



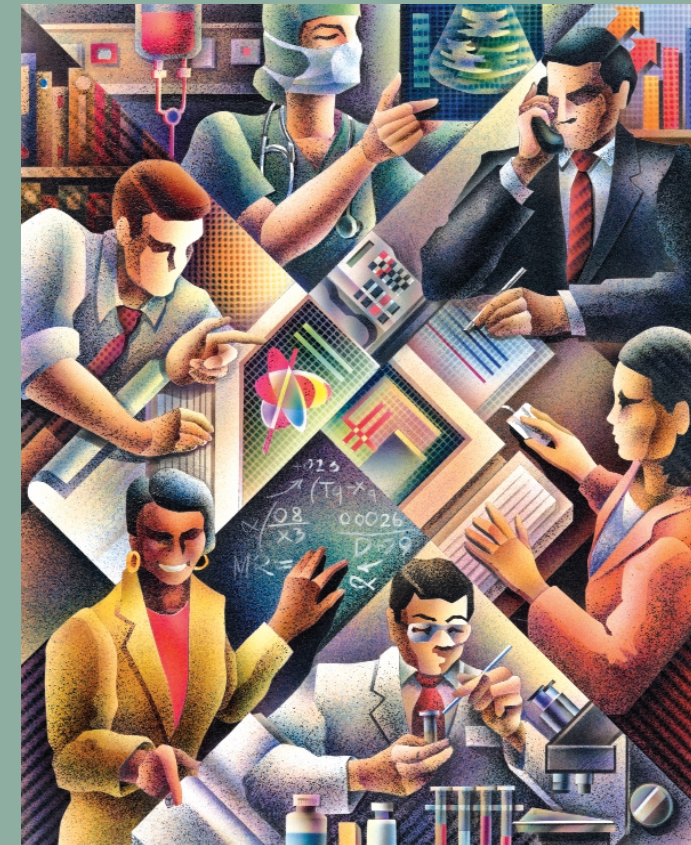
Robert Wood Johnson Foundation

HAROLD AMOS
MEDICAL FACULTY
DEVELOPMENT PROGRAM

*Twenty-Fifth
Anniversary*

HAROLD AMOS MEDICAL FACULTY DEVELOPMENT PROGRAM

The Robert Wood Johnson Foundation focuses on the pressing health and health care issues facing our country. As the nation's largest philanthropy devoted exclusively to improving the health and health care of all Americans, we work with a diverse group of organizations and individuals to identify solutions and achieve comprehensive, meaningful and timely change. For more than 35 years we have brought experience, commitment, and a rigorous, balanced approach to the problems that affect the health and health care of those it serves. When it comes to helping Americans lead healthier lives and get the care they need, we expect to make a difference in your lifetime. For more information, visit www.rwjf.org



*Changing the face of
American Medicine*

HISTORICAL OVERVIEW

Outside, it was a miserably hot July day in the nation's capital. Inside the second-floor meeting room of the Ritz-Carlton, the climate was far more pleasant—at least for the 15 men and women seated around the horseshoe-configured tables facing a podium and slide screen. Perhaps for Allyson Spence, the individual behind the podium, remote in hand, the air conditioning could have been set a wee bit higher.

Spence, a post-doctoral scholar at Stanford University School of Medicine, had just presented a synopsis of her research into the mechanisms of stem cell renewal, and was fielding questions from around the horseshoe:

- *You use the term stem cell behavior. What do you mean by that?*
- *Where are you in terms of your academic continuum?*
- *What kind of job are you interested in?*

The questioners, all senior medical academics, were as gentle in tone as their questions were varied in content, and if the presenter was at all rattled by either, she gave no hint. With an M.D.-Ph.D. in molecular physiology and biophysics from Vanderbilt University, Spence matched the confidence of her delivery with obvious enthusiasm for her subject.

*Even so, given what was at stake, she could have been excused for feeling a little heat under that cool demeanor. Spence was in the final round of competition for a four-year research award worth more than \$400,000 from the **Harold Amos Medical Faculty Development Program** of the Robert Wood Johnson Foundation (RWJF).*

Created in 1983, this unique program selects and nurtures promising young medical scientists from minority and other historically disadvantaged groups who are committed to developing careers in academic medicine—a world where minorities are even less of a presence than in medicine as a whole.

Over the last 25 years, more than 181 physicians from African-American, Hispanic, Native American and Puerto Rican backgrounds have completed the four-year fellowship, many going on to make significant contributions to medical science and advance into leadership positions at major medical institutions across the country.

“We definitely know that there are things you can put into place to increase the probability that people are going to succeed—and not just succeed a little but have very successful, impactful academic careers. And I think that there’s no question that the Harold Amos program has done that,” says Risa Lavizzo-Mourey, president of RWJF, which has invested more than \$100 million in the program. “I view it as an out-of-the-park success.”

Spence, an African American, was one of 25 semifinalists who made presentations to the program’s national advisory committee in July 2008—and one of 14 selected to receive a four-year fellowship starting in 2009.

She and her cohort, the program’s 26th, mark the beginning of the second quarter century of an initiative that seeks—in the words of program advisory committee chair Rose Marie Robertson, M.D.—“to change the face of American medicine.”



Harold Amos

The BEGINNING

“If only we could see someone like us as a physician or faculty member, someone who proved we could be given recognition and we could make it, someone who would be a model for us.”

THE BEGINNING

The staff is recommending that the Foundation initiate a new program to increase the number of minority medical faculty with high likelihood of achieving senior academic positions in the nation's medical schools.

January 1983 proposal to the RWJF Board of Trustees

Upon its founding as a national philanthropy in 1972, RWJF identified improved health care for the neediest Americans as a principal objective. One of the Foundation's key strategies for achieving this goal was to increase the number of minorities in the medical profession. Research showed:

- Minority physicians are more likely to practice in inner city areas and in the South, both with large, medically underserved populations, and to engage in primary care, a major need in low-income areas.
- Medicine is a culturally sensitive area of human interaction, and people tend to seek out physicians of similar race and ethnicity.

Among its early initiatives, RWJF funded medical school scholarships for needy minority students and supported historically African-American Meharry Medical College in Nashville, Tenn. By 1982 the Foundation's investment in these and similar efforts totaled \$15.5 million. Clearly, it was not enough.

A DOWNWARD TREND

In 1970, minorities accounted for 16 percent of the U.S. population but less than 6 percent of the nation's physicians. In the early 1970s, however, the picture began to brighten.

