity, but at the same time you are removed. So that distance gives you space to observe and think about things. And it's that distancing space that I think is the same space art occupies.

JH: So you find painting as a place to translate that distance?
SM: The distance is just required in order to make observations and think about things in a critical way. Being on a plastic surgery rotation and thinking about a breast augmentation surgery brought into play all these questions of culture and aesthetics. Or I got really interested in hand-washing because it's this action you do over and over again in the hospital. I started thinking about it as a way of differentiating the self from "other" and what it signifies to patients. How does hand-washing structure chapters of time in your day?

JH: How do you move from an abstract concept to an object that is a painting?
SM: I think painting is just my way of thinking. And oftentimes, my way of thinking is not verbal. It's visual. You see something and you understand it on a different level, or it creates a feeling. And so I'll have a sort of visual thought while I'm on a rotation, and then I'll translate that into painting. Painting is like poetry in a sense. I think that poetry is incredible because of the leaps you have to make to fill in the gaps. Poetry exists in what is unsaid. Where the visual thought or painting takes you is sometimes scrutable, and sometimes it's unpredictable and very inscrutable.

JH: There is some visual static out of which your images emerge. In some hand-washing paintings, not every finger will be the same color, but the hands come together in your vision.
SM: If you see realistic paintings in real life, especially frescos, they are so loose up in person. They really dissolve into random marks. I think what painting can do is reveal how you see things and how perception works. Because you don't actually see everything. Your mind fills in those gaps, and your mind creates things.

JH: Can you tell me about a specific painting?
SM: I made a painting while I was in the first-year anatomy course. We had one lab where the body was transected in two different ways, sagittally and coronally. Like down the middle one way and then the other way. So my painting has three figures in it. Two heads are cut in those ways. And then, the third figure's head is "cut" by the canvas, by cropping. The painting is called "Cut Three Ways," because it plays with the idea of a physical cut, but then also a more metaphorical cut, or a type of headlessness that is required for the medical student to see beyond the violence of dissection to the knowledge, the anatomy. I painted the figures loosely, with lines, because in that period of medical training you learn to translate a 2D anatomical diagram onto a real body. And that experience of translation is also something you do in art all the time.

JH: Why do you make such colorful paintings?
SM: I think it's because color gives off an intensity of feeling and elicits intensity in the viewer. I am interested in discovering color relationships, in how colors vibrate and talk. Right now color serves a totally different function in my paintings than

"Cut Three Ways,"
oil and acrylic on canvas,
90"x120", 2015

before medical school, because color in the hospital is so particular—the color of the uniforms, the linoleum, the curtains, the walls, the light. I can only speculate why these decisions were made. In some spaces, it seems like everything is green, like in the old anatomy lab. Or in the operating room, you drape everything with blue fabric. You used to wear blue scrubs until Columbia changed to maroon. I don't know if that's because blue is the opposite of the color of flesh and insides or just a peaceful hue. All of a sudden I started having a whole different color experience than I did before, and maybe that's why so many of my paintings are blue. That is something I had to try to break away from actively, because I was painting all green and blue! And pink, and hot red. Because that was what I was seeing.

"Clinic Chess,"
oil on panel,
24"x32", 2018

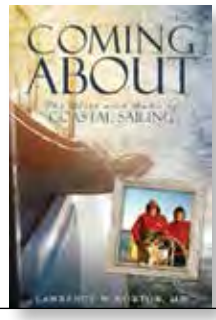
JH: Talk about your choice to go into psychiatry.

SM: When I first came to medical school, I thought I would go into psychiatry. But on clinical rotations, being a visual thinker really drew me to surgery. And the operating room was an arena where I felt very comfortable. In art school I loved power tools and was always in the wood shop. In surgery, you are fixing a problem by working with your hands. And I loved collaborating with other people. It reminded me of working as an artist assistant, which is a job I had for a few years. Many of the things that excited me about the operating room, however, were being satisfied by my studio practice—that itch was being scratched by painting. Ultimately I realized that so much of what drives me, and what brought me to medical school in the first place, is thinking about patient stories, about the psychology of experiences, about the way the brain works and mental health. I wanted to spend time talking to patients. I think I could have been a surgeon-painter in another lifetime. I think in psychiatry there is this chance to really have a deep connection with somebody else and think through problems with another person in a rewarding way that does justice to artistic thought.

