One Marks is Not Enough

Paul Marks and son Andy Marks have — in ways similar and unique — helped to make P&S great

Diabetes and Surgery
Researchers seek to understand how surgery helps

Legacy in Botany
Two 1980 grads write about John Torrey '1818
Inside this issue, you will find several examples of exciting progress here at Columbia: A profile of our newest Institute of Medicine member, Carol Mason; Tim Wang’s novel approach to the study of cancer; an exciting expansion of our ColumbiaDoctors practice in midtown Manhattan; an update on the scholarly projects of our inaugural class in the new M.D. curriculum; the experience of the first class of Columbia-Bassett students in Cooperstown; and a review of landmark research performed here at Columbia that demonstrates how we can now replace an aortic valve without surgery. The issue also profiles two accomplished physician-scientists and academic leaders: Paul Marks – a 1949 P&S graduate, former dean of P&S, and current CUMC Board of Visitors member – and his son, Andy Marks – our current chair of physiology & cellular biophysics. In the newly designed alumni section of the magazine, you can read profiles of three 1980s alumni who have had fascinating careers in biotechnology: Ron Cohen, Paul Maddon, and George Yancopoulos.

These examples of our people and our achievements serve as true measures of our success, but we also appreciate when external evaluations publicly reinforce the value of our contributions to the fields of medicine, education, and biomedical science. In 2011, our National Institutes of Health awards grew by more than 6 percent, demonstrating how well our faculty are doing when competing against their peers for research funding at a time when the overall NIH budget declined. In education, we proudly note that the yield for our first-year class – the percentage of accepted students who enrolled – was the highest in 35 years. Another indicator is our record-breaking philanthropy, which last year topped $200 million in support that we gratefully acknowledge from alumni, patients, and other friends.

However, no external assessment exemplifies the greatness of P&S better than the highest standard we set for ourselves – our unwavering commitment to improving health throughout the world with advances in medical education, scientific research, and patient care.

With best wishes,

Lee Goldman, M.D., Dean
goldman@columbia.edu
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The Marks of Clinical and Research Excellence

By Robin Eisner

P&S faculty member and department chair Andy Marks and Paul Marks’49, former P&S department chair and former dean, make up one of the few father-son teams in the Institute of Medicine and the National Academy of Sciences.

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John Torrey’s Legacy: From Plants to Trees to Mountains to Botanical Societies

By Alan Lipkin’80 and Mindy L. Aisen’80

Two graduates who discovered their mutual connections to the legacy of 1818 P&S graduate John Torrey write about the influence of the medical botanist.

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Does Metabolic Surgery “Cure” Diabetes?

By Robin Eisner

Experts may not agree on how surgery treats diabetes but they agree that more research is needed.
As a P&S graduate who made it into the field of family medicine, I rather feel that our select cohort should shout in our best Shakespearean voice, “We few, we happy few, we band of brothers [and sisters]…” While P&S does not produce many family physicians, I know of no better field to have chosen. My specialty allows me an opportunity to care for generations of family members, providing invaluable depth and perspective that help me contextualize my understanding of my patients’ current health as well as help shape my plan of care. I have held family conferences advocating for a patient at the end of their life in the ICU while delivering a baby that same day. I have so loved my career choice that now I’ve returned to academia to teach future family medicine residents. In this capacity I have the great privilege of working with a member of P&S’s extraordinary Class of 2011: Jamie Conniff. While it is encouraging that our numbers from elite programs like P&S are growing, I want to elaborate upon the article on this subject. Family medicine is not merely about service but also advocacy and collaboration. With its focus upon continuity of care, we are often as much enriched by our patients as they are by us. Furthermore, family medicine does not merely bring the whole patient into focus but even more broadly tries to consider health and healing in the context of family and community too. With the growing need for primary care providers, and with increasing awareness among scientists of the connectedness between individual, family, and community health, family physicians are in great demand. It is a specialty for people who love puzzles, who love to build things, who love stories, who love challenges. Dr. Spears is skeptical that family medicine will continue to find such numbers as the Class of 2011 but Jamie and I and many others hold our standard high and encourage other P&S graduates to join our ranks.

Jennifer Edgoose ’96
Madison, Wis.

I was fascinated by the article in the Fall 2011 issue regarding the nine students in the class of 2011 who matched in family medicine. I was a member of the “notable exception” class of 2002, from which four students entered family medicine. Compared to other medical schools, P&S
is certainly specialty-oriented, as evidenced by the number of weeks devoted to surgical subspecialties: significantly more than in the curricula at the three medical schools where I have taught since graduation, all of which specifically require a family medicine rotation in the major clinical year with a separate clinical experience in outpatient primary care internal medicine. Whatever changes are made in our health care system, a greater focus on training clinicians for the primary care setting will be necessary. While Columbia should not move away from providing such excellent training in specialty care, I am delighted that medical students are having more exposure to the residents and faculty in family medicine. Throughout my clinical rotations, I enjoyed engaging with P&S faculty about what they considered most important for referring primary care physicians to know about their fields, and this approach has served me well in my career so far. I believe it works the other way, as well, in that specialists in training will benefit greatly from learning the perspective of referring physicians. I look forward to seeing the increasing impact of family medicine on P&S students reflected in match lists in the years to come.

Clara (Holt) Keegan’02
Burlington, Vt.

Loeb and Other Legends
Congratulations on the Autumn 2011 issue which has just arrived. Herewith a few comments.

The argument over Robert Loeb will go on as long as he remains in memory – the sign of a giant. I arrived at P&S in 1949 as the first ever Fellow in rheumatology. I was assigned to the late great Charles Ragan and was treated as a regular faculty member. Loeb and Atchley, even then, were legendary but Loeb went out of his way to be caring, courteous, and almost friendly to me. At times I was even his sounding board when he wanted to voice his frustration at things that did not achieve his level of perfection. The chief resident in medicine was the late Calvin Plimpton, who later became president of the American University of Beirut, then Amherst and finally Downstate. Cal and I, in 1951, were granted the degree of Doctor of Medical Science (I don’t know if that degree is still granted). I defended my thesis before a challenging group which included Loeb and he was incisive but fair and – most importantly – he voted to grant me the degree! It was based on the research done during my tenure under Ragan, research which would later lead to my development of the latex fixation test which helped establish both rheumatology and immunology as full-fledged disciplines.

I continue to follow P&S news with great interest. My wife and I flew to San Francisco to be with our dear friend Eph Engleman on his 100th birthday. We were saddened by the recent death of Barry Blumberg, who succeeded me as a rheumatology Fellow at P&S but made his mark as the discoverer of the hepatitis B virus.

The current and estimable dean, Lee Goldman, paid me a visit several months ago when I had a new aortic valve inserted at Columbia-Presbyterian [now NewYork-Presbyterian Hospital]. This has helped me to recently reach my 90th birthday and I have my eyes set on the Engleman mark!

Keep up the good work.

Charles M. Plotz, M.D., Med.Sc.D.’51

M.D.s, not Medical Providers
Upon graduation from medical school, we were awarded diplomas which noted that we were Doctors of Medicine. In recent times, we are noted to be “medical providers,” which seems to delete us from our rightful designation of M.D. Am I the only one who regrets this as a put down? Are we now in the same league as nurses (RNs) or members of emergency medical technicians (EMTs)? How can our local or state medical societies, the AMA, the ACS, or other large medical societies ignore this, and not try to get our proper identity back? Should the medical schools in the USA get involved in this situation? I am interested to read the responses to this letter to the editor.

Stan Edelman’53

“l Went to Medical School Because of Her”
Thank you for the lovely words about Dr. Martha MacGuffie. I went to medical school because of “Bobby.” I had started out college premied but decided the courses were too diffi-
cult. In the late 80s I met Bobby while working at AmeriCares and had the opportunity to travel to Kenya with her. Prior to meeting Bobby I had never met a woman doctor or any professional woman who was not a teacher or a secretary. Bobby was down to earth, funny, warm and told larger than life stories about her adventures in medicine and as a mother; she had eight children. I reasoned if Bobby could go to medical school and have eight children I could probably do it too. It was that simple. I think the thing I remember most about Bobby was her hands: She had the hands of an artist, large, knobby, always moving while she talked. She liked to compare her work as a plastic surgeon to being a sculptor. I feel so fortunate that she touched my life. She was opening doors for others her whole life.

P.S. Thanks for the piece on family medicine in the same issue!

Melissa Bradner’96
Richmond, Va.

Metabolic Surgery
It sounds like Columbia is still doing a discredited operation that produces results for two years (Clinical Advances, Fall 2011 issue). It is antique. Columbia should start the duodenal switch (controlled malabsorption) which Ara Kishishian, M.D. (formerly my landlord), brought here from Detroit 15 years ago. I see some of his patients for urology. The cure of diabetes is permanent as is the cure of hypertension. They are svelt new people and the fat does not come back.

Anthony H. Horan’65
Delano, Calif.

Editor’s Note: More about metabolic surgery can be found in this issue, Page 24.
A map showing the curricular route so far for the 10 members of the inaugural Columbia-Bassett Program class would start at Cooperstown, wind down to New York City, then circle back to Cooperstown, where the students have now taken up residence and will consider Bassett Healthcare their home base for the next few years.

While their classmates were marking the transition in January 2012 to their major clinical year in New York, the 10 Columbia-Bassett students were settling in to remodeled homes adjacent to the main Bassett hospital. Their January move-in was not their first live-in experience in Cooperstown. For a week in August 2010, the 10 completed a one-week orientation that included mucking stalls in a cow barn, working at a construction site, and helping out in the kitchen of a local restaurant. The students also visited a nursing home and rehab center, shadowed doctors in both outpatient and hospital settings, made pottery, and learned about the history and culture of the region.

Henry Weil’86, P&S assistant dean for education at Bassett, and Walter Franck’64, senior associate dean, describe the primary goal they had in mind as they designed the orientation: help the students understand their patients as people by letting them see and experience their living and working environments.

The Columbia-Bassett Program began in 2010 when the first 10 participants enrolled at P&S with the Class of 2014. The program emphasizes longitudinal patient relationships in a rural setting and exposure to a hospital system model that integrates individual and population medicine. The students will learn about finance, risk management, patient safety, quality improvement, and medical informatics as part of the program’s goal to prepare leaders in health care who have learned both the patient care and systems sides of their profession.

After the Cooperstown orientation in August 2010, the 10 headed to New York for their white coat ceremony and 18 months of fundamentals alongside their classmates. The group spent its summer break in 2011 conducting research, several at Bassett, then rejoined Class of 2014 classmates for the remainder of the basic science curriculum.

After arriving in Cooperstown in January, members of the first Columbia-Bassett Program class posed with Walter Franck ’64, senior associate dean for the Bassett affiliation, left, and Henry Weil ’86, P&S assistant dean for education at Bassett, right. Students, from left: Andrew Gomez, Krista Suojanen, Daewoong Lee, Mark Harris, Haley Masterson, Freda Ready, Blake Alberts, Monika Laszkowska, Katherine Schwartz, and Allan Guiney.
Cooperstown is now home base to these Columbia-Bassett Program students for the next few years as they “begin the work of becoming great clinicians,” says Dr. Weil.

The 10 Class of 2014 students at Cooperstown (and their undergraduate schools) are Blake Alberts (University of South Dakota), Andrew Gomez (University of Arizona), Allan Guiney (Hamilton), Mark Harris (Dartmouth), Monika Laszkowska (Harvard), Daewoong Lee (Dartmouth), Haley Masterson (University of Kansas), Freda Ready (Cornell), Katherine Schwartz (SUNY Geneseo), and Krista Suojanen (Williams).

During the New York City segment of their education, the students attended monthly lectures led by Drs. Weil and Franck and guest lecturers as part of the unique Bassett SLIM (Systems, Leadership, Integration and Management) curriculum. “Physicians are the de facto managers of the largest industry in the world, but we offer students virtually no practical management training,” says Dr. Weil. “We are the only medical school program teaching medical students why money is wasted in health care and how to change the system.”

“By engaging students in discussions with public health and business school faculty, we have started to prepare students to be active participants in 21st century health care reform,” adds Dr. Franck.

“It has been a phenomenal experience to be able to discuss problems and potential solutions in the health care industry with the high-powered doctors, hospital administrators, insurance representatives, and IT specialists that have come to speak with us,” says student Mark Harris. The Columbia-Bassett students will have the opportunity to complete their required scholarly projects on topics related to the SLIM curriculum.

Included among the competencies expected of students through the SLIM curriculum: develop and manage standardized processes of care to improve the health of individuals and populations; work effectively in integrated, team-based health care systems; become critical users of evidence-based health care information; and use problem-solving methods to improve clinical, operations, and financial performance in a health care micro system.

The Columbia-Bassett students will complete their Major Clinical Year in Cooperstown in March 2013. Bassett will remain their home base thereafter, regardless of their travels, though their P&S fourth year will include at least three four-week rotations at NewYork-Presbyterian Hospital. During part of their time in Cooperstown, they will work alongside the second Columbia-Bassett class when it heads upstate in January 2013. The first class also will participate in the August 2012 orientation of the third Columbia-Bassett class, which enters P&S this fall with the Class of 2016.

For Allan Guiney, one member of the Columbia-Bassett 2014 class, the move to Cooperstown was a homecoming: He graduated from Cooperstown Central School. He and fellow Columbia-Bassett student Blake Alberts are half of the Columbia P&S 2014 Band (Mr. Guiney is guitarist and lead vocalist and Mr. Alberts plays drums). The other half of the band – bass player Eric Braunstein and guitarist/vocalist Chris Mardy – have started clinical rotations in Manhattan but will rotate through Bassett for surgery or primary care rotations. (Mr. Braunstein was in Cooperstown early this year for his surgical rotation.)

The Columbia-Bassett students will return to New York City for three Mechanisms & Practice weeks (intersessions scheduled during the clinical year to allow students to process their clerkship experiences in classroom-based, small-group settings). That break in their clinical rotations also will bring the P&S 2014 Band back to the same location. “We’re hoping to maybe get the band back together then,” says Mr. Braunstein.
Turning Cancer Research on its Head

By Susan Conova

Timothy Cragin Wang ’83 may have edited the first textbook on gastric cancer, 2009’s “The Biology of Gastric Cancer,” but he knows that what is considered definitive today in this rapidly changing field could be tomorrow’s discarded theory.

While Dr. Wang was completing his residency at Barnes Hospital in St. Louis and later training as a research fellow at Harvard Medical School, Australian researchers first proposed that a bacteria, Helicobacter pylori, was responsible for causing gastric cancer. The concept was controversial, but Dr. Wang’s mentor, the chief of gastroenterology at Mass General, Dr. Daniel K. Podolsky, suggested Dr. Wang look into the now accepted idea.

Looking into the idea turned Dr. Wang into an expert on H. pylori and its role in gastric cancer and launched his own career of upending conventional wisdom. Dr. Wang’s most significant contribution, toppling a 150-year-old theory of gastric cancer’s origins, came soon after he arrived at P&S in 2004 from the University of Massachusetts Medical School, where he was chief of gastroenterology. Since the 1860s, when an influential anatomist traced cancers back to epithelial cells, scientists had thought gastric cancer arose from the epithelial cells that line the stomach. By the 1990s, scientists knew that H. pylori instigated most tumors but did not understand how.

Dr. Wang thought that bone marrow-derived stem cells recruited to the site of H. pylori infection to clear the cells could play a role. But what he found in a mouse model of gastric cancer was completely unexpected: The bone marrow cells turned into tumors.

When the research was published in Science in 2004, the paper was called, “novel,” “provocative,” and a concept that should get researchers “thinking quite hard” about the origin of stomach cancer.

“The findings offer a different perspective on the process of carcinogenesis,” Dr. Wang says. “Many of the ‘black box’ aspects of cancer become easier to explain. Metastasis, for example could be viewed as an inherent property of cancer derived from the traveling bone marrow stem cells, instead of something acquired after time and multiple genetic changes. So identifying the cells responsible for cancer could eventually lead to better treatments.”

His latest reported research on Barrett’s esophagus, which is increasing in incidence each year, is a case in point: By continuing to question assumptions about the origins of different cancers, Dr. Wang discovered that the cells that cause Barrett’s esophagus migrate to the esophagus from the gastric cardia, a small region between the esophagus and the acid-secreting portion of the stomach. The study was published in the January 2012 issue of Cancer Cell.

“Proliferation and survival of these pre-malignant cells were inhibited when we blocked signaling from the Notch protein, so that’s a possible new clinical strategy to use in people at high risk for cancer development,” says Dr. Wang.

Dr. Wang thinks better treatments may be possible by paying more attention to the tumor’s surroundings, not just the cancer cell’s mutations; that focus is shared by the National Cancer Institute’s six-year-old Tumor Microenvironment Network, created in 2006 to generate greater understanding of the stroma in normal tissues. Dr. Wang’s program is one of 11 programs in the nation conducting targeted research and working collaboratively.

“In the 1980s, no one believed that stromal cells could help transform epithelial cells into cancer, even though studies showed that cancer cells put in normal environment would not grow, and normal cells put in abnormal environment turned into cancer. To use a gardening metaphor, one might say that the seed may be mutated but the soil can also contribute to out-of-control growth by being too rich,” says Dr. Wang.

Last year, Dr. Wang published work that showed that at least in skin and colon cancer, surrounding cells can determine whether a tumor develops. If the surrounding white blood cells – drawn to the site by the cancer – develop into mature cells and release cancer-inhibiting molecules, the tumor is less likely to develop. If the white blood cells stay undeveloped, the tumor can grow.

“We may have greater success in fighting cancer if we can return the cellular environment to normal at the same time we attack the cancer cells themselves.”

Dr. Wang is the Dorothy L. and Daniel H. Silberberg Professor of Medicine, chief of gastroenterology, and director of the NCI-sponsored Tumor Microenvironment Network at P&S. He served on the Harvard and University of Massachusetts faculties for 15 years before returning to P&S. He also is editor-in-chief of a peer-reviewed journal started in 2008, Therapeutic Advances in Gastroenterology, and senior deputy editor for Cancer Prevention Research.
Columbia Joins in Development of New York Genome Center

The New York Genome Center in November 2011 announced the development of what will become one of the largest genomic medicine facilities in North America, involving Columbia, NewYork-Presbyterian Hospital, and nine other top academic medicine and research institutions. The City of New York and private funding from corporations and foundations also support the independent, non-profit consortium, which is expected to reach more than 10 million patients as gene-based medicine grows in importance.

The goal of the center is to accelerate progress toward an era of genomic research and to have an impact on patient care and clinical outcomes by leveraging the combined scientific breadth, diversity of patient population, access to clinical outcomes data, and scale of basic and clinical research among the 11 member institutions.

