

Collaborative HIV Prevention Research in Minority Communities Program: A Model for Developing Investigators of Color

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SYNOPSIS

The Collaborative HIV Prevention Research in Minority Communities Program was developed to address the simultaneous overrepresentation of communities of color among those with HIV and under-representation of researchers of color at the National Institutes of Health. The program is designed to help scientists develop their programs of research and obtain significant research funding. The 27-month program has the following elements: small grant funding, a structured summer program, individualized long-term research collaboration, access to behavioral science expertise, and internal peer review of all products. To date, the 19 program participants, eight of whom have not completed the program, have received almost \$11,000,000 in research funding and have conducted culturally specific research with communities of color. In addition, a network of HIV prevention investigators of color has been created. Institutes throughout the National Institutes of Health (NIH) and other entities could use this model to develop investigators of color, improve the quality of research with communities of color, and begin to address health disparities.

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Seven years ago, a group of ethnic minority investigators conducting HIV prevention research at the University of California, San Francisco, met with the authors to discuss the factors that often impede ethnic minority investigators from obtaining funding from the National Institutes of Health and Public Health Service for HIV prevention research. The group identified a number of impediments to their success, including lack of appropriate mentoring and research collaborators, financial need that precludes post-doctoral training, and need for small grants before large projects can be proposed. To overcome these impediments, the UCSF Collaborative HIV Prevention Research in Minority Communities program was proposed as part of the Center grant for the Center for AIDS Prevention Studies (CAPS). Funding for the program was secured in September 1996 from the National Institute of Mental Health. The program was designed to provide small grant funding, a structured summer program, individualized long-term research collaboration, access to behavioral science expertise, and internal peer review of all products over a 27-month period. This paper will describe the need for and impediments to HIV prevention researchers of color, as well as describe the program, its accomplishments, and steps needed to apply this model elsewhere.

BACKGROUND

Communities of color bear a disproportionate share of health problems in the U.S. For numerous diseases, including diabetes, HIV, cardiovascular disease, and cancer, morbidity and mortality are significantly higher for persons of color than for the white population. Recently, more attention is being paid to ways to address these disparities.

In the area of HIV prevention and treatment, minority populations carry a disproportionate risk of HIV infection. Over 70% of cases of AIDS among women are in women of color, the majority of cases in injection drug users are drug users of color, and almost half of the AIDS cases among men who have sex with men are from minority groups.¹ HIV incidence data are equally alarming. HIV surveillance indicates that 69% of new infections are in communities of color,² although these communities make up less than 25% of the U.S. population. African American men who have sex with men have not slowed their rates of infection as white men have.³

Communities of color present a particular challenge to researchers. Research in these communities is more difficult because it must be sensitive to the particular needs and cultures of communities of color. Surpris-

ingly little is known about the cultural and psychosocial factors that influence HIV risk behavior in ethnic minority groups, and only a few studies have been conducted that attempted to change risk behaviors in members of a specific minority group. In a review of HIV intervention research in populations of color for the Office of Technology Assessment, Marín⁴ reported that those studies showing solid evidence of change in risk behaviors shared several characteristics. In general, the best studies target their intervention to a specific group, base their intervention on theory, and do extensive preliminary work to determine population-specific beliefs and barriers to HIV prevention. A few studies since 1995 also share these characteristics.⁵

The current literature on HIV prevention, which contains numerous studies on ethnicity as a predictor of risk behavior, does not provide sufficient information about why minority groups are at increased risk. Theorists in the area of culturally appropriate research propose that to truly understand these ethnic differences, studies must address the underlying mechanisms and cultural factors that can explain such discrepancies.⁶ For example, it may be interesting to know that Latinos report more risk behavior; but for intervention, it is important to know that Latino men who hold traditional sex role values and feel less comfortable with their sexuality are more coercive and less likely to use condoms.⁷

Researchers seeking to conduct HIV prevention research within minority populations encounter a variety of difficulties.⁸ Such populations may be unwilling to participate in research because of mistrust generated by abuses such as the Tuskegee syphilis experiment.^{9,10} In addition, language barriers may make translation of words, and especially concepts, to another language and culture difficult.⁸ Researchers have discovered that such seemingly ordinary concepts as locus of control and assertiveness have different meanings in other cultural groups.^{11,12} For example, homosexuality in Latino culture is not understood as "gay" vs. "straight," but as "men" vs. "women."^{13,14} Standard instruments frequently used with mainstream groups may have a different factor structure when applied to minority groups.¹⁵ Thus, population-specific measurements and methods, including qualitative research and careful instrument development, are needed to successfully involve respondents and accurately measure their beliefs, values, and behaviors.^{4,16} Methods for addressing research with minority populations have been developed,⁸ but many researchers have not been trained in their use.

