



Summer Medical and Dental Education Program

An RWJF national program

SUMMARY

The *Summer Medical and Dental Education Program* is a six-week academic enrichment summer program to help qualified undergraduate students from minority and disadvantaged backgrounds compete successfully for medical and dental school admission.

This long-running national program of the Robert Wood Johnson Foundation (RWJF) provides medical and dental school preparation—free of charge—to incoming college sophomores and juniors who meet one or more of the following criteria:

- Identify with a racial or ethnic group that is underrepresented in medicine and dentistry, including Blacks, Native Americans and Hispanics. (For a definition of the term "underrepresented in medicine," see [Appendix 1](#).)
- Come from an economically or educationally disadvantaged background
- Demonstrate an interest in issues affecting underserved populations

Program Evolution

RWJF launched the program in 1987 to help pre-med students from underrepresented minority groups and subsequently expanded the focus in 2003 to include students based on socioeconomic factors regardless of race and ethnicity and in 2005 to add students interested in dentistry.

As the program evolved so did its name—from *Minority Medical Education Program* to *Summer Medical Education Program* and, in 2005, to *Summer Medical and Dental Education Program*.

Also of evolutionary significance: starting with the 2006 session the program limited participation to incoming sophomores, juniors and, in one site a limited number of rising freshmen. Previously the program was open to all undergraduates and recent graduates. The change reflected a determination that younger students received greater benefit from the curriculum.

Currently, medical and dental schools at 12 universities across the country participate in the program. Each site enrolls 80 students a summer and provides instruction in basic science and math, help with writing and oral presentation, development of learning and study skills, exposure to health policy issues, assistance in financial planning, and a clinical experience.

Key Results

The national program office reported the following:

- From the first summer session in 1989 through 2010, a total of 19,441 students participated in the enrichment program. The vast majority—14,659—participated during the years 1989–2005 when the program was for pre-med students only.
- Of those 14,659 participants, 64.5 percent (9,458) subsequently applied to M.D.-granting institutions.
 - Of the medical school applicants, 65.7 percent (6,216) were accepted
 - Of those accepted, 98.4 percent (6,118) entered medical school
 - Of those who entered M.D.-granting institutions, to date 75.8 percent (4,637) have graduated.
- From 2006, when the program began accepting pre-dental students, through the 2010 session, a total of 4,782 students participated—81.5 percent (3,895) as pre-med students and 18.5 percent (887) as pre-dental students.

At the time this report was prepared (June 2011), none of the 2010 participants had yet reached the point of applying to medical or dental school.¹ The following are results to date for the 2006–09 participants:

- A total of 3,132 pre-med students participated in the program, and to date 27 percent (848) applied to medical school. (The low percentage reflects the fact that many of these recent participants were still not far enough along in college to apply to graduate school. Less than 1 percent of the 2009 cohort had applied as of June 2011.)
 - Of the applicants, 63.6 percent (539) were accepted, and of those accepted, 97.2 percent (524) matriculated.
- A total of 701 pre-dental students participated during 2006–09, and of those, 44.7 percent (313) had applied to dental school to date.

¹ Along with adding pre-dental students, the 2006 session was the first year the program was open to only incoming sophomores and juniors. Thus, none of the 2010 participants was a college senior as of June 2011 when this report was written.

- Of the applicants, 68.7 percent (215) were accepted, and all of those accepted entered dental school.

(As would be expected, none of the 2006–09 participants had yet graduated from medical or dental school.)

Program Management

The Association of American Medical Colleges (AAMC) in Washington is officially the national program office. However, the AAMC runs the program collaboratively with the American Dental Education Association (ADEA):

- The program co-directors are Marc A. Nivet, Ed.D., M.S., chief diversity officer of AAMC, and Richard W. Valachovic, D.M.D., M.P.H., executive director of ADEA.
- The program co-deputy directors are Norma I. Poll-Hunter, Ph.D., director of AAMC's Human Capital Portfolio, and W. David Brunson, D.D.S., associate director of ADEA's Center for Equity and Diversity.

Funding

RWJF's Board of Trustees originally authorized the program in July 1987 for up to \$8 million. It was reauthorized in 1994, 1998, 2003, 2005, 2009 and 2011. Total spending through July 2011 was \$67,847,977 million, with more than \$4 million left in the 2011 authorization.

CONTEXT

Racial and ethnic minorities have long been underrepresented in medicine and dentistry. Non-minorities from disadvantaged circumstances also face special challenges to entering the medical and dental professions.

In 1970, minorities constituted 16 percent of the U.S. population but only 2.3 percent of the nation's medical students and 5.9 percent of all medical professionals, according to a 1978 report of the AAMC Task Force on Minority Student Opportunities in Medicine.

Since then, in the wake of civil rights legislation and various public and private initiatives, minority students have entered medical school in larger numbers. However, while narrowed, the gap remains. African Americans, Hispanics and Native Americans total almost 30 percent of the U.S. population but account for:

- Some 12.3 percent of physicians, according to AAMC data for 2008
- About 7 percent of dentists, according to American Dental Association data for 2006

- Some 13.9 percent of all medical school students and 12.8 percent of dental school students, according to 2007 AAMC data

Poverty and related socioeconomic factors that contribute to minority underrepresentation also have an impact on the entry of disadvantaged non-minorities into the health professions. An AAMC analysis² of students entering medical school in the years 1987–2005 found:

- Students from low-income families (those with parental income less than \$19,178 a year) never accounted for more than 5.5 percent of the total during the study years.
- In contrast, students from high-income households (income greater than \$91,705 a year) never accounted for less than 48.1 percent of the total.

Impact on Care

Underrepresentation in medicine is not just an issue of career opportunity. Research shows that minority doctors and dentists are more likely than their non-minority colleagues to practice in underserved, low-income areas and treat minority patients.

Thus, a more diverse physician and dentist workforce can be expected to improve the ability of underserved populations to get medical and dental care—and, importantly, care that is culturally compatible.³

RWJF's Interest in the Area

The mission of RWJF is to improve the health and health care of all Americans. Because minority physicians, dentists and other practitioners provide the majority of care to underserved minority populations, RWJF has long supported initiatives to increase the number of minorities in the health professions.

For a comprehensive discussion of RWJF's philanthropy in this area, see "The Robert Wood Johnson Foundation's Commitment to Increasing Minorities in the Health Professions" by Jane Isaacs Lowe and Constance M. Pechura in the 2004 issue of *The Robert Wood Johnson Anthology*.

In recent years, RWJF has broadened its diversification effort to include individuals who, regardless of racial or ethnic heritage, are economically disadvantaged, live in isolated rural areas or come from other circumstances historically associated with substandard health care.

² The analysis, "Diversity of U.S. Medical Students by Parental Income," is available at <https://www.aamc.org/download/102338/data/aibvol8no1.pdf>.

³ See the Institute of Medicine 2004 report *In the Nation's Compelling Interest: Ensuring Diversity in the Health-Care Workforce*, available at <http://www.nap.edu/openbook.php?isbn=030909125X&page=R1>.

For example, in the early 1980s RWJF created a program—now called the *Harold Amos Medical Faculty Development Program*—to provide four-year postdoctoral research awards to minority physicians committed to pursuing careers in academic medicine. The Foundation has since opened the program to non-minority physicians disadvantaged by financial, geographic and other factors. For more information, see the [Program Results](#).

The Supreme Court: A Factor

A key factor in the Foundation's expanded approach to pipeline diversification was the U.S. Supreme Court's 2003 landmark decision on affirmative action.