Spurred by new federal civil rights legislation and various public and private initiatives, minorities historically underrepresented in medicine—African Americans, Native Americans (American Indians and Alaska Natives), Mexican Americans and mainland Puerto Ricans—began entering medical school in increasing numbers. By 1974, they accounted for 10 percent of all first-year medical students. The African-American proportion alone had more than doubled—to 7.5 percent of entering medical students compared to 2.7 percent in 1968. It was a promising trend but not a lasting one.

Buffeted by various factors, including increased opportunities in other professions and legal challenges to affirmative action programs, the minority medical school enrollment percentage declined in 1975 to 9 percent and remained in the 9–10 percent range into the 1980s.

African Americans—11.7 percent of the nation's overall population in 1980—accounted that year for only 6.6 percent of new medical students (a third of whom were at three historically black medical schools: Meharry Medical College, Morehouse School of Medicine and Howard University School of Medicine). Among the nation's practicing physicians, a mere 2.6 percent were African American.

A RESPONSE

In May 1982, a team of RWJF program officers led by Ruby P. Hearn, recommended the Foundation consider several new approaches to increasing the supply of minority physicians—including developing a program to stimulate the number of minority faculty at the nation’s medical schools.

Additional minority professors and administrators would provide needed role models and encourage minority college students to seek medical school admission, the team told the RWJF board, adding:

“Polls of minority medical students have repeatedly shown the general feeling of the following quote: ‘If only we could see someone like us as a physician or faculty member, someone who proved we could be given recognition and we could make it, someone who would be a model for us.’ ”

Outside of the three historically black medical schools, such models were few and far between. Of 31,000 physicians then employed as full-time faculty at the nation’s 130 medical schools, only 477—1.5 percent—were African-American. And the situation was getting worse. The average number of first-year faculty appointments among African Americans dropped from 24 per year in the years 1971–1975 to 18.3 in 1976–1978.

In addition to influencing students, Hearn and her colleagues, including then RWJF president David E. Rogers, believed that additional minority faculty would have an impact on elite, predominantly white medical institutions. Rogers, a distinguished academic physician who was white, knew from experience that minority faculty members could increase a school’s commitment to minority outreach and admissions.

At Johns Hopkins University, where Rogers had been dean of the medical faculty, cardiac surgeon Levi Watkins, Jr., had successfully used his faculty position and passion for racial equality to increase the medical school’s African-American enrollment. Watkins—the first African-American graduate of Vanderbilt University School of Medicine and the first African-American chief resident in cardiac surgery at Johns Hopkins Hospital—joined the Johns Hopkins medical school admissions committee in 1979. By 1983, the school’s minority representation was up 400 percent.

Hearn’s group cited Watkins as a prime example of why increasing the number of minority medical faculty would be an effective strategy to spur the number of minority medical physicians.

Richard Payne, M.D., Ph.D. (1984-1989)

Professor, Duke Divinity School, Duke University

Director, Duke Institute on Care at the End of Life, Duke Divinity School, Duke University

In 1984, Richard Payne, M.D. became a clinical affiliate, a clinical fellow, and assistant attending neurologist at Memorial Hospital for Cancer and Allied Diseases, with an academic appointment at Cornell as an assistant professor of pharmacology and neurology. He began his Harold Amos fellowship during this time, completing it at the University of Cincinnati Medical Center, where he was named chief of neurology service and associate professor of neurology. His research topic was CFS-Plasma Pharmacokinetics of Opiate Drugs.

“Dr. Amos was an inspiration to me as a medical student and young doctor-in-training at Harvard,” says Payne.” My selection as a fellow in the program unlocked the key to my career in academic medicine and I will be forever grateful.”



PROGRAM DEVELOPMENT

With authority from the Trustees to develop a minority faculty program, Hearn, an African American with a Ph.D. in biophysics, and other staff consulted with medical educators across the country, culminating in a September 1982 meeting in New York with a group of academic physicians that included David Satcher, then president of Meharry, and Louis W. Sullivan, dean of Morehouse.

From those discussions, the staff identified a major deterrent to increased numbers of minority physicians at medical schools: The nation's leading laboratories and researchers—traditionally the source of training for mainstream medical faculty—were inaccessible to young minority physicians interested in entering academic medicine, Hearn reported to Rogers in October 1982.

Was it discrimination—or something else? Hearn did not enter that thicket in her memo to Rogers, but in a recent interview she suggested expectations were a factor. At medical school, she said, there was often an assumption that minorities would become clinicians and practice in underserved areas—and were encouraged to do so because of the need there. “We were concerned that the minority students were not getting that kind of encouragement to go into biomedical careers,” Hearn said.

In addition, there was the burden of education debt, a burden that tended to fall more heavily on young minority physicians and exert a strong pull toward practice. At least back then, clinicians stood to make more money than academics, says Baruch S. Blumberg, who won the 1976 Nobel Prize for Medicine and chaired the program's national advisory committee from 1986 to 1989.

“My guess is that for the whole time I was in academic medicine, my salary was one of the lowest of all my classmates,” says Blumberg, a 1951 graduate of the Columbia University College of Physicians and Surgeons. Economics of this kind, he suggested in a recent interview, was at least one factor in the shortage of minority medical academics.

While emphasizing that as a white person, he might not have recognized it, Blumberg said he never saw racial discrimination in academic medicine; to the contrary, the institutions with which he was involved were eager to recruit qualified minorities, he said.

In a December 1982 memo laying out the reasons for a minority faculty development program, Leighton E. Cluff, an academic physician who was at the time RWJF's executive vice president and later Rogers' successor as president, listed the benefits that could be expected from the addition of top-notch minority scientists to predominantly White medical institutions.

Among them, he said, would be a greater understanding by white faculty and students of minorities and their “problems and potential.” Cluff—who is white and previously headed the allergy and infectious disease division at Johns Hopkins and the department of medicine at the University of Florida—wrote:

It is common for white faculties and students to be inadequately prepared to work with students so very different from the middle-class whites with whom they are so familiar. Even medical administrators and faculty members who actively participate in special efforts for minority students often comment that their efforts are misunderstood by minorities, and that they cannot

Lisa A. Cooper, M.D., M.P.H. (1996-2000)

Professor of Medicine, Department of Medicine, Johns Hopkins University School of Medicine

Cooper found that African-American patients frequently are more reluctant than other groups to accept medication for depression, fearing that it might be addictive. There is also, she says, a greater tendency by African-American patients to see depression “more as a spiritual illness.”

“Just bringing me into that network [of people who are committed to the development of physicians and researchers from underrepresented minority groups] was like bringing me into a big, extended family,” she says. “It opened up a huge number of doors for me. A lot of those people are still part of my professional support system.”



understand the reactions they receive from minorities. On the other hand, minority students repeatedly indicate that they are simply not understood by white faculty and students.

