

Unit Productivity Award Application For Academic Departments, 2006-2007

**Academic Unit Name: Department of Geography and Geology
Department Head: David J. Keeling
(Key Indicators of Productivity for 2006-2007):**

SUMMARY OF APPLICATION:

- ① Andrew Wulff received the 2007 WKU Award for Outstanding Teaching – he also won the Ogden College Award for Teaching.
 - ① The WKU China Project received additional funding in 2007, led by Dr. Groves.
 - ① Two students were selected for scholarships from an international competition to attend the annual ESRI global GIS conference.
 - ① Faculty and students were featured 100+ times in media print and online articles.
 - ① Over 100 students participated in study-abroad programs, field camps, special field projects, and field trips during the year. Study abroad field-camp programs visited Australia and Western Europe, and are in development for the Yucatán and the eastern Mediterranean for 2008, with 40 students scheduled to participate.
 - ① The Department awarded 21 GIS Certificates this year; and 45 students have completed half of the requirements. A new BS in GIS major has been developed, with 10 students expected to enroll during the coming year.
 - ① A geoscience graduate student won presentation awards at the annual Sigma Xi student conference, at the Kentucky Academy of Science meeting, and at the regional Southeastern Geographers conference.
 - ① A geology major was selected for an REU program at the American Museum of Natural History during the summer.
 - ① Forty students were actively engaged in applied research with faculty supervision through the ARTP and through externally funded research projects.
 - ① Faculty and students visited 15 overseas locations for research, professional development, conferences, study-abroad programs, expedition study tours, and collaborative activities, including multiple visits to China, Europe, and Southern Africa, and visits to Morocco, Niger, Mali, Burkina, Chile, Bahamas, and Turkey.
 - ① The Kentucky Geographical Alliance received \$50,000 in national funding for the second year in succession.
 - ① The Department Head published multiple Op Eds nationally on geoscience issues from global climate change to immigration and transportation.
 - ① The Kentucky Mesonet developed several weather network sites during the year.
 - ① Dr. Mahmood co-edited a special issue on climate and land cover use for the international journal Global and Planetary Change.
 - ① Scott Dobler served as the Kentucky State Geographer during 2006.
 - ① Nick Crawford was appointed a WKU Distinguished University Professor in 2006.
 - ① Dr. Groves received a \$2 million grant for the China Environmental Health Project.
 - ① Dr. Keeling lectured on two international study tours for the American Geographical Society, and served as Assistant Treasurer of the organization.
 - ① A new B.S. Meteorology degree has been approved by the CPE effective July 1, 2007, and already has enrolled 10 students effective Fall 2007.
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**Department of Geography and Geology
Unit Productivity Award Application – 2006-2007**

