

## **Enhancing Departments and Graduate Education in Geography: A Disciplinary Project in Professional Development**

by

Dr. Michael Solem  
Association of American Geographers  
1710 Sixteenth Street NW  
Washington, D.C. 20009  
Tel: 202-234-1450  
Email: msolem@aag.org

Dr. Kenneth Foote  
Department of Geography  
University of Colorado at Boulder  
Boulder, CO 80309  
Tel: 303-492-6760  
Email: k.foote@colorado.edu

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### **Abstract**

*This paper describes the development, implementation, and preliminary outcomes of Enhancing Departments and Graduate Education (EDGE) in Geography, a multi-year project begun in 2005 to study the process of professional development in graduate geography in the U.S and sponsored by the National Science Foundation. As a research and action project responding to the needs of graduate geography programs, EDGE seeks to provide academic geographers with an empirical perspective of disciplinary as well as interdisciplinary and generic skills that M.A./M.S. and Ph.D. students develop as a result of graduate education. Related objectives are to understand how disciplinary skills are applied by geography graduates once they enter the professional*

*workforce in both academic and non-academic professional settings, and to gauge the extent graduate programs are sufficiently preparing geography graduates for those careers.*

*We begin by summarizing the research goals and design of EDGE, highlighting the roles and contributions of geographers and educational researchers, and noting the interplay and synergy between disciplinary and interdisciplinary methodologies and practices. To date, research has focused on: 1) assessing contemporary workforce competencies in professional geography and 2) examining the role of department climate and culture on student experience and faculty development within masters and doctoral programs. Although the EDGE research efforts are still underway, we present some preliminary research findings and discuss the implications of those outcomes for professional development in geography and related social and environmental sciences. Also discussed is the complementary nature of discipline-based and interdisciplinary professional development efforts.*

## **Overview of the EDGE Project: A work in progress**

Enhancing Departments and Graduate Education (EDGE) in Geography is a multi-year, broad-based initiative to support geography graduate students and programs in the United States. Funded by a \$980,393 grant from the National Science Foundation (NSF) and led by the Association of American Geographers (AAG) since 2005, the EDGE project builds on a foundation of prior work in academic geography to study the professional development needs of future geography faculty as well as students who are planning careers in government, business, and the non-profit sector. The project also aims to promote awareness of professional development topics through workshops, conference sessions, and outreach to departments, while simultaneously exploring the implications of the study for other disciplines.

As one discipline's response to a variety of reform-driven assessments of American graduate education (e.g., Nyquist and Woodford, 2000; Golde and Dore, 2001), EDGE seeks to provide a research-based perspective of the skills that individuals acquire through graduate education in geography, the value of those skills for academic practice and other forms of professional work, and the role of personal and institutional factors in the development of professional expertise and abilities. The project also employs geographical methods of analysis and a theoretical framework sensitive to the demographic contexts of academic departments and the place-based nature of academic culture and climate.

EDGE is being implemented through a management plan leveraging the complementary strengths and capacities of the AAG (geography's largest professional

association), several graduate programs in geography, AAG committees on diversity and careers, and professional geographers of various backgrounds and interests. As such EDGE may provide a model for other disciplines seeking to enact national reforms in graduate education by triggering structural and cultural changes at the local level in graduate programs. Yet in many ways EDGE can also be described as an interdisciplinary project characterized by the active input and collaboration from researchers in higher education, faculty development professionals, and scholarly organizations and research centers dedicated to improving knowledge and theoretical perspectives on faculty development, the scholarship of teaching and learning, and graduate education more generally. In the section that follows, we summarize the key research objectives of EDGE and illustrate how those objectives are being met through a combination of disciplinary and interdisciplinary approaches.

## **A Focus on Professional Development in Geography in Higher Education**

EDGE focuses on graduate education in the discipline of geography for four reasons. First, geography graduate students are starting degree programs at a time when the discipline has never been stronger: student enrollments are at historic highs, new departments are appearing on the map, and graduates enjoy an ample choice of employment opportunities in public and private sectors (Murphy, 2007). Accompanying this growth, however, are numerous challenges: the racial and ethnic diversity of the discipline remains very low, geography is still absent in many of the nation's elite universities (with the exception of the newly founded Center for Geographic Analysis at Harvard University),

and the discipline is still misunderstood by large segments of the American population having little or no geography preparation in school or higher education. New geography professors will also be affected by larger trends affecting higher education such as changing student demographics, new classroom technologies and course delivery systems, increasing reliance on part-time and adjunct instructors, shifting tenure policies, and pressures to hold higher education institutions more accountable for the quality of teaching and learning. EDGE is then a major effort by geographers to respond proactively to the many internal and external opportunities and challenges facing their discipline and the broader world of American higher education.