Ruling on two University of Michigan cases (*Grutter v. Bollinger* and *Gratz v. Bollinger*), the court held that race- and ethnicity-conscious admission policies must be narrowly tailored and give substantial weight to other diversity factors.

RWJF was not involved in the Michigan litigation but saw potential implications for all race- and ethnicity-based pipeline diversification programs. Consequently, the Foundation added socioeconomic criteria to the vetting process for its own initiatives in this area.

THE PROGRAM

The *Summer Medical and Dental Education Program* is a six-week intensive academic enrichment summer program to help undergraduate students from racial and ethnic minority and disadvantaged groups compete successfully for medical and dental school admission.

The program's purpose is to expand the overall pool of minority and disadvantaged applicants by increasing the acceptance rate of those who have the credentials for medical and dental school admission. The ultimate goal is a health care workforce that more closely mirrors the nation's general population.

This long-running RWJF national program provides medical and dental school preparation—free of charge—to incoming college sophomores and juniors who meet one or more of the following criteria:

- Identify with a racial or ethnic group that is underrepresented in medicine and dentistry, including African Americans, Native Americans and Hispanics
- Come from an economically or educationally disadvantaged background
- Demonstrate an interest in issues affecting underserved populations

For the full list of eligibility requirements, see the program's [website](#).

Participating Universities

Twelve universities located across the country participate in the program, each enrolling 80 students a summer. The schools get \$300,000 each annually in RWJF grant support and match that dollar-for-dollar with cash and in-kind contributions in the form of faculty salaries, student housing and the like.

The 12 sites, which were selected through a competitive process conducted in 2005, are:

- Case Western Reserve University Schools of Medicine and Dental Medicine (Cleveland, Ohio)
- Columbia University College of Physicians and Surgeons and College of Dental Medicine (New York, N.Y.)
- Duke University School of Medicine (Durham, N.C.)
- Howard University Colleges of Art & Sciences, Dentistry and Medicine (Washington, D.C.)
- David Geffen School of Medicine at UCLA and UCLA School of Dentistry (Los Angeles, Calif.)
- University of Louisville, Schools of Medicine and Dentistry (Louisville, Ky.)
- University of Medicine and Dentistry of New Jersey, New Jersey Medical and New Jersey Dental Schools (Newark, N.J.)
- University of Nebraska Medical Center, Colleges of Medicine and Dentistry (Omaha, Neb.)
- University of Texas Health Science Center at Houston, Schools of Medicine and Dentistry (Houston, Texas)
- University of Virginia School of Medicine (Charlottesville, Va.)
- University of Washington Schools of Medicine and Dentistry (Seattle, Wash.)
- Yale University School of Medicine (New Haven, Conn.)

Nine of the participating institutions accept both pre-medical and pre-dental students and enroll a maximum of 60 pre-medical and a minimum of 20 pre-dental students. Three sites (Duke, University of Virginia and Yale) do not have a dental school and consequently devote all 80 slots to pre-medical students. The medical-school-only programs offer scholars an opportunity to learn about the dental profession through seminars and/or clinical experiences.

While students apply to the program through a centralized online process, each university decides which applicants to accept for its summer session. For more on the application process, see [Appendix 2](#).

The Curriculum

Program participants take courses in the basic sciences and math and also get instruction in:

- Communications skills (written and oral)
- Learning and study skills
- Personal financial planning and career development

In addition, students are exposed to national health policy issues and have a clinical experience, such as participating in a group clinical rotation or clinical seminar.

The curriculum is not all classroom work. The universities introduce the students to physicians and dentists from a variety of backgrounds and take other steps to solidify the students' interest in the health professions and increase their confidence that they themselves can become members of it.

At the University of Virginia, for example, each participant receives a medical school identification pass and a white coat to wear daily to class, making them indistinguishable from regular medical school students.

Mentoring is a key ingredient. Edna Iris Flores, a 1997 program participant at the University of Washington, was assigned to shadow an otorhinolaryngologist. "I recall not even knowing what exactly that was at the time,⁴ let alone being able to pronounce the full name of the specialty, but it was a really great experience," says Flores, the eighth of nine children in a San Antonio, Texas, family that struggled economically.

"I had the opportunity to scrub into OR cases and get acclimated with surgery as a specialty, which looking back was a great experience and prepared me for my clinical clerkships in medical school," says Flores, who went to medical school at the University of Texas Health Science Center in San Antonio. In 2011 she was beginning a fellowship in hematology/oncology at a California hospital.

Cecil R. Webster Jr. was an undergraduate at Morehouse College in Atlanta when he attended the 2001 summer program at Columbia University in New York. "You learn

⁴ No doubt, she was not alone. In lay terms, an otorhinolaryngologist is an ear, nose and throat doctor.

how to take the MCAT [Medical College Admission Test], how to take good notes, how to study, what you needed to do well in medical school, what is medical school," he says.

"I don't think anyone has a clear idea of medical school before they get there. But this program represented the closest thing that I could ever experience," says Webster, who graduated from Baylor College of Medicine in Houston in 2007 and completed his general psychiatry residency at Baylor in 2011.

See the separate profiles on [Flores](#) and [Webster](#).

While the 12 universities follow prescribed guidelines, they vary in precisely how they structure the curriculum. For a comparison of operations across the 12 sites, see the program [website](#). For a more in-depth look at site operations, see the separate reports on three universities that have participated through all three stages of the program:

- [University of Medicine and Dentistry of New Jersey](#)
- [University of Virginia School of Medicine](#)
- [University of Washington Schools of Medicine and Dentistry](#)

The Student Experience

Students accepted into the program participate free of charge. They live in dormitories, where medical and dental school students serve as residential advisers and teaching assistants and offer academic and other support.

The host universities also provide meals, a financial stipend (\$600 starting in 2012), access to campus recreational facilities and opportunities for social activities. As with the curriculum, the sites vary in precisely how they deliver these components.

Nine of the sites also help with travel expenses, and RWJF provides additional transportation funds through the American Dental Education Association.⁵

The Student Experience: Two Examples

Valerie Cordero, 1996 Pre-Med Participant

Valerie Cordero, whose mother is a Shoshone and a member of the Wind River Reservation in north-central Wyoming, planned to have a career in

⁵ In December 2010 RWJF awarded the American Dental Education Association a \$90,000, three-year grant (ID# 068567) to provide travel scholarships of up to \$500 to about 70 participants a year. From 2006 to 2009, the American Dental Association provided \$100,000 through its education association to support travel.

music. After junior college, she left her hometown of Riverton, Wyo., for Las Vegas and life as a professional saxophonist.

"I don't think I ever thought consciously about being a doctor," she says. "Everyone always encouraged me in music because I was good at it."

More than a decade and a few twists and turns later, Valerie Cordero did, indeed, become a physician and began practicing family medicine for a nonprofit health care system in the Seattle area.⁶ One important step along her circuitous route was participation in the RWJF summer enrichment program at the University of Washington in Seattle.

For Cordero, a key part of the summer was shadowing a physician practicing in the community. Just being in a medically oriented environment with people from a variety of backgrounds was valuable, Cordero says. "For me, it was like, wow—there are some Native Americans who are doctors."

Cordero, who returned to the University of Washington to get her medical degree, says that she doubts she would have gotten into medical school, at least not on her first attempt, had it not been for the summer enrichment program.

