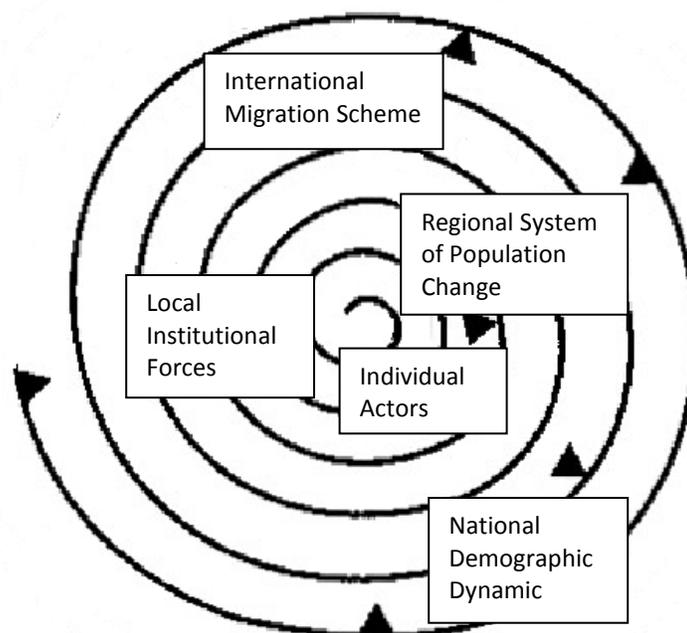


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The purpose of the AAG Catalyzing Research on the Geographies of Broadening Participation Creative Scholarly Retreat is to explore various ways in which geographers can inform and advance approaches to broadening participation. Given that my academic work is devoted to issues of migration, inequality, and justice, I look forward to presenting ideas that can enrich efforts toward achieving diversity in higher education and the scientific workforce. The proposed research will produce both theoretical insights and pragmatic ways to broaden participation.

I present a situational matrix approach (see Skop 2012 for another application of the situational matrix) to account for the varying scales within which broadening participation occurs, sketched in Figure 1. This is a comprehensive analytic device – moving within/between the micro-scale of individual actors, the mid-level tier of local institutions, the regional system of population change, the broader national demographic dynamic, and the international migration scheme. The situational matrix is a framework for investigating the interdependency between individuals, institutions, and regional/national/international forces. I created this analytic device largely because the complexity of the situation requires interaction between scales in order to understand the science of improving the representation and participation of underrepresented groups. It's not a matter of locating everything on one level but of realizing that there are actually a whole order of levels differing in amplitude and capacity to produce effects.

Figure 1. Understanding the Geography of the Pipeline with the Situational Matrix



Below is a description of the interconnectedness of the five scales and potential avenues for exploration:

(1) International Migration Scheme: In the last several decades, the combination of changing global economies and geopolitical contexts, along with shifting immigration policies, have set in motion significant flows of migration to the U.S. These flows are characterized by both highly skilled and lower-skilled migrants coming from a variety of destinations. Particularly relevant to the science of broadening participation amongst underrepresented groups is the flow of highly skilled, highly educated students and faculty to higher education institutions in the U.S. There is much evidence that the presence of international students and faculty is one important piece of the puzzle in creating an environment of inclusiveness.

Potential Project: To illustrate the highly skilled migration schematic, a spatial visualization of migration flows and patterns across the U.S. will be created. The latest U.S. Office of Immigration Statistics and U.S. Citizenship and Immigration Services data will be analyzed to identify specific channels of migration from particular source countries to particular destinations. Most of this data is readily available electronically and can be easily analyzed by undergraduate students. Since student-driven research is a high impact practice that is recognized as increasing diversity, this portion of the project could prove particularly effective. The results will illustrate how change varies dramatically by geographic location, and will provide a framework for understanding if certain regions serve as catchment regions and/or magnets for particular groups (AAG-GBP 4).

(2) National Demographic Dynamic: Understanding the ever-changing geography of U.S. diversity is key to the science of broadening participation. The basic spatial patterns that drive current demography can provide an overarching framework for identifying just how important geography can be in efforts towards inclusiveness. If certain regions of the country are home to particular groups, that information needs to be disseminated to ensure that higher education institutions are made spatially aware for recruitment purposes.

Potential Project: To illustrate the spatial dynamics of demographic change a census-based spatial analysis of growth and decline of various demographic groups across the U.S. will be created. The latest U.S. Bureau of the Census data will be analyzed using Geographic Information Systems (GIS) to demonstrate how the demographic composition of the U.S. population has changed since the passage of the 1965 Immigration Act (a watershed moment in terms of shifting national demographic trends) and where future population change will occur.

Most of this data is readily available through the U.S. Census Bureau's American FactFinder website and can be easily analyzed by undergraduate students.

(3) Regional System of Population Change: The migration literature is rich with evidence of the significant role of migrant networks and chain migration in creating channelized flows from certain origins to certain destinations. The process begins with migrant networks, which are sets of interpersonal ties that connect movers, former movers, and non-movers in origin and destination through social ties, be they relations of kinship, friendship, or remote acquaintances. These migrant networks serve important functions in both international and domestic migration as early migrants reduce costs and risks for later arrivals by providing information, informal aid, and various other resources. As knowledge and experience accumulates with each trip, more potential migrants are induced to move, further expanding the network, and creating increasingly developed paths of migration between particular origins and destinations. The process of migration becomes self-perpetuating as chain migration connects migrants to non-migrants, thereby increasing movement along specific routes. Massey and Zenteno (1999) call this self-perpetuating process cumulative causation, and their research suggests that each additional migrant within a stream increases the propensity for others to migrate in that same channel, thus creating high levels of migration to specific destinations. The question, then, is whether certain catchment regions and/or magnets exist whereby certain institutions of higher education draw certain student groups because of social/spatial networks and/or distance?

