WANT TO SEE THE FUTURE?
LOOK TO PITTSBURGH.
PMC chief medical and scientific officer and professor of medicine Steven D. Shapiro, MD, was in Washington, D.C., to take part in a conference on the future of health care when one of the first speakers said, “Want to see the future? Look to Pittsburgh.” Shapiro jokingly looked around the room and wondered, “Well, what am I doing here, then?” He knew that a prime reason the speaker pointed to Pittsburgh was the combination of payer and provider in UPMC. With an insurance plan and the region’s top hospital system, UPMC has great incentive to address the primary objectives in American health care today: improved systems of health care delivery, reduced cost, and better outcomes—all of which happen to be in the best interests of the patient and the nation.

When Shapiro told this story, he was speaking to the future of health care in America, in a sense. The School of Medicine’s Class of 2013 was seated in the tiered rows of Lecture Room 6 of Scaife Hall on a late winter morning for a special, half-day course called, “Practicing Medicine—What Awaits You?” After four years of gaining clinical skills and core biomedical knowledge, these physicians-to-be were ready to think about where the rubber meets the road. The questions they would explore that day would challenge them to think systematically about where the health care system breaks down and to be creative to make it work for their patients. There was a sense of urgency and purpose in the room that day; in roughly six weeks’ time, each student would—with some combination of eagerness and trepidation—tear open an envelope containing a residency match letter to learn where he or she would spend the next few years of medical training.
Sitting and swinging his legs from the lip of the stage was one of the course directors—Loren Roth, MD, MPH, Distinguished Service Professor of Psychiatry and associate senior vice chancellor for clinical policy and planning, health sciences. He was clearly enjoying the lively give-and-take between Shapiro and this next crop of young physicians. As Roth pointed out the relevant facts of Shapiro’s background—a practicing pulmonologist in a health system’s leadership position—he explained to the students exactly why they were present today: “If you have no interest in these matters, you will practice medicine under policies shaped by others.”

Students rotated through three roundtable discussion groups in the morning. Each included around a half-dozen students and was led by a practicing faculty clinician. Exploring case studies with some of their clinical mentors, students were drawn into the sorts of scenarios they would navigate as new MDs.

“This is the sort of nuts-and-bolts that not all med students get,” said one. “You can’t learn it in the first few years of med school, but it’s important for us to start thinking about it as we prepare for residency.”

In a discussion of cost control, Mark Roberts, MD, MPP, professor and chair of health policy and management, Graduate School of Public Health, and professor of medicine in the School of Medicine, asked the students how it can be that, in the United States, public health declines as costs escalate. “More specialists equals more referrals,” noted one student. “But is that always for the best?”

Roberts relayed a story about his patient who played on the Homestead Grays baseball team in the 1940s. “The guy knew Satchel Paige and Jackie Robinson! He got bronchitis when he was 99 years old, and an intern noted an elevated PSA [prostate specific antigen] level on his chart. Urology wanted to biopsy his prostate. I called them and said, ‘If you touch him, I will kill you.’” A lively discussion ensued exploring the benefits and risks of screening and the importance of understanding and respecting a patient’s wishes.
Down the hall, a cold rain tapped on the windows as Ateev Mehrotra, MD, MPH, MSc, associate professor of medicine, led an engaging discussion with seven med students. Mehrotra, a hospitalist and RAND Corporation health policy researcher (recently relocated to Harvard Medical School), shared details of a care and financing agreement between a health plan and a large primary care practice. The students explored how to improve health care delivery and patient compliance under the agreement. Would hiring a nutritionist and a communications director lead to healthier patients? Would it lead to savings through fewer hospitalizations and office visits?

“What would you do under this contract?” Mehrotra asked. “How are you going to stay in business?”

“It doesn’t seem fair. Physician pay is based on compliance,” a student said.

“Well, you’re not treating robots,” another replied. “If the outcome is poor, then you’re doing it wrong.”

Roth circulated through all of these sessions, offering context and war stories where he could and hauling two thick binders of course material under one arm. In one of the final sessions of the morning, Melissa McNeil, MD, MPH, professor of medicine and a perennial favorite of the students among their clinical instructors and mentors, offered some wisdom on the case of a 75-year-old man with hypertension, coronary artery disease, and congestive heart failure. Seven days after discharge, he was readmitted after neglecting his medications, eating bags of potato chips, and failing to monitor his fluid intake and weight.

“You have to get past, ‘The patient won’t comply,’” says McNeil. “Why did the patient do this? Did he know the cost in calories?” Then she raised related questions: “How do you bridge the hospital and home? What do you most want to monitor in a heart failure patient?”

