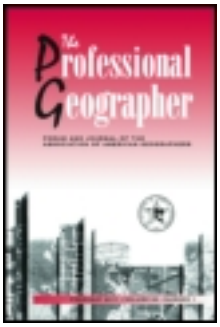

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The Landscape of Diversity in U.S. Higher Education Geography*

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Patterns of racial, ethnic, and gender participation in higher education are diverse and vary spatially, yet they fail to fully reflect the changing demographic landscape of the United States. This article explores two key questions: (1) How does diversity within geography compare to diversity within U.S. higher education more broadly? (2) How does the participation of underrepresented minorities and women in geography programs differ across regions and settings? We conclude that departmental strategies and goals for enhancing diversity should be sensitive to institutional and geographic contexts that shape individual programs' unique opportunities and constraints. **Key Words: diversity, higher education, underrepresented minorities, women.**

高等教育中种族、族裔与性别的参与模式非常多样化且因地而异, 但却无法完整反映美国改变中的人口地景。本文探讨下列两大关键问题: (1) 地理中的多样性如何大致相较于美国高等教育中的多样性? (2) 地理学程中代表性不足的少数族群与女性的参与, 如何在不同区域和环境脉络中因地而异? 我们在结论中主张, 各系所促进多样性的策略及目标, 必须对形塑各别学程的特殊机会与限制之制度与地理脉络保持敏感。 **关键词: 多样性, 高等教育, 代表性不足的少数族群, 女性。**

Los patrones de participación racial, étnica y de género en la educación superior son diversos y varían espacialmente, aunque fallan en reflejar completamente el cambiantes paisaje demográfico de los Estados Unidos. Este artículo explora dos cuestiones claves: (1) cómo se compara la diversidad en geografía con la diversidad en la educación superior de los EE.UU., en sentido amplio, y (2) cómo difiere la participación de minorías mal representadas y las mujeres en los programas de geografía a través de regiones y escenarios diversos? Concluimos que las estrategias departamentales y sus metas para promover diversidad deben sensibilizarse de los contextos institucionales y geográficos que configuran las singulares oportunidades y limitaciones de cada programa. **Palabras clave: diversidad, educación superior, minorías mal representadas, mujeres.**

Patterns of participation in higher education are diverse and vary spatially, but they do not necessarily mirror the evolving demographic landscape of the United States. When assessing racial, ethnic, and gender participation in geography programs, an awareness of geographic context can help us to conceptualize the notion of broadening participation in ways that are sensitive to differences across place and space and are therefore attuned to local and regional realities.

This article explores two key questions: (1) How does diversity within geography compare to diversity within U.S. higher education more broadly? (2) How does the participation of underrepresented minorities and women in geography programs differ across regions and settings? Our approach juxtaposes the discipline to higher education as a whole. The alternative of using demographic data from other disciplines as a yardstick to measure our progress toward diversity goals is inherently problematic. Geography's very broad subject matter ranges from physical sciences to social sciences to humanities to visualization and mathematical modeling. Metaphorically, comparing other disciplines to geography is like comparing apples and oranges to a fruit salad. We argue that it is more appropriate and potentially more enlightening to assess geography's diversity relative to diversity within higher education as a whole, rather than itemizing comparisons across an arbitrarily selected subset of disciplines.

We first provide a general overview of what is meant by broadening participation in higher education, because recent policy initiatives have played, and will continue to play, a significant role in guiding and supporting efforts to increase diversity at the national scale. This overview provides context for the next section, in which we locate geography's place within the national landscape of diversity, revealing the kinds of institutions in which geography programs are present or absent to understand how disciplinary diversity is affected by institutional structures.

As Wright et al. (this issue) demonstrate, patterns of racial diversity and segregation in the United States are contingent on and vary across spatial scales. We therefore look at measures of diversity within the discipline through a geographer's eye. Our findings demonstrate that spatial patterns of participation differ across geographic subregions and among campus settings, underscoring the value of using a geographic perspective to identify potential opportunities and constraints for enhancing disciplinary diversity.

Although the data presented here focus on race, citizenship status, and gender, we recognize and celebrate the many dimensions of diversity that are critical to nurture within our community of geographers. We

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also acknowledge that statistics alone do not suffice to define diversity. This article addresses a specific need for quantitative information and reflects the limited availability of comparable data; at the same time, it permits a richer analysis across scales. Because it is intended to provide a broad overview of a complex and dynamic issue, our analysis necessarily raises a number of issues that merit further investigation but that are beyond the scope of this endeavor. We therefore conclude by presenting a number of avenues for future inquiry.

Origins and Development of National Policies and Initiatives on Broadening Participation

The broadening of participation in higher education is not keeping up with demographic changes and, in fact, gaps in attainment appear to be widening between whites and minorities (National Center for Education Statistics [NCES] 2011). This situation is well documented for undergraduates in science, technology, engineering, and mathematics (STEM) disciplines, as minority participation has been a key focal point in the national discourse and initiatives about diversity, particularly as the relationship between scientific and technological progress and economic development is emphasized (Malcom, Chubin, and Jesse 2004; Hrabowski 2011).[1]

Since the Science and Engineering Equal Opportunity Act of 1980 gave the National Science Foundation (NSF) authority to advance diversity in STEM, several key legislative and policy initiatives have advanced the cause of diversity in the context of creating a "knowledge workforce" (Committee on Equal Opportunities in Science and Engineering [CEOSE] 2004; Malcom, Chubin, and Jesse 2004). Diversity struggles, however, to be seen as a high priority within academic departments and disciplinary cultures amid competing demands. For example, after ranking 274 participating institutions, the National Research Council concluded that the academic community has generally regarded research activity as more important to assessing program quality than either student support and outcomes or the diversity of the academic environment (see Solem and Solís [2010] for a more detailed discussion).