Myriam Jourdan, 2007 Pre-Dentistry Participant

Myriam Jourdan's background differs from Cordero's, but for her, too, the six-week experience was influential. Jourdan's parents, originally from Haiti, are psychiatrists in South Florida. She might have pursued medicine as well had she not had an interest in art, particularly drawing—an interest that drew her to dentistry.

From her own dental office visits as a youngster, Jourdan explains, she became fascinated by the way dentists worked with their hands, manipulating wires, making impressions. She grew to think of dentists as artists. "Dentistry was perfect for me. By the age of 13, I decided that this was what I wanted to do with my life."

To prepare for a dental career, she studied biology as an undergraduate at Nova Southeastern University in Florida's Fort Lauderdale area. She also attended the 2007 RWJF summer program at Columbia University.

⁶ Cordero was interviewed for this report in 2005. She subsequently moved back to Wyoming and as of 2011 was practicing family medicine in the rural community of Powell under her married name, Valerie Lengfelder. Her profile has not been updated with this information.

It was there that she realized how challenging the road ahead would be. The courses were tough, the other students as academically successful as she. Her program mentor, also from Florida, was direct—and helpful.

"When I just started the [summer] program, I did not stand out," Jourdan says. "But he was honest. My mentor told me, 'You have the drive, but you have to show more motivation and go after it.'"

Back at college, Jourdan did just that. She got more involved in the university's pre-dental club and was elected club president her senior year. She also developed a program for pre-dental students to shadow dental students and faculty in the university's dental clinic.

"I credit the [summer program] with not only consolidating my desire to pursue dentistry but also serving as the critical springboard I needed to push myself academically. So when I got back to Nova Southeastern University, I knew I had to step it up."

Jourdan graduated from college in 2009 and was accepted by the University of Florida's College of Dentistry, class of 2013.

See the separate profiles on [Cordero](#) and [Jourdan](#). For more first-hand student experiences, see the separate profiles on:

- [Walter Conwell \(2002\)](#)
- [Edna Iris Flores \(1997\)](#)
- [Kara King \(2001\)](#)
- [Eniola Mudasiru \(2001\)](#)
- [Ngozi N. Okoh \(2005\)](#)
- [Nicholas James Smith \(2000\)](#)
- [Cecil R. Webster, M.D.\(2001\)](#)
- [Shannon Wiegand \(1989\)](#)

For additional alumni profiles, see the program's [website](#).

Program Evolution

The *Summer Medical and Dental Education Program* is the third stage of an RWJF initiative that began in 1987 as the *Minority Medical Education Program*. The impetus

was a concern that minority applicants to medical school were being accepted at an increasingly lower rate than non-minorities.

In the mid-1980s RWJF funded the Educational Testing Service to analyze the minority applicant pool and identify factors associated with admissions success.⁷ A key finding was that academically qualified but unsuccessful minority applicants felt they were not well informed about the application process.

This lack of knowledge affected the students' ability to write effective application essays, develop strong skills for admission interviews and pick appropriate medical schools for application.

With those needs in mind, RWJF staff designed the summer program to include counseling in the application process and help with interview and writing skills. (For more information on the program's origins and early history, see "The Minority Medical Education Program" in the 2000 issue of *The Robert Wood Johnson Foundation Anthology*.)

First Stage: Minorities Only

The initiative operated under the name *Minority Medical Education Program* until 2003. The inaugural summer session took place in 1989 at six colleges and universities. By 2001 the program had expanded to 11 sites across the country. See [Appendix 3](#) for the list of institutions.

Through the 1990s participation was limited to students from the four racial and ethnic minority groups that the Association of American Medical Colleges (AAMC) had identified at that time as underrepresented in medicine:

- African Americans
- Mexican Americans
- Native Americans (American Indians, Alaska natives and native Hawaiians)
- Puerto Ricans living in the continental United States

(For a further explanation of the term "underrepresented" and its changing definition, see [Appendix 1](#).)

⁷ Grant ID# 009123

Second Stage: Expanded Eligibility

During the 1990s the political climate surrounding affirmative action became increasingly negative, generating concern that there could be a legal attack on the RWJF summer program or one of its participating universities.

That did not happen, but at the end of the decade RWJF responded to the concerns by opening up the program to all Hispanic students and giving the sites discretion to admit additional minority groups and disadvantaged white students.

However, it was not until 2003—following the Supreme Court's decision in the University of Michigan cases—that RWJF formally and explicitly broadened the program's target population to include members of all groups underrepresented in medicine as determined by socioeconomic, geographic and other factors, as well as race and ethnicity.

To reflect the change, RWJF dropped *Minority* from the program's name and it became the *Summer Medical Education Program*. Likewise, the application form was modified to ask students not only about their racial and ethnic background but whether they identified themselves as disadvantaged and, if so, for what reason. The changes took effect for the 2004 summer session.

Third Stage: Addition of Pre-Dentistry Students

In the early 2000s RWJF stepped up its efforts to increase diversity in the dentistry profession and, as part of that push, funded two of the summer enrichment sites to test the inclusion of pre-dental students in their sessions.

Staff and students at the two sites—Columbia University and the University of Washington—were enthusiastic about the addition, and in 2005, after two summers of the test, RWJF made the addition of pre-dentistry students permanent and program-wide, starting with the 2006 session.

With the change came the program's third (and current) name: *Summer Medical and Dental Education Program*. At the same time RWJF conducted a new site-selection process, resulting in the 12 university participants as of 2011.

Other Key Changes Made in 2005

In response to the program's almost two decades of experience and to the findings of a curriculum assessment,⁸ the newly christened *Summer Medical and Dental Education Program* instituted four other key changes that define how the program operates today.

Of greatest significance, as of the 2006 summer session the program limited participation to incoming sophomores and juniors—and, in one program, a limited number of rising freshmen. Up to then, freshmen, sophomores, juniors, seniors and even recent college graduates were eligible.

The move reflected a determination that students in the first years of college generally derived greater benefit from the program, and that the curriculum should be tailored more tightly to their needs.

At this same time, the program also:

- **Reduced enrollment at each site from 125 students per summer to 80.** The cutback reflected a consensus that recruiting 125 interested, qualified participants for each site was difficult. In fact, sites frequently missed the target altogether.⁹

Also, the higher number sometimes forced sites to fill their slots with students who lacked sufficient interest in science and medicine to benefit from the program, RWJF staff believed.

- **Increased uniformity among the sites.** RWJF required the participating universities to structure their enrichment activities more closely around a set of predetermined, core operational and programmatic principles.

Previously the schools included basic curriculum components outlined by RWJF but had considerable freedom to develop their own individual approaches. As a result, the content differed widely from site to site. For example:

- Some schools were providing in-depth preparation for the MCAT while others devoted a small amount of time to test preparation. The program now de-emphasizes MCAT preparation across all sites.
- Previously, the extent of the students' clinical experience differed from site to site. Now all sites must provide a clinical experience but a limited one, occupying no more than 5 percent of program time.

⁸ To date RWJF has commissioned two formal evaluations and an assessment of the summer program, the most recent in 2004. A summary of the findings appears in [Appendix 4](#).

⁹At the program's start, the target was 180 students per site, but that number quickly proved unrealistic and in 1991 was reduced to 125.

The makeup of the core curriculum continues to evolve. In 2010, the program added a health policy component aimed at broadening students' perspectives and exposure to other health professions.