In a recent interview, James R. Gavin III —an African-American physician-scientist who has held leadership positions in academic, research and professional organizations—said mainstream biomedical research programs were accustomed to training young physicians who already knew the landscape of academia and how to navigate their way to a faculty appointment, knowledge that minorities often did not possess.

“Sometimes we worry about problems of discrimination and active measures that people take to erect barriers. Certainly some of that occurred, and we would be naive not to recognize that,” said Gavin, director of the Harold Amos program.

“But a bigger enemy with respect to getting people like this (minorities) through the academic pathway was indifference. That was the thing we had the biggest problem with—people who didn’t do anything to them but didn’t do anything for them, either. Didn’t recognize that they had what might have been easily construed as unique needs.”

Ralph Gonzales, M.D., M.S.P.H. (1997-2001)

Professor, University of California, San Francisco, School of Medicine

During Gonzales’ research on how to curb the overuse of antibiotics, he worked with some 25,000 patients and 25 physicians. He sent written materials and a refrigerator magnet to each household stressing that antibiotics are useless against acute bronchitis. He and staff gave physicians materials making the same point, as well as a seminar in which the physicians were shown their previous year’s antibiotic prescription rates for acute bronchitis. Together, these measures sharply reduced antibiotic use for acute bronchitis, Gonzales says.

“The most important thing the grant did was give me four years of protected time where I didn’t have to find other sources of funding,” Gonzales says. “It’s the time protection, the mentoring through the national advisory committee members and the bringing together of outstanding scientists who share a minority background into a national network.”



THE PROPOSAL

To remove the barriers between young minority physicians and predominantly white academia, Hearn and her colleagues proposed a fellowship program that would have three key components:

A four-year stipend (initially \$35,000 a year) to support biomedical research by highly qualified, competitively selected minority physicians who were in or had recently completed residency training, were committed to a career in academic medicine and showed a strong likelihood of achieving a major academic position.

- Fellows would be able to take their awards with them if they moved to a new institution during the four years—a feature that could make a young medical researcher more attractive as a faculty hire.
- In addition to the stipend, RWJF would provide funding (initially up to \$25,000 a year) to each fellow’s institution to offset research and training costs.

Because basic research (also known as bench research) had long been the surest route to top-flight medical faculty positions, fellows were to be bench scientists—and spend at least 70 percent of their time on research activities.

In addition, applicants had to be members of one of the four racial/ethnic groups defined by the Association of American Medical Colleges as underrepresented in medicine in relation to their proportion of the population.

Both restrictions on program participation—to basic researchers and specific minorities—would prove controversial and, eventually, be changed.

Linkage of each fellow with a mentor who had a track record of producing outstanding medical faculty members and was committed to the fellow's success.

The mentor was to provide guidance on research issues, article submissions and grant applications, and protect the fellow from encroachments by the institution on the 70 percent commitment to research.

The mentor was also expected to be the fellow's advocate outside the lab, using his or her contacts to open doors to potential faculty positions. One piece of advice that came out of the New York meeting was that to make the fellowship attractive, participants had to believe it would lead to a job.

Vetting the applicant's selected mentor became a key part of the selection process. Another indication of the importance attached to the mentoring component was a requirement that the mentor accompany his or her fellow to the annual program meeting during the first two of the four years.

Formation of a national advisory committee of high-caliber biomedical scientists—minority and nonminority—to select the fellows, guide them and monitor their progress.

To chair the committee, Hearn and her colleagues sought out Donald S. Fredrickson, a well-known researcher in genetic disorders who was then vice president of the Howard Hughes Medical Institute and formerly headed the National Institutes of Health (NIH).

The Foundation wanted the committee chair to be someone with a strong reputation as a no-nonsense scientist—"not a sentimental person," as Hearn puts it. "By choosing Don Fredrickson, we were sending a message that this program was not about social issues. It was a program about science."

Fredrickson, Rogers and Hearn later selected the panel's other inaugural members, who included:

- Watkins, professor of cardiac surgery and associate dean at Johns Hopkins School of Medicine and a continuing member of the program committee.

- Joseph E. "Ed" Rall, an internationally known and widely published research scientist and a deputy director of NIH. Rall, who died in early 2008, played an instrumental role on the committee for years, shaping program policy and assisting fellows.
- Harold Amos, professor of microbiology and molecular genetics at Harvard Medical School and the first African American to chair a department (now the Department of Microbiology and Molecular Genetics) at the school. Amos, who was a Ph.D., not an M.D., became director of the fellowship program in 1989. Following his death in 2003, RWJF named the program in his honor.
- Gavin, an Alabama native with a Ph.D. in biochemistry from Emory University and an M.D. from Duke University and at the time a member of the medical faculty at Washington University in St. Louis. Gavin succeeded Amos as program director in 1993 and has continued in that post since.
- Maria I. New, pediatrics department chair at New York Hospital-Cornell Medical Center in 1983 and today professor of pediatrics at Mount Sinai School of Medicine and director of the school's Adrenal Steroid Disorders Program. She is a member of the advisory committee.

Kevin B. Johnson, M.D. (1998-2002)

Associate Professor of Pediatrics, Department of Pediatrics, Associate Professor and Vice Chairman, Department of Biomedical Informatics, Vanderbilt University Medical Center

Johnson's research field is medical informatics—more specifically, an answer to the question: "Can you bring computers into medicine without dehumanizing it?" He says that his work so far indicates that introduction of a computer produces no falloff in the quality of the doctor/patient interview.

His mentor urged him to take a position offered to him at Vanderbilt University, one of many ways he says that she helped him during his career. "She said that we have to meet every time you have an offer for something to do. Those kinds of meetings helped me realize there were things I needed to say 'yes' to and things I needed to say 'no' to," Johnson says. "I've taught other students that set of lessons. It's helping you set priorities and helping you self-reflect."



APPROVAL

David Rogers came to RWJF as the Foundation's first president committed to breaking down racial barriers and equalizing health care access. The self-described "troublemaker" had a record of doing both as an educator, first at Vanderbilt, where he chaired the department of medicine, and then at Johns Hopkins. (On Rogers' death in 1994, Thomas H. Meikle Jr., then president of the Josiah Macy, Jr. Foundation, called his former colleague "the articulate conscience of the profession over the last 30 years.")

