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Undergraduate Minor in Health Disparities in Society: a Magnet for Under-represented Pre-professional Students

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Abstract Increasing the diversity of tomorrow's healthcare work force remains a challenge despite many thoughtful published reports and recommendations. As part of an effort to grow a more diverse pre-professional health population, we created an undergraduate minor, Health Disparities in Society, at the University of Florida. Most courses for the minor were identified from existing offerings, and we created only two new courses, an introduction course and a capstone service-learning course. The new minor quickly became the most popular in the College of Liberal Arts and Sciences (which has approximately 12,000 total undergraduate students), and importantly, students selecting the minor were more likely to be under-represented minorities than would be expected given undergraduate demographics. Pre-professional students choosing this minor reflect the desired diversity of the healthcare workforce of tomorrow.

Keywords Workforce diversity · Pre-medical education · Under-represented minorities · Health disparities

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America's Growing Diversity

The demographics of the USA continue to evolve and our nation is now among the most racially, economically, and socially diverse countries in the world. The changing national complexion presents challenges to educators, administrators, and policy makers engaged in workforce development issues. The health of our nation depends upon access to a qualified healthcare workforce that reflects the diversity of the nation and is distributed appropriately to meet population needs in health promotion and treatment, especially of chronic disease.

Lingering societal and economic issues such as racism, discrimination, and educational disadvantage have prevented the current healthcare system from producing a diverse and well-distributed workforce reflecting the nation's population. A mal-distribution of health professionals in rural and urban areas creates health professional shortage areas (HPSAs), medically underserved areas (MUAs), and medically underserved populations (MUPs) [1]. The preparation of a skilled workforce begins at the earliest stages of professional development and to date, undergraduate pre-professional students have not been engaged in addressing workforce shortage and mal-distribution issues. Informing and engaging these students could have a positive impact. One way that the University of Florida (UF) has addressed the diversity challenge is by creating an undergraduate minor, Health Disparities in Society (HDS).

The minor integrates the findings of science-based national initiatives and international reports that promote health [2, 3] with social science theories that explain oppression, power inequalities, and social marginalization [4, 5]. It teaches students to examine complex systems of interlocking social, economic, and environmental inequalities at different levels of society (individual, institutional, organizational). HDS provides an interdisciplinary, intersectional framework to

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examine the well-documented and disproportionate burden of health disparities in underserved US populations. Healthy People 2020 defines health disparities as,

> "... a particular type of health difference closely linked with economic, social, or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater social or economic obstacles to health based on their racial or ethnic group, religion, socioeconomic status, gender, age, or mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion" [2].

Health professionals are responsible for providing the same quality of care to both socially advantaged and disadvantaged patients. Meeting the health and social needs of underserved populations reduces health disparities and in turn, promotes social justice and health equity [6]. Medical education prepares physicians to provide healthcare for the general population, and while all medical schools meet this general goal, they experience different success rates meeting the social mission of medicine that focuses attention on the needs of disadvantaged populations. The social mission addresses three interconnected issues including the inadequate number of primary care physicians, the geographic maldistribution of physicians, and the insufficient minority representation in medicine [7]. If more medical schools met the social mission of medicine, underserved populations would have increased access to care and improved quality of care.

Because national trends in health indicators show insufficient progress in eliminating health disparities, policy change is required to accelerate the process of improving healthcare delivery, quality, and workforce development. The Department of Health and Human Services' *Action Plan to Reduce Racial and Ethnic Health Disparities* establishes a framework to simplify and integrate policy efforts with research and evidence-based programs. The 2015 plan explicitly recommends increasing the number and diversity of health professionals to strengthen the healthcare infrastructure and workforce, thereby improving the health of all Americans [8].