The NSF (2011) published a report on evaluating the impacts of broadening participation that included metrics for monitoring projects and designs and indicators for program evaluation, drawing from a decade of workshops on the subject (e.g., National Science Board 2003; NSF 2005, 2009; Sekaquaptewa 2008). By producing its own agency-wide framework through the formation of a Broadening Participation Working Group and the launch of a "Science of Broadening Participation" initiative, the agency opened up the national discourse for intellectual contributions to enhancing diversity (NSF 2008, 2011). Together with the National Aeronautics and Space Administration, NSF supports projects in STEM across an inclusive set of disciplines, including geography, under the Institute for Broadening Participation.[2] Geography could serve as one of the key gateways to bringing such insights into the national conversation, as we traverse interdisciplinary and subdisciplinary boundaries and are therefore well positioned to be interlocutors among the set of disciplines engaged.

Although geographers have been active in research and efforts around diversity since the 1960s (see Winders and Schein this issue), much of this work has not explicitly engaged with the national discourse. Within the social sciences, the conversation has been driven in large measure by voices in psychology, anthropology, and sociology (Sekaquaptewa 2008). Although the contributions of these disciplinary perspectives are critical, it is equally imperative that the geographic research community participate in the conversation and applies its intellectual capacity to help advance innovative, creative, and ultimately effective understanding about access and success in higher education for underrepresented populations.

Reading the Landscape of Participation in Higher Education

As the preceding discussion suggests, the concept of diversity and the notion of broadening participation can be interpreted from multiple perspectives. In addition to phenotypical markers such as gender and race, diversity encompasses less visible dimensions. Schlemper and Monk's (2011) research demonstrates that geography students and faculty also regard class, sexual orientation, religion, marital and family status, employment status, age, and place-based aspects of identity as distinguishing subgroups within departmental communities. Data about the presence (or absence) of these groups within departments, disciplines, and higher education more broadly, however, are not collected in a systematic fashion, if at all. Further complicating our ability to assess disciplinary progress, these many facets of diversity overlap and intersect in ways that fundamentally affect individuals' experiences but cannot readily be captured or understood through strictly quantitative analysis. Where statistics are readily available, participation in higher education is measured in multiple ways using data from a variety of sources. For purposes of comparison, we rely on the most comprehensive and consistent national data set available—the institutional data compiled by the U.S. Department of Education's NCES—and we define our scope as an exploration of race, gender, and citizenship (i.e., native vs. foreign-born status) among U.S. students and faculty at multiple scales.

Between 2009 and 2020, total undergraduate enrollment in the United States is expected to jump from 17.6 million to 20 million students (NCES 2011), continuing a trajectory of growth. Undergraduate enrollments of underrepresented minorities have mirrored national trends, but rates of change vary by group. From 1976 to 2009, the largest increases were observed among Hispanics (from 4 percent to 13 percent)

and Asians and Pacific Islanders (from 2 percent to 7 percent).[3] Although white enrollment has increased numerically, its share of total enrollment has actually declined from 82 to 68 percent. Similar patterns are evident across ethnic and racial groups in graduate enrollments (NCES 2011).

Women accounted for 57 percent of total enrollment in 2008, but gender representation varied across racial and ethnic groups. Black students displayed he largest disparity, with women accounting for 64 percent of undergraduate enrollment and 71 percent of graduate enrollment (NCES 2010). Gender disparities were lowest among white and Asian students, at both the undergraduate and graduate levels. The majority of all associate, bachelor's, master's, and doctoral degrees awarded in 2008–2009 went to women, with female recipients outnumbering male recipients within each ethnic and racial group (NCES 2010). Black women outpaced black men by the largest margin, with nearly twice as many degrees, whereas whites and Asians had the narrowest margins (NCES 2010).

International students continue to compose a relatively modest proportion of total undergraduate enrollments; however, their presence within U.S. graduate programs is palpable, having shown tremendous growth over the past three decades. In 2008, foreign-born students accounted for 2.2 percent of undergraduate enrollments and 11.0 percent of graduate enrollments, up from 1.5 percent and 4.8 percent in 1976 (NCES 2010). Since 2003, female undergraduate enrollments of foreign-born students have surpassed their male counterparts (NCES 2010). At the graduate level, the proportion of international female enrollments surged from 23.6 percent in 1976 to 41.5 percent in 2008 (NCES 2010). Data are not available on degrees conferred but are expected to reflect similar patterns.

Geography's Place Within the Landscape of Diversity in Higher Education

In addition to demographic changes within enrollments, recent years have seen shifts in the types of institutions where students earn degrees, particularly as private for-profit institutions gain in popularity.[4] Public two-year institutions, such as community colleges, are also becoming increasingly important as a starting point toward a degree from a four-year institution (National Academy of Sciences [NAS] 2007; CEOSE 2009). These institutions are of particular importance for Hispanic students, accounting for nearly half of Hispanic enrollments in 2008 as compared to a range of 33 to 42 percent for other ethnic and racial groups (NCES 2010).

Trends in enrollments by institution type provide insight into the larger structures that affect disciplinary diversity. Within the U.S. higher education system, geography disproportionately resides in public institutions and, among these, geography departments are more commonly found at four-year institutions than at two-year institutions (Table 1).[5] Geography departments are present in 22.86 percent of public institutions but only 2.36 percent of their private counterparts. Among those institutions that offer geography, 98 percent of two-year institutions, 83 percent of four-year institutions, and nearly 90 percent of advanced degree-offering institutions are public.