Not surprisingly, Rogers was a strong supporter of the fellowship proposal. Indeed, he had been an active collaborator in its development. However, Gustav O. Lienhard, a former Johnson & Johnson chief financial officer who as RWJF's longtime board chair kept a watchful eye on resources, loomed as a hard sell.

For one thing, the four-year fellowship would be twice the length of any training program previously funded by RWJF. Potentially of greater concern, the program would support basic research—counter to the Foundation's policy against funding lab work, an activity the board believed was best left to the deeper pockets of NIH.

Hearn and her colleagues outlined their proposal to Lienhard, and after quizzing the team on several points, he gave his blessing. In January 1983, the full Board of Trustees authorized the program for a three-year test run with funding of \$2.88 million—enough to support four fellowships in each of the three years.

The *Minority Medical Faculty Development Program* was on its way, with the first four fellowships scheduled to start in 1984.



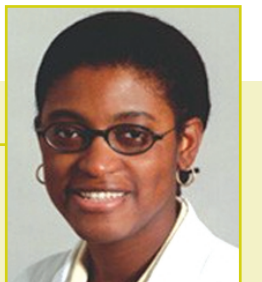
AMFDP Annual Meeting, San Diego, Calif., October 2004

Arleen F. Brown, M.D., Ph.D. (1999-2004)

*Assistant Professor, Department of Medicine, Center for Health Sciences,
University of California, Los Angeles (UCLA) Medical Center, Los Angeles*

Brown developed official guidelines for individuals over 65 with diabetes. Endorsed by the American Geriatrics Society, *Guidelines for Improving the Care of the Older Person with Diabetes Mellitus*, are the first to specifically factor in patient preferences, functional status and the need to control a patient's blood sugar against other chronic diseases.

Brown has continued her research into chronic diseases like diabetes, building on a discovery she made during her time as a scholar—namely, the importance of making changes in neighborhoods by working with existing groups.





Ruby Hearn and Jim Gavin

The PROGRAM

“Of the program’s first cohort, four members are professors or associate professors at major universities (Duke, Michigan, Stanford and Yale), and two lead divisions of NIH.”

THE PROGRAM

By matching talented young minority physicians with their chosen mentors, this program seeks to prepare a cadre of outstanding faculty that will further the progress of medical science and serve to encourage and guide succeeding generations of minority medical students and physicians.

*RWJF President David E. Rogers on April 21, 1983,
announcing the Minority Medical Faculty Development Program*

The 1983 solicitation for the initial cohort of fellows drew more than 120 applicants, most of them African Americans. The size of the response was a surprise—and a pleasant one. “Since our foundation was not known for support of biomedical research, we were not sure what the uptake of the program would be,” says Hearn.

Not only was this first crop of candidates large, it was strong—too strong, it turned out, for the \$2.88-million authorization. After reviewing the written applications, the advisory committee members met in August 1983 and whittled down the list to 12 semifinalists for face-to-face interviews the next month. At the conclusion of the September sessions, the committee had a problem: the members deemed eight of the contenders outstanding and refused to whittle further—a response that has come to be known in program lore as *The Revolt*.

“Ed Rall looked at me and said, ‘Ruby, double the size of the program,’ which was unprecedented in my experience, but I said, ‘Okay.’ I had sat in all of these interviews and realized, as they did, that we had some fantastic potential fellows.”

Hearn returned to RWJF and pled the case to Rogers and Lienhard, arguing that the program had tapped a rich vein of talent, and the Foundation should take advantage of the opportunity. The two agreed, and in December the Trustees doubled the program’s three-year funding to support eight fellowships a year instead of four.

Time proved the committee’s judgment sound. Of the program’s first cohort, four members are professors or associate professors at major universities (Duke, Michigan, Stanford and Yale), and two lead divisions of NIH—the National Institute of Diabetes and Digestive and Kidney Diseases and the National Institute of Biomedical Imaging and Bioengineering.

One of the latter, Griffin P. Rodgers, director of the National Institute of Diabetes and Digestive and Kidney Diseases, is a hematologist recognized internationally for his contributions to the development of an effective—and, to date, the only approved—therapy for sickle cell anemia and other genetic diseases of hemoglobin.

Rodgers—an African American from New Orleans with undergraduate and medical degrees from Brown University—was a research fellow at NIH outside Washington in 1983 when he learned of the new RWJF program. “It was serendipity,” he says. A Brown administrator who knew Rodgers received a copy of the program flier and sent it on, saying, “Hey, Griff, did you hear about this?”

Rodgers’ interest in sickle cell anemia was not accidental. Because he had high school friends who died of the disease, at Brown he had pursued research in red blood cell disorders (which include sickle cell disease). That work “really set in motion my desire to become a hematologist and a physician-scientist.”

His RWJF research project focused on understanding the cellular components that distinguish the severity of sickle cell and the application of quantitative, noninvasive techniques, such as CAT scans and MRI scans, to study the pathophysiology of the disease—all of it related directly to the research he continued after the four-year project ended.

Rodgers’ experience is an example of the significant research conducted throughout the program’s 25 years—research that has an impact on the career path of individual scholars and also on scientific and medical knowledge.

PROGRAM ADMINISTRATION

Initially RWJF managed the program in-house under the guidance of Hearn, a Foundation vice president and later senior vice president, and with the day-to-day direction of Program Officer Annie Lea Shuster.

The administrative and outreach demands, however, proved greater than anticipated, and when the need for a stand-alone program office with its own staff became clear, RWJF did not have to look far. In 1989 the Foundation tapped committee member Harold Amos—who had taken emeritus faculty status the previous year—to be program director and began funding the program’s administrative expenses through grants to Harvard Medical School.

For Amos, the job was a continuation of what he had been doing in his more than four decades on the Harvard Medical School faculty. Over the years he had recruited, advised and befriended scores of minority students, trying to move them to careers in science and medicine. “He really embodied the idea of mentorship,” says Nina Ardery, who has been with the program since 1993 and its deputy director since 1996.

Neil R. Powe—a professor at Johns Hopkins in the medical and public health schools and a member of the Institute of Medicine—was a first-year Harvard medical student when he met Amos.

It was 1977, Powe recalls, and he was working in another professor’s lab when Amos “introduced himself and invited me to his house for dinner for the sole purpose of talking about science. He was interested in seeing an African American interested in science, and he wanted to promote that.”

Powe, a member of the program’s national advisory committee, adds, “He could cook. It was one of the best dinners I had in medical school.” Indeed, good food was just one of Amos’s interests outside the classroom. He was a classical pianist, art collector, avid reader (Willa Cather novels among his favorites) and Francophile fluent in

French—a product of World War II military service in France and two years at the Pasteur Institute in Paris in the early 1950s.