Health disparities concentrate in minority populations marked by social marginalization and economic disadvantage and are often, but not always, communities of color. The racial and ethnic composition of the US population is changing and by the middle of this century, it is projected that non-Hispanic Whites will no longer represent a racial majority and decline from 62.2% in 2014 to 43.6% by 2060. Hispanics, the largest ethnic population, will increase from 17.4 to 28.6% of Americans. Other minority populations will grow: Asian Americans will almost double from 6.3 to 11.7% and African-American, American-Indian/Alaska Native, and Native Hawaiian/Pacific Islander populations will grow more slowly. Those who identify as two or more races will almost triple from 2.5 to 6.2% [9].

The size of the US population will increase from 319 million to more than 400 million and approximately 80% of the growth will come from immigration. Today, nearly one in eight residents (12.5%) is an immigrant but by 2050, they will be one in five [9, 10]. Currently, 20% of Americans older than five years of age speak one of more than 300 languages other than English at home [11] and high immigration rates will likely increase the number of spoken languages.

Growing immigration and language diversity will further contribute to health disparities because those with limited or no ability to speak English face many barriers accessing healthcare and navigating the healthcare system. When patients are unable to communicate clearly with providers, the quality of the patient-provider relationship is compromised. Language barriers impair a patient's ability to understand their diagnosis, medication regimen and self-care instructions, limit participation in informed consent, lengthen hospitalizations, and increase 30-day re-hospitalization rates. Persons with limited English proficiency (LEP) often fail to seek care when needed and may not engage in preventive care [12]. In this changing environment, national guidelines such as the Culturally and Linguistically Appropriate Services (CLAS) Standards are blueprints that help providers and organizations meet individual patient needs, comply with federal laws, and promote health equity [13].

The Struggle for a Diverse Health Professional Workforce

When the healthcare of a diverse population is managed by a diverse health professions workforce, the quality and utilization of services increase [14, 15]. Given a choice, patients of color choose providers matching their racial, ethnic, and linguistic backgrounds. Minority providers increase access to care because they are more likely to practice in medically underserved communities. Providers of color also communicate and build trust more easily thereby improving satisfaction with care and health decision-making among minority patients [14, 16, 17]. Furthermore, minority providers are often vocal advocates for their patients promoting policies that benefit the underserved [14].

Of course, issues of healthcare access, utilization, and quality are concerns for all vulnerable populations, not just racial and ethnic minorities. Changing social norms and policies which recognize the legal status of gay marriage are moving sexual and gender minorities into the mainstream, uncovering the shortage of information about healthcare needs of this

population. The Association of American Medical Colleges (AAMC) recommends adoption of more inclusive curricula in medical school to better prepare medical students for addressing healthcare needs in the LGBTQ+ population [18]. It seems reasonable to assume that, similar to ethnic, racial, and linguistic minorities, members of the LGBTQ+ population, if given a choice, would also choose providers from their own population. Today's holistic admissions practices consider a variety of parameters when evaluating individual qualifications [19], yet the impact of holistic admissions on the representation of LGBTQ+ students in medical school is not well documented.

The last 30 years of national reports, commission studies, and initiatives from professional academies have not led to policy changes sufficient to enhance the diversity of the health professions workforce or reduce health disparities. The 1985 *Report of the Secretary's Task Force on Black and Minority Health* (*Heckler Report*) challenged health professions educators to "gain increased awareness of and sensitivity to the health problems and health attitudes, beliefs, and concerns of minority populations" and called for strategies "to increase minority representation in preventive medicine, public health, health education, communication, and other health professions" [20]. In the two ensuing decades, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* [21], *In the Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce* [22], and *Missing Persons: Minorities in the Health Professions* [23] supported *Heckler,* but policy change has not increased significantly the number of Black or Hispanic physicians over the 1985 figures [23]. The AAMC reports a slow but steady increase in student diversity and among the 20,630 students matriculating to medical school in 2015, the contribution from under-represented minorities (URM) was 18.2% (9.6% Hispanic, 7.6% African American/Black, and 0.9% American Indian/Alaska Native) [24]. Although commendable, medicine and the student bodies of other health professions are still disproportionally Caucasian. Racial, social, and economic diversity is accelerating in America, and the demographic gulf between the health professions and society continues to widen. The ability to produce a diverse health professions student body prepared for twenty-first century practice fades without a radical change in admissions practices.