- **Placed a higher priority on tracking participants after they complete the program—including those who do not go on to medical or dental school.** RWJF and the program staff were particularly interested in determining to what extent alumni enter health-related professions other than medicine and dentistry.

The AAMC runs a centralized application system for M.D.-granting schools, and the program staff used that database to track the participants who applied to medical school. The American Dental Education Association (ADEA) does same for dental school applicants.

But what about the participants—roughly 35 percent—who did not apply to either medical or dental school? There was no way to know what happened to them. To fill that void, the program office initiated an online system that regularly surveys all ex-participants on their career progress.

The drawback is that the new system depends on voluntary responses. Of the 2006–10 participants, 37 percent had provided information as of early 2011—a response rate that the program office is trying to increase through small financial incentives (\$5-\$10 gift cards) and other strategies.¹⁰

Program Management

Initially, the national program office was at the University of Oklahoma Health Sciences Center in Oklahoma City under the direction of James R. Gavin III, M.D., Ph.D., a medical professor at the time. (Gavin later became the director of RWJF's *Harold Amos Medical Faculty Development Program*, a position he continues to hold as of 2011; he has also served two terms on the RWJF Board of Trustees.)

In 1993, following Gavin's decision to leave the university, RWJF transferred the program office to AAMC in Washington, where it remains today. With the addition of pre-dentistry students, RWJF made the program a joint responsibility of AAMC and the ADEA. (AAMC receives RWJF funding and subcontracts with the ADEA to collaborate on program management.)

The program co-directors are Marc A. Nivet, Ed.D., chief diversity officer of AAMC and Richard W. Valachovic, D.M.D., M.P.H., executive director of ADEA.

¹⁰ In addition, the national program office is developing a relationship with the Osteopathic Schools Association to track participants who enter osteopathic schools.

The co-deputy directors are Norma I. Poll-Hunter, Ph.D., director of AAMC's Human Capital Portfolio, and W. David Brunson, D.D.S., associate director of ADEA's Center for Equity and Diversity.

Program Office Activities

The national program staff, which consists of both AAMC and ADEA employees,¹¹ manages the centralized application service, maintains the tracking system, develops and implements communications and outreach strategies, coordinates alumni engagement initiatives, and oversees curriculum planning and implementation.

It also supports and monitors program activities at the 12 sites, including convening an annual meeting of the universities' program teams and conducting visits to half of the sites each summer.¹² RWJF staff members and national advisory committee members also participate in the visits.

Increasing the program's visibility, especially among potential applicants, is another activity. For a list of the staff's key communications and promotional functions, see [Appendix 5](#).

National Advisory Committee

A 12-member committee of outside experts in the health and education fields appointed by RWJF staff helped select the 12 universities, guides program policy and participates in site visits. William B. Deal, M.D., senior vice president for medicine and dean emeritus at the University of Alabama School of Medicine in Birmingham, Ala., chairs the panel. See [Appendix 6](#) for the full membership as of 2011.¹³

PROGRAM RESULTS

The Data: Participants and Medical/School Applicants

The national program office reported the following:

- **From the first summer session in 1989 through 2010, a total of 19,441 students participated in the enrichment program** The vast majority—14,659—participated during the years 1989–2005 when the program was for pre-med students only.

¹¹ As of June 2011, the staff consisted of six AAMC and two ADEA employees.

¹² As of 2011, four of the site visits are actual visits and two "virtual" visits conducted through electronic means.

¹³ A national advisory committee also guided the program in its earlier stages. Deal chaired that panel as well, but most of the other members were different.

- **Of those 14,659 pre-med participants, 64.5 percent (9,458) subsequently applied to medical school.**
 - Of the medical school applicants, 65.7 percent (6,216) were accepted.
 - Of those accepted, 98.4 percent (6,118) entered medical school.
 - Of those who entered medical school, to date 75.8 percent (4,637) have graduated.
- **From 2006, when the program began accepting pre-dental students, through the 2010 session, a total of 4,782 students participated**—81.5 percent (3,895) as pre-med students and 18.5 percent (887) as pre-dental students.

At the time this report was prepared (June 2011), none of the 2010 participants had yet reached the point of applying to medical or dental school.¹⁴ The following are results for the 2006–2009 participants as of that date:

- A total of 3,132 pre-med students participated in the program, and to date 27 percent (848) applied to medical school. (The low percentage reflects the fact that many of these recent participants were still not far enough along in college to apply to graduate school. Less than 1% percent of the 2009 cohort had applied as of June 2011.)
 - Of the applicants, 63.6 percent (539) were accepted, and of those accepted, 97.2 percent (524) matriculated.
- A total of 701 pre-dental students participated during 2006–09, and of those, 313 (44.7%) had applied to dental school to date. (The applicants include only three from the 2009 cohort, reflecting the youthfulness of the participants.)
 - Of the applicants, 68.7 percent (215) were accepted, and all of those accepted entered dental school.

(As would be expected, none of the 2006–09 program participants had yet graduated from medical or dental school.)

- As now constituted, the program draws participants from a range of racial and ethnic backgrounds. The breakdown for the 949 participants in 2010 was:
 - Black 36.7 percent (348)
 - Hispanic 19.9 percent (189)
 - Asian 14.1 percent (134)

¹⁴ Along with adding pre-dental students, the 2006 session was the first year the program was open to only incoming sophomores and juniors. Thus, none of the 2010 participants was a college senior as of June 2011 when this report was written.

- White 9.4 percent (89)
- Native American 0.6 percent (6)
- Other race 4.6 percent (44)
- Multi-race 13.3 percent (126)
- Race unknown 1.4 percent (13)

Program Impact: What the Data Mean

Based on interviews with RWJF and national program staff and former participants, the program has had the following key impacts:

- **Thousands of undergraduates have gained new skills that made them more viable medical and dental school applicants.**

"I often refer to [the program] as 'academic boot camp,' but it exposes students to much more than the academic rigors of health care careers. This program exposes students to the possibilities, and it gives them the tools they need to succeed."

—Andrea Daitz, M.A., RWJF staff member with lead responsibility for the program

As evidence of the program's impact, Poll-Hunter, the co-deputy director, cites the number of alumni who have successfully applied to medical and dental school. She also points to another statistic: program alumni as a proportion of all minority medical school applicants.

According to 2004 AAMC data—cited by Poll-Hunter and a colleague in an article in *Academic Medicine*¹⁵—program alumni accounted that year for:

- 17.6 percent of all Black applicants to M.D.-granting institutions
- 9.8 percent of all Native American applicants
- 8.2 percent of all Hispanic applicants

The program "makes a significant contribution to the [minority] applicant pool," she says.

For Cecil Webster, the Morehouse undergrad who went to medical school at Baylor, the contribution was not just the six weeks he spent at Columbia University but the lasting relationships he formed there.

¹⁵ Dill MJ and Poll-Hunter N. "AM Last Page: Increasing Workforce Diversity." *Academic Medicine*, 85(1): 179, 2010. Available at http://journals.lww.com/academicmedicine/Fulltext/2010/01000/AM_Last_Page.43.aspx.

"Even though I was not at Columbia after that summer, I was able to talk to advisers, and they helped me figure out what recommendations I would need and from whom," he says. "Having that support was exceptionally helpful. I would not have known how to prepare for the process of even applying for medical school without this program."

The story of Walter Conwell is another example of how the program can strengthen an applicant.

Conwell, an African American, grew up in a one-parent family in a poor Gary, Ind., neighborhood without the slightest idea of becoming a physician.

