

Investments in the Future of Behavioral Science: The University of California, San Francisco, Visiting Professors Program

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A need exists for the promotion of diversity in the scientific workforce to better address health disparities. In response to this need, funding agencies and institutions have developed programs to encourage ethnic-minority and early-career scientists to pursue research careers.

We describe one such program, the University of California, San Francisco, Visiting Professors Program, which trains scientists to conduct HIV/AIDS-related research in communities of color. The program provides training and mentoring in navigating grant processes and developing strong research proposals and provides crucial networking opportunities.

Although this program is focused on community-based HIV prevention, its principles and methods are widely applicable. (*Am J Public Health.* 2009;99:S43–S47. doi:10.2105/AJPH.2007.121301)

PROMOTING ETHNIC DIVERSITY

in all areas of the scientific workforce is needed not only for reasons of fairness but also because ethnic-minority researchers are in a unique position to help address chronic health disparities. Communities of color in the United States suffer disproportionately from a variety of health problems, including HIV/AIDS. People of color constitute the majority of AIDS cases among women, injection drug users, and men who have sex with men.^{1,2} AIDS cases also are rising in specific minority populations, such as adolescents of color and African American women in the South.^{1,3}

Ethnic-minority scientists may have greatest access to and credibility within the communities most in need of health disparity research, but few minority researchers are funded as lead investigators on National Institutes of Health (NIH) studies.⁴ The lack of ethnic-minority researchers in lead roles is attributable, in part, to the unique barriers these investigators face.^{4,5} Consequently, there is a need for concerted efforts to increase the number of ethnic-minority scientists conducting NIH-funded research on minority health disparities.

The process of achieving principal investigator status at NIH is highly competitive; only a small percentage of submitted grants are funded, and funding levels recently have decreased.⁶ Even well-trained scientists with creative, timely research ideas often face a lack of critical resources, such as institutional support, information

about the NIH system, grant-writing experience, effective networks, and mentoring.^{4,7} Thus, NIH has supported programs designed to enhance the ability of scientists from underrepresented groups to compete successfully as independent investigators.^{8,9} These programs are targeted toward scientists at all levels of career development as well as those from all racial and ethnic groups. Recent increases in the number of ethnic-minority doctoral students¹⁰ suggest that there may be an increasing overlap between ethnic-minority researchers and early-career researchers.

THE UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, VISITING PROFESSORS PROGRAM

NIH programs to encourage underrepresented groups of researchers include one-time intensive workshops, mentored experiences provided by research supplements, mentored K Awards, and the Collaborative HIV Prevention Research in Minority Communities Program, which is designed to meet the needs of a diverse range of investigators who wish to develop a research career in HIV/AIDS prevention. Initially funded in 1996 as part of an NIH center grant and refunded under NIH training mechanism R25, the Collaborative HIV Prevention Research in Minority Communities Program is based at the Center for AIDS Prevention Studies (CAPS) at the University of California, San Francisco

(UCSF), where it is known as the UCSF Visiting Professors Program. The program builds knowledge and experience in grant development and submission, scientific and mentoring networks, and institutional support (Table 1).

Each year a small group of behavioral scientists (typically 3–5 visiting professors) is selected, through a competitive process, to participate in the 3-year program. As of summer 2007, 40 scientists were currently in or had completed the program. Program participants represent a diverse array of disciplines, including medical anthropology, psychology, sociology, medicine, nursing, social work, and urban planning. The program is designed specifically for investigators interested in conducting community-based research on HIV/AIDS in ethnic-minority communities. To date, all visiting professors have been people of color, although this is not a requirement of the program.

Building Knowledge of the Grant System

Scientists who have little or no experience in research development or grant writing often decline to seek external funding from NIH. The NIH grant world—with its specialized lingo, arcane rules, and national preeminence—can be intimidating to scientists who have not been exposed to the system through collaborations with mentors or colleagues. One goal of the UCSF Visiting Professors Program is to demystify the NIH grant-making process through education

TABLE 1—Key Components of the UCSF Visiting Professors Program

Component	Description
Summer institutes	6 weeks in residence during 3 consecutive summers
Institute activities	Research planning seminars Peer reviews Science forums in which scholars present their work Networking meetings Mentoring meetings Special sessions with external speakers on methods, topics, and timely issues in HIV/AIDS
Summer stipends	Funds to replace summer teaching salaries for 3 summers
Seed funds	\$25 000 for preliminary study
Protected time	Commitment from home institution for 25% release time
Network development	Facilitated through formal and informal interactions among visiting professors
Ongoing mentoring	One-on-one mentoring throughout the year

Note. UCSF = University of California, San Francisco.

and experience. The program’s 3-year cycle enables each visiting professor to gain the experience necessary to develop, submit, and (usually) resubmit grants.