In 2009, underrepresented racial and ethnic groups accounted for 30.76 percent of all enrolled undergraduates in the United States. Given that less than 11 percent of all institutions have geography programs at all, geography is comparatively well represented in public institutions with above-average rates of minority enrollment, whether calculated as a percentage of high-minority institutions that offer geography (23.94 percent) or the percentage of geography-offering institutions that have high-minority enrollments. Geography programs are present in thirty-seven of the fifty institutions (both public and private) that confer the most baccalaureate degrees to students of color (Association of American Geographers [AAG] 2010; Diverse Education 2011). The virtual absence of geography in private institutions with above-average minority enrollments is striking, however. Only 12.25 percent of private undergraduate institutions exceed 30 percent minority enrollment, and a mere seven of these schools (less than 3 percent) have geography programs.

Table 1 *Presence of geography and minority representation in undergraduate institutions, 2009*

Type of institution	Percentage offering geography	Percentage exceeding 30% minority enrollment	Percentage of 30%+ minority enrollment institutions offering geography	Percentage of geography-offering institutions with 30%+ minority enrollment
Public, 2-year ($n = 1{,}012$)	11.66	23.72	16.67	33.90
Public, 4-year ($n = 620$)	41.13	25.97	34.78	21.96
All public undergraduate institutions	22.86	24.57	23.94	25.74
Private, 2-year ($n = 669$)	0.30	8.52	0.00	0.00
Private, 4-year ($n = 1{,}658$)	3.20	13.75	3.07	13.21
All private undergraduate institutions	3.14	12.25	2.46	12.73
Total ($N = 3{,}959$)	10.81	17.33	15.01	24.07

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS; 2010).

Table 2 *Enrollments by type of institution, most recent five-year data period*

Type of degree-granting institution	Total fall enrollment, 2008	Percentage change in total fall enrollment, 2003–2008	Percentage enrolled minority students, 2009	Change in percentage enrolled minority students, 2004–2009
Public, 2-year	6,640,344	+6.94	32.57	–1.86
Public, 4-year	7,331,809	+10.26	28.95	+1.02
Public, advanced degrees	1,380,936	+3.39	19.51	+0.36
All public	15,353,089	+8.16	29.92	–0.37
Private, 2-year	331,034	+16.16	45.19	+2.26
Private, 4-year	4,799,627	+27.39	28.39	+1.53
Private, advanced degrees	1,356,140	+23.79	23.41	+2.10
All private	6,486,801	+26.00	28.67	+1.70
All undergraduate	19,102,814	+12.96	30.76	+0.10
All graduate	2,737,076	+12.59	21.64	+1.42
All institutions	21,839,890	+12.91	29.56	+0.12

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS; 2010).

The absence of geography programs in the large majority of private institutions is cause for concern, particularly given recent patterns of growth. As Table 2 illustrates, enrollments in public institutions have increased by as much as 10.26 percent at four-year schools over the most recent five-year period for which data are available. But in every category of institution, this growth has been overshadowed by rising enrollments in private institutions, which increased by 26.00 percent overall, versus just 8.16 percent for public institutions.

Geography's diminished presence within private institutions translates into missed opportunities to engage traditionally underrepresented minority students. For example, Asian and Pacific Islander students are more likely to attend private research institutions and Hispanic students are more likely to attend two-year institutions than members of other ethnic and racial groups (NCES 2010). Between 2004 and 2009, minority participation grew within the private academic sector while declining among public institutions as a group. The largest increase occurred at private two-year colleges, which already had the highest proportions of enrolled minority students and in which geography programs are least common.

Despite gains in their absolute numbers, minority students remain underrepresented relative to the U.S. population (Table 3).[6] With the exceptions of Asians and Pacific Islanders (at both graduate and undergraduate levels) and black graduate students, total enrollments of nonwhite groups are below levels that would reflect national demographics. Although the overall college participation rate increased from 26.1 percent in 1980 to 39.6 percent in 2008, this growth was not consistent across ethnic and racial groups: White enrollments grew by 17 percentage points to 44 percent, compared to 12 percentage points for black enrollments (to 32 percent) and 10 percentage points for Hispanic enrollments (to 26 percent; NCES 2010). At 58 percent, Asian and Pacific Islanders had the highest participation rates in 2008. For every ethnic and racial group, female college participation rates matched or exceeded male participation (NCES 2010).

A diverse faculty is undeniably important, as it affects student diversity, student achievement, and the

Table 3 *Diversity within the U.S. population as compared to diversity in U.S. higher education, as percentages of totals*

Groups	U.S. population, 2010	Enrollment in four-year institutions, 2009	Enrollment in graduate degree-granting institutions, 2009	Full-time higher education faculty, 2009
Non-white and Hispanic, aggregated	36.72	29.20	22.56	17.96
Black/African American	12.21	12.66	10.36	5.45
Hispanic/Latino	16.35	9.44	5.56	3.85
Asian, Native Hawaiian, and other Pacific Islander	4.85	5.79	5.87	8.19
American Indian or Native Alaskan	0.73	0.90	0.57	0.47
Other or multiple races	2.13	0.41	0.20	No data
White, non-Hispanic	63.75	59.02	55.37	75.62
Nonresident (international)	N/A	2.73	10.68	4.21
Ethnicity unknown or unreported	N/A	9.04	11.38	2.20
Female	50.8	56.17	58.79	42.96

Sources: U.S. Census Bureau data (2011); U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS; 2010).

general university climate (Smith et al. 1997; American Council on Education and the American Association of University Professors 2000; Hurtado 2001; Milem 2001). Generally, diversity among faculty, including instructional, research, and other professional academic staff, has been evolving incrementally across nearly every subgroup over the past few years, for both tenured and non-tenure-track faculty. The proportion of non-whites among full-time faculty is roughly half the proportion of minorities within the U.S. population, however. These figures vary widely by group, with Asian and Pacific Islander faculty substantially exceeding a "representative" share based on national demographics (8.19 percent of faculty vs. 4.85 of population). In contrast, the share of black faculty is less than half the proportion of blacks within the U.S. population (5.45 percent vs. 12.21 percent), and the share of Hispanic faculty is less than one quarter the proportion of Hispanics within the U.S. population (3.85 percent vs. 16.35 percent).