“Completion of the human genome project and recent breathtaking technological advances in DNA sequencing and computer hardware provide an unparalleled opportunity to advance basic medical science, drug discovery, and healthcare delivery,” says Thomas Maniatis, Ph.D., the Isidore S. Edelman Professor of Biochemistry and chair of biochemistry & molecular biophysics at P&S. “The New York Genome Center will provide the opportunity for basic scientists and physicians from extraordinary universities, research institutions, and hospitals to work together to transform the complexity of genomic information into an understanding and treatment of human diseases.”

The New York Genome Center is expected to open a 120,000-square-foot facility, to be located in Manhattan, that will offer access to large-scale but cost-effective gene sequencing, data mining, and leading edge instrumentation. The center will offer an initial technology platform of next-generation sequencers and will scale up to be fully operational within a year. The facility will house laboratory space for principal investigators, sequencing instrumentation, robotics for high-throughput library preparation, IT storage hardware for buffering and final data storage, bioinformatics, and computational capabilities. The goal is to create the largest high-throughput gene sequencing facility for translational research of its kind in North America.

Other collaborating institutions are Cold Spring Harbor Laboratory, Weill Cornell Medical College, Memorial Sloan-Kettering Cancer Center, Mount Sinai Medical Center, NYU School of Medicine, North Shore-LIJ Health System, the Jackson Laboratory, Rockefeller University, and Stony Brook University. The Hospital for Special Surgery is an associate founding member.

At Columbia, the Judith P. Sulzberger Columbia Genome Center, directed by Andrea Califano, Ph.D., professor of systems biology and biochemistry & molecular biophysics, will be a key scientific and technological partner for the New York Genome Center. The Sulzberger Center has developed a large-scale infrastructure for the analysis of genomic sequences, especially in the context of recent advances in systems biology approaches. It also has developed significant capabilities in next generation sequencing, high-throughput screening, and high-throughput, high-content microscopy to advance the technology available for genomics research and to address important problems in biological and biomedical research.

“It is critical that the genome centers of the individual NYGC member institutions work collaboratively to develop the leading edge of sequencing technology and analysis. Each of the institutions has specific strengths and know-how that would be hard to reproduce within a single organization. When this is combined with the throughput and scientific reach of the NYGC, this makes all of us more competitive and better able to recruit key genomic faculty to New York City,” says Dr. Califano. “I expect New York to experience a true renaissance in the genomic sciences thanks to this initiative.”

“The New York Genome Center will make it possible to share extraordinarily rich and diverse data on an unprecedented scale and allow us to support the world’s premier research and medical institutions, as well as their diagnostic and pharmaceutical partners,” says Nancy J. Kelley, founding executive director. “NYGC will be a powerful engine for breakthrough genomic science, as well as for commercial development, in the New York region.”

Dr. Maniatis is a member of the center’s executive committee. Lee Goldman, M.D., EVP and dean, is a member of the Board of Directors.
Scholarly Projects Begin as Part of New P&S Curriculum

Jonathan Amiel’07 became assistant dean for curricular affairs at P&S in 2011 after he finished his residency in psychiatry at Columbia. In this role, he oversees a new facet of the P&S curriculum, the mentored scholarly project. Fourth-year students this spring began work on a project in one of six tracks: basic science, clinical research, global health, narrative and social medicine, medical education, and population health. They are expected to finish the project over the course of a year (March 2012 to March 2013 for the Class of 2013). Columbia Medicine talked with Dr. Amiel about his role and the work students have begun.

Why are students required to complete a scholarly project?
The new Columbia curriculum prioritizes experiential learning as a way to bring medicine to life. In the new curriculum, students complete their required pre-clinical coursework by December of their second year and their clinical rotations one year later, leaving 14 months for the students to focus on fields of particular professional interest to them. Four of these months are dedicated to the scholarly project, in which the students work closely with faculty mentors to explore their chosen area of medicine. We encourage students to select a project that allows for immersion with the hope that this experience will consolidate the learning developed through Fundamentals and the Major Clinical Year into an individual professional passion.

Describe your role as director of the scholarly projects program.
I work with a team of talented faculty, staff, and class representatives to help students focus the aim of their projects, identify potential mentors, and access the vast resources available within the University. Beginning at orientation, we meet with students regularly in town halls, in lunches with their advisory deans, and individually to make sure that as they progress through the curriculum, they have ample opportunity to reflect on how their early experiences might inform their choice of scholarly project and to connect them with faculty on and off campus. As students approach the end of the Major Clinical Year, I meet with them individually to think through their individual goals and to direct them toward a track director who will introduce them to potential mentors.

What has student reaction been to this phase of their education?
We have been delighted to see the students approaching their scholarly projects with the creativity and enthusiasm characteristic of P&S. In our planning meetings, students have been excited to find that the program is flexible and can accommodate a broad range of interests. The track directors and I are committed to helping students develop unique projects suiting their talents and ambitions. Similarly, faculty have been reaching out to make sure students are aware of opportunities for collaboration.

How do students choose mentors? Describe the role of mentors.
There are many roads to choosing a mentor. Some students work on projects with faculty during the pre-clinical curriculum or the summer between their first and second years. Other students come to know faculty members’ scholarly interests through their coursework and rotations and approach them directly to explore mentoring opportunities. Still others consult with the track directors and with me to find faculty who have worked with students in the past or who have expressed a particular interest in working with the students. While there is no “right” way to find a mentor, we do encourage students to look for faculty who are accessible, generous with opportunity, interested in identifying the students’ priorities for the scholarly project, and looking to collaborate on planning a project that works toward those priorities.

What is the role of the track directors?
The track directors are senior faculty members who have ample mentoring experience and broad knowledge of scholarly work going on in the University. Each track director determines the scholarship required for successful completion of scholarly projects in their field. As students narrow their interests to a specific track, they meet with the track directors to formulate their interests into a specific project and to seek their advice on potential mentors. The track directors provide ongoing consultation to students on project proposals and assist students in successfully completing the program.

Tell us about a few projects you have seen in proposal form.
We are currently receiving and reviewing proposals from the Class of 2013. Based on our discussions with students to date, it is clear that there is tremendous variety in the types of projects they will select. This year, clinical research is our most popular track, with global health also attracting many students. This pattern is consistent with the scholarly work students have been interested in over the past few years, but we anticipate that as pioneering students build a track record in new areas, we might see some redistribution in their track selections.

This year’s scholarly projects run the gamut. Among the projects, our students will be studying novel treatments for intracerebral hemorrhages, variation in cardiac exam practices in developed versus developing areas of the world, educational interventions to enhance end-of-life care, and histopathological variation in cutaneous T-cell lymphomas. While many students will complete written reports of their work, some will also work in other media in consultation with their mentors and track directors.

Where do students who take an extra year to finish medical school – or pursue a second degree – fit into this part of the curriculum?
Students who complete a research year or a second degree during medical school may use that experience to satisfy their scholarly project requirement. However, we have heard from several students who are planning to participate in the program in addition to a second degree or research year. These students are viewing the scholarly project as an opportunity to either deepen a particular area of their scholarship or as a time to explore another area of their interest.

How are other schools at Columbia involved in this part of the P&S education?
We are delighted to collaborate with other schools at the University in creating new oppor-
opportunities for P&S students. We have close partners at our sister schools on the medical center campus, Columbia’s Graduate School of Arts and Sciences, and Columbia Business School.

**What do you expect to learn from this inaugural year of scholarly projects?**
The first year is very exciting as we see how students experience this new opportunity. We are learning about how best to support students as they search for mentors during what is already a rich and busy time for them and how to build in the time for reflection and “big picture” thinking that we believe is crucial in helping the students select a project that is meaningful to them. The students will show us the breadth and depth of their interests and we anticipate the scholarly projects program will evolve over time to match their needs. We are also curious about the impact of scholarly projects on the students’ experience in the residency match. As the match becomes increasingly competitive, we hope students will find that their experience in the scholarly projects program will enhance their ability to differentiate themselves in their applications.

**What have you learned already?**
So far, we have learned that creating an opportunity for scholarly work within the curriculum has allowed our students and our faculty to think broadly about the kind of experiences that can contribute to our students’ professional development. With this program, P&S students are showing us that the intelligence and determination that we have always known them to have also translate into extraordinary creativity.

**How can faculty and alumni be supportive of this endeavor?**
Faculty and alumni are crucially important to this effort and we welcome all input as we develop the scholarly projects program. We encourage anyone who is interested in working with students on projects, in identifying new opportunities to expand the scope of the program, or in supporting student work through dedicated funding to contact us at psspp@columbia.edu.

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**Columbia Practice Plans Move to Midtown**

*ColumbiaDoctors*, the P&S faculty medical practice, is expected to move to new facilities adjacent to Rockefeller Center early in 2013. The practice signed a 25-year lease for 120,000 square feet at 51 W. 51st St. The new site will replace the existing ColumbiaDoctors Eastside practice on East 60th Street.

The new space, being built out over this year, will provide the practice room for expansion. ColumbiaDoctors is one of the largest medical group practices in the Northeast, comprised of approximately 1,200 physician faculty members in 80 specialties and subspecialties.

“Our midtown offices make the outstanding care provided by ColumbiaDoctors within easy reach of people who live or work anywhere in Manhattan and the greater New York area,” says Louis U. Bigliani, M.D., chair of the Department of Orthopedic Surgery at P&S and president of ColumbiaDoctors.

“With our partners at NewYork-Presbyterian, we will be able to provide the clinical services that our patients need in a comfortable, convenient place,” says Mark McDougle, chief operating officer of Columbia University Medical Center. “The long-term lease demonstrates our commitment to serving all of our patients, both midtown and at our main campus in Washington Heights.”

The move parallels an expansion of ColumbiaDoctors to the north of New York City. As of July 1, ColumbiaDoctors will have more than 40 doctors (specialists in cardiology, internal medicine, gastrointestinal medicine, pulmonary care, cancer, and podiatry) in Westchester, Orange, and Rockland counties, with plans to recruit more medicine faculty in that region next year.
PARTNER: “Greatest Advance Since Heart Transplantation”

Craig Smith, M.D., and Martin Leon, M.D., have come a long way since they first proposed using catheters to replace calcified heart valves. Detractors a decade ago called the idea crazy, reckless, even lethal. Now, with two landmark studies of the valve published in the New England Journal of Medicine and last fall’s FDA approval, Drs. Smith and Leon are considered visionaries for leading an effort that has involved 26 study sites from California to Florida to Massachusetts plus sites in Canada and Germany.

Dr. Smith, chair of surgery at P&S, and Dr. Leon, director of Columbia’s Center for Interventional Vascular Therapy, now hear decidedly different words to describe the PARTNER (Placement of Aortic Transcatheter Valve) trial, including “breakthrough” and “one of the biggest advances in cardiovascular medicine in our lifetime.” Dr. Smith calls transcatheter valve replacement “the biggest thing to come along since heart transplants, which is now quite a few years ago in my career.”

Drs. Leon and Smith are proud to be leading a trial that shows promise in treating an insidious disease. Aortic stenosis remains largely hidden for years as calcium deposits slowly accumulate on the valve. For most patients, the ruined valve can be replaced during open surgery. But for the nearly one in three patients ineligible for surgery, the prognosis is extremely poor. Half die within two years, with multiple hospitalizations along the way for fainting spells, chest pain, and heart failure.

It’s a horrible way to die, Dr. Leon says, and these 100,000 patients in the United States alone are motivation enough to pursue a treatment that also could benefit the other 200,000 patients who are able to tolerate open surgery. Transcatheter valve procedures take about 90 minutes, compared with three hours for open heart surgery that requires cardiopulmonary bypass, and recovery time is shorter after transcatheter procedures. In the transcatheter procedure, a heart valve made of bovine pericardial tissue leaflets hand-sewn onto a metal frame is threaded with one of two catheter-based methods – navigated to the heart from the femoral artery in the patient’s leg or through a small incision between the ribs and into the left ventricle. The valve is then positioned inside the patient’s existing valve, using a balloon to deploy the frame to hold the replacement valve in place. The procedure is performed on a beating heart, without the need for cardiopulmonary bypass and its associated risks.

NewYork-Presbyterian Hospital/Columbia in 2005 was one of the first hospitals in the United States to do a percutaneous transcatheter aortic valve replacement and has performed more than 300 valve replacement procedures. The original 2005 device, the Edwards Sapien transcatheter aortic heart valve, integrated balloon-expandable stent technology with a replacement tissue heart valve. The FDA in November 2011 approved the transcatheter aortic heart valve procedure for patients too sick to undergo traditional aortic valve surgery. NYP/Columbia will be one of only four sites to train American physicians in the procedure.

The PARTNER trial, with Drs. Leon and Smith as co-PIs, started at Columbia and 25 other centers in 2007 and completed the first phase of enrollment in September 2009.

In patients ineligible for surgery, the trial showed significantly lower rates of death among patients who received transcatheter aortic valve replacement compared with patients receiving standard therapy at one year and at two years out. Results of the trial’s second arm, comparing the use of the transcatheter valve with conventional surgically implanted valves in patients at high risk for surgery, showed that patients who received the less-invasive catheter-based aortic valve replacement had similar one-year and two-year survival rates as patients who underwent open valve-replacement surgery.

In May, the Centers for Medicare & Medicaid Services announced that it would cover transcatheter aortic value replacement for Medicare patients under certain conditions.

The type of patient enrolled in the PARTNER trial accounts for less than 5 percent of patients who undergo open-heart surgery for valve replacement. “Ten years from now I believe most aortic valve replacements will be done this way,” says Mathew Williams, M.D., assistant professor of surgery (in medicine) and an investigator for the Columbia site of the PARTNER trial.
Carol Mason: Election to Institute of Medicine Recognizes Research and Commitment to Training Neuroscience Students, Postdocs

By Andrea Crawford

From the days of her postdoctoral work in the visual systems of cats, Carol Mason, Ph.D., has been drawn to the sense of sight as a window into the workings of the nervous system. “The visual system is intrinsically interesting and important, but I came at it because it was a way of understanding nerve cell structure and their connections” says Dr. Mason, who joined P&S in 1987 and is now professor of pathology & cell biology, neuroscience, and ophthalmic science.

Over almost four decades of work – in research on axon guidance, in particular – she has indeed elucidated fundamental cellular and molecular mechanisms of the nervous system, earning her membership in the Institute of Medicine, one of the highest honors in health and medicine. IOM noted her pioneering work in the application of video microscopy and light and electron microscopy to the developing brain. With these “tools of the old anatomists – microscopes, but now laser-driven and digital,” Dr. Mason wrote in an article marking the 40th anniversary of the Society for Neuroscience in 2009, neuroscientists can “peek at living neurons behaving in their native surroundings.”

Since the early 1980s, when she first showed how electron microscopy could provide a way to study synaptic connections, Dr. Mason has used evolving imaging technology to study axon guidance, the method by which neurons grow toward target cells to create the circuits of the nervous system. She has done this by looking at the optic chiasm, one of several decussating pathways, or “crossing” points, in the nervous system, of which the corpus callosum, which connects the two hemispheres of the brain, is perhaps the most commonly known.

For the thalamus and, from there, the cortex to receive sensory inputs from the two retinas, the axons for retinal cells must traverse the optic chiasm, some to the same side of the brain and others to the opposite side. “People always ask me why such a ‘split’ pathway exists, and without being too teleological, it is thought to provide sensory input on both sides of the animal but also partly for behavioral escape response,” she says, explaining that if an organism gets injured in one part of its body, other parts can compensate.

The number of retinal axons that cross the chiasm dictates the efficiency of an organism’s binocular vision; in healthy humans about half cross from each eye. But questions of how they do it, and what enables some to cross the midline of the brain while others are repulsed – as Dr. Mason demonstrated in 2003 when her lab identified the first gene (a transcription factor called Zic2) known to determine which axons cross by regulating a receptor that makes them turn around – have long driven her research. Over the years, she has identified the receptor, EphB1, carried by retinal ganglion cells that don’t cross at the optic chiasm, and its ligand, ephrinB2, found at the midline. Her lab is now at work to identify the molecular factors that facilitate crossing the optic chiasm midline.

She believes that clues to how the retinal ganglion cells inherit the specific genes that help them find their way lie in albinos. In humans, mice, and other organisms, albinism causes a disturbance in optic chiasm crossings, which results in defects of binocular vision. Dr. Mason is trying to understand why the lack of pigment causes this imbalance. “We think that the cell layer behind the eye that makes pigment is critical for the daily visual light cycle and must send signals to the retina that control the inheritance of genes in the retinal ganglion cells for navigating the visual pathways,” she says. “If the pigment is missing, the retina does not get the right signals to develop properly.”

On a winter afternoon in her laboratory, she pauses from writing the final paragraph of a paper to reflect on recent developments in her field. Neuroscientists, she notes, tend to think that the particular molecular factors and mechanisms they have discovered are the sole means of laying down the path or region under study. Their findings, individually and collectively, “are only the tip of the iceberg,” she says. “There are probably multiple programs that make a nerve cell who it is, and make the cells grow in a certain direction.” And for any one set of molecular directions for growth, there are likely multiple modes of transport and traffic signals, which she likens to New Yorkers choosing between public transport and a car.

In her quest to understand the mechanisms of the nervous system, she has been surprised by how temporally important processes can be – as in the case of one receptor-ligand pair expressed in embryonic brain development for only a couple of hours – as well as by how human-like nerve cells are. A decade ago, in her studies of the developing cerebellum, she and colleagues were among the first to witness the movement of spines, tiny protrusions on the dendrites, or branches, of a neuron. “They were just incredibly motile,” she says, “They advance, withdraw, retract, move around.” The team set out to determine if the moving cells were attached to a synapse. “We found some were and some weren’t,” she says. “We still don’t understand why.”
News in Brief

Stephen G. Emerson, M.D., Ph.D., former president of Haverford College, was named director of the Herbert Irving Comprehensive Cancer Center at P&S and NewYork-Presbyterian Hospital, effective April 1. He also is the Clyde and Helen Wu Professor in Immunology at P&S. He was a faculty member since 1994 at the University of Pennsylvania, where he was the Francis C. Wood Professor in Medicine, Pathology, and Pediatrics and professor in pathology and laboratory medicine. He also was chief of hematology/oncology for the Hospital of the University of Pennsylvania. Dr. Emerson is a leading hematologist/oncologist who treats patients with bone marrow stem cell disorders. As chief of hematology/oncology, he led a group of 60 full-time faculty and 25 trainees. His research in bone marrow stem cell biology has been recognized with several awards, including the Stohlman Award of the Leukemia and Lymphoma Society, the Medical Scientist Trainee Prize of Yale University, the Wilbur Cross Medal from Yale University (Yale’s highest honor for Ph.D. graduates), and the Bai-Yu Lan Prize of the City of Shanghai. He has an active role in grant review and scientific program review at the NIH and National Science Foundation, and he is senior editor of the Journal of Clinical Investigation. Dr. Emerson received all of his advanced degrees – master’s in molecular biophysics, M.D., and Ph.D. – from Yale, and he served on the faculties of the University of Michigan and Harvard University before joining Penn.