“Weight,” ventured a student.

“Absolutely,” said McNeil. “What if the system paid for a scale in the home?”

As the morning sessions drew to a close before lunch, one student sat back from the table and said, “You know, the timing of this is just right. We still have some time in training because we’ll be residents for a few years. But this gives me a sense of the things I need to keep in mind and educate myself about.”
At the University of Pittsburgh, new medical students are still settling in when they first interact with real patients — an experience they frequently describe as moving, profound, and inspiring. It happens during the “Introduction to Being a Physician” course, which is also a powerful reminder — even to experienced faculty clinicians — of what it is to be a physician.

The course focuses on the patient experience of living with chronic disease. It begins with brief, educational overviews of specific disorders, followed by doctor-patient interviews conducted in front of the class. Students then disperse into small groups, where they engage in conversations with patients who volunteer to discuss their experiences living with chronic disease.

 Patients with cystic fibrosis and HIV describe the lengths they go to in order to live normal lives, despite the obstacles they face. Another discusses how diabetes affects every aspect of her life. A mother holds her 15-month-old daughter and recalls what it’s like to have a doctor inform her that her newborn has Down syndrome.

Afterward, students report their surprise at how early in their medical training they are viewed as medical trainees who can be trusted with confidential and deeply personal information. They leave the course highly motivated and with a greater sense of purpose in becoming physicians.

The course is just one element of an important goal of the Pitt medical curriculum — an early introduction to the patient and the community. Other notable features include a scholarly research requirement, extensive opportunities to work with high-tech patient simulators, and regular encounters with standardized patients — actors specially trained to present realistic and consistent behavior, symptoms, and medical histories in simulated doctor-patient interactions.
Medical Education Awards
The Office of Medical Education (OMED) works to implement curricular refinements and innovations, as well as to provide instructional support to faculty and academic support to students. OMED also recognizes and rewards excellence in medical education. Awards given in 2012 included the Distinguished Service in Medical Education Award — a special recognition that, rather than being given annually, is given only as warranted. This award was presented to Kathleen D. Ryan, PhD, assistant dean for medical education and associate professor of cell biology. The award, the highest honor in medical education given by the School of Medicine, recognizes Ryan’s contributions over more than 10 years of service.

Other OMED awards given in 2012:

Kenneth E. Schuit Award, Recognizing the Dean’s Master Educators
Melissa A. McNeil, MD, MPH, Professor of Medicine
Christine Milcarek, PhD, Professor of Immunology

Sheldon Adler Award for Innovation in Medical Education
Larisa J. Geskin, MD, Associate Professor of Dermatology
Douglas W. Lienesch, MD, Clinical Assistant Professor of Medicine
Thomas A. Medsger, MD, Emeritus Professor of Medicine
Chester V. Oddis, MD, Professor of Medicine
Adam M. Yates, MD, Assistant Professor of Emergency Medicine

Donald S. Fraley Award for Medical Student Mentoring
Richard A. Steinman, MD, PhD, Associate Dean for the Medical Scientist Training Program, Associate Professor of Medicine and of Pharmacology and Chemical Biology

William I. Cohen Award for Excellence in Clinical Skills Instruction
Stephanie B. Dewar, MD, Associate Professor of Pediatrics
Margaret L. Watt-Morse, MD, Associate Professor of Obstetrics, Gynecology, and Reproductive Sciences

Innovation in Medical Education
Pitt Broadens the Inclusiveness of Training and Education in Cancer Research

In 2012, the Association of American Medical Colleges (AAMC) highlighted five exceptionally bright spots in biomedical research training and education in the nation. Winners of the AAMC Award for Innovations in Research Training and Education were recognized for advancing creative, collaborative partnerships that make an impact on institutional practices. Pitt’s award-winning program is the University of Pittsburgh Cancer Institute (UPCI)—Hampton University Education and Training Partnership, led by Richard Steinman, MD, PhD, associate professor of medicine and of pharmacology and chemical biology.

The program addresses the fact that, despite a greater burden of cancer in many minority communities, there is a paucity of minority biomedical and physician scientists actively involved in cancer research. Beginning in 2002, UPCI established a formal cross-institutional partnership to bolster faculty and student interactions with Hampton University, a historically black university in Virginia focused on didactic teaching.

The collaboration has met with significant success. Goals achieved include the development of a cooperative curriculum, building of faculty competencies in teaching undergraduate cancer biology and undertaking cancer-related projects, and building student skills to enable later success in graduate and professional school. High-level institutional support and cross-institutional advisory committees enhanced the partnership process.