Efforts at diversifying faculty are often lamented as being hampered by hiring constraints and limited pools of qualified applicants (Turner 2002; Smith et al. 2004). National hiring trends show that a smaller share of positions is going to nonwhite and Hispanic faculty. According to the NCES, the number of new hires increased by 38 percent from 2004 to 2009, but the proportion of new positions filled by non-whites and Hispanics decreased from 19.80 to 10.08 percent. Some of this change can be attributed to growth in the proportion of international hires (up from 8.47 percent in 2004 to 13.14 in 2009). Because foreign-born scholars are not typically enumerated according to race (as are U.S. citizens), it is difficult to assess the extent to which international faculty contribute to the visible diversity of geography departments. Research suggests, however, that Asia has surpassed Europe as the leading source region for foreign-born geography faculty, with China as the leading country of origin (Theobald 2009). Nevertheless, as the proportion of international hires has grown, so, too, has the share of new hires who are white (from 71.73 percent to 76.79 percent), suggesting a troubling trend of retrenchment. In comparison, women make up 47.12 percent of faculty at all degree-granting institutions combined, and the share of new hires who are female (48.24 percent) has almost reached parity with male hires, slowly narrowing the gender gap within U.S. faculty (NCES 2010).

Taken together, these data suggest that disciplinary diversity might be enhanced through efforts to increase geography's presence within institutions of higher education, particularly those in which the greatest diversity gains are occurring. Given the current economic crisis and its impacts on higher education, the establishment of new geography programs might not be a feasible short-term solution. At the national level, minority enrollments have been growing, albeit slowly, and significant gains have been achieved in female enrollment and faculty hires. The data lead us to ask whether geography departments have been successfully tapping into the diversity present on their home campuses. As geographers ourselves, we question the value of setting departmental goals based on national benchmarks and trends. As Wright et al. (this issue) clearly demonstrate, the racial and ethnic distribution of the U.S. population represents a mixed landscape of diversity and segregation that varies widely across space and within places. To expect a diverse department in the rural West to resemble a diverse department in a major East Coast metropolis might mean holding the former to an impossibly high standard while underestimating the potential for the latter. The next section of this article examines diversity in geography departments within the contexts of their larger institutions, regions, and settings to explore alternative metrics that are both realistic and geographically informed.

Spatial Patterns of Participation in Geography at the Department Level

Responding to the need for better information on the racial and ethnic composition of the discipline, the AAG has twice surveyed geography departments. The first survey was conducted in 2004–2005, with input from the AAG's Diversity Task Force. Seventy-four departments responded, representing approximately 30 percent of U.S. geography departments. A second survey was conducted in 2010, with 160 departments responding.[7] All North American geography departments were invited to participate in the survey. Because respondents were self-selected, the responses are not necessarily representative of geography departments as a whole. In addition, the response rate in 2010 was more than twice that of the baseline survey, and only twenty-two departments participated in both surveys. Therefore, the results should not be interpreted as evidence of change over time, but they do suggest possible trends within the discipline that could inform future data collection and research efforts.

To help control for the variation in response rates, the data here are presented as "averages of averages." In other words, we calculated each gender and ethnic or racial group's percentage of total enrollments within each department reporting and then calculated the means of those values for each survey year (Table 4).

Aggregated data indicate that, on average, nonwhites accounted for 14.63 percent of graduate students within the departments surveyed in 2010, 3.35 percent higher than the proportion reported in 2005. The average proportion of graduate students reported for each underrepresented racial and ethnic category was slightly higher in 2010 than in 2005, except for an almost imperceptible difference among Hispanic/Latino students. The most noticeable change is a markedly lower average proportion of international (nonresident) students reported in 2010 (a difference of nearly 10 percent). Women were better represented in the departments reporting in 2010, exceeding the 2005 average by 3.69 percent. Similar patterns can

Table 4 *Diversity reported in Association of American Geographers surveys of geography departments, as average percentage of department totals*

	Undergraduates		Graduate students		Faculty	
Groups	**2005 ($n = 58$)**	**2010 ($n = 61$)**	**2005 ($n = 40$)**	**2010 ($n = 45$)**	**2005 ($n = 59$)**	**2010 ($n = 112$)**
Non-white and Hispanic, aggregated	12.90	13.50	11.28	14.63	11.41	10.90
Black/African American	3.54	3.67	3.80	3.82	3.26	3.21
Hispanic/Latino	3.76	3.59	2.82	2.80	1.28	1.22
Asian	3.05	3.18	3.20	4.93	6.69	5.22
American Indian or Native Alaskan	0.46	0.31	0.10	0.79	0.18	0.17
Native Hawaiian/Pacific Islander	No data	0.16	No data	0.22	No data	0.16
Other or multiple races	1.40	2.60	1.35	2.08	0.00	0.92
White, non-Hispanic	85.70	85.50	73.31	79.62	86.67	77.67
International, nonresident	1.40	0.99	15.41	5.74	1.92	11.43
Female	36.55	36.83	39.88	43.57	26.93	31.13

Note: *n* values represent the number of departments reporting figures in a given survey year. *Source*: AAG Survey of Geography Departments (2005) and AAG Survey of Geography Departments (2010).

be observed in the undergraduate data: The average representation of non-whites was slightly higher in 2010 than 2005, with the proportions of most ethnic groups and of women holding fairly steady across the survey years. Comparing student classifications within survey years suggests that participation by Hispanic/Latino students is greater at the undergraduate level than the graduate level, whereas the opposite is true for black or African-American, Asian, and female students.

