Geography at Montana State University

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The history of geography teaching at Montana State University covers a much longer period of time than does the history of the Department of Earth Sciences where geography courses and curricula are now housed. The Department, like so many others across the United States, is a post-WWII creation, coinciding with the rapidly increasing enrollments in higher education first generated by returning veterans, and later sustained by the baby-boom generation.

Although geology courses have been available annually since 1893, when the institution was founded, the first geography course was not offered until 1922, when the Department of Secretarial Science introduced a course entitled "commercial geography." It was not until 1947, however, that a professionally trained geographer/geologist was employed at then-Montana State College, not only to teach the existing courses in the two disciplines, but also to establish an academic department. Thus, the present Department of Earth Sciences was created in 1947 as a Department of Geography and Geology. It retained that title until 1959, when the name change to Earth Sciences was approved.

Prior to 1970, Montana State had a tradition of long-term administrative appointments, particularly at the dean and department head level. It was neither unusual nor unexpected that an individual might serve in either position until retirement. Those who left these positions sooner usually did so to accept similar or higher appointments at other institutions. In the case of Earth Sciences, there have been only four department heads in its 43-year history: Helburn (geography), seventeen years (resigned and left Montana State); Edie (geography), sixteen years (resigned four years before retirement); Smith (geology), three years (accidental death); Custer (geology), seven years (has resigned effective 1991).

In 1970, Montana State initiated a five-year review system for department heads, with most of the heads electing to serve only five years. The university administration has yet to adopt formally a rotating chair system, although some departments are following such a system under the headship format. Earth Sciences faculty are generally in favor of changing to a chair system which calls for greater faculty involvement in decision making at the department level.

Staff and Courses

The first staff member of the new department was Nicholas Helburn, whose contact with Montana State began when, as an undergraduate at the University of Chicago, he took part in a visiting lecture series arranged by Roland R. Renne, of Montana State's Department of Agricultural Economics and Economics. Apparently mutually favorable impressions resulted, for Helburn shortly enrolled at Montana State in a graduate program that led him to the Master of Science in Agricultural Economics in 1941. During the ensuing war, Helburn was a member of a Forest Service smoke-jumping team based in Missoula, and was able to pursue some preliminary field work on the doctoral program in geography he had started at the University of Wisconsin (and completed in 1950). Renne, who became president
of Montana State in 1945, held the new geology-geography position open for Helburn until his discharge from the Forest Service camp.

The new department acquired responsibility for four courses that had originated in other departments: general geology (from chemistry), commercial geography (from secretarial science), climatology (from agronomy and soils), and the conservation of natural and human resources in Montana (from agricultural economics and economics). Helburn quickly added courses in physical geography and historical geology. When a geologist was added to the staff in 1950, Helburn was able to establish three new courses congenial to his own interests: agricultural geography, Middle East problems and backgrounds (pursuant to a year of studying Turkish agriculture), and political geography (as a requirement for ROTC students).

With continuing increases in enrollment, Milton Edie, the next geographer selected, came from the University of Wisconsin with a joint appointment in geography and conservation education, the latter having just been mandated (but not funded) by the 1955 Montana legislature for teacher training both on and off campus. Montana's sparse population made it difficult to recruit enough students to support courses off the campus, but Edie did offer the conservation education course in Lewistown, 165 miles from Bozeman, helping to meet enrollment requirements by picking up a few of the students on his weekly drive to class. The conservation course was taken into geography after several years and eventually relabeled as resource geography. Edie introduced several new courses, including introduction to weather and climate, two courses in cartography, and historical geography of the United States. Montana geography and resources made use of *Montana in Maps* (1962), the first atlas of the state, published by Helburn, Edie, and cartography student Gordon Lightfoot. Courses on physiography of Eastern and Western United States were developed jointly by Edie and a geologist.

