

**COMPREHENSIVE MINORITY BIOMEDICAL BRANCH
NATIONAL CANCER INSTITUTE
NATIONAL INSTITUTES OF HEALTH**

M.D. WORKING GROUP

**Underrepresented Minority Physician-Scientist
*TODAY'S OBSTACLES
TOMORROW'S OPPORTUNITIES***

**Gaithersburg Marriott Washingtonian Center
Gaithersburg, Maryland
May 2, 2002**

EXECUTIVE SUMMARY

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Executive Summary

The Workshop of the M.D. Working Group, held on May 2, 2002, was sponsored by the Comprehensive Minority Biomedical Branch (CMBB), Office of the Deputy Director for Extramural Sciences, National Cancer Institute (NCI), National Institutes of Health (NIH). The Workshop was held following a 3-day CMBB Professional Development and Peer Review Workshop for NCI graduate student supplement recipients, predoctoral fellowship grantees, and junior faculty career development awardees for the purpose of learning about the NCI peer review process. The Workshop of the M.D. Working Group afforded an opportunity for M.D. grantees to address problems and discuss barriers they have experienced as underrepresented minorities entering medical research careers.

The NCI has given increased attention to improving the participation of underrepresented minority physicians and scientists in NCI cancer research and funding priority areas. The CMBB identified the problems to be addressed by the Workshop as the following:

The number of underrepresented minority graduating medical students indicating interest in research careers is dwindling; the number of underrepresented minority M.D. first-time applicants for NCI grants and traineeships is plummeting, and is becoming a progressively smaller segment seeking NIH support; and Ph.D.s are applying for research project grants in far larger numbers than M.D.s.

Consequently, the underrepresented minority physician-scientist is at risk and in serious jeopardy of vanishing. This endangers all involved in medical research and weakens the bench-bedside bridge, because the physician-scientist is the critical link in the medical research chain. This threat can only be

averted by bold and concerted efforts. Workshop objectives developed to address these problems included:

- To learn about some of the current endeavors and appreciate the obstacles, including the variety of toxic factors in the form of powerful messages from the public about the M.D.'s social (versus intellectual) responsibilities, economic disincentives, inadequate postdoctoral training, unstable NIH funding, and the explosive growth of managed care; and
- To explore new opportunities for creating and expanding attractive training programs, which have not grown apace with today's needs.

The Workshop format included formal and informal presentations, each followed by a discussion of topics relevant to the obstacles and opportunities presented. A networking lunch also was scheduled to allow participants the opportunity to meet and discuss topics of interest. After a general discussion period following presentations, recommendations were developed and expressed.

THE DATA

Data from the Surveillance, Epidemiology, and End Results (SEER) Program of the National Cancer Institute indicate that minorities have higher incidence and mortality rates of many common cancers, such as lung, colorectal, prostate, and breast. In addition, 5-year survival rates are approximately 60 percent lower in African Americans than in Whites. Studies on access-to-care show significant racial disparities in many areas, including:

- Surgery for non-small cell lung cancer.
- Screening mammography.
- Renal transplant.
- Coronary artery bypass grafting.
- Coronary angioplasty.
- Carotid endarterectomy.
- Peripheral vascular surgery.
- Total knee or hip arthroplasty.
- Cataract surgery.
- Sigmoidoscopy.
- AntiHIV therapy.

In 1998, there were 660 protocols for NCI clinical trials; approximately 25,000 patients were accrued to those trials. African Americans, who comprise 12.9 percent of the U.S. population, represented only 8.1 percent of participants in the clinical trials. Underrepresentation also was seen in non-White Hispanics, American Indians, Alaska Natives, and Pacific Islanders. Impediments to clinical trial participation for minorities include socioeconomic barriers, lack of trust in the medical system, and lack of culturally appropriate approaches and educational materials.