Dr. Emerson succeeds Riccardo Dalla-Favera, M.D., who served as director for seven years before stepping down last year, and Corinne Abate-Shen, Ph.D., who served as interim director.

Alan D. Johns has been named chief financial officer and associate vice dean at P&S, after serving in an interim capacity since October 2011. Before joining Columbia, Mr. Johns was associate dean for strategic services for Duke University School of Medicine and chief academic administrative officer during the transition of Duke Comprehensive Cancer Center to Duke Cancer Institute. He also has held positions at Virginia Commonwealth University and Emory University.

A search committee begins work soon to identify a successor to Ira B. Lamster, D.D.S., dean of the College of Dental Medicine since 2001. Dr. Lamster, who announced plans in March to step down at the end of the academic year, joined the dental faculty in 1988. During his decade as dean Dr. Lamster initiated new educational programs, clinical initiatives, and research opportunities, including an innovative pre-doctoral curriculum, expanded joint degree programs with the Mailman School, the Columbia Business School, and Teachers College, and a robust program in continuing dental education. The school became recognized as a leader in studying the relationship between oral inflammation and systemic health and earned recognition for its research program in social and behavioral sciences. Dr. Lamster also led the effort to create formal affiliations with 12 international schools of dentistry and partnerships with non-government organizations to deliver needed dental care to underserved people while also providing valuable educational opportunities for Columbia’s dental students and residents. Of students graduating from the school in 2011, 75 percent had participated in an international program during training.

The legendary Rachmaninoff piano returned home to Bard Hall in 2011, after nearly two years away for restoration work. In addition to a new keyboard, action, pinblock, strings, and beautiful case refinishing, the piano had large steamroller wheels installed to prevent future mishaps from occurring in the future. (During a move in 2009, the piano collapsed, snapping off the pedal lyre and two of its legs.) Restoration of the Rachmaninoff piano was made possible by generous donations from alumni and faculty and anonymous donors on behalf of the Chinese Community Church of New York. The piano, which is maintained by the P&S Musicians’ Guild, is used for performances only, including monthly concerts by students and faculty members. Information about the piano or performances is available from Hanjay Wang, hw2384@columbia.edu.

Several premedical students from underrepresented, disadvantaged, and low-income communities are spending their weekends at P&S through May in an academic enrichment boot camp intended to improve their chances of getting accepted to medical school. The program is called STAT – for Strategic Testing Application Techniques – and is offered free for weekends over four months to qualified students. The 25 STAT students receive rigorous test preparation for the MCAT, learn strategies for successful application to medical school, and participate in workshops to improve their skills as students during college and medical school. The course is offered by the P&S Office of Diversity to New York City premedical juniors or seniors.
or post-baccalaureate students from communities that have been underrepresented historically in medicine. New York State funds the program through the Doctors Across New York initiative in partnership with the Associated Medical Schools of New York.

Jeffrey Lieberman, M.D., the Lieber Professor of Psychiatry, Lawrence C. Kolb Professor of Psychiatry, chair of psychiatry, and director of the New York State Psychiatric Institute, is president-elect of the American Psychiatric Association. His term as president-elect began in May 2012, and his term as president begins in May 2013.

Ground was broken in April for construction of the new Center for Autism and the Developing Brain in White Plains. The center is designed for children, adults, and families dealing with autism spectrum disorders. P&S, Weill Cornell Medical College, and NewYork-Presbyterian Hospital are collaborating with the New York Center for Autism to develop the 11,000-square-foot, state-of-the-art facility expected to open in 2013. The center will be directed by Catherine Lord, Ph.D., a leading autism authority who will hold appointments at both P&S and Cornell. The center will streamline the process from diagnosis to treatment and maximize the usefulness of information gained from multi-level assessments. A vigorous research program, integrated treatment, and resources for community-based providers and families are also hallmarks of the planned center.

Bard Hall Gym Gets Facelift

significant improvements are planned for the gym in Bard Hall. The Bard Athletic Center within Bard Hall has a pool, basketball court, squash courts, yoga studio, and cardio equipment.

Responses to a user questionnaire stressed the need for more exercise equipment and space that could be used for multiple purposes. The center will be refitted to include two levels of exercise equipment that look out over the basketball court.

In addition to athletic center cardio area improvements, much of the facility will have new central air conditioning and will be more accessibility friendly with ADA shower and locker amenities.

Bard Hall, named for medical school founder Samuel Bard, opened in September 1931, a few years after P&S moved to Washington Heights to become part of Columbia-Presbyterian Medical Center. The 11-story art-deco building was designed by James Gamble Rogers, the architect behind many of the medical center’s original buildings.

New Chair of Ophthalmology

George A. “Jack” Cioffi, M.D., became chair of the Department of Ophthalmology at P&S March 1. He succeeds Stanley Chang’74, who chaired the department since 1996 and will remain on the faculty.

Dr. Cioffi joined Columbia – and the hospital as ophthalmologist-in-chief – from Legacy Health, Devers Eye Institute, and Oregon Health & Science University. He was chief medical officer and senior vice president at Legacy, the R.G. Chenoweth Endowed Chair of Ophthalmology at Devers, and professor of ophthalmology at Oregon Health & Science University.

The internationally recognized glaucoma researcher and clinician joined Devers Eye Institute in Portland in 1991 as a fellow and built the Institute’s research department. His research focuses on how circulatory changes in the optic nerve may lead to glaucoma and on best practices in glaucoma surgery. He is editor in chief of the Journal of Glaucoma and chairman of the Scientific Advisory Committee for the Glaucoma Research Foundation. Dr. Cioffi received his medical degree cum laude from the University of South Carolina.

The 2012 residency match results can be found within News Bytes online at www.cumc.columbia.edu/news/journal
for many patients with respiratory illnesses, mechanically forcing air into the lungs does more harm than good, says Daniel Brodie, M.D., a pulmonary critical care specialist and co-director of the new Center for Acute Respiratory Failure at NewYork-Presbyterian Hospital/Columbia University Medical Center. “We only use ventilators because we have to.”

Columbia and other pioneering centers around the world are now using a more lung-friendly option: extracorporeal membrane oxygenation, or ECMO, a machine that acts like an artificial lung, adding oxygen to and removing carbon dioxide from the blood. It can allow lungs to recover from acute distress and even serve as a bridge until lung transplant for patients whose already diseased lungs have failed.

When Dr. Brodie and his colleague, Matthew Bacchetta, M.D., co-director of the center and assistant professor of surgery, first started using ECMO in adults, “it was hard to get other doctors interested,” Dr. Brodie says. The device, a system of component parts originally used in the operating room, including a pump, an oxygenator, and tubing, is a version of the cardiopulmonary bypass machine first used during cardiothoracic surgery in the 1960s. Its first reported use in a patient with respiratory failure outside of the OR was in the early 70s, but in 1979 the results from a randomized controlled trial demonstrated little benefit to adult patients.

ECMO began to show success in infants in the 1980s and soon became the standard of care. In 1994 another randomized controlled trial of ECMO in adults showed no benefit. With that, all but a few centers abandoned the idea.

Meanwhile, technology improved. In 2008, aware of the advances, Dr. Brodie and Dr. Bacchetta believed it was time to expand the use of ECMO as medical intervention in adults again. “The idea behind it, we felt, was always right,” says Dr. Brodie, assistant professor of clinical medicine. “It was a matter of revisiting an older concept and saying ‘We have an opportunity here to do something that might not have been successful in the past but might well be successful now.’”

The first patient in their modern ECMO program, a 27-year-old woman, arrived at the hospital by ambulance short of breath (the result, later learned, of a cosmetic silicon injection). Her lungs filling with blood, she twice went into cardiac arrest. “Everybody said, ‘ECMO will kill her,’ but the truth was, she was going to die if we did nothing,” Dr. Brodie says. The team, including Dr. Bacchetta and Dr. Jen Cunningham, a member of the critical care team, put her on ECMO, and she stabilized but her lungs did not heal. The team used a bronchoscope to look inside her lungs and saw “something you can’t generally see except at autopsy,” a complete cast of her airways in clotted blood. It required six and a half hours of bronchoscopy over two days to remove the clot. After almost two weeks on ECMO, she recovered. “There are many cases we can argue that patients would have survived just as well without ECMO,” Dr. Brodie says. “In this case, there’s no argument.”
The following year, 2009, many centers around the world began to try ECMO. They turned to it in desperation as the H1N1 pandemic hit, causing a severe form of ARDS – acute respiratory distress syndrome – particularly in young people. Around the same time, a major randomized controlled trial appeared to show benefit. With those two events, ECMO use took off.

Columbia now treats around 100 adults a year with ECMO. Among those treated with ECMO for respiratory failure, the most common indications are ARDS, bridge to lung transplant, and asthma. An IRB-approved study protocol also allows for the treatment of some patients with acute exacerbations of chronic obstructive pulmonary disease. The team has pioneered the use of lower levels of anticoagulation and has lowered the amount of blood transfused, which reduces complications.

In most patients with respiratory failure, a single cannula placed in the neck has replaced a two-cannula system that typically included one in the groin. This has been particularly beneficial for patients awaiting lung transplantation who experience acute respiratory failure. Such patients would frequently “sit on a ventilator for a number of days not moving and would become too deconditioned to get transplanted. If donated lungs did not become available before this point they would be removed from the transplant list,” Dr. Brodie says. With single-cannula ECMO, patients have been able to get off the ventilator completely, talk, eat, and in some cases exercise to remain in shape for a transplant, which allows them to wait longer for the arrival of donor lungs.

The center is one of a few in the United States to use a mobile ECMO unit, which enables the team to stabilize patients with ECMO before transferring them to CUMC. The mobile unit recently became equipped to conduct transfers by flight. The mobile technology isn’t much different from standard ECMO, Dr. Brodie says, “but you need a high level of comfort with ECMO to run it in a parking lot.” Dr. Bacchetta, an officer in the U.S. Army Reserves with extensive experience in frontline trauma care (including the use of ECMO during his last tour in Afghanistan), standardized the equipment and protocols for ECMO transfers.

As significant as ECMO is for patients today, its most important application may be the role it will play in the evolution of an actual artificial lung implanted in the body. “There are prototypes out there already,” Dr. Bacchetta says. Artificial lung devices, he believes, could be ready for patients within the decade.

To transfer a patient to the Center for Acute Respiratory Failure, physicians may call 1-800-NYP-STAT (the Access Transfer Center) 24/7.

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Integrated Arthritis Center: Applying Research to Patient Care

By Andrea Crawford

Columbia University’s new Integrated Arthritis Center

is one of only a few centers in the country that integrate research directly into patient care activity, says Joan Bathon, M.D., professor of medicine-rheumatology and medical director of the center.

The center offers a full-service approach to treating patients with osteoarthritis, rheumatoid arthritis, and other inflammatory diseases, for which neither cause nor cure is known. It features an injection clinic using ultrasound guidance, technology useful in targeted treatment, particularly in challenging small joints, such as wrists, shoulders, and ankles, but also useful as a research tool. “It’s helped us to understand how much under-the-surface swelling there can be without us being able to feel it,” says Dr. Bathon, who was recruited to P&S to head the rheumatology division in the Department of Medicine. The center collaborates with biomedical engineers to investigate new methods for optical imaging, which could improve existing technologies that provide information such as the amount of oxygenation or blood flow present in joints.

Dr. Bathon’s own research in the care of inflammatory and degenerative arthritis focuses on the cardiovascular effects of rheumatoid arthritis. Previously director of the Johns Hopkins Arthritis Center, Dr. Bathon has found that patients with rheumatoid arthritis have accelerated atherosclerosis and reduced heart mass, suggesting silent muscle damage or loss of myocytes. With collaborators on several NIH-funded projects, she is looking for a genetic marker in rheumatoid arthritis to indicate those at risk for the accelerated form of atherosclerosis in RA as well as attempting to identify a protein bio(multi)marker for the same purpose through proteomic screens of inflammatory, endothelial, and other relevant soluble molecules. She and collaborators are also investigating whether the protein modification called citrullination – one of the major ways rheumatoid arthritis patients develop antibodies – occurs in and potentially is responsible for damaging heart muscle.

The advantages of being treated in an integrated center are many, says Dr. Bathon. “When presented right there with options to participate in research studies, whether it involves treatment or a non-treatment study, patients respond very enthusiastically.” Self-interest is obviously part of the appeal but, she adds, “frequently they are motivated out of a more global interest, that is, how will the knowledge gained in the study contribute in the long run to helping others with the same illness? This gives them a lot of personal satisfaction.” Research participation also gives patients extra attention through educational forums that keep study participants informed about outcomes.

Seamless integration of research and clinical care is also the goal for other multidisciplinary collaborations. Dr. Bathon’s plans, including a center for lupus research, draw expertise from rheumatology, nephrology, dermatology, and obstetrics. She also is developing an autoimmune interstitial lung disease center and hopes to establish a cardiovascular risk management clinic with cardiac and metabolic experts. “For good clinical research, it is important to have a divisional culture with a strong commitment to research,” she says, to enable clinical and translational research to net new discoveries that lead to diagnostic and treatment tools to improve health.

More information is available by calling 212-305-4308.
For Sleep Apnea, Robotic Surgery Offers a New Tool

By Susan Conova

Using a new technique made possible by robotic technology, Jeffrey Ahn, M.D., is helping some sleep apnea sufferers ditch the CPAP machine and catch some Zs. Judith Oderwald is one of them. After eight years of struggling with her CPAP machine, she decided it was time to find another solution to her obstructive sleep apnea.

“I had enough of the machine. You’re fighting with the hose all the time. I switched to a machine that uses a tube that goes up the nose, but that would slip out. And I was still exhausted,” says Mrs. Oderwald, a 69-year-old retiree from New Hyde Park on Long Island.

It was not surprising to Dr. Ahn, director of sleep disorder & robotic surgery at Columbia, that Mrs. Oderwald had trouble tolerating CPAP (continuous positive airway pressure). “CPAP works as long as patients wear it, but it’s cumbersome and about 50 percent of people who try it eventually quit,” he says.

While researching other options, Mrs. Oderwald read about a new robotic surgical procedure that can now help. Her family physician referred her to Dr. Ahn, assistant professor of clinical otolaryngology-head & neck surgery, one of the few surgeons in the United States certified to perform the procedure.

Three common areas of the airway can become obstructed during sleep: the nose, the palate, and the base of the tongue. It is simpler to surgically remove excess tissue from the nose and palate, but surgeons have difficulty reaching down into the throat to remove tissue from the tongue base.

“The surgeon cannot see well and human hands are too big,” says Dr. Ahn. Many people with severe obstructive sleep apnea have obstructions in all three regions, so the surgeon addresses the nose and palate first and then uses the robot to remove excess lymphoid tissue in the tongue base.

The condition disappears after robotic surgery in about 80 percent of Dr. Ahn’s patients, and he thinks further minor modification of the epi-glottis, at the base of the tongue, could increase the success rate.

When a sleep study finds a patient with significant obstructive sleep apnea, the patient undergoes sleep endoscopy, an endoscopic examination...
Forestalling Lymphedema, a Preventive Strategy

By Dan Harvey

After surviving breast cancer, many patients must battle lymphedema, a common side effect of breast cancer surgery that causes painful, debilitating, and disfiguring swelling in the arms.

Breast cancer specialists at NewYork-Presbyterian/Columbia University Medical Center now have a way to detect lymphedema early—before patients notice symptoms and when treatments are more effective. “Clinicians can now be more proactive than reactive,” says Sheldon Feldman, M.D., the Vivian L. Milstein Chief of Breast Surgery.

Lymphedema is a common side effect of lymph node removal in breast cancer treatment, but doctors cannot predict when, or if, it will occur. Lymphedema can appear immediately after treatment or it can take months, or even years, to develop.

Clinicians can now use bioimpedance spectroscopy to detect the earliest signs of lymphedema. The small portable device applies a mild electric current to the upper arm and measures the amount of fluid in the limb. “The patient might be asymptomatic—that is, no visible swelling—but we can detect increased volume,” says Dr. Feldman.

The test is non-invasive and painless and best serves those at the highest risk: patients with invasive breast cancer who undergo surgery, radiation therapy, and chemotherapy. NYP/Columbia is the only academic medical center in New York that offers a lymphedema prevention program.

Lymphedema cannot be cured, but early detection can forestall the condition. “By the time swelling is visible, it may be too late to provide optimal treatment,” Dr. Feldman says. “But if it’s detected early, we can pre-empt lymphedema development with therapy and avoid long-lasting effects.”

Therapy typically includes several visits with a physical therapist for decongestive therapy, which involves massage,wrappings, compression bandages, and support garments. Treatment typically lasts for a month and reduces swelling in most cases.

In the year since the program started, several patients have been identified with subclinical levels of lymphedema. Before the program began, testing was typically performed only after swelling was noticeable. Now, Dr. Feldman says, “Even before a patient has lymph node surgery, we do a baseline study to determine normal fluid levels. We then follow up on a three- to six-month basis after surgery. We can see very quickly if the levels increase.”

Surgeons are also working to prevent lymphedema by becoming more selective about removing lymph nodes. Until the mid-1990s, most or all lymph nodes in the armpit were removed to prevent the spread of cancer to other organs. Then techniques were developed that allowed surgeons to determine if some of these lymph nodes could be spared. If the sentinel lymph node—the node closest to the cancer—was clear, the other nodes were spared. If the sentinel lymph node contained tumor cells, the surrounding lymph nodes were removed. “We now understand that even if the sentinel node has cancer, it may not be necessary to remove additional lymph nodes,” says Dr. Feldman.

A technique called reverse arm mapping also has helped surgeons reduce the number of nodes removed. “Mapping better defines the function of the lymph nodes in the armpit. Two nodes may be close together, but one affects the arm while the other affects the breast,” says Dr. Feldman. In reverse arm mapping, the lymph nodes related to the arm are identified with a special dye so they can be spared. “This reduces the risk of lymphedema,” Dr. Feldman says.

Soon, Columbia breast surgeons also will start offering patients at the highest risk of lymphedema a new surgical technique to prevent lymphedema. These patients have more advanced breast cancer with lymph node metastases that requires complete lymph node dissection and radiation treatment of the armpit region. The risk of developing lymphedema after this treatment is 40 percent.

To reduce that risk, Columbia surgeons will use dye to identify the lymphatic vessels from the arm and then connect the vessels to a branch of the axillary vein after the lymph nodes are removed. “This will re-establish the lymph flow and significantly reduce the risk of lymphedema developing,” Dr. Feldman says.

“These are important advances that we think will reduce the incidence of lymphedema and help us improve quality of life for survivors.”

