

Increasing the Capacity of Health Sciences to Address Health Disparities

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In order to create a cohort of investigators who are engaged in health disparities research, scholarship, and practice, and to increase the amount of funding in the university that is invested in research focused on reducing health disparities, the San Diego EXPORT Center implemented 2 major initiatives: (1) the support of underrepresented minority (URM) junior faculty development and (2) the funding for pilot research grants in health disparities. This paper describes the activities employed by the center and summarizes the outcomes of these two initiatives. Ninety-five percent (18 of 19) URM junior faculty completed the faculty development program, and 83.3% (15 of 18) of the completers are advancing in their academic careers at University of California San Diego (UCSD) and are teaching, working with populations at risk and/or conducting research in health disparities. EXPORT awarded 7 investigators a total of \$429 186 to conduct pilot research, and 71.4% (5/7) have now obtained \$4.7 million in independent extramural funding. The San Diego EXPORT Center has increased the research capacity, strengthened the infrastructure for health disparities research, and created a cohort of successful URM junior faculty who are advancing in their academic careers. These investigators are already changing the climate at UCSD by their leadership activities, research focus, peer-networking, and mentoring of students.

Keywords: underrepresented minorities ■ health disparities ■ research

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INTRODUCTION

In order to make improvements in the health status of underrepresented minority (URM) populations in the United States, the Office of Minority Health suggests that, “we need the active engagement and sustained efforts of all stakeholders working together with us and each other to effect the necessary changes at every level and across all sectors over time.”¹ In the 2003 publication *Unequal Treatment* there are a series of recommendations to address health disparities, including a focus on the role for academic medicine, which is one of the key stakeholders that provides primary care, is responsible for training health care professionals, and is an integral part of the country’s research enterprise.² Academic medicine is uniquely positioned to play a leadership role in eliminating health disparities.

In 2002, as part of the national effort to engage academic medicine to address health disparities, the National Institutes of Health’s (NIH) National Center on Minority Health and Health Disparities (NCMHD) launched the Centers of Excellence in Partnerships for Community Outreach, Research on Health Disparities and Training (Project EXPORT). The NCMHD is the focal point for planning and coordinating minority health and other health disparities research within the NIH. “According to Public Law 106-525, the NCMHD was established by Congress to foster, coordinate and assess the progress of all NIH-sponsored research activities involving minority health and other health disparities” by working in collaboration with the NIH’s institutes, centers, and other program offices within the office of the director. In the 2007 grant application cycle, Project EXPORT was renamed Comprehensive NCMHD Research Centers of Excellence. The Centers of Excellence were established to “develop novel programs across America, Puerto Rico, and the US Virgin Islands that would make significant advances in easing the health burden in underserved populations and in reducing and ultimately eliminating health disparities in several priority diseases and conditions.”³

In 2002, with funding from Project EXPORT, the University of California San Diego School of Medicine (UCSD SOM) and San Diego State University (SDSU) Graduate School of Public Health, in collaboration with

the County of San Diego Department of Public Health and the San Diego Council of Community Clinics, established the San Diego Center of Excellence in Partnership for Community Outreach, Research on Disparities in Health and Training (San Diego EXPORT Center). The goal of the San Diego EXPORT Center is to promote research and enhance education and training to reduce health disparities by aligning the research, education, training, and outreach activities of the university with the resources and needs of the community.

To create a cohort of investigators who are engaged in health disparities research, scholarship, and practice and to increase the amount of funding in the university that is invested in research focused on reducing health disparities, the San Diego EXPORT Center implemented 2 major initiatives: 1) the support of URM junior faculty development and 2) the funding for pilot research grants in health disparities. This paper describes the activities employed by the center from 2002 to 2007 and summarizes the outcomes of these 2 initiatives.