In addition to Amos, the program office at Harvard included a deputy director, Charlotte Litt. Like Amos, she was a Ph.D., and also like Amos, she had a natural talent for helping young people.

By 1993 Amos—then in his 70s and ready to spend more time at his Maine farm and pursuing his other interests—gave up his program post and rejoined the advisory committee. Litt left at the same time.

Once again the search did not go far. Gavin by then was senior scientific officer at the Howard Hughes Medical Institute and president of the American Diabetes Association—the first African American in either position. He was also director of RWJF’s summer enrichment program for minority undergraduate college students interested in going on to medical school (then named the *Minority Medical Education Program*, now the *Summer Medical and Dental Education Program*).

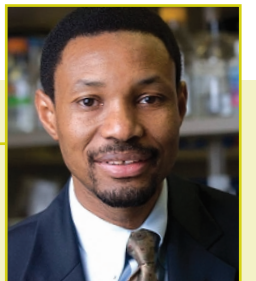
At RWJF’s request, Gavin gave up the undergraduate program and took over the faculty development program. Already busy with his other positions, he hired an

Lewis Rowland Roberts, M.B., Ch.B., Ph.D. (2000-2004)

*Associate Professor of Medicine, College of Medicine, Mayo Clinic, Rochester, Mich.
Consultant, Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, Mich.*

Roberts zeroed in on viruses associated with liver cancer—including Hepatitis B—armed with a list of questions. “If these viruses were more likely to integrate into a fragile state, is this the way viruses have their carcinogenic effects? Would the Hepatitis B virus—already known to integrate into the human genome—integrate into fragile sites? When it does integrate, does it integrate into places within the genome that give the cells a growth advantage and develop into cancer?” During his four-year participation in the program, Roberts was able to essentially answer “Yes” to each question.

“They have the cream of the crop of scientists who offer to serve as mentors,” he says. “That is a unique part of the program, having such accomplished mentors be role models for fellows.”



administrative assistant and relied heavily on her to set up and run the program office, located in Washington’s Maryland suburbs, not far from the Howard Hughes Medical Institute.

The assistant was Nina Ardery, who had met and impressed Gavin when working as a temp at Howard Hughes. With one master’s in business administration and another in linguistics, she was highly over-qualified as a temp but had absolutely no background in medicine and science.

What it turned out she did have, however, were the skills to work well with program applicants, fellows and advisory committee members and handle the myriad logistics that accompany the selection cycle and annual fellows’ two-day meeting.

“The anchor of the program,” former scholar Herminia Palacio calls Ardery. At a recent gathering, Gavin paid tribute to her by likening the program to a family and Ardery to the “mother and sister” to all of its members. “I sort of feel like the grandmother,” responded Ardery, who in reality is some years away from such status.

One important initiative of the Gavin-Ardery team was what the two only half-jokingly call “cradle-to-grave”—an effort to track all fellows and their careers after they leave the program.

A NEW HOME

While the program office remained in suburban Washington, the program’s fiscal home—where RWJF sent the administrative funds—moved through a series of educational institutions, including Morehouse School of Medicine, where Gavin was president from 2002 to 2004.

In 2007, that all changed. For the first time since the Amos/Harvard years, the program’s physical and fiscal locations came together—at the Indiana University School of Medicine in Indianapolis.

The main reason was that the school aggressively sought the program as part of a concerted effort to enhance its standing generally and attract minority students specifically.

Geography can be a challenge for a Midwestern medical school competing for talented minorities against institutions with mountains, an ocean and a big name, says Stephen P. Bogdewic, executive associate dean for faculty affairs and professional development. Hosting a minority development program office, he says, sends a helpful message: “It says, ‘Why would you house a program (like that) here?’ Because this campus really cares about this.”

Michelle Asha Albert, M.D., M.P.H. (2001-2005)

*Assistant Professor of Medicine, Harvard Medical School
Attending Cardiologist, Brigham and Women’s Hospital, Boston*

Albert conducted one of the first randomized studies to look at reducing inflammation in cardiovascular thrombosis through the use of statins. “Did the drug reduce the level of inflammation, measured by the C-reactive protein?” asks Albert. “We found that it did.”

“As a RWJF scholar, I had four years of protected time to focus on research. It offered me a lot of peace of mind.”



COMMITTEE MENTORING: A KEY INGREDIENT

From the beginning, the program has emphasized mentoring and provided two sources of mentors. One is the institutional mentor—the faculty member responsible for overseeing the fellow’s science and career development. That mentoring relationship is well-illustrated by that of Terence Dermody, and Gregory J. Wilson.

Dermody had just joined the medical faculty at Vanderbilt when he mentored Wilson, a member of the cohort selected in 1990. “We were chosen when I was like a child—very, very young. Greg Wilson was my first post-doc,” recalls Dermody, now professor of pediatrics and microbiology and immunology at Vanderbilt and director of the division of pediatric infectious diseases.

“The investment that RWJF made for Greg—and therefore for me because it was a substantial amount of funding that came into my lab at that time—started two careers in fact: Greg’s, of course, but it also started mine.”

More important than the funding was what Dermody learned from the program about beneficial scholar-mentor relationships. Especially valuable, he says, were the annual program meeting discussions on the mentor’s role—a topic that he seldom finds covered at professional meetings.

“As fate or nature or whatever would have it, mentoring and the process of training in medicine and science have been the foundation for my career. And that was my real introduction to it—through the RWJF program,” says Dermody, whose duties include directing Vanderbilt’s Medical Scientist Training Program.

The second source of mentors is national advisory committee members who divide up each new cohort and take responsibility for mentoring specific fellows. In large part, committee mentoring focuses not on technical research questions

but on what Rodgers, the NIH official, calls the “do’s and don’ts, the etiquette” of academic medicine.

One key aspect of that is helping fellows understand where best to invest their limited nonresearch time: which faculty committees to join and meetings to attend and, more importantly, what obligations are unlikely to advance their careers and be a waste of time.

Learning when and how to say no—a recurring topic at the program’s annual meetings—is especially important for minorities, according to committee members and former fellows.

“If you’re one of the desired few, everyone wants your input,” says David S. Wilkes, an African American in the program’s 1991 cohort. It was as if he were “speaking for all of the black people on the planet,” says Wilkes, now professor of medicine and microbiology and immunology at the Indiana University School of Medicine.

(There is at least one committee dissenter on the wisdom of saying no, however. Levi Watkins advises that precisely because there are so few minorities in medicine, they need to speak out and take on as much they can.)