Among faculty, reported representation of non-whites was slightly lower in 2010 than in 2005. These figures might reflect the national-level hiring trends we discussed earlier in this article. One very interesting observation here is the higher proportion of non-resident, international faculty in 2010, suggesting that departments might be pursuing internationalization as a diversity strategy for the professoriate.

To get a sense of how geography is performing relative to higher education in general, we compared the 2010 survey results to the nationwide average proportions of students from each racial and ethnic group and female students, at both the four-year undergraduate and graduate levels (Tables 5 and 6). Acknowledging that the departments responding to the AAG's survey are not necessarily representative, we also calculated averages for the institutions of the responding departments as a basis for comparing how programs are doing in terms of diversity relative to their respective campuses.

While reviewing the data, the reader should note that the proportions of persons whose ethnicity is "unknown" or "not specified" vary across the units of analysis. In the AAG Survey of Departments, responding departments classified all of their students or none of their students. In comparison, the NCES data sets have

Table 5 *Average undergraduate enrollments by race/ethnicity and gender*

	All U.S. four-year undergraduate degree-granting institutions $N = 2{,}841$		Institutions of participants in 2010 AAG department survey $n = 61$		Departments participating in 2010 AAG department survey $n = 61$	
Groups	**Mean %**	**Median %**	**Mean %**	**Median %**	**Mean %**	**Median %**
White, non-Hispanic	64.92	73.08	75.18	80.77	85.50	90.91
Non-white and Hispanic, aggregated	28.59	20.85	21.46	16.78	13.50	7.84
Black or African American	16.72	8.37	7.62	5.24	3.67	1.35
Hispanic or Latino	8.86	4.28	6.93	4.83	3.59	2.25
Asian, Native Hawaiian, or other Pacific Islander	4.61	2.11	5.62	3.52	3.34	1.43
American Indian or Alaska Native	1.32	0.47	0.82	0.60	0.31	0.00
Other or multiple races	0.47	0.00	0.48	0.00	2.60	0.00
International, non-U.S. resident	3.09	1.26	3.36	2.38	0.99	0.00
Ethnicity unspecified or unknown (as percentage of total enrollment)	9.04		5.89		0.00	
Female	55.76	57.15	54.46	52.83	36.83	35.64

Note: AAG = Association of American Geographers. *Sources*: AAG Survey of Geography Departments (2010); U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS; 2010).

Table 6 *Average graduate enrollments by race/ethnicity and gender*

	All U.S. graduate degree-granting institutions, 2009 $N = 1{,}960$		Institutions of participants in 2010 AAG department survey $n = 43$		Departments participating in 2010 AAG department survey $n = 43$	
Groups	**Mean %**	**Median %**	**Mean %**	**Median %**	**Mean %**	**Median %**
White, non-Hispanic	67.58	72.70	68.01	71.79	79.62	82.89
Non-white and Hispanic, aggregated	22.11	18.66	16.81	13.00	14.63	11.88
Black or African American	12.89	6.03	6.48	4.97	3.82	1.39
Hispanic or Latino	5.63	2.94	4.81	3.08	2.80	0.69
Asian, Native Hawaiian, or other Pacific Islander	5.48	2.67	4.55	3.18	4.69	1.86
American Indian or Alaska Native	0.73	0.29	0.65	0.48	0.79	0.00
Other or multiple races	0.27	0.00	0.31	0.00	2.08	0.00
International, non-U.S. resident	7.42	2.78	15.18	12.97	5.74	0.00
Ethnicity unspecified or unknown (as percentage of total enrollment)	11.38		6.41		0.00	
Female	59.17	61.36	56.89	56.29	43.57	43.20

Note: AAG = Association of American Geographers. *Sources*: AAG Survey of Geography Departments (2010); U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS; 2010).

fairly sizable proportions of students for whom no race or ethnicity was reported. The figures in Tables 5 and 6 are presented as percentages of total students who reported a race or ethnicity. Therefore, there is a margin of error that could account for some of the variation between the national and institutional data and the departmental data.

With few exceptions, reported enrollments of minority and female students in geography lag behind both national averages and averages for the departments' home campuses. At both the undergraduate and graduate levels, survey results suggest that the greatest disparities characterize enrollments of black/African-American and Hispanic/Latino students. At the graduate level, the representation of Asian students in surveyed departments exceeded the institutional average but slightly trailed the national average, although undergraduate participation at the department level trailed both institutional and national participation. Perhaps most surprising, given the near-parity that has been achieved in higher education overall, was the underrepresentation of women in geography. Although both institutional and national figures reveal that female students are the majority at both graduate and undergraduate levels, the surveyed geography departments report only 36.83 percent female enrollment at the undergraduate level and 43.57 percent at the graduate level. With reported female representation at 31.13 percent, geography faculty also lag behind the national average of 47.12 percent (NCES 2010).