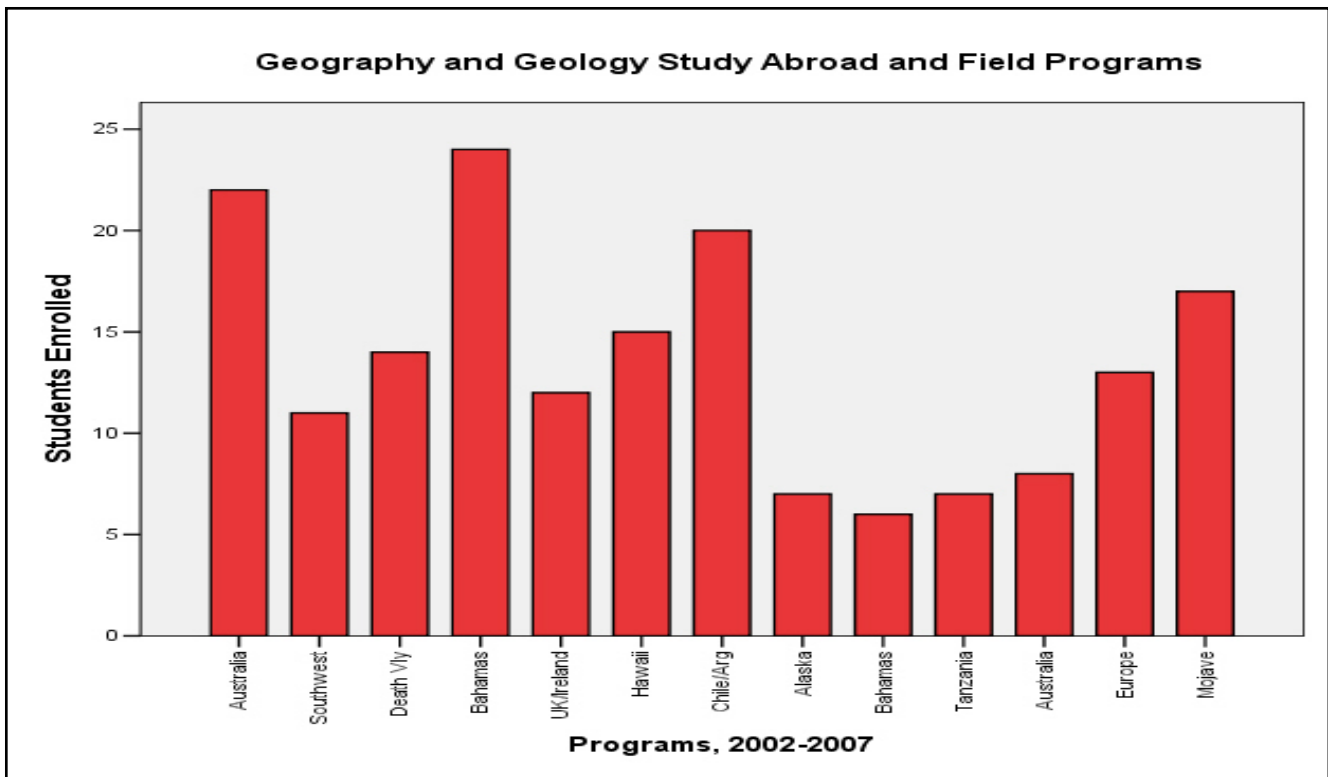
I. Increasing Student Learning

The primary goal of the Department for the 2006-2007 academic year has been to restructure its programs and courses around WKU's mission of "preparing students for success in a global society." A second, but equally important, goal for the year has been to advance QEP initiative three: ensuring that students can demonstrate an understanding of their opportunities as responsible citizens living and working in a global society. The Department also developed several new strategies to: (a) ensure that students can demonstrate their capacity to apply knowledge and training in their discipline to address relevant societal concerns (QEP goal 1), and (b) ensure that students can demonstrate an understanding of the diversity of peoples, ideas, and cultures (QEP goal 2).

To achieve these goals, three strategies were implemented during the academic year. First, the Department introduced two new major programs (#578 Meteorology and #576 GIS), revamped its Environment and Sustainable Development concentration in geography, introduced a new Cultural Geography concentration, and developed an Honors Geography program in partnership with the WKU Honors program. In addition, several minor adjustments were made to existing geology, geography, geoscience, and GIS programs to harmonize their outcomes more intentionally with QEP goals. These curriculum changes were introduced partly as a result of ongoing research opportunities through the Department's various Program of Distinction centers (Kentucky Climate Center, MesoNet, Hoffman Institute, and Center for Cave and Karst Studies) that require new sets of skills for students. Moreover, feedback from employers, business people, and alumni suggests that significant career opportunities are developing in the areas of GIS applications and analysis, climate-related activities, geophysical techniques, and environmental management and consulting. Faculty also have been active this past year in attending conferences and workshops that highlighted the need for greater relevancy in academic programs. Students graduating over the next decade will need skills not only to be successful in a global society, but also to help address critical societal challenges related to global climate change, human-earth interaction, global resource security, and geopolitical threats. The Department sees these challenges as wonderful learning opportunities for current and future generations of students.