The UCSF faculty who direct this program have extensive experience in HIV/AIDS-related community-based research, research with ethnic-minority populations, and grant development and grant management, and faculty members share their expertise with visiting professors. Visiting professors have the opportunity to read grant proposals for funded projects (courtesy of the UCSF faculty), to review and hear reactions to NIH summary statements, and to hear an NIH program officer speak about opportunities and funding mechanisms. Program participants are also informed of NIH program announcements and requests for applications that may be relevant to their work.

The program includes 6-week summer institutes tailored to the participants, usually consisting of 3 cohorts of scholars per session (10–12 scholars total; Table 2). The

institutes include research-planning seminars that focus on various grant proposal components. In the specific aims seminar, for instance, examples of specific aims are presented, participants discuss what “good” specific aims look like, and scholars work with mentors on the specific aims of their own research. Methodological and data analysis seminars are tailored to meet the needs of each summer’s cohorts and to give visiting professors opportunities to seek input on pilot data from the faculty conducting the seminar. The tailoring of seminars to participants’ needs is especially important given the diversity of backgrounds and interests among visiting professors. Because the seminars meet over several weeks, visiting professors have the opportunity to continue to seek input and refine their research programs and grant proposals.

In addition to formal seminars, frequent informal meetings take place among visiting professors and between visiting professors and UCSF faculty. These

interactions focus on the development of research programs, grants, and manuscripts. For instance, weekly science chats provide opportunities for visiting professors to present their current work in an informal setting and to seek input from fellow visiting professors and from UCSF faculty on specific aspects of their work.

In recognition of the time-intensive nature of grant writing, the program is designed to provide protected time for visiting professors. Only a few days per week are devoted to seminars, allowing substantial blocks of time for research and writing. This is especially important during the second and third summers, when visiting professors are engaged primarily in data analysis and in writing grants and manuscripts.

The Visiting Professors Program takes advantage of the strong internal peer review system developed at CAPS over the past 20 years. At the end of each summer institute, each visiting professor presents a formal document for review, such as a manuscript, a grant proposal, or a reply to a critique of a previously submitted grant. Several reviewers—other visiting professors, a former visiting professor, the UCSF program faculty, or a faculty member not associated with the program—provide verbal and written feedback to the visiting professors on their documents. The reviews offer constructive, positive input intended to increase the probability of the proposed work’s success and to emulate the type of feedback that might be expected in an NIH review. Visiting professors often report that the peer review is one of the most helpful aspects of the program.

Strong grant proposals are based partially on preliminary data that provide evidence of the

investigator’s experience and of the feasibility of the proposed work. It is difficult to conduct this supporting research without financial resources, so the program provides each participant with pilot study funds to support work that will become the foundation of a future grant. Visiting professors refine their proposed pilot studies during the first summer, and UCSF faculty review and approve proposals for the seed funds. Typically, visiting professors conduct their preliminary research during the second (academic) year and return the second summer to discuss early findings. Data analysis is followed by manuscript preparation and proposal development.

Some visiting professors are early-career faculty, and their first proposals may be R03s, D2Ps (new early-career awards), or mentored K Awards. Others who are farther along in their research careers come to the program with research ideas for which they already have preliminary data or a rough draft of a proposal. Thus, proposal development can take place at any point in the program, depending on the visiting professors’ needs and experiences. Proposals are reviewed both formally in peer review and informally by faculty mentors.

Visiting professors’ successes in obtaining external funding attest to the program’s effectiveness. Since the program was launched in 1996, visiting professors have obtained more than \$28 million in NIH research funding, and program participants have obtained 20 NIH grants, including eleven R01s, an R24, an R41, an R34, an F32, two R03s, two R21s, and a mentored K Award. In addition to NIH funding, visiting professors have secured more than \$17 million in external funding from other federal sources (e.g., Centers for