Key components of the partnership involved the establishment of a molecular biology laboratory at Hampton and four undergraduate cancer biology courses jointly taught by Hampton and Pittsburgh faculty. A subset of the Hampton undergraduates enrolled in a multi-year longitudinal “Cancer Fellow” curriculum undertook research rotations at UPCI and accrued teaching responsibilities in the curriculum. Of the 18 selected students who participated, 17 entered graduate or professional school. (Steinman points out that this is 94 percent, versus 15 percent of peers taking biology who did not participate in the program.) Currently, 10 are in medical school, residency, or fellowship; among the others, one is in private practice, two are conducting public health research, another is completing her PhD, and one is in postdoctoral training.
In addition to curing what ails us, the nation’s physicians advance our understanding of both basic and clinical science. For those medical students captivated by the prospect of being involved in biomedical research and other academic endeavors, there are numerous ways to get carried away at Pitt. Upon completing their first year of medical school, more than 75 percent of students in the Class of 2015 engaged in various summer research programs. In addition, some students will take a year off at some point to earn a master’s degree in public health, biomedical ethics, or a related field; others will take a one-year leave of absence to conduct research through one of a handful of specialized programs available to Pitt med students.

**The Clinical Scientist Training Program**

Pitt’s Clinical Scientist Training Program (CSTP) offers a leg up for medical students who show an interest in and a talent for clinical research. Select students whose scholarly projects meet the NIH definition of clinical research are invited to delve deeper into their mentored scholarly projects during a fifth year of training. Interested students apply to the CSTP in January of the year they plan to commit to full-time research (typically between the third and fourth years of medical school). Selected students are appointed as research fellows for the research year, during which they receive a living stipend, research funds, travel funds, health insurance, and tuition toward the graduate certificate in clinical research. After successful completion of the fellowship year, they receive a CSTP scholarship toward the final year of medical school. By providing formal research training and partial tuition assistance, the CSTP seeks to increase the number of Pitt graduates who choose clinical research careers and contribute to the vital work of translating biomedical science into clinical care. Graduates from 2013 matched to the following residency programs:

- **Ryan Li, MD**
  University Hospitals of Case Western Reserve University, Orthopaedic Surgery

- **Benjamin Sprague, MD**
  UPMC Medical Education, Internal Medicine

- **Lisa Tseng, MD**
  Washington University in St. Louis, Anesthesiology

**EMBRACING SUPERLATIVES IN NONSTANDARD GRADUATE MEDICAL EDUCATION**

**“SUPER-FELLOWSHIPS”**

Like most academic medical centers, Pitt has a large infrastructure dedicated to the care and feeding of medical residents and fellows. At any one time, the graduate medical education (GME) office is responsible for hundreds of physicians training in residency programs that range from anesthesiology to urology and everything between. Fellowship training is available for further specialization in areas like cardiothoracic surgery, pulmonology, or hematology/oncology.

But an interesting thing has happened as medical advances have made ever-increasing specialization possible — even desirable. Training programs are in demand for scores of specialty areas not officially recognized by the Accreditation Council for Graduate Medical Education and the American Board of Medical Specialties. What’s a GME office to do?

At Pitt, the answer has been to make the nonstandard programs as organized and rigorous as the accredited programs. Frank Kroboth, MD, George H. Taber Professor of Medicine and assistant dean for graduate medical education, and colleagues described their approach in a 2011 *Academic Medicine* article. They have another article under review right now, detailing measurable outcomes such as scientific publications, manuscripts, presentations, abstracts, and posters. (“The fellows have been amazingly prolific in academic accomplishments,” says Kroboth.)

“We believe this approach makes a better fellowship program,” Kroboth continues. “Each program has four elements — dedicated faculty who do the teaching and supervision; an established, written curriculum; an evaluation system that is implemented; and documented feedback given on the basis of the evaluation. We believe that, when you implement these elements, you have a better outcome.”

Nonstandard programs (sometimes called “super-fellowships”) at Pitt number approximately 100 right now. Most include a research component. There’s a program in multi-organ transplantation. Anesthesiology offers one in acute pain and regional anesthesia. Ophthalmology offers one each in cornea, glaucoma, retina, and oculoplastic surgery.