"My mother would come to me and say, 'What do you want to do with your life?' I would say I want to be a nurse." A nurse? 'Why not a doctor,' she would ask? No way, he thought.

Conwell was in high school when he met an African-American physician for the first time—a meeting that ignited a burning ambition to be a physician. A talented high school student, Conwell got a scholarship to Florida A&M University, and as graduation neared, he considered his prospects for medical school admission.

His grades and MCAT score were good, but he knew he lacked exposure to the medical field. Surfing the Web for summer opportunities, he came across what was then called the Minority Medical Education Program.

One of the sites at the time (2002) was a collaborative curriculum in Chicago run by the medical schools of four local universities: Loyola, Northwestern and Rush universities and the University of Chicago. Only 30 miles from his home town, it seemed like a perfect fit.

During his six weeks in Chicago, Conwell attended lectures on organ systems, observed surgeries and shadowed a general internist—an experience that sparked a lasting interest in internal medicine.

In one-on-one sessions with admissions officers for each of the four medical schools, he got a clearer understanding of the admissions process as well as help honing the autobiographic essay required of medical school applicants.

Conwell put all of that to good use. He was accepted by a number of medical schools and—in no small part because of the ties he developed during the RWJF summer program—chose to attend Chicago's Pritzker School of Medicine.

Getting from the mean streets of Gary to one of the nation's premier medical schools took work, determination, a sharp mind and, Conwell will tell you, a helping hand from above.

He will also tell you that the summer enrichment program was an important stop on his journey to what was once an unimaginable destination: the medical profession.

See the full profile of [Walter Conwell](#).

Students like Conwell bring with them a wealth of talents and experiences that no doubt do more to shape their subsequent success than any summer curriculum can ever hope to do.

Even so, the roster of RWJF program alumni is full of men and women to whom those six weeks have provided a boost as they overcame tough odds to enter the medical and dental professions.

Edna Flores, the 1997 program participant from the large San Antonio family, is certainly one example. "I am the first doctor in my family—it's been a challenging yet rewarding opportunity, but I could not have done it on my own," she says.

"I needed the support of numerous teachers, mentors and my family who have supported me throughout this arduous process—and summer programs like the [RWJF program], which afforded me the opportunity to experience medicine firsthand."

Another example is that of Karen Morris-Priester, an African-American mother of five who participated in the program in 2001 and six years later graduated from Yale medical school—the first grandmother ever to do so.

Read about her tenacious journey in "Long Road to Cedar Street" published in *Yale Medicine* in 2003 (available [online](#)) and in a 2007 follow-up article (also [online](#)). (TV host Oprah Winfrey recognized Morris-Priester's accomplishment on a "Cheers to You" segment of the Winfrey show broadcast a few weeks before the 2007 Yale commencement.)

- **An important impact of the program—possibly the most important, according to program staff—is that it increases students' self-confidence in their ability to enter and succeed in medical school.**

"It reinforced my decision to become a physician and provided me even more motivation to pursue a career in medicine."

—Huy Mai, former participant from College of Southern Nevada, Las Vegas

"This is the message that the students take with them when they leave: 'Someone believes in me, and I have what it takes,'" says Moses K. Woode, Ph.D., professor emeritus at the University of Virginia School of Medicine, summer program adviser and former long-time director of the university's summer program. "They suddenly realize they can make it to the M.D. Promised Land."

Students from underserved backgrounds are often the first in their family to attend college or to consider the health professions, and many come from environments that provide little encouragement in that direction, explains Victoria Gardner, M.Ed., who directs the University of Washington School of Medicine's Office of Multicultural Affairs and oversees the university's summer program.

While the program tries to help participants appreciate the difficult road that lies ahead, it also fosters confidence in their ability to complete the journey. "You don't have to be a genius to go to medical school"—that is a message the program delivers, Gardner says.

Increased confidence is definitely something that Shannon Wiegand got from her six-week experience.

Wiegand was two years old when her father, a Fort Peck Tribe member of Sioux and Chippewa heritage, and her Norwegian-Irish mother moved from Montana to Alaska to teach in a native village for the federal Bureau of Indian Affairs.

Young Shannon liked Alaska and learned about native village life. She also liked science classes in school and had an interest in health care. In junior and senior high school and later in college, she worked as a hospital volunteer. However, she never considered becoming a doctor. "It wasn't something I thought I could do," she says, looking back.

A major factor, Wiegand believes, was the absence of a role model. Growing up in Alaska, she knew no female physicians, no Native American physicians, and no physicians of color. "You don't know what you can do until you're exposed to the possibility," she says.

Wiegand attended the RWJF summer program at the University of Washington in 1989—the first year it was offered—and in 1994 became the first program alum to get an M.D.

Had she not attended the summer program, she doubts that she would have applied to medical school, she says. Being exposed to people from a variety of backgrounds in an academic medicine setting gave her the confidence that she did have, after all, what it would take to get in and through medical school, she says.

"When I left [the program], I was going to medical school. It was kind of like: 'Eureka.'"

Shannon Wiegand's story lends strong support for the central strategy behind the summer program: that increasing the number of minority and disadvantaged students in the medical profession will result in improved access to care for the nation's underserved populations.

A board-certified family physician, she has devoted her career to providing care to American Indians and Alaskan Natives. As of 2011, she was practicing at the Chief Andrew Isaac Health Center in Fairbanks.

For more information, see the full profile of Shannon Wiegand, M.D.

Nicholas James Smith also gained in self-confidence through the program:

Nicholas James Smith grew up in a one-parent, African-American family in Aberdeen, Miss., a town of about 6,500 people just west of the Alabama line.

*As a youngster, he never met an African-American doctor in person. But in high school he did get to know one from afar when he read *Gifted Hands*, the autobiography of Ben Carson, M.D., an African-American from inner-city Detroit who became director of pediatric neurosurgery at Johns Hopkins University Hospital.*

Carson's book solidified what had been a recurring thought: Nick Smith wanted to be a doctor. He certainly seemed to have what it takes. He liked science and was a good student. Indeed, he was good at just about everything. At Aberdeen High, he played football, basketball and track, and still managed to be in the school band.

But despite all of that, Smith had doubts. "Coming from a small town, I didn't know if I was smart enough to be a medical student," he says.

In 2000, while an undergraduate at the University of Mississippi in Oxford, Smith attended the RWJF summer program at the University of Alabama at Birmingham (UAB), then one of the sites. The curriculum emphasized science review courses and included mock MCAT exams. Participants who scored well were guaranteed an interview with the UAB medical school's admissions staff.

Smith did score well, and the resulting interview gave his chances for medical school acceptance a big boost, he says. The review work also improved his performance on the real MCAT, which he took for a second

time shortly after the program ended. (His first attempt was several months before the program's start.)

In addition to the program's science courses, Smith took a class in interview skills, where he learned to anticipate likely questions in a medical school admissions interview. He also took a writing course that helped him prepare the autobiographical essay required of medical school applicants. Through the process he forged close ties with members of the UAB medical faculty.

Smith applied to a number of medical schools in the Southeast but withdrew his applications to the others when he received early acceptance at UAB. Without the summer enrichment program, he is not certain he would have gotten in, at least not on the first try, he says. "It kind of allowed me to get a foot in the door."

In 2005, Smith graduated from the UAB medical school and embarked on a five-year residency in ear, nose and throat surgery.