The second key strategy in development this past year involved placing more emphasis on experiential learning and project-based learning. The Department has restructured its curricula offerings to require that all students have a study abroad, field camp, internship, practicum, or supervised research experience as part of their major program. Figure 1 details the variety and global reach of study abroad and field camp programs offered by the department over the past five years, with 176 students participating since 2002. The Department now offers a regular study abroad curriculum, with programs offered either in Winter and Summer, or occasionally both semesters. In Summer 2006, eight students participated in the Western Australia program, and thirteen students participated in the Winter 2007 program to Western Europe in partnership with Leadership Studies. Study abroad experiences to the Mayan Yucatán, in partnership with the Sociology Department, and to the eastern Mediterranean, are in development for 2008. Geology faculty have a long tradition of engaging students in field-based experiences, and field programs are run every Fall and Spring semester as part of the regular curriculum. In addition, geology field camps are offered on a regular basis during the summer. In recent years, students have worked in Utah, Wyoming, and Montana with Drs Wulff and Siewers, as well as in the Bahamas with Dr. Siewers and in Alaska with Dr. Groves. The Department also offers regular spring break or fall break geoscience field programs to the U.S. southwest, with recent programs to the Mojave Desert, Death Valley, and other great locations.

Throughout the academic year, over 40 students were actively engaged in directed research projects and other activities related to the ARTP and Programs of Distinction (Kentucky Climate Center, Hoffman Institute, Center for Cave and Karst Studies, and the Water Resources program), and twenty other students worked on research projects directed by department faculty. Moreover, dozens of students were employed by the Lost River Cave program and at Mammoth Cave National Park as guides and assistants, or worked on the Kentucky Cave Survey project or for the Mesonet.



Many of these students presented their research at conferences around the country during the year, including the annual Posters at the Capitol, the Geological Society of America (GSA) meetings, the Association of American Geographers (AAG) annual conference, the Kentucky Academy of Science, and the annual WKU Sigma Xi student conference, among others. More than twenty faculty, students, and alumni were in attendance at the San Francisco AAG meeting, three students attended the National Severe Weather workshop, three students traveled to Denver for the National Storm Chasers Convention, ten students participated in the Sigma Xi WKU conference, ten faculty and students attended the Southeastern AAG meeting in Morgantown, VA, and eleven faculty and students attended the GSA annual meeting in Philadelphia. In addition, Margaret Crowder also took her Honor's Colloquium students on a field trip to the Philadelphia GSA meeting as part of the curriculum for her "Climate Change – Global Catastrophe or Global Conspiracy?" course. Geoscience graduate student Ashley Littell won three awards during the year for her research presentations, including best paper at the regional AAG meetings in competition with students from a dozen other universities. The Department's various research centers have a strong record of engaging students in meaningful applied research that addresses problems of significance to the local, regional, and international communities.

Chelsea Brunner, a geology major, was selected for a funded summer research program participating in a National Science Foundation REU experience through the American Museum of Natural History. The Department also hosted nine REU students from WKU and six other universities, in partnership with the Chemistry Department, to conduct environmental research in the Mammoth Cave/Upper Green River watershed program. Eight students from the Department's Graduate Geoscience Society and Geography Club helped to administer the annual Kentucky State championship of the National Geographic Bee in March. Working with 100 middle-grades students helped our students to appreciate the depth of knowledge required to become truly geographically competent. Faculty and students also contributed to Girls in Science, the Science Olympiad, and dozens of other activities that engaged over 1000 primary, middle, and high school students from our region.

The third strategy focused on outcomes assessment and involved a more significant emphasis on preparation, the learning process, and analyses of the knowledge base. Both national and local

data have focused attention recently on the challenges faced by faculty dealing with under-prepared students. The lack of adequate preparation for students entering universities has been a hot-button political issue for several decades and the media have devoted much attention to the problem. Various strategies have been tried to improve primary and secondary education across the country, yet many high-school graduates do not come to WKU adequately prepared for college-level work. Data from the American Association of Colleges and Universities (2007) show that about 50 percent of all students enrolling in colleges and universities are academically under-prepared. They lack basic skills in at least one of the three fundamental areas of reading, mathematics, and writing. At WKU, incoming freshman are ill-prepared for courses in geography, geology, earth science, and critical thinking generally. In order to measure base knowledge and to quantify (to the extent possible) the knowledge-building process, the Department has initiated several strategies to improve student learning.

