

Review Team Report

University of New Mexico

Department of Geography

February 2008

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Summary Recommendations

The review team was very impressed with the enthusiasm shown by the geography faculty, students and staff to continue the renewal of geography at UNM. This realistic optimism must be supported by several significant changes internal to the program and through targeted support from the leadership of the College and the University. Below are the six priority actions:

- 1) Continue the strong departmental leadership by recruiting from outside UNM a department chair with expertise in environmental management/GIScience.
- 2) Reduce the scope of courses of the departmental curriculum and increase the depth of course offerings with a structured, sequenced curriculum in environmental management and GIScience at the undergraduate and graduate levels.
- 3) Increase the technical and administrative support for the department with a second (preferably full time) office staff person, a computer lab technical person, and a person to handle undergraduate and graduate advising.
- 4) Provide additional funding of laboratories for physical geography and GIScience in terms of equipment, software licensing and support, and additional teaching assistant positions.
- 5) Identify tenured/tenure track geography faculty to be responsible for course lecture/lab coordination, teaching assistant orientation, training and oversight.
- 6) Create a hiring plan for 2-3 additional faculty members in the department's new focus areas. At least eight or nine faculty are the minimum to provide a competitive master's degree program, especially one with scientific and geospatial technical emphases.

Documentation of the Visit

The Geography Review Team was provided in a timely manner with the Department's well-done and thorough self-study *Program Review*, the Academic Program Review *Policies, Principles, and Procedures*, and the University's *Catalog*. In addition, a preliminary schedule was provided in advance, giving us the opportunity to request modifications and additions.

The site visit was on February 25 and 26, 2008. A copy of the final schedule for the visit is attached.

State of the Department

The Department has four tenured/tenure track faculty members, and with two recent hires will grow to a regular faculty of six next year. It offers BA, BS, and MS degrees. It has one lecturer and several adjuncts who help staff classes. Geography is one of only two departments in the College of Arts and Sciences (A & S) that do not have PhD programs. There are approximately 40-50 undergraduate majors and 18 graduate students in 2007-08. Courses in the Department serve core requirements in the physical and natural sciences and the social sciences. These core courses and the GIScience courses require laboratory facilities and technical support.

A very small faculty has kept the Department intact over some difficult times. With strong recent hires who are contributing immensely to the Department and institution, with two more coming in this fall, and with the work that all are doing to plan for the future, it is an exciting time for the Department and for the institution.

Geography is recognized across the country as a necessary component of research (www.geovista.psu.edu/aboutus/members/faculty.jsp), business (www.gisdevelopment.net/application/business/index.htm), government (www.esri.com/industries/localgov/gis-government/literature.html), and daily activities (maps.google.com, www.garmin.com). It has enjoyed a renaissance that is reflected in stronger geography programs, new programs and program components, and reintroduction into the Ivy League (www.news.harvard.edu/gazette/2006/05.11/05-geography.html). Students with geography backgrounds have a wide range of job opportunities (communicate.aag.org/eseries/scriptcontent/custom/giwis/cguide/opportunity/cguide_opportunity.cfm).

The Questions

We are organizing the core of our report around the four questions posed to us in the February 1, 2008 letter from Vice President for Academic Affairs, Wynn Goering.

1. How can the implementation plan and strategic plan be improved?

We suggest the Department focus on the nexus of environmental management and geographic information science (GISci) with emphasis on the southwestern U.S. We found that the people-

environment / GISci focus in the strategic plan was definitely on the right track, but the breadth and the words used to describe it need to be carefully crafted by the Department such that they are more identifiable with the Department of Geography at the University of New Mexico. Without careful framing, the area as currently stated can be used to justify the inclusion of almost anything in the field. With a small, high-quality (and overworked) faculty, a more narrowly-framed focus will help the Department's quest for quality and for identity within the discipline, the institution, and the state.