Clinical trial participation depends, to a large degree, on participation of minority M.D. investigators. Medical school faculty comprise an important component of the NCI system for funding clinical trials. An area identified as a barrier to increasing participation of minority M.D.s in NCI clinical trials is the low number of minority medical school faculty members, especially at the tenured faculty level. In 2000, only 2.9 percent of medical school faculty members were African American; at the tenured faculty level, the percentage was only 1 percent. Additionally, in Fiscal Year 2000, African American Principal Investigators received less than 1 percent of NCI awards in the Research Grant (R01) and Cancer Center Core Grant (P30) categories, which are considered the most prestigious. Without an increase in minority medical school faculty members, or a revision in the manner in which the NCI supports clinical trial investigators, there likely will be no improvement in this area. The NCI has set goals for clinical trials outreach to minorities. They include:

- Increase Enrollment of Underrepresented Patient Populations.
- Increase Active Participation of Minority Investigators in Scientific Groups.

In the past 3 years, the NCI has established Clinical Trials Outreach Units at Howard University (1999), Meharry Medical College (2000), research funding supplements to 8-10 minority-accruing institutions (2001), and expects to add 2 new sites in 2002. In addition, the Minority Based Community Clinical Oncology Programs (MBCCOP), comprised of 10 minority-accruing universities, have been established to provide support for clinical research and state-of-the-art treatment and cancer control research in minority communities, and to increase the involvement of primary health care and other specialties in cancer control and prevention. Recommendations for developing successful centers for minority recruitment include:

- Develop sustained, aggressive action and commitment to solving the problem, including accountability and a level playing field.
- Use patient navigators from the patient's community, including research nurses and case managers, patient advocates, and other dedicated staff.

- Simplify and possibly defray the costs of the consent forms for awardees, and provide the forms in different languages.
- Increase patient access to Cancer Centers, reconsider catchment areas which define accrual targets, consider new partnerships with public hospitals, engage state and local governments to provide mechanisms for access by uninsured and underinsured patients, and partner with professional societies such as the American Society of Clinical Oncology (ASCO).
- Ask for greater accountability from the Cancer Centers, require Centers to report on inclusion of underserved populations and demonstrate commitment when completing the Core Grant,
- Provide greater support for research on outcomes and solutions relevant to underserved populations, use RFAs for minority oriented issues with molecular correlates and especially outcomes research, assist grant applicants with statistical support to include adequate outcomes endpoints, and address methodology issues.
- Concentrate funding in urban centers and centers where minority patients reside, increase the numbers of minority health care professionals and support staff, and train non-minority physicians to talk to minority patients about clinical trials and the impact of health disparities and access issues.
- Develop partnerships with organizations such as ASCO and industry, as well as with policymakers, health care professionals, professional societies, and underserved communities.
- Consider using community outreach staff and incorporate lay program leaders as community spokes persons, include patients who will benefit from participation in clinical trials, and provide support and incentives for patients, including transportation vouchers.
- Nurture the next generation of minority researchers.

TODAY'S ENDEAVORS

Increasing minority physician-scientist participation in NCI-sponsored grants and contracts offers an opportunity that should be aggressively pursued by individuals and institutions. Those minority

physicians-scientists who participate, and have had some success, are able to provide valuable lessons learned through experience. Foremost is the invaluable role that mentors play in developing systems of support for young researchers. Many mentors are able to work within institutional systems to secure and protect researcher time and resources, which are key to successfully navigating grant or other funding processes. Mentors also can work with young researchers to plan scientifically sound career-promoting projects. Working in both clinical and research environments is particularly difficult for young researchers. It is difficult to schedule the time to work in research, especially given the demands from the clinical practice side of medical life. However, a strong institutional commitment, fostered by an influential mentor, can provide the proper balance between clinical and research assignments, allowing growth in both areas.

Looking long term, as more minority physician-scientists find supportive positions, the opportunity will exist to build on these successes to cultivate an ongoing increase in minority participation. It is important that minority physician-scientists take responsibility for marketing their skills and promoting their research. One Workshop participant suggested that minority physician-scientists need to solicit support for research early in their careers, and as aggressively as possible. Leveraging the research position also was suggested, especially as confidence grows from success in securing and completing grants.

Additional insights from personal experience were provided by Workshop participants. Selected insights include:

- Learn to speak the language of research and the language of the clinician.
- Use the time in research to develop skills in designing and implementing research protocols, and learn to write grant proposals that succeed.
- Encourage the institution to provide tangible support research (e.g., full-time laboratory technicians, data management support, or nurse PA/case management support).
- Develop a network of mentors, including those outside your institution.
- Keep up-to-date on your field of research interest, even when not actively involved in research project.