Added to the lack of minority representation in medicine and other health professions, a recent examination of 32 health professions by sex, race, and ethnicity revealed a maldistribution of providers of color. When primary care professions were sorted as either health diagnosing and treatment professions (physicians, physician assistants, dentists, advanced practice and registered nurses, counselors, and psychologists) or health technologists and technicians (dental hygienists or technicians, medical assistants, certified nursing assistants, and home health aides), strikingly different patterns emerged. The health diagnosing and treatment professions requiring terminal or advanced degrees showed greater representation by Caucasians and Asians than the general population but among the health technologists and technicians professions that required less education had a disproportionate representation by African Americans in all but the dental professions. Hispanics were under-represented in almost all health professions [25]. Although this report did not offer an explanation for the observed differences, the effect of institutional factors such as the admissions process, faculty composition, administrative leadership, and institution's mission statement and commitment to diversity are well documented. Individual factors identified as barriers to admission among students of color include the lack of academic preparation, enrichment opportunities such as tutoring, resources to participate in academically focused extracurricular activities, mentoring, and role models within communities [23]. Less-examined factors that need more attention include the outreach and recruitment activities of institutions, efforts by individual health professions to recruit minority students, and increasing information about less-known professions among students of color [26] and role of implicit bias in admissions [27] and applicants choice of professions.

A Missed Opportunity

Diversity in the health professions begins with enrollment of a diverse student body capable of success in professional and graduate schools. The K-12 educational system fails to prepare students adequately, especially low-income minority students, for higher education and admission to health professions schools. Those missing from the health professions are students most likely to exit workforce development in the early stages of the educational process [28, 29]. In response, several national health and medical research centers have established pipeline programs offering remedial and enrichment experiences to bring more students of color into the health professions.

An overlooked opportunity to prepare students for health careers lies in the diverse undergraduate student body enrolled in universities and colleges nationwide and the enrollment of African-American and Hispanic students in college is on the rise [30, 31]. Undergraduate students are in the early years of career development and ideally positioned to learn about the relationship between healthcare workforce issues and health disparities in communities of color. While immersed in a new, stimulating, and diverse learning environment, many undergraduates find their passion and purpose in life through classroom instruction and community outreach activities. These formative years present a unique opportunity to introduce both majority and URM students to health disparities and prepare them for their role in eliminating them as future health professionals. Engaging undergraduates in service-learning

experiences as intake coordinators in safety net clinics, projects in non-profit organizations conducting patient needs assessments and outreach events in county health departments recruiting hard-to-reach populations for HIV testing is sound pedagogy and provides opportunity for student transformation as theoretical models from the classroom are experienced in a "real-world" environment.

Educators often miss opportunities with pre-professional students because they are still undergraduates. As young adults, career paths may not yet be defined, undergraduates are not licensed health professionals, and their successful matriculation to professional education programs has not been demonstrated. Despite these apparent deficiencies are opportunities for students to grow personally and professionally from their work in underserved communities. Investigations of college students found an increased intellectual competence, improved interpersonal skills, increased commitment to "developing a meaningful philosophy of life," decreased materialism, and increased idealism [32]. Involvement in extracurricular activities also promotes leadership development [32, 33].

At UF, the demand for a minor in health disparities was inferred from success with the Collegiate Health Service Corps (CHSC), an expansion program of the Eastern Connecticut Area Health Education Center (AHEC). Funded through the National Health Service Corps (NHSC), the CHSC's goal was to educate pre-health students about health disparities, encourage careers in primary care, promote the NHSC, and ultimately return students to their communities as licensed health professionals. A five credit-hour curriculum taught undergraduates about health disparities, cultural competence, linguistic appropriateness, and health literacy and immersed them in 75 hours of service learning in underserved communities [34].