We support the hiring of a new chair at the senior level in the near future to replace the current chair, who plans to phase into retirement in the next few years. The current faculty is heavily weighted toward the junior level. There is tremendous potential among them for chair service later in their careers, but their attention at this stage should not be diverted from their roles in program building and in promoting their research and teaching agendas. A senior person would allow these dynamic young faculty to develop and is needed to oversee the implementation of the vision reflected in the Department's document. We see a very strong future for this department, and a senior hire can help them get there.

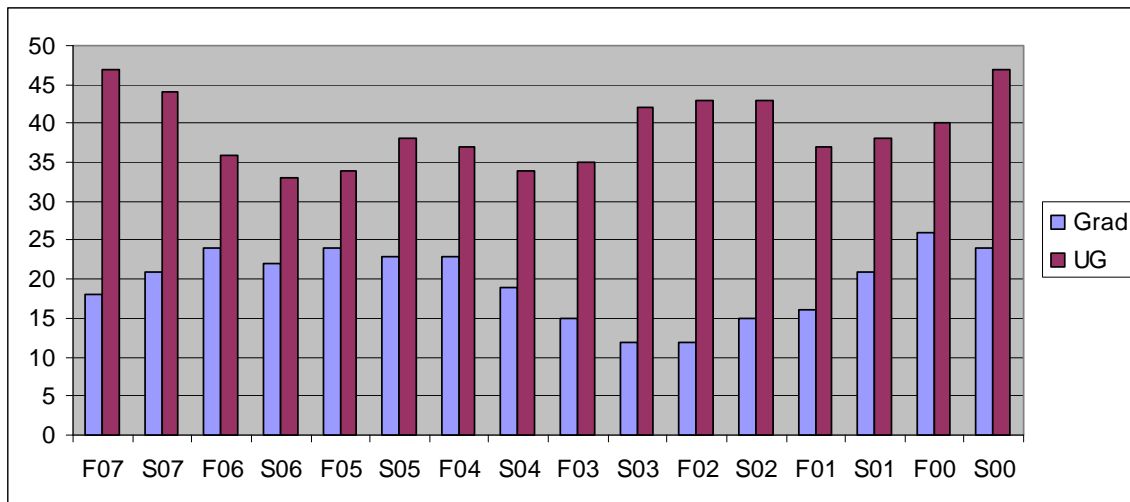
A concern that was raised by administrators was diversity among faculty and students. The department has taken significant steps in recent hires to increase gender diversity. We believe that well-advertised positions, better recruiting of graduate students as covered elsewhere in this report, the improved "face" of the Department (webpage), and the better-framed focus of the Department will work in favor of diversity, especially if that dimension is kept in mind through all these changes. Improvements in the plans should include an explicit focus on diversity in the program.

2) Is the department's curriculum revision and implementation appropriate?

The department proposes to position itself at the intersection of physical geography, human geography and geographic information science – an important nexus in geography. It is essential that there be a tighter focus to the renewed program, in order to distinguish it from other programs. Given the historic areas of expertise within the department as well as the strengths of the new hires, we recommend that the focus be on Environmental Management and GIScience, using the Southwest as its field laboratory, so to speak. To illustrate why we make this recommendation and to evaluate the proposed curriculum revision, it is necessary to look at what the current situation is and how it came to be. We base our evaluation and recommendations on the materials provided to us as well as our meetings with undergraduate students in GEOG 195 (Survey of Environmental Issues), graduate students, and faculty.

The Geography Department has held together a solid program in spite of a significant decline in tenured or tenure track faculty, filling in with a cadre of part time instructors. These professionals, working in conjunction with the full-time faculty, have made it possible for the department to continue to offer a range of courses. However, the lack of tenured/tenure track faculty has minimized the ability of the department to offer consistent courses on a regular basis, making it difficult for students to plan their academic programs. The graph below shows the number of undergraduate majors and the number of graduate students over an eight year period. Clearly, there is variation over time, but some of this is due, on one hand, to the number of

faculty and, on the other, to priorities of the university. Thus, demands on faculty remain high, but the nature of those demands varies.