“These programs represent an opportunity for physicians to create a niche for themselves, above and beyond what is usual in patient care,” says Kroboth.
The Physician-Scientist Training Program (PSTP) is a five-year program for exceptionally talented students who, in addition to the regular curriculum, undertake two summers and a dedicated year of laboratory-based research training, as well as enrichment courses, to prepare them for careers in academic medicine. Those selected for the program receive partial tuition assistance for the four years of medical school plus a stipend during the two research summers and the research year. The Class of 2013 included six graduating PSTP students, all of whom matched to top residency programs, including obstetrics/gynecology at Johns Hopkins Hospital, neurology at Weill Cornell Medical Center, neurological surgery at Stanford University, radiation oncology at Memorial Sloan-Kettering in New York, diagnostic radiology at the University of Texas Southwestern Medical Center, and medicine/pediatrics at the University of Minnesota. Collectively, these six graduates have published 32 papers (12 as first authors), received 10 national or international awards (best poster, best talk, or travel awards), and received four research grants.

Top Students Win Prestigious Fellowships

Three of Pitt’s PSTP students were awarded highly coveted research training fellowships through the Howard Hughes Medical Institute Medical Research Fellows Program. The students will be supported through a one-year leave of absence, during which they can dedicate themselves to research projects and associated research training.

The award-winning students and their projects:

**Michael Burrow**
Mechanisms of Corneal Stroma Remodeling by Stem Cells
MENTOR: James Funderburgh, PhD, Professor of Ophthalmology

**Bhavana Vangara**
The Role of MicroRNA-363 in Human Papillomavirus-Associated Head and Neck Squamous Cell Carcinoma
MENTOR: Saleem A. Khan, PhD, Professor of Microbiology and Molecular Genetics

**Erin Cummings**
Mitochondrial Dynamics in Parkinson’s Disease
MENTOR: Gary Silverman, MD, PhD, Twenty-Five Club Professor of Pediatrics; Chief, Division of Newborn Medicine

**Bhavana Vangara**
The Role of MicroRNA-363 in Human Papillomavirus-Associated Head and Neck Squamous Cell Carcinoma
MENTOR: Saleem A. Khan, PhD, Professor of Microbiology and Molecular Genetics

CO-MENTOR: Jennifer R. Grandis, MD, UPMC Professor of Head and Neck Surgical Research, Distinguished Professor of Otolaryngology
William Markle, MD, clinical associate professor of family medicine, didn’t set out to work in global health, but he has a decades-long habit of directing his efforts wherever he sees a profound need. In 2013, the modest, unassuming physician-educator was honored with the Drs. Anvar and Pari Velji Award for Teaching Excellence in Global Health from the Consortium of Universities for Global Health (CUGH) in recognition of his work with Pitt med students and residents.

Markle has made an impact on a great many lives, including both patients and medical professionals. He is a sought-after teacher and consultant on issues concerning health care to the underserved, and he is known for his ability to tell an engaging story from his own experiences in global health to illustrate almost any point.

In the 1970s, Markle helped start the Mannboro Medical Center in an underserved rural area of central Virginia, where he remained in solo family practice for 11 years. The center continues today as a Federally Qualified Health Center. He later became medical coordinator for the Indonesia branch of the Wycliffe Bible Translators, providing primary care, teaching, and performing community health work in Irian Jaya (now Papua), Indonesia. He received a diploma in tropical medicine and hygiene from Mahidol University, Thailand, in 1993 and a certificate in clinical tropical medicine and travelers’ health in 1997.

In 1994, Markle joined the University of Pittsburgh School of Medicine Department of Family Medicine as a student preceptor. He served as clerkship director for medical students and helped start the global health interest group and area of concentration. In 2002, he became program director of the family medicine residency at UPMC McKeesport and continues there as the senior associate program director. Seeing a large number of people unable to get care in the McKeesport area due to lack of insurance, Markle was able to help start the 9th Street Clinic, a free clinic serving uninsured patients. He continues to direct this clinic, and many students and residents have rotated there. His interest in global health has resulted in an ongoing project to improve health care in remote areas of Honduras. With Pitt students, residents, faculty, and community physicians, Markle has performed extensive global health work in Honduras, Haiti, and countries affected by the Indian Ocean tsunami of 2004. He is the senior editor of the influential textbook *Understanding Global Health.*
MED STUDENT RESEARCH

Where Every Day Is Scholars Day

Coming less than a week after a highly successful Match Day, Scholars Day for the Class of 2013 had a relaxed and festive air in the elegant confines of the University Club. Following an informal breakfast and a poster session featuring student research, med school dean Arthur S. Levine, MD, kicked off the program with a brief history of the Scholarly Project, which has been a requirement for every MD student since 2004.

“When I first floated the idea that every medical student would conduct a scholarly research project during the four years of medical school, I was told that nobody would apply to medical school here,” Levine said. “However, the admissions office assures me that it keeps getting harder to get admitted to Pitt.”