While doing research with communities of color involves particular difficulties, ethnic minority scien-

tists often have certain advantages when doing HIV prevention in communities of color. Investigators who are minority group members are likely to have a special interest in and motivation to understand their community, so that instead of doing an occasional study that includes members of minority groups, they may feel motivated to dedicate their career to increasing knowledge about their community. Such long-term dedication greatly enhances the chances of increasing a scientific understanding of minority issues. Minority group members report feeling “used” by researchers, and researchers often find access to minority groups difficult.^{17,8} Scientists of color have more access to their community, often have language fluency, and typically have more credibility within that community.

Yet funded ethnic minority investigators are scarce. Historically, few ethnic minority investigators have received funding from the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), or other agencies. For example, less than 3% of the projects funded by NIH between 1982 and 1991 were headed by African-American, Latino, or Native American investigators.¹⁸ This situation has not changed significantly in recent years.¹⁹

Ethnic minority scientists who seek to compete successfully in highly competitive research environments face unique impediments. Absence of mentoring and research collaboration has been identified as a critical barrier to research participation by minority investigators.²⁰ The most talented minority scientists are often recruited to excellent universities directly out of graduate school. Therefore, the research skills, which may have been acquired during a postdoctoral fellowship, are not obtained, in part because the postdoctoral fellowship stipend is less attractive than an academic salary. An additional barrier to taking advantage of the opportunity to do a postdoctoral fellowship may be the burden of heavy educational loan obligations, which, combined with the low fellowship stipend and lack of moonlighting opportunities (at least for social scientists), makes traditional postdoctoral fellowships unattractive. Yet once recruited by universities, these minority scientists are expected to engage in funded research as well as assume numerous other duties.

The roles and duties that minority faculty are asked to assume make it difficult for them to develop a strong program of research. They are expected to assume heavy mentoring loads; to become the “experts” on issues of diversity within the organization; to educate members of the organization about diversity; to serve on affirmative action and other committees; to serve as liaison with the minority community; to negotiate cultural differences between administration,

staff and students; and even to translate documents or letters.²⁰ These activities, which are not expected of non-minority scientists at those same universities, take time away from scientific pursuits. In addition, minority scientists may find that their research on minority issues is not valued by other faculty and that research collaboration with someone knowledgeable about their ethnic group is impossible to find.²⁰ Finally, minority investigators are aware of the lack of success of many investigators of color and may feel that funding from the NIH is impossible to achieve.

Due in part to these many known impediments and to the need for diversity among scientists, several initiatives exist to train minority researchers. They include the Minority Health Statistics Grants Program, Hispanic Researchers Program through the Health Care Research Administration, Enhancement Awards for Underrepresented Minority Researchers in HIV/AIDS (also known as “Minority Supplements”), and workshops sponsored by institutes. Some of these programs are Requests for Application specific to minority researchers that assume researchers already have the necessary skills. Others are four- or five-day workshops that can provide an overview but cannot provide the ongoing collaboration or detailed information and practical experience needed. “Minority Supplements” are for a longer period, allowing an NIH-funded principal investigator to work with a junior investigator of color, but these supplements often do not allow the minority investigator to develop his or her own research ideas.

Investigators of color have unique qualifications for doing research with communities of color, and yet often they face various impediments to obtaining funding for that research. The program described below was designed to address the barriers to funding and help researchers develop culturally sensitive programs of research that will begin to address the serious health disparities in communities of color, specifically in the area of HIV.

DESCRIPTION OF THE PROGRAM

The purpose of the program described here is to provide training, research collaboration, and technical assistance to scientists, especially scientists of color, who plan and conduct research on HIV risk prevention in ethnic minority populations disproportionately affected by HIV. The program was developed initially through consultations with scientists of color at the UCSF Center for AIDS Prevention Studies and the Center’s peer review process. Each component of the program was designed to address known or suspected

impediments to the success of investigators of color at the National Institutes of Health. For example, the \$25,000 seed funding was designed to help participants strengthen their theoretical model and preliminary studies using data from their population of interest. Three summers at CAPS were needed because participants have heavy teaching loads and would need time to develop their proposals. Once initiated, the program has continued to change due to the ongoing input of the participants. For example, seminars have become increasingly less didactic, and focus directly on the work of participants.