More information is available from the Clinical Breast Cancer Program, 212-305-9676.

In the two months after her procedure, Mrs. Oderwald lost 30 pounds, which she attributes to her newfound energy. “When you’re tired, I think you go for the wrong foods,” she says. “I’m now out walking the dogs every night, I’m eating better, and the weight’s come off.”

“Sleep apnea that stems from tongue base has troubled me for the 15 years I’ve been doing sleep apnea surgery,” Dr. Ahn says. “But I think now we have a technique that is finally capable of helping the majority of our patients.”

More information is available from Dr. Ahn, 212-714-9494.
It’s not every 85-year-old father and 57-year-old son who talk by telephone every day about new cancer and heart disease drugs arising from research in their respective laboratories. It’s not every father and son, both physicians, who are valued leaders in academic medicine. It’s not every father and son who care deeply about advancing biomedical research both by doing it and by nurturing talent at all levels, from junior faculty to minority youngsters underrepresented in science. It’s also not every father and son who each has been honored with membership in both the Institute of Medicine and the National Academy of Sciences.

But this father and son are not typical.

They are Paul Marks’49 and Andrew Marks, a Harvard M.D. The cancer drug they discuss, SAHA, is the first in a new class of agents to inhibit the enzyme histone deacetylase, which affects protein scaffolding around DNA and causes cancer cells to either die or mature into cells that stop proliferating. Based on more than 35 years of research by Paul Marks and his collaborators, the Food and Drug Administration in 2006 approved the drug for cutaneous T-cell lymphoma. The drug is now being tested against other types of cancer and AIDS.

The heart drug, developed by Andrew Marks, is a new type of medication, called a Rycal, which works on the ryanodine receptor and is now in clinical trials in Europe to treat heart failure. Paul chairs the board of his son’s pharmaceutical company, Armgo Pharma, dedicated to Rycals, which also can treat arrhythmias, muscular dystrophy, and...
age-related muscle strength loss. “At this point we each know a lot about what is going on in each other’s laboratories,” Andrew says.

Although the Marks family has made an impact in medicine, it started from humble beginnings. Paul was born in a Pennsylvania coal mining town and after his mother died when he was 5, he moved to his father’s parents’ modest apartment in Brooklyn. He went to Columbia University on a scholarship, graduating in 1946. In 1949, he graduated first in his class at P&S and did his residency in medicine at Presbyterian Hospital. Paul Marks says he learned about “creativity in science” and “performing at and identifying the highest standards in research” from his post-doctoral fellowship with Nobel Laureate Arthur Kornberg at the NIH from 1953 to 1955 and from a visiting scientist position with Nobelist Jacques Monod at the Pasteur Institute in 1961-62.

“I was very lucky in my training,” Paul Marks recalls. “Monod was particularly demanding. If he thought you were good, the sky was the limit. Luckily, he thought I was good. Living with those standards every day you soon begin to see the scientists who were brilliant, those who were so-so, and those who were not so good.”

Returning to Columbia in 1956, he studied globin genes and genetically determined anemias and thalassemias. By 1967, Marks became the founding chair of the new Department of Human Genetics and Development at P&S. He was appointed dean of the Faculty of Medicine in 1970, “a job I took with trepidation, since I always considered myself a scientist first.” In 1973, he became vice president of health sciences and director of the Cancer Research Center, which he helped found in 1972 as principal investigator on an application for National Cancer Institute funding. The center received comprehensive designation in 1979 and today — as the Herbert Irving Comprehensive Cancer Center — remains one of the elite NCI-designated cancer centers.

“One of the major issues in leadership,” Paul Marks says, “is identifying talented faculty, and it was what I most liked to do as an administrator.” Two accomplishments he cites from his leadership at P&S are recruiting Eric Kandel, M.D., and persuading Richard Axel, M.D., to stay at Columbia. Both subsequently won Nobel Prizes.

To have a major management role in cancer clinical care and research ultimately drew the senior Marks to Memorial Sloan-Kettering Cancer Center in 1980, where he became president and CEO of the newly merged institution. Of his achievements there – many of which challenged orthodoxy at the time – he is proudest of ushering MSKCC into the age of molecular biology and creating the first psychiatry department, pain service, free-standing breast cancer center, and adult day chemotherapy outpatient program at a cancer facility. MSKCC also was an early adopter of digital medical records.

“One thing I learned as an administrator and researcher is that if anything new is proposed, someone will oppose it,” Paul Marks says. “If it's really new, many, many people oppose it.” This was reflected in a 1987 New York Times magazine article examining Dr. Marks’ transformation of MSKCC.

Although he retired as president emeritus in 1999, Paul Marks and his laboratory at MSKCC continue the SAHA research. He and colleagues first developed suberoylanilide hydroxamic acid, or SAHA, in 1987 as a small synthetic molecule that mimicked the action of the chemical solvent DMSO. In the 1970s, DMSO was shown to interact with globin genes in certain leukemic cells to stop their growth by turning them into red blood cells. The finding, at the time, revealed other ways to stop cells from being cancerous besides killing them. SAHA, by inhibiting the HDAC enzyme and other still unknown mechanisms, can make cancer cells non-malignant or can kill them.

Andrew Marks credits his father’s steel backbone and passion about medicine and science for influencing his career choice. As did his mother Joan’s work: She established the genetic counseling program at Sarah Lawrence College. “I grew up with a love of science and familiarity with its lifestyle and culture,” Andrew Marks says. “There were always scientists around the house and at dinner.” But he says he had to work hard to get his busy professional parents’ respect. “After I got into the National Academy of Sciences [in 2005, a year after he was elected to the Institute of Medicine],” Andrew Marks says, “I joked with my parents, asking them whether I had finally earned the right to sit at the grown-ups table at Thanksgiving.” His daughter, Sarah, now hopes to join the family legacy; she plans to apply to medical school.

It was not a foregone conclusion, though, that son Andrew would pursue medicine or research. He graduated from Amherst with a double major in biology and English and was the first student there to achieve honors in two subjects. He considered becoming a journalist and spent a summer at the Wall Street Journal as a reporter after winning a Dow Jones award for his college newspaper journalism. He opted for medicine and research because journalism, he says, often involves uncovering others’ mistakes, while science is more positive as it prizes the discovery of new things. He obtained his medical degree from Harvard in 1980 and did his residency in medicine and fellowship in cardiology at the Massachusetts General Hospital then completed a postdoctoral fellowship in molecular biology there. After faculty appointments in cardiology at Harvard and Mount Sinai School of Medicine, he joined P&S in 1997 as director of the Center for Molecular Cardiology and the Clyde and Helen Wu Professor of Medicine and

Andrew Marks credits his father's steel backbone and passion about medicine and science for influencing his career choice.

Besides his recent Rycal research, Andrew Marks did seminal work in the 1990s in developing the first drug for drug-eluting stents, now used in most angioplasties to treat coronary artery disease. “One thing about research is that you always hope your work will benefit society but it’s so rare that it does in an obvious way,” he says, “so it gives me a warm feeling that thousands of people have been helped by drug-eluting stents even if they do not know my role in helping to create them.”

Humbled by his father’s origins and success, and cognizant of the advantages he had growing up, Andrew Marks started a program in 2003 to help those less fortunate get ahead in science. Called SPURS, Columbia’s Summer Program for Underrepresented Students, the program helps students from diverse and economically disadvantaged groups get research experience, mentoring help, and support toward a career in medicine or research. “Most of these students are the first in their family to go to college and need some help navigating the academic world,” Andrew Marks says. “We let them know that they are welcome here at Columbia and that the connections they make with their mentors will last a lifetime. This small program literally has changed the lives of dozens of students by giving them access to a world of biomedical research and education that they thought was not available to them. The emails of thanks that I get from the SPURS alumni are profoundly moving and make it all worthwhile.”

Andrew, like his father, says creativity spurs scientific progress and likens scientific advances to those in art. Although the world is here for all of us to see, he explains, it takes a Van Gogh, say, to see and depict the world differently than others have done for centuries and then change the way we all see the world. Similarly, the natural world is available for all scientists to decipher, but it takes creativity to reveal the world in a different way. “Nature doesn’t change. The way we understand it changes.”

But new artistic and scientific ideas often get challenged. While Paul weathered criticism at MSKCC, Andrew has been criticized for aspects of his work with Rycals, small-molecule drugs based on more than 20 years of Andrew’s research on the ryanodine receptor (RyR), a calcium channel. The drugs hold the promise to help people with debilitating cardiac, skeletal, and neurological disorders by preventing the loss of a stabilizing protein, calstabin, which under stressful conditions separates from the RyR channel. The dissociation of calstabin from the RyR channel causes calcium to leak inside the cell, which weakens heart and skeletal muscle contraction and impairs neurological function. Rycal binding to the RyR channel prevents calcium from leaking but has no effect on normal non-leaky RyR channels present in virtually all cells. Critics have contested some of the details of Andrew’s work but the overall concept of the leaky RyR channels causing heart and muscle disorders has changed the way people think about these important diseases.

Andrew Marks takes the detractors in his stride. “It is difficult for some people entrenched in old paradigms to accept new ones,” he says. “The irony is that some scientists who work hard to figure out how things work and to make important discoveries often have a hard time embracing truly creative work by others.” Regardless of criticism, Andrew maintains the highest standards in his work and will not publish until he feels all the questions about a topic have been addressed. “Even after we make a discovery in the lab I will insist on working a year or two more to get a more complete understanding before publishing so I can feel confident that we are pushing the field forward in a solid and responsible way.”

Andrew Marks also has taken on international scientific politics. After a spate of academic boycotts of Israeli scientists started around 10 years ago, he created the International Academic Friends of Israel in 2003, which brings international scientists to conferences in Israel and opposes boycotts of Israel scientists in the global academic community.

Besides talking about research and their family every day, father and son occasionally discuss opportunities Andrew fields for positions with more administrative responsibilities but less time for research. Does the father want his son to follow in his executive footsteps? Apparently not. “My Dad discourages me,” Andrew says “and I have taken his counsel so far.” Why? Because of their shared love of biomedical research. Paul Marks, a man of enormous achievements and recognition, says he regrets the time he lost in administration and does not want the same fate for his son. “The last 10 years of my life as a full-time scientist have been wonderful,” the senior Marks says. “I wonder what my lab could have discovered earlier?”

Paul Marks ’49, left, in a meeting with President Jimmy Carter
Imagine the state of the art in medical and biological discovery in the early 19th century. Before major advances in chemistry and pharmacology, much of medical treatment involved administration of plants and their derivatives. Medical botanists were at the forefront of science in a way comparable to today’s drug companies and pharmacologic researchers. Newly discovered plants and herbs, often administered by trial and error in accordance with the folklore of native cultures, were often the basis for treatment of poorly understood diseases.

John Torrey’s Legacy: From Plants to Trees to Mountains to Botanical Societies

Influence of 1818 P&S Graduate Continues Today

By Alan Lipkin’80 and Mindy L. Aisen’80
The North American wilderness, filled with areas never previously explored by Europeans, was extensively investigated by the medical botanists of the day. Plant experts, discovering and bringing back new specimens, often accompanied the major parties exploring the interior of the continent. The botanist widely regarded as a mentor by his trainees, and the person who developed a system of classification of these discoveries, was John Torrey (1796-1873), an 1818 graduate of P&S and later chairman of the botany department. To this day, he remains one of the most influential individuals in the history of American plant science.

Torrey’s ancestors arrived in Massachusetts from England in 1640. He was born in New York in 1796, a member of the seventh generation of his family born in what is now the United States. His father was a merchant who had been a lieutenant in the Continental Army. The New York of Torrey’s youth was a city of 30,000 situated around today’s lower Manhattan, an area gradually recovering from a major fire and seven years of British occupation during the Revolutionary War. Torrey was educated in the public schools of New York. As difficult as it may seem to comprehend given today’s urbanization of the island, the areas of his earliest botanical exploration included the streams and forests of what is now the Lower East Side. He contributed to a catalog of New York plants that was published in 1810.

He enrolled at P&S in 1816, where his instructors included David Hosack in botanical medicine and Valentine Mott in surgery. Hosack purchased a 20-acre site from the city and established a botanical garden three miles north of settled areas, at the site of today’s Rockefeller Center (title to the property was eventually transferred to Columbia University). With the use of plants and herbs being an integral part of much of therapy, Torrey became better acquainted with the general area of medical botany. He was one of 34 students who graduated in the P&S Class of 1818.

Torrey opened a medical office in New York but never had a busy clinical practice. He spent much of his spare time discovering and classifying new species of plants, and he published the first catalog of plants growing within 30 miles of New York City. He analyzed and classified plant specimens acquired by Major Stephen Long (after whom Colorado’s Long’s Peak was named) during Long’s federally sponsored Rocky Mountain and western expedition of 1819 and 1820. Torrey rapidly became recognized as a national authority on the flora of the American west. In keeping with the broad-based biological scientists of the time, he also became known as a geologist, mineralogist, and chemist.

As Torrey’s renown increased, he received an honorary M.A. degree from Yale in 1824 and was named president of the Lyceum of Natural History, the most important scientific investigational society of its day. The same year, he was named as professor of chemistry and mineralogy at West Point and assistant surgeon in the U.S. Army. In 1827, he returned to a teaching position at P&S, where he chaired the botany department. He developed new plant classification systems and eventually published, with Asa Gray, the first comprehensive illustrated guide to the flora of North America.

Although Torrey had named and classified many of the native plants of Colorado, he did not travel to the area until near the end of his life, when he was able to see the mountain named for him, 14,267-foot Torrey’s Peak, one of the highest summits in Colorado. Torrey’s Peak was named by Charles Parry, another P&S graduate and fellow botanist (see the Fall 2006 issue, P&S).

In addition, Torrey’s students and acolytes honored him by naming the coniferous genus Torreya after him, which includes species of trees across North America, most notably California’s Torrey Pine.

To this day, the Torrey Botanical Society, which was founded in the 1860s, promotes interest in all areas of botany and plant science. It is America’s oldest botanical society. Torrey, a P&S graduate and professor from nearly two centuries ago, still exerts influence in his scientific field.

Alan Lipkin ’80 is an otolaryngologist in the Denver area. He has climbed to the top of Torrey’s Peak several times. Mindy Lipson Aisen’80 is a neurologist and chief medical officer at Rancho Los Amigos National Rehabilitation Center in Downey, Calif. She lives in San Diego and hikes every weekend in Torrey Pines State Natural Reserve. Dr. Lipkin noted via Facebook his classmate’s frequent trips to Torrey Pines, and Dr. Aisen admired her classmate’s outdoors photos on Facebook.
The combination of type 2 diabetes and being significantly overweight is a huge burden. Doctors tell you to lose weight, in essence, to save your life. Weight loss, in addition to diabetes medications, they say, will manage the major symptom of your diabetes: high blood glucose. If not controlled, experts warn, the excess glucose will lead to circulatory problems, high blood pressure, heart and kidney disease, blindness, limb amputations, and the many other complications of diabetes. Also, an obese person, or someone with a body mass index – BMI – over 30, has an increased risk of heart disease, cancer, arthritis, and sleep apnea.

The solution: two simple words, lose weight. The reality: not that simple. Losing so much weight by diet alone and keeping the weight off are extremely difficult for someone with a BMI over 30. Exercise also is likely to be difficult for someone with a high BMI.

Various types of weight loss surgery help people who have type 2 diabetes and BMIs over 35 lose weight, sometimes as much as 50 percent or more of their origi-

Experts disagree about how surgery treats diabetes but agree more research needs to be done.
nal weight, depending on the surgery. Besides allowing these patients to lose and keep off excess weight, surgery helps most patients manage their diabetes and blood glucose levels, with some people needing fewer medications and others stopping drugs completely.

The debate about the surgery and diabetes
Although weight loss surgery helps patients with diabetes and BMIs over 35 (the minimum BMI for surgery) lose weight, it remains unclear how it helps treat diabetes. Because most patients have substantially improved glucose control soon after surgery and before losing significant weight, some clinicians argue that the surgery alters the gastrointestinal system’s anatomy and hormonal milieu to cause the remission of symptoms. The new hormone balance, they say, influences insulin and glucose levels, appetite, and overall metabolism. As a result, they call these procedures metabolic instead of bariatric, the traditional term for weight loss surgery.

Other physicians, however, say it is more likely the reduction in the amounts of food patients eat before and soon after surgery, not altered hormones, that leads to the metabolic changes and rapid glucose control after surgery. Calorie restriction can directly lower glucose levels. It is not hormonal changes contributing to the diminution of diabetes symptoms, they say, but reduced calories and, ultimately, weight loss.

Still others say hormonal changes and weight loss may act together.

Does it matter why patients are being helped? Surgeons say no other treatment is better for helping many patients with diabetes and BMIs over 35 lose weight and manage their diabetes. Endocrinologists agree but want to see if the hormonal effects from the surgery, independent of reduced calories and weight loss, may point the way to development of better drugs or other interventions that work on these biochemical pathways, a less extreme alternative to surgery. Not all morbidly obese patients are candidates for surgery, which has risks and causes life-long medical issues, such as vitamin and mineral absorption problems that must be treated with supplements.

Many questions about surgery inform the debate: How might gut hormones work to help diabetes after surgery? How long do the improvements last after surgery? Which patients are the best surgery candidates? When should surgery be offered? Will surgery also help diabetes patients with lower BMIs?

How do hormones work to help diabetes after surgery, and how long do improvements last? Which patients are the best surgery candidates? When should surgery be offered? Will surgery also help diabetes patients with lower BMIs?

Does it matter why patients are being helped? Surgeons say no other treatment is better for helping many patients with diabetes and BMIs over 35 lose weight and manage their diabetes. Endocrinologists agree that the gut plays an active role in weight loss and the regulation of eating behavior is a relatively new idea, explains Rudolph Leibel, M.D., the Christopher J. Murphy Professor of Diabetes Research, professor of pediatrics and medicine, co-director of the Naomi Berrie Diabetes Center, and co-director of the New York Obesity Research Center and the Columbia University Diabetes and Endocrinology Research Center.
“It used to be thought you ate, the gastrointestinal tract digested food and absorbed the calories,” says Dr. Leibel. “Now, we know there are important interactions of the gut with food and the gut plays a role in influencing behavior to start and stop eating and for food preference. It is not just a pipe.”

Gut hormones, such as the incretins GLP-1 and GIP, regulate insulin secretion, while others, such as PYY-1 and CCK, affect food intake. In fact, several new diabetes drugs, such as exenatide (Byetta) and liraglutide (Victoza), work as a GLP-1 receptor agonist to stimulate insulin release. Nerve signals from the gut can also stimulate the vagus nerve, a cranial nerve that extends from the brain stem to the viscera, with or without hormonal input.