A second catalyst for EDGE is the issue of whether geography's graduate students are entering the workforce ready for a rapidly globalizing economic landscape. In recent years there have been a series of national reports calling for change in how graduate students are prepared for professional careers, with concerns being raised about the inability of many new graduates to apply their knowledge and skills to serve a broad range of societal needs. For example, a report by the Renewable Natural Resources Foundation warns of imminent retirements of large numbers of senior grade personnel in federal agencies and private research firms, and the current lack of orientation in graduate science programs to prepare and encourage students to consider careers in these sectors (Colker and Day, 2003). A national survey initiated by the Pew Charitable Trusts found a majority of students in arts and sciences doctoral programs to be dissatisfied with their professional training and unprepared for their careers (Golde and Dore, 2001). The same survey revealed that many students enter programs without a clear

understanding of the nature of graduate education and what they can do to enhance their own abilities and prospects for success in their programs and future careers. These concerns are mirrored in reports from the National Science Foundation about the reform of graduate education (Levine, Abler, and Rosich, 2004) as well as in studies of the career paths of geography undergraduates in the US (Ringer, 2003) and UK (Gedye, Fender, and Chalkey, 2004). Compounding the issue in some cases are students who are actively discouraged by faculty from pursuing non-academic professional careers (AAU, 1998; Davis and Fiske, 2001; NAGPS, 2001). As a result, many students who graduate from doctoral programs often leave as highly specialized researchers, but with little appreciation of how their skills might be applied in non-academic contexts or in academic institutions such as community colleges and liberal arts colleges where teaching is the central mission.

A third reason for focusing on graduate geography was the potential for contributing to theory and practice in graduate education more generally. Academic geography is of a size and character well suited to explore issues of broad significance to graduate education. When EDGE commenced in 2005, there were 158 academic departments awarding graduate degrees in geography (including 86 doctoral programs). This means that a systematically-drawn sample of students in approximately a quarter of geography graduate programs can yield insights about graduate education in a wide range of department and institutional settings. EDGE is also relevant to the needs of returning students and graduate students in other social and environmental fields, given the relative abundance of terminal professional M.A./M.S. programs in geography, the inclusion of social and

biophysical sciences and technical specialties in most departments, the hybrid nature of some departments (30 percent of geography graduate programs are combined with geology, anthropology, environmental sciences, and so forth), and the interdisciplinary research specialization of some graduate programs, including departments at the University of Southern California, SUNY Buffalo, and Arizona State University which have received funding from the NSF Integrative Graduate Education and Research Traineeship (IGERT) program.

Finally, since 2002 the National Science Foundation has funded a project to examine academic professionalization in geography and provide early career faculty with the theoretical and practical knowledge needed to succeed in their careers of research, teaching, and service. That project, the Geography Faculty Development Alliance (GFDA), is built around a program of summer workshops as well as follow-up seminars, panel discussions, and paper sessions held at professional meetings of the AAG and National Council for Geographic Education (Solem and Foote, 2004). The EDGE project complements, but considerably expands and extends the GFDA objectives by including research on individuals at earlier stages of professional development beginning with students enrolled in Master's programs. EDGE is also developing a methodology to examine more closely several issues arising from our surveys and interviews with GFDA participants, such as the discovery that many of the concerns and challenges experienced by new geography professors are rooted in issues related to the overall social and academic environments of geography departments.

Though it may be a disciplinary responsibility to initiate research and development programs aimed at changing or otherwise enhancing practices in a particular graduate field, it is difficult to imagine such an effort succeeding on a sustainable basis without drawing on the expertise, models, and practical contributions of researchers and developers in the higher education research community. In every respect of its planning and design, the EDGE project sought the input of scholars and organizations whose work in many ways provided the rationale and impetus for the project. We continue by highlighting the outcomes of some of those collaborations.