Although many graduates will go on to conduct clinical and basic research, Levine pointed out that it was not only for them that scholarly research was added to the curriculum, saying, “We were convinced it would make all of you better physicians.”

Rather than avoiding Pitt because of stringent scientific requirements, applicants have flocked here for the benefits of being exposed to — and immersed in — scientific research. Medical schools at Harvard and Columbia have followed suit, adding very similar research requirements to their curricula. A whopping 70 percent of Pitt grads matched to one of the nation’s top 25 hospital systems in 2013. Students report that they are questioned extensively about their scholarly research during residency interviews, and many feel that their confidence in discussing research gives them a leg up on their peers from other universities. In Levine’s words, “Residency directors understand the value of the rigor to which you have been exposed.”

As evidence, the five students honored with a Bert and Sally O’Malley Award for Outstanding Medical Student Research matched to the University of California, San Francisco; Johns Hopkins; Pittsburgh’s own UPMC; Case Western Reserve University; and Harvard’s Brigham and Women’s Hospital, respectively. The awards are named for a pair of Pitt alumni (Bert O’Malley earned his MD from Pitt in 1963 and was awarded the 2007 National Medal of Science for his pivotal work on steroid hormone receptors), and they recognize the most outstanding scholarly projects in basic and clinical research.

2013 O’Malley Award Winners

Colby Croft, MD
Evaluation of the Representation of Lesbian, Gay, Bisexual, and Transgender Health Issues in the University of Pittsburgh School of Medicine Curriculum

MENTOR
Melanie Gold, DO, Clinical Professor of Pediatrics

Jocelyn Fitzgerald, MD
The Role of Mast Cells and PAR-2 Receptors in the Cross-Sensitization of Pelvic Afferent Nerves

MENTOR
William de Groat, PhD, Distinguished Professor of Pharmacology and Chemical Biology

Kellie Middleton, MD
Effects of Playing Nintendo Wii on Student Performance on a Virtual Reality (VR) Laparoscopic Simulator

MENTOR
Giselle Hamad, MD, Associate Professor of Surgery

Thomas Phelps, MD
The Potential Therapeutic Efficacy of the Atypical Antipsychotic Arripiprazole after Experimental Traumatic Brain Injury

MENTOR
Anthony Kline, PhD, Associate Professor of Physical Medicine and Rehabilitation

Rachel Orler Reid, MD
Which Physicians Provide the Highest Quality Health Care?
An Analysis of the Quality of Care Delivered by Massachusetts Physicians

MENTOR
Ateev Mehrotra, MD, MPH, MSc, Associate Professor of Medicine
When it was time for Matthew Hedberg to select a combined MD/PhD program, it came down to his top two choices. One option was to stay at his undergraduate institution, the University of Utah, where he could continue in the lab of 2007 Nobel laureate Mario Capecchi, PhD. Hedberg had done a six-week stint in a lab in Capecchi’s department (genetics) as a teenager, then was invited to stay on through high school. Later, he was hired as an undergraduate researcher; and around the time he graduated with a BA in chemistry, he was a coauthor with Capecchi and two others on a 2009 Cancer Research paper describing a new way of modeling sarcomas in mice.

Like most applicants who receive acceptance letters from Pitt’s MSTP (Medical Scientist Training Program), Hedberg ultimately chose Pittsburgh over other opportunities. He arrived here in June 2010 for a nine-week research rotation before the start of medical school—one of the hallmarks of Pitt’s program.

“Applicants often say this is the most supportively structured program in terms of keeping track of student progress, providing academic and career advisors, and building both clinical and research skills concurrently,” says Richard Steinman, MD, PhD, associate dean for the medical scientist training program.

Hedberg concurs, saying, “Pitt has developed a progressive program with integrated classes. It’s a cohesive unit instead of separate programs for the MD and PhD.”

The National Institutes of Health supports 43 MSTP programs around the country. With 81 students, Pitt’s program enables a lively student experience, both social and scientific. (Many programs support only a handful of students at a time.) NIH saw fit to increase support of Pitt’s MSTP by 25 percent since 2010, which is quite an endorsement in fiscally lean times.

Steinman, who is also associate professor of medicine and of pharmacology and chemical biology, says that the integrated nature and supportive structure of the program are vital, intentional elements. Though students begin with two years of medical school, they complete summer research rotations before, during, and after those years. Even during the intense years of PhD research, there are 40-some weeks in which they spend a half-day in clinic, never forgetting that they are becoming clinicians. Then, as they begin the final two years of medical school, MSTP students are offered a special elective with a master clinician to facilitate their reentry into clinical training. Throughout, there is a rigorous system of safeguards, evaluation points, and reviews to keep each student on track.