“It is not surprising that manipulating the gut via surgery can affect glucose and insulin metabolism, leading to a reversal of symptoms and a decrease in the number of drugs needed to treat diabetes,” says Dr. Leibel. But the jury is still out as to whether calorie restriction or hormonal changes (or both) account for the improvements. “Patients are not in a neutral energy state before surgery. They eat less calories; negative energy balance can affect glucose metabolism.”

Doctors cannot force morbidly obese patients to lose, then maintain, the weight loss they need to affect metabolic changes. “It is hard for patients to reduce calories to lose weight and improve their metabolism but even harder to keep the weight off,” says endocrinologist Blandine Laferrère, M.D., associate professor of medicine and co-director of the hormonal core laboratory at the New York Obesity Nutrition Research Center, an NIH-funded collaboration of Columbia and St. Luke’s-Roosevelt Hospital Center. Dr. Laferrère has researched the hormonal effects of bariatric surgery for the past 10 years.

Dr. Leibel acknowledges the surgery is vital for morbidly obese patients and thinks gut hormones may be playing a role in addition to weight loss. He also believes that research about the altered gut hormones’ mechanisms of action after the surgery may lead to new drugs and less invasive interventions.

Evidence for and against the metabolic argument
What evidence favors either calorie restriction/weight loss or hormonal changes?

Whether weight loss and calorie restriction play a more dominant role than hormonal changes after bariatric surgery is unclear. Gastric bypass seems to be working by both mechanisms. However, bypassing the duodenum may not be necessary. Animals with diabetes that have had sleeve gastrectomy lose weight, have an improvement in diabetes, and have an incretin-like response similar to what occurs in gastric bypass, points out Dr. Laferrère.

But Melissa Bagloo, M.D., assistant professor of clinical surgery in the Center for Metabolic and Weight Loss Surgery, thinks hormones are more at play. In a study in which type 2 diabetic rats underwent a duodenal-jejunal bypass, a gastrojejunal bypass, or a sham operation, the animals were fed the same type of diet. The animals that underwent the duodenal-jejunal bypass, which, similar to the Roux-en-Y, excludes the initial portion of the small intestine but does not alter the stomach, maintained significantly better glucose control, suggesting that the surgery’s hormonal effects – not fewer calories – were responsible, says Dr. Bagloo.
It would be unethical to allow morbidly obese human research subjects to eat whatever they want after a gastric bypass to see if glucose control improves even without calorie restriction, so researchers have inferred the effects of calorie restriction versus hormones in diabetes control.

In a 2007 study, Dr. Laferrère compared the hormonal profiles of patients with BMIs between 35 and 50 who had undergone surgery with people who had the same BMIs but ate very few calories. She measured the levels of incretins, such as GLP-1 that increase insulin secretion and glucose control, in both groups after they lost the same amount of weight. She found that incretin levels were much higher and the diabetes control better for patients who had the bypass surgery compared with patients who lost weight via caloric restriction.

“There is something special about surgery compared to weight loss alone,” Dr. Laferrère says. “Both groups of patients lost the same amount of weight but there was a difference in hormone levels and diabetes improvement in the surgery group.” She is now studying the mechanisms behind hormonal changes, such as food transit time and bile acid changes after bypass surgery. But the patients in her 2007 study had diabetes for less than five years, were not taking insulin, and may still have had residual insulin production. Patients who have had diabetes longer and who take insulin may have different hormonal results after surgery.

Ongoing Research

To better understand the hormonal responses and glucose control in patients with BMIs over 35 who have had diabetes for any length of time and may or may not take insulin, Judith Korner, M.D., Ph.D., associate professor of medicine and director of the Weight Control Center at Columbia, is directing an NIH-funded clinical trial comparing gastric bypass surgery with restricted diet alone in that population. The results of this study should shed light on whether it is caloric restriction or surgical manipulation of the gut that is responsible for early improvement in glucose control.

Encouraged by evidence that gastric bypass surgery has metabolic and hormonal effects beyond weight loss for type 2 diabetes patients with BMIs over 35, many clinicians at Columbia and elsewhere are investigating whether metabolic surgery can help type 2 diabetes patients with lower BMIs. Dr. Korner, in conjunction with Columbia surgeons Dr. Bessler and Leaque Ahmed, M.D., associate clinical professor of surgery at Harlem Hospital, are investigators in a five-location clinical trial of 120 patients who have BMIs between 30 to 39.9, have had type 2 diabetes for at least six months, and may or may not take insulin. Only individuals whose diabetes is poorly controlled have been randomized. Sponsored by the surgical supply company Covidien, the study will compare gastric bypass with intensive medical management using diabetes drugs and lifestyle changes, focused on diet, exercise, and behavior. The sites are New York (Columbia), Minnesota (University of Minnesota and the Mayo Clinic), and two hospitals in Taiwan. “Because the race and ethnicities are different, with Caucasians, Hispanics, and African-Americans in New York, mostly Caucasians in Minnesota, and Asians in Taiwan, race and ethnicity may have an impact on the results,” Dr. Korner says.

Asians can develop type 2 diabetes with much lower body weights and BMIs, such as 24, than Caucasians. A BMI of 24 for a Caucasian is considered normal weight. Research abroad has shown metabolic surgery in Asians with lower BMIs can help resolve their diabetes, Dr. Bessler says. “The results of this randomized study might help determine what type of patient is the best candidate for the surgery,” Dr. Korner says. “By enrolling individuals with a BMI under 35, results from this study may be used to change current BMI criteria for metabolic surgery.”

Dr. Bessler is directing a trial to compare LAP-BAND, gastric bypass, and sleeve gastrectomy to determine which surgery might be best for people with type 2 diabetes and BMIs between 30 and 34.9. Patients in the trial must pay for the treatment because insurance companies do not consider metabolic surgery in the lower BMI category standard of care.

The prevailing wisdom against surgery for the lower BMI patients with diabetes might be changing, says Dr. Bessler. In February 2011, the Food and Drug Administration extended the use of LAP-BAND for patients with BMIs of 30 who have another condition related to their obesity, such as diabetes. “This seems to be a first step in showing that these kinds of operations may be appropriate for the lower BMI population with diabetes,” Dr. Bessler says. The FDA in 2001 had approved LAP-BAND for patients with a BMI of at least 40, patients who were at least 100 pounds overweight, and patients with a BMI of at least 35 who also had another severe condition due to their obesity, such as heart disease or diabetes.

On the basic research front, Domenico Accili, M.D., the Russell Berrie Foundation Professor of Diabetes (in Medicine) and co-director of the Columbia University Diabetes and Endocrinology Research Center, has a 10-year NIH grant to study how endocrine cells in the gut change after gastric bypass.

“Pharmaceutical and biotechnology companies are actively researching these gut hormones as potential new treatments,” says Dr. Accili. “One of the great benefits of this attention to gut hormones and metabolic surgery is the effort to try to understand what is going on to help patients, perhaps, in new ways. The unresolved questions also remind us how complex diabetes is as a disease and what more needs to be learned.”

Researchers outside of Columbia also are assessing how long the benefits of metabolic surgery last and the best timing of surgery following diagnosis. Also, cost benefit analyses are being used to compare the expense of the surgery with reduced costs in treating diabetes complications.

“For now, there is no drug that can help extremely obese patients with diabetes lose weight and help them manage their diabetes like the surgeries can,” Dr. Bessler says. “All the research should help us determine how to improve the surgery and potentially increase the number of patients who can benefit.”

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No drug currently available can help affected patients lose weight and manage their diabetes. Research should help determine ways to improve the surgery with the goal of increasing the number of patients who can benefit.
ew drugs to treat disease are developed in two
general ways. Large scale screening involves
assessing the efficacy of an array of available
chemical agents against a disease proxy. In contrast, a
drug can be specifically constructed based on an under-
standing of the underlying disease process. Often these
approaches overlap; some understanding of the disease
process can guide the selection of drugs for screening.

Several students in the Graduate Program in Phar-
macology and Molecular Signaling use sophisticated
techniques to examine at the molecular or even atomic
level the interactions between disease-related proteins
and ligands which bind to them, laying the ground-
work for the design of more potent and specific drugs.

Matt Le-Khac uses X-ray crystallography to assess
the interaction between HIV, the disease-causing agent
in AIDS, and small molecule ligands modeled on the
receptor to which the virus binds to gain entry to the
body’s immune system. (It was X-ray crystallographic
pictures of DNA that led Watson and Crick to their
epochal double helix model.) Matt prepares crystals
(regularly arrayed lattices) of the ligand bound to a
protein from the coat of HIV and takes them to a syn-
chrotron facility to bombard them with a high-pow-
ered beam of X-rays.

The scattering pattern of the X-rays after collision
with the crystal yields information about the posi-
tioning of atoms within the crystal, information that

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**From Molecule to Disease**

By Daniel J. Goldberg, Ph.D.
Professor and Director of Graduate Studies
Department of Pharmacology

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The three-dimensional structure of protein
enables researchers to screen for ligand
interactions that may be relevant to treatment
disease.
Graduate students in pharmacology and molecular signaling use sophisticated techniques that will lay the groundwork for designing drugs.

allows Matt and his mentor, Wayne Hendrickson, Ph.D., University Professor, to determine how closely and strongly the ligand is adhering to the protein. They and their collaborators can then tinker with the ligand to improve the fit, which gives Matt a chance for some family bonding over the chemical bonding, as he discusses the data with his chemist father.

The hope is that Matt’s work will help in the development of a ligand that binds strongly and specifically to the coat protein when introduced into the bloodstream and thereby prevents HIV from binding to its biological receptor on immune cells.

Zach Carpenter, who is doing his thesis research with Raul Rabadian, Ph.D., assistant professor of biomedical informatics, and Adolfo Ferrando, Ph.D., assistant professor of pediatrics and of pathology & cell biology in the Institute for Cancer Genetics, is taking a bioinformatics approach to identify carcinogenic alterations in protein structure. Nucleotide sequencing of DNA from patients with a cancer, such as peripheral T-cell lymphoma, identifies mutations. Special computer programs, some of which Zach helped develop, can then suggest which mutations are functionally important and how they might affect the shape and orientation of important domains of the protein coded by the mutated gene. There is also the possibility of “in silico” drug screening, where computer programs can model the interactions of a library of drug structures with a protein domain of interest. Sitting at his desk, with nary a pipetter or cell culture dish in sight, Zach can meld the screening and design approaches to drug development.

In the laboratory of Jonathan Javitch, M.D., Ph.D., the Lieber Professor of Experimental Therapeutics in Psychiatry and professor of pharmacology (in the Center for Molecular Recognition and in physiology & cellular biophysics), the focus is on proteins that mediate the actions and regulate the distribution of the important brain transmitter, dopamine. These proteins are key targets of drugs of abuse, such as cocaine, and of many drugs used to treat schizophrenia.

Pharmacology graduate students Prashant Donthamsetti and Hideaki Yano are both focused on the dopamine D2 receptor to which antipsychotics bind. They use techniques such as bi-molecular fluorescence complementation to monitor the interaction of drugs with the receptor and of subunits of the receptor with each other and with proteins to which the activated receptors bind to lead to cellular effects. These techniques involve tagging components of the receptor complex with small molecules. When the components come close enough to one another for their respective tags to interact, fluorescence is emitted; thus, these are called proximity assays. Prashant, for example, is using these to try to understand why aripiprazole, an “atypical” antipsychotic, has different actions at the D2 receptor in different cellular contexts.

Work such as that of Prashant and Hideaki addresses the issue of specificity of drug action, which is critical for thinking about the design of drugs with fewer side effects.

Seth Robey, a second-year student in the laboratory of Robert Kass, Ph.D., the Hosack Professor of Pharmacology, Alumni Professor of Neuroscience, chair of the Department of Pharmacology, and vice dean for research at P&S, also uses fluorescence tagging to moni-
Their biotech businesses are located within a two-mile radius in Westchester County, N.Y., but their influence extends far beyond.

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Biotech Stars

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1951 M.D.
See the Letters section to read a letter from Charles M. Plotz.

1953
See the Letters section to read a letter from Stan Edelman.

Stanley Inhorn and his wife, Shirley, were made Lifetime Trustees of the Wisconsin Youth Symphony Orchestras in December 2011 in recognition of their 40 years of service to the organization. As they recounted in an interview with a classical music blog, Stan arrived in Madison, Wis., in 1953 for internship and residency in pathology at Wisconsin General Hospital. After he and Shirley married in 1954, Stan was called to the Navy as a shipboard medical officer. After returning to Madison, Stan completed his residency and joined the faculty of the University of Wisconsin, where he became professor of pathology and preventive medicine and director of the Wisconsin State Laboratory of Hygiene.

1957 Ph.D.
The seven eminent researchers named in 2011 as recipients of the National Medal of Science included Shu Chien, president of the Whitaker Institute of Biomedical Engineering and professor of bioengineering at the University of California, San Diego. He was honored for pioneering work in cardiovascular physiology and bioengineering. Dr. Chien, who was on the P&S faculty for nearly two decades, received the medal at a ceremony at the White House.

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Harris A. Berman was named dean of Tufts University School of Medicine in Boston in October 2011. He had served as interim dean since December 2009. Before becoming interim dean, Harris was dean of public health and professional degree programs at Tufts. He also served as chair of the Department of Public Health and Community Medicine from 2003 to 2008. Before joining Tufts, the pioneer in the development of managed care in New England served as CEO of the Tufts Health Plan for 17 years, during which time the plan grew from 60,000 to more than 1 million members. He previously co-founded the Matthew Thornton Health Plan in Nashua, N.H., one of New England’s first HMOs.

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Shu Chien ’57 Ph.D.

with President Obama

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See Alumni in Print to read about a book by David Forrest.

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the Delano Regional Medical Center in Delano, Calif. See the Letters section to read a letter from Tony.

1966
See Alumni in Print to read about the latest book by Robin Cook.

Henry F. Spears has been appointed to serve on the board of Washington College in Maryland. Harry is a retired surgical oncologist, who held various positions at the National Naval Center, the National Cancer Institute, and the Fox Chase Center of the University of Pennsylvania and the Wistar Institute. He then moved to Boston, where he was associate professor of surgery at Harvard, working out of New England Deaconess Hospital. Harry practices land conservation and sustainable agriculture through stewardship of his family’s farms in Queen Anne’s County, Md. He also is a trustee of the Manomet Center for Conservation Sciences near Plymouth, Mass.

1967
Pediatric surgeon Michael Curci and his wife, Christine, are spending two months at the Queen Elizabeth Central Hospital in Blantyre, Malawi, this spring. Mike retired as clinical professor at the Maine Medical Center in Portland, while Christine, a Ph.D., is a medical health and conflict mitigation consultant. Their mission is education, training, and direct care in Malawi; they are working under the auspices of Physicians for Peace, a non-government organization based in Norfolk, Va. Mike will be a volunteer faculty member, working on the intern training project, while Chrissie will give guidance and educational support in the mental health department. In the past the Curcis have served as volunteers in Tanzania, Ghana, Haiti, underserved areas in Maine, and post-Katrina New Orleans.

1969
John Bilezikian organizes and directs an annual osteoporosis symposium in Armenia for physicians and other health care professionals, including students and residents at Yerevan State Medical University, where John is a member of the international advisory board. The fifth annual symposium in 2011 drew more than 400 individuals, a record number. In 2011, with the cooperation of the International Osteoporosis Foundation, of which he is a member of the Board of Governors, the first woman’s leadership roundtable in osteoporosis was held. Featured participants included the wives of the minister of health and the prime minister of Armenia. John is the Silberberg Professor of Medicine and Pharmacology at P&S. He is chief of the Division of Endocrinology and runs its internationally known Metabolic Bone Diseases Program.

1973
See Alumni in Print to read about a book by Robert B. Santulli. Bob is associate professor of psychiatry at Dartmouth Medical School and director of geriatric psychiatry at Dartmouth-Hitchcock Medical Center in Lebanon, N.H. He blogs at http://memorymemos.blogspot.com/.

Outgoing P&S Alumni Association President Donald O. Quest received the 2012 Harvey Cushing Medal from the American Association of Neurological Surgeons in April. Don is professor of neurological surgery and assistant dean of students at P&S. The Cushing Medal, the most prestigious award given by the AANS, recognizes Don’s outstanding leadership, distinguished service, and dedication to the field of neurosurgery. Don is past president of the AANS, the Congress of Neurological Surgeons, and the American Academy of Neurological Surgery. He also has chaired the American Board of Neurological Surgery and the Residency Review Committee for Neurological Surgery.

1974
Michael M. Krinsky has been inaugurated as the 173rd president of the Connecticut State Medical Society. He had served the society as vice president and vice chairman of its House of Delegates. He previously was president of the Hartford County Medical Association, the largest component of the state medical society, and its councilor to the governing council of the state society. Michael has been in the clinical practice of neurology in Bloomfield and Vernon, Conn., since 1979 and remains active in the practice he founded. He has served on numerous boards and committees for the medical society and for hospitals and voluntary associations including the American Heart Association, the Multiple Sclerosis Society, and the Easter Seals Society, where he was at one time medical director and neurology consultant. He is the founder of the Neurology and Movement Disorders Clinic at the Hebrew Home and Hospital in West Hartford, Conn., where he was president of the medical staff. He also served as assistant clinical...
professor of neurology at the University of Connecticut. Michael and his wife, Marcia, have three grown children and three grandchildren.

1975 Eli Gang is chief medical officer of Magnetecs Corp., a designer and manufacturer of robotic systems for external navigation of medical devices within the body, and clinical professor of medicine at UCLA's Geffen School of Medicine. In the most recent peer survey of the U.S. News & World Report, Eli ranked among the top 1 percent of cardiology and heart surgery physicians. Eli also is a general partner at the Cardiovascular Medical Group of Southern California. “Efe (aka Efrat Lavie) continues to do television and movies, mostly in Israel,” Eli writes of his wife. “She has also become an expert yoga practitioner and occasionally rescues me from the depths of one pain or another with an appropriate asana. Adam, our son, studied philosophy at UCLA and now works in the medical device industry. Danielle, our 19-year-old daughter, is actively serving in the Israeli Defense Force and also has a weekend home on a kibbutz.”

1979 Joanne Palmisano relocated to Connecticut to take a position as vice president, regulatory affairs, for Boehringer Ingelheim Pharmaceuticals, located in Ridgefield.

1980 An article in this issue co-authored by Mindy Lipson Aisen and Alan Lipkin about P&S graduate and medical botanist John Torrey is a collaboration Mindy calls an extension of one started in medical school, when “alphabetically we were linked up periodically for laboratory courses.” They discovered a recent mutual interest in Torrey through Facebook. “I saw his photographs on Facebook (he is a very gifted photographer as well as a medical history genius),” says Mindy. “I live in San Diego and hike every weekend in Torrey Pines preserve and I took photographs of our Torrey Pines (they only grow in San Diego and a few isolated other spots, but here they are everywhere!)” Alan says that after becoming interested in Torrey’s story, “I saw on Facebook that Mindy was a frequent visitor to the Torrey Pines State Reserve.” Mindy says that after becoming interested in Torrey’s story, “I saw on Facebook that Mindy was a frequent visitor to the Torrey Pines State Reserve.” Mindy is chief medical officer at Rancho Los Amigos National Rehabilitation Center and clinical professor of neurology at the University of Southern California’s Keck School of Medicine. Alan is an otolaryngologist in private practice in the Denver area.