TABLE 2—Overview of the UCSF Visiting Professor Summer Institute

Activities (No. of Meetings)	Content
All summers	
Introduction and plan (1)	Introductions and overview of Summer Institute.
Computer/housekeeping issues (1)	Essential information on computer setup, office keys, identification cards, etc.
Science chat (3-4)	Informal presentations by VPs to share their work and obtain feedback from others. Each VP conducts one science chat each summer.
Social lunches (weekly)	Lunch hosted by UCSF faculty to facilitate social connections among participants and with UCSF faculty.
Peer review (8-12)	Constructive feedback on documents (e.g., pilot study proposal, RO1 proposal) using internal and external reviewers.
Summer 1	
Specific aims seminar (1)	Introduction to specific aims section of grant proposals. Development/refinement of each participant's specific aims.
Background literature and significance seminar (1)	Introduction to background and literature sections of proposals. Development/refinement of each participant's background and literature review.
Methods seminar (1)	Introduction to methods section of proposals. Development and refinement of each participant's study design and method.
Qualitative research (2)	Introduction to qualitative methods as they relate to pilot studies. Review of principles of qualitative data collection and analysis.
Pilot study planning seminar (1)	Development of each participant's pilot study.
Human subjects issues (2)	Overview of specific human subjects issues in sensitive research. Discuss practical approaches to submitting IRB applications. Provide individualized advice on IRB issues.
Budget development (1)	Practical advice on budget development and budget justification for grant proposals.
PubMed and Web tutorial (1)	Overview of literature search mechanism available at UCSF.
Endnote tutorial (1)	Introductory-level instruction on Endnote.
Orientation to CAPS (1)	Overview of CAPS structure, goals, projects, faculty, and staff in order to maximize the summer residence program experience.
Summers 2 and 3	
Research planning seminar (3)	Provide individualized development and refinement of research programs.
Qualitative analyses (individual meetings)	Provide advice on analyses of pilot study data or other qualitative data.

Note. VP = visiting professor; UCSF = University of California, San Francisco; IRB = institutional review board; CAPS = Center for AIDS Prevention Studies at UCSF.

Disease Control and Prevention, National Science Foundation) and from state and local agencies. The vast majority of program participants have obtained external funding during or after their participation in the program. At the federal level, 42% of visiting professors have received NIH funding, and an additional 16% have received other federal funding.

Building Networks With Mentors and Peers

Mentoring relationships are central to the success of the

Visiting Professors Program. Each visiting professor is assigned a member of the UCSF faculty as a mentor, based on shared interests by topic or research methodology. The visiting professor meets with his or her UCSF faculty mentor frequently during the summer months and as needed during the academic year. Visiting professors may also seek out other faculty who can assist them with technical issues (e.g., methodology, data analysis) or topical issues (Latino adolescents, community-based interventions).

The UCSF faculty members who administer the program have extensive experience in working in communities of color and in HIV/AIDS research, and they provide mentoring in these potentially sensitive areas. Behavioral research on HIV/AIDS is by its very nature politically and socially sensitive, as are interventions targeting sexual behavior and substance use. Additionally, research involving ethnic-minority populations, where there is likely to be distrust of science and researchers, presents its own challenges.^{5,11}

Many visiting professors, often highly experienced with work in these communities, share their solutions to these challenges with one another. The UCSF faculty help visiting professors navigate all these aspects of their research.

The program's strong emphasis on ongoing mentoring and on the relationships forged among visiting professors has led to the development of an informal national network of minority researchers who have connected through their participation in the program. This network has proven useful in strengthening ties and helping create new opportunities among current and former participants. The relatively small size of the visiting professors' group at each summer institute facilitates interaction and development of relationships. Visiting professors have office space in a single area of the building, they attend seminars both as an entire group and by cohort, and they have weekly social lunches, as a group, that include the UCSF faculty on alternate weeks.

Because visiting professors usually attend the program for 3 consecutive summers, each visiting professor has the opportunity to interact with 5 cohorts of visiting professors, and most participants develop professional relationships both within and across cohorts. Frequently, former visiting professors return to UCSF for short periods during the summer or participate via telephone in peer reviews, creating additional contacts and new opportunities for networking.

Although the Visiting Professors Program is focused on helping each visiting professor develop a fundable research program, the program has also facilitated collaborations that have resulted in manuscript development and funded grant proposals. A number

of manuscripts have been co-authored by visiting professors or by visiting professors and UCSF faculty.¹²⁻¹⁴ Connections between visiting professors carry over into other professional domains and include collaborations at professional meetings, referrals for tenure review or promotion review committees, and recommendations for manuscript reviewers.

The strongest indicator of connections facilitated by the UCSF Visiting Professors Program may be the frequency with which visiting professors refer colleagues to apply to the program. The program also has the potential to benefit the mentoring of future generations of scientists. Former visiting professors have noted that their experiences at UCSF have had a positive influence on the mentoring they provide to students and junior colleagues.

Building Institutional Support

Institutional support is critical to the success of individual scientists seeking external funding for research. Developing and securing extramural funding requires considerable time and effort, and scientists who lack dedicated time for funding research are unlikely to be successful. Scientists at teaching-focused institutions are at a particular disadvantage; not only must they develop the scientific elements of a research program, but they must also handle many administrative tasks—development of budgets, electronic grant submission, and obtaining institutional approvals and signatures—that take time away from their scientific endeavors. Mentorship through the Visiting Professors Program increases familiarity with the grant process, which may help faculty succeed in contexts where institutional support is minimal.