METHODS

Supporting Underrepresented Minority Junior Faculty Development

In order to create a cohort of URM investigators engaged in health disparities research and practice, EXPORT identified URM junior faculty using the UCSD School of Medicine Office of Academic Affairs database and worked closely with the UCSD National Center for Leadership in Academic Medicine (NCLAM) to recruit and enroll URM faculty in the existing NCLAM faculty development program. In addition to the invitation extended to all new junior faculty to participate in activities conducted by the Office of Faculty Affairs (Faculty Orientation, New Faculty Briefing and the NCLAM faculty development program), EXPORT Center faculty and staff personally contacted all eligible URM junior faculty to confirm that they had received this information, encouraged them to participate in all activities, described the NCLAM program, and emphasized the benefits of participation in the NCLAM faculty development program. URM faculty were contacted using multiple modalities, including campus mail, e-mail, phone, and face-to-face personal meetings. The EXPORT Center made this additional effort to contact URM faculty based on the information obtained from the UCSD study of URM perceptions and career experiences.⁴

NCLAM limits participation to UCSD Health Sciences Center salaried full-time junior faculty, who are at the assistant-professor level for 1 to 5 years. Visiting professors or faculty in other teaching positions, such as instructors, are not eligible to participate in NCLAM.⁵ Eligible junior faculty must complete and submit an application, which includes approval and authorization from the chair of their department for release time to

participate in the program. The UCSD School of Medicine, Office of the Dean, EXPORT, and the Health Resources Service Administration funded Hispanic Center of Excellence provided funding for the faculty development program and partial funding for release time of program participants.

The NCLAM program requires each participant to complete the following activities:

- twelve half-day faculty development workshops on goal-setting and preparing the academic portfolio, principles of teaching and learning, leadership styles, negotiation skills, stress management, UCSD academic resources, UCSD grant resources, grant writing, conflict resolution, curriculum development, performance evaluation, and effective presentation skills;
- a structured 7-month, one-on-one instrumental mentoring program (averaging 12 hours per month);
- a 2-hour academic performance counseling session; and
- a professional development project.

The cornerstone of the NCLAM faculty development program is a formalized, proactive, instrumental mentoring process that complements the administrative style of a leading research institution embedded in a competitive managed care environment. Instrumental mentoring relies on senior colleagues to collaborate with junior faculty on research or teaching projects, critique their scholarly work, nominate them for career-enhancing awards, include them in valuable networks and circles, and arrange for them to chair conference sessions or submit invited manuscripts.⁶⁻⁸

Funding Pilot Research Grants in Health Disparities

The EXPORT Center established the Pilot Core and created an infrastructure for the regranteeing of NIH NCMHD funds to eligible applicants in both university and community sites in order to create a cohort of investigators engaged in health disparities research and scholarship and increase the amount of funding in the university that is invested in research focused on reducing health disparities.

Pilot grant announcements. The EXPORT Center announced the availability of pilot grants of \$50 000 to \$75 000 per award to support research projects conducted over a 12- to 18-month period. Center staff disseminated pilot grant information via e-mail, partner distribution list-serves and outlets, and a special bulletin posting through the *UCSD Health Sciences News* publication. EXPORT faculty and staff also announced the availability of pilot grants at all executive committee meetings, at the Council of Community Clinics physi-

cian director meetings and at other meetings with EXPORT partners and collaborators.

Pilot grant application procedures. EXPORT Pilot regranting announcements, procedures, and guidelines were developed and implemented during the first year of the EXPORT Center and were based on the standard NIH PHS 398 application, guidelines, review criteria, and scoring. EXPORT required that each applicant submit a letter of intent for projects in health disparities research that focused primarily on Cardiovascular disease or human immunodeficiency virus (HIV) among African American and Hispanic populations. Investigators eligible to compete for pilot grant funding included new investigators, established investigators who were new to the field of health disparities, and established investigators in health disparities research who wished to test innovative research ideas that departed from established lines of investigation. Eligible investigators who submitted letters of intent that demonstrated appropriate areas of concentration, resources, and affiliations were invited to submit a full application.

Pilot grant application scientific review. The San Diego EXPORT Center created the criteria and scoring guidelines for a pilot grant review committee. The guidelines address reviewers' duties, confidentiality, conflict of interest, and scoring instructions. Written critiques addressing each of the following criteria: significance, approach, innovation, investigator, environment, and interdependence; and an overall/summary were also requested of each review member. Summary statements based upon reviewers written comments were compiled by the pilot core director and staff, and were provided to applicants after completion of the review process.

