



A Job Well Done

Change is coming. It's the kind of change that the University of Pittsburgh School of Medicine hasn't endured in more than 20 years. That change will be new leadership as Arthur S. Levine, MD, announced on January 23, 2019, his plans to step down as senior vice chancellor for the health sciences and John and Gertrude Petersen Dean of the School of Medicine, effective the day his successor sets foot in Scaife Hall.

On the day of Levine's decision, the University community learned of the news in an email from Chancellor Patrick Gallagher. In part, he wrote: "It's difficult to overstate the remarkable impact that Art has had on our School of Medicine, on our health sciences programs, on UPMC, and on the University of Pittsburgh."

Gallagher's remarks are not mere hyperbole. Since succeeding Thomas Detre, MD, in 1998, Levine has—by essentially every metric and ranking—shepherded the School of Medicine to the stratosphere occupied by only the most elite medical schools.

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— DUANE ALEXANDER, FORMER DIRECTOR OF NICHD

“Now, you need to recruit a leader who really understands basic biology. We found that person in Art Levine.”

— MARK NORDENBERG, CHANCELLOR EMERITUS, UNIVERSITY OF PITTSBURGH

One of his many admirers is Arthur H. Rubenstein, MBBCh, who, from 2001 to 2011, was executive vice president of the University of Pennsylvania Health System and dean of the Perelman School of Medicine. “Art has been an exemplary and inspiring leader and has built one of the truly great medical centers in the world,” says Rubenstein, who today is professor of medicine in Penn’s Division of Endocrinology. “Art’s dedication to excellence has often shaped my own thinking.”

Levine’s dedication to excellence is evident in National Institutes of Health (NIH) funding, which is perhaps the most objective metric for assessing research-focused institutions. The University has been among the top 10 recipients since Levine arrived in 1998. In 2018 alone, the University received more than \$577 million in funding—nearly 80% of which went to the School of Medicine. By contrast, in 1998, Pitt received \$169 million.

But Pitt’s Levine era is about much more than statistics or grants or groundbreakings. It’s about people. Brilliant people. Creative people. People who dare to be great. Levine has recruited those people, brought them to Pitt, and—by their own accounts—given each of them the stage they needed for the benefit of biomedical research. Regionally. Nationally. Globally.

The big question is—what was it that enabled Pitt to lure Levine from NIH in 1998, where, by all accounts, he was a superstar?

It turns out Pitt was the right place at the right time for his professional trajectory.

Levine’s career in medicine and science began with an MD in 1964 from the Chicago Medical School of the Rosalind Franklin University of Medicine and Science, followed by an internship and residency in pediatrics and then a fellowship in hematology and biochemical genetics at the University of Minnesota Hospitals, which he completed in 1967.

Immediately afterward, amid the Vietnam War, he began his military service at NIH, as a public health service clinical associate in the National Cancer Institute.

“Art’s rise through the NIH ranks was nothing short of meteoric,” points out Peter Strick, PhD, Thomas Detre Professor of Neuroscience, Distinguished Professor and chair of neurobiology, professor of psychiatry, and scientific director of Pitt’s Brain Institute.

Strick’s assessment is hard to dispute. Within 15 years, Levine catapulted from clinical associate in 1967; to senior staff fellow in 1969; to senior investigator in 1970; to head of the institute’s Section on Infectious Disease, Pediatric Oncology Branch, in 1973; to branch chief in 1975; to scientific director of the National Institute of Child Health and Human Development (NICHD) in 1982.

Or, as Strick simply states: “Fifteen years after his arrival, he was running the place. Art is properly credited with transforming the intramural program of his institute from a moribund unit to one of the gems of the NIH system.”

Concurring is Juan Bonifacino, PhD, associate scientific director for NICHD’s Neurosciences and Cellular and Structural Biology Division: “Art Levine is a visionary leader who built the Intramural Program of NICHD into one of the best Intramural Programs—actually *the* best while he was here—of all 27 institutes that make up the NIH,” says Bonifacino, whom Levine brought on board at NIH in 1997. “I remember that at Art’s NIH retirement party, the director of NICHD, Duane Alexander, paraphrased Walter Gretzky, father of ice hockey great Wayne Gretzky, saying that Art ‘skated where the puck was going.’ I think this is an apt definition of Art’s ability to anticipate where the most important scientific discoveries would come from and to support the people who would make those discoveries possible.”

Levine remained NICHD’s scientific director until 1998, when he became Thomas Detre’s successor at the University of Pittsburgh.

Again, the question—why Pitt?

Levine explains that at the time he earned his medical degree, NIH was the only real option for aspiring physician-scientists. However, by the 1990s, with the proliferation of MD/PhD programs, physicians could become scientists without necessarily training at NIH. “I saw those programs, as well as the end of the doctors’ draft, as having a weakening effect on NIH,” he recalls. “I wanted to be at a place that, in fact, was going up rather than staying the same or going down.”

But, not to be repetitive, why Pitt? Even he had to ponder the answer to that question.

“I’d already looked at jobs in many top-tier universities and turned them down,” he admits. “I recalled turning down the Pitt search committee’s phone call about seven times until someone at NIH told me I was being very rude, and I should at least answer the phone.”