### **The Complementary Nature of Disciplinary and Interdisciplinary Professional Development**

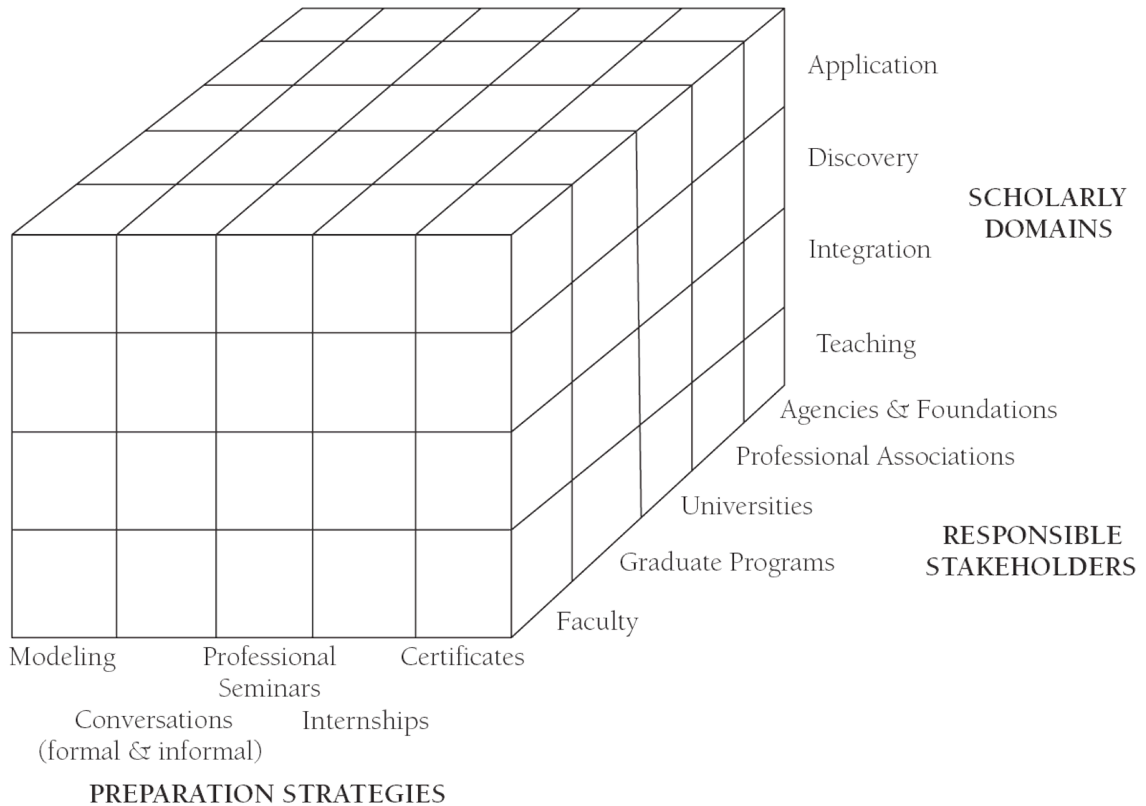
We see all of our discipline-specific efforts as complementary to, rather than separate from, interdisciplinary professional development programs available on many campuses and provided by many graduate programs and faculty. In their recent article, Austin and McDaniels (2006) depict professional development opportunities within a three dimensional matrix (Figure 1). The scholarly domains articulated by Boyer (1990) in *Scholarship Reconsidered* form the vertical axis, while preparation strategies and stakeholders are arrayed along the X and Y axes. Although the EDGE project focuses on developing opportunities among professional associations, graduate programs, and faculty, we view the efforts of other stakeholders as essential to the overall effort of improving professional development within geography and other disciplines as well. Many colleges and universities provide excellent programs, workshops, internships, seminars and certificate programs on career topics for

graduate students and early career faculty, often based on the Preparing Future Faculty Program model. Other initiatives focus on particular themes (such as promoting the scholarship of teaching and learning or service learning, for instance) and still others like the U.S. National Science

Foundation ADVANCE grants aim to provide leadership training for women and under-represented groups.

However, we believe that these sorts of university-wide efforts--as well as those sponsored by agencies and foundations--must also be complemented with cross-cutting discipline-specific professional development opportunities, a point raised by other researchers both inside and outside geography (Jenkins, 1996; Brown, Clark, and Bucklow, 2002; Clark et al. 2002; Healey and Jenkins, 2003). There are special challenges in most disciplines that need to be addressed among peers (Monk, 1978; Healey, 2003) and, as Becher (1989) has argued, there are cultural and social differences among disciplines which limit some sharing of insights across fields.