In both geography and geology general education courses, several faculty have developed strategies to measure the knowledge base at the beginning of the semester. The aim is to determine what types of learning skills students develop during the semester and how effectively they can apply these skills to problem solving. Other strategies involve developing assignments that test the students' ability to apply a basic analytical rubric to stories reported in the media. For example, several faculty utilize the "five themes of geography" (an accepted set of concepts in the discipline) as a heuristic device, and require that students identify each of these themes in assigned news stories from various parts of the globe. In *The Earth!*, a general education geology course required for all majors and minors in geology, Dr Wulff (winner of this year's WKU outstanding teaching award) conducts a pre-course assessment and measures results against a post-course assessment.

In the Introduction to Latin America survey class (team-taught across four departments), students are assessed on the first day of the semester to determine their general knowledge about the region, drawing from issues in the news, pop culture, and basic geography. The average score over the past three years has been around 2.2 out of ten questions. An average score of 22 % suggests that students are not adequately prepared with a broad world view and do not have the appropriate geoscience "grammar" or basic concepts to enable success in these introductory courses. At the end of the semester, the same ten questions are incorporated into the final exam; students do not see these questions again directly during the course of the semester, as the presumption is that students will build their knowledge base during the semester sufficiently to score higher at the end of the course. Typical average scores at the end of the course are around 7.5/10, an overall improvement from an inadequate knowledge base to an adequate base. Of course, to have greater analytical validity, these questions would need to be asked again three months after completion of the course, one year after completion, and five years after graduation. Only then might the data prove to be of any real analytical value in determining the validity of certain learning strategies. Nonetheless, the Department is committed to finding additional creative ways to assess student learning.

To tackle the problem of under-prepared students directly, the Department proposes to develop a course "recitation" system (essentially a learning laboratory) for each of its general education courses. Using specially recruited graduate students in the geosciences, the strategy calls for the development of one-hour recitation labs that are linked to selected courses. Each student will enroll in a recitation lab section, limited to 25 students, and will engage in learning activities that are hands-on, project-based, or experiential in nature. The Department is in the process of developing a PIE proposal, among other approaches, to fund a pilot of this project for the next two years (2008-2010). The pilot project requires funding for three graduate students, with each student responsible for running five recitation labs each semester. Thus, fifteen recitation labs, accommodating 375 students each semester, could be offered during this pilot project.

Another ongoing challenge during the past year has been to engage students more successfully with the technologies, theories, and applications that are demanded by employers and society. Part of the Department's mission is to continue developing an interdisciplinary approach to Geographic Information Science (GIS) that provides learning opportunities for students from all disciplines across the university. The GIS program continues to grow steadily, with 100 students now having completed the full GIS Certificate program, the only one of its kind in the Commonwealth.

Another 100 students are enrolled in introductory GIS courses for the summer and Fall 2007 semesters, while a further 45 students have completed half of the requirements for the GIS Certificate. Advances in GIS software and technology obsoleted the existing computers in the GIS lab this past year. With generous support from WKU's IT division and the Ogden College Dean, supplemented with funds from the Department, 21 new workstations were installed this May, costing approximately \$27,000. New courses in Meteorological Instrumentation and GIS Database Management were developed during the year to support not only the Department's new BS programs but also to provide students with courses that provide them access to the latest equipment and techniques,

During the year, the Department targeted the Meteorology and GIS programs for *academic and infrastructure improvements* after student assessments, course evaluations, and alumni feedback from more advanced courses suggested that professional majors in these areas be developed. Consequently, B.S. programs in Meteorology and GIS were developed and have been approved effective Fall 2007. Advances in GIS software and technology, and the desire to offer a full GIS Certificate program at the extended campus locations, led the Department to upgrade the introductory GIS course to the 300-level and to require at least a "C" grade in each of the previous GIS courses required to enroll in the next level. Too many students were enrolling in the more advanced GIS courses after earning a "D" in the lower course, leading to poor performance in the advanced class. Maintaining the academic quality of the GIS Certificate program is critical if the Department's reputation for graduating well-trained GIS students is to be maintained and enhanced.