Curricular issues

Both graduate and undergraduate students recognized the lack of staffing that has plagued the department. Both groups acknowledged that choices of courses are limited and can be unstructured from year to year. Much initiative is required of the student to sort through both requirements and options.

An important issue brought up by both graduate students and undergraduates is the sequencing and cycling of courses. In their experiences, required and prerequisite courses are offered infrequently, which has hampered the progress of many. Part-time students are less affected because they can wait until the courses are offered, but full-time students often do not get courses that they want or need.

A review of the catalog and the list of courses in the materials provided shows a myriad of options, some of which are critical to the academic programs of undergraduate and graduate students, and some of which reflect the interests of staff no longer teaching. Many are taught simultaneously at both the undergraduate and graduate levels, and some of the graduate students believe that the material is watered down in order to meet the needs of the undergraduates. This is not unique to the University of New Mexico and much of it will likely be remedied with the new hires. Still, it needs to be recognized and addressed. Given the new focus, the number and range of courses needs to be pared to reflect the areas of specialization within the undergraduate and masters degrees as well as the expertise of the faculty. The Department cannot continue to promise such a wide range of courses.

It is recommended that the department develop a matrix showing what courses *will be* taught by whom in what semester over, say, a four-year period. This matrix needs to reflect the situation based on current faculty and part-time instructors rather than on what the department hopes to offer. This matrix can serve as a planning tool for both staff and students. With such a matrix, the sequence and timing of core courses at both the undergraduate and graduate levels can be plotted,

alleviating some of the current problems with course scheduling and facilitating coordination and dependability of offerings. Further, courses that will not be taught can be eliminated from all lists, thus allowing the department to focus on its areas of specialization (GISci and environmental management) at the upper undergraduate and graduate levels.

Undergraduate program needs

Given the size of the faculty, the department has maintained a good number of undergraduate majors. In addition to the issues brought up by the students regarding the sequencing of courses both in terms of timing of offerings and in topical coverage, the single largest undergraduate need appears to be advising. What the majors need most is a strong system of advising for courses and requirements in the major and minor.

All undergraduates taking geography courses would benefit from a more structured means of communication of information on courses, internships, and career opportunities. Seminars, an improved website, and organizations (such as the geography club) could be used to share information more widely and more effectively. Given the limited faculty, perhaps a staff member, auxiliary faculty member, or retired alumnus could be enlisted to assist with, if not spearhead, the advising duties.

Graduate program needs

In its documents, the department presents a plan to move toward offering the PhD degree. This is particularly important because the Geography Department is one of only two in the college that do not currently offer such a degree, and there is currently no geography PhD program in the state. While we see this as an important goal and we recommend that the department continue to work toward that end, some intermediate steps are required.

In order to launch a successful and effective PhD program, the Masters program needs to be as strong as it can be. Once that part of the graduate program is well established, then the stage will be set for moving ahead. There are several aspects of the masters program that require strengthening: courses, recruiting, requirements, and the related areas of communication and TA training and oversight. Much has already been said about courses in the section on curricular issues. In short, graduate students need a set of courses that is sequenced appropriately, offered regularly, and available at the requisite level of expertise. This should include a course in geographic theory and research methods that is required of all incoming graduate students beginning in their initial fall semester term. This will create a cohort of students with a common orientation and understanding of program requirements, geographic history and theory, and basic geographic research methodologies.

A strong recruiting effort is needed that gets information out to potential students and to advisors at other institutions about the areas of specialization and opportunities available at the UNM Department of Geography. This requires an effective web presence as well as resources to support the students once they are here, including state of the art hardware and software and opportunities for TA/GA support (see later sections for our recommendations on these). While the current situation seems to work for local, part-time students, it is less effective for full-time students. Recruitment efforts and materials need to be in line with areas of expertise within the

department – and these can be successful given the interest in GISci and environmental management among geographers and others.