The survey results appear to fairly accurately reflect broader patterns of female participation within geography. According to NCES data published in the AAG's annual *Guide to Geography Programs in the Americas*, in the 2008–2009 academic year, 34.09 percent of bachelor's degrees were awarded to women, as were 40.81 percent of master's degrees and 36.53 percent of doctorates (AAG 2010). Although the representation of women within master's-level enrollments in geography has consistently slightly surpassed that within undergraduate enrollments since 1989, only in 2003–2004 did the proportion of women receiving geography PhDs exceed the proportion of women receiving bachelor's degrees, according to our analysis of the *Guide to Geography Programs* data. The proportion of women receiving geography PhDs in 2008 (around 37 percent) is markedly lower than the proportion of women receiving PhDs in all disciplines that same year (52.3 percent; NCES 2011), suggesting that the gender gap within geography faculty is persistent and might hamper efforts to improve representation within geography student populations.

Tables 5 and 6 also present the median values for the proportions of students within each racial and ethnic group and for female students to help illustrate the skew within each data set, particularly in terms of minority participation. The skewness of a distribution characterizes its symmetry around the mean.[8] A skew of zero represents a normal distribution. The further the skew value is from zero, the greater the tendency for the sample to include a bulk of values that are very different from the mean. A positive skew indicates a large number of low values within the data set and a negative skew indicates a large presence of high values. For the preceding data sets, the positive skew within each sample is greater for geography departments than for institutions with geography or all institutions as a whole. (See the article by Solís et al. in this issue for further discussion.) Therefore, reliance on an "average" or mean value for non-white representation somewhat obscures the fact that the large majority of departments are characterized by very low

proportions of minority students, especially at the undergraduate level. The handful of departments, including some minority-serving institutions, that have large populations of non-white students inflates the department average. For geography graduate programs, as a group, the "gaps" between mean and median values are narrower than those observed for undergraduate programs, the skew is lower, and the departmental figures more closely correspond to national averages.

Despite recent progress, especially in graduate programs, it is clear that geography as a discipline has more work to do to achieve levels of participation by women and underrepresented minorities that reflect the demographic profile of U.S. higher education. We also contend that diversity is not a one-size-fits-all proposition. It is not realistic to expect that every geography department can be a microcosm of U.S. diversity because *place matters*. In the next section of this article, we explore how representation within geography, and within higher education more broadly, varies across regions and settings.

What Are the Spatial Dimensions of Diversity in Geography?

Understanding their spatial contexts can help geography departments establish realistic, location-specific diversity goals. Minority participation can vary greatly from one department to the next. To explore the effect of geographic context on these disparities, we calculated and compared regional averages for institutions of higher education, surveyed departments, and the surveyed departments' home campuses.

For purposes of analysis, we classified departments and institutions according to the nine regional divisions within the AAG.[9] Our classification by "setting" is based on the "degree of urbanization" classifications assigned by the NCES.[10] We acknowledge that regional boundaries and classifications of places are human constructs and that there can be significant variation within regions and localities as well as between them. AAG regional divisions are largely defined as clusters of neighboring states, which can encompass areas that are very different demographically. For example, the Pacific Coast region includes Hawaii and California, the country's most diverse states, as well as Idaho, which ranks thirty-ninth in percentage of non-whites. Nevertheless, the following discussion highlights the importance of geographic context to assessing progress toward broader participation and to setting relevant and realistic targets for representation in institutions and departments.

Table 7 presents the representation of non-white minority groups and women by region and setting, based on undergraduate enrollments at all four-year institutions in the United States. The figures presented should not be interpreted as prescriptions for what diversity in higher education "should" look like in specific kinds of places; rather, they lend insight into the spatial variability of the concept of diversity itself. A department in the Great Plains–Rocky Mountain region will contend with smaller local populations of black and Hispanic students from which to recruit, but it might have very promising opportunities to engage Native American students, as illustrated cartographically in Figure 1. These data also challenge some popular conceptions about where the "diverse" students are. For example, there might be unrecognized, and therefore potentially untapped, opportunities for reaching out to black students in suburban and rural settings, particularly in the Southeast.

As Table 8 illustrates, non-white participation in higher education varies significantly by region, ranging from a high of nearly 50 percent of undergraduates in the Middle Atlantic to a low of roughly 20 percent of undergraduates in the Northeast–St. Lawrence Valley. The range for surveyed geography programs is narrower, with lower minimum and maximum

Table 7 *Average proportion of undergraduate students (all fields) in U.S. degree-granting four-year institutions, by region or setting and minority or gender group*

Location	American Indian/ Alaska Native	Asian and Pacific Islander	Black/African American	Hispanic/ Latino	Two or more races	Female
East Lakes	0.57	2.24	15.12	2.52	0.23	55.87
Great Plains–Rocky Mountains	4.66	2.41	6.83	7.36	0.47	56.52
Middle Atlantic	0.41	5.47	35.93	7.38	0.30	54.74
Middle States	0.32	5.21	12.29	7.87	0.36	50.20
Northeast–St. Lawrence Valley	0.61	5.30	8.02	6.79	0.47	56.17
Pacific Coast	2.58	14.08	8.04	19.43	0.91	55.07
Southeast	0.52	1.93	32.14	7.01	0.47	57.45
Southwest	3.10	3.27	21.10	17.73	0.40	56.34
West Lakes	0.86	3.90	13.01	5.26	0.48	58.63
City setting	1.03	5.99	19.01	10.51	0.50	57.19
Suburban setting	0.81	5.21	16.72	9.85	0.51	53.77
Town setting	1.62	2.34	12.08	5.15	0.47	55.05
Rural setting	3.64	3.39	16.57	7.66	0.40	54.58
All students	1.35	4.95	17.12	9.20	0.49	55.76

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS; 2010).