Assessment activities continue to reveal that students still are not engaging effectively with the scientific method and with the major theories and advancements in the geosciences. As a consequence, greater attention will be paid in the undergraduate and graduate research methods courses to address this deficiency. Graduating seniors are required to complete a 499-Professional Development course for senior assessment and are also required to demonstrate their ability to apply concepts, theories, and skills through an independent research project or a supervised internship experience. As an example of "*closing the loop*" between assessment and program quality enhancement, the ongoing evaluation and restructuring of courses in the Department demonstrate how valuable regular assessment and refining of course content, pedagogy, and technology can be. The quality of the Department's majors continues to be enhanced as a consequence of this process.

II. Developing the Student Body

Employment opportunities in GIS, climate change, geophysical techniques, and environmental consulting positions have led to a number of changes in the Department's program offerings. New B.S. programs in Meteorology and Geographic Information Science were developed recently and are now enrolling students for the new academic year. Both new majors are designed as professional programs and are the only such majors offered in our region. The Department is also working with KCTCS to develop 2+2 programs in GIS. Planning is underway to have the GIS Certificate program completely online by Fall 2009, providing more students throughout the Commonwealth with an opportunity to get trained in this important technology. The Department also restructured its GIS course numbering system so that the full GIS certificate program can be offered at both the Owensboro and Elizabethtown campuses. An introductory GIS course will be offered at Glasgow in Fall 2007 as part of the Department's initiative to make GIS courses more widely available to students.

The Department recognizes that most students are ill-prepared for university level course work. As part of its initiative to attract more majors to its programs, the Department intends to pilot a pre-college program in Summer 2008 for geoscience students. The program would recruit potential majors from high school graduating seniors by offering an integrated field-based summer course in late July. Students could enroll for six credits of coursework, receiving general education credit in category D (Science) and category C (Social Science). The program would incorporate a field trip across the state of Kentucky, one week of classroom work, and a research project. Other initiatives to support the state's STEM disciplines focus are in development.

Enrollment in the Department's programs has grown at a steady pace over the past six years, and the rate of graduation continues to be acceptable. Meteorology continues to be the most popular major for pre-declared freshmen coming to the Department, but it also has the highest non-completion rate, primarily because of the mathematics, physics, and advanced meteorology course requirements. Of the 54 students who have dropped out of the Department's majors over the past five years, 31 initially enrolled in the meteorology major. Not all of these students have left WKU, however; 20 of these students are still enrolled at WKU in other majors. Several students left WKU to attend other universities in the region, but the Department has no data on these students. The Department aims to reduce the dropout rate over the coming years, through better advising, a recitation lab program (see discussion above), and more rigorous recruiting and orientation strategies. The Department has also enhanced its GEOG 175 University Experience course to address many of the issues that contribute to poor academic performance and, ultimately, dropping out from the university (including, study habits, attendance, learning techniques, reading for the discipline, and critical thinking skills).

The Department graduated 41 students during the past year (35 in geography and 6 in geology, with 22 minors completing their programs). Since the 1999-00 academic year, the Department has graduated 302 students, with 82 majoring in Meteorology, 72 in Environmental Management, 39 in general geography, 33 in city and regional planning, 16 in GIS, 56 in geology, and the remaining in programs since deleted. The Department has approximately 300 majors and minors enrolled for the Fall 2007 semester.

The Geography, Geology, Meteorology, and Geoscience clubs play important roles in the recruitment, retention, and development of students. These student-led organizations provide mentoring, peer support, research opportunities, seminars, and field-trip experiences for members. For example, Geology Club students raised money and fostered interest in their activities through rock and gem sales, seminars, and tee-shirt sales, and regularly attended annual regional and national geology meetings and conferences. Additionally, this year the Graduate Geoscience Society again helped to run the state-wide National Geographic Bee for grades 4-8 (organized by the Kentucky Geographical Alliance), with faculty and students involved in administering the event. The Bee was held for the fifth consecutive time at WKU, with 100 students and about 165 parents and teachers in attendance. Faculty are also active in the Kentucky Society of Professional Geologists, developing statewide initiatives to introduce students to the geological sciences. Two faculty are engaged in the Kentucky Geographical Alliance and the Science Alliance respectively; both initiatives are designed to help improve the content knowledge of K-12 teachers and to improve the geoscience knowledge base of students preparing to attend Kentucky universities. The Department remains hopeful that initiatives such as these will help to attract more students to the geosciences in the future.