Almost 100 students enrolled in the CHSC in March 2011 and at the summer's end, expressed desire to continue service-learning experiences throughout the academic year. With faculty support, they established a recognized student-run campus organization, the Collegiate Health Services Corps (CHSC) Club. HRSA budget cuts eliminated the CHSC program funding after only 1 year, but in recognition of program success, the College of Medicine provided funds for a second CHSC class in 2012. Student interest in health disparities and community outreach was overwhelming, and the second cycle could not accommodate the more than 100 students who applied.

Simultaneously, UF faculty in the College of Liberal Arts and Sciences were wrestling with ways to increase diversity in pre-health students. The academic interdisciplinary framework of health disparities was the transformative vehicle used to increase diversity by addressing health outcomes; the faculty believed this approach would be particularly attractive to students who are members of under-represented groups.

The two groups became aware of one another and to meet the expressed pre-professional student interest in understanding health disparities, UF developed an undergraduate minor, Health Disparities in Society. UF is a Carnegie research 1 land grant, sea-grant and space-grant institution. The Association of American Universities (AAU) lists the UF among the top 10 public universities nationwide [35]. In 2015–2016, the student body exceeded 50,000 and of these, more than 35,000 were undergraduate students; 31% were under-represented minorities [36].

The minor was established by a novel collaboration between the College of Medicine (COM) and College of Liberal Arts and Sciences (CLAS). HDS is housed strategically in the Center for Gender, Sexualities and Women's Studies Research where it enjoys interdisciplinary support in an environment committed to intersectionality and social justice. HDS began enrolling students in early 2013 and today is the largest of 48 minors with more than 200 students, it captures 12.5% of those pursuing CLAS minors.

The 15 credit-hour curriculum draws upon existing undergraduate course catalog offerings in sociology, anthropology, religion, history, health science, public health, medicine, and women's studies. Approved courses provide instruction about culture, theories of social inequality, social determinants of health and health systems and the minor is sufficiently flexible to allow the inclusion of special topic courses such as The History of Black Women's Health and Global Health Disparities. A written mission and goals guide the curriculum and learning outcomes and provide a framework for evaluation.

Two new courses developed about health disparities serve as "bookends" for starting and completing the minor. *Introduction to Health Disparities,* a three credit didactic course, examines health disparities through the interdisciplinary lens of social and behavioral sciences, medicine, public health and women's studies. It examines the intersections of sociodemographic, stigmatizing, and socioeconomic factors that characterize marginalized populations at the individual, institutional, and systemic levels. *Introduction to Health Disparities* also serves as one of several courses that fulfill the general education requirements of diversity and social science and thereby provides additional benefit to undergraduates.

The capstone course for the minor is *Practicum in Health Disparities*, a three-credit service-learning course that assigns senior-level students to actual community clinics, agencies, and programs which serve the underserved. Unlike an internship, the experiential service-learning model integrates guided reflection with learning experiences to develop critical thinking skills and address the higher levels of the cognitive domain. The hands-on practicum experience promotes integration of new with prior learning, deepens analysis of complex social and health systems, and engages students in creating solutions that promote health equity [37].

HDS is an academic undergraduate program that informs pre-professional students about health disparities while inspiring and empowering them to see their role in eliminating them. The interdisciplinary curriculum also shows students not seeking health careers (education, law, journalism and communication, business, engineering, and technology) the role of other professions in eliminating disparities, informs them about the US healthcare system, and prepares them to be health-literate consumers.

The curriculum in health disparities advances an innovative strategy to engage, mentor, and empower URM students interested in the health professions. Between January 2012 and August 2016, 764 students enrolled in *Introduction to Health Disparities* and 209 in the capstone *Practicum in Health Disparities*. The UF enrolls a diverse student body, but the percent of URM students enrolled in health disparity courses or HDS (as WST 4941C) was higher than the percent of enrolled undergraduates [36].