Along with orientation and advising for incoming graduate students in general, TA training and oversight are essential. The current mode of operation puts a great deal of responsibility on the TAs, and those who are new may struggle. The move to link the physical geography lab section with the lecture will help in this regard, but more actions will be needed, especially if additional TA lines are allocated to the Department. Indeed, as the Department grows, the range of courses for which TAs are utilized will likely expand as well. Therefore, the need for instructional guidance and oversight to provide the best training environment for TAs and the best learning environment for undergraduate students will become even more critical. If the University does not offer TA training before the start of the fall semester, those reading this report should encourage the development of such a program. According to the catalog description of the Teaching Assistant Resource Center, there is a course during the regular term and workshops toward the end of the academic year, but TAs need input *before* they start teaching.

3) How can the department's plan toward GI Science be improved?

The department is planning to create a GISci minor and a certificate program to address the demand for GISci courses and credentials by students in other majors and by professionals working in the community. These programs will increase student credit hour production, improve cross departmental linkages, and build connections to employers in government and the private sector.

We support this effort and believe that the certificate program should center on a fixed course sequence that can be taken by undergraduates (as a minor or certificate) and by graduate students and non-matriculated professionals for certificate credentials. We call upon the administrative units at the college and university levels to expedite the creation of these initiatives.

We believe that the focus and increased program development workload makes it imperative that the department undertake a junior faculty hire whose primary research emphasis is at the nexus of geographic information science (probably remote sensing) and a physical geography field, such as biogeography, hydrology, or geomorphology. This will promote depth in the teaching of the GISci courses and provide substantive support for graduate student theses and externally funded research projects.

The department should take a leadership position in coordinating and fostering the development of GISci methodology and tools across the UNM campus and beyond. While many units teach a course and/or utilize the tools, the intellectual and academic cores should reside in the Department of Geography. Presently, there are nodes of geospatial analysis in several programs. A greater coordination among these programs would improve the efficient allocation of resources and foster the development of research proposals to agencies that increasingly request cross-disciplinary efforts.

The Earth Data Analysis Center (EDAC) has been closely associated with the geography department over the last 40 years. EDAC has been co-located with the geography department in Bandalier Hall for some time. Stanley Morain, EDAC Director for many years, was a regular faculty member in the Department of Geography. Many geography students have staffed EDAC. EDAC staff have taught courses and assisted students in the geography program.

The review team understands that the two units have different core missions, but feels that there is a mutuality of interests and objectives between EDAC and the renewed mission of the geography department. The administrative framework within the College of Arts and Sciences should reflect and encourage this synergy. Specifically we advise that an EDAC representative be invited to serve on the hiring committees for future GISci hires in geography, that the geography department utilize (for payment) EDAC in support activities, such as grants administration, website content maintenance, computer network support and other similar activities.

Although there is a synergy that can be nurtured in upcoming years, the review committee believes both EDAC and the Department of Geography will be better served if the leadership is not co-mingled. EDAC should have a Director separate from the Chair of the Department of Geography. The two units have different missions, and their directors require contrasting skill sets and leadership qualities.

4. What personnel and infrastructure resources are needed to achieve the plans?

Our committee concludes that fulfillment of the Geography Department's strategic action plan will require several types of infrastructural and personnel resources. Most basic is the previously addressed need for an externally recruited senior faculty member to provide departmental leadership after Paul Matthews, who has served in the role since 1995, steps down in 2009. We strongly recommend that UNM begin planning for an externally recruited chair to replace Professor Matthews when his current term expires. Our recommendation is that permission to search be granted soon so that the search process can occur during the next academic year (2008-09), enabling the new chair to be in place by Semester I of the 2009-10 academic year.