Several new members of the staff during the 1960s were either on temporary appointments or resigned after a few years. Bob O'Brien from the University of Washington, John Olson from the University of Kansas, and John Donahue from Syracuse all taught at Montana State for at least five years. Helburn resigned from the staff in 1966 after a two-year leave during which he had served as director of the NSF/AAG High School Geography Project.

Robert Taylor, who completed his M.S. in applied science/geography at Montana State in 1963, came to the department in 1966 from Louisiana State University. Taylor added the dimension of planning to the geography curriculum with an introductory course, an internship, and a course entitled legalistic land use controls. He developed an original course on geography of exploration. Joseph Ashley from the University of Colorado was appointed in 1971 as a physical geographer with interests in physiography and hydrology.

Financial constraints prevented filling one of the geography positions between 1972 and 1977 when John Alwin from the University of Manitoba was appointed. Alwin resigned in 1985, to continue his geographic writing and publishing on Western regions. Edie had left the department in 1983, first to serve a year as acting dean of the College of Letters and Science, and then to retire in 1984.

Three more appointments in the 1980s brought the geography staff to five, its present number. Katherine Hansen-Bristow came from Utah State University in 1983, with interests in climatology and biogeography. New courses she has developed include mountain geography, bioclimatology, and intermediate remote sensing. John Wilson came from Toronto the next year with interests ranging from agriculture, which had been pioneered by Helburn, to systems modeling and information systems. His new courses include quantitative methods, geographical analysis, environmental management, and hazard assessment. William Wyckoff, from Syracuse, came for a one-year stint in 1983, and returned in 1986 as a tenure-track staff member. His specialty is historical and cultural geography of North America; he introduced the new course, settlement geography.

A feature of course identification since 1970 has been the designation of several courses as Earth Sciences (ESCI) rather than as Geography (GEOG) or Geology (GEOL). The ESCI courses include
general introductory courses, courses used by both geography and geology students that were the strict province of neither discipline, and graduate research and thesis courses to be used by all of the department’s graduate students. The general introductory courses originally included a three-part series dealing with the lithosphere, hydrosphere, and atmosphere. Currently the first two of these have been retitled the earth’s interior and the earth’s surface and have become a two-part introductory geology course series. Most of the ESCI courses are now slated to be retitled GEOG or GEOL in 1991, when the university shifts from a quarter to a semester system.

The Degree Programs

The department initially offered only service courses, and had neither majors nor degree program possibilities. In 1955, however, a student received permission to emphasize geology course work under the catchall baccalaureate degree program entitled the General Curriculum, and became the department’s first graduate in 1957. Although the stated purpose of the General Curriculum was to give students flexibility in designing programs in courses of study that might not conform with prestated professional requirements, it was used principally to provide opportunities for specialization in subject matter areas that did not offer degrees. The earth sciences department continued its occasional use of this program until its termination in 1970.

In the meantime, the department continued its efforts to offer regular degrees in its constituent fields. The problem was in the restrictions imposed by the Montana university system, which had allocated geography and geology to the University of Montana at Missoula (then itself known as Montana State University while the Bozeman campus was Montana State College), and geological engineering to the Montana School of Mines at Butte. The first progress was achieved in 1957 when the department was authorized to offer a curriculum entitled natural resources with a geography option bearing the same title and a geology option entitled earth science. Two years later the department’s name and degree fields were changed to Earth Sciences, with options still permitted.

The present arrangement dates from action of the board of regents in 1979. Montana State was authorized to offer geography and geology options for both bachelor’s and master’s degrees, with the restriction that the degrees should emphasize the connections among geography, geology, and other fields in the interdisciplinary department.

Initially in 1959 the new earth sciences curriculum had three options: geography, geology, and conservation. Although the geology and geography options have persisted since 1959, six other options have been offered for limited periods. The conservation option was phased out in 1968, and a geographical planning option replaced it from 1970 to 1986. Earth sciences teaching, geophysics, and meteorology had their day as options during the late 1960s and 1970s. Currently geohydrology, which was instituted in 1988 as a replacement for geophysics, is the department’s third option.