Figure 1. Austin and McDaniel (2006, 59) framework for doctoral student professional development organized around Boyer's scholarly domains. The EDGE project focuses especially on developing opportunities among professional associations, graduate programs, and faculty, but views the efforts of other stakeholders as essential to the overall effort of improving professional development across all scholarly domains using all of the preparation strategies listed here.



In geography, there are a number of challenges which arise, especially around teaching. These include: 1) the importance of field study and fieldwork in both the undergraduate and graduate curricula; 2) the widespread use of laboratory sections for teaching both physical geography and geographical research techniques such as geostatistics, cartography, and geographic information systems (GIS); 3) the extensive use of technologies for mapping, GIS, and web-based instructional materials; and 4) the critical value of developing among students a global perspective on key social, economic, environmental, political, and cultural issues. Additionally--and this is true of other disciplines--considerable faculty effort is put into service courses--large, introductory level courses required of non-majors. These courses--so important to sustaining, funding and attracting majors--are often the ones which are little discussed within departments, but assigned often to early career faculty.

Nonetheless, one of the most important reasons for promoting discipline-based professional development revolves around networking among graduate students and early career faculty. Too often early-career faculty report feelings of isolation and having to "go it alone" in their first few years without recognizing that they are facing stresses shared by others. Particularly important are mentoring and networking opportunities which extend beyond one's own graduate school cohort and home department. Building this more extensive network is thus one of the key reasons for pursuing discipline-specific programs.

We would add two important caveats to these points. First, the mix of discipline-specific and interdisciplinary professional development is likely to vary considerably

across the social and natural sciences, engineering, humanities and arts. The EDGE project was developed for a mid-sized discipline with about 77 master's and 86 doctoral programs in the United States. In a discipline of this size, considerable impact can be made through the efforts of stakeholders among professional associations and graduate programs. Thus, the EDGE methodology focuses on all types of programs and institutional types in our outreach activities and considers the needs and perspectives of all students pursuing a graduate degree in geography. A similar combination of disciplinary and interdisciplinary professional development and engagement may not be the case in smaller or larger disciplines or ones with different professional and demographic characteristics.

Second, though not addressed in the Austin and McDaniels framework, is that early career issues are perhaps best conceived as part of a life-long, career-spanning trajectory, not something confined to graduate school and the first years beyond. We concur with Healey (2003) that more attention should be devoted to issues of professional development from graduate school onward, not just at the start of a career. And we agree with Austin and McDaniels (2006, 63) that the "limits of faculty knowledge and ability to guide students in various domains [of scholarship]" may be one of the major impediments to improving doctoral preparation. This means that professional development programs should aim both forward and backward--forward toward the next generation of scholars and backward toward the senior faculty whose leadership is also important to success.

## **Blending Disciplinary and Educational Methods in Research on Professional Development**

Like the Geography Faculty Development Alliance project that preceded it, the EDGE project seeks to engage geographers in a dialogue undertaken in the past decade to stimulate reflective thinking about graduate education in America. Among the best known of these efforts are the Preparing Future Faculty programs sponsored by the Council of Graduate Schools and the Association of American Colleges and Universities, the Re-envisioning the Ph.D. project at the University of Washington, and the Responsive Ph.D. initiative of the Woodrow Wilson National Fellowship Foundation (Wulff and Austin, 2004). EDGE acknowledges the work of these organizations while building relationships among geographers and higher education specialists in three major areas of research collaboration:

### *1. Assessing contemporary workforce competencies in professional geography*

This research component employs the concept of a competency model for classifying subsets of knowledge, skills, and abilities that are required for effective work in a profession or industry. Gaudet, Annulis, and Carr (2003), for example, developed a model detailing the skills expected of workers in the geospatial technology industry. In the context of professional geography more generally, the EDGE project has developed a competency model that delineates and explores relationships between geographical concepts, skills, and perspectives, such as knowledge of physical geography and the ability to “think spatially”, with general areas of proficiency that fall outside the domain of the discipline, such as writing and

oral presentation skills, organizational management acumen, and the ability to work effectively in a team.

The EDGE study does not seek to explain how professional expertise in geography develops over the course of an education (cf. Downs, 1994). Rather, its focus is developing a means to classify discrete areas of professional knowledge and skill in geography, and to use those areas of competency to explore issues of “employability” (i.e., the demand for certain skills and traits in different types of workplaces) and questions raised in recent U.S. and U.K. assessments regarding the congruency, or lack thereof, between what graduates know and are able to do versus the skills that employers want (Mistry, White, and Berardi, 2006; Solem et al. 2006).