JH: What about the perception that being an artist or a doctor is a calling and that people can't possibly be both to a serious degree?

SM: There are models for being both, especially in writing. There aren't so many models for that with painting. Verbal language is something that is used all the time in medicine, obviously. I think visual language is also used all the time in medicine, but maybe it's not as acknowledged. I think everybody, no matter how serious they are about their career, wears multiple hats and multiple professional hats, too. Like many artists are also very serious teachers, and same goes for physicians. But I also think it extends to people's personal lives. There are so many physicians who are also mothers or fathers or children to elderly parents. Everybody has so many demands on their time, and demands on their selves, that to tell somebody that there is only space to be one of your selves is just not doing justice to what it means to be human. Right now the profession of medicine is facing a burnout crisis, and I think part of that is not allowing doctors to be people in multiple ways. I know being a physician is very demanding on your time and on your energy. Taking care of and caring for anybody is really challenging. But I think that there needs to be space, at least over the span of a career, to be a whole person, and that means allowance to wear different hats. At different points in your life you will have more or less time to do certain things. But there just has to be some kind of nod that that those different selves exist and that they are important.

Sharon Madanes'19, who attended the Skowhegan School of Painting and Sculpture in 2014, has an MFA in fine art from Hunter College (2014) and a BA in art from Yale University (2007). She is co-founder of 14 x 48, a nonprofit organization that displays works by contemporary artists on vacant billboards across New York City. Dr. Madanes matched to a psychiatry residency at NYU. See more of her work at www.sharonmadanes.com.



alumni *in print*

By Bonita Eaton Enochs, Editor

Funny People: Short Stories

George M. Burnell'57

Outskirts Press, 2018

Dr. Burnell's newest book is a compilation of short stories about "people caught in the vicissitudes of life, sometimes tragic, sometimes comical, but always life-changing and transforming." Story titles include "The Little Boy and the Fat Man," "Transplant," "Blind Date," "Kismet," and "CRISPR World." As one reader described the book: "The main characters in these stories share a deep quiet compassion for others. Waiting to see what happens next in each story kept me engaged to the end, where each one touched me deeply, but with a feather touch that left me surprised and satisfied." Dr. Burnell also collaborated with his wife, Adrienne L. Burnell, PhD, on a 2015 book, "Picking Up the Pieces. What Everyone Needs to Know When a Child Dies."

Coming About: The Bliss and Bane of Coastal Sailing

Lawrence Norton'58

Zulon Press, 2018

Dr. Norton's newest book describes a lifetime of yearning and fulfillment in sailing. The book recounts the sailing adventures, mostly in the Pacific Northwest, of Dr. Norton and his wife, Ann, over the past 25 years. The "bliss" included sailing among magnificent mountain vistas of British Columbia and Alaska on their way to Glacier Bay. The "bane" is seen in such episodes as grounding on rocks, engine failures, incessant rainfall, blinding fog, and being charged by a whale. The book balances the challenging with the beauty of being alone in the wild. Before retiring, Dr. Norton sailed a 16-foot sloop on Colorado lakes during his free time.

Stone. Bread. Salt.

Norbert Hirschhorn'62

Holland Park Press, 2018

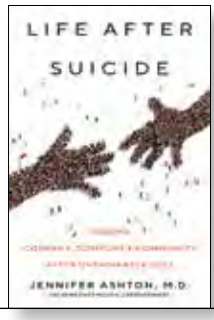
In Dr. Hirschhorn's new collection of poems, he takes stock of his life and gives voice to his quest to pass on the experiences of the generations before him. "Over the past decades I have lived and worked in the Middle East, coming to a greater understanding not only of Judaism, but also the other Abrahamic religions," says Dr. Hirschhorn. "As I approach my ninth decade of life I am aware of the need to share with my descendants the wisdom, texts, and lessons handed down by our ancestors of all religions. The poems in this collection reflect this aim and necessity."