1981 Dyax Corporation, a biopharmaceutical company, has appointed Ron Cohen to its Board of Directors. Ron is founder, president, and CEO of Acorda Therapeutics, a biotechnology company developing therapies for multiple sclerosis. In addition he is chairman of the Emerging Company Section of the Biotechnology Industry Organization. He is also a member of the Columbia-Presbyterian Health Sciences Advisory Council. (See more about Ron in this issue’s alumni profile.)

Ellen Gravallese received the Arthritis Foundation’s Dr. Marian Ropes Award for Excellence in Arthritis Care and Leadership in September 2011. Ellen is professor of medicine and cell biology and chief of rheumatology and director of translational research for the University of Massachusetts Memorial Musculoskeletal Center of Excellence. Ellen cares for patients with rheumatoid arthritis and studies the
mechanisms by which inflammation in the synovium leads to joint cartilage and bone destruction. Her laboratory has identified key molecular and cellular pathways in RA, including the identification of the role of osteoclasts in articular bone destruction, and has contributed to new treatment modalities. “In the last two decades we have made tremendous strides in treatment and we’re fortunate to have a number of medications that can block the progression of the disease.” Ellen joined the University of Massachusetts in 2006 from Brigham and Women’s Hospital, where she was the Katherine Swan Ginsburg Visiting Professor. She also has received the Sandoz Award for medical research, the McDuffie Award from the Arthritis Foundation, the Scholars in Medicine Award from Harvard Medical School, and the Physician Achievement Award from the University of Massachusetts.

1983
In November 2011, Jeffrey Pollak became the inaugural Robert I. White Jr., M.D., Professor of Interventional Radiology at Yale University. The White professorship is the first endowed professorship in the Department of Diagnostic Radiology. Jeff is co-section chief of vascular and interventional radiology and director of the vascular and interventional radiology fellowship program at Yale.

1984
Andrey Shaw holds a named professorship in immunobiology and pathology at Washington University School of Medicine in St. Louis. With two co-workers he formulated the theory of the immune synapse. He also discovered the genes linked to focal segmental glomerulosclerosis (seen in diabetes). In addition to research he is still interested in classical music (in which he got his undergraduate degree), literature, politics, and human behavior. He and his wife, classmate Cynthia (nee Florin), have two children; their son is a Columbia College graduate.

1986
P. David Adelson, director of the Barrow Neurological Institute at Phoenix Children’s Hospital, was elected to the American Academy of Neurological Surgery in January 2012. David also is division chief of neurosurgery at Phoenix Children’s. He joined the hospital in 2008. Membership in the American Academy of Neurological Surgery, founded in 1938, is limited to 105 active members, who are invited because of their noteworthy scientific achievements in neurosurgery. David was recruited to Arizona from Children’s Hospital of Pittsburgh. He trained at UCLA, Children’s Hospital of Boston, and Harvard Medical School.

1987
Jeremy Luban was invested as the David J. Freelander Professor of AIDS Research at the University of Massachusetts Medical School in September 2011. Jeremy was in medical school when patients with what would turn out to be AIDS began to be seen in hospitals and clinics. “In a sense, my professional career grew up with the HIV/AIDS epidemic,” he told the Foundation for AIDS Research. “I started medical school in 1983, and by our third year, we were seeing a lot of AIDS patients in the local hospitals in New York. During our fourth year of medical school, students had the opportunity to take an elective, and I decided I wanted to go to Africa and work with AIDS patients. When I came back to the United States, I did my internship/residency and then went to work as a postdoctoral researcher. My feeling was that we needed to know a lot more about the basic biology of HIV so we could come up with better therapeutics.” He is also professor of molecular medicine and co-principal investigator of the NIH-funded UMass Center for AIDS Research.

1989
Abraham Thomas, chairman of endocrinology and division head of endocrinology, diabetes, and bone and mineral disorders at Henry Ford Hospital, became president of the American Federation for Medical Research in April 2012 after a year as president-elect. He has an MPH from the Harvard School of Public Health.

1993
See Alumni in Print to read about a book co-authored by Jaime Landman.

Charles Presti giacono is the new chair of neurological surgery at New Jersey Medical School, succeeding Peter Carmel’70 MSD, who resigned to become president of the American Medical Association. Charlie completed an internship in general surgery, then a residency in neurological surgery at Columbia. He also completed a research fellowship at Columbia and fellowships in interventional neuroradiology and endovascular surgery at Beth Israel Medical Center. Peter recruited Charlie to New Jersey Medical School, where he received joint appointments in neurology and radiology. He also has served as director of the neurological surgery residency training program and director of the endovascular surgical neuroradiology program.

1995
Hand surgeon Andrew Thomas of St. Paul, Minn., was selected to participate in the American
Society for Surgery of the Hand’s Young Leaders Program, a leadership development program for young members dedicated to the Hand Society’s tradition of excellence and interested in shaping the society’s future. Andrew completed a general surgery residency and a research fellowship in hand surgery in New York, then clinical fellowships in Indianapolis and Davos, Switzerland. He currently practices reconstructive surgery of the upper extremity with an emphasis on reanimation and rebalancing of the hand after stroke or traumatic brain injury.

After two years in Salt Lake City, Steven Wu moved to Guangzhou, China, in August 2011 to accept a position as director of medical affairs-China for Mead Johnson Nutrition. He remains an adjunct associate professor of pediatrics (gastroenterology) at the University of Utah, where he plans to return each summer. “To anyone planning to visit either China or Utah, please come visit!” Steve writes.

1996
Melissa Bradner is associate professor in the Virginia Commonwealth University Department of Family Medicine. See the Letters section to read a letter from Melissa.

Jennifer Y.C. Edgoose is assistant professor in the Department of Family Medicine at the University of Wisconsin School of Medicine and Public Health in Madison, Wis. She also has a master’s degree in public health from Columbia University. Prior to her current position she spent more than 10 years working with the urban uninsured and underserved in a community health clinic in Tacoma, Wash. See this issue’s Letters section to read a letter from Jennifer.

See Class of 1999 for a photo of Sam Rhee, who is a plastic surgeon in private practice in Rutherford, N.J.

1998
Blake Anderson, who also received a Ph.D. from Columbia in 1997, has returned to his home state of Missouri to join Heartland Health Regional Medical Center in St. Joseph, north of where he grew up in Kansas City. He did his ENT residency at Barnes-Jewish Hospital in St. Louis, a Washington University teaching hospital.

1999
Shahid Aziz and his team travel to Bangladesh and other countries two to three times a year, sponsored by Smile Bangladesh, a non-profit organization he founded. This photo, taken in November 2011, shows Shahid with three fellow P&S graduates, a Columbia-trained nurse anesthetist, and a P&S-trained anesthesiologist. When not in far-away places Shahid is associate professor of oral & maxillofacial surgery at UMDNJ. Among the P&S alumni in the photo is Jonathan Bingham’99, a urologist in private practice in Allentown, Pa.

Massachusetts’ Reliant Medical Group, formerly known as Fallon Clinic, appointed Christine Petersen to its medical team. She will practice at Reliant’s Worcester radiology department.

2000
Jennifer Ashton is co-host of a new ABC daytime talk show, “The Revolution.” The daily program, which premiered Jan. 16, 2012, focuses on health and lifestyle transformations. Jennifer is one of five co-hosts for the program. She previously was a medical correspondent for CBS News and a medical contributor for Fox News. She also has appeared on PBS, “The Dr. Oz Show,” and XM Radio’s “Oprah & Friends.”

2002
Clara (Holt) Keegan joined the faculty in the Department of Family Medicine at the University of Vermont in June 2011. She lives in Essex Junction with her husband, Mark, and their two young sons, Tim and Will. See the Letters section to read a letter from Clara.

2003
See Class of 1999 for a photo of Alicia Sobers, who is an anesthesiologist at Westchester Medical Center. She started with the Class of 1998.

2006
See Alumni in Print to read about the latest book by Josh Bazell.

2007
The new CEO of New Cardio Inc. is Jess Jones; he has served on the board for three years. He previously worked as director of health care investing in a similar company. Jess has an MBA from Columbia. New Cardio is a cardiovascular diagnostics and services developer, striving to provide higher accuracy and increase the value of the standard 12 lead EKG.

2010
See Alumni in Print to read about a poetry collection by Jenna Le. Jenna is a radiology resident at Montefiore Medical Center in the Bronx. As a medical student, Jenna was co-editor-in-chief of the CUMC literary magazine, Reflexions, and the leader of the P&S creative writing club, Creative Rounds. She is a two-time winner of the AOA Pharos Poetry Competition, a finalist in the William Carlos Williams Poetry Competition for medical students, and a finalist for the Michael E. DeBakey Medical Student Poetry Award. Jenna’s poems have been featured in many national literary journals, and in 2011 she was nominated for the PEN American Center’s Emerging Writers Award.

2011
See Alumni in Print to read about a book co-authored by Christopher R. Kelly.
How Three P&S Alumni Bucked the Odds and Made it Big in Biotech

By Peter Wortsman

When Ron Cohen’81, Paul Maddon’88 (M.D. and Ph.D.), and George Yancopoulos’86 Ph.D./’87 M.D., get together, the mood is buoyant and the laughter is infectious. They swap snapshots of their respective growing offspring, compare notes on clinical trials, and reminisce about the bumpy road to success.

How, in the early days, Dr. Maddon, who lacked a driver’s license, relied on Dr. Yancopoulos to drive him to work. “We never got anywhere,” jokes Dr. Maddon. “George couldn’t drive and I had no idea where I was going.” And how Dr. Cohen, way back as a member of the Princeton crew team met Dr. Yancopoulos, who rowed with Ron’s younger brother, Oren, for Columbia. “Awed by George’s tremendous athletic prowess, personality, and intellect, my brother complained: ‘And he’s such a great guy, you couldn’t even hate him!’”

The camaraderie of the three P&S graduates and friends extends to family. Dr. Cohen’s wife, Amy, works in corporate affairs for Dr. Maddon’s company, Progenics. “So I probably see more of her than Ron does!” says Dr. Maddon.

Rising stars in the biotech boom of the moment, each with successful FDA-approved drugs to their credit and promising candidates in the research pipeline, their businesses are based within a two-mile radius of each other in Westchester County, one of the fastest growing hubs of biotech activity in the country. What all three have in common, in addition to a P&S degree, is a passion for science and medicine, a fondness for collaboration, seemingly boundless enthusiasm and confidence, and, in the words of Dr. Yancopoulos, “a willingness to embrace the risk of failure.”

Seated around a table one morning in late 2011 in the conference room of the Hawthorne, N.Y.-based offices of Acorda Therapeutics, Dr. Cohen’s company, the three entrepreneurs took time to reflect on the paths they chose, the challenges and satisfactions, and the hurdles they encountered along the way.

“If You Do This, You Will Never Be Heard From Again!”

For Dr. Maddon, vice chairman of the board of directors (after serving as chairman and CEO for 20 years) of Progenics Pharmaceuticals Inc., a company he founded and first ran from his medical school dorm room, science and business have been intertwined from the start. (In March, Dr. Maddon announced his retirement from Progenics as chief science officer, but he will continue as a member and vice chairman of the company’s board of directors.) As a Columbia College undergraduate, he perused scientific papers by P&S professor and future Nobel laureate Richard Axel. “I was blown away by reading what we now know were the papers that delineated the dawn of molecular biology.” Dr. Maddon was no less thrilled to leaf through copies of Biotechnology News, among the first journals and magazines to describe this new industry emerging in the 1980s. The combination of bench and bottom line appealed to him and something clicked. “To take a scientific discovery and make a drug out of it— I knew that this was exactly what I wanted to do.”

Accepted into the M.D./Ph.D. program at Columbia, he had the supreme confidence or gumption (call it what you will) to insist that Dr. Axel let him know on the spot if he would let him work in his lab before he decided whether to accept a coveted slot. Ph.D. candidates generally do two years of classroom work before pursuing their research. The seasoned scientist accepted the young upstart on the spot. (The two are still close.) The same gumption served Dr. Maddon well when, upon earning his dual degree, he announced to his faculty advisers that he would not be opting for a postdoctoral fellowship in research or an internship in medicine but instead planned to venture out on his own into the risky field of biotechnology. His advisers were at first flabbergasted, then furious. “You should be ashamed of yourself!” he was told. “You’re wasting the education we gave you!” But Dr. Maddon was undaunted and determined to take the leap and succeed.

He remains devoted to the University, at which he spent a total of 11 years of study. In 2008 he joined the Columbia Board of Trustees, for which he chairs the Subcommittee on Science. He is also a member of the Board of Visitors of Columbia University Medical Center.

“I remember them vilifying Paul when he took the leap and left academia,” recalls Dr. Yancopoulos, who followed suit a few years later to become president of the laboratories and chief scientific officer of Regeneron Pharmaceuticals, which he joined shortly after its founding by his long-time partner, Dr. Len Schleifer. Dr. Yancopoulos and Dr. Maddon had been friends since sophomore year at Columbia College. The two shared a dream and offered each other moral and logistical support. Dr. Maddon reciprocated by lending Dr. Yancopoulos lab space. Progenics can hardly spare the elbow room nowadays. And Regeneron now occupies five buildings in two major sites in New York, in Tarrytown and Rensselaer, and has more than 1,700 employees.

But back in 1987, when Dr. Yancopoulos first accepted and then turned down a prestigious Markey Trust Research Grant and a much sought-after...
junior faculty position at P&S, opting instead to link his fortune to an unknown start-up biotech business, his mentor, Fred Alt, still a close friend today, called upon his own mentor, Nobel laureate David Baltimore, Ph.D., to try to dissuade him. “You have such a promising career in science,” Dr. Baltimore told the young scientist, “If you do this you’ll never be heard from again.”

Nevertheless, Dr. Yancopoulos, who still maintains warm ties to Dr. Baltimore, trusted his own inclination. It had been his lifelong dream to “figure out how to take basic scientific findings, apply them, and create a drug to help people suffering from a disease.” His father, a Greek immigrant and ardent believer in the American dream, had his own education and career goals interrupted by World War II and subsequent unrest in Greece. “In this country,” the father said to his son, “if you do great things they will pay you a hell of a lot more than the small salary you would make as a junior faculty member.”

A week later Dr. Yancopoulos got a telephone call from Len Schleifer, a fellow M.D./Ph.D., inviting the young man to join him as head scientist of Regeneron, a company he was in the process of founding. For Dr. Yancopoulos, something clicked at that moment. From an early age his father had told him, “If you’re interested in medical research, why not be like this guy!” He pulled out an article from a Greek-American newspaper about P. Roy Vagelos ’54, then director of research, now retired CEO of Merck, a company he led to stellar success. “So Roy was my model from when I was about 15 years old.”

Dr. Vagelos returned the favor and the confidence some years later, becoming chairman of the board of Regeneron and helping to focus the company’s technological know-how and scientific mission to foster drug discovery.

A Doctor-Actor Changes Roles
Dr. Cohen walked a different road. He was already a practicing clinician who had pursued a residency in medicine at the University of Virginia and had several years of clinical practice in New York behind him when the biotech bug bit. His mother had been a concert violinist, and his father, the late Sidney M. Cohen, M.D., MSD ’52, a distinguished member of the faculty in the Department of Neurology at P&S, had been an actor on the Yiddish stage in his youth. The son had always been torn between acting and medicine, opting for P&S in part because of the school’s reputation for clinical excellence, but also because of the Bard Hall Players, America’s most acclaimed medical school theater group, in a number of whose productions he played leading roles. “I think P&S has always been amazing at picking people who have those kinds of mixed backgrounds, with a healthy dose of the humanities and the arts.”

In the 1990s he was dividing his time in New York among his work as medical director of a private fee-for-service clinic on Wall Street, acting classes, and auditions for roles and commercials, when he received a call from medical school friends, who put him in touch with a husband and wife team in the process of founding a company. First called Marrow-Tech, initially committed to creating a bone marrow bank, the company’s mission later expanded to include multiple tissue regeneration and the company’s name changed to Advanced Tissue Science. At that early stage the company was looking for a clinician “with presentational skills” to help develop clinical trials and promote the company. For reasons he still cannot fathom years later, Dr. Cohen agreed on the spot to sign on.

After six and half years of helping to raise the first $110 million and “doing almost everything in the company and loving it,” he came up for air and decided it was time for the next step. Following a one-year self-imposed sabbatical, during which he taught himself finance, Dr. Cohen had what he still thinks of as an epiphany at the UC-San Diego medical library. Surrounding himself with every article he could find on spinal cord injury, he decided to link up labs and collaborate with top neuroscientists around the country to found Acorda, a virtual company devoted to restoring neurological function to people with spinal cord injury, MS, and other conditions.

Frustrations and Breakthroughs
All three M.D. entrepreneurs went through their share of disappointments and frustrations before finally achieving a commercially viable breakthrough in the lab.

“The path to getting a drug approved is so complicated and so difficult to navigate, and the hurdles appear nearly insurmountable, it is amazing any drug ever gets approved,” Dr. Maddon says as he shakes his head at the sheer magnitude of the challenge. His company, Progenics, is devoted, among other areas, to the discovery and development of cancer therapies and currently has a promising human monoclonal antibody-drug conjugate in phase 1 testing for the treatment of prostate cancer. Still far from the finish line, the company took a clinical detour with its first successful drug, Relistor, approved in 2008 by the FDA and by regulatory agencies in 50 other countries, for the treatment of opioid-induced constipation for patients with advanced illness. The pain relief of opioids for patients with cancer and other illnesses comes at a terrible cost, effectively shutting down the body’s peristalsis. Relistor counteracts the effect and gets the system going again. Additional marketing approval is expected in 2012 for the treatment of opioid-induced constipation in patients with non-cancer pain. In this case, Progenics licensed, developed, and marketed a drug originally developed by scientists at the University of Chicago. “In this business you have to keep your finger on the pulse of what’s happening with your own program and other people’s programs,” says Dr. Maddon, “and be able to pivot and move along alternate paths to success.”