This program takes place both at the UCSF Center for AIDS Prevention Studies (CAPS) and at the home institution of each scientist. This intensive collaborative process has the following elements and timeline: Summer 1 (at CAPS) covers elaboration and clarification of the research question, literature review and problem conceptualization, and development of preliminary studies plan. In Academic Year 1 (at home institution), participants conduct preliminary studies. Summer 2 (at CAPS) consists of analysis and write-up of preliminary studies and draft of research grant proposal; during Academic Year 2 (at home institution), participants revise and submit their research grant proposal. In Summer 3 (at CAPS), participants rewrite the proposal in response to reviewer comments or prepare to begin the research. We have found that the collaborative process often requires more time than the 27 months (two academic years and three summers) that we originally allotted. Informal support of our participants continues for as long as needed. Three to five minority-focused scientists begin this three-year process each summer. Thus, new participants have the advantage of intensive interaction with those who are continuing.

The 27-month program has the following elements: small grant funding, a structured summer program, individualized long-term research collaboration, access to behavioral science expertise, and internal peer review of all products.

Seed funding

Participants use a \$25,000 small grant to collect additional data needed to develop their research proposal. Generally, the funds are used to obtain in-depth interviews with the planned study population, almost always a specific subgroup of one ethnic group (e.g., African American adolescent girls; Latino gay men). These interviews serve to clarify the conceptual model and identify key variables. For example, while doing open-ended interviews with HIV-positive Latino gay men, one program participant discovered that many

of them were having difficulties adhering to their HIV medications, because they had not disclosed their HIV status to family members. She therefore added medication adherence as an outcome to her study of the mental health consequences of HIV disclosure. In another study, work with African American men in drug treatment suggested that they sometimes fear becoming "clean," as this is perceived as becoming "white." A culturally sensitive intervention was developed to address this issue among others.

Occasionally this preliminary research study helps to clarify issues of intervention feasibility and access to difficult to reach populations. Asian and Pacific Islander gay men were studied by another program participant, who learned ways that they use informal social networks to support their HIV preventive behaviors. He plans to use this information in developing and testing an HIV prevention intervention for this group.

Funds have also been used to assist in secondary data analysis of relevant data sets, including those of program mentors. Using one such data set, a program participant has found a steep increase in HIV risk-taking behavior among Latino gay men immigrating from Latin America. His research project will attempt to explain this increase through ethnographic methods.

As a requirement for admission to the program, the scientist's home institution must agree to waive the indirect costs on these small grants. This signals a commitment on the part of these institutions to support scientists' research efforts and results in a significant savings to the program.

Structured summer program

During each of three summers, scientists work at CAPS for six weeks. The program includes the following seminars and activities:

First year seminars. These seminars are particularly important for first year people who must present a scope of work, budget, qualitative interview protocol and human subjects protocol for their pilot research by the end of the first summer:

Pilot Study Development Seminar. This six hours per week ongoing seminar is designed to help scientists develop their preliminary studies and consider their long-term program of research. Participants work with various program faculty to develop the specific aims, rationale, and theoretical model of the large research proposal, as well as the aims, questionnaire, budget and human subjects proposal for the preliminary study. This seminar has evolved from a more didactic format to one that is entirely driven by the research projects being discussed. The participating

scientists provide feedback and ideas to each other and have proven to be an invaluable resource. Each program faculty provides at least one seminar in order to familiarize themselves with the projects of first year participants, as well as to provide his or her unique perspective and experience.

Three other one-time-only, two-hour seminars are provided:

Budget Justification provides an overview of thoughtful methods for assuring that budgets include all necessary items, such as writing the budget simultaneously with methods, and using the sample size/power analysis to help with budgeting. The seminar also covers use of the budget justification to build credibility for the study and differences between NIH and CDC budgets.

Human Subjects covers basic issues of protecting human subjects, including appropriate ways to access subjects, consent issues and language, as well as addressing the specific issues that each scientist is facing.

Community Collaborations provides an overview of the benefits, challenges, and methods of research collaborations between CAPS scientists and community-based organizations. Practical issues raised by the participants about such collaborations are also discussed.

Two seminars on **Qualitative Research Methods** provide an overview of qualitative methods and their applications. The focus is primarily on how to develop an in-depth interview protocol. The seminars cover structuring interview guides that solicit information about beliefs, behaviors, and complex social phenomena within a population. Issues of how to balance close-ended, semi-structured, and open-ended questions to get the type of data needed are addressed. Consideration is given to the best ways to elicit stigmatized behaviors. Issues of documentation, recording, transcription procedures, confidentiality, project-related training, staffing, and budgeting are also discussed.