Finally, the Department continues to offer non-traditional courses in partnership with other programs to appeal to a wider cross-section of the campus community. Forty community college teachers participated in two weeklong workshops on the culture and history of the Mammoth Cave region, funded by a grant from the National Endowment for the Humanities. Presenters were drawn from a number of universities and organizations, including Geography and Geology and Anthropology and Folk Studies at WKU, Ball State University, the University of Kentucky, the Kentucky Archaeological Survey, and Washington University at St. Louis. An Historic Preservation course, cross-listed with Folk Studies, was offered in the Spring semester, taught by Bowling Green's resident Historic Preservationist. A special course on Globalization and Nationalism enrolled fifteen international students from the Administrative Dynamics M.A. program, and an Honor's Colloquium on Globalization and Terrorism enrolled 13 students. Courses in Environmental Ethics and Human Ecology were offered this past year, and the Center for Cave and Karst Studies summer program (now in its 29th year) offered nine different courses centered on Mammoth Cave. In partnership with the Teacher Education program, a summer institute for geography and social studies teachers convened in June, 2007, and the Kentucky Geographical Alliance also offered a one-week summer institute, with attendees receiving a scholarship to attend the program.

Evidence of success in developing the student body is provided by several representative vignettes about program graduates. This year, one undergraduate student (Brandon Porter, CIS major and GIS minor) and a graduate geoscience student (Ronnie Leeper) have been selected from an

international competition to receive GIS scholarships for the annual ESRI global GIS conference, following in the footsteps of Shawn Simpson and Jon Hall (2006), Narcisa Pricope and Shwu-Jing Jeng (now working fulltime for ESRI) (2005), Jeremy Weber (2004), Dan Taylor (2003), and Rhonda Pfaff Glennon (2002), who also works fulltime for ESRI. Amy Seymour (MS 2007) has accepted a full-time position teaching geography at the Glasgow and Elizabethtown extended campuses, Victoria Alapo (MS 1996) is an instructor at Omaha Community College, and Julie Reizner (Geology 2003) is completing her Earth Science Master's at Montana State. Numerous students have completed GIS training and have started excellent careers in planning, exploration, consulting, and analysis, like Jennifer Burns (double major in geology and geography BS, 2006) who is an environmental technician in Florida, Josh Gunnels (Geography 2001) who works as a GIS specialist for the Kentucky Revenue Cabinet, Allison Link (Geography 2007) who works for SDI Maps in Louisville, and Patrick Allen (Geology 2004) who is an aerospace technician for the US Air Force.

III. Assuring High-Quality Faculty and Staff

Two major funded research projects got underway this past year, with the MesoNet project led by Drs Foster and Mahmood, and the China Environmental Health Project led by Dr. Groves. Faculty solicited WKU *Academic Quality funds* to support replacement of aging GIS computer facilities, to renew GIS site licenses, to support study abroad and field programs, to enhance several research labs, and to support ongoing classroom renovations. External funds generated by the Hoffman Institute, Water Resources Program, Kentucky Climate Center, the Center for Cave and Karst Studies, and individual faculty from agencies such as the USDA, Mammoth Cave, NSF, NASA, the Commonwealth of Kentucky, and other sources continue to help support graduate students, student-centered research, provide new equipment, and facilitate the development of research exchange programs in China, Puerto Rico, Chile, Southern Africa, and within the Commonwealth.