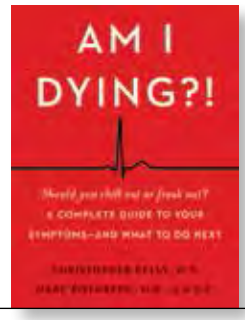
Risk Evaluation and Mitigation Strategies for U.S. Drug Development (Second Edition)

Edward Tabor'73

Regulatory Affairs Professionals Society, 2018

The second edition of Dr. Tabor's book is an updated analysis of the FDA's Risk Evaluation and Mitigation Strategies program, which gives the FDA the authority to ask developers of high-risk products to submit risk assessment documentation as part of the regulatory review process. Several new aspects of the program have been introduced by the FDA since the original edition of this book was published in 2012. The book is meant for companies that submit a new drug to the FDA or pursue approval for a generic copy of a product that has already undergone risk assessment.





Beyond Every Wall

Velma Scantlebury'81

www.BeyondEveryWall.com, 2018

Dr. Scantlebury's memoir is subtitled "Becoming the 1st Black Female Transplant Surgeon," and this book outlines her journey from her childhood in Barbados, her family's move to New York, college, medical school, and her career. She describes the obstacles and challenges—the walls—that met her at every turn in her life and how she overcame them. The book describes highlights of her career, including a fellowship with the famed surgeon Thomas Starzl in Pittsburgh, her move to the University of South Alabama as chief of transplantation and assistant dean of community outreach and education, the recognition she received as a pioneering female surgeon of color, and the importance of mentorship.

Life After Suicide

Jennifer Ashton'00

William Morrow, 2019

Dr. Ashton's book, subtitled "Finding Courage, Comfort, & Community After Unthinkable Loss," provides a personal look inside the suicide epidemic. She writes about the 2017 suicide of her ex-husband and the effect of his death on her and her children. After the high-profile suicides of Kate Spade and Anthony Bourdain in 2018, Dr. Ashton recognized the importance of discussing suicide and its resulting grief instead of suffering in silence. As ABC News chief medical correspondent, Dr. Ashton used her media platform to give voice to her pain and recovery and to help other suicide survivors. The book also includes interviews with others who have been touched by suicide and shares their tales of resilience.

Doctor

Andrew Bomback'03

Bloomsbury Academic, 2018

Dr. Bomback's book is part of the Object Lessons book series, published in partnership with an essay series in the Atlantic, about the hidden lives of ordinary things. After coming to the conclusion that even doctors struggle to define their profession, Dr. Bomback attempts to unravel how much of doctoring is role-playing, artifice, and bluffing. He examines the career of his father, a legendary pediatrician on the verge of retirement, and the health of his infant son, who is suffering from a vague assortment of gastrointestinal symptoms. The book is at times serious, comedic, analytical, and confessional, providing an unflinching look at what it means to be a physician today.

Am I Dying?

Christopher Kelly'11 and Marc Eisenberg'91

William Morrow, 2018

This book is a resource for "your inner hypochondriac," with guidance to common symptoms—and what to do about them. The Columbia cardiologists offer advice on when to chill out, when to make a doctor's appointment, or when to get to the hospital. The authors recognize that new health symptoms can be alarming and acknowledge the temptation to use online search engines to find a diagnosis (which can cause people to ask, "Am I dying?"). Drs. Kelly and Eisenberg describe the 40 most common symptoms and provide conversational guidance on what to do next.

Send books (published within the past two years) to:

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Please include an email address for the editor's use only.

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in memoriam

FACULTY

Reza Amighi, MD, assistant professor of psychiatry at CUMC, died Feb. 28, 2018.

Rodman D. Carter, MD, retired faculty member in urology and surgery at Bassett, died Dec. 28, 2018. See more in Alumni In Memoriam, Class of 1954.

Leonard Chess, MD, chief of rheumatology at VP&S for 26 years, died Oct. 19, 2018.

Donald L. King, MD, professor emeritus of clinical radiology, died Dec. 31, 2018. See more in Alumni In Memoriam, Class of 1960.

Leonard Chess

Barbara W. Low

Donald L. King

Ines Mandl

Herbert Kleber

Ralph James Veenema

Donald West King, MD, former chair of pathology, died Oct. 27, 2018.

Herbert Kleber, MD, professor of psychiatry, died Oct. 5, 2018.