Pilot grant review committee. Members of the EXPORT Center pilot grant review committee included researchers and community-based health care professionals who were able to provide not only scientific review but also community expertise relevant to the unique San Diego/Mexico border area. The composition of the review committees for all cycles were similar and typically included the pilot core director (a UCSD physician researcher), 1 faculty member of the EXPORT administrative core, 1 research core director or designee (a UCSD HIV or cardiovascular disease research core

director or designee), 2 community-based representatives nominated by the EXPORT executive committee or affiliated faculty, and 2 members of the EXPORT program advisory committee. With the exception of the pilot core director who served on every committee, the membership of the review committee changed in each cycle in order to create a committee composed of individuals with expertise appropriate for the type of applications submitted.

Pilot grant award requirements. In order to receive funding from the San Diego EXPORT Center, pilot grant recipients were required to comply with the EXPORT researcher agreement contract, which consists of requirements and guidelines established by the EXPORT Center and the NIH NCMHD. Pilot investigators were responsible for providing the following: annual institutional review board (IRB) certificates and current IRB approval at the beginning of each year; an annual progress report, including a written narrative following PHS 395/2590 written guidelines; and acknowledgment of NIH NCMHD and the EXPORT Center in their scholarly work and in scholarly work produced by other individuals supported by their pilot funding. Although not specified by the EXPORT researcher agreement, pilot grant recipients were encouraged to mentor students in their area of research.

RESULTS

Supporting Underrepresented Minority Junior Faculty Development

During the first 5 years of EXPORT, 19 URM junior faculty enrolled in, and 18 of 19 (95%) URM junior faculty completed the NCLAM program. During the same time period, 73 of 75 (97%) non-URM junior faculty completed the NCLAM program. Although during this period, 5.2% (Association of American Medical Colleges, AAMC) of the faculty at UCSD SOM were URM, 18 of 91 (20%) of the total junior faculty who completed NCLAM were URM faculty. Eighty-three percent (15 of 18) of URM NCLAM completers are advancing in their academic careers at UCSD and are teaching, working with populations at risk, and/or conducting research in health disparities.

The retention rate in academic medicine and at

Table 1. Comparison of Retention Rates Between URM and Non-URM Junior Faculty at University of California San Diego School of Medicine for all National Center for Leadership in Academic Medicine Participants, 2002-2007

	URM	Non-URM	P Value ^a
	Junior Faculty	Junior Faculty	
Retained at University of California San Diego	83.3% (15/18)	74.0% (54/73)	NS
Retained in academic medicine	88.9% (16/18)	86.3% (63/73)	NS

Abbreviation: URM, underrepresented minority.

^a Statistical comparisons were conducted using χ^2 tests corrected for continuity (Yates corrected χ^2) and an α level of .05.

UCSD for URM junior faculty who completed NCLAM is similar to the retention rates of nonminority faculty (Table 1).

Funding Pilot Research Grants in Health Disparities

During the 2002-2007 period, the EXPORT Center conducted 3 pilot grant award cycles. Investigators submitted a total of 28 letters of intent and the EXPORT Center invited 16 eligible investigators to submit full proposals. Seven investigators received funding at \$60 000 to \$75 000 per award to conduct basic science, behavioral, and community-based research over an 18- to 24-month period. The EXPORT Center awarded a total of \$429 186 in pilot grants.

Of the 7 investigators who received pilot grant awards, 4 of 7 (57%) were URMs (3 Latino, 1 African American), and 5 of 7 (71.4%) were female. Five Pilot award recipients were UCSD SOM Faculty members, 1 was a physician at a US/Mexico border area community clinic, and 1 was a research scientist at a community hospital. Four researchers out of 7 (57%) were alumni of the UCSD NCLAM faculty development program.

During the period 2003-2009, 5 of 7 (71.4%) of the pilot researchers obtained independent extramural funding totaling \$4.7 million. Table 2 provides a summary of the extramural grants obtained by pilot researchers.

During the period 2002-2008, 6 pilot researchers generated 35 peer reviewed manuscripts. The 5 UCSD faculty members are advancing in their academic careers on schedule. One pilot recipient was a physician in a community clinic and is now a full-time salaried faculty member, and 1 pilot recipient is a community-based research scientist. The 7 pilot researchers have supported, advised, and mentored 15 URM and 11 non-URM students.