Second and third year seminars. A variety of seminars are available for second and third year scientists, who attend as appropriate, depending on their progress:

The **Research Planning Seminar**, two hours per week, allows those preparing an RO1 or other research plan to receive feedback from program faculty, and other participants on various sections of their proposal. These seminars often focus on refining the theoretical model, but may cover any aspect. Scientists arrive with specific questions about their research and everyone participates in solving them.

The **Qualitative Research Seminar**, two hours per week, allows participants an opportunity to reflect on and work with their qualitative data. Depending on

the phase of the investigators' projects, discussions may focus on how to use data to build theory via inductive reasoning through theory triangulation, or consider which theoretical perspectives can be reformulated by the data. At earlier stages, scientists learn how to find, define, and describe a situated behavior or process in the data set and employ coding techniques to identify the multiple instances of it and variations across the data texts.

Three other two-hour, one-time-only workshops are offered:

Intervention Planning covers the issues that must be addressed in describing an intervention in a research application. These include the "dose" of the intervention, that is, the intensity and length of the intervention; practical issues such as how participants will return if the intervention takes place over time; what to do if the intervention shows no effect; types of interventions; and where to implement interventions.

The **Recruitment/Retention Workshop** is conducted by staff from HIV prevention trial projects who have hands-on experience in recruiting and retaining hard-to-reach participants in longitudinal studies. Topics include tracking methods, such as use of change of address cards, follow-up letters, contact persons, the INTERNET, phone books and directory assistance, universities, and the Department of Motor Vehicles. Other staff presents information about how to select, train and supervise recruitment personnel, and on how to manage burnout.

The **Grant Management Workshop** involves project directors from research projects and administrative staff who discuss grant management issues with scientists and answer their questions. Topics include how to hire a project director, project meetings, project planning, and personnel and financial management.

Additional seminars

Funding Opportunities Seminars. Whenever possible, additional seminars are provided by invited speakers from the Centers for Disease Control and Prevention and the National Institutes of Health, who discuss funding opportunities and mechanisms.

Returning Scientists Seminars. Scientists who have completed the program are invited back each summer, as appropriate, to provide seminars and peer review. These visits provide an opportunity for participants to consult with outside experts who are successful minority-focused scientists. These scientists are often able to provide information on specific topics outside the expertise of program faculty.

Literature Searches and Endnote: Scientists are offered the latest techniques for literature searches, cre-

Table 1. Program faculty: their role, education, expertise, and funding

Faculty	Role	Education	HIV-related expertise	NIH/PHS funding since	Minority-focused research since
Marín, BV	Director/ Mentor	PhD, 1981 Loyola Chicago	Latino sexuality, adolescent sexuality, research methods with minorities	1985	1980
Díaz, RM	Co-director Mentor	PhD, 1982 Yale	Latino gay men, risk reduction interventions, social discrimination and HIV risk	1983	1983
Tschann, JM	Mentor Methodologist	PhD, 1983 UC Santa Cruz	Adolescent couple relationships, adolescent sexual risk, violence, methodology	1992	1990
Dolcini, MM	Mentor	PhD, 1990 UC San Francisco	Social networks, adolescent social development and sexual health esp. in African Americans, interventions	1992	1988
Grinstead, O	Mentor	PhD, 1981 UC Los Angeles	Intervention development and evaluation, HIV testing and counseling, HIV/STD/hepatitis prevention for incarcerated populations	1995	1990
Folkman, S	Consultant	PhD, 1979 UC Berkeley	NIH review process, stress and coping, especially in HIV disease	1984	
Chambers, D	Statistical support	PhD, 1990 UC Berkeley	Longitudinal analysis, randomized clinical trials, power and sample size		
Neilands, T	Statistical support	PhD, 1993 UT Austin	Structural equation modeling, missing data, longitudinal analysis, modeling behavior change		

ating a reference library, and downloading references and abstracts from the internet by a CAPS in-house expert.

Weekly Forum. All scientists and faculty meet each week. We begin with a lunch that provides time to socialize, check in, and network. Afterward, the Forum allows two second- or third-year participants one hour each to present their work, including recently submitted large grant applications. They receive feedback from other program participants and faculty. Scientists share innovative research methods and theories, practical concerns about their projects, and various kinds of ethnic minority expertise.