TODAY'S OBSTACLES

Minority physician-scientists face many of the same challenges that non-minority physician-scientists face, including the potential lack of support from the institution or department, finding mentors that can alleviate the difficulties of entry into the established research infrastructure, and the need to balance professional interests with medical school debt repayment realities. The minority physician-scientists also face the additional burden of institutional biases against providing support to researchers that are young or have not established a record of long-term success within established research networks. It is not unusual for a minority physician-scientist to be the only, or one of only a few, minority members in a medical school or research institution, which almost guarantees that there will be no existing support system to ease their induction into the research infrastructure. The competition for limited funding for scientific research makes the experience of Principal Investigators one of the most important evaluation criterion considered by proposal reviewers. The data presented earlier in the day indicated that very few minority physician-scientists are awarded the most coveted grants from the NCI (e.g., R01).

According to the Association of American Medical Colleges (AAMC), there has been an increase in diversity in medical education over the past two decades, but recent trends indicate a decrease in the minority applicant pool in medical colleges. In addition, medical school matriculation rates for minorities have fallen in the past few years. This should cause some concern among policymakers who have worked to develop programs over the years to increase the number of underrepresented minorities in the medical profession. Initiatives to address the current trends should be developed to avoid losing this generation of minority physician-scientists. Suggestions to the NCI and to minority physician-scientists for addressing some of the barriers include:

- Provide a centralized location for information to support minority physician-scientists.
- Target the research infrastructure with programs to encourage full participation of minority physician-scientists.
- Provide continuing education for minority physician-scientists.
- Provide a program to encourage participation in mentoring programs.
- Provide instruction to minority physician-scientists on methods to utilize existing programs to increase participation in NCI-sponsored research.
- Consider programs that target high school students to encourage an earlier commitment to the medical sciences.

- Participate in as many national and regional medical organizations as possible.
- Submit grant applications that have been reviewed and critiqued by knowledgeable investigators.
- Volunteer to participate in the NCI IRB or study section process.

TOMORROW'S OPPORTUNITIES

Research Grant Supplements

To support minority participation in NCI-sponsored research, the NCI issues supplements in the following categories:

- NCI Cancer Center Support Grant Supplements for Minority Clinicians pursuing Patient-Oriented Research (PA-01-079). These grant supplements are meant to increase the representation of minority physician investigators in patient-oriented research and to support minority clinicians as postdoctoral researchers or as investigators to develop their own independent research career. The applicant institution must include a description of the research project, source, and duration of funding for that project, and the mentor must be the PI of the clinical research project (not the PI of the NCI Cancer Center Support Grant).
- Institutional Clinical Oncology Research Career Development Award Supplements (K12S). The K12 grant supplement is intended for board eligible/certified clinical oncologists to pursue patient-oriented research, and may be awarded for up to 5 years of support. Any PI of an active K12 grant may request the award. Grantees will receive a salary of up to \$75,000 per year plus fringe benefits, and up to \$30,000 per year for research-related expenses, statistical services, travel, etc.
- Minority Supplements to the NCI-Supported National Research Service Award Institutional Research Training Grants (T32S). The T32 supplement is awarded to postdoctoral candidates (M.D. or M.D./Ph.D.) to pursue basic, prevention and population-based cancer research in interdisciplinary and collaborative settings. Funds, in the form of stipends, will be provided at the current National Research Service Award level, and may be awarded for up to 3 years of support.

K08 and K23 Career Development Awards may be awarded to increase the number of

underrepresented minority physicians participating as competitive NCI/NIH-funded cancer researchers. These awards support up to 5 years of research, and require a minimum of 75 percent research effort. The awards are funded for allowable costs, including a salary of up to \$75,000 and research and development costs of up to \$30,000. Investigators may submit an application for these awards on February 1, June 1, and October 1. More information may be found on PHS form 398/Research Career Award section IV website: <http://grants.nih.gov/grants/funding/phs398/phs398.html>. The K08 award, “Mentored Clinical Scientist Award for Underrepresented Minorities”, provides specialized laboratory-based cancer research training and requires a mentor from the basic sciences. The K23 award, “Mentored Patient-Oriented Research for Underrepresented Minorities” is directed toward patient-oriented research, which is research conducted with human subjects in which there is direct subject-investigator interaction.