An equally pressing need, in our view, is for a full-time administrative assistant to supplement the efforts of the single administrative staff person, Department Administrator Jazmin Knight. We agree with department members' unanimous assessment that Ms. Knight is a valuable asset to the department, who is performing remarkably effectively under difficult circumstances. We also maintain that the demands of the job have grown so much in recent years that no single person can be expected to administer even a small UNM department. Recent changes have decentralized much of the administrative load for support of instruction, advising, and research to the departmental level. Much of the change has to do with the Banner System, which requires extensive, on-going training, and demands a complex set of duties and capabilities. Even without Banner, structural, procedural, and technological innovations at UNM are creating an ever-more complex set of challenges for department administrators. Moreover, as the Geography Department's mission expands to encompass its strategic priorities, the work load of its front office staff will increase accordingly. Work-study student help is an unsatisfactory substitute for

the labor power needed to effectively run the office. While students generally mean well and do their best to fulfill their office duties, they typically require considerable training and supervision, which has to be continually started anew because they rarely remain in their job assignments beyond a few semesters. The Geography Department needs a second, preferably full-time, administrative staff person to work under the able direction of Department Administrator Jazmin Knight.

An equally pressing set of needs is related to the instructional laboratory, which will require infrastructural investments to support the department's GISci program and other technical activities. Both undergraduate and graduate students lamented that the quality of hardware and software lags far behind what they had encountered in geography classes at Central New Mexico Community College (CNM), and several suggested that the Geography Department might be able to coordinate with CNM to offer course credit for classes and lab sessions taken at CNM. While we hesitate to make this recommendation without knowing more about the ease of lower-division curricular sequencing between the two institutions, we encourage exploration into the feasibility of resource/credit sharing between the two institutions. More importantly, we encourage UNM to hire a staff person with strong technical expertise to maintain the Geography Department's computer lab. The College of Arts and Sciences recently augmented the lab's computer stock by purchasing 10 new machines capable of running GIS software (part of the start-up package for Dr. Zandbergen when he was hired last year). This was a far-sighted decision which provides an excellent foundation for building the IT capability necessary for the department's strategic priorities. The intended development of GISci instruction will require further investment in equipment and software in the years ahead, which we encourage. In our view, the most pressing immediate need is for a qualified computer technician to maintain computers both in the lab and in offices, update the software, and provide other IT assistance to students and faculty.

We are concerned that the number of graduate assistantships allocated to the department is inadequate to meet the needs of a graduate program of its size. Between 2000 and 2007, the number of graduate students has ranged between 26 and 12, with 18 enrolled as of fall 2007. Yet the department has only three full-time (20-hour) graduate assistantships. We consider the limited availability of student financial support to be an impediment to effective student recruitment. Also, it adversely affects the undergraduate program because there are insufficient GA/TA resources to staff the laboratory sections and to assist faculty with their teaching duties. We recommend that the number be doubled for the time being, and increase still further as the graduate program expands.

We were extremely impressed by the quality and enthusiasm of Geography's auxiliary (PTI) faculty, whose contributions are essential to the department's instructional mission. They represent a broad range of subject matter areas and generally receive strong evaluations from the students in their classes. We commend the department for hiring and retaining them. Without their participation—even with the two recent tenure-track hires and the two faculty members who will be joining the department next year—the department would not be able to offer what struck us as a broader range of classes than would be expected in such a small department. We note that the department's long-range plans for augmenting its graduate program to include a Ph.D. program will require expansion in the ranks of its tenure track faculty (and we would

welcome another tenure track hire within the next few years to contribute to that goal), but there will likely continue to be a need for PTI faculty as well. In the short term, the selective use of PTI faculty whose expertise matches the goals of the department will continue to be an especially helpful supplement to the tenure-stream faculty, and will enable the department to go a long way toward achieving its strategic priorities.

Summary

The UNM Geography Department is well positioned to renew itself with a focus on GISci and Environmental Management. Recent hires, along with the additional resources and changes to the way the department operates that are recommended here, will strengthen departmental offerings and set a strong foundation for moving to the next step, that of establishing a PhD program. The Department has weathered a number of significant changes in the past. Its ability to recover from them as well as its thorough self-study and departmental plan and the interest among the administration in supporting the department, leave the review team with a very optimistic view of its future.

**Geography Department Academic Program Review (APR)
On-Site Visit by External Evaluation Team
February 25--26, 2008**

Sunday – February 24, 2008

Reviewers arrive in Albuquerque; take hotel shuttle from airport to Wyndham Hotel.