Barbara W. Low, PhD, professor emeritus of biochemistry & molecular biophysics, died Jan. 10, 2019.

Ines Mandl, PhD, professor emeritus of reproductive biochemistry, died Aug. 5, 2016.

David Pelino, MD, adjunct assistant clinical professor of psychiatry, died July 20, 2018.

Ralph James Veenema, MD, professor emeritus of clinical urology, died Dec. 14, 2018.

Patricia Warne, PhD, associate research scientist in psychiatry, died Dec. 31, 2017.

Doris L. Wethers, MD, retired professor of clinical pediatrics (at St. Luke's-Roosevelt Hospital Center), died Jan. 28, 2019.

ALUMNI

1943

Quentin "Chip" Deming, a researcher and longtime faculty member at Albert Einstein College of Medicine, died Jan. 21, 2019, at his home in New Hampshire. He was 99. After graduating from VP&S, he was a doctor in the Navy during World War II and won a three-year medical fellowship at Stanford University. He is survived by two children, three grandchildren, a great-grandchild, and a brother.

1946

Russell S. Boles Jr., a gastroenterologist with a private practice on Cape Cod from 1981 until his retirement in 2008, died at his

Russell S. Boles Jr.'51

home in Massachusetts on Feb. 4, 2019, at age 96. His wife of 67 years, Elizabeth, and their three children, nine grandchildren, and five great-grandchildren survive him. Dr. Boles served in the U.S. Navy for two years as a medical officer on the USS Fargo in the Mediterranean, then continued training at Philadelphia General Hospital and UPenn Medical Hospital. He was affiliated for 40 years with New England Baptist Hospital. He was active in Christian fellowship. A building at the Latham Centers in Cape Cod is named after him.

Barbara Penn Wright (also known as Barbara Wright Pierce), a retired internist, died Nov. 24, 2018, at her Manhattan home of more than 56 years. She was 98. She practiced in a few institutional settings before working for many years at Metropolitan Life Insurance Co. at its former headquarters in southern Manhattan. She retired in 1984. She and her husband, Sam, maintained a second home in Washington, D.C., for nearly 20 years until his death in 2000. She is survived by a daughter.

1947

Alexander Caemmerer Jr., who practiced psychiatry at St. Luke's and VP&S for more than 60 years, died July 10, 2018, at age

94. He is survived by three sons and their families.

Gloria Clare Elias died Jan. 23, 2019, following a long illness. She was 95. Dr. Clare, as she was known professionally, practiced psychiatry for more than 50 years in New York City. She is survived by two children, a grandson, and a great-granddaughter.

Edward F. Vastola, professor emeritus of neurology at Washington University, died July 22, 2018, at age 94. He served in the Navy Reserves on active duty from 1943 to 1945 and as first lieutenant from 1951 to 1953 as chief of neurology at the Neuro-

Edward F. Vastola'47

psychiatric Specialized Treatment Center of the Army Hospital at Camp Pickett, Virginia. He was a member of the American Academy of Neurology and the American Neurological Association. Aside from medicine, he researched Greek linguistics through the texts of Homer.

1950

Henry Post Ward, a psychiatrist, died Sept. 17, 2018. He was 92. He worked for many years in the Washington, D.C., area. Upon his retirement, he lived in Maryland, Maine, and later in Atlanta, Georgia. He is survived by his wife, two sons, two daughters, and six grandchildren.

Donald T. Kasprzak'51

1951

Donald T. Kasprzak, a surgeon, died Oct. 16, 2018, from complications of a fall. He practiced in Plattsburgh, New York. He is survived by his wife, Kathy, and six children.

1952

Leslie J. DeGroot, known for his contributions to the field of endocrinology, died Oct. 23, 2018. He enrolled in VP&S at the age of 20 and was elected to AOA as a junior. His professional career took him to the NIH, Massachusetts General Hospital, Harvard University, and MIT.

1954

Rodman D. Carter, who was board-certified in general surgery and urology, died Dec. 28, 2018, at the age of 90. He was born in Ohio, the son of a Congregational Church minister,

Rodman D. Carter'54

and served in the U.S. Navy after graduating high school. At VP&S he worked with Virginia Apgar'33, the creator of the Apgar Scale for grading babies' health at birth. In 1953, he started a long career at Bassett Hospital in Cooperstown, New York. He became a member of the senior staff in 1962 and continued to teach surgery there until 1993. Dr. Carter is survived by his wife, Mary, one daughter, two granddaughters, four great-grandchildren, and a sister.