Current students have racked up significant accomplishments of late. Amin Afrazi, who completed his PhD in 2012 and is now working on his MD, is a coauthor on a slew of scientific papers, including two in Proceedings of the National Academy of Sciences, exploring inflammation and the molecular mechanisms behind necrotizing enterocolitis (see page 55). In 2012, Pitt MSTP students were coauthors on 79 scientific publications and first authors on 41. Jason Sanders’s work on the epidemiology of aging has been particularly productive, leading to eight first-author papers in journals like Epidemiology Reviews, Academic Medicine, and Journal of Gerontology: Biological Sciences. At the 2012 MSTP retreat, he received the Dr. S. Hamilton Sutton MSTP Scholar Award, the program’s top research honor.

The MSTP retreat is an annual highlight that is scientifically challenging, inspiring, and just plain fun. The experience builds community because artificial barriers between students and mentors tend to break down as everyone talks science, sings karaoke, plays volleyball, and hikes the woods of Western Pennsylvania together. The 2012 retreat featured a special keynote speaker—none other than the Nobel-winner Mario Capecchi, who accepted an invitation from his former student researcher Hedberg and enthusiastically participated from beginning to end.

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When people think about medical school, they typically think about the MD program, which, at Pitt, has nearly 600 students. But many come to Pitt to earn a PhD or MS in one of many programs available to them. In addition to the 87 students in the combined MD/PhD program, there are more than 300 others pursuing a doctorate in programs like neuroscience, biomedical informatics, computational biology, molecular biophysics and structural biology, integrative molecular biology, and clinical and translational science. The biomedical informatics program is leading the way in online offerings, recently introducing a certificate program that can be completed entirely online.

In May 2013, the School of Medicine granted 51 PhD and 43 MS degrees. Recent graduates have fanned out and can currently be found serving as postdoctoral fellows at the National Institutes of Health, Fred Hutchinson Cancer Research Center, Emory, Yale, Harvard, Cincinnati Children’s Hospital Medical Center, Stanford, the Broad Institute, and many other academic institutions as well as in the biotech industry.

John Horn, PhD, professor of neurobiology and associate dean for graduate studies, directs the Interdisciplinary Biomedical Graduate Program, which features a core curriculum combined with specialized research and dissertation work in one of the following areas: molecular genetics and developmental biology, cell biology and molecular physiology, cellular and molecular pathology, immunology, molecular pharmacology, or molecular virology and microbiology.

“Every year, the program has become increasingly competitive,” says Horn. “Clearly, it’s now a national program, whereas that was not so obvious just 10 years ago.” Horn recently produced a map showing the home states of applicants to the interdisciplinary PhD program over two five-year periods. The first, ending in 2003, represents the period shortly after the founding of the program. Of 378 U.S. applicants during those years, 84 percent came from Pennsylvania and states that border it. Over the most recent five-year period, there were 1,275 U.S. applicants, with 55 percent coming from Pennsylvania and bordering states. Applications from the Pacific Coast states nearly quadrupled in that time; applicants from Minnesota and Wisconsin went from four to 54.

“The program continues to attract very accomplished students from around the country and the world,” says Horn.

Before coming to the School of Medicine, Zach Landis-Lewis earned his master’s degree in library and information science at Pitt. Now, as a PhD candidate in the biomedical informatics program, he is working with health care providers in HIV/AIDS clinics in Malawi, who use a national electronic medical record system. He is pursuing the research question, “What features of clinical performance feedback are most effective for improving health care provider performance?” Landis-Lewis is developing software that generates automated performance feedback to support clinical learning and implementation of national treatment guidelines.
Pitt Med & Tsinghua — getting to know you.
The second annual University of Pittsburgh and Tsinghua University Joint Symposium on Medical Sciences, which was held at the University of Pittsburgh in April 2013, was planned partly as a “getting to know you” event. After all, the first-of-its-kind collaboration between Pitt and Tsinghua is barely two years old. What’s more, the distance between Pittsburgh and Beijing is roughly 6,700 miles, so these partners don’t get together nearly as often as they’d like. The 2012 symposium had been hosted in Beijing by Tsinghua University, whose students were filled with questions about what life would be like in Pittsburgh. Since arriving in August 2012 to begin two years of intensive biomedical research training, 21 students have chosen scientific mentors, become part of laboratory teams, and delved into their own research projects to advance the work of their respective labs. The symposium was their first formal opportunity to demonstrate what they’ve accomplished for their peers and faculty members at Pitt. In addition to presenting their research during a lively student poster session, students were treated to scientific presentations by top faculty from both institutions. Session topics included current research in neuroscience; structural, computational, and systems biology; immunology; infectious diseases; epigenetics and cancer; reproductive and stem cell biology; and pharmacology and drug discovery.