Individualized long-term research mentoring and collaboration. Each scientist is assigned to one of the program faculty (see Table 1), who collaborates on their research throughout the course of their participation. This collaboration includes regular meetings during the summer, review of all written work, and frequent contact throughout the year. Program collaborators provide guidance on all aspects of proposal development, and often refer the participant to other resources as needed. The program faculty includes a statistician who is available for consultation as needed. Rather than provide quantitative instruction at the group level, which past experience has shown is often too general to be useful, the statistician works on the specific model

building, testing, and statistical power issues of the participant's project. This can be done in individual consultation or in the Research Planning seminar. In addition to completing their quantitative methods plan, participants report being better prepared to conduct additional quantitative analyses upon returning to their home institutions. Whenever necessary, this statistician receives consultation and feedback from the statisticians with other specialties at the Center.

Another critical aspect of the mentoring and research collaboration is the ethnic minority expertise of program faculty. All faculty who serve as research mentors have been selected because of their particular sensitivity to, expertise in, and commitment to ethnic minority populations. Each faculty mentor has a long track record of publications and grants focusing on ethnic minority populations.

While we initially envisioned this mentoring as a 27-month process, we have found that participants in the program often require mentoring and expertise beyond the stated time limits of the program. Those who have successfully achieved large grant funding may still have questions about grant management, subject recruitment or follow up, statistical or methodological issues, or their subsequent grants. Those who do not receive funding in the designated time receive the additional mentoring they may need, whether it is peer review, ongoing feedback about a proposal, or strategizing about responses to reviewers.

Access to behavioral science expertise. Participants receive support from multiple members of the UCSF and San Francisco research community. While there are only six program faculty, several additional CAPS faculty provide seminars, and participants are frequently referred to one of the 200 faculty and staff with experience in a variety of research projects. Referrals may also be made to other resources in the San Francisco Bay area, including local community-based organizations working with communities of color.

Internal peer review. A crucial aspect of the program is peer review of all products. CAPS has a well-developed system of peer review in place. Thus, at the end of each summer, each program scientist's summer product is reviewed in detail by a scientist and statistician unfamiliar with the project and by a participating scientist, with additional comments provided by program faculty and other program participants. In addition, during the year, program scientists return to CAPS for one or two peer reviews of their RO1 or other grants before submission, and peer review of reviewer comments. These mid-year peer reviews have proven helpful in providing additional feedback by experienced

grant makers at CAPS on a fully developed proposal. In addition, the participants have the opportunity to meet with statistical and methodological experts, their primary mentor, and others who have relevant expertise.

Participant selection and evaluation. Each year the program advertises widely for participants in appropriate scientific publications, newsletters, list serves, and websites. The program currently has an extensive list of such sites, as well as a mailing list of over 600 scientists who may be interested or know of others interested in the program. Potential applicants are encouraged to contact the program director who can help them decide if they should apply, since the application process is fairly rigorous. Applicants must complete a three-page statement of their research interests, past research activities and specific ideas about how they would use the \$25,000 small grant. They must also complete an application and submit their curriculum vitae and three letters of support. Once these materials are received, the program faculty read each proposal and then meet to discuss each applicant. Besides the strength of the research ideas and publication records of the applicants, a key evaluation criterion is their experience in the community they wish to study, including their ideas about cultural issues that may be affecting HIV prevention in this community.

RESEARCH PRODUCTS

In the five years of the program's existence, we have recruited and worked with 19 scientists from distinguished universities across the U.S. and Puerto Rico (see Figure 1). Eight of these scientists are currently in the program and eleven have completed it. All participants have used or are using the \$25,000 small grant to collect data on their population of interest. Nine of the program participants work with and represent the African American community, seven the Latino community, and three the Asian community.

The scientists who have participated in the program have obtained almost \$11 million of research funding (see Figure 2) including:

- Investigator-initiated grant (RO1), NIMH, 4 years, \$1.6 million;
- RO1, NIMH, 5 years, \$2.2 million;
- RO1, NIDA, 5 years, \$1.4 million;
- Center for Substance Abuse Prevention grant, 3 years, \$1.2 million;
- Center for Substance Abuse Prevention grant, 3 years, \$1.2 million;
- Los Angeles County Department of Health Services, 3 years, \$1.5 million.