He did, and he says he quickly became intrigued. The school’s trajectory had already begun to rise under the helm of Detre, the retiring senior vice chancellor.

“Tom felt that the next step had to be to strengthen fundamental science,” says Levine, “and I believe I was chosen because I was a physician who could address clinical research and patient care, but at the same time I was a researcher who could begin to strengthen fundamental science.”

Pitt’s chancellor at the time, Mark Nordenberg, confirms Levine’s recollection: “When Tom was preparing to step down as senior vice chancellor for the health sciences, he said to me, ‘Mark, this psychiatrist has taken you as far as he can. Now, you need to recruit a leader who really understands basic biology.’ We found that person in Art Levine, who was the first choice of virtually everyone involved in the search process, even though the pool of candidates was strong. Because of the importance of the position, I did some personal reference-checking, including a call to a Nobel Laureate, who had led NIH. The key assessments of Art were consistent: He has an extraordinary mind, incredibly high standards, and seemingly endless energy.”

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— JEFFREY ROMOFF, PRESIDENT AND CEO, UPMC

Levine accepted the position and gave NIH nine-months’ notice. During that time, he read all 2,000 CVs of every School of Medicine faculty member, and he contemplated what he wanted to accomplish in his new position. He hit the ground running:

“My first week at Pitt, I met with the admissions committee for the medical school. I told them, having thought a lot about what I wanted to do here, that we were going to have a different kind of medical school. There were a lot of medical schools in the commonwealth. I didn’t think that we needed to produce more primary care physicians for Western Pennsylvania. We needed to address a dramatic decline in the number of physicians who also became scientists. We had to strengthen the scientific underpinnings of our education and, as the dean of the medical school, it was up to me to lead. So I told the admissions committee that we were going to recruit students who had the potential to be creative scientists as well as physicians.”

Levine says his proposed paradigm shift was met with less than unbridled enthusiasm: “The admissions committee stared at me and said, ‘If you force us to do that, then our applicant pool will dry up, and you better go back to NIH.’ But, at least for that week, I was the boss, and they had to do what I told them to do, for better or worse.”

Turns out, it was definitely for the better. In 1998, the School of Medicine received 4,720 applications for its first-year class of 148. In 2019, it received 7,013 applications for its first-year class of 148 students.

The medical school curriculum now includes basic sciences, patient/doctor relationships, a mandatory longitudinal research project, life-like simulation training (using whole-body simulators), small group (i.e., problem-based) learning, a fourth-year integrated life science program, standardized patient encounters (using trained actors to interact with students in a clinical setting), evidence-based medicine, addiction medicine and the opioid epidemic, and patient experiences (pairing each student with a patient throughout the course of the student’s education).



Levine meets monthly with students in an informal “Lunch with the Dean,” so he can learn what’s on their minds. He greets student Meghan Wilson (above), who didn’t let her quadriplegic disability end her dream of becoming a doctor. She graduated in 2013 with an MD and a PhD in neuroscience.

Levine, in reshaping the admissions standards and curriculum, was just getting started. He also set out to enhance the medical school’s partnership with UPMC, one of the nation’s most renowned and successful health systems.

“Dr. Levine had big shoes to fill succeeding Dr. Detre, who was an enduring presence,” remembers Jeffrey Romoff, UPMC’s longtime president and CEO, who worked closely with the late Detre, too.

“Clinical departments were already successful and had been significantly enhanced under Dr. Detre’s regime, but Dr. Levine’s focus was strongly on the basic sciences; and by upgrading the basic sciences, he was able to round out the excellence of the School of Medicine,” says Romoff. “He and I worked hand in glove from the beginning—his focus was academic, while mine at UPMC was clinical. The transition was seamless, and it’s worked out very well.”

Romoff believes Levine’s greatest strength is what he calls Levine’s “exquisite academic taste and his capacity to recruit people who are top rung. His recruits, both in research and for clinical department chairs, have been people with excellent academic credentials and judgment. You can’t be a great medical center without academic leadership, and Dr. Levine has extraordinary standards.”

Much recruitment was needed because, under Levine’s direction, multiple new School of Medicine departments were created—including Biomedical Informatics, Cardiothoracic Surgery, Computational and Systems Biology, Critical Care Medicine, Developmental Biology, Immunology, Plastic Surgery, Physical Medicine and Rehabilitation, Structural Biology, and Urology.

There were also new centers and institutes: Aging Institute, Center for Evolutionary Biology and Medicine, Center for Military Medicine Research, Center for Vaccine Research, Clinical and Translational Science Institute, Institute for Precision Medicine, Pittsburgh Institute for Neurodegenerative Diseases, University of Pittsburgh Brain Institute, University of Pittsburgh Drug Discovery Institute, and the Vascular Medicine Institute.

And there were new research and medical buildings that added to the synergy: Biomedical Science Tower 3, Bridge-side Point II, UPMC Children’s Hospital of Pittsburgh Rangos Research Center, and the UPMC Vision and Rehabilitation Tower, as well as additions and renovations to the Graduate School of Public Health, Magee -Womens Research Institute, and Salk Hall, and breaking ground for Scaife Hall’s revamped west wing.