Despite all the cutting-edge science on the agenda, the two-day symposium began with an exploration of what it feels like to experience nostalgia for those formative years of one’s life. Arthur S. Levine, MD, Pitt’s senior vice chancellor for the health sciences and Petersen Dean of Medicine, set the tone when he introduced his counterpart—Yigong Shi, PhD, dean of Tsinghua’s School of Life Sciences and executive vice dean of its School of Medicine. Levine described how Shi had declined to fly the last leg of his journey from Beijing to Pittsburgh. He deplaned in Chicago and, after visiting colleagues in Illinois, drove 500 miles to Pittsburgh by himself. It felt like coming home, said Shi, who first arrived in this country in 1990 to begin a PhD program in molecular biophysics at Johns Hopkins University School of Medicine and remained until 2008, when he gave up a prestigious endowed professorship at Princeton University to return to Tsinghua, his alma mater.

“Twenty-three years ago, I landed in Ames, Iowa, surrounded by cornfields, and drove 22 hours to Baltimore,” Shi recalled. “I’ll never forget the welcoming people of the Midwest or how fascinated I was by the landscape on that long drive.”

A large community at Pitt is working to give the Tsinghua students every opportunity for a similarly unforgettable experience. There’s evidence it’s working. Lijia Cui says that she has quickly fallen in love with the unfamiliar, hilly terrain of Pittsburgh, despite the fact that it exhausts her when she bicycles around the city. She was assigned to the lab of Elodie Ghedin, PhD, a MacArthur Fellow and associate professor of computational and systems biology. Cui was nervous at first about being in an American lab because she still has a lot to learn about conversational English. In Ghedin’s lab, however, she found herself on a team with Americans, Canadians, and an Indian, so the addition of a Chinese med student wasn’t unusual. “We are friends,” Cui says now.
Ghedin’s lab studies the genomics of infectious diseases. Working with her new colleagues, Cui developed an experiment using next-generation DNA sequencing to study the fungal microbiome in patients with both HIV and chronic obstructive pulmonary disease (COPD), which are commonly comorbid. Her studies yielded 19 fungal genera in these patients that did not show up in healthy controls. Only four of the 19 had previously been associated with HIV and COPD in the scientific literature, so Cui’s findings are novel. Next steps for Cui include further research to determine whether fungi are driving COPD symptoms in these patients and how.

Ghedin says that having Cui in the lab has been a boost to the team’s capabilities. Because Ghedin’s lab personnel are paid for by multiple grants, each has multiple areas of responsibility. But the Tsinghua students, paid for by the collaborative agreement between the partner universities and the Chinese government, are able to focus on one project at a time. “Because of limited resources, we weren’t even going to do this experiment,” says Ghedin. “But now she is finding really interesting stuff that is going to lead to further research.”

Another student, Luxi Sun, says that the Pitt-Tsinghua program is exactly what she hoped it would be. The daughter of two developmental biologists working at the Chinese Academy of Sciences, Sun arrived with a good sense of what she’s interested in. She was thrilled to find that Pitt has a strong and welcoming research program in DNA damage and repair mechanisms. The genome stability group, as it is called, includes multiple investigators from the medical school and the University of Pittsburgh Cancer Institute, including med school dean Levine. Working with mentor Li Lan, MD, assistant professor of microbiology and molecular genetics, Sun has become immersed in an exciting line of research in which Lan and others have devised a means of using the fluorescent protein KillerRed to induce damage in specific locations on the genome, then observe DNA repair proteins in action in live cells as they come to fix the damage. With the ability to target even something as small as the telomeres at the ends of chromosomes, the lab is observing and elucidating DNA damage response mechanisms that could have important implications for cancer and aging. Sun’s contributions to the lab’s work have already led to coauthorship on a forthcoming publication in the Journal of Cell Biology.

As for life in Pittsburgh, Sun is surprised and delighted by how easy it has been to explore American culture. She has taken in the Pittsburgh Symphony Orchestra performing Beethoven and the national tour of the musical Chicago, both just a short bus ride from campus. She finds Pittsburgh peaceful and says that the environment has allowed her to relax and commit completely to research.