Potential Project: To appraise whether catchment regions and/or magnets do in fact exist at the regional scale, student residency data at higher education institutions will be analyzed to see whether any channels have formed between certain origins and destinations, as well as whether the role of distance plays a factor in deterring/persuading students from certain groups/areas from attending particular institutions. This data will be gathered with the permission of Institutional Research Review at selected higher education institutions, using cross-selected data comparing residency and demographic information. No personal information will be required, since the purpose is to test the relationship and distance between origin and destination based on demographic characteristics. The information will be put into the same national GIS database created with the U.S. Bureau of the Census data to see if/how well certain institutions are doing at capturing students based on the demographic data of the region.

(4) Local Institutional Forces: The above discussion suggests that national and regional demographic trends both interplay to create a particular geographic patterning of higher education in the U.S. But the local institutional environment is also essential in creating a place where underrepresented groups can, want, and do succeed. Because word-of-mouth plays such an important role in the migration network system, it is likely that those institutions that are more successful than others have/will increasingly become magnets for underrepresented groups. How to “measure” these local institutional factors is challenging, but exploring those indicators outlined by Campbell et al. would prove especially fruitful (Campbell et al., 2009, 58).

Potential Project: To assess whether/how particular higher education institutions explicitly emphasize efforts to improve equity, inclusion, and broadening participation a “Diversity” index based on four broad indicators (with 3-4 factors each) will be created using data provided by the institutions themselves. The index is designed to illustrate how well an institution is doing compared to a hypothetically “effective” institution (score = 100) and its peers (above or below 100). Measures at the institutional level would be identified across four areas, including but not limited to: (a) staffing, particularly the hiring patterns of faculty from underrepresented groups and/or from international backgrounds; (b) policy, funding, and initiative, particularly those that use high impact practices that indicate the centrality of diversity (see Kuh, 2008); (c) accountability, particularly those that utilize metrics of leadership and reward systems for increasing participation of underrepresented groups; and (d) collaborations, particularly those that employ two-way partnerships between majority- and minority-serving institutions, including community organizations like the Asian American Higher Education Council and the Latin American Educational Foundation. The results will provide a quantifiable, comparable measure of institutional effectiveness and could prove very useful to a variety of stakeholders with interests in understanding the current status of efforts to improve diversity, as well as future areas for improvement. The index will also identify whether those institutions with a high diversity index are also those schools that have become magnets for certain underrepresented groups. If so, the process is likely to be self-perpetuating; this in turn has its own implications for future planning (especially in terms of spatial clustering and/or dispersal of various groups at all scales).

(5) Individual Actors: Building relationships at the individual level cannot be underestimated in understanding the science of broadening participation of underrepresented groups. Research

indicates that students are more likely to persist and graduate in settings that provide academic, social and personal support (Tinto, 2000). Indeed, through the ALIGNED Project, the AAG recognizes this and crafted “32 strategies for increasing diversity in geography departments,” a document that outlines a variety of tactics that programs can use to foster this support (AAG ALIGNED 32, 2008). Faculty and staff have a critical role to play in this process, particularly because they can create environments inside and outside the classroom that foster learning and interaction (Skop, 2008). But most faculty lack awareness and/or tools to make this happen. Thus, it is essential to facilitate training of faculty and staff that promotes techniques that succeed, and to “catalyze epiphanies to expand the ranks of the converted” (Davis and Garcia, 2009, 18). This work at the individual level interplays with the institutional factors, the regional population dynamics, and broad national demographic trends to create success. For instance, the stronger and more positive word-of-mouth information becomes, the more likely migration networks will be developed, and the process of self-perpetuating cumulative causation will occur. The opposite is also true, of course, because when individual students feel excluded, they provide that information to others in their social networks, which in essence results in the closure of that migration stream. Recruitment and retention efforts are then stymied and institutions remain unchanged.

Potential Project: To facilitate training of individual faculty at local institutions, half-day training workshops to guide faculty and staff will be created. The workshop will be designed and modeled after the BIG idea at the University of Colorado Colorado Springs, which was created to provide knowledge and strategies to enable university faculty and staff to be leaders in building campus-wide inclusiveness (See UCCS Office of Diversity and Inclusiveness website) The focus will be to present particular high impact practices that increase participation, persistence, and graduation rates, including those that the AAG ALIGN project has already outlined, as well as other high impact practices that have proven to work in broadening participation through individual interactions. Most important among these are one-on-one mentoring by active researchers, participation in learning communities, and involvement in research experiences for undergraduate and graduate students that tackle immediate social and economic problems (Tinto, 2000; Kuh, 2008; and Gutmann and Friedlander 2011). Institutions with both high and low “Diversity” indices will be invited to participate, and a faculty member designated by the research team will facilitate the workshop.

As the AAG proposal to catalyze research so effectively argues, we must begin to recognize how geography enriches our knowledge of the science of broadening participation. Action and inaction occurs in real places, at different scales, and across space. The situational matrix I propose here begins to address this complexity by outlining the interactions that occur at various levels, and by providing potential avenues for advancing what we know about achieving diversity in higher education. As members of another NSF-funded workshop argued so effectively nearly ten years ago, “The need – indeed the imperative – to include ALL Americans in bringing the best of creativity and innovation to the entire STEM enterprise is more vital than ever. The ethical imperatives of equity and justice, along with many pragmatic reasons dictate this need” (CEOSE 04-02, 2004 cited in Fortenberry, 2009, pg. 28).

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UCCS Office of Diversity and Inclusiveness. See <http://www.uccs.edu/diversity/the-big-idea-building-inclusiveness/what-is-the-big-idea.html>.