Table 8 *Mean representation of non-whites within total student enrollments, by region and setting*

	Non-white undergraduate students			Non-white graduate students		
Location	**All U.S. 4-year undergraduate institutions, 2009**	**Institutions of surveyed departments, 2009**	**Surveyed geography departments, 2010**	**All U.S. institutions with graduate programs, 2009**	**Institutions of surveyed departments, 2009**	**Surveyed geography departments, 2010**
East Lakes	20.26	13.11	8.07	18.21	10.38	3.02
Great Plains–Rocky Mountains	20.86	13.13	7.56	14.35	10.21	9.95
Middle Atlantic	48.40	12.73[a]	17.05[a]	37.73	N/A	N/A
Middle States	24.95	22.09	14.63	20.18	17.26	21.76
Northeast–St. Lawrence Valley	20.05	11.37	12.58	14.40	7.60	4.92[a]
Pacific Coast	42.35	35.31	25.99	31.22	29.97	24.21
Southeast	41.27	20.94	6.52	34.01	14.14	6.93
Southwest	44.41	33.95	19.02	34.01	22.49	13.41
West Lakes	22.86	21.76	13.09	17.38	18.87	21.18
City	35.74	26.89	18.48	23.94	19.42	15.78
Suburb	32.07	16.97	11.21	21.28	12.26	5.67
Rural	30.60	17.24	9.60	24.52	14.95[a]	22.73[a]
Town	20.90	12.69	5.81	14.67	10.35	13.89
All students	31.99	21.46	13.50	24.95	16.81	14.63

Sources: AAG Survey of Geography Departments (2010); U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS; 2010).
[a]Only one department in this category.

values (e.g., 6.52 percent non-white undergraduate enrollment in the Southeast and 25.99 percent in the Pacific Coast region). Average enrollments within undergraduate geography programs consistently lag behind regional averages for all four-year institutions. However, when the scope is narrowed to explore how diversity within surveyed departments compares to diversity within their host institutions, the gap substantially narrows. In two regions, the Middle Atlantic and Northeast–St. Lawrence Valley, geography departments reported larger proportions of non-white students than their campuses, an especially interesting finding given that these regions are the most and least diverse based on national enrollments,

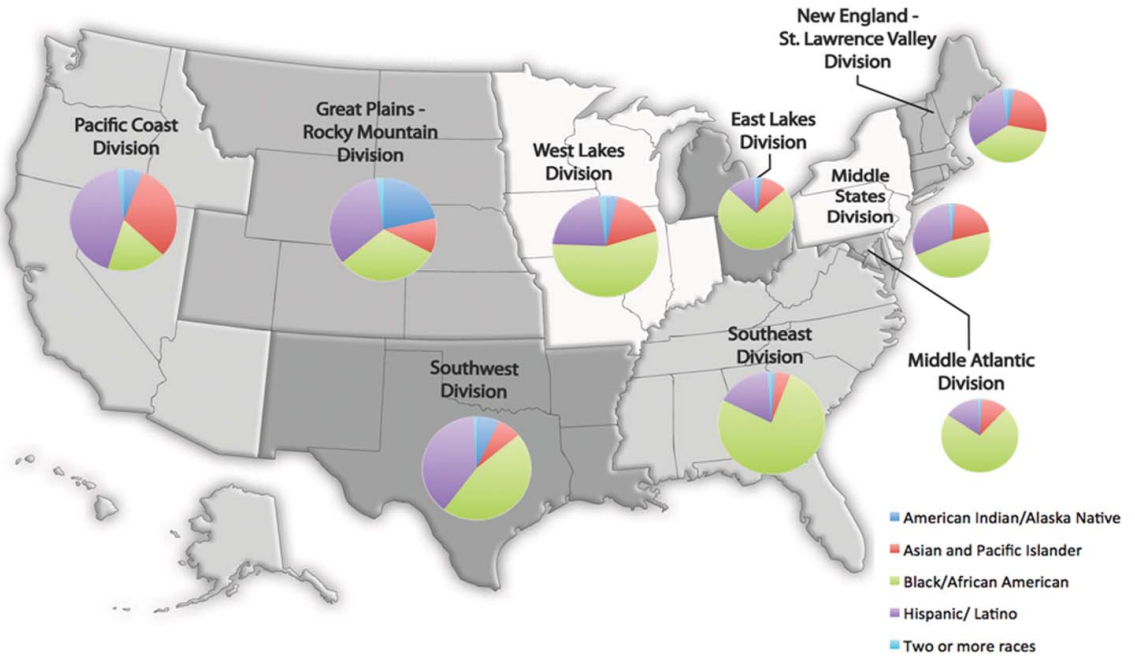

Figure 1 *Average proportions of non-white undergraduate students enrolled in U.S. degree-granting, four-year institutions (all fields), by Association of American Geographers regional division and minority group (see also Table 7). (Color figure available online.)*

respectively. At the graduate level, the surveyed geography departments as a group reported a lower average nonwhite participation rate than all graduate institutions within their regions, but the gap between departmental and national averages on the whole is smaller for graduate students than for undergraduates (10.36 percent vs. 18.49 percent). In two regions, the Middle States and West Lakes, the surveyed departments averaged a higher rate of non-white participation than their regions.

With this coarse mosaic as a backdrop, how is geography faring relative to higher education as a whole? Table 8 illustrates that, in most cases, average nonwhite participation within the surveyed geography departments is trailing average participation rates, both on their campuses and within their regions.[11] Improvement in broadening participation within geography is needed in all regions, but the largest gaps and thus the greatest potential are found in the Southeast and Southwest. In terms of settings, suburban areas have the biggest gaps between national averages and geography department averages, contrary to perceptions that suburbs hold relatively low potential for enhancing diversity in the discipline.