Several faculty were recognized locally, nationally, and internationally during the academic year. Dr. Wulff received the annual Ogden College Award for Excellence in Teaching, and also received the same award at the university level. Dr. Crawford was appointed a University Distinguished Professor. Faculty choosing optional retirement effective July 1, 2007, included James Bingham and Dr. Crawford. A recent geology Ph.D. (Stony Brook), Dr Aaron Celestian, was hired effective August 15, 2007, as part of the Department's geology program enhancement initiative, with the position supported with funding from Ogden College. Dr. Yanmei Li, an Ohio State University Ph.D. in City and Regional Planning, joined the Department in August 2006 and will take on the responsibility of restructuring the planning program over the next few years. The Department *search committees addressed diversity and gender goals* during the recruitment process, contacting qualified individuals through listservs, conferences, and special mailings, and ultimately recommended the most qualified individual for the position. Dr Li is the fourth female to join the faculty. The Department has every expectation that the new generation of faculty will continue to strengthen the Department's accomplishments in scholarship, creative activities, and externally-sponsored research and grants.

Throughout the year, faculty from the Department have been featured in a variety of WKU and regional media, including stories in *Echo* magazine, *Western Scholar*, the *Bowling Green Daily News*, and in a number of other regional media outlets. Faculty continued to excel in scholarship, research, and professional development, convening and/or participating in myriad professional workshops and presenting approximately 35 papers at local, regional, national, and international conferences. Faculty also were significantly engaged with the local community, serving on committees, task forces, running for public office, participating in WKU-sponsored community outreach events such as the *Far Away Places* series at Barnes and Noble, sharing geoscience expertise on WKYU-FM's Midday Edition program, and giving talks at churches, community organizations, and for service groups. Three faculty also served as editor or co-editor of professional academic journals or book series, six faculty reviewed manuscripts for academic journals or publishers, and one faculty co-authored a chapter in *Methods in Karst Hydrogeology*. Geography faculty research articles appeared in such diverse journals as *Global and Planetary Change*, *Progress in Human Geography*, *Climate Research*, *The Professional Geographer*, and *Journal of Hydrology*, among others. Over twenty faculty research

articles or book chapters are either currently in review, revision, or awaiting publication, several co-authored with undergraduate or graduate students, an exceptional level of productivity indeed.

Faculty also gave over 50 academic and community talks during the academic year, including presentations at universities and conferences across the United States, in Latin America, China, and Europe. In addition, faculty visited more than 15 overseas locations for research, professional development, study abroad programs, professional study tours, meetings, and collaborative activities with other institutions (including China, Switzerland, Singapore, Morocco, Niger, Mali, Botswana, South Africa, the Bahamas, Britain, France, Belgium, the Netherlands, Chile, Turkey, and Australia). Four faculty led the Department's study abroad programs to Australia (summer 2006) and Western Europe (Winter 2007), the Department Head served as a Study Tour Lecturer on educational programs co-sponsored by the American Geographical Society to the Sahara and the Arctic region, and five faculty led field trips for students within the U.S. Indeed, the Department has led the university in departmental Study Abroad program development and participation over the past decade, with nine faculty leading nearly 200 students to more than a dozen destinations around the planet, and it has the most globally focused faculty in the Commonwealth; they have visited over 130 countries on research, expedition, and lecture trips in recent years!

IV. Enhancing Responsiveness to Constituents

A major focus of the Department this past year has been to focus on issues that are relevant to society generally and to our communities specifically. Several geology faculty are involved with a geology outreach group for the Commonwealth, establishing a 'speakers bureau' to better serve the public. There are many issues from land-use management and fossil fuel resources to hazardous site mitigation that would benefit from a geological perspective. Through cooperation between the Kentucky section of the American Institute of Professional Geologists (AIPG-KY) and the Kentucky Society of Professional Geologists (KSPG), a series of lectures, demonstrations, and experiments are being made available through the AIPG-KSPG Geology Outreach group. Geology faculty are helping to bridge the gap between civic groups, schools, clubs, and the profession. The Department also is seeking to expand course offerings at WKU's satellite campuses (Glasgow, Owensboro, Elizabethtown/Ft. Knox) to meet the growing demand for skill-based courses, especially by non-traditional students looking to retrain or enhance their skills.