See the full profile of [Nicholas Smith, M.D.](#)

- **In addition to its impact on students, the program has enhanced the ability of participating universities to attract minority and disadvantaged students to their medical schools, according to program personnel.** Admissions committees at all of the program's participating medical and dental schools recognize that an applicant who has participated in the program has a level of understanding of the realities of professional school.

Because of its value as a recruiting tool, the University of Virginia has institutionalized the summer program as part of the medical school's diversity effort, says Woode. The University of Washington calls the summer program the flagship of its medical school recruitment effort.

Kara King, the daughter of a widowed African-American teacher in Columbia, S.C., decided in middle school that she would be a doctor, but choosing a medical school was not so easy.

She was between her junior and senior undergraduate years at Wake Forest University when she attended the summer program at Duke University. Particularly helpful were the writing course and a class that used "standardized patients"—actors who simulate health problems—to teach communication and examination skills.

But for King, probably the program's biggest impact was on her choice for medical school: Duke. Interacting those six weeks with the university's

medical staff and students and getting to know the campus raised Duke to the top of King's list.

Likewise, the six weeks gave the Duke staff an opportunity to get to know her. King is convinced that her summer participation was a factor in the success of her medical school application. The program is "a great bridge to get to medical school," she says.

For more information, see the full profile of [Kara King](#).

- **The program can also be beneficial for participants who do not end up applying to medical or dental school. An informed decision not to apply is also a success, according to former program director Charles Terrell, Ed.D.¹⁶**

Denise Epps, facilitator of the summer program at the University of Medicine and Dentistry of New Jersey, says some pre-med students—including some attracted by the respect and financial well-being associated with the medical profession—learn from the six weeks in the program that they do not have the commitment necessary to be a doctor.

Some of those same students, however, decide to become a physician assistant, nurse or other health professional, she says.

Based on voluntary responses to the tracking system developed by the national program office, the 2006–10 participants have pursued other health-related careers in these numbers:

- Public health, 23
- Nursing, 15
- Science advanced degrees, 14
- Pharmacy, 12
- Physician assistant, 11
- Psychology, 11
- Optometry, 6
- Veterinary medicine, 5

(Some program alumni have gone into osteopathic medicine, based on tracking data according to Poll-Hunter.)

¹⁶ Terrell directed the program from 2002 to the end of 2009 when he stepped down as AAMC's chief diversity officer.

Poll-Hunter says the program significantly increases participants' self-confidence in making career decisions, as measured by the Career Decision Making Self-Efficacy Scale-Short Form (Betz & Taylor, 2001). That has been the consistent finding each year since the tool's initial use in 2006, she says.

LESSONS LEARNED

1. **Make sure a student enrichment program includes a comprehensive system to track participants after they leave the program.** While the national program office could keep tabs on program alumni who applied to medical or dental school, there was no systematic way to learn what career paths the non-applicants took after graduating from college.

To address that shortcoming, program staff in 2008 implemented a system to track the career status of all alumni through emailed surveys and has since taken steps to upgrade the report mechanism and increase the survey response rate. (Co-Deputy Program Director /Poll-Hunter; Former Program Director/Terrell)

2. **Provide opportunities for networking as well as classroom education in enrichment programs.** Initially the program staff did not appreciate the beneficial impact of student networking. After several years, however, it became clear that informal interaction among participants helped build their self-confidence. As a result, the staff added planned social events to the program. (Former Co-Deputy Program Director/Harris)

3. **Anticipate potential difficulties when setting enrollment targets for a student enrichment program.** The RWJF program sites had trouble meeting the enrollment target when it was set at 125. A contributing factor was that some students applied, were accepted and said they would attend—but then failed to show up. Another complication was that numerous students applied after the deadline had passed.

To help address these problems, the national program staff organized a cadre of former program participants—called Ambassadors—to seek out potential participants and help them through the application process.

The program also cut the enrollment to 80 students per site—a target that they have had no difficulty meeting. (Former Co-Deputy Program Director/Harris and National Program Office Reports)

4. **Do not expect a six-week summer enrichment curriculum to be able to prepare an unprepared college senior or college graduate for medical school admission.** If a student is not ready for the medical school admission process by the time he or she gets a bachelor's degree, it is unlikely that a short summer program can provide enough help to make a difference.

The program initially included college seniors and post-baccalaureates. But after almost two decades of experience, RWJF concluded that incoming college sophomores and juniors gained the greatest benefit and that the program should focus on them. (National Advisory Committee Chair/Deal)

5. **Emphasize study skills and learning habits as much as academic content when developing an enrichment program.** Based on experience gained in the early years, the program increased the emphasis on teaching students how to learn and solve problems as opposed to imparting specific academic knowledge. For example, the program now de-emphasizes MCAT preparation. (National Advisory Committee Chair/Deal)
6. **Be careful not to set eligibility requirements for an academic enrichment program so high that they automatically exclude students who have potential but less than sterling grades.**

For many years the RWJF summer program required applicants to have an overall grade point average (GPA) of at least 3.0 (out of 4.0). In 2010, on the recommendation of the National Advisory Committee, the minimum was lowered to 2.5. A second requirement—a 2.7 GPA in the sciences—was dropped altogether.

The committee concluded the earlier requirement was too stringent, precluding students who had promise but were still adjusting to college life, says Daitz of RWJF.

While a 2.5 GPA may be too low for medical or dental school acceptance, program participants still have time to improve their academic performance, she says, noting that many have not yet completed even their freshmen year at the time they apply to the program. "We're not lowering the bar. I think we're opening up the door," Daitz says. It is too soon to tell if this change may result in a lower acceptance rate to medical or dental school for program participants.

CHALLENGES FOR THE FUTURE

- **Reaching the types of students that the program was designed to help—those from minority and disadvantaged backgrounds—is an ongoing challenge.** RWJF has voiced particular interest in increasing recruitment of American Indian and Alaska Native students and students living in rural areas as well as in the nation's southeast and southwest regions.

Enhancing recruitment activities to expand the applicant pool was one of the objectives set for the program in conjunction with its 2009 and 2011 reauthorizations. "Are we reaching the students we want to reach? We keep asking ourselves that," says Daitz.

- **Increasing the response rate to the alumni tracking surveys remains an objective.** Program staff has implemented various strategies aimed at generating a

greater response, including offering gift cards to the first 100 alumni who respond to a survey, enlisting the sites to send follow-up email requests, and engaging alumni through social media and in-person events.

In addition, the staff is exploring the possibility of collaborating with the American Association of Colleges of Osteopathic Medicine to track program participants who apply to schools of osteopathy. (AAMC represents M.D.-granting institutions, and its centralized application system does not cover osteopathic medical schools.)

- **Participating medical and dental schools faced financial challenges of varying degrees in 2010, the national program office reported to RWJF.** While there was no significant program disruption, some sites experienced turnover in program staff, the office said.

The university's housing, food and other program costs have increased in the face of flat RWJF funding. "The sites have had to be consistently creative in how they allocate the funds," says Poll-Hunter. A continuation of poor economic conditions could increase these financial pressures.

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Reviewed by: Lori De Milto and Molly McKaughan

Program officers: Jane Isaacs Lowe, Judith Stavisky and Andrea Daitz

Program ID#: MME

Program area: Human Capital

APPENDIX 1

What Is an Underrepresented Minority?

(Current as of the time of the grant; provided by the grantee organization; not verified by RWJF.)