Although approximately 40% of entering freshmen at the UF indicate interest in health careers among 2014 graduates, only 16% planned to pursue medicine or healthcare as a career [38]. Post-graduation, 41% HDS students matriculate directly to medical or graduate school (18% medical school, 12% health professions, 11% public health and health administration). Forty-eight percent complete a "gap year" experience before applying to medical, graduate, or other professional schools. These data reflect the national trend to gain life experience, develop interpersonal skills, improve the quality of one's professional school application, and increase the likelihood of successful matriculation following graduation [39].

A Novel Entry Point to Health Careers

Our program met its goals and discovered that students enrolled in the minor at UF are enriched on six distinct axes relative to the already diverse UF undergraduate population, estimated national census in 2015 [40], and projected US populations [10] (Table 1). First, the greater representation by racial and ethnic minorities in HDS reflect a higher percent of URM than the UF undergraduate student body [36] and resemble more closely the diversity of the US population of the future [10]. Second, enrolled students more often identify as non-binary gender conforming persons than UF undergraduates [42] and the general population [41]. Minority genders suffer disproportionally from health disparities and represent an important and often ignored population [18]. Third, 38% of HDS students are first-generation Americans compared with only 31.5% of UF undergraduates [40]. Fourth, 24% of students in the minor are immigrants, a number significantly higher than UF's reported 14% [42] and almost double the 12.5% immigrant population in the USA [9]. As future health professionals, students enrolled in the minor bring much needed cultural, social, and economic diversity to healthcare and public health fields. Fifth, more than half (63%) of the students speak a language other than English at home and 70 different languages have been reported by the 749 students enrolled in the *Introduction to Health Disparities* course (Table 2). Although Floridians report greater language diversity (27.4%) [43] than the USA (20% of Americans speak a language other than English at home) [11], our students almost double that high percentage. Only 2.8% of UF's undergraduates are non-Florida residents [44] therefore, the language diversity found among health disparity students is a startling reminder about the diversity of Florida's residents and forthcoming in the nation. Sixth, given the association between SES and membership in a minority group or immigrant status, the last unexpected outcome was finding that HDS students (40%) are more likely than their undergraduate counterparts (21%) to be in the first generation to college [44].

An Internet search that used the terms "undergraduate education programs" and "health disparities" identified only the Health Disparities in Society minor and summer research internships lasting 4 to 10 weeks. Summer programs introduce students to health disparities using community-based participatory research, public policy initiatives, biomedical research, experiential learning, and clinical research, but few offer coursework for college credit. In contrast, the minor is a 15-credit systematic immersion in health disparities during which students explore the health/social science of a minority/cultural group in the USA, theories of social inequality and international/global studies. Nationwide, it is the only identified undergraduate academic program dedicated to the topic of health disparities.

The impact of disparities on the health of multiple segments of the US population has not created a significant change in the education and training of health professionals. With this in mind, the need for systematic instruction about health disparities in undergraduate pre-medical education becomes more apparent. Medicine is not unlike other professional degree programs such as physician assistant, dentistry, and pharmacy; each provides graduate education to meet the standards set by accreditation councils and associations. Although health disparities is an important issue, systematic graduate-level instruction is not provided and medical students may be educated by required or elective coursework [45] modules that supplement the curriculum [46] and/or by an integration of concepts into the curriculum [47].