Regeneron’s varied scientific portfolio, including ongoing research in oncology, ophthalmology, cardiovascular diseases, immunity and inflammation, infectious diseases, metabolic diseases and obesity, muscle disorders, pain, and bone disease, is grounded in two technologies developed in-house by Dr. Yancopoulos and his associates. One is the VEGF trap, a molecular protein designed to trap cytokines and reassert control over out-of-control factors in the body that cause disease; the French pharmaceutical giant Sanofi has signed on as a partner to co-develop the technology. The other is the VelocImmune mouse, a mouse genetically engineered to have a humanized immune genome, an optimal platform to generate human antibodies to combat disease conditions. Regeneron went through a rocky period when Procter and Gamble, which had entered into a collaborative agreement, subsequently declared the VEGF trap “clinically invalid” and left the partnership. “One problem with big pharma, as opposed to biotech,” says Dr. Yancopoulos, “is its aversion to risk.” A few years later, when the biotech pioneer Genentech published data on a kindred technology, commercial interest was suddenly generated in Regeneron’s VEGF trap. The subsequent partnership deal with Sanofi to
commercialize the trap would become, in Dr. Yancopoulos’ words, “at the time, one of the biggest deals in biotech history.”

Regeneron has two FDA-approved products on the market, Eylea, a drug that effectively treats age-induced macular degeneration, and Arcalyst, a treatment for cryopyrin-associated periodic syndromes (CAPS), a rare hereditary condition in adults and children. Many more medicines are in the R&D pipeline at various stages of clinical trials. Dr. Yancopoulos is particularly proud that, in contrast to the industry norm, all of Regeneron’s approved and pipeline products were discovered and developed by Regeneron. Those products have made Regeneron one of the 10 largest biotech companies (in terms of market capitalization) in the world.

Acorda’s history of drug development likewise hit bumps before rebounding. Initially focusing on spinal cord injury, the company invested tens of millions of dollars in its lead drug, Ampyra, which failed in phase 3 clinical trials. Dr. Cohen still believes “that some people with spinal cord injury might benefit from the drug, but we didn’t prove it in those trials.” Acorda also conducted phase 3 clinical trials on the same drug for patients with MS. Those trials too failed at first. “But after deep analysis, we realized that what failed was the way we analyzed it, that, in fact, the drug had worked beautifully in a sub-set of patients, about 40 percent of whom had had a positive response, dramatically improving their walking ability. So we designed phase 3 trials to prove it, and we did.” The fruit of basic scientific research conducted at the University of Chicago in the early 1980s, Ampyra was first licensed by another company before Dr. Cohen saw its potential and decided to bank on it. FDA approval finally came in 2010, almost 25 years after the drug’s discovery.

The Beauty of Brainstorming
Gregarious by nature, the three entrepreneurs all agree that gathering good people and working together in a team is the key to their success and also a lot of fun.

“I think I’ve sort of figured out over the years how to bring a group of the right people together in a room,” says Dr. Yancopoulos. “Make sure the computers and the iPhones are switched off, and just brainstorm together. If you’re lucky, every now and then, you hit that aha! moment that makes it all worthwhile.”

“Some of my favorite moments in this whole process,” Dr. Cohen agrees, “happen when getting together with my chief scientific officer and other team members, looking at data or thinking about data or challenging each other. We’ll be talking when all of a sudden it’s: Oh, my gosh! We’ve found the right analysis, the right direction.”

“No question about it,” Dr. Maddon adds, “as Ron just said, one of the greatest joys and the greatest privileges is surrounding ourselves with amazing people. They stoke the creativity, the innovation, because one person, however insightful he may be, cannot sustain a company.”

Yet while all three learned to treasure teamwork from working for and with revered mentors at P&S and, in Dr. Cohen’s case, the University of Virginia as well, they fault America’s top medical schools for, at best, turning a blind eye to the possibilities of biotech and other medically related business ventures and, at worst, discouraging their graduates from pursuing that option.

‘There is no absolute failure. Unless you keep trying you’re never going to come up with anything.’

Chicago in the early 1980s, Ampyra was first licensed by another company before Dr. Cohen saw its potential and decided to bank on it. FDA approval finally came in 2010, almost 25 years after the drug’s discovery.

Committed to Insight and Calculated Risk
“If I had to start Acorda today, from exactly where I was in 1992 when I committed to it, I don’t believe there’s any way I would have succeeded,” says Dr. Cohen. “I don’t believe this drug would have seen the light of day because it would have been impossible to keep investors interested long enough.”

Dr. Yancopoulos concurs with the sentiment. “It helps to have been a little naïve. Because if you had told me it was going to take 22 years to succeed, if I had known all the risks back when I started out, that we had a significant chance of going out of business several times over the years, honestly I probably wouldn’t have done this.”

But for Drs. Cohen, Maddon, and Yancopoulos, and like-minded medical entrepreneurs, it’s all about toying with the seemingly impossible and turning virtual failure into success.

“Ron had the insight,” Dr. Maddon points out, “and he was willing to take the risk to license a product others had dropped. To someone else that drug may have been a dog, but to Ron it was a gem in the rough. Each of us is committed to insight. Each of us is willing to take risk. And each of us has developed a thick skin and is willing to risk failure.”

“There is no absolute failure,” Dr. Yancopoulos qualifies his friend’s insight. “With every setback, you adapt, you figure out how to make it work, and make something great out of it. And unless you keep trying you’re never going to come up with anything.”

Bucking the Academic Bias
“Much as I revere P&S and am profoundly grateful for the solid grounding I got there in medicine,” Dr. Cohen maintains, “I would say that the three of us did what we did, not because of how we were pushed at Columbia, but in spite of the biases that we encountered there. There is an ethos in the academy that says: What we do here is pure, this is real science, and the stuff that goes on in industry is tainted, it’s bad, it’s led by the profit motive. The time has long passed for that attitude to change.” Dr. Cohen believes it is imperative for P&S and peer institutions to incorporate course material that exposes entrepreneurially minded medical students to the possibility of applying their knowledge to industry. “We in industry often rely on the insights generated in the academy. But there is no way to turn those insights into new medicine unless you integrate industry.”

“I couldn’t agree more with Ron,” says Dr. Yancopoulos, who favors the establishment of a guest lectureship on medicine and business at P&S. (The “Pam and Mark Grodman’77 Joint Degree Program Fund,” recently established by another MD entrepreneur, Marc Grodman’77, CEO of BioReference Laboratories, will start the ball rolling.) “P&S graduates who go into business,” adds Dr. Yancopoulos, “have a different kind of drive, a different tolerance of risk. Clearly not all medical students will be so inclined, but there may be a few who have this ability and this interest and this daring, who may not even know that the possibility exists.”
The P&$ Legacy Challenge, which gave P&S alumni the chance to help current students and support the future of medical education at Columbia, raised nearly $20 million in combined planned gifts and matching funds.

The program began in 2009 when a group of anonymous donors agreed to match new planned estate gifts at one-third their value. Though planned gifts would not benefit P&S for years, the matching funds would help support scholarships right away. Under the leadership of P. Roy Vagelos’54, chair of CUMC’s Board of Visitors, the idea soon caught on among alumni and their spouses; nearly 60 had participated by the time the program ended in December 2011.

Planned gifts valued at $14.6 million generated $4.8 million in matching funds, including $3.9 million in new endowed scholarship funds. Another $920,114 will supplement existing endowed scholarships, and $170,000 generated one-time $10,000 scholarships.

A scholarship recipient during his time at P&S, Dr. Vagelos called the Legacy Challenge one of the most tangible ways for alumni to support the future of the college. “By helping students fulfill their dreams of becoming leading physicians and scientists, alumni leave a legacy that will truly resonate for generations to come,” he said.

Alumni who participated in the Legacy Challenge pointed to their experiences at P&S and the need to support future generations of physician-scientists as motivation for contributing. Three alumni are highlighted here. (A list of scholarships funded through the Legacy Challenge can be found online at www.cumc.columbia.edu/pjournal/features.)

Leaving a Legacy, Paving the Way for the Future of P&S

A Lifetime in Medicine

One Legacy Challenge contributor recalls a performance his class staged at the end of senior year. The first of its kind at P&S, the show included musical numbers he wrote and a lighthearted, student-led roast of key faculty members. But that was “quite a few years ago,” says Ephraim P. Engleman’37, who turned 101 years old on March 24.

Seven decades since graduating, Dr. Engleman looks back on an illustrious career as a pioneer rheumatologist. He joined the clinical faculty at UCSF in 1947 and in 1979 became founding director of its Rosalind Russell Medical Research Center for Arthritis. In 2007, P&S awarded him the Alumni Gold Medal for Excellence in Clinical Medicine.

Still, he claims to have been a merely average medical student. “I think I made up for that after I graduated, thanks to the background that I received from P&S.” Dr. Engleman trained in rheumatology at Massachusetts General Hospital and has witnessed extraordinary progress in the treatment of rheumatic diseases.

“When I was a medical student at P&S, and when I was a fellow in arthritis at the Mass General Hospital, the patients in our arthritis clinics were either in wheelchairs or gurneys,” he says. “We don’t see that anymore, and the reason we don’t see that anymore is because of the improvements in treatment.”

A different innovation – the advent of talking motion pictures – put Dr. Engleman on the path to medicine, ending his brief career as leader of the house orchestra of a silent movie theater. Considered a musical prodigy at the age of 6, Dr. Engleman continues to play the violin and has regular chamber music sessions in his home.

“I think that music accompanies medicine beautifully,” he says. He arranged for his Legacy Challenge gift to create a scholarship for a P&S student with a strong musical background.

“I did appreciate very much the opportunity to get a medical education, and this is sort of a thank you,” he says. “Hopefully I can be of some help to at least one student at a time, particularly one who has an interest in music.”

He hopes one of these aspiring physicians and researchers will find a cure for the conditions he has spent a lifetime treating. “The hope – and I don’t think it’s far-fetched – is that we will have cures for at least some of the rheumatic diseases.”
Keeping P&S Special

June Wu’96, assistant professor of surgery at P&S, remembers the financial burden some of her classmates faced after graduation. “You don’t want to discourage people from going into medicine, or to only go into certain specialties because they reimburse better,” says Dr. Wu. She liked the idea of contributing to a program that will keep P&S accessible to talented students and give them freedom to pursue their interests.

“If you love what you do,” she says, “you will become a better doctor and a better scientist.”

After fellowships in craniofacial surgery and vascular anomalies at Children’s Hospital of Boston, Dr. Wu returned to P&S as an assistant professor in the Department of Surgery, where she specializes in pediatric plastic surgery.

“I like plastic surgery because there is an element of artistry to it,” she says. Dr. Wu, a pianist who was a founding member of the Musicians’ Guild, formed during the 1992-93 academic year, cites the availability of diverse extracurricular experiences at Columbia for helping her to become a better physician.

“When you have many dimensions to you, it makes you a better doctor,” she says. “I think this is what makes P&S students so special, that they can relate to patients on a personal level as well as a professional level.”

A Surprise Gift Honors Another Contributor

Maureen Cafferty’79 wasn’t sure what to think last October when her husband stood up to speak at the Legacy Dinner, which honors donors and introduces them to students who benefit from their gifts.

Dr. Cafferty and her husband, Don McAllister Jr., a retired business publisher, attended a class dinner earlier in the year at which Dr. Vagelos spoke of the Legacy Challenge. She planned on making a legacy gift to P&S. She did not realize, however, as her husband explained to the guests, that “the enthusiasm and salesmanship of Dr. Vagelos … persuaded me on the spot to supplement Maureen’s gift to fund a partial scholarship in her honor.”

“I was so surprised and happy,” she says of her husband’s announcement. “He’s just been so impressed with P&S that he decided to do this, unbeknownst to me, and I was so appreciative of it. I love P&S and all it’s done for me.”

Dr. Cafferty is chair of her class and has been an active P&S alumnus for many years. A neurologist at St. Luke’s-Roosevelt Hospital since 1985, she is assistant clinical professor of neurology at P&S and mother of triplet teenagers.

When asked about her time at P&S, Dr. Cafferty speaks with great reverence for her instructors, notably Dr. Linda Lewis in neurology and Vincent Butler’54 in immunology, her advisers; Abbie Knowlton’42, Jane Morse’55, and, “of course, Dr. Glenda Garvey’69. None of us can forget her.”

“Being exposed to teachers like that made the experience at P&S just tremendous,” she says.

She hopes her gift, and her husband’s gift, will make it possible for others to experience wonderful role models and teachers. “That’s what I hope – that students who might not otherwise have the means to go to P&S get that opportunity.”
Slots: Praying to the God of Chance  
David Forrest’64  
Delphinium/HarperCollins/OpenRoadMedia, 2012

Dr. Forrest likens spending time feeding money into slot machines to a form of meditative prayer, a $300 billion a year religious experience the gaming industry encourages without fully understanding the interface of mind and brain. Respectful of slots players and acknowledging the machines are entertaining to most players, the author uses both humor and a sense of awe to describe how slots emporia have been transformed from unimpressive venues to soaring cathedral-like structures.

Dr. Forrest, a psychiatrist who has written on subjects ranging from psychoanalytic anthropology to machine intelligence, guides the reader through the hypnotic world of casino slots by drawing upon neuropsychiatric, sociological, and cultural insights.

Death Benefit  
Robin Cook’66  
Putnam Adult, 2011

P&S student Pia Grazdani is back in Dr. Cook’s latest medical thriller. The student thinks she has found the work of a lifetime when she becomes the lab assistant for a Columbia geneticist working on using stem cells to grow much-needed organs for transplants. But tragedy strikes in the lab, launching an investigation that reveals an attempt to manipulate private insurance information to allow investors to benefit from the deaths of others. Dr. Cook has successfully combined medical fact with fantasy to produce nearly 30 international bestsellers since his breakthrough novel, “Coma.” His other thrillers include “Outbreak” (1987), “Terminal” (1993), “Contagion” (1996), “Chromosome 6” (1997), and “Foreign Body” (2008).

The Alzheimer’s Family: Helping Caregivers Cope  
Robert B. Santulli’73  
W.W. Norton, 2011

Although the patient is rightfully the focus of treatment in Alzheimer’s disease, the illness is equally debilitating to the family and other caregivers, writes Dr. Santulli, a clinician who has worked with Alzheimer’s disease patients and their families for more than 20 years. An estimated 15 million Americans provide unpaid care to family members and other loved ones with the disease. This handbook helps clinicians navigate the interpersonal issues at the heart of the disease, including how to respond compassionately to likely questions and concerns, how to clearly explain symptoms and risk factors, when to suggest consultation with a geriatric specialist, and how to discuss with sensitivity the issues of long-term treatment and care.

Critically Ill: A 5-Point Plan to Cure Healthcare Delivery  
Frederick Southwick’73  
No Limit Publishing, 2012

Effective healthcare systems need to have key processes in place to reduce errors and improve the quality of patient care, writes Dr. Southwick. He taught at Harvard and Penn before becoming chief of infectious diseases and vice chair of medicine at the University of Florida. When a family member nearly died while hospitalized, Dr. Southwick began to adopt a system to improve frontline care and prevention of hospital errors. “Unless every caregiver and every administrator develops five key skill sets, we will never be able to cure our critically ill health centers. No single person can transform how we care for patients. Everyone needs to pitch in.”
One for the Road: Drunk Driving Since 1900
Barron H. Lerner’86
Johns Hopkins University Press, 2011

Efforts to eliminate drunk driving are as old as automobiles, but every movement to keep drinkers from driving has hit bumps in the road, Dr. Lerner writes. He describes the two strong perspectives voiced in the debate: those who argue vehemently against drunk driving and those who believe the problem is exaggerated and overregulated. While advocacy groups campaign passionately for education and legislation, many Americans remain unwilling to take stronger steps to address the problem, an attitude Dr. Lerner attributes to Americans’ love of drinking and love of driving, an inadequate public transportation system, the strength of the alcohol lobby, and the enduring backlash against Prohibition. Dr. Lerner examines why these opposing views exist while describing drunk driving in the context of American beliefs about alcoholism, driving, individualism, and civil liberties.

Wild Thing
Josh Bazell’06
Little, Brown, 2012

In the sequel to his debut novel, the bestseller “Beat the Reaper,” Dr. Bazell sends his protagonist, Dr. Pietro Brnwa, on the run from the Mob and into a new job protecting a sexy and self-destructive paleontologist. “Things are about to get wild,” says the book jacket. Read what reviewers have to say: “It’s so rare that you see a really brilliant writer who is committed, 100 percent, in every sentence, to giving you a good time. Bazell is, and he does.” — Time. “Insanely funny … The work of a crackpot genius.” — New York Times Book Review. “A rousing, fast-paced sequel … When Brnwa isn’t lusting after the paleontologist, he’s a profanely trenchant social observer.” — Washington Post.

Six Rivers
Jenna Le’10
New York Quarterly Books, 2011

Dr. Le’s debut book of poetry has received praise from many quarters: acclaimed poet David Watts, M.D., called it “an intelligent voice…sometimes poignant, always intriguing.” The collection explores a variety of topics, both medical and non-medical, including C-sections, hysterectomies, tapeworms, immigration, the aftermath of war, the role of Apollo as the god of medicine in Greek mythology, and interpersonal relationships, both humorous and tragic. As a P&S student, Dr. Le was co-editor-in-chief of the CUMC literary magazine, Reflexions.

The Netter Collection of Medical Illustrations - Urinary System: Volume 5, 2nd ed.
Christopher R. Kelly’11 and Jaime Landman’93
Saunders, 2012

Dr. Kelly worked on this book – the second edition of Frank Netter’s world-famous urinary system atlas – from his fourth year at P&S through his intern year at NewYork-Presbyterian/ Columbia. The book is part of Netter’s “green book” series that depicts the anatomy and pathology of every organ system. “All physicians and medical students are familiar with the work of Frank Netter, since his atlases are widely used in basic anatomy classes,” says Dr. Kelly. Most of the senior editors are Columbia faculty, including Jai Radhakrishnan (nephrology), Leal Herlitz (pathology), and Jeffrey Newhouse (radiology). Dr. Landman (a 1993 P&S graduate) was a P&S faculty member before becoming chair of urology at the University of California, Irvine, last year.


Benvenuto G. Pernis, M.D., professor emeritus of microbiology and medicine, died Oct. 25, 2011.

Elaine Ron, Ph.D., adjunct professor of radiation oncology, died Nov. 20, 2010.

Peter Wright, M.D., assistant clinical professor of radiology at Bassett Healthcare, died Nov. 11, 2011.


ALUMNI 1937

Helen T. Dexter, a retired urologist, died Jan. 5, 2012. With his early mentor, Dr. Reed Nesbit, under whom Dr. Glickman pursued a residency in urology at the University of Michigan, Dr. Nesbit pursued the procedure. Returning to New York, Dr. Glickman joined the faculty of Mount Sinai Hospital, where he practiced for more than three decades. Preceded in death by his first wife, Ruth, Dr. Glickman is survived by his second wife, Annette, a son, and four grandchildren.