In 1970, AAMC identified four specific racial and ethnic minorities as underrepresented in the medical profession in relation to their proportion of the U.S. population: African Americans, Mexican Americans, Native Americans (meaning American Indians, Alaska natives and native Hawaiians) and mainland Puerto Ricans (people of Puerto Rican heritage who live in the U.S. mainland rather than in the Commonwealth of Puerto Rico).

To accommodate the dynamics of national and professional demographics, the AAMC in 2003 adopted a new, flexible definition that avoids identifying any specific group: "Underrepresented in medicine means those racial and ethnic populations that are underrepresented in the medical profession relative to their numbers in the general population." See the AAMC [website](#) for their full definition, which is also used by the ADEA.

The new definition was generally understood to include the same four groups plus all Hispanics and all Pacific Islanders. The new definition also ushered in a focus on regional and community demographics.

For example, Poll-Hunter explains that while Asians in general are not underrepresented nationally, particular Asian ethnic groups can be underrepresented locally.

APPENDIX 2

Application Process

Through the program website, an applicant fills out a password-protected application, including college transcript(s) and recommendations, and submits it electronically to the national program office. As part of the application, the student designates up to three sites as his or her top choices.

The national program staff sends the application electronically to the student's three designated universities. Staff at each of those sites—not the national program office staff—decides whether to accept the applicant. If selected by more than one site, the student chooses which to attend.

Before 2010, the sites made decisions as applications arrived. In some instances, the sites' 80 slots were filled before the March 1 application deadline. To level the playing field,

the program staff made a change: it now requires the sites to make their selection decisions in two batches—February 15 for applications submitted by February 1, and April 15 for applications submitted between February 1 and the March 1 deadline. The sites must reserve a minimum of half of their slots for the second batch of applications.

For more about the application process, see the program [website](#).

APPENDIX 3

The 11 *Minority Medical Education Program* Sites in 2003

- University of Alabama School of Medicine, Birmingham, Ala.
- Baylor College of Medicine in conjunction with Rice University, Houston, Texas
- Case Western Reserve University School of Medicine, Cleveland, Ohio
- Chicago Summer Science Enrichment Program, a consortium involving the University of Chicago; and Loyola, Northwestern and Rush universities, Chicago, Ill.
- Columbia University College of Physicians and Surgeons, New York, N.Y.
- Duke University School of Medicine, Durham, N.C.
- Fisk University in partnership with Vanderbilt Medical Center, Nashville, Tenn.
- New Jersey Medical School, Newark, N.J.
- University of Virginia School of Medicine, Charlottesville, Va.
- Western Consortium, which included programs at both the University of Washington in Seattle and the University of Arizona in Tucson, Ariz.
- Yale University School of Medicine, New Haven, Conn.

APPENDIX 4

Program Evaluation Findings

Over the years RWJF has commissioned two outside evaluations and one assessment of the summer enrichment program, the most recent in 2004.

First Evaluation

In 1996, prior to the second reauthorization of the *Minority Medical Education Program*, RWJF funded an evaluation to quantify the program's impact on participants' chances for

medical school acceptance. RWJF funded the evaluation through a grant to the United Hospital Fund of New York.¹⁷

The co-principal investigators were:

- Joel C. Cantor, Sc.D., then research director at the United Hospital Fund of New York and previously a senior RWJF evaluation officer
- Lois Bergeisen (now Lois Colburn), at the time AAMC assistant vice president of community and minority programs, and deputy director of the program

Laurence C. Baker, Ph.D., an assistant professor at Stanford University School of Medicine, served as investigator.

The team analyzed AAMC data on minority medical school applicants in three years—1992, 1996 and 1997—and conducted telephone interviews with and administered written questionnaires to 12 lead faculty members at participating universities.

Findings, Recommendations and Conclusions

The evaluators reported the following in the *Journal of the American Medical Association*¹⁸ and the *RWJF Anthology*¹⁹:

- **In 1997, 49.3 percent of *Minority Medical Education Program* participants who applied to medical school (223 out of 452) were accepted compared to 41.6 percent of minority applicants who had not participated in the program (1,406 of 3,378).** The program also had significant, positive effects on the 1992 and 1996 applicant groups.
- **The program had positive effects on participants who were early in their college careers as well as those who participated late in college and on students with high as well as low grades and test scores.**
- **The program "enhanced the probability of medical school acceptance among its participants."**²⁰ "Intensive summer education is a strategy that may help improve diversity in the physician workforce," the authors wrote.

¹⁷ ID# 029560

¹⁸ Cantor JC, Bergeisen L and Baker LC. "Effect of an Intensive Educational Program for Minority College Students and Recent Graduates on the Probability of Acceptance to Medical School." *Journal of the American Medical Association*, 280(9): 772–776, 1998. Available at <http://jama.ama-assn.org/content/280/9/772.long>.

¹⁹ Bergeisen L and Cantor JC. "The Minority Medical Education Program." In *To Improve Health and Health Care 2000: The Robert Wood Johnson Anthology*, Isaacs SL and Knickman JR (eds). San Francisco: Jossey-Bass, 2000. Available at <http://www.rwjf.org/en/research-publications/find-rwjf-research/2000/01/to-improve-health-and-health-care-2000/the-minority-medical-education-program.html>.

- **In interviews, site directors emphasized that the *Minority Medical Education Program* had a positive impact on students not because of any one component but as a result of "the synergistic effects of the entire experience....** Some directors mentioned the program's contribution to preparation in the sciences, but most emphasized motivational and other noncognitive factors—for instance, that participants ‘enhance [their] understanding of the meaning of medical education, enhance their preparedness for application and understanding of the [application] process.'"

Second Evaluation

In 2002, prior to the program's 2003 renewal, RWJF funded a second evaluation led by Jonathan A. Showstack, Ph.D., adjunct professor of medicine and health policy at the University of California, San Francisco, Institute for Health Policy Studies.²¹ The evaluation sought to determine:

- Whether the program's structure and processes successfully supported the program goals and if not, what changes might be made.
- How the program might address the changing social, political and legal climate regarding diversity in education.

Showstack and his team conducted 53 interviews with staff members of RWJF, the national program office and the university projects, advisory committee members and experts in minority medical education. They also administered a Web-based survey of 1,200 former program participants (who responded to a written invitation mailed to 4,421 program alumni; a 27% response rate).

Findings, Recommendations and Conclusions

In October 2003, Showstack's team reported the following to RWJF²²:

- **Some 64 percent of *Minority Medical Education Program* participants from 1990 to 2000 who applied to medical school were accepted, based on national program office data.** To put that figure in perspective, the report said nationwide the highest percentage of underrepresented minorities ever accepted to medical school was 68 percent in 1989, and that the national figure declined to 37 percent in 1996.

²⁰ Also, in an unpublished report to RWJF, the evaluation team said it found that the program "increases the probability of [medical school] acceptance of its participants by nearly 20 percent."

²¹ ID# 046163

²² Showstack J, Rothman AA and Dixon KF. *An Evaluation of the Minority Medical Education Program*. San Francisco: University of California, San Francisco, Institute for Health Policy Studies, 2003.