Through an extensive and ongoing period of surveys and interviews with professional geographers and employer organizations, EDGE researchers are discovering some interesting patterns about the skills expected of geography professionals. For example,

- Across major industry sectors (i.e., higher education, government, and the private sector), a considerable majority (more than 75 percent) of geography professionals (N=280) participating in our surveys indicated that time management, communication, critical and creative thinking, and problem-solving were all essential skills for the work they perform.
- With regard to geographic skill areas, the ability to “think spatially,” examine patterns from an interdisciplinary perspective, and proficiency in cartography and GIS were cited as required qualifications

by more than half of the respondents. However, many employer organizations in all sectors (N=447) reported that they are experiencing some difficulty, or even failing, to find individuals with sufficient preparation in these areas.

- Computer skills and time management abilities were two areas predicted to grow in importance by employer organizations across all sectors. But within sectors, some skill areas were cited more often than others (e.g., higher education employers were more likely to predict an increase in demand for individuals capable of writing competitive grant proposals, whereas for-profit companies foresee a greater need for individuals capable of adapting to change in the workplace).

Extending this first research component is an ongoing collaboration between the AAG and the Center for Innovation and Research in Graduate Education (CIRGE), an organization based at the University of Washington in Seattle that recently completed a major survey of social science PhDs who were awarded their degrees between July 1, 1995 and June 30, 1998. Geography was one of five disciplines examined in the CIRGE survey, which explored how a Ph.D. education is used across a variety of careers and analyzed respondents' perceptions of the usefulness of a Ph.D. and the quality of their degree program. CIRGE invited the AAG to review and contribute items for the survey, and the two organizations will work together to communicate and weigh the implications of our respective findings for graduate programs and students.

## *2. Examining the role of department climate and culture on student experience and faculty development within masters and doctoral programs*

In the past decade, a considerable amount of research has explored issues of professional development in a higher education system marked by demographic, technological, and structural changes. Much of this work addresses academic professionalization from the perspective of personal attributes and individual behaviors. Boice (1992, 2000), for instance, has found that early patterns of success among new faculty “quick starters” are closely related to efficient and strategic time management strategies, which helps the new professor effectively balance teaching, research, and service responsibilities with the demands of home life. Boice further notes that a successful beginning in the tenure track career path is associated with being proactive and seeking feedback from colleagues, becoming familiar with local institutional culture, and learning the literature informing educational practice in one’s discipline. Other writings offer advice on mentoring and what new faculty can do to improve skills in areas ranging from writing and publishing to designing research proposals and lecture presentations (Sorcinelli and Austin, 1992; Schoenfeld and Magnan, 1994; Middaugh, 2001; Fink, 2003).

As geographers we appreciate the contribution of these works but feel especially drawn to an emerging literature providing compelling evidence that variables from student completion rates to faculty productivity are sensitive to factors “that are not simply a function of personal attributes” (CGS, 2003, p. 11). To a somewhat lesser extent, researchers have explored professional development in relation to institutional factors such as



program environment, disciplinary research culture, and curriculum practices, and the impacts of these factors on student and faculty development. Perhaps part of the reason why less empirical work exists on this issue has to do with the elusive concept of academic culture, a topic that lacks a consensus definition apart from broad differences in the nature of faculty work in different disciplines and in teaching-intensive versus research-intensive institutions (Becher, 1989; Finkelstein, Seal, and Schuster, 1998; Lucas and Murray, 2002). Nevertheless we can point to valuable works by anthropologists, sociologists, psychologists, and others studying organizational culture in higher education as providing a springboard for investigations of the cultures and climates of M.A./M.S. and Ph.D. departments (Kuh and Whitt, 1988; Tierney and Rhoads, 1993; Hermanowicz, 2005).

In the EDGE study, we are attempting to thread together various scholarly perspectives of culture and climate in several ways. First, we share Kuh and Whitt's (1988) view of academic culture as a process that creates a richly textured landscape of professional norms, expectations, and behaviors, all of which are oftentimes reinforced by institutional policies, and therefore relatively stable over time. Academic culture provides a framework for understanding the behaviors of individuals and the perceptions they have for the overall social and academic climate within a particular department (Cameron and Ettington, 1988; Petersen and Spencer, 1990). Also important for purposes of interpreting local academic culture is the need to situate the academic department within the larger institutional environment as well as in relation to organizations such as professional associations that serve to establish cultural ties among members of a

disciplinary community spanning hundreds of departments at the national and international scale (Lee, 2007).