Conclusion

It is evident that geography has room for improvement in terms of broadening participation. Achieving progress will require concerted action at the department level, which is where our future generations of scholars and professionals are cultivated. The preceding analyses support the position that departmental strategies and goals for enhancing diversity should be informed by and sensitive to institutional and geographic contexts that shape individual programs' unique opportunities and constraints. Beyond metrics, these department goals and strategies should also incorporate deeper understandings of how to build an inclusive and supportive climate to attract and retain talented diverse students and faculty (see Solís et al. this issue).[12]

It is encouraging to notice that geography departments as a group do not appear to have fully tapped the diversity that already exists within their home institutions and within their geographical regions. Therefore, efforts such as recruiting undeclared majors and new transfer students within existing campus populations or reaching out to regional community colleges, especially the increasingly diverse, private (not-for-profit) two-year institutions, hold promise as relatively low-input strategies that could yield immediate results.

Perhaps the most significant contribution of our approach is the demonstrated utility of rethinking how we measure disciplinary diversity. To applaud geography for being more diverse than certain physical sciences or to disparage the discipline for being less diverse than certain social sciences fails to acknowledge geography's unique situation as a bridge discipline that spans the breadth of the academic enterprise. Furthermore, such comparisons fail to acknowledge that diversity is it itself a diverse concept; a "representative" student population will mean different things in different places and contexts. This situation is generally acknowledged within the geographic community, but it remains largely unexplored, either conceptually or statistically. Therefore, the considerations raised here have rarely been explicitly applied to departmental diversity planning and implementation activities.

We encourage further interrogation of the critical and complex challenge of how to better assess progress toward broadening participation in geography. Topics warranting further study include the following:

- Assessing diversity within geography's many subdisciplines to understand how participation varies across content areas and to suggest topical emphases for geography courses or programs that will engage students from traditionally underrepresented groups.
- A closer examination of geography in two-year institutions, minority-serving institutions, and private institutions, specifically to explore where geography programs are absent and why.
- Understanding the role of "stand-alone" geographers in promoting the discipline among diverse students in the absence of established geography departments.
- Parallel analyses of the participation of students and faculty who embody many facets of diversity that are beyond the scope of this article, including (but not limited to) sexual orientation, (dis)abilities, first-generation college students, nonnative English speakers, and the economically disadvantaged as well as differences and similarities among national-origin subgroups within larger race-based categories.
- The rise of for-profit institutions and their impacts on the landscape of diversity.
- Qualitative research to contextualize these findings and deepen our understanding of the spatial patterns revealed by statistical analysis.

As evidenced by trends in annually compiled AAG membership data (available online at http://www.aag.org/diversity), geography has been making slow progress toward better representation of women and ethnic and racial minorities. Low response rates for departmental surveys and nonresponses for demographic data requested of AAG members hamper our ability to confidently evaluate rates of change over time.[13] Research on the dynamics of diversity within geography will help us to evaluate our efforts and to refocus them as needed to achieve diversity goals for departments, institutions, and the discipline. ■

Notes

[1] The NAS reported that "Underrepresented minority groups comprised 28.5 percent of our national population in 2006, yet just 9.1 percent of college-educated Americans in science and engineering occupations (academic and

non-academic), suggesting the proportion of underrepresented minorities in S&E would need to *triple* to match their share of the overall U.S. population" (NAS 2010, 2).

[2] For more information on this program, see http://www.pathwaystoscience.org/Discipline.asp.

[3] The NCES has begun collecting separate demographic data for Asians and for Pacific Islanders. In the 2009 data set, however, some institutions still combined these two groups into a single category. We therefore present AAG survey data on Asians and Pacific Islanders as a combined figure as necessary for comparison with national figures.

[4] In the most recent ten-year period for which data are available, the number of degrees earned at for-profit institutions increased by a larger percentage than those earned at public and private not-for-profit institutions (NCES 2011).

[5] Programs referenced as offering geography in this article include departments of geography (including those combined with other fields) and other university administrative units that offer degrees, majors, minors, or programs in geography, geography education, GIS, or "other geography."

[6] Owing to the very small number of two-year institutions with geography programs, data discussed here are limited to enrollments in four-year institutions, for comparative purposes.

[7] It should be noted that not all departments that responded to the survey answered all of the questions. In addition, because our frame of comparison for this article is the United States, responses from Canadian institutions are not reflected in the figures presented. Therefore, *N* values that appear in the tables do not reflect the total number of survey respondents, but the subset that provided the requested data in each survey year.

[8] The skew within a data set is calculated using the following formula: $\frac{n}{(n-1)(n-2)} \sum (\frac{x_i - \bar{x}}{s})^3$.

[9] For definitions of the AAG's regional divisions, see http://www.aag.org/membership/regional_divisions.

[10] See http://www.nces.ed.gov/surveys/ruraled/page2.asp#how for an explanation of how NCES classifies settings.

[11] The tables do not report data on gender, as Table 7 demonstrates that the participation of female students is fairly consistent across regions and settings.

[12] Geographers have published several excellent articles that discuss the specific challenges faced by members of underrepresented subgroups and propose strategies for improving departmental and disciplinary climates. See Winkler (2000) on female faculty, Foote et al. (2008) and Theobald (2009) on foreign-born scholars, Peake and Kobayashi (2002) and Pulido (2002) on racial minorities, and Schlemper and Monk (2011).

[13] In 2009, over one third of AAG members (33.65 percent) did not indicate their race or ethnicity in their membership records and more than 5 percent did not specify their gender.

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