Figure 1. Description of scientists accepted into program

Accepted 1997	
<p>Faye Belgrave, PhD Professor of Psychology Virginia Commonwealth University Richmond, VA Sex and drug risk prevention interventions for African American adolescent females</p>	<p>Hirokazu Yoshikawa, PhD Assistant Professor Department of Psychology New York University Social networks and their role in HIV prevention for Asian men who have sex with men</p>
Accepted 1998	
<p>Kurt Organista, PhD Associate Professor School of Social Work University of California, Berkeley HIV prevention in Mexican migrant workers</p>	<p>Accepted 2000 Kimberly R. Jacob Arriola, PhD Senior Faculty Associate Rollins School of Public Health Emory University HIV/AIDS and social inequality among African American women</p>
<p>Darrell Wheeler, PhD, MPH Assistant Professor School of Social Work Columbia University, New York; now at Hunters College, New York Physician-patient relationship and adherence to medication in HIV-positive African American gay men</p>	<p>Emma J. Brown, PhD Associate Professor School of Nursing University of Central Florida HIV risk prevention in Southern rural African American women</p>
<p>Maria Cecilia Zea, PhD Associate Professor of Clinical Psychology George Washington University Washington, DC. Disclosure of HIV status in Latino gay and bisexual men</p>	<p>Lynn F. Roberts, PhD Associate Professor City University of New York Hunter College Violence prevention intervention for adolescent African American females</p>
Accepted 1999	
<p>Larry Gant, CSW, PhD Associate Professor School of Social Work University of Michigan Interventions to reduce risk in African American drug users</p>	<p>Accepted 2001 Sonya Grant Arreola, PhD, MPH Research Fellow Center for AIDS Prevention Studies (CAPS) University of California, San Francisco Childhood sexual abuse and risky sexual behaviors among Latino gay men</p>
<p>Jesus Ramirez-Valles, MPH, PhD Assistant Professor in Community Health Sciences School of Public Health University of Illinois-Chicago Effects of volunteerism and activism on unsafe sex practices among Latino gay men</p>	<p>Gauri Bhattacharya, DSW, MSW, MA Assistant Professor School of Social Work University of Illinois at Urbana-Champaign Contexts of immigration and HIV risk: Asian Indians in the United States</p>
<p>Deborah Ridley Brome, PhD Associate Professor Department of Psychology University of Massachusetts, Boston Sexual self characteristics in African American adolescents</p>	<p>Dorie J. Gilbert, PhD Assistant Professor School of Social Work University of Texas at Austin Young African-American, HIV-affected daughters: a prospective assessment</p>
<p>George Ayala, PhD Deputy Director DHS Office AIDS Programs & Policy Los Angeles Race, class and unprotected sex among Latino gay men</p>	<p>Don Operario, PhD Research Specialist Center for AIDS Prevention Studies (CAPS) University of California, San Francisco Social identity, stigma, and the social context for HIV risk and protective factors among young gay men of color</p>
Accepted 1999	
<p>Héctor Carrillo, DrPH Specialist Center for AIDS Prevention Studies (CAPS) University of California, San Francisco HIV prevention among Mexican men who come to the U.S. to enact homosexual behaviors</p>	<p>Blanca Ortíz-Torres, PhD, JD Associate Professor University of Puerto Rico, San Juan Normative beliefs, social networks and health-related outcomes among Puerto Rican HIV-positive women</p>
<p>Lisa Bowleg, PhD Assistant Professor Department of Psychology University of Rhode Island Gender norms and power in relationships of black women and men</p>	

Other funding totaling over \$1 million has been received by participants (see Figure 1). Most of this funding comes from city or state health departments or the Centers for Disease Control and Prevention. Two of the ROIs listed above were funded on the first review, which is unusual for a new investigator. Several other large grant applications are in advanced stages of preparation.

Participants have completed a large number of manuscripts for publication based on program-related work (see Figure 2). They describe the knowledge gained from their small grant funds regarding their particular communities. Participants have also presented their work in panels at various public health and psychology meetings. At least three symposia consisting entirely of program participants have been presented at national meetings and more than 20 individual presentations. In addition to presenting the findings of their pilot studies and research projects, they discuss the methodological and cultural issues relevant to this research.

DISCUSSION AND POLICY IMPLICATIONS

We have designed a program to address the serious need for additional, high-quality ethnic minority HIV prevention research by recruiting, educating, and collaborating with promising ethnic minority and minority-focused scientists. The current project is specifically designed to provide several key elements:

- Ongoing research collaboration with scientists experienced in research among communities of color;
- Technical assistance in developing culturally appropriate, population-specific measures;
- Emphasis on theory-based, culture-specific research and interventions;
- Time and support for long-term research planning, data analysis and writing of reports;
- Emphasis on ongoing programs of research with minority populations;
- Seed funding for preliminary studies;
- Opportunities to interact with other investigators of color working on HIV prevention.

Scientists in the program have been highly productive, with two scientists receiving ROI funding on the first review. Such success in scientists who have never attempted an investigator-initiated proposal to the NIH before is notable. While it is possible that some of these scientists would have been successful without the program, at least one has indicated that she had

not even considered applying for NIH funding until she heard about our program (Personal communication, Maria Cecilia Zea, PhD).