- **Site directors at the participating medical schools view the program as beneficial to students and faculties.** Hosting the program made an important statement about the medical schools' beliefs and priorities regarding underrepresented minority education and increased the minority applicant pool, the site directors reported.
- **Most former program participants surveyed indicated strong satisfaction with the program overall.** On a scale of 1 (lowest) to 5 (highest), 53 percent of the 1,200 respondents rated their overall satisfaction as a 5 and 37 percent of respondents rated their overall satisfaction as a 4.
- **Of the 392 survey respondents who had applied to medical school, most reported that the skills learned in the program were very useful (41%) or useful (38%).** Respondents rated the most important skills as writing skills and preparation of the personal statement required of medical school applicants (42%), interviewing skills (29%); and information about the application process (26%).
- **Respondents were less satisfied with the program's efforts at providing networking with other minority students, the teaching ability of faculty, the quality and presentation of the curricula at the sites, and quality-of-life areas such as housing, meals and social activities.** They were least satisfied with efforts to improve study and test-taking skills and prepare for the Medical College Admission Test (MCAT).
- **Nine out of 10 respondents said the program increased their interest in applying to medical school,** with many commenting that the program strengthened their resolve and increased their confidence.
- **The program experience for students is "good" but "somewhat mixed," and changes in program administration and governance could improve participants' chances for medical school admission.**

Assessment

In late 2004, RWJF funded an assessment of best practices at the 11 universities then participating in the program.²³ The purpose was to identify key program components in preparation for implementing the new medical-dental stage. William B. Deal, M.D., chair of the advisory committee, directed the assessment.

He sent letters to all advisory committee members and site directors requesting their views on a range of program areas. He also visited the RWJF summer enrichment program underway at Columbia University and an unrelated enrichment program for disadvantaged students at the University of Connecticut.

²³ ID# 052567

Findings, Recommendations and Conclusions

Deal reported the following to RWJF:²⁴

- **The curriculum should be science-based primarily.** Instruction should be targeted to assist students with required prerequisites for admission to medical or dental school at the post-freshman or sophomore year at the latest. Core scientific subjects should be advanced biology, organic chemistry, physics and mathematics.
- **Complementing the science classes, each program should provide sessions on test-taking skills, study skills, communication skills (including writing the personal application essay), financial planning, time management, the medical school admissions process, and health topics involving ethical and critical analyses.**
- **Mentoring by professionals and graduate students should be a key component.**

APPENDIX 5

National Program Office Activities to Promote the Program

To focus attention on the *Summer Medical and Dental Education Program* and stimulate student interest in applying, the program staff:

- Maintains the program [website](#), which functions as the main recruitment tool and houses the centralized, online application process. The staff also uses Twitter and Facebook to focus attention on the program, and maintains a toll-free telephone information line (1-866-58-SMDEP) to assist potential applicants.
 - In November 2010 the office partnered with the nationally syndicated *Tom Joyner Morning Show* and BlackAmericaWeb.com on a Web 2.0 marketing blitz during the *Tom Joyner Virtual College Fair*.
- Enlists program alumni who have gone to medical or dental school to help interest college students in the program and mentor them in the application process. Each of these alumni boosters—called Ambassadors—agrees to recruit at least five eligible applicants a year. As an incentive, the Ambassador recruiting the largest number of applicants each year receives funding to attend a professional conference.
- Attends national and regional gatherings of pre-medical and pre-dental students, college advisers, educational leaders, minority affairs directors and elected leaders in order to publicize the program and stimulate student interest.

²⁴ Deal WB. *An Environmental Assessment of the Summer Medical-Dental Education Program for the Robert Wood Johnson Foundation*. Birmingham, AL: University of Alabama, 2005.

- Produces program brochures, posters and fliers, and disseminates the materials to college health advisers and others in a position to encourage student involvement in the health professions.
- Encourages publication of articles about the program in general and also specific participants. In 2010, for example, the *Hispanic Outlook in Higher Education* profiled Jazmin Villavicencio, a pre-med student of Mexican-American Indian heritage who participated at the University of Nebraska.²⁵ Jazmin was also featured in a one-minute public service announcement that was broadcast on tribal public television.
 - The program has also received coverage in *Keepsake*, the annual publication of the Student National Medical Association and *Motivos*, a bilingual magazine for young adults, and has been featured on various websites targeted at college students, including www.explorehealthcareers.org and www.aspiringdocs.org.
 - Brunson, the program's co-deputy director, co-authored a 2007 *Journal of Dental Education* article that presented the program as a promising way to increase minorities in the dental profession.²⁶
 - In 2010 Poll-Hunter, the other deputy director, contributed to physician workforce diversity data published in *Academic Medicine*.²⁷

See the [Bibliography](#) for additional materials.

²⁵ The article, published November 1, 2010, is available at <http://www.jdentaed.org/content/71/3/339.full.pdf>.

²⁶ Price SS, Brunson WD, Mitchell DA, Alexander CJ and Jackson DL. "Increasing the Enrollment of Underrepresented Minority Dental Students: Experiences from the Dental Pipeline Program." *Journal of Dental Education*, 71(3): 339–347, 2007. Available at <http://www.jdentaed.org/content/71/3/339.full>.

²⁷ Dill MJ and Poll-Hunter N. "AM Last Page: Increasing Workforce Diversity." *Academic Medicine*, 85(1): 179, 2010. Available at http://journals.lww.com/academicmedicine/Fulltext/2010/01000/AM_Last_Page.43.aspx.

APPENDIX 6

Summer Medical and Dental Education Program National Advisory Committee (as of 2011)

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Senior Vice President for Medicine and Dean Emeritus
University of Alabama School of Medicine
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Tamana D. Begay, D.D.S.

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Program Director
Math and Science Partnership Program

National Science Foundation
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Leon Johnson Jr., D.Ed., M.B.A.

President and CEO
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Jeremiah (Jerry) L. Putnam, Ph.D.

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Dean
School of Dentistry
Meharry College of Medicine
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James Story, Ph.D.

Professor Emeritus
Department of Pathology, Anatomy and Cell Biology
Meharry Medical College
Nashville, Tenn.

The committee had one vacancy as of June 2011.

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Non-Journal Articles

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Books or Chapters

Chapters

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Reports

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Deal WB. *An Environmental Assessment of the Summer Medical-Dental Education Program for the Robert Wood Johnson Foundation*. Birmingham, AL: University of Alabama, 2005.

Communication or Promotion

Grantee Websites

www.smdep.org. Website of the *Summer Medical and Dental Education Program* provides information on the program's purpose, history, content and eligibility requirements. Washington: Association of American Medical Colleges.

PROFILE LIST

A selection of grantees who have participated in the program is listed below. Click on the name to read their profile.

- [Walter Conwell \(2002\)](#)
- [Valerie Cordero, M.D. \(1996\)](#)
- [Edna Iris Flores, M.D. \(1997\)](#)
- [Myriam Jourdan \(2007\)](#)
- [Kara King \(2001\)](#)
- [Eniola Mudasiru \(2001\)](#)
- [Ngozi N. Okoh \(2005\)](#)
- [Nicholas James Smith, M.D. \(2000\)](#)
- [Cecil R. Webster, M.D. \(2001\)](#)
- [Shannon Wiegand, M.D. \(1989\)](#)

PROJECT LIST

Reports on the projects managed under this national program are listed below. Click on a project's title to see the complete report, which typically includes a summary, description of the project's objectives, its results or findings as of the date of the report, post grant activities and a list of key products.

- [NJ Summer Medical and Dental Education Program Gives a Boost to Minority and Disadvantaged Students Seeking Medical and Dental School Admission \(January 2006\)](#)
- [University of Washington Summer Medical and Dental Education Program Seeks to Draw Native Americans to Medical and Dental School \(January 2006\)](#)
- [VA Summer Medical and Dental Education Program Students Don Lab Coats and Try Out Medical School \(January 2007\)](#)