Public service, as exemplified by the Kentucky Climate Center and the MesoNet project, continued to be a central pillar of the Department's contributions to the community, with activities in 2006-2007 reaffirming the faculty's commitment to productive engagement with a wide variety of constituents. The Department, through the MesoNet project, is pioneering interactive and demonstrative student and public learning activities as part of its long-term goal to develop a state-wide climate monitoring system. Faculty continue to devote thousands of hours to the educational, social, cultural, and economic development needs of the city, county, region, state, and other countries. Faculty are involved in numerous community and regional activities, from historic preservation in Scottsville and GIS support for various community projects (the Baker Arboretum, for example), to local planning and economic development issues around Mammoth Cave National Park. During the summer, the Center for Cave and Karst Studies offers several cave-based courses for continuing education credit, aimed at professionals across the region and nation. Summer institutes for geography and earth science teachers were also offered, in partnership with Teacher Education and the MesoNet project. In early June, 23 elementary school teachers enrolled in a new geographic education program, and 17 teachers from around the Commonwealth enrolled in a mid-June workshop focused on GIS, climate, and earth science content.

Alumni development is an important source of funding for the Department and it also provides employment opportunities for future students. Many alumni in positions of leadership frequently contact the Department with information about job opportunities for graduating seniors. The Department circulates its annual Geogram newsletter to approximately 1,400 alumni, it hosts alumni and current students at the annual Homecoming alumni reception, and it offers continuing education training in a variety of fields (Hazmat, Stormwater Mitigation, GIS, Karst Management, etc.). Last year, the Department received record unrestricted contributions from alumni and faculty (over \$15,000), and

it hopes to break that record again this academic year. Earnings from endowments support student enrollment in field camps, help faculty and students attend more conferences and workshops, and provide significant support to the Department's programs overall.

V. Improving Institutional Effectiveness

The Department continues to run efficiently and effectively. Improvements to classrooms and laboratories continued throughout the year, supported by funding from Academic Affairs, the Ogden College Dean's office, faculty research grants, and departmental funds. Last summer, renovations to classroom 337 replaced old desk chairs with 48 movable chairs on casters with adjoining desks. This room is now more suitable for courses that require larger maps and other instructional material. Classroom 328 was also converted to a combination seminar and conference room, with 25 armrest seats and two sets of tables in two half-circle configurations. The Department's Honors courses now utilize this space, with regular faculty and student meetings also utilizing this room. Currently, classrooms 349 and 350 are undergoing renovation and will be ready for Fall 2007 classes. Each room will be configured with rolling chairs and tables to facilitate better use of teaching materials. Each of the Department's five main teaching rooms is now fully equipped with white boards, projectors, and computer equipment. Space has been developed to support the MesoNet project and the China Environmental Health project, with renovations in several rooms to support the growing number of staff, students, and post-doctoral researchers hired to work on these funded programs.

The Department has completed the first year of its second five-year strategic plan (2006-2011) and is on schedule with a number of programs and projects. The strategic plan forms the basis for the Department's ongoing expansion in a number of important areas, including research, extramural funding, student engagement, and alumni relations. The Department seeks to double the level of financial support received from alumni over the coming years. The Department continues to participate proactively in all aspects of the institutional planning process, in the implementation of QEP strategies, and in promoting programs that help prepare students for success in a global society. Finally, the Department has an active program to promote and advertise the many successes of its faculty and students, with over 100 media stories published during the academic year. Faculty regularly appear in print, on the radio, and on local television stations discussing teaching and research. For example, research posted to Dr Goodrich's meteorology blog was widely covered by national sportswriters on ESPN and in regional newspapers, and Dr Keeling published several Op Ed commentaries on global climate change, transportation, and immigration in newspapers from California to Florida, in Michigan and Illinois, and across the Commonwealth of Kentucky. The Department continues to build its reputation as a leading Department at WKU and one of the best combined human-earth programs in the state and across the region.



**Study
Abroad
Winter 2007
Leadership
in Urban
Planning**