We acknowledge that academic departments have cultures distinguishing them from other professional workplaces, but we also wish to account for the roles that various human actors play in shaping those cultures and who, over time, possibly contribute to normative shifts within departments. Because the profound human and institutional diversity of higher education means that academic culture varies considerably across departments, we assert that a geographic perspective is needed for capturing the full range of experiences of what life is like for members of department communities, how their experiences vary from place to place and why, and how this information can help explain patterns of student academic achievement, program satisfaction, completion rates, time-to-degree, and awareness of professional development issues and strategies.

EDGE is therefore using the academic department as the "unit" of analysis to interpret the culture of graduate education in various M.A./M.S. and Ph.D. programs. Two sources of data are informing this analysis. First, a survey was developed to measure graduate student perspectives of their program climates with regard to issues such as mentoring and advising, working environment, academic rigor of the curriculum, and the quality of laboratory facilities and professional development received. We received 605 valid, complete returns from graduate students from all types of geography graduate programs in the United States. A factor analysis of the survey data yielded 17 factors largely based on studies of departmental culture by Dr. Jenny Lee, a higher education specialist who is participating in the EDGE project as a

research consultant (Table 1). In the Lee (2004) study, 96 survey items that reflected the professional values, assumptions, beliefs, and ideologies held by faculty in five disciplines (Biology, Business, Education, English, and Political Science) in all types of two- and four-year academic institutions were factor analyzed using data from the 1998 Faculty Survey by the Higher Education Research Institute.

While Professor Lee's study provides validated constructs of various dimensions of academic culture, it was restricted to college faculty and thus does not fully account for student perspectives of academic culture. We therefore developed new variables and reworded the titles of the factors in the Lee study to better describe graduate student culture and their perceptions of departmental climate. For example, the factor "Collegiality" in the Lee study became "Social Interactions Among Students" in the EDGE analysis to focus on the role of student social networks in providing a source of support. Likewise, whereas the Lee study measured the value placed on research by faculty in different disciplines ("Commitment to Scholarship and Scholarly Recognition"), we wanted to know the extent that doing research *as a career goal* was a driving influence on students' decisions to pursue a graduate degree. Other factors in the EDGE survey, such as "Availability of Internships" and "Financial Stress" were developed with new questions based on particular aspects of graduate student professional development and concerns such as financing a degree program or obtaining funding for a dissertation project.

A second major data collection activity occurred between September 2006 and February 2007, when EDGE researchers Drs. Janice Monk and Beth Schlemper

completed an extensive series of interviews in M.A./M.S. and Ph.D. geography programs. Ten programs, selected from a stratified random sample, accepted an invitation to participate in the case studies. The interview participants included 10 department chairs, 10 graduate program coordinators and directors, 62 faculty members, 121 graduate students, 18 university administrators, and 3 administrative staff members. The interviews provide an important qualitative context for interpreting graduate student and faculty experiences, attitudes, and achievements in relation to the cultures of different graduate programs.

A preliminary analysis of the survey and interview data suggests important lessons for graduate programs seeking to create supportive and equitable learning environments. For example,

- We found significant differences in student perceptions of department environments when compared on the basis of race and gender. White and male students perceive their departments to be more tolerant, equitable, and diverse places, and are more likely overall to perceive the working environment in favorable terms (i.e., as more "collegial" and "civil") relative to the views held by women and racial and ethnic minorities. While there is a considerable presence of foreign-born students, of women, and of students who have returned for graduate study after other careers, the representation of racial and American-born ethnic minorities remains very low. Though students and faculty broadly agree that departments need to be more proactive in recruiting and