As co-organizer of the symposium and a driving force behind the larger collaboration, Levine has always had high expectations of the Tsinghua students. But after spending much of two days with them at the symposium, he declared himself in awe of the students and their work. Both Levine and Shi expressed their hope that the Tsinghua students come to think of Pittsburgh as their alma mater and maintain this connection as they become independent investigators.

To further cement the bonds already formed between these two institutions, the final day of the symposium included a gift from one longtime friend and colleague to another, both of whom were pleased to be renewing collaborative efforts after many years. When he was a grad student at Johns Hopkins, Yigong Shi was mentored by Jeremy Berg, PhD, Pitt’s associate senior vice chancellor for science strategy and planning, health sciences, and director of the Institute for Personalized Medicine. Berg presented Shi with a 3-D model of a protein for which Shi had determined the crystal structure. Berg also announced that Shi had learned that very day that he was among 21 foreign associates elected to the U.S. National Academy of Sciences—a rare honor.

Shi raised the 3-D model that his mentor had given him and took the opportunity to speak to the gathered students and mentors about the personal connections they will make in their scientific careers. He pointed out that 23 years after they met at Johns Hopkins, Berg, who is scientific director of the Pitt-Tsinghua program, is still a valued mentor—but now for the Tsinghua students. “You are like the grandsons and granddaughters of Jeremy,” he said. With those words, the second Pitt-Tsinghua symposium came to a close. However, as with all good family get-togethers, the moment left many participants looking forward to the next reunion, which will be in Beijing in 2014.
For fourth-year medical students across the country, March 15th was all about the envelope. On this Match Day at the University of Pittsburgh School of Medicine, students tried to pay polite attention while Donald DeFranco, PhD, professor of pharmacology and chemical biology, and other beloved Pitt educators Georgia Duker, PhD, and Melissa McNeil, MD, MPH, did their best warm-up acts.

Students were (not so) surreptitiously looking for Joan Harvey, MD, associate dean for student affairs. She had the envelopes stuffed with letters telling students where the next phase of their careers as new residents would take them.

Photos were snapped and toddlers fidgeted. The action was punctuated by occasional screeches, baby gurgles, high-fives, and hugs. A promotional video for the Scope and Scalpel musical revue offered scrubs-clad members of the Class of 2013 working the Harlem Shake. By the time Dr. Harvey made her way to the podium, toddlers weren’t the only ones squirming.

“This year, there were over 40,000 participants in the Match,” she announced, giving a special welcome to loved ones watching Pitt’s live Internet stream. “Along with many placements at our most prestigious institution — UPMC — your programs include virtually all the top programs in the country.”

In fact, she continued, nearly two-thirds of the Class of 2013 matched to a top-tier institution. Leading in numbers of incoming Pitt med grads were Harvard, Johns Hopkins, Northwestern, UPMC, and the Universities of Washington, Chicago, Pennsylvania, and California, San Francisco.

Ready, Set, Match!
In all, 142 Pitt med students matched to programs in 24 states and performed with distinction in some very competitive specialties. "I’m pleased to report that your class matched two-for-two in ENT, three-for-three in plastic surgery, eight-out-of-eight in general surgery, seven-for-seven in orthopaedic surgery, 13-for-13 in emergency medicine, and four-out-of-four in pediatrics," Dr. Harvey declared to hoots and cheers.

Then Erin Nuzzo opened the first envelope. When she grabbed a microphone and reported her internal medicine residency match at Beth Israel Deaconess Medical Center, Scaife Hall’s largest auditorium erupted. The screaming — dancing, jumping, laughing, and LOTS of hugging — lasted for more than an hour.

The decibel level really shot up when MD/PhD student Meghan Wilson motored her wheelchair up to a microphone to announce she was off to the University of California, Irvine, for a residency in physical medicine and rehabilitation.

When all was said and done, Sergio Hickey, whose name was called last, collected a fat cash prize (traditionally, each student places $1 in the pot before learning his or her fate) and the joyful throng dispersed to continue individual celebrations.

"This is the happiest weekend of my life," chimed Peter Asante, who is heading to a pediatrics residency at the University of Washington, while classmate Julie Steinbrink accepted congratulations on her internal medicine match to the University of Michigan Hospitals.

Ben Sprague, who entered Pitt med with the Class of 2012 but added a research year through the Clinical Scientist Training Program, is pleased to be staying at UPMC for his internal medicine residency.

"Pittsburgh has a very excellent program for training clinician researchers," said Sprague, who is keen to conduct heart and lung disease-related investigations. "I would love to practice medicine in a teaching environment with residents and medical students." Sounds like he’s in the right place.