Health disparities are critical factors affecting the health of our nation. Undergraduate education is the ideal setting for introducing pre-health and pre-public health students to population health, diversity issues, and health disparities. Pre-professional health students complete prescribed courses in biology, chemistry, anatomy and physiology, and physics to build the foundation needed for advanced instruction in the basic and natural sciences. If the content of undergraduate

Table 1 Demographic comparison among students enrolled in introduction to health disparities, practicum in health disparities, UF undergraduate students, and current and projected US populations

	Introduction to health disparities 764 (%)	Practicum in health disparities 209 (%)	UF undergraduate students, 2015 [36] 35,043 (%)	US population, 2015 [10] (%)	Projected US population, 2050 [40] (%)
Male	166 (22)	38 (18)	39	49	50±
Female	580 (76)	168 (80)	60	51	50±
Trans/genderqueer	9 (1)	2 (1)	0.7	0.3 [41]	
Did not report	9 (1)	1(<1)			
Black/African American	134 (18)	46 (22)	6	13	13
White/Caucasian	405 (53)	94 (45)	57	77	47
Am Indian/Alaska Native	5 (<1)	0	0.2	1.2	
Asian	139 (18)	38 (18)	8	5.6	9
Hawaiian/Pacific Islander	5 (<1)	0	0.5	0.2	
More than 1 race	26 (3)	10 (5)	3	2.6	
Unknown/did not report	55 (7)	21 (10)	3		
Hispanic/Latino	191 (25)	56 (27)	21	17.6	29
1st generation to college	245 (32)	83 (40)	21 [42]		
1st-generation American	263 (34)	79 (38)	31.5 [42]		
Immigrant (not born in the USA)	155 (20)	51 (24)	14 [42]	12.5 [9]	20 [9]
More than English at home	408 (53)	131 (63)		20.5 [11]	
Pre-med major	416 (54)	97 (46)			

Table 2 Seventy languages spoken in addition to English at home

Afrikaans	Gujarati	Polish
Amharic	Haitian Creole	Portuguese
Arabic	Hebrew	Punjabi
Aramaic	Hindi	Russian
Azerbaijani	Igbo	Sebano
Bangla	Ilocano	Sign language
Belorussian	Italian	Sindhi
Bengali	Jamaican Patois/Patois/Patwa	South Korean
Bosnian	Japanese	Spanish
Cambodian	Kannada	Swedish
Canadian French	Khmer	Tamil
Cantonese	Kissi	Telegu
Cebuano	Kiswahili	Thai
Chinese	Korean	Tigrinya
Chou Zhou Chinese	Lingala	Turkis
Croatian	Lithuanian	Twi
Danish	Malay	Ukranian
Dutch	Malayalam	Urdu
Farsi	Mandarin Chinese	Uzbek
Filipino/Tagalog	Nepali	Vietnamese
French	Nigerian dialects (n = 21)	Yiddish
Ga	Nowalty	Yoruba
German	Oromo	
Greek	Pangasinan	

social and behavioral science courses received the same attention, medical students would be better prepared for advanced instruction addressing the issues associated with social inequalities. Systematic undergraduate instruction about health disparities would meet two needs. First, students matriculating to medical school would have a foundation for advanced instruction about the determinants of health and health equity. Second, the existing gaps in the curriculum would diminish.

Sandra Millon Underwood, RN, PhD, writes, "engaging nursing students in this (health disparities) issue is the most powerful way we can effect a change in the future. We are teaching the next generation so they can engage in practices that may reduce health disparities. If we would truly commit to doing what we can about this, we would see a change" [48]. Dental educators point to major gaps in dental curricula and write, "dental education has a crucial influence on future providers' professional attitudes and behavior related to providing care for patients from underserved patient groups" [49]. Undergraduate education is the ideal place to teach about health disparities and engage students in discussions about viable solutions.

Implications

Any undergraduate campus with a diverse student body has the potential to attract and prepare under-represented minority students for careers in health. Creating the minor, Health

Disparities In Society, has accomplished several important objectives at the University of Florida.

First, it increases students' awareness of the critical role of societal and economic factors on the health of individuals and populations whether they enter health professions fields or choose other educational paths.