The master’s degree was offered on a limited basis before 1970 under the heading of applied science, a title that unfortunately carried no indication of the actual subject matter studied. The master’s degree in earth sciences was finally approved in 1970 with the possibility of specialization in the different fields offered by the department.

The Students

The number of geography majors has grown slowly over the years from a low of five in 1957-58 to an average of about thirty each year during the past fifteen years. The various geography options (natural resources, conservation, geographical planning and geography) have accounted for 205 bachelor’s degrees and 34 master’s degrees. Most of the undergraduate majors started out in other programs and were attracted into geography through favorable contact with introductory courses and instructors (Figure 1).

The students thus attracted have, as a general rule, been above average in scholarship, and many have gone on to graduate schools to
acquire a variety of graduate degrees. Even though career opportunities in geography at the baccalaureate level are not so plentiful as in some other fields, many graduates found the geographical planning option useful as a springboard into a variety of planning jobs, particularly if they had availed themselves of an internship opportunity. These are available from the city and county level to the federal agency level. Some have sought military careers via the Army and Air Force ROTC programs available at the university. Others have found jobs in business and industry that permit them to remain in Montana, albeit at significantly reduced earning levels. In recent years, about one-half of the graduates have enrolled elsewhere in graduate programs, usually in geography, but occasionally in law or public administration.

Graduate student enrollment in geography ranged from a low of one student to a high of ten students during the first twenty years of the department’s involvement in graduate education. Most of the students were interested in a master’s degree either as preparation for a doctoral program or to qualify for state and federal positions at a level higher than possible with a bachelor’s degree alone. During the program’s early years, most of the course work for graduate students in geography was offered above and beyond a normal teaching load, with scheduling in late afternoon or evening for staff convenience. The program received funding for one cartographic assistant position, and, on occasion, was able to secure a floating graduate teaching or research assistantship.

In the mid-1970s, the geography staff elected to shelve its graduate program because of budget constraints that prevented filling a vacant position. The program was revived in 1988 and now enrolls ten graduate students, most of whom hold appointments as teaching or research assistants.

Research and Creativity

Taken as a whole, the department’s efforts in securing research funding have been very successful. The geographers have accounted for almost $1.1 million of the department’s total of $4.5 million. The greatest share of this amount, over two-thirds of the grants to geographers, has come in the last three years. Research interests have varied from Edie’s study of changing farm sizes in eastern Montana, and Taylor’s work in reapportionment and legislative redistricting, to Hansen-Bristow’s and Wyckoff’s present study of the fluctuating lower tree line in mountainous environments of southwestern Montana. In addition, Ashley and a geologist have secured funding for equipment for computer-enhancement of remote-sensing images, and Wilson is involved in a cooperative research project with staff of the plant and soil science department on soil erosion in the Northern Great Plains.

In the research area, Taylor’s work on reapportionment and redistricting found immediate application in helping to bring Montana into harmony with federal law regarding “one-person, one-vote” issues.
As Montana’s population continues to shift from rural to urban, further modifications in both federal and state legislative districts will be implemented, with Taylor’s work continuing to provide guidelines for restructuring. Hansen-Bristow’s work in biogeography, with emphasis on mountain environments, has led to her appointment as co-director of the Montana State University Program in High Altitude Systems, which received $300,000 in support from a Pew grant in autumn 1989. Wilson’s expertise in geographic analysis and information systems has led to his appointment as director, Montana State University Geographic Information Systems Center, which received $250,000 in support from a Murdock grant in autumn 1989.

The geography staff have been active also in publication of articles in professional journals; publication of book chapters as well as one book; preparation and publication of geographic, historical, and geologic maps and atlases; presentation of papers at international, national, regional, and state meetings; participation in professional societies; and consulting in their various areas of expertise. Most have found time to participate in both departmental and university administration via committee assignments resulting from either appointment or election.