Faculty overload can also hinder efforts to build a program of research, and ethnic-minority scientists are particularly vulnerable to this challenge.⁵ The phrase “minority faculty syndrome” refers to situations wherein a department’s lone ethnic-minority scientist is asked to assume a large service/community role, such as when the administration wants to include an ethnic-minority faculty member on particular committees or to have the faculty member serve as a liaison to the minority community.¹⁵ The Visiting Professors Program helps participants recognize and counteract this syndrome.

Institutional challenges can be covert as well as overt. For example, in some departments, research on stigmatized diseases or conditions, such as HIV/AIDS, is not supported. When there is no institutional support for a given area of research, faculty may not pursue careers in that domain. In addition, those who conduct research in stigmatized areas may find that their work is not valued as highly as work in more accepted domains. The UCSF Visiting Professors Program plays a valuable role by providing active support for work in stigmatized areas, thus legitimizing scientific work in those fields.

Institutional support may come in a variety of forms, such as course buy-out, specified level of effort dedicated to research activities, and seed money. The UCSF Visiting Professors Program requires visiting professors’ home institutions to ensure 25% protected time for the faculty member for 3 years. The program also provides a summer stipend that replaces a summer teaching salary for the 3 summers spent at UCSF. Finally, as noted earlier, the program provides seed money for research: each visiting professor

receives \$25,000 in a pilot study grant during his or her first year.

Building Connections With Communities

Community-based research requires strong, positive linkages between the community and the investigators conducting the work. Most visiting professors who have participated in our program have already established relationships in the communities where they will conduct their research, and issues related to community collaborations have usually been addressed. The scholar is also often a member of the community he or she is studying, which serves to eliminate commonly encountered barriers such as language and cultural differences and to enhance investigators’ ability to establish trust and a good working relationship.

Much of the research conducted by UCSF visiting professors involves active collaboration with community members. When collaborations are developed early in the research process and collaborators jointly contribute to setting goals and implementation, there is a strong basis for reciprocal learning, which enhances the research endeavor and increases the relevance of the work to communities of color affected by HIV/AIDS. Because community participation underlies much of the research conducted by scholars in our program, discussions of community involvement permeate many of the formal and informal seminars at the summer institutes, and scholars openly share their expertise in working in various communities.

Conclusions

The UCSF Visiting Professors Program has helped a diverse group of investigators seek and obtain funding to conduct innovative community-based HIV

prevention research in ethnic-minority communities. Although the program has accomplished much, the continued success of this program and others like it is dependent on several factors. First, programs must continually evolve to respond to changes in science and in the communities in which scientists are being trained to work. Second, the program described here, with its high faculty-to-participant ratio and intensive mentoring, requires substantial administrative (e.g., faculty salary) resources, which are difficult to obtain under current funding mechanisms. Therefore, structural changes in training grant mechanisms or new ways to support the administration of such programs are needed.

Further evolution and expansion of the UCSF program could extend its ability to support ethnic-minority investigators. Formalizing the network of visiting professors could strengthen ties, increase communication, and offer greater visibility. An annual or biennial meeting of program participants would provide a forum for sharing ideas and research findings. The program could establish a mechanism for offering a 3-month sabbatical to visiting professors who have completed substantial research and need protected time for writing. Finally, elements of the program that are currently addressed on a case-by-case basis, such as issues related to community-based research, could be formalized as separate institutes.

Given the epidemiology of the HIV/AIDS epidemic, a critical need exists for HIV/AIDS research focused on ethnic-minority communities. The UCSF Visiting Professors Program has been highly effective in developing exactly this kind of research by

creating new opportunities for ethnic-minority and early-career researchers. This program is focused on community-based HIV prevention, but it provides a model that could be used to train scientists to address other pressing health disparities. Larger institutions where faculty are primarily supported by grants, such as UCSF, are ideal locations for programs like this one because of the resources available in larger institutions and the depth of faculty experience in grant development and administration. ■

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Contributors

M. M. Dolcini wrote the first draft, contributed to revisions, and took responsibility for production. O. A. Grinstead and B. V. Marin contributed to revisions. All authors helped to conceptualize ideas and reviewed drafts of the article.

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For more information about the UCSF Visiting Professors Program, see <http://www.caps.ucsf.edu/CAPS/about/fellows/minorityindex.php>; for more information about the visiting professors, see <http://www.caps.ucsf.edu/CAPS/about/fellows/minoritybios.php>.

B. V. Marin was the founding director of the University of California, San Francisco Visiting Professors Program and M. M. Dolcini served as director following B. V. Marin's retirement. M. M. Dolcini and B. V. Marin were previously on the faculty at the University of California, San Francisco.

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