Edward F. Conklin, a cardiovascular-thoracic surgeon, died Dec. 4, 2018, at the age of 90. Born in New York City, he grew up in New Jersey. He served in Frankfurt, Germany, in the U.S. Army Medical Corps from 1955 to 1957. He completed his residencies at Columbia and was in private practice at St. Vincent's Hospital in New York City. He also practiced at medical centers in Hackensack, Harlem, and Pascack Valley. He was an avid outdoorsman and huntsman and an active member of the Campfire Club of America. Dr. Conklin is survived by his wife, Carol, three children, and four grandchildren.

1955

Donald Brown, who practiced psychiatry in Hartford, Connecticut, and held various administrative positions in medical education, died June 28, 2018, at the age of 91. Following service in the U.S. Navy, he trained in psychiatry at the University of Rochester. He is survived by his wife, Lea, and his sons and their families.

Richard A. Rifkind, an esteemed cancer researcher, died Jan. 1, 2019, at the age of 88. As chair and chief scientific officer from 1983 to 2000 of the Sloan Kettering Institute, the experimental research arm of Memorial Sloan Kettering Cancer Center, he led a restructuring of the institute to focus on major areas of scientific inquiry and recruited an outstanding faculty of scientists. He personally directed laboratory studies that have helped shape contemporary developmental biology,

Richard A. Rifkind'55

investigating the differentiation of blood cells and identifying chemical agents that could steer cancer cells back to normal. This led to the development of the first HDAC inhibitor, vorinostat (Zolinza). He also supported a vibrant graduate program within the institute and established the Simon H. Rifkind Chair in Molecular Biology in honor of his father. Dr. Rifkind was a founder of the New York Structural Biology Center, which opened in 2002 to increase the understanding of proteins that play a role in diseases such as cancer.

Arthur S. Verdesca, an internist, died Aug. 11, 2018. He graduated from VP&S as a member of AOA. Even though he received a prize in pediatrics, he chose internal medicine and trained at St. Luke's before serving in the U.S. Air Force. Upon discharge, he published his research find-

ings on adrenal physiology. An elected member of the American College of Physicians, Dr. Verdesca was medical director for American International Group and for General Electric. He served as president of the New York chapter of the American Occupational Medical Association. He was an associate clinical professor of medicine at Cornell from 1986 to 2005. A crossword puzzle enthusiast, he constructed them (including puzzles for several issues of this magazine) and also judged crossword puzzle competitions. He translated Dante's "Divine Comedy" from the Italian. He is survived by his wife, Ann, his children, and his grandchildren.

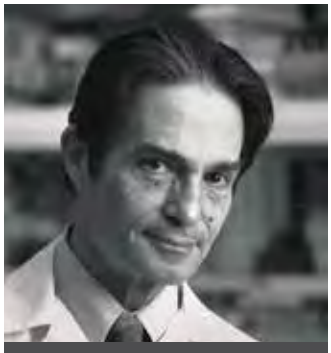
1956

J. Putnam "Put" Brodsky, an internist specializing in pulmonary medicine, died Nov. 20, 2018, of lung cancer. He was 88. Born in Brooklyn, he was raised in New Jersey and attended the New York Military Academy. He trained at Bellevue Hospital and Yale-New Haven Hospital. Following two years as an Army captain in Puerto Rico, Dr. Brodsky started a 40-year medical practice in Rumson, New Jersey. Despite his pulmonary specialty, most patients considered him their family doctor. He enjoyed making rounds at Riverview Hospital, where he served as chief of medicine, co-director of the respiratory ICU, and the first director of the drug rehab center. He served as the Rumson police and fire surgeon from 1964 to 2000. Dr. Brodsky is survived by three children, seven grandchildren, and a brother.

Donald M. Gleason, who practiced urology for more than 30 years in Tucson, Arizona, died March 22, 2018. He served in the Air Force and later completed his residency in New York City. His wife, four children, and nine grandchildren survive him.