Monday – February 25, 2008

7:30 am	Paul Matthews picks up review team from lobby of Wyndham.
7:45 am	Brief tour of the Department with Paul Matthews
8:00 – 8:30 am	Orientation breakfast with review team Bandelier West, Room #104 <i>Vice Provost for Academic Affairs, Wynn Goering; University Accreditation Director, Nancy Middlebrook; APR Coordinator, Bessie Gallegos; Olen Paul Matthews, Chair; Jazmin Knight, Department Administrator</i>
8:30 – 9:00 am	Team planning, Bandelier West, Room #104
9:00 – 9:45 am	Meet with undergrads in B. Cullen’s class, Bandelier East #105
9:45 – 10:00 am	Break
10:00 – 10:45 am	Meeting with Paul Zandbergen, Bandelier West, Room #224
10:45 – 11:00 am	Paul Zandbergen escort to Ortega Hall – Dean Claiborne’s Office
11:00 – 11:30 am	Meeting with Dean Claiborne
11:45 – 1:15 pm	Lunch – Paul Matthews meet with the Team
1:15 – 2:00 pm	Meeting with Maria Lane, Bandelier West, Room #222
2:00 – 2:45 pm	Meeting with Brad Cullen, Bandelier West, Room #219
2:45 – 3:00 pm	Break
3:00 – 4:00 pm	EDAC Meeting – time length is tentative
4:00 – 4:45 pm	Meet with Graduate Students, Bandelier West, Room #104
5:00 – 6:15 pm	Reception at Paul Matthews
6:15 pm	Geography representative drives review team to Wyndham.
6:45 – 8:45 pm	Working Dinner @ hotel or Albuquerque restaurant. The review team may invite selected faculty members or not at their discretion.

Tuesday, February 26, 2008

- 7:30 -- 9:00 am Breakfast with Paul Matthews if committee desires and delivery to campus
- 9:00 – 9:30 am Meeting with Interim Provost Florez or *Deputy Provost, Richard Holder*
Scholes Hall, Room 246
- 9:30 – 10:00 am Meeting with key university administrators
Scholes Hall, Room 246
Deputy Provost, Richard Holder; Vice Provost for Academic Affairs, Wynn Goering; Office for Research and Economic Development, Denise Wallen and Ernest Herrera; Acting Dean of Graduate Studies, Charles Fleddermann
- 10:00 – 10:30 am Confidential meetings requested by faculty or students –
Scholes Hall, Room 246, or Break, or Planning Time for Team
- 10:30 – 11:15am Danielson Kisanga, Bandelier West, Room #220
- 11:15 – 12:00 pm Meet with adjunct and part-time faculty, Bandelier West, Room #104
- 12:00 – 1:30 pm Lunch
- 1:30 – 3:45 pm Team meeting to draft initial thoughts, Bandelier West, Room #104
- 4:00 – 5:00 pm Exit meeting with reviewers and university administrators and representatives
Scholes Hall, Room 101
Deputy Provost, Richard Holder; Vice Provost, Wynn Goering; Dean of College of Arts & Sciences, Brenda Claiborne; Acting Dean of Graduate Studies, Charles Fleddermann; Assistant Dean of Graduate Studies, Barbara Carver; Office of Research and Economic Development, Denise Wallen and Ernest D. Herrera; Faculty Senate Graduate Committee, Ann Massmann; Faculty Senate Undergraduate Committee, Debra Brady; Faculty Senate Curricula Committee, Kathleen Keating; University Accreditation Director, Nancy Middlebrook; Assessment Manager, Tom Root; APR Coordinator, Bessie Gallegos; LAS Director, Olen Paul Matthews, Chair, Geography Faculty
- 5:00 pm LAS representative drives review team to Wyndham.
- 6:00 – 8:00 pm Working Dinner @ hotel or Albuquerque restaurant

Wednesday, February 27

Reviewers depart Albuquerque; take hotel shuttle from Wyndham to airport.