

**A HISTORY of
GEOSCIENCES at
COLORADO STATE
UNIVERSITY**

Department of
GEOSCIENCES



Colorado State University
WARNER COLLEGE OF NATURAL RESOURCES

Geology | Geophysics | Hydrogeology | Environmental Geology



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DEPARTMENT OF GEOSCIENCES Fall, 2018 WARNER COLLEGE OF NATURAL RESOURCES

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The Early Years

The early days of geology at Colorado State University recounted here were chronicled by David V. Harris after he retired in 1975. It is an informal account confined largely to the period between when he arrived on the campus on a snowy day in January 1946 and when he turned over the reins of department chairman to Scott Creely in 1965. Some important historical details missing from Dave's account from the late 1950s to middle 1960s have been provided by Jack Campbell. When Dave came to CSU in 1946, it was Colorado A & M College, a member of the State's college system incorporated as the State's land-grant institution in 1870. Dave's account serves as the only written record of our early days. Much of the history until the middle 1960's that follows has been adapted from this record.

CSU Geology got its start soon after a fire gutted the old Chemistry Building in 1922. During the fire, the collection of rocks and minerals that had been stored in the attic plummeted down into the

debris in the basement. A few days later, President Chas. A. Lory called Major Reuben C. Coffin of the Chemistry Department into his office and asked him if he would like to teach some geology. Pointing to the three blackened rock specimens that had been salvaged, Dr. Lory added that he would not have much to work with at first and no money at all! He accepted it as a challenge, one that he kept uppermost in mind until he retired some 25 years later. In 1921 Coffin published Bulletin 16 of the Colorado Geological Survey entitled, Radium, Uranium and Vanadium Deposits of Southwestern Colorado, a comprehensive study of two-hundred-thirty pages. Later, the uranium mineral, "coffinite" was named after him.

Thus, Major Coffin was the first to teach a formal geology course in 1923. It is probable that some geology or mineralogy was injected into various chemistry courses earlier, particularly by Dr. W.P. Headden who had a doctoral degree in Chemistry and Geology from the University of Giessen, Germany. He published articles on fluorescent calcite from the Owl Canyon area in northern Larimer County and was an avid collector of minerals. His collection, including gemstones, was nationally known. After his death, Dr. C. S. Hurlbut of Harvard purchased the Headden Collection.

As noted above, Major Coffin was primarily a chemist and had co-authored a chemistry textbook with Dr. Whiteford. He had rigorous training in geology at the Colorado School of Mines and also extensive practical experience on the staff of the Colorado Geological Survey. Therefore, he was well-qualified to teach physical geology and historical geology. The general feeling around the campus was that these two courses were all that were needed or affordable. Colorado A & M College did not enjoy a favorable position insofar as appropriations from the legislature were concerned.

Major Coffin was the Commanding Officer of Battery A of the Colorado National Guard which was largely made up of students, faculty, and alumni of C.A.M. In 1916, the battery was activated to first train and then join General Pershing in guarding border towns from incursions by Pancho Villa. By fall, the crisis had passed and Battery A returned home. The following spring, America joined World War I and Battery A was again activated. After training on the east coast the battery shipped out to France and engaged in several major battles. By fall 1919, Major Coffin and the students were back at school.

One might assume that Major Coffin's geology courses would be a little less in-depth than most. This was not the case. He insisted on his students knowing all of the chemistry involved in geologic processes. As he was limited to teaching only one course at a time, his students in physical geology got a good introduction to crystallography and mineralogy. Several students who later became geologists "caught the spark" from the Major and went elsewhere to finish their work. One mining geologist wrote and ended his letter by saying that he went to "Aggies" to "find something" and that it was the Major who showed him what it was. Clearly, Major Coffin was the founder of geology at what is now Colorado State University.

As recounted by Dave Harris, Roy and his brother Claude found the Lindenmeier archeological site in 1934. Had they published immediately we might recognize Lindenmeier Man rather than Folsom Man! Major Roy C. and Judge Claude C. Coffin excavated the site between 1934 and 1936, which was followed by extensive work carried out by the Smithsonian Institute. The site now lies within the Larimer County Soapstone Prairie Natural Area.

In those early days of geology on campus, Colorado A&M College consisted of the Schools of Agriculture, Forestry, Home Economics, Engineering and Science and Arts. The School of Science

and Arts was established to provide service courses for students in the other Schools. Majors in mathematics, chemistry and physics had been established. Geology, oddly, was in the Agronomy Department of the School of Agriculture when Dave arrived on campus. It was quartered in one room of the red-brick Soils Building (now the Vocational Education Building). It was not a particularly exciting building, except when energized by a rumbling freight train just below the upstairs window. Dave shared an office with Major Coffin who would be retiring in another year. The room in the Soils Building was well used. During the noon hour, after Major Coffin's lectures were over, the chairs would be shoved back against the walls and the tables moved out for afternoon labs. The students sat on stools during the three-hour labs.

The annual inventory was relatively simple in the early days. Equipment consisted of one binocular microscope, 10 blowpipes, and a set of wooden crystal models. There was something of far greater significance, however, namely reference and working collections of rocks, minerals and fossils. The collections were not of just local origin. Major Coffin traded local specimens for others needed for instruction, some from as far as Germany. This was the life's work of one man, untiring, undaunted and without very much encouragement from either the administration or from others on the faculty.

Major Coffin's teaching mineral collection, which had been held by his family since his death in 1960, was recently donated to the Fort Collins Museum by his heirs. A significant contribution to geology was Major Coffin's comprehensive study of the minerals of Larimer County together with geologic occurrence and specific localities. Although in most cases the mineral deposits noted were not large enough to be of great economic value, the total number of minerals was very

impressive. The results of the study were not published until much later, when E. B. Eckel included Major Coffin's material in his Minerals of Colorado, U.S. Geological Survey Bulletin 1114.

From time to time during the next five or six years of Dave Harris' tenure, the wisdom of his decision to join Major Coffin as a geology faculty member was in doubt. Fortunately, the attitude toward geology improved, perhaps mainly through death and retirement, rather than through success in changing administrators' minds. They were also successful in persuading the civil engineers that they and their students would benefit from instruction in geology. Only those new courses that could be clearly demonstrated to have direct application in one or more of the academic areas could be proposed for adoption. Thus, engineering geology was added to the "geology curriculum". To round out the "new" curriculum, Dave undertook to develop a course in geomorphology in which ultimately there were more foresters, soil scientists, and engineers enrolled than geologists. He based the course more on his experience in conservation and flood control work than on formal training and taught it along more practical than theoretical lines.

The museum at Colorado A&M was flooded in 1938. Faculty and students collected all of the geological specimens from various places where they had been dumped after the flood. Some plant fossils from Florissant were salvaged and put on display. There also were minerals from some of the Colorado mining districts. One valuable specimen was a vug-filled with intricately entwined wire silver. So that it could be admired in detail, a \$2.00 magnifying glass was purchased and carefully mounted. Later it was discovered that someone had broken into that case. What had been stolen? Just the \$2.00 magnifying glass! The display room ultimately had to be converted into a classroom and the museum specimens became a part of the geology collection.

The most pressing problem as the program grew was to move geology from the School of Agriculture to a more appropriate home. The choices were few. It had been clearly demonstrated at other schools that to align geology in engineering or forestry colleges would limit course offerings to all but those phases of geology with direct application to the "parent" college. With GIs returning in droves after World War II, space was at a premium, and the agronomists were quite willing to discuss possible changes in college affiliation for geology.

The College of Science and Arts was the most logical the place for geology and chemistry obligingly became the new home of geology. This administrative change coincided with the retirement of Major Coffin and Dave's taking charge of the geology program. There was no room for geology in the then Chemistry Building (which is now the Weber Building). Early in 1948, a war-surplus building, or shell, had been moved in and located near the railroad tracks just south of what is now the National Seed Lab. The north part of the ground floor of this building (the Industrial Research Building) was hastily partitioned off and made available for the new occupants. At last there was adequate space. Four heavy war-surplus tables were obtained that had been used in an army kitchen as meat chopping blocks. These served as lab tables. The tops were laminated 2 x 4s, which when cleaned were of beautiful maple (including some birds eye maple).. For the first two years in the new quarters, classes and labs were taught while construction was going on upstairs to make more useable space.

As geology was just a sub-department within chemistry at the time, there was a deficit of direct access to those who held the purse strings. The "trickle-down" system was supposedly working, but somehow very little trickled down far enough to have much impact on the fledgling operation. Finally, the College Treasurer somehow learned how desperate the situation was and allocated

\$2500 directly to geology. Much needed equipment was purchased, including a rock-cutting saw and laps for making thin-sections. Later on, but before the days of the Motor Pool, a high-slung, 4 WD carryall was purchased.

Obtaining instructors during the 40s and early 50s was very difficult, especially during the times when geologists were in great demand. There was no Geology Department, nor any definite promise of one and the low salaries at that time compounded the problem. At long last, a geology major was approved and late in the 1950s (1957 as Dave recalled), department status was granted, with Dave as the Department Chairman. The faculty consisted of Dave, Tom Bridge, Bill Laval and Leo Broin. Dave and Tom had M.S. degrees and Bill and Leo had Ph.D. degrees. As of that day, everything was changed. Budgets and hiring could be planned and carried out without the department's fate resting on someone else's decisions within a parent department. Almost immediately, Dave was in a position to select the best from several applicants. Salaries improved, though not in spectacular fashion. Of course, it was not money but the opportunity to grow professionally in a growing department that was attractive to new faculty.

The Growth Years

By the time geology became a department, it had outgrown its quarters in the Industrial Research Building and had moved onto the campus into the old Electrical Engineering Building on the east side of the Oval. This was a building with a long history all its own. The stone part had been the first heating plant for the college (the old smoke stack was eventually converted into a flue to carry the fumes out of the mineralogy lab). The brick half of the building had been added on the north end for the Electrical Engineering Department. When the new engineering complex was completed in the early 1960s, the building had been vacated. It was thus an old building that geology inherited,

and even with major remodeling, it was inconvenient. The antiquated heating system in the old part furnished more noise than heat. However, it did provide adequate space and it *all* belonged to geology. Once again, geology was practically on the railroad tracks! It was exasperating to try to teach so close to the tracks. Often the most important statement in a lecture was interrupted by a passing train, typically accompanied by a whistle!

Soon after the move onto the main campus, the department began to grow and there was real promise for the future. In 1957, Leo Broin left for industry and Jack Campbell took his place on the faculty along with Hank Holt. Jack had an M.S. degree and Hank a B.S. but was working toward a Ph.D. at the University of Colorado (CU). Thus, geology had grown to a six-man department. With the trend for having faculty with Ph.D. degrees, Hank left to finish his Ph.D. degree at CU, after which he joined the USGS. Dave began work on his Ph.D. degree at CU, and Tom Bridge left to earn his Ph.D. degree at the University of Texas, from which he went elsewhere. Bill Laval also left to teach elsewhere.

Ernie Wolff and John Welch were added to the faculty in 1959. Welch left after one year, but Scott Creely and Joe Weitz were added in 1960 (Joe left in 1961 but returned one year later). Malcolm McCallum, fresh from his Ph.D. degree at the University of Wyoming, joined the faculty in 1962. It was also around this time (September of 1959) that Helen McClure became department secretary, at first on only a half-time basis. Jack Campbell took a two-year leave to finish his Ph.D. at CU from 1962-64. In 1964, Ernie Wolff took a one-year leave to complete his Ph.D. at Oregon State University and was replaced for the year by Ron Worl. Several temporary faculty members other than those noted above assisted the permanent faculty in the late 1950s and early to middle 1960s. The increased number of permanent and temporary faculty, subject matter coverage, and

the broadening professional activities of the faculty resulted in the university granting the department the privilege of offering a Master's Degree program. The first M.S. degree and thesis, "Inorganic quality of water as related to environment in the lower Boxelder Creek Valley, Larimer County, Colorado", by Donald White, was awarded in 1964.

Faculty activities during the 1960s were important to the growing recognition of the department and its programs. One significant example was the organization and operation of a National Science Foundation Summer Institute in Geostatistics by Jack Campbell during the summer of 1960. The Institute faculty were Bill Krumbein of Northwestern University and Frank Graybill of CSU. Participants came from many parts of the country, and the Institute had considerable impact on the increased use of statistics in geology by those who attended. Among the participants were two who later joined the faculty, Bob Johnson and Stan Schumm.

Field camp has been a requirement for graduation since the approval of a geology major. For many years until enrollments (up into the middle 1970s) became so large that multiple sessions were required each summer, the camps operated out of tents and were held in the Flattops area northwest of Glenwood Springs, Colorado. Field camp during these years was taught by Jack Campbell with the able assistance of his wife, Pat. Much of the continuing reputation of the department for producing able field geologists can be attributed to the long-standing field camp graduation requirement and the sustained emphasis of the department on the quality of the field camp course.

On the Threshold of Maturity

The middle 1960s were the beginning of another significant time in the development of geology on campus. In 1965 with an impending sabbatical leave, Dave Harris felt that he had held the position of department chairman long enough and Scott Creely was chosen to replace him. Coincident with this, Jim Waltz was hired in the fall of 1965 to direct the program in hydrogeology begun earlier by Mal McCallum. Carol Ann Hodges replaced Dave during his sabbatical year. In 1967, Bob Johnson and Stan Schumm were hired to add breadth to subject matter offerings and to assist in teaching the ever increasing required and elective courses and to add strength to the growing graduate program. The National Science Foundation's Earth Science Curriculum Project (ESCP) in Boulder sought out Joe Weitz to head up their newly formed program. Joe held that post from 1967-1969, at which time he returned to campus.

Prior to his leaving for the ESCP position, Joe Weitz had laid the groundwork for a National Science Foundation-funded one-time offering of a Master of Arts in Teaching (MAT) program in Earth Science in the department. Four candidates were recruited by Joe and began their program in the fall of 1967. The faculty pitched in with the necessary courses and all students successfully completed the program. The graduates who chose to continue in an education career found positions as junior high and high school-level physical science teachers.

Just when a stable, well-rounded academic program appeared to have been achieved, Scott Creely resigned in the fall of 1968 to accept a position at San Jose State University in his home state of California. This left a void in the area of optical mineralogy and petrology, Scott's areas of expertise. It also left a void in the administration of the department. The department selected Bob Johnson as acting chairman, effective the fall semester of 1968. He became chairman the following year. The sudden departure of Scott Creely at the beginning of the fall semester required finding

qualified replacement(s) for his courses. We were fortunate to hire Glenn Izett and Peter Lipman, who each took semester-long leaves of absence from the U.S. Geological Survey in Denver to cover optical mineralogy and igneous and metamorphic petrology, respectively.

By this time both undergraduate and graduate programs were flourishing in spite of the staffing uncertainties. Space in the Geology Building was at a premium and many graduate students were assigned office space in Old Main, the campus' oldest building. This was a time of widespread campus unrest and Colorado State University did not go unscathed. On the night of May 8, 1970 Old Main burned to the ground taking with it all of the research materials and other belongings that our students had in their offices. Recovery from this loss was slow from this senseless act, but ultimately degrees were completed and life continued.

The search for a permanent replacement for Scott Creely that was progressing at the time Old Main burned resulted in the hiring of Lary Burns, a new Ph.D. from the University of California at Berkeley, in the fall of 1970. Lary ably filled this position but the changes were not at an end. Just prior to Lary's hiring, Ernie Wolff, our economic geologist, resigned to return to Alaska as a consulting geologist. So, the game of musical chairs continued! Although economic geology has been an elective subject area over the years, it has been important and successful at both the undergraduate and graduate levels of instruction. We felt fortunate again to be able to find a successor to Ernie with Bill Wilson, a respected economic geologist and Associate State Geologist at the Wyoming Geological Survey. After two years of struggling with the demands of teaching, graduate student program counseling and a commuting problem, we were again faced the need for yet another replacement as Bill elected to leave CSU and return to Wyoming.

During the 1972-1973 academic year, geology at CSU was again faced with many problems. At the staffing level, an economic geologist was needed to begin the 1973-74 academic year. Our enrollments were steadily increasing to the point that more space was needed for instruction and research. Additional faculty were needed to accommodate additional subject areas in the geological sciences. The old building that we occupied by the railroad tracks was sorely in need of refurbishing. We were approached by College of Natural Sciences and University administrators with an offer that would provide us with adequate, safe space in the new Natural Resources Building then under construction. However, to benefit from this offer, we would be required to leave the College of Natural Sciences and join what had in 1966 become the College of Forestry and Natural Resources. The mechanism for doing this was to merge the Department of Geology with the Department of Watershed Science, a College of Forestry and Natural Resources department, to form the Department of Earth Resources. The merger seemed to be a logical one considering the natural resources thrust of the college.

Maturity

1973 was a watershed year in more ways than one. The faculty of both the Geology and Watershed Science Departments agreed to the merger with the promise of adequate space for both areas of instruction in the new building. At that time the watershed faculty, which included remote sensing expertise, also were in cramped quarters in a small building adjacent to the Forestry Building. With the merger, Bill Marlatt retained the chairman's position in the new department as it was the "parent" department already established in the College of Forestry and Natural Resources. Secretarial staffs were merged and Colleen Templar from Watershed Science became the head secretary while retaining all others, including Helen McClure, at the time of the merger. Coincident with all of these changes, the geology faculty had selected and made an offer to Tommy Thompson,

an Oklahoma State University faculty member well acquainted with the economic geology of the west and Colorado in particular. Tommy joined the faculty in the fall of 1973.

During the 1974-75 academic year, Bill Marlatt elected to vacate the position of Department Head of the new department and return to teaching and research. In addition, Jack Campbell chose to leave academia and accepted a position with the U.S. Geological Survey in Denver. Dave Harris retired in May 1975 after many years of service to geology at CSU. The combined faculty was faced with replacing a department chairman and filling two geology vacancies. This provided an opportunity to evaluate long-term goals within the geology program. A specialist in sedimentology was needed to replace Jack Campbell. Environmental geology was gaining in importance and the need for a faculty member to replace Dave provided the opportunity to expand in this area.

The fall semester of 1975 was another important date in the history of geology at CSU. The combined faculty offered the position of Department Head to Theodore Chamberlain, a physical oceanographer from Johns Hopkins University. He accepted and joined the faculty in August of 1975. Frank Ethridge, a sedimentologist from Southern Illinois University, and Donald Doehring, an environmental geologist from the University of Massachusetts, also joined the faculty in August of 1975.

Planning for space in the new Natural Resources Building had been carried on during these times of faculty and program changes. By January, 1976 all was ready for the newly expanded Department of Earth Resources to move into its new quarters. With most of the third (top) floor and lab and storage space on the first floor, the department, geology in particular, looked to a future of ever expanding enrollments at the undergraduate and graduate levels. Geology enrollments and

numbers of majors continued to rise during the late 1970's and early 1980's. Even elective courses had multiple sections of labs which taxed the new quarters. Lecture sections were moved to larger lecture rooms in the Natural Resources Building and the Clark Building.

Helen McClure retired in the spring of 1979. With her retirement, geology lost a prized asset who had provided stability to the program for many years. Through the years until the department became the Department of Earth Resources in 1973, she took care of a million and one details, kept our office expenses within our budget, typed and reproduced all instructional materials and correspondence for the faculty and was always there when students needed help or counsel. These things were always done with outward calm. Helen's cheerful, friendly greeting on the phone and in the office served the department well. The affection for her was obvious when an overflow crowd of graduates came from all parts of the country to attend her retirement party.

In the fall of 1979 Bob Johnson became Acting Department Head when Ted Chamberlain returned to teaching his specialty courses in oceanography and related subjects. Mike Harvey, a Ph.D. in fluvial geomorphology under Stan Schumm, was hired as Research Associate and added much, primarily to the graduate program, from 1980 to 1988. At that time, he became a full-time consultant while retaining the option of serving on graduate committees in the department. In the fall of 1981, Hal Boyne, who had come to the watershed faculty from the U.S. Bureau of Standards in Boulder as a snow hydrologist in 1979, was elected Department Head by the faculty. Additional geology staffing changes occurred when Joe Weitz retired in the spring of 1983. He was replaced the following fall by Eric Erslev, a structural geologist from the Lafayette College faculty. Colleen Templar left the department after the spring semester, 1984, for a similar position in another campus department. Secretarial duties were then divided between Barb Holtz and Bev Johnson.

The continued growth of the geology program since its inception peaked in 1982 with slightly over 300 majors. In the next few years the decline in majors and resultant class sizes was very rapid as the demand for geologists, especially in the petroleum industry, fell dramatically. Fortunately, enrollments in ER 130, Environmental Geology, and ER 140, Physical Geology, remained high, providing the department with continued very high credit-hour production.

Over the years since becoming a graduate degree-granting program, the department has offered Master's and Ph.D. degrees in many sub-disciplines of geology. Growth in numbers of M.S. and Ph.D. candidates kept pace with the undergraduate program and remained at a respectable level while the undergraduate enrollments declined. Much of this continued success has been due to a faculty actively engaged in diverse supported research. During this period of an essentially full complement of faculty, degree offerings were in the following sub-disciplines: economic geology, engineering geology, environmental geology, geochemistry, hydrogeology, igneous and metamorphic geology, remote sensing applications, sedimentology, stratigraphy and structural geology.

Enrollments in the required summer field camp also had reached such proportions as the numbers of majors increased that a move had to be made to a more suitable physical setting. The campus of Western State College in Gunnison, Colorado was selected as a base of camp operations for the multiple sections required by our enrollments. Camping was not eliminated from the program, however. Field problems at Tincup and at Lime Creek near Silverton were conducted from tent camps. Float trips to examine stratigraphy along the Colorado River were added when feasible. The added faculty in this period greatly aided in maintaining a quality program. As the number of

majors fell, summer field camp was taught in alternate years for a few years to provide adequate class sizes, while retaining a quality field-oriented program.

The Department of Earth Resources and its geology program hosted several important professional meetings beginning in 1979. In the spring of 1979 the Rocky Mountain Section of the Geological Society of America (GSA) held its Annual Meeting on our campus. The Third International Fluvial Sedimentology Conference was held here in 1985. In 1992, we hosted the Society for Sedimentary Geology (SEPM) Theme Meeting. The theme of this meeting was the Mesozoic of the Western Interior.

Times of Change

From the middle 1980s on the department has witnessed a continuing state of change in faculty personnel and course offerings. Hal Boyne took a leave of absence for the 1985-86 academic year and Don Doehring served as Acting Department Head. This coincided with the onset of a recession in the state of Colorado. A time when many energy-related companies went out of business or left the state and state revenues plummeted. A substantial reduction in funding to CSU triggered a university-wide program of review and redirection called Planning for Progress. Although the title sounds upbeat and positive, it really amounted to retrenching and budget cuts for colleges, departments, and the extension service. Central administration eliminated tuition remission for Graduate Research Assistants and began raising resident and nonresident tuition each year. The department would endure a budget cut that included elimination of travel funds, a five-percent reduction in course offerings, and a reduction of faculty by attrition. Ultimately, Professors Johnson and Marlatt would not be replaced following their retirement. Our Dean proposed several schemes to shrink the college to three departments. One reshuffling would

have melded Earth Resources and Recreation Resources and another would have combined Earth Resources with Range Science. After many hours of meetings and several retreats it became clear that fiscal savings from these mergers would be negligible. Yet another bid came from the College of Agriculture in a proposal to combine Earth Resources with their soils program. The department vehemently opposed moving colleges, and suggested instead that they move their one soil scientist, Gene Kelly, to Earth Resources. We had no trouble dropping courses, for a number had not been taught for some time and were still on the books. Ultimately, the loss of two senior faculty without replacement was the major negative impact to the department.

At this time, the geography program was part of the Department of Economics. The geographers were persuaded to move to Earth Resources, and this was eventually cited as one of the university's ten major accomplishments of Planning for Progress in a report to the Colorado Commission on Higher Education. The geographers, Gene Wilken and Glen Weaver, moved to the department for fall semester 1986. In 1986 Stan Schumm was selected a "University Distinguished Professor" in recognition of his world-class scholarship in fluvial geomorphology. The title is conferred upon the most outstanding CSU faculty members for the duration of their association with the University. Stan had the further honor of being in the first group of 12 distinguished professors recognized by CSU.

By the mid-eighties the university became computerized and adopted a uniform method of accounting. Personal computers replaced typewriters most everywhere on campus. Barb Holtz took a series of computer and accounting classes and soon became proficient at both. At the same time, Bev Johnson took computer classes and in addition to her great job at the front desk could handle many computer applications. These ladies' abilities didn't go unnoticed in the college and

other departments tried to lure them away from us. Thank goodness that they stuck by us. Instead of leaving us, Barb trained personnel in other departments of the college.

Bob Johnson retired at the end of the 1987-88 academic year. The combination of enrollments and funding had left this position unfilled with the accompanying loss of a permanent faculty member to cover engineering geology and exploration geophysics. Debbie Anthony, a fluvial geomorphologist with course work in civil engineering who had earned her Ph.D. under Mike Harvey, taught engineering geology in alternate years on a temporary faculty appointment. After his return from leave, Hal Boyne resumed as Department Head until his retirement in the spring of 1989. Don Doehring returned as Department Head at this point. Changes in the discipline configuration of the department have continued. Salary support from research permitted Stan Schumm to withdraw from active teaching and to devote his time to research. Stan became a transitional faculty member in 1990 with limited academic year responsibilities. A replacement for Stan was of great importance because of his core course in geomorphology and his graduate program in fluvial geomorphology. Ellen Wohl, from the University of Arizona, was hired to fill this subject area vacancy in February 1989. Ellen was also the first female tenure-track faculty member in the department and one of the first two female tenure-track faculty hired in the college.

Faculty, staff, students and alumni were shocked by the sudden death of Lary Burns in the spring of 1991. Lary had been planning to leave on a sabbatical in the following fall and a temporary replacement, Michael Smith, had been hired to teach Lary's courses that year. Michael came to us from serving as a sabbatical replacement at Montana State University at Bozeman. He was succeeded by Sally Sutton from the Department of Geological Sciences at the University of Texas, Austin in the fall of 1992. Sally's specialization in petrology-geochemistry provides much needed coverage in this broad area.

Gene Wilken was granted a three-year leave of absence to do research on traditional farming methods in Latin America beginning in fall semester 1991. Joseph Butler, from the State University of New York Binghamton, was a temporary replacement for fall semester 1991 and Sherry Oakes a temporary replacement from spring 1992 to spring 1994. Bill Marlatt retired in fall of 1993. Dean Jay Hughes retired in 1992 and Al Dyer, former Head of Forest and Wood Science, became the new dean. Shortly thereafter, the college changed its name to the College of Natural Resources.

The geography faculty were next to retire. First Glen Weaver retired in the January of 1994 and then Gene Wilken in spring of 1995. Lorna Weaver taught Glen's classes during spring of 1994. Their replacements, Kelly Elder and Melinda Laituri, were hired and were onboard for fall 1995. Kelly is a Snow Hydrologist and Melinda a geographer specializing in Geographic Information Systems, Remote Sensing, and environmental applications. Jim Waltz retired in the fall of 1994, but continued to teach at Pingree Park for several summers.

The mid-nineties saw continued change in the faculty. Malcolm McCallum took a leave of absence for 1993-94 and Clint Seanor taught his classes. He continued the leave for 1994-95 with Linda Davis covering his classes. After distinguished careers, both McCallum and Thompson retired at the end of the spring 1995 semester, and Doehring announced his retirement for January of 1996. Judy Hannah, from the University of Vermont succeeded Don.

Jerry Magloughlin came on board as the department mineralogist, filling McCallum's position, and Bill Sanford was hired as the new hydrogeologist in the fall of 1996. The Earth Resources Department hosted a two-day "Schumposium" in November, 1996 to honor Stan Schumm's life

work and exceptional commitment to graduate student research and education. The meeting was attended by a large number of his colleagues and former students. A symposium volume of research papers, edited by several of his former students, was published several years later.

Financial cutbacks at the U.S. Geological Survey (USGS) resulted in the dissolution of a research group that Judy Hannah had been closely allied with for many years. Holly Stein conceived and structured a partnership between CSU and the USGS, establishing the AIRIE Program (Applied Isotope Research for Industry and the Environment), and brought her former USGS research group to the CSU campus along with a negotiated donation of a mass spectrometer and other laboratory equipment. As a result, Rich Markey and John Morgan came to campus in 1996 as research associates, and Holly Stein joined them in 1998 as a senior research scientist and director of the AIRIE Program. The AIRIE Program pioneered the development of the Re-Os molybdenite chronometer and they now pursue novel methods in Re-Os (rhenium-osmium) isotope geochemistry for dating petroleum source rocks and the timing of maturation and migration of hydrocarbons. A strong stream of mineral industry and NSF funding, including a mass spectrometer dedicated to Re-Os, formed the financial base for the first decade. Beginning in 2000, Holly Stein forged a relationship with the Norwegian Geological Survey engaging Judy Hannah in projects in Norway. In 2012, the AIRIE Program became a founding member of a new Centre of Excellence in Norway at the University of Oslo (CEED – Centre for Earth Evolution and Dynamics). The AIRIE Program carries out much of their pioneering work on geology in Norway, and in 2012, Holly Stein and Judith Hannah, launched a \$5 million project funded by the Norwegian petroleum industry. In 2013, Holly acquired an additional \$1 million from industry for a second mass spectrometer. The AIRIE Program is a special research unit within the department that is maintained by external funding.

Andy Frank was hired in 1997 and after he left in 1998 to take a community college position, Nazli Nomanbhoy was hired to fill a temporary, non-tenure track faculty to teach a section of the freshman general geology course and coordinate the introductory geology laboratory. She resigned to take a position with CNR in 1999 and her position was filled by Andrew Warnock. Andrew resigned in 2001 to move to the CSMATE program on campus. He was replaced by Sara Rathburn, who had just completed a Ph.D. degree in fluvial geomorphology at CSU under the direction of Ellen Wohl.

Stephanie O'Meara was hired in 1999 as the first of several research associates in what would become the National Park Service (NPS) Geologic Resources Evaluation (GRE) program. This group, funded by the NPS, grew to six researchers with the addition of John Graham and Trista Thornberry-Ehrlich in 2002, Heather Stanton and Jim Chappell in 2004, and Ron Karpillo in 2006.

In 1999 Edward Warner (BS, 1968) approached the department about funding a graduate teaching assistant for the 1999-2000 academic year. Ed had been very successful as an independent petroleum geologist and was instrumental in the discovery of Jonah field in southwestern Wyoming; one of the largest gas fields in the Rocky Mountain Region. In 2000 Ed added support for the Spatial Analysis Computer Lab (SAL). In May 2001 Ed agreed to support two graduate teaching assistantships, one graduate research assistantship, stipends for graduate student summer research and continue the operation of the SAL. Ed also agreed to endow two faculty Chairs, at mid-career level. Dennis Harry was hired in the fall of 2003 to fill the Edward M. Warner Chair in Geophysics. Dennis was previously an associate professor of geophysics at the University of Alabama. In the fall of 2004 John Ridley was hired to fill the Edward M. Warner Chair in Economic Geology, later renamed the Malcolm McCallum Chair in Economic Geology in

recognition of the role that Malcolm had played in shaping Ed's geological knowledge. John was previously a lecturer at Macquarie University, Australia. Thanks to Ed's generous support we became the only department in the