1957

Henry Metzger, who spent nearly his entire career at the NIH pursuing basic research in molecular aspects of the immune system and in administration, died Nov. 20, 2018, at age 86. He was born in Mainz, Germany, and immigrated to New York City as a child. After two years of internal medicine residency at NewYork-Presbyterian, he entered public health service at the NIH in 1959. For 10 years, he was the first director of intramural research with the newly formed National Institute of Arthritis and Musculoskeletal and Skin Diseases. He was elected to the National Academy of Sciences, was a Fellow of the American Association for the Advancement of Science, and served in professional organizations including the American Association of Immunologists



Henry Metzger'57

(21 years) and the NIH's Foundation for Advanced Education in the Sciences (40 years). He also served as president and councilor of the International Union of Immunological Societies and was an active member of the Washington, D.C., chapter of the Medical Committee for Human Rights that provided medical support during demonstrations related to the assassination of Martin Luther King Jr. and the Vietnam War. Dr. Metzger is survived by his wife, Deborah, three children, six grandchildren, and a brother.

Robert John Reilly died Aug. 14, 2018, at age 87.

1958

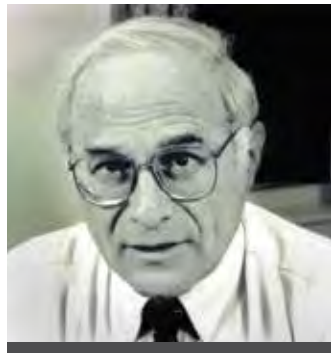
Daniel J. Collins, who spent nearly his entire career at Hale Hospital in Haverhill, Massachusetts, died from complications of Alzheimer's disease on Aug. 8, 2018. He was 84. He served in the U.S. Army as a surgeon during the Vietnam War. Survivors include his children, grandchildren, and various animals, including cats, dogs, horses, and a donkey.

1959

Kenneth Faust, who made several important contributions to the field of ophthalmology, died Oct. 31, 2018, in Tavares, Florida. He was 85. He completed his internship in Los Angeles, then served in the U.S. Navy, where he completed submarine medical officers and diving medical officers courses and served in Vietnam. He retired from the Navy at the rank of commander. A wrestling champion in high school and captain of his college wrestling and football teams, he was inducted into the PA Wrestling Coaches Hall of Fame and the National Wrestling Hall of Fame. He is survived by a daughter, a son, and four grandchildren.

Kenneth Faust'59

Thomas F. Plaut, a refugee from Nazi Germany who went on to become a beloved community pediatrician, died Jan. 30, 2019. He was 85. Dr. Plaut was born in Leipzig, Germany. His family escaped in 1935 and settled in Ohio. While at VP&S, he studied tropical medicine for several months in Surinam and helped underpaid laborers there organize a union. He married Johanna Mautner in 1962. Because he wanted to practice medicine where he could make a real difference, they settled in the tiny coal-mining town of Whitesburg, Kentucky. After several years they moved to the South Bronx. At the MLK Jr. Community Health Center, one of the first community health centers in the country, Dr. Plaut initiated a new model for health care delivery that trained community members to become health care workers. Their next home was Amherst, Massachusetts. Dr. Plaut specialized in treating asthma. He published several books, including "One Minute Asthma," which sold more than 2 million copies. He



Thomas F. Plaut'59

was active in the men's group of the Jewish Community of Amherst and sang with the social justice chorus Amandla for 17 years. His two children, three grandchildren, and two siblings survive him.

William V. Shaw, who spent most of his career conducting research at the NIH and at Cambridge University in the United Kingdom, died July 30, 2018. He was 85. He helped found a biomedical center and medical school in Leicester, United Kingdom. He is survived by his children, grandchildren, and siblings.

Martin J. Smith, former chair of internal medicine and director of clinical laboratories at Gunderson Clinic and Lutheran Hospital in Wisconsin, died July 29, 2018. His training included specialty training in hematology at Massachusetts General Hospital. He served as a U.S. Naval medical officer and continued in the Reserves for another 18

Martin J. Smith'59

years. He was the first hematologist in La Crosse, Wisconsin, and director of research at the Gunderson Medical Foundation. He was elected as a Fellow of the American College of Physicians and of the American College of Pathologists. He is listed in "Who's Who in Science and Engineering," "Who's Who in Medicine and Health Care," and "Who's Who in the World." He is survived by his wife, daughter, and two sons.