Some of this funding success may be due to the innovative, community-focused research ideas that our scientists develop. Because they are from these communities and understand them, they are able to identify areas of research that are particularly innovative and intervention opportunities that may not yet have been tried. For example, participants have focused on innovative culturally-sensitive drug treatment for African American men, community involvement as a protective factor for sexual risk among Latino gay men, ways to reduce the confidentiality worries of rural African American women, and peer networks as a protective intervention for Asian/Pacific Islander gay men.

The need for these types of programs is great. Several recent initiatives have signaled the federal government's interest in addressing health disparities. The Congressional Black and Hispanic Caucuses have developed the Minority Initiative to Address Racial/Ethnic Disparities in HIV. The Center on Racial and Ethnic Health Disparities was created as part of the National Institutes of Health. However, for these initiatives to have the desired effect, it will be necessary for researchers of color to participate in them. The need for more scientists of color has been cited by a wide variety of groups, such as the Congressional Black and Hispanic Caucuses, the American Psychological Association, and the Office of AIDS Research.²¹ Programs to support and mentor such scientists are needed in many, if not most, fields of health research. Given the longstanding deficits in the number of researchers of color funded by the NIH, it will be necessary to make extraordinary efforts to mentor and train these researchers.

The program described here could serve as a model for mentoring researchers of color throughout the NIH. The program has successfully recruited 19 scientists of color, and these scientists have already obtained over \$10 million in funding. Similar efforts could be envisioned in all areas of health disparities.

Before such efforts can be implemented, however, a mechanism for funding such programs must be developed. Most NIH-funded training programs do not allow for some of the expenses needed to conduct this program (e.g., faculty salaries, seed funds). The program described here was funded in an unusual manner, as part of a five-year center grant, but cannot be continued under this mechanism. A funding mechanism for this program is currently being developed at the National Institute of Mental Health. Given the need for more investigators of color at NIH, greater

Figure 2. Collaborative HIV Prevention Research in Minority Communities Program**ACCOMPLISHMENTS****Grants Received**

- National Institute of Mental Health (RO1). *Zea*. Disclosure of HIV status among Latino gay men. \$1,625,799, 4 years
- National Institute of Mental Health (RO1). *Ramirez-Valles*. Latino MSM community involvement: HIV protective effects. \$2,257,000, 5 years
- National Institute on Drug Abuse (RO1). *Gant*. A risk reduction intervention for black men. \$1,443,381, 5 years.
- Center for Substance Abuse Prevention grant. *Belgrave*. Drug prevention intervention for African American females. \$1,231,554, 3 years
- Center for Substance Abuse Prevention grant. *Belgrave*. Intervention with African American girls. \$1,200,000, 3 years
- Los Angeles County Department of Health Service. *Ayala*. Evaluating the effects of improving HIV screening, referral, and prevention services. \$1,500,000, 3 years
- Centers for Disease Control and Prevention. *Ayala* (co-PI) and others. HIV prevalence and incidence among Latino men who have sex with men who frequent commercial and public sex environments. \$600,000, 3 years
- National Institute of Mental Health Minority Supplement. *Zea*. HIV Status disclosure among Brazilian gay men. \$163,363, 3 years
- New York City Speaker's Fund for Public Health Research. *Roberts*. Oppression, dating violence and HIV risk behavior in African American and Latino high school students. \$300,000, 3 years
- Health Resources and Services Administration. *Organista* (co-PI) and others. Centro De Evaluacion: HIV/AIDS Evaluation and Technical Assistance Center. \$300,000
- Detroit Health Dept. *Gant*. NJIDEKA II: A secondary risk reduction program for African-American women living with HIV/AIDS. \$80,000
- Florida Bureau of HIV/AIDS (program grant) *Brown*. Columbia-Union faith-based teen STD/HIV prevention project. \$38,740, 10 months
- New York City Department of Health. *Yoshikawa*. HIV prevention needs assessment of Asian/Pacific Islander men who have sex with men. \$15,000
- CA Office of AIDS. *Organista*. HIV prevention with Mexican migrant laborers. \$15,000
- Asian and Pacific Islander Coalition on HIV/AIDS (APICHA). *Yoshikawa*. Community risk assessment in Asian/Pacific Islanders. \$5,400

- APA Minority Fellowship. Doctoral student of *Yoshikawa*. HIV prevention among African American MSM.

Proposals Being Rewritten

- Office of Rural Health-HRSA (program grant). *Brown*. "BUCH HIV Rural Outreach Project". Requested: \$600,000 for 3 years.