Another function of the committee mentor is to ensure the host institution leaves the fellow sufficiently free of clinical and other duties. Although less of a problem now that the program is established, universities have on occasion infringed on fellows’ 70 percent research commitment.

To deal with time poaching, Gavin says that he and committee member Rall would visit an offending institution and inflict a “good cop/bad cop” routine on the fellow’s mentor or supervisor.

Rall—as colorful and crusty a personality as he was an exacting scientist—was the bad cop, as Gavin tells it, and would rail at the person before finding an excuse to leave the room so Gavin could launch into his good cop spiel.

“We were a study in contrast. I had an Afro, and Ed had a shock full of white hair. Ed would go in and he would cuss, and he would tell them how they had betrayed the trust of the Foundation, the Foundation that believed in them. And of course these people would be, sort of, squirming.

“Then Ed would excuse himself and go to the rest room or something, and at that point I would introduce a more reasonable level of conversation, and point out how badly we needed their support...and that we could not do this without their help.

“And, boy, they found me a lot more pleasant to talk to than Ed. By the time Ed came back, they were ready to concede just about anything to keep him from getting started again,” recalls Gavin with a laugh.

Wonder Puryear Drake, M.D. (2001-2005)

*Assistant Professor of Medicine, Department of Infectious Diseases,
Vanderbilt University School of Medicine*

One clue to the cause of sarcoidosis, a progressive pulmonary disorder, may be found in Drake’s infectious disease research: she and her colleagues found that genetic material from mycobacteria were present in the granulomas associated with sarcoidosis. She has become primary investigator on two National Institutes of Health (NIH)-funded grants, continuing her research on sarcoidosis and the role of mycobacteria.

Drake says that the grant has been invaluable both in giving her committed time for research and giving her “long-term exposure to physician-scientists from groups who are underrepresented in medicine. It has been helpful to see people with similar backgrounds navigate the waters of academic medicine.”



“A BIT OF A DUSTUP”

The program was supposed to support basic, molecular research, but soon some projects were drifting into clinical research—the study of treatment at the patient level. It can be a fine line, and crossing it apparently caused no great stir among the national advisory committee members, a group anchored in the basic research camp.

That was not the case in 1990 when Steven A. Schroeder, an academic physician newly installed as RWJF president, proposed opening the program to health services research—the study of how social factors, financing systems, technologies and the like affect health care access, quality and costs.

A relatively small field when the RWJF program was getting underway, health services research had gained importance as an academic discipline, and Schroeder saw no reason why minority physicians in that area should be excluded—especially by a foundation that focused on health policy and, except for this one program, steered clear of basic research.

Schroeder, a self-described “generalist at heart,” makes clear that his reverence for bench researchers is not exactly unlimited. “I think people who work in basic research feel it’s about as close to God as you can get on this planet. I just don’t see it that way,” Schroeder, now at the University of California, San Francisco, said in a recent interview.

Schroeder’s proposal caused, as he puts it, “a bit of a dust up” with the advisory committee. “Absolute bedlam” is Gavin’s description. “We had members...who thought this was cockamamie, this was crazy. These people (health services researchers) aren’t going to go anywhere. They aren’t going to achieve anything.”

In short, for some members, this was a program for *serious* science, a category in which health services research decidedly did not fall. Herminia Palacio, a 1994 cohort fellow who conducted health services research related to HIV, remembers Rall asking her: “Why are you wasting your brain on that health services crap?”

(Palacio, who laughs about the incident, is today executive director of the Harris County Public Health and Environmental Services agency in Houston.)

In the end there was a kind of compromise. Agreeing with the need for more minorities in health services research but not wanting to reduce the opportunity for basic scientists, Hearn proposed expanding the program's eligibility and simultaneously increasing the number of fellowships.

Schroeder concurred, and in 1991 RWJF began funding 12 fellowships a year (up from eight) and amended the eligibility rules to include basic, clinical and health services researchers—the categories that remain covered today.

Importantly, neither RWJF nor the advisory committee set down a formula for divvying up the 12 slots. Running two separate selection tracks—one for health services applicants and another for everyone else—got brief consideration, but Gavin says the committee rejected the idea in favor of choosing the most accomplished, promising candidates and letting the disciplines fall where they may.

“We didn't ever default to the pursuit of a set of quotas. We never found it necessary to say at the end of this we have to have four people from health services, eight people from the other disciplines.”

Over the years health services researchers have become a significant portion of both the applicant pool and the funded fellows. Of the 59 applicants in 2008, 19 (32 percent) proposed projects in health services research; 14 (24 percent) in clinical research; 11 (19 percent) in basic research, and the remaining 15 (25 percent) a combination of two of the three. Ardery says typically—and unintentionally—the makeup of the selected cohort mirrors the applicant pool, and indeed that was the case in 2008.

Today, some committee members believe the relative presence of basic researchers has declined too much, but the consensus seems to be that Schroeder was right: that the expansion has permitted the program to attract high-caliber scientists in an important area of medical academia. Dominick P. Purpura, long-time dean of the Albert Einstein College of Medicine and chair of the program advisory committee through the 1990s, calls Schroeder prescient.

To evaluate the widened spectrum of applicants, the advisory committee added members from the health services field, starting in 1991 with J. Sanford Schwartz of the University of Pennsylvania, as of summer 2008 professor of medicine, health care management and economics.

It all took some getting used to, but soon committee members were helping each other understand their respective disciplines. “A process of self-education,” Purpura calls it. Says Gavin:

Basic scientists became a little bit more patient with the nonbasic scientists, who couldn't have identified a single nucleotide polymorphism if it came up and bit them in the nose. By the same token, the basic scientists didn't understand the use of validated survey instruments or appreciate alpha, beta errors in a research design. So there was now this sort of cross-fertilization between the two extremes that proceeded with fits and starts but gradually became an absolutely wonderful experiment.

This cross-fertilization extended to the program's annual meeting—a fall conference where fellows present their research, network with each other, mentors and committee members and, in essence, recharge their program batteries.

“It is the only leadership program that I know of where basic scientists come together with people who are focusing on policy health services research and population health,” says Senior RWJF Program Officer Jeane Ann Grisso, who began overseeing the program for the Foundation in 2006 (but left RWJF to return to the University of Pennsylvania as a professor of medicine in September 2008).

“What I've watched in the few years I've been program officer for this program is that the health services researchers and the basic scientists are teaching each other,” says Grisso. “They are learning from each other; they are criticizing each other methodologically; they are sharpening their skills.”

This integrative process, Grisso says, is a powerful model for increasing communication across research modalities and strengthening the translation of basic research to clinical situations and population health.