DISCUSSION

Although several studies have outlined the need for and benefits of diversity in academia, the number of

URM faculty in academic health centers remains low. As of December 31, 2007 the AAMC faculty roster reported a total of 114 087 faculty members in US medical institutions. Of these, 71.9% were white, 12.6% were Asian, and 7.2% were URMs (Hispanics/Latinos, African Americans, American Indians/Alaska Natives, and Native Hawaiians/other Pacific Islanders). Minority faculty were found to have significantly lower adjusted career satisfaction scores and more often report that they were considering leaving academic medicine within 5 years.⁹ In addition, URM faculty were less likely to be promoted compared to white faculty.¹⁰ This has led to the AAMC describing the representation of URM faculty in US schools of medicine as “alarmingly low” and described them as clustering in the junior faculty ranks.¹¹ We have recently reported our success at improving the retention of minority faculty at UCSD SOM by implementing the NCLAM faculty development program that integrates professional skill development and instrumental mentoring.⁴

The San Diego EXPORT Center strategy for creating a cohort of URM faculty who are engaged in research, scholarship, teaching, and practice included early identification of and communication with URM faculty, encouraging and supporting enrollment in the UCSD NCLAM faculty development program and reviewing, critiquing and providing financial support for pilot research projects. During the period of this study, 5.2% (AAMC) of the faculty at UCSD SOM were URM and 20% (18 of 91) of the total junior faculty who completed the NCLAM program were URM faculty. This demonstrates that a focused and targeted effort to identify, communicate with, encourage, and support URM faculty can promote a high level of program participation.

URM junior faculty who participated in the EXPORT initiative and completed the NCLAM faculty development program, during 2002-2007, became a more integral part of UCSD Health Sciences, were as likely as non-URM junior faculty to have goals and expectations that align with the mission and values of UCSD, and

Table 2. Independent Extramural Funding Received by Pilot Researchers, 2003-2009

Type of Source	Funding Source	Amount (US \$)
National Institutes of Health	National Institute of Mental Health	610 187
	National Institute of Diabetes and Digestive and Kidney Diseases	418 578
	National Institute of Mental Health	343 953
Federal (non-NIH) State	Public Health Services (HRSA)	1 200 000
	Cal H&W Health Care Services	473 370
	UC California Policy Research Center	40 000
	California HIV/AIDS Research Program	221 891
Local	State/County Commission Funding	955 085
Private (nonprofit)	Hispanic-Serving Health Professions	23 000
Private	Pharmaceutical	246 642
	Pharmaceutical	227 000
Grand total		4 759 706

were as likely as non-URM junior faculty to remain at UCSD and academic medicine.^{4,5}

Through the pilot program, the EXPORT Center developed an infrastructure that promotes health disparities research at UCSD. Pilot grants allowed investigators to conduct research in health disparities and obtain extramural independent research funding, critical for professional advancement in the academic setting. In addition, pilot researchers collectively have supported, advised, and mentored students of all levels (undergraduates, postbaccalaureate, graduate, and health professions students), thus developing future researchers and allied health professionals interested in eliminating health disparities.¹² The unanticipated outcomes of the pilot grant program include:

- New research collaborations. Pilot recipients have collaborated with other researchers both within and outside of their institutions to obtain funding to address health disparities through research and practice.
- Community/university partnerships. By including community-based health care professionals in the EXPORT Center pilot grant review committee, investigators received recommendations from community members with expertise in the San Diego/Mexico border area. Input from community representatives resulted in changes in the design of pilot research studies, the expansion of pilot studies to include different minority groups, and improved recruitment and increased participation of individuals from minority populations in research studies. The success of the pilot grant program reinforced the premise that community/university partnerships are effective and can improve the way we conduct basic science research and community-based research.

CONCLUSION

The San Diego EXPORT Center has increased the research capacity, strengthened the infrastructure for health disparities research, and created a cohort of successful URM junior faculty who are progressing to senior rank in their academic careers. These investigators are already changing the climate at UCSD by their leadership activities, research focus, peer networking, and mentoring of students.

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