Manuscripts Accepted/Published

- Ayala G 2001. Health Status of Lesbian, Gay and Bisexual People of Color Living in New York City: A Report on the Health Assessment Survey Conducted by the Audre Lorde Project. A Monograph of the Audre Lorde Project.
- Ayala G, Díaz RM. Race, class, and HIV risk among Latino gay men in New York City, Los Angeles, and Miami. *Journal of Homosexuality*. In press
- Ayala G, Díaz R. 2001. Racism, poverty and other truths about sex, race, class, and HIV risk among Latino gay men. *Revista Interamericana de Psicología*. In press.
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- Belgrave FZ, Brome DR, Hampton C. The contribution of Africentric values and racial identity to the prediction of drug knowledge, attitudes, and use among African American youth. *Journal of Black Psychology, Special issue on Drug Prevention within the African American Community*. In press.
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Figure 2 (continued). Collaborative HIV Prevention Research in Minority Communities Program

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Manuscripts Submitted

- Ayala G, Diaz R. 2001. Community-based collaborative research processes: lessons learned and re-learned.
- Brown EJ, Brown J. HIV prevention outreach in black communities of three rural North Florida counties.
- Brown EJ. Recruitment feasibility and HIV prevention intervention acceptability among rural north Florida blacks.
- Bowleg L, Tschann JM, Lucas KJ, Burkholder G. Relationship power bases in sociocultural context: condom use in black heterosexual relationships.

flexibility in funding guidelines should be addressed by other institutes.

A program such as this is not inexpensive, but this approach has been highly productive compared to other efforts to help minority scientists obtain NIH funding. This program costs about \$500,000 per year, over half of which goes to the participants in the form of seed funds, summer stipends, and travel. That investment has already resulted in three funded ROIs and several more in process. By comparison, the NIMH has recently been spending \$5–6 million per year on Minority Supplements, over half of that for funding

post-doctoral-level scientists. Of 82 recipients of post-doctoral Minority Supplement awards between 1997 and 2000, only two RO1 applications have been funded.¹⁹

Besides funded ROIs, another way to gauge the success of this program is to consider the secondary benefits when scientists of color compete successfully for NIH funding. For the last several years, NIH review groups have been asked to assess the adequacy of minority representation in the groups studied in evaluating grant applications. This has resulted in greater inclusion of minorities in study populations—but of-

ten without a proper understanding of the measures and methods that should be used with these groups. We hope that the greater expertise in how to study and work with communities of color provided by participants of this program will result in a meaningful improvement in the quality of research on communities of color.

Another benefit of the program is to reduce the isolation felt by scientists of color who rarely have the opportunity to interact with others who share their research concerns. The program has created a network of highly trained, community-based scientists who provide each other with technical assistance, support, and encouragement. Given the sense of isolation that haunts so many investigators of color, participants often cite this network as one of the most important benefits of the program.

The program has important benefits beyond the scientists who participate. Participants use what they have learned about qualitative and quantitative methods, grant writing, and other topics in their teaching. In addition, once funded, our investigators are diligently working to help train other minority scientists to do this type of research (e.g., Maria Cecilia Zea received a minority supplement and has four graduate students working on their theses or dissertations using her data). Finally, these scientists are frequently asked to assist the NIH, the CDC, and other federal agencies in peer reviews.

Even though the grantees have just begun their research, there are already interesting findings. Dr. Zea's study of disclosure of HIV status among Latino gay men used a computer-assisted interviewing technique in both Spanish and English that was well accepted by this often low-literacy group. The initial sample of 155 men revealed that less than half of their mothers or fathers knew that the men were HIV positive.²² Also, the men used a variety of indirect methods to either disclose or hide their HIV status, with more than half of them reporting that they hid their medications from others.

CONCLUSIONS

Investigators of color have been underrepresented among investigators at the National Institutes of Health and other research entities. This program has been successful in addressing some of the significant barriers to research funding for investigators of color through a structured program that provides small grant funding, ongoing mentoring and research collaboration, a structured summer program, access to behavioral science expertise, and internal peer review.

Unique benefits of the program are the network of talented investigators who support each other and the high quality of research on targeted populations within communities of color. Developing and supporting researchers of color and high quality research in communities of color is one promising avenue for eliminating racial and ethnic health disparities in HIV and other diseases.

Romy Benard and Alberto Curotto have contributed in many ways to the program's success through their hard work and creativity. The program participants, program faculty and an anonymous reviewer contributed important ideas for this manuscript.

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