Not unlike Romoff, Steven D. Shapiro, MD, marvels at how Levine filled all those buildings, centers, institutes, and departments with what Romoff called “top rung” professionals. Shapiro, UPMC’s executive vice president and chief medical and scientific officer, even witnessed the magic firsthand because he frequently joined Levine on recruiting efforts.

Shapiro, himself, had been recruited by Levine to become chair of the Department of Medicine in 2005. He recalls one instance, as he began his new role with UPMC in 2008, when they were recruiting John Reilly, MD, to become his successor.

"I'm proud of what we've been able to accomplish in teaching and training as well as in research. ...What really is important is our impact on the science of medicine and how we use that science to further promote health care."

— ARTHUR S. LEVINE, MD



The School of Medicine entered into an agreement with three world-renowned French research institutions in 2017, which focuses on collaborative research and education in the fields of medicine and biomedical sciences. Levine (far left) was among those signing the historic agreement.

Reilly had been affiliated with Brigham and Women's Hospital in Boston for more than two decades.

"Art, how long do you plan on doing this for?" asked Reilly, who clearly didn't want to make a move if Levine, who was 72 years old, had plans to retire in the near future.

"I come from a line of long-lived, short-statured Russians," replied Levine. "I don't have a fleck of calcium in my coronary arteries, and I have fire in my belly."

Reilly needed no more convincing. He came on board; and, ironically, after seven years at Pitt, he moved on before Levine. He is now vice chancellor for health affairs at the University of Colorado and dean of its medical school.

"It has been great fun working with Art," says Shapiro, adding, "it's not just the senior faculty who are important to him. When I first started as chair of medicine in 2005, I was still trying to figure out the names of my faculty. Art could give me a succinct summary of all of the research they did. When he says he wants to see your articles, he reads them."

Attesting to Levine's sincere mentoring interest is Barbara Barnes, MD, MS, associate vice chancellor for industry relations and continuing education, health sciences; and vice president for sponsored programs, research support, and continuing medical education, UPMC.

"I am most grateful for Dr. Levine's support and advocacy of my own career," she says. "In 1994, I was recruited to Pitt with a very unusual background for my role as assistant dean in the School of Medicine, having been a primary care physician and hospital administrator. Art, despite his strong interest in basic science, recognized how I could contribute to the core missions of the Schools of the Health Sciences and afforded me multiple opportunities to intellectually and personally grow and develop. Through his support, I have been able to take on so many different responsibilities, both internal and external to the University and UPMC, leading to an amazingly rich and rewarding career over the past 25 years."

Barnes is one of many to express her gratitude to Levine. With the announcement that he is stepping down, other colleagues—past and present—have conveyed heartfelt, appreciative accolades. For a sampling (or to submit an accolade), visit www.health.pitt.edu/accolades-job-well-done

Acknowledging all of the praise, Levine jokes that—while it's great fodder—no one should be writing his eulogy just yet. He makes clear that just because he is stepping down, it doesn't mean that—after celebrating his 83rd birthday on November 1—he'll be spending all his time with his wife, Linda, walking their Havanese doggie, Sasha, or going bike-riding or swimming (though he does enjoy the exercise!). Rather, he will spend chunks of his days hunkered down in a School of Medicine lab, building upon his research roots. Overall, he has already authored or coauthored more than 280 scientific publications during his career at NIH and Pitt.

As for future research, he says, "I want to become a quasi-neuroscientist. I want to do something about Alzheimer's; it's a horrible disease. It consumes 12% of our nation's health care economy. It's not a treatable disease. The latest clinical trials basically, in my view, are failures, like all of the other clinical trials. I don't think you can treat this disease once it's established. The only breakthrough in Alzheimer's was here in Pittsburgh—development of Pittsburgh Compound B that allows us to visualize amyloid in the brain, the telltale marker of Alzheimer's. We now know that patients with Alzheimer's develop their disease 10 to 20 years before they ever become symptomatic, and it's at that time that we have to understand the molecular roots of the disease and, hopefully, prevent them—just as in this institution we prevented polio, revolutionized organ transplantation, and revolutionized our sense of the biology of breast cancer."

For Levine, his Alzheimer's research will be about results, not about just staying busy. And he says it's the results achieved at Pitt, under his watch, which have helped make his career seem so worthwhile.

"I'm proud of what we've been able to accomplish in teaching and training as well as in research. It's not the amount of NIH funding, or the number of research and medical buildings, or the new centers or institutes. What really is important is our impact on the science of medicine and how we use that science to further promote health care."

Chancellor Gallagher, for one, is grateful for that impact, which he points out has been "nothing short of transformative for the University, the city of Pittsburgh, the region and, in many ways, the broader fields of medicine and health today."

It has been incumbent on Gallagher, along with the search committee, to select a worthy successor to Levine. But that's a story for another day. This much is known now. And it's what was known when Thomas Detre stepped down. The next dean, using Jeffrey Romoff's words, will have big shoes to fill.