Second, student engagement in the service-learning capstone experience contributes to the well-being of local medically underserved communities and is highly valued by participating not-for-profit clinics and agencies who precept students. As members of the community's safety net organizations, they appreciate the professionalism, knowledge, and skills displayed by students completing special projects. In 2016, 71 practicum students completed 8520 hours in 25 safety net clinics, non-profit agencies, UF Health clinics, and state-funded organizations. The estimated value of their service-learning deliverables (HIV testing, educational infographics, and patient satisfaction surveys and needs assessments) was estimated to be $127,800. In return, the in-kind contribution to UF by community physicians, agency executives, and professional staff who serve as student mentors was estimated to be $243,532.

Third, through the capstone's practical experience, relationships established between the university and local community-based agencies are strengthened and expanded. This enables the university to meet an important goal in the strategic plan to establish partnerships with the community while improving community health and well-being. It also enables the university to realize its interest in providing experiential education opportunities for its undergraduates. Dedicated professionals in safety net clinics, non-profits, state and federal agencies are committed to pre-professional education, and their support was instrumental to the development and success of HDS. The minor is an effective campus-community partnership in which students, health agencies, and residents benefit and grow.

Fourth, student reflections written throughout the capstone practicum reveal their increased understanding of the issues and need to advocate for the underserved during their health careers; they are inspired, empowered, and transformed by the didactic instruction followed by hands-on experience. The minor is still too new for long-term follow-up, but among the first six students to complete it in spring 2013, five are enrolled in medical school and one is enrolled in a PhD program in clinical psychology. Although much has been written about the difficulty of tracking students after graduation, technology provides numerous opportunities. At the end of the practicum course, students are asked to evaluate their success in meeting learning goals, identify plans post-graduation, and provide an e-mail address that they expect to have for the next five years. Relationships established early with students allow for continued communication after graduation to update placement records. These relationships will also enable an evaluation of retention during training, area of specialization, and perhaps, the return of health professionals with twenty-first century knowledge and skills to underserved communities.

Fifth, students completing the minor have demonstrated comparable success in matriculation with professional and graduate programs compared with pre-professional students nationally. They distinguish themselves from others in professional school applicant pools, and their community outreach experiences usually feature prominently in their personal statements. Students in HDS are familiar with issues related to health disparities, cultural competence, health policy, and more that are often addressed during the interview process. This is a significant outcome since students completing the minor are more likely to be the "missing" under-represented persons in health professions schools. Longitudinal data are needed to follow matriculation rates, participation rates in NHSC programs, patterns of career development, and practice in HPSAs or MUAs as providers.

Educators of undergraduate pre-professional students are positioned uniquely to prepare students for robust health careers. Highly qualified and motivated students representing multiple dimensions of diversity can be inspired, directed, and enlivened to do something about health disparities. Those persons under-represented in the health professions are in our undergraduate classrooms all around the country, looking for a place in society where they can make a meaningful contribution. Greater diversity benefits all of the health and public health professions and creates a workforce that not only reflects current population trends but is also sensitive to social determinants of health.

UF created a new faculty position to facilitate our program, but in these days of shrinking budgets and diminished state revenue, this is not an option for many public institutions. Higher-level actions are required to demonstrate a clear, concrete national commitment to improving diversity in the healthcare workforce. Examples of proactive federal policy change include awarding incentives to create a minor in health disparities in undergraduate institutions, re-establishing the Collegiate Health Service Corps program and increasing scholarship availability in the National Health Service Corps. Alternatively, states can provide incentives to educational institutions by increasing loan repayment programs for service in underserved areas by newly graduated health professionals. Institutional diversity can be increased using holistic admissions to health professions programs to assign credit to student applicants with relevant knowledge and experience. Partnerships between undergraduate institutions and local public/private agencies can exchange mutual benefits such as short-term human resources for agencies and real-world contemporary experiences for students. It is also important for the local media to recognize and report outstanding workforce development efforts by local agencies, colleges, and

universities. Based upon our experience, if you build a program, the students you are seeking will come.

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