1960

Barry M. Beller, co-founder of the University of Texas San Antonio School of Medicine and head of cardiology there, died Oct. 2, 2018, in Santa Fe, New Mexico. He trained in cardiology at the University of Chicago, then served in the U.S. Air Force as head of its cardiac catheterization lab. Outside of medicine, he supported the arts and music and was a co-founder of San Antonio's classical music station. He also enjoyed restoring antique autos and was an enthusiastic photographer.

Julian J. Clark, a psychiatrist in private practice who specialized in psychosomatic medicine, died Sept. 21, 2017. He was a clinical associate professor at SUNY Downstate Medical Center and also worked as an independent medical examiner. His wife, Rita, also a 1960 VP&S graduate, and two daughters survive him.

Donald L. King, a pioneer in the field of diagnostic ultrasound imaging and professor emeritus at VP&S, died Dec. 31, 2018. He was 84. Upon graduation from VP&S, he served in the U.S. Air Force, leaving as a major in 1968. During that time, he served at Walter Reed Army Hospital, completed an Air Force-sponsored civilian residency in radiology at NewYork-Presbyterian, and served for four years at the USAF Hospital in Evreux, France, and the U.S. Air Force Academy Hospital. At Columbia, Dr. King developed an interest in the nascent field of diagnostic ultrasound imaging, being the first to offer it as a general clinical service. In 1970, he developed electrocardiographic-gated ultrasonic imaging of the heart. In 1975, he edited the first comprehensive textbook, "Diagnostic Ultrasound." He received two patents covering his 3D imaging apparatus and several grants to pursue its development. In 1992, he received the Joseph H. Holmes Pioneer Award from the American Institute of Ultrasound in Medicine. Dr. King is survived by his wife, Nancy, three sons, and six grandchildren.

Laurus Waldemar Lehwalder, an ophthalmologist, died June 5, 2018, in Tempe, Arizona. He was 88. He grew up in Montana and after graduation from VP&S served in the U.S. Navy, where he aided refugees in Vietnam. He and his wife had three children and settled in Missoula, Montana. He is survived by his wife, children, three grandchildren, and three great-grandchildren.

William E. Temple, who was on the team that used the first cardiopulmonary bypass equipment for open heart procedures, died Oct. 5, 2018. He was 88. A New Jersey native, Dr. Temple worked at a telephone company before starting college. He interned in Chicago and became a research fellow at the American Heart Association. In the U.S. Air Force, he conducted research associated with the Apollo rocket and became a flight surgeon. After discharge, he completed an orthopedics residency and moved to San Diego, where he was chief of orthopedics at Mercy Hospital. His hobbies were flying, driving fast in his BMW (he called that "flying low!"), and singing with the San Diego Master Chorale. His other hobbies were rowing, hiking, skiing, and spending time with friends and family.

1961

Frederic Augustus Alling, former director of inpatient services in substance abuse at St. Luke's Hospital, died Oct. 22, 2018. He was 88. A New Jersey native, Dr. Alling studied philosophy

Frederic Augustus Alling'61

and religion at Princeton before studying at General Theological Seminary in New York City and becoming an ordained priest. Alongside his MD he received an MS in social psychiatry. He worked as a psychiatrist at Harlem and St. Luke's hospitals, volunteered to help the homeless, and wrote numerous articles. He also published a book titled "Brief Flights: Transcendent Experiences." He retired to Marblehead and worked at a psychiatric clinic and helped Cambodian refugees in Lynn, Massachusetts. His hobby was sailing. He was devoted to his family and is survived by his wife, Martha, three daughters, and a sister.

1963

Michael Gary Ehrlich, who specialized in pediatric orthopedics, died July 21, 2018, at age 78. At VP&S, he was a member of Alpha Omega Alpha. He trained in orthopedic surgery and became chief of pediatric orthopedics and associate professor at Harvard. After moving to Rhode Island, he served as a member of

the Board of Trustees at Lifespan Health System. He received numerous prestigious awards, including an endowed chair in orthopedic research bearing his name. He is survived by his sons and grandchildren.