Of particular note in the area of publication is William Wyckoff’s book, *The Developer’s Frontier: The Making of the Western New York Landscape*, published by Yale University Press in 1988, in which he describes how the early imprints made by developer and settler continue to shape the landscape today. The book has been nominated for several awards, but no announcements had been made at the time of this writing. The first atlas of Montana, *Montana in Maps*, was prepared in 1962 by Helburn, Edie, and Lightfoot, and updated for a second edition in 1974 by Taylor, Edie, and Gritzner. In 1987, Taylor and Ashley prepared for distribution a map titled “Geological Map of Montana,” with financial assistance from Marathon Oil Company and technical assistance from the department’s geology staff. In 1989, Taylor and Ashley, with geologist Bill Locke, prepared for distribution a map titled “Geological Map of Yellowstone National Park,” with technical assistance from the National Park Service and the University of Wyoming, and financial assistance from Marathon and Phillips oil companies, and Union Pacific Resources. The map was published in both English and Japanese, with George Kakuichi (University of Washington) providing the translation for the Japanese edition.

At the national level, Wilson is currently serving as chair of the AAG Applied Geography Specialty Group, and Wyckoff serves as secretary-treasurer of the AAG Historical Geography Specialty Group. In a recent announcement, the AAG nominating committee submitted the name of Katherine Hansen-Bristow as a nominee for a national councillor position, for the 1990 AAG election.

**Prospect**

Geography and geology have been together in the department since its very beginning, and it is likely they will remain together well into the future. After having their birth and growing pains clouded by the specter of duplication, the two programs have survived for 42 years by recognizing and building on the common ground between the disciplines. That the staff were able to become earth scientists, as well as geographers and geologists, added to the department’s strength and offered support to each discipline when faced with down-turns in enrollments, research opportunities, or job prospects for graduates.

Both disciplines appear ready to continue their contributions to the successes of the university. The faculty view academic employment at Bozeman as a positive value, particularly because of the opportunities for research in relatively untouched areas of the environment. With most of the staff appointed in the 1980s, the department is characterized by youthful aggressiveness and enthusiasm. Their love of teaching is complemented by well-established courses, programs, and student interest.
Montana State University: Geography Staff Since 1947

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<thead>
<tr>
<th>Name</th>
<th>Education</th>
<th>Appointment</th>
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<tbody>
<tr>
<td>John A. Alwin</td>
<td>Manitoba, Ph.D., 1978</td>
<td>1976-85</td>
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<tr>
<td>Joseph M. Ashley</td>
<td>Colorado, Ph.D., 1971</td>
<td>1971-</td>
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<tr>
<td>John J. Donahue, Jr.</td>
<td>Syracuse, Ph.D., 1970</td>
<td>1967-72</td>
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<tr>
<td>Milton J. Edie</td>
<td>Western Illinois, M.S., 1948</td>
<td></td>
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<tr>
<td></td>
<td>(Wisconsin, Ph.D. candidate)</td>
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<tr>
<td>Katherine J. Hansen-Bristow</td>
<td>Colorado, Ph.D., 1981</td>
<td>1983-</td>
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<tr>
<td>Nicholas Helburn</td>
<td>Wisconsin, Ph.D., 1950</td>
<td>1946-66</td>
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<tr>
<td>John K. Olson</td>
<td>Minnesota, M.S., 1961</td>
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<tr>
<td></td>
<td>(Kansas, Ph.D. candidate)</td>
<td>1964-71</td>
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<tr>
<td>Robert L. Taylor</td>
<td>Montana, M.S., 1963</td>
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<tr>
<td></td>
<td>(Louisiana, Ph.D. candidate)</td>
<td>1966-</td>
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<tr>
<td>John P. Wilson</td>
<td>Toronto, Ph.D., 1986</td>
<td>1984-</td>
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<tr>
<td>William K. Wyckoff</td>
<td>Syracuse, Ph.D., 1982</td>
<td>1986-</td>
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