NIH Loan Repayment Programs

The NIH and NCI have a variety of loan repayment programs to support the recruitment and retention of highly qualified health professionals as clinical or pediatric investigators. The NCI Loan Repayment Programs (LRPs) allow repayment of up to \$35,000 of the principal and interest of eligible educational loans of clinical or pediatric investigators for each year of research service, and the payment of 39 percent of the loan repayment amount per year toward Federal tax liability. The LRP is a contractual agreement, whereby awardees agree to engage in clinical or pediatric research for a minimum of 2 years. Examples of these repayment programs are the Minority Health Disparities Research LRP, the Clinical Researchers from Disadvantaged Backgrounds LRP, the Clinical Researchers LRP, the Pediatric Research LRP, and the Contraception and Infertility Research LRP. Eligibility requirements and information about eligibility criteria for the NIH LRPs may be found at the LRP Web Site: <http://www.lrp.nih.gov/>.

Recruitment of Minorities for Clinical Trials

Health disparities must be addressed in cancer clinical trials. In the past, the medical establishment has not been adequately thorough in recruiting underrepresented minorities for these trials. The limited number of minority physician-scientists involved in cancer clinical trials, especially at the PI level, may account for this shortcoming. In the past, the NIH may have fallen short in their efforts to recruit minorities into clinical trials, especially given the higher rates of cancer incidence among some minority groups when compared to Whites.

In general, cancer treatment trials should be made available to more patients, both minority and

White, than are currently enrolled in trials. To illustrate, more than 50 percent of children with cancer are enrolled in treatment clinical trials; this percentage drops to less than 2 percent in patients more than 65 years of age. Therefore, results from childhood cancer treatment trials are likely to be more generalizable to the entire population of children, than from cancer treatment trials in adults.

Cancer clinical trials that are in the recruitment phase, such as the Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial, and several large breast cancer trials, will be much more racially and ethnically diverse than past trials. Recruiting underrepresented minorities remains a challenge. Suggestions for improving recruitment include the use of social marketing to target recruitment efforts, a need for culturally appropriate materials, and inclusion of more minority investigators in cancer clinical trials. Another barrier for increasing participation in clinical trials for minority patients is the cost for treatment associated with the trial. According to a recent study, the patient cost for participating in a clinical trial is approximately 10 percent higher than the cost of treatment for a patient who is not participating in a clinical trial. How to cover these increased costs for treatment is an issue that needs to be addressed by federal and state agencies, as well as by insurance companies.

RECOMMENDATIONS

The following recommendations include those proposed by individual presenters as well as those proposed during the general discussion. The order of listing does not imply either priority or group consensus.

- Increase mentoring programs and discuss the issue of incentives for mentors.
- Address salary issues, especially in relation to Career Development Awards.
- Define the “percent effort” clause in the Career Development Award.
- Develop initiatives to address institutional commitment.
- Address release time for research.
- Reevaluate the number of years for support of NIH awards.
- Address the needs of the surgeon-scientist relevant to the physician-scientist.

- Centralize the efforts at the NCI and NIH regarding early intervention programs for medical students as it relates to recruiting more students into research.
- Increase collaboration with other organizations, as well as improving marketing of NCI programs.
- Continue programs for debt relief to allow time for research.
- Concentrate on improving skills in grantsmanship.
- Provide database support for minority researchers and mentors to help identify those M.D.s that are participating in NCI programs.
- Support for revising tenure and promotion criteria related to clinical versus basic researchers.
- Increase networking and accountability for minority physician-scientists.

Participants were asked to think about the “ideal award” that should be considered by the NCI to increase minority participation in research programs. The length of the award, the reimbursements associated with such an award, and other incentives that would make the award acceptable to more M.D. physicians-scientists, are areas that the NCI will be looking at as this initiative proceeds. Ideas should be submitted to Dr. Sanya Springfield, Director of the CMBB. One suggestion was to develop a program to recognize outstanding mentors. This award, which would not have a monetary value, could be presented at a national scientific conference and be based on criteria developed by the CMBB.