<b>Factors related to Student Perceptions of the Department Program and Climate</b>	<b>Factors related to Student Self-Assessed Goals, Experiences, and Outlooks</b>
<ol style="list-style-type: none"> <li>1. <i>Quality of Academic Advising, Support, and Curriculum</i> (21 variables)</li> <li>2. <i>Diverse, Tolerant, and Equitable Environment</i> (10 variables)</li> <li>3. <i>Department Commitment to Students' Affective Development</i> (7 variables)</li> <li>4. <i>Favorable Working Environment</i> (8 variables)</li> <li>5. <i>Unfavorable Working Environment</i> (4 variables)</li> <li>6. <i>Access to Internship/Employment Opportunities</i> (2 variables)</li> <li>7. <i>Department Focus on Improving Prestige</i> (3 variables)</li> <li>8. <i>Social Interaction among Students</i> (4 variables)</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Difficulty Coping with Program Requirements or - Personal Issues</i> (10 variables)</li> <li>2. <i>Likelihood of Leaving or Suspending Program</i> (7 variables)</li> <li>3. <i>Importance of Affecting Social Change</i> (6 variables)</li> <li>4. <i>Importance of Improving Teaching Skills</i> (4 variables)</li> <li>5. <i>Importance of Scholarship and Scholarly Recognition</i> (4 variables)</li> <li>6. <i>Financial Stress</i> (5 variables)</li> <li>7. <i>Importance of Future Financial Success</i> (3 variables)</li> <li>8. <i>Importance of Program Reputation</i> (5 variables)</li> <li>9. <i>Importance of Program Diversity</i> (4 variables)</li> </ol>

Table 1. Factors related to graduate student perceptions of departmental climate and students' self-assessed professional goals, experiences, and outlooks.

- supporting students of color, few of the survey and interviewee respondents were themselves actively engaged in diversity efforts. When women and minority students perceive a program as indifferent or unsupportive, they are more likely to express a desire to leave the program.
- We also found substantive differences in the perceptions of Master's and Ph.D. students for their programs. When choosing to enroll in a program, doctoral students tend to give more weight to a department's academic reputation and prestige, whereas master's students are more interested in the ways in which programs, including internships beyond campus, will prepare them for employment outside of academia. Doctoral students, however, also report higher levels of financial and emotional stress and are more likely to view their working environments as being unfriendly or discriminatory – two factors that correlate strongly with students' expressed intent to drop out of a graduate program (cf. Rosser, 2004).
- During our visits to graduate departments, students frequently expressed a desire for more information about non-academic professional career alternatives and opportunities to become more engaged in the local departmental community and in the discipline more broadly. We also observed that approaches to mentoring and professional development varied greatly among the departments visited, ranging from extensive, formal programs of workshops and

courses to a near total reliance on individual relationships with faculty advisors. Further work is planned to link the quantitative and qualitative data on issues regarding participation in professional development activities, enhancing gender and diversity, and how the cultures of M.A./M.S. and Ph.D. programs are related to influential rankings of program quality such as the Assessment of Research-Doctorate Programs periodically conducted by the National Research Council.

### *3. Developing and evaluating resources for professional development*

EDGE is supporting collaborations between geographers and educational researchers to pave new approaches for discipline-based professional development, while exploring the implications of this work for other social and environmental sciences. Two forthcoming books by Prentice Hall, *Aspiring Academics: A Resource Book for Graduate Students and Early Career Faculty* and *Teaching College Geography*, are the focus of this effort and both volumes offer materials that have been extensively reviewed and tested. The books represent a culmination of six years of GFDA and EDGE workshops and research on geography faculty development.

### **Management Strategies for Sustaining Professional Development Programs**

From the very beginning those involved with the management of EDGE recognized that achieving the project's fundamental goal of enhancing graduate programs and laying the seeds for broad-based change would require a multi-layered strategy engaging the AAG membership, graduate

students, geography professors, department chairpersons and graduate program directors, and campus administrators from a representative group of graduate programs. Part of this recognition stems from understanding that the culture of graduate education, like higher education generally, affects and is affected by these numerous actors. Though one project cannot begin to account for all of the issues affecting the process of graduate education, it can begin to lay a foundation upon which, over time, desired progress can be made, especially when goals are set with the direct participation of stakeholders.

Though it is too early to make a summative assessment of impact mid-way through a project, we can point to a number of changes resulting from the activity of EDGE and related disciplinary initiatives, and how the AAG will institutionalize key components of the project for the long-term benefit of the discipline:

1. Geography Faculty Development Alliance: Since 2002 GFDA has convened workshops enrolling more than 300 early-career faculty representing approximately half of geography's new professoriate. The aim is to provide early career faculty and advanced doctoral students with the theoretical and practical knowledge needed to excel in the lecture hall, seminar room, and laboratory. Key objectives of the project are to foster a culture of support and success for early career faculty, to help them understand the fundamental interconnections between their teaching and research, and to advance the scholarship of teaching and learning across the entire discipline. The program has been waitlisted annually and popular

demand is such that geography departments are now funding the attendance of participants with plans to continue workshops until 2010 (five years after the original ending date of the NSF grant). GFDA workshops are also expanding to include one-day events at the AAG Regional Conference and the National Council for Geographic Education annual meeting.