1964

Ann Heroy Webb, a public health worker who was board-certified in family practice, geriatrics, and preventive medicine, died Sept. 15, 2018, of a traumatic brain injury following a fall in her home in Oxford, Maryland. She was 80. She received an MPH from Johns Hopkins and served as a health officer in various Maryland counties. She also was on the medical staff of

Ann Heroy Webb'64

an Easton, Maryland, hospital. Upon retirement, several hospitals gave her citations honoring her service. She also served on the board of directors of her county's historical society. She is survived by husband and classmate, Charles Webb, and two sons and their families.

1967

Richard J. Mackler, who practiced endocrinology for 45 years in Montreal, died Feb. 2, 2019. At VP&S, he was elected a member of Alpha Omega Alpha. In Canada he was professor of endocrinology at Montreal General Hospital and taught endocrinology in association with McGill University in addition to maintaining an independent medical practice. Known for his generosity, Dr. Mackler funded two scholarships for students with need. He was a patron of art and theater companies and taught himself Italian (he was already fluent in German and French). His siblings, six nieces and nephews, and nine grandnieces and grandnephews survive him.

Carol Petito, a distinguished neuropathologist who was the first to discover changes to the brains of AIDS patients—a landmark finding in the diagnosis

Carol Petito'67

and treatment of AIDS—died Dec. 15, 2018, at age 76. She would say that her greatest accomplishments were the many residents and young doctors that she mentored and trained throughout her career at Cornell and at the University of Miami as director of its residency training program. She continued to mentor doctors and practice medicine until 2017, not letting the lung cancer diagnosed in 2010 get in her way. She is survived by her husband, Dr. Michael Norenberg, two children, five grandsons, two siblings, and her ex-husband, VP&S classmate Frank Petito.

1980

Warren Scott Grundfest, an internationally recognized surgeon, inventor, and bioengineer, died Dec. 28, 2018, in Los Angeles. Born into a medical family, Dr. Grundfest worked in the laboratory of Nobelist Eric Kandel before entering medical school at VP&S. He completed his internship and general surgery residency at UCLA and Cedars-Sinai Medical Center. Early in his career, he was best known for cutting-edge work on the excimer laser for medical applications. He also pioneered instrumentation for minimally invasive surgery, saving the lives of countless patients. He became

Warren Scott Grundfest'80

professor of surgery at the David Geffen School of Medicine in Los Angeles and served as chair of biomedical engineering at the Henry Samueli School of Engineering and Applied Science; he was also a member of the UCLA Brain Research Institute and the California Nanosystems Institute. He authored more than 175 papers and numerous book chapters and had more than 20 patents. He lectured internationally and was a longstanding consultant and adviser to governmental entities such as the NIH and FDA. The American Institute for Medical and Biological Engineering gave him the Pierre Galletti Award, the organization's highest honor. He was passionate about classical music and environmental and human rights causes. Dr. Grundfest is survived by his wife, Andrea, and his mother.

Martin P. O'Laughlin, a pediatric cardiologist, died Dec. 22, 2018, at age 63. He completed residency training at Baylor College of Medicine in Houston, Texas, and was a former associate professor of pediatric cardiology at Duke University. At the time of his death, he lived in Missouri.

1990

James "Jim" V. Joy III, an anesthesiologist, died Nov. 1, 2018, in a skiing accident in Argentina on his way to Antarctica in his quest to ski on all seven continents. He was 54. In his undergraduate years at Fordham, he started the Outdoors Club and also worked as an actor and director. While at VP&S he acted in and directed shows produced by the Bard Hall Players. After an internship at Greenwich Hospital, he moved to Seattle for a residency in anesthesiology. It was in Seattle that he met his future wife, Lori, who survives him along with their two daughters.

Other Alumni Deaths

Seymour Cohen'41 PhD
Girard Craft'43
James Kieran'44
Gary Piccione'44
Gray C. Buck'45
Philip Duffy'47
Lawrence M. Bugbee'54
Burton Cohen'54
Warner V. Slack'59
Joel Duberstein'61
Luther M. Strayer III'61
Herman Frankel'62
Frederick Dietz'77
Timothy Aliff'96