1941

Stanley I. Glickman, a retired urologist, died Sept. 9, 2011, at age 103. Dr. Glickman was an archaeologist in Alaska before pursuing medical studies, one of four women in her class. Bucking social prejudice against women physicians, Dr. Glickman pursued a successful private dermatology practice for many years in Clearwater, Fla., where she maintained affiliations with Morton Plant Hospital, where she also served for a time as chief of staff, and at the VA Hospital. Dr. Glickman taught on the faculty in the Department of Dermatology at the University of Cincinnati College of Medicine, where she trained. She served as a vice president of the Florida Dermatological Society and secretary-treasurer of the Southeastern Dermatological Association. Among her many passions outside of medicine were orchids, bromeliads, which she grew, and local politics, in which she took an active role. In 1979 she ran successfully for a seat on the Belleair, Fla., City Commission, helping to block rampant real estate development. Vigorous till late in her life, she swam for 45 minutes every day in the Gulf of Mexico until age 90. Preceded in death by her husband, Dr. Morris Glickman, a professor of bacteriology, and a daughter, she is survived by two daughters, a son, and four grandchildren.

1943M

Frederic P. Moore II, a retired pediatrician, died Oct. 24, 2011, at age 93. Dr. Moore served with the U.S. Army Medical Corps in the Pacific Theater during World War II, rising to the rank of major. Returning to civilian life, he pursued a private pediatric practice for more than four and a half decades in Richmond, Va. Noted for his thorough manner and caring ways, as one former patient, now grown up, noted, “He talked to you and your mother. He took time for the exam.” Dr. Moore taught on the clinical faculty in the Department of Pediatrics at the Medical College of Virginia and served as chairman of the advisory board of the Salvation Army Evangeline Booth Home and Hospital in Highland Park. An avid boater in his free time, he was a former commander on the Richmond Power Squadron and a chairman of the National Power Squadron Education Committee, for which he taught celestial navigation. He is survived by his wife, Jane, a daughter, two sons, four grandchildren, and two great-grandchildren.

1943D

Robert P. Allen, a retired pediatric radiologist, died Oct. 1, 2010. Dr. Allen had in the course of his career been affiliated with Columbia and with Children’s Hospital in Denver. He was a past president of the Society for Pediatric Radiology. He is survived by a daughter.

1944

F. Henry (Bunky) Ellis Jr., a retired general and thoracic surgeon affiliated with the Mayo Clinic and
former faculty member at the Mayo Foundation Graduate School at the University of Minnesota, died Sept. 25, 2011. He was 91. Dr. Ellis, who also earned a Ph.D. degree, served as a lieutenant in the U.S. Navy during World War II. At the Mayo Clinic he served as chief of the thoracic surgery section and helped develop the field of cardiovascular surgery. He was best known for his surgical interventions for esophageal disease. Dr. Ellis later moved to Boston, where he became chair of thoracic and cardiovascular surgery at the Lahey Clinic. A member of the clinical faculty in the Department of Surgery at Harvard Medical School, he also served as chief of thoracic and cardiovascular surgery at New England Deaconess Hospital. Among other honors in the course of his career he received the Billings Gold Medal of the American Medical Association and the Mayo Clinic Distinguished Alumni Award. He was a member of the teaching faculty at Albany Medical College.

1945 Herbert Sandick, a retired orthopedic surgeon, died Aug. 7, 2011. Dr. Sandick served as an Army medical officer, supervising recruitment at Whitehall Street in New York from 1946 to 1948. Upon his return to civilian life, he completed general surgery and orthopedics residencies at Mount Sinai Hospital. He pursued a private orthopedic practice in Pittsfield, Mass., for more than three decades, until his retirement in 1985. He served for many years as a member of the teaching faculty at Albany Medical College. He was the first to operate on leg-lengthening and lumbar spinal stenosis at Pittsfield General Hospital. He was also an innovator in the use of bone fragment plasters in the treatment of lower leg fractures. Following his retirement, Dr. Sandick collaborated with Victor Braden to produce a video on tennis injuries. He also decided to do “at least once everything I hadn’t done before,” attending the Berkshire Institute for Lifelong Learning and making the reading of Shakespeare a regular part of his life. Preceded in death by his first wife, Helen, he is survived by his second wife, Betty, a daughter, two sons, eight grandchildren, and four great-grandchildren.

1951 John A. Ordway, a retired psychiatrist, died Nov. 12, 2011. Before entering medical school Dr. Ordway enlisted in the U.S. Navy and served as a cryptanalyst in the Pacific Theater during World War II. After becoming certified in psychoanalysis at the Chicago Institute for Psychoanalysis, he pursued private practice. He was a founding director of the Municipal Court Psychiatric Clinic and served as director of mental health and assistant high commissioner for the City of Cincinnati. He later moved to Bangor, Maine, where he founded the Psychiatric Unit at Eastern Maine Medical Center. He is survived by his wife, Janet’51, four daughters, a son, and six grandchildren.

1954 Doris J. (Stewart) Pennoyer, a retired internist, died Sept. 4, 2011. Specializing in endocrinology, Dr. Pennoyer pursued a private medical practice in Portland, Maine. She also served as employee health physician for Maine Medical Center and student health physician for the University of Southern Maine School of Nursing. Keenly aware of a dearth of quality health care in rural Maine, she helped create the University of Maine Family Nurse Associate Project. She later served as associate medical director and second vice president for Union Mutual Life Insurance Company. At age 52 she pursued a fellowship in allergy and immunology at Brigham and Women’s Hospital/Harvard Medi-
in memoriam

William C. Pennoyer ’54, in his 46th year of study at Harvard and completed his undergraduate work. After the war he received a Purple Heart, the Bronze Star, and the Infantry Badge. He was awarded the Distinguished Service Medal for heroism, and the Infantry Badge. After the war he returned to New Jersey, where he joined the clinical faculty in the Department of Pathology at Robert Wood Johnson Medical School and became a member of the medical staff at Somerset Medical Center, serving as chairman of the Hospital Ethics Committee. In his free time he loved to hike the Appalachian Trail and went on long bike trips with his wife, Marion, who died of breast cancer in 2007. He is survived by a daughter, two sons, and four grandchildren.

James L. Mason, a cardiologist who implanted the first pacemaker in St. Petersburg, Fla., and later served on the city council there, died Sept. 6, 2011. He was 81. Dr. Mason served as a Navy flight surgeon. He was a founder of the Heart and Vascular Institute, pursued a private practice, and directed the Coronary Care Unit at Bayfront Medical Center. He also helped to promote and expand the use of heart catheterization instruments at All Children’s Hospital. He is survived by his second wife, Debra, three sons, and four grandchildren.

1957
Stephen V. Chandler, a retired pathologist, died of leukemia Feb. 8, 2011. Dr. Chandler served from 1962 to 1964 in the U.S. Army as chief of pathology at Fort Sill in Okinawa. Following his discharge he returned to New Jersey, where he joined the clinical faculty in the Department of Pathology at Robert Wood Johnson Medical School and became a member of the medical staff at Somerset Medical Center, serving as chairman of the Hospital Ethics Committee. In his free time he loved to hike the Appalachian Trail and went on long bike trips with his wife, Marion, who died of breast cancer in 2007. He is survived by a daughter, two sons, and four grandchildren.

1958
William G. Atwood, a retired dermatologist, died Aug. 6, 2011. He had been suffering from Alzheimer’s disease. Dr. Atwood pursued a private practice and served on the staffs of Presbyterian and Lenox Hill hospitals in New York. Passionate about music, he wrote three books about Frederic Chopin. Dr. Atwood is survived by his longtime partner, David Balthrop.

John S. Britten, a former member of the physiology faculty at P&S, died Feb. 9, 2011. He is survived by his wife, Marianne.

1962
Howard V. Dubin, a retired dermatologist, died Oct. 16, 2011, from complications of Parkinson’s disease and chronic lymphocytic leukemia. Dr. Dubin served in the U.S. Army in Vietnam. A former clinical professor in the Department of Dermatology at the University of Michigan, he pursued a private dermatology practice in Ann Arbor for more than four decades. He was a past president of the Michigan Dermatological Society and the Dermatology Foundation, which awarded him its Distinguished Service Medallion. He is survived by his wife, Patricia, two daughters, three sons, 10 grandchildren, and a beloved spaniel named Charley.

1963
Barbara Jo (Serber) Chaffee, a retired pathologist, died Dec. 20, 2011. She also held a Ph.D. degree in anatomy from Columbia University. She served in the U.S. Army Medical Corps, attaining the rank of lieutenant colonel. After moving to Lewiston, Maine, Dr. Chaffee served for a number of years as a staff pathologist at St. Mary’s Regional Medical Center. In her free time, she was an accomplished downhill skier and a skilled quilter. Survivors include her husband, Bruce A. Chaffee, M.D., two daughters, two step-sons, four grandchildren, and five step-grandchildren.
1965  
Robert F. Schreiber, a practicing psychiatrist trained in psychoanalysis, died of cardiac arrest Oct. 11, 2011. He served in the U.S. Army stationed in Germany. Trained at the San Francisco Psychoanalytic Institute, Dr. Schreiber ran a private practice in child, adolescent, and adult psychiatry for more than three decades in Berkeley, Calif. He was affiliated with the Lincoln Child Center, a treatment center for severely emotionally disturbed children in Oakland, and Redwood Place, a residential treatment center for people with developmental disability in Castro Valley. Dr. Schreiber was a past president of the Regional Organization of Child and Adolescent Psychiatry and a delegate to the American Association of Child and Adolescent Psychiatry. His passions included hiking, fly fishing, canoeing, bird watching, golf, woodcarving, furniture making, and travel. He is survived by his wife, Mary Lu, two daughters, two sons, and four grandchildren.

1966  
Gerald L. Hamilton, a retired obstetrician & gynecologist, died Aug. 21, 2011. Dr. Hamilton served in the U.S. Air Force. A former member of the adjunct faculty in the Department of Obstetrics & Gynecology at Mary Hitchcock Medical Center in Concord, N.H., he pursued a private practice there for many years. A longtime staff member at Concord Hospital, he was chief of obstetrics & gynecology from 1990 to 1993. Outside of medicine his interests included coins, fossils, skulls, ivory carvings, miniatures, and comic books. With his wife, Christine F. Kuhlman, who survives him, he established New Hampshire’s first independent birthing center outside a hospital. He is also survived by a son.

John Zucker, a practicing allergist, died of a heart attack Dec. 27, 2011. He was 70. Dr. Zucker was well known in the Washington, D.C., metropolitan area for reporting the daily pollen count on radio and TV. He served in the U.S. Public Health Service based at the Bureau of Radiological Health in Washington, D.C., where he pursued a private allergy practice for more than three decades. A gourmet in his spare time, Dr. Zucker was a past president of the D.C. chapter of the International Wine and Food Society. He is survived by his wife, writer Kitty Kelley, a daughter, a son, and four grandchildren.

1967  
Joseph M. Ballo, a pathologist, died Jan. 5, 2012. He was 71. Dr. Ballo served in the U.S. Army in Vietnam, earning a Bronze Star, and served as chief of the Missile Trauma Pathology Branch at the Armed Forces Institute of Pathology. Returning to civilian life, Dr. Ballo served for many years as a staff pathologist at Loudoun Memorial Hospital in Leesburg, Va. In 1989 he opened a private forensic pathology consulting practice. He was a talented pianist and a gourmet cook, among other avocations. Survivors include his former wife, Amy Tankoos, M.D., two daughters, and a granddaughter.

Kenneth K. Nakano, a neurologist formerly affiliated with Straub Clinic in Kailua, Hawaii, died of stomach cancer Nov. 12, 2011. He was the author of a widely used textbook, “Neurology of Musculoskeletal and Rheumatic Disorders and Current Neurology.” A loyal alumnus and supporter of P&S, Dr. Nakano is survived by his former wife, Juanita, three daughters, and a son.

1968  
David A. Newsome, a senior vice president of research and development for Adeona Pharmaceuticals and former chief scientific officer of Pipex Pharmaceuticals, died Feb. 24, 2011. A former head of the Retinal Disease Section of the National Eye Institute, Dr. Newsome was professor of ophthalmology at Louisiana State University in Baton Rouge. He had previously been a member of the Department of Ophthalmology faculty at Johns Hopkins and director of the Wynn Center for the Study of Retinal Degeneration. He invented and developed ZincMonocystein and was the first to prove the benefits of oral high dose zinc therapy in age-related macular degeneration. Also a committed philanthropist, Dr. Newsome founded Eye Care Haiti, an organization that established operating suites and training programs in Port au Prince and rural eye clinics, and the Meals on Wheels New Orleans Fund. He is survived by two daughters.

1970  
Arthur S. Brown, a retired neurologist, died May 20, 2011. He served in the U.S. Army and worked in advertising before enrolling in medical school. Dr. Brown was an accomplished painter and art collector in his spare time. He is survived by his partner, Ellen Swain.

Paul Chang, a member of the Department of Medicine faculty at the University of Maryland, died Oct. 26, 2011, of complications from advanced thymic carcinoma. He often advised and allayed the fears of fellow cancer patients while undergoing treatment. He served with the Public Health Service as a researcher in the Cancer Research Center of the NIH. An oncologist in private practice for close to three decades, he was affiliated with St. Joseph Medical Center in Towson, Md., and Good Samaritan in Baltimore and had been affiliated with the Baltimore Cancer Research Center. Survivors include his wife, Vivia, two sons, and two grandchildren.

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As the holiday spirit arrived on the Columbia University Medical Center campus last December, the student-run Musicians’ Guild of the P&S Club presented its first Messiah Sing on the evening of Dec. 12, 2011. Throughout the United States (and, indeed, worldwide), “Messiah Sing” events are a holiday staple and typically involve the performance of Part I of George Frideric Handel’s well-known oratorio, “Messiah” (1741), with its ever-popular “Hallelujah” chorus sung as the finale.

Unlike standard classical music concerts, Messiah Sing events encourage audiences to participate and sing as the chorus, creating an opportunity for individuals of all musical backgrounds to experience one of the greatest masterpieces of the classical canon.

The idea to organize a Messiah Sing at CUMC was first suggested by Jackie Havens’14, who proposed the ambitious idea in September 2011 to Musicians’ Guild co-directors Joshua Marr’14 and Andrew Duren’14 and to conductor Hanjay Wang’15. As the team developed the framework of the 90-minute special event, 14 student musicians (representing Columbia medical, dental, and graduate schools) assembled into the Messiah orchestra. Although Handel’s original instrumentation likely involved only oboes, trumpets, harpsichord, and a complete contingent of strings, our orchestra had a string section plus other instruments (flute, clarinet, and even soprano saxophone) that added an exotic and fresh color to the timeless music.

On the night of the performance, Bard Hall’s student lounge was filled with an atmosphere of festive excitement, as Broadway vocalists Michael Ayers’14 and Jennifer Russo’15 adapted beautifully to the ornamented, Baroque style of Handel’s tenor and alto solos, respectively. Joshua Marr, an experienced veteran of “The Messiah,” contributed his gloriously sonorous voice as the bass soloist, and his wife, Meredith, performed the notably difficult soprano solos with flawless precision. The orchestra, too, delivered an evening of elegant music under the baton of conductor Hanjay Wang.

Perhaps most impressive, however, was the audience that composed the chorus. In a survey of the attendees, one would not only find students from each of the schools on the CUMC campus, but also faculty and administrators, pre-medical applicants visiting Columbia for the first time, and other community members living in the area. When the individuals of this diverse chorus stood and lifted their voices, the effect in Bard Hall was truly magnificent, from the first word of “And the Glory of the Lord” to the final chord of the famous “Hallelujah.” The evening was filled with a warm and generous holiday spirit and conveyed the ongoing commitment to the arts by the students, faculty, alumni, and many friends in the CUMC family.

A Chorus of Hallelujahs
By Hanjay Wang’15

Bard Hall’s student lounge hosted the first Messiah Sing at P&S
PHOTOGRAPHS BY DAVID XU’15
I grew up on the back of a horse in rural Milton, Massachusetts, and for a while my family despaired of my ever doing anything except ride and ski,” says Virginia Biddle, MD’65. “I was kicked out of a whole slew of schools and lasted only two years in nursing school before being expelled for breaking minor rules, like getting in after curfew.” One school told her parents she was not college material, but she graduated junior college with highest scholastic honors!

Virginia became a registered medical technologist and nine years after the atomic bomb was dropped in Japan, she went to Nagasaki as medical director of a research lab for the Atomic Bomb Casualty Commission. That led her to realize she needed more education, either in laboratory science or, perhaps, medicine.

She was accepted into the College of Physicians and Surgeons and graduated in 1965. Two years later, she opened her own practice in internal medicine on Cape Cod.

Virginia’s adventurous nature led her to earn her Coast Guard captain’s license for up to 60-foot auxiliary sailboats and, paired with a lifelong love of wooden boats, resulted in a WoodenBoat magazine cover story about “Saga” in 1982; she authored the cover story and articles in other issues.

Virginia has always been a supporter of P&S and decided to fund a Charitable Remainder Trust as a way of repaying her gratitude to P&S for putting her on the path to a career in medicine.

The Charitable Remainder Trust, which can be funded with a minimum of $100,000, will provide income and an initial tax benefit to Virginia Biddle. Upon her death the remaining assets in the Trust will be added to her Class of 1965 50th Anniversary Scholarship Fund or may fund an endowed scholarship in her name. She funded the Charitable Remainder Trust in 2011, making the contribution eligible for the Legacy Challenge match that added to Virginia’s Class fund.

Virginia Biddle, who took an unusual path to medicine, found a way to support the school that discovered the college material in her and set her up for a rewarding career.
A hobby that I followed for some time was the collecting and studying of the hands of surgeons and physicians. At first I had the idea that there would be a definite difference in the shape and make-up of the hands of these two groups of practitioners. But as I collected models of some eight hands of well-known surgeons whom I had known in the American Surgical Association, and some thirty internists’ hands, I realized that there was no difference. It soon became evident that, as in all walks of life, character was often expressed in the hand. Some interesting examples of this were shown in the hands of doctors with strong or striking personalities. Harvey Cushing, who was always positive in his opinions and well aware of his importance, sent me his hand, cast in bronze, with all his fingers in full extension and with all the tendons on the back of his hand tense and showing. Rudolph Matas of New Orleans, a most modest and cultured gentleman, always known for his desire to give his friends and associates full credit for everything that they had done (which resulted in his reading papers of interminable length) sent me the cast of his hand that suggested more than anything else a frightened bird seeking its nest. The men of artistic temperament, whether surgeons or physicians, had very much the same type of hands, with slender fingers longer than average. Most of the surgeons, because of their use of surgical instruments over long periods of time, had thicker and stronger palms and inter-osseous muscles than the internists. This was to be expected. This collection of hands stood on the top of my bookshelves in my office at the Presbyterian for several years and, when I retired, I left the collection to the surgical department.