2. **Healthy Departments Initiative and Workshops:** Organized by then AAG president Victoria Lawson in 2005, the Healthy Departments initiative sponsors annual workshops to assist Department Chairs and facilitate sharing of successful strategies for maintaining healthy departments, including a focus on faculty development and mentoring. Members of the Healthy Departments Committee communicate regularly to formulate strategies for engaging department chairpersons in the work of GFDA and EDGE. Healthy Departments workshop leaders also include geographers holding positions as deans and provosts who share strategies for linking professional development activities undertaken by a department with the broader mission and goals of the academic institution.
3. **Enhancing Diversity Committee:** Created by the AAG Council in 2007, the Enhancing Diversity Committee is the most recent organized institutional effort by the AAG to promote a more diverse discipline. It was formed to continue the work of the Diversity Task Force, formed by the AAG in

2003 to identify strategies for improving representation of women and racial/ethnic minorities in academic and professional geography. Members of the committee serve as advisors with the EDGE project and are collaborating in the analysis of data exploring experiences of women and minorities in graduate programs, and how that knowledge can be communicated effectively to departments that are experiencing relative difficulties with the recruitment and retention of women and minorities.

4. **Professional Development Small Grant Program:** Significant outreach and dissemination activities are planned to maximize the distribution of the *Aspiring Academics* and *Teaching College Geography* volumes and associated web resources. This dissemination will be achieved partly through a small grant program administered by the AAG with NSF funds to support the development of workshops and seminars in geography programs. A related evaluation will assess: 1) the impact of the publications on students' understanding and appreciation for various aspects of professional development; 2) the extent the publications are adopted by graduate programs in geography and beyond; and 3) whether the publications result in any changes in approach taken by graduate programs with regard to the professional development of academic staff. The evaluation will be designed with consultants who specialize in organizational culture and change in higher education.

As we alluded earlier one of the key strategies we have employed to broaden the impact of the project has been reaching out to scholars and organizations outside of geography, but who share our general interests in improving graduate education as a process and enterprise. Our original partners in CIRGE and the Professional and Organizational Development (POD) group of faculty developers in the United States have expanded to include researchers in the Centre for Excellence in Preparing for Academic Practice at Oxford University and the several institutions participating in the Graduate Education Working Group of the Carnegie CASTL Leadership program (Central European University, CIRT Network, Howard University, Michigan State University, Rutgers University, and University College Cork). These relationships have already yielded fresh research collaborations and interesting new tactics for developing resources on teaching and learning that we hope will inspire our colleagues in geography to think differently about professional development in relation to their own work and departments.

We are also witnessing student-led initiatives to expand the conversation of professional development in graduate programs as well as an increasing number of organized sessions at the AAG annual meeting that focus on career planning and graduate education. For example, a team of graduate students at the University of California at Los Angeles organized a one-day professional development conference in May 2006 with EDGE staff serving among the speakers and workshop facilitators (personal communication with David Rhys Davies, 11 April 2006). Another approach was taken in the 2007 spring semester by graduate students at Penn State University who organized a semester-long series of professional development panels in direct

response to a GFDA research publication about issues facing early-career academics in geography (Solem and Foote 2004) (personal communication with David Fyfe, 20 February 2007). The EDGE project sponsors these initiatives and their success at generating attendance has encouraged us to expand the number of similar sessions offered at smaller regional AAG meetings, but which often reach individuals unable to attend the large annual meeting of the AAG.

In closing, the legacy of the activities discussed in this paper is a disciplinary infrastructure providing graduate students and new professors in all departments with access to information that can help them successfully develop as professionals in academia or other professional settings. It also ensures that the AAG will remain responsive to serving the needs of its members who, through their professional practice, will carry the responsibility of preparing future generations to continue the geographical tradition of scholarship in teaching, research, and service.

### **Acknowledgements**

Funding for the EDGE project comes from the Research on Learning and Education (ROLE) program (grant number: REC-0439914) in the National Science Foundation. We wish to thank Jan Monk, Beth Schlemper, and anonymous referees for their comments on earlier drafts of this paper.

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