A NEW NAME AND ANOTHER ELIGIBILITY CHANGE

The biggest challenge to the program during Schroeder's presidency (1990 through 2002) was keeping it faithful to its mission and staying out of legal trouble, he says.

Affirmative action policies designed to increase enrollment of racial and ethnic minorities in higher education were under legal and political attack. The Foundation was never sued, but there was concern that it might be, says Schroeder.

A more likely possibility was that one or more of the institutions hosting fellows would land in court. The program depends on the participation of universities—which are the grantees for most of the fellowships—and there was unease among them, especially the state institutions, says Lavizzo-Mourey, Schroeder's successor.

In a 2003 ruling on two landmark cases involving the University of Michigan, the U.S. Supreme Court said race- and ethnicity-conscious admissions policies may be permissible under certain conditions but must be narrowly tailored and give substantial weight to other diversity factors.

In the wake of the ruling, RWJF dropped the word *minority* from the program name (it became the *Harold Amos Medical Faculty Development Program*) and changed the eligibility from underrepresented minorities to “physicians from historically disadvantaged backgrounds (ethnic, financial or educational).”

It was a repackaging designed to avoid the legal and political sentries on the political right without diluting the program's purpose and impact—an objective that Lavizzo-Mourey says was achieved. Since the change in 2004, the quality and diversity of the awardees has continued unabated.

Also, renaming the program in honor of the person who contributed so much to its early success was an important step, says Lavizzo-Mourey, who as a Harvard medical student took Amos' class.

For some advisory committee members, however, it was a bitter pill, and as Gavin puts it, “the language was not kind”—“sell-out” was among the nouns employed. Levi Watkins, an outspoken advocate of affirmative action (affirmative action helped get him into Vanderbilt, but “Watkins action” got him out, he likes to say) remains critical of the move. Changing the name was “less than courageous,” and broadening the eligibility ran counter to David Rogers' efforts “to include the excluded,” he argues.

Gavin, who at the time was an RWJF Trustee as well as program director, says he supported the changes as necessary while realizing that to some he might have seemed to “change stripes.”

Conceivably, under the new criteria a white physician could make a case for eligibility, but Gavin says in reality the new wording has not had the dire consequences that some anticipated.

Of the 14 new scholars selected in 2008, three would not have met the old requirement—two because they are non-Mexican-American Hispanics and one who is a citizen of Sudan with permanent U.S. residency status. (Originally, only citizens were eligible for the program, but RWJF later broadened the rule to include permanent residents.)

Kenneth R. Cooke, M.D. (2001-2005)

Associate Professor, Department of Pediatrics and Communicable Diseases, Division of Hematology/Oncology, C.S. Mott Children's Hospital, University of Michigan Medical Center

Cooke helped establish that Enbrel, a drug approved by the Food and Drug Administration for treating rheumatoid arthritis and psoriasis, might also be effective in treating lung injury associated with bone marrow transplants in humans. “We're poised to change the way we treat this disease,” Cooke says. “To be in a position to ‘raise’ rather than simply ‘follow’ the standard of care for our patients is the most exciting part of my work.”

“Productive academic careers are founded on knowing where you have to be in three to five years,” he says. “It can be hard to get that perspective and overview without an outstanding mentor.”



PROGRAM EVOLUTION

Over the years, the program has also undergone more subtle—and noncontroversial—changes. Perhaps most important has been the increasing involvement of alumni in the program’s operation. In 2008, of the national advisory committee’s 16 members, five are former fellows:

- Glenn Flores, a member of the cohort selected in 1996, now professor of pediatrics and public health, University of Texas Southwestern Medical Center, Dallas.
- Juanita Merchant, 1987, professor of internal medicine and molecular and integrative physiology, University of Michigan Medical Center, Ann Arbor, Mich.
- Arturo Molina, 1986, senior vice president, clinical research and development, Cougar Biotechnology, Los Angeles.
- Lee W. Riley, 1985, professor of infectious disease and epidemiology, University of California, Berkeley, School of Public Health, Berkeley, Calif.
- Griffin P. Rodgers, 1983, director of the National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, Md.

In addition, alumni are returning as mentors. In 2008, three of the applicants teamed up with previous program participants. There is also an increase in informal peer mentoring and networking among former fellows, according to Ardery. “Because we’ve got critical mass, there is much more opportunity now for interaction among the different generations of awardees,” she says.

Merchant, a basic researcher in GI tract-related processes and one of the five alums on the committee, says, “One of the important things that I think all of the fellows benefit from is the family feel of the program.” It’s a “warm and fuzzy” feel, she says, that draws many former participants long after their fellowships have ended.

Academic medicine can be a “very tough” environment, and the program—the administrators, committee and former fellows—provides a place to “share your experiences with those who are going through the same thing,” Merchant says.

Among operational changes, two stand out:

- In 2004, *fellows* became *scholars*—a change in terminology to avoid confusion between this program and post-residency specialty training fellowships.
- In 2006—to address the shortage of minority hematologists with academic and research appointments—the American Society of Hematology (ASH) agreed to fund at least one additional fellowship a year, to go to a minority or disadvantaged physician in the field.

With the participation of ASH, each annual cohort now typically has 13 members—12 funded by RWJF and one by ASH. However, on occasion, the committee has responded to difficult selection choices by recommending that RWJF fund an extra scholar.

That happened in 2008, and as a result the program’s newest and 26th cohort will have 14 members instead of 13. The practice is to make up the funding difference by reducing the number of awardees the following year.

Jesus A. Araujo, M.D., M.Sc., Ph.D. (2004-2008)

Assistant Professor of Medicine, Department of Medicine, University of California, Los Angeles (UCLA) School of Medicine, Los Angeles.

Director of Environmental Cardiology, Division of Cardiology, UCLA School of Medicine, Los Angeles.

Araujo pursued research in a pioneering field that helps connect environmental, medical and genetic tools. This field of research (Environmental Cardiology) was so new that Araujo hadn’t even included it in his original application.

“I found this whole community of people who are in various stages of their careers.... These different disciplines and areas make a success of the whole scientific enterprise.”



IMPACT

In 1995, RWJF commissioned an evaluation of the program by two academic physicians: Kenneth Bridges of Harvard and Lloyd H. Smith Jr. of the University of California, San Francisco.

They concluded the program was unique and effective. Based on conversations and correspondence with current and former fellows and mentors, the two reported that the program “has had, and continues to have, a seminal role in developing the potential for academic careers for this admirable group of young physicians.”

The evaluators went on to raise an interesting question—one they immediately acknowledged could not be answered with certainty absent a control group: Would this elite group of physicians have succeeded in academic life without a faculty development program?

Asked another way: Was the national advisory committee adept at identifying highly competent individuals already unstoppable on the career ladder—or did the program, in fact, give them a boost up the ladder?

The answer appears to be both. While a quick read of their CVs makes it clear the men and women entering the program are already high achievers, former fellows interviewed recently were emphatic that the four-year experience gave their careers a significant push.

Added Wilkes, the professor at Indiana, “There are a lot of incredibly smart people who did not make it because they did not have that structure behind them.”

One factor, of course, is the money. The stipend buys time for research and, hopefully, the production of journal articles. “It allowed me to do a number of different projects,” says Glenn Flores, who calls the fellowship instrumental in his academic success.

Flores, a pediatrician and health services researcher now on the national advisory committee, focused his fellowship project on preventable hospitalizations of children. A New Yorker of Puerto Rican background, he is today a recognized authority on health disparities and related issues.

“I’d have to go back and look, but I think it was upwards of 30 or 40 publications after four years. So it provided me with protected time that I needed—and, of course, a set of really tremendously inspirational people.”

One, says Flores, was his advisory committee mentor, Sandy Schwartz of the University of Pennsylvania. “I still can’t believe how dedicated he was.”

The support of committee mentors and other fellows is another key benefit cited by former participants. “This program was probably the cornerstone of my career development,” says Lisa A. Cooper, a 1995 fellow who credits the encouragement and role modeling she received as a major assist in opening professional doors.

“What this program does is connect you to people who know what it takes to be successful,” says Cooper, who in 2007 received a \$500,000 “genius” award from the John D. and Catherine T. MacArthur Foundation.

Today a professor at Johns Hopkins in the medical and public health schools, Cooper focuses on improving the health care of minorities. Her research on the role of race and ethnicity in patient-physician communications has received widespread attention.

Griffin Rodgers, the NIH division director, says the program made him part of a large and ever-expanding community of scholars. “They allowed you to have someone to run ideas by, and vice versa, as well as introduce you to their peers and colleagues. The major effect of that is to allow you to extend your network of potential collaborators.”

Along with the money and supportive network, former participants say a third important benefit of the program is an intangible best captured by the word *validation*.

“Having a Robert Wood Johnson fellowship was a huge measure of legitimacy to my proposed career path,” says Selwyn M. Vickers, professor and chairman of the surgery department at the University of Minnesota.

Vickers, a nationally known researcher in pancreatic cancer, entered the fellowship program in 1995 as a new assistant professor at the University of Alabama School of Medicine at Birmingham—the first African American ever hired by the school’s surgical department.

The fellowship “was instrumental in conveying to my institution and to my chairman and basic science mentor, that ‘Here is an individual who is worth my time.’” At any research-intensive institution, says Vickers, extramural money is the currency that buys credibility for a young faculty member.

Vickers’ RWJF-funded research was on growth factors in the development of pancreatic cancer—work that he continues today.

Wilkes, an immunologist who specializes in lung transplant problems, was in training at the University of Texas Southwestern Medical Center in Dallas when he won his fellowship in 1991.

The next year he moved to Indiana University, taking his RWJF funding with him. The fellowship definitely made him a more attractive job candidate, but it was not just the money, he says. The award is “an affirmation that you have already been vetted,” says Wilkes, whose RWJF research project focused on lung immune regulation, where he continues to focus today.

“BRICK-BY-BRICK”

The minority groups that were underrepresented in American medicine 25 years ago remain so today. African Americans, Hispanics and Native Americans comprise only 6.4 percent of the nation’s physicians, according to 2004 data from the Association of American Medical Colleges.

In academic medicine, the numbers are a little better, at least for African Americans. They now account for 3 percent of full-time medical school faculty, according to the association’s 2007 survey—double the percentage cited by RWJF 25 years ago.

However, Watkins, the advisory committee member, says the impact of the RWJF program is not to be found in macro data of that kind. The program is too small to move that dial appreciably.

To see the program’s value, focus instead on the individual participants—people like Selwyn Vickers, says Watkins. “On a one-on-one basis, on a brick-by-brick basis, yes, we have made a difference. One brick at a time, we have been building the numbers.”

According to the program office, as of February 2008, 181 scholars had completed all four years of their fellowships, and of those 150 (83 percent) remained in academic medicine:

- 35 professors.
- 53 associate professors.
- 62 assistant professors.

Examples in addition to those already mentioned—but by no means a comprehensive listing—include:

- William F. Owen Jr., (a member of the 1985 cohort) is president of the University of Medicine and Dentistry of New Jersey.

- Three former fellows have been elected members of the Institute of Medicine:
 - Emery Brown (1991), professor of anesthesia at Harvard Medical School and professor of computational neuroscience and professor of health sciences and technology at Massachusetts Institute of Technology.
 - Gary H. Gibbons (1988), professor of medicine and director of the Cardiovascular Research Institute at Morehouse School of Medicine.
 - Roderick I. Pettigrew, (1983), director of the National Institute of Biomedical Imaging and Bioengineering at the National Institutes of Health.
- Keith L. Black (1986), is an internationally known neurosurgeon, director of the Maxine Dunitz Neurosurgical Institute and director of the department of neurosurgery at Cedars-Sinai Medical Center, Los Angeles.
- Richard Payne (1983), is a recognized authority on pain relief and palliative care and director of the Duke Institute on Care at the End of Life at Duke University and a professor in the Duke Divinity School.

“From a total percentage basis, we might not have made great strides,” says Watkins. “But when you look at each individual, you see it.”

Giselle Corbie-Smith, M.D., M.Sc. (2001-2006)

Associate Professor of Epidemiology, University of North Carolina at Chapel Hill, School of Public Health

Corbie-Smith designed a focused educational intervention to increase minority participation in research. She has published more than 20 articles about the topic and used the study’s findings to help establish best practices for investigators’ recruitment of African Americans for research.

“It’s not just about the research and their support of me as an investigator. It’s about the network of people you work with for those four years. The annual meeting was one meeting I looked forward to—to get to hear the amazing things that other people are doing and to be awed that I was asked to be a part of that group.”



As the Harold Amos Medical Faculty Development Program celebrates its silver anniversary, the RWJF leadership sees the original strategy and purpose as still valid and expects the program to continue unchanged.

“It is a long-term strategy,” says Lavizzo-Mourey.

“And it is a strategy that cannot be viewed as a solo strategy. This in and of itself is not going to increase the number of underrepresented minority students in medical schools. But it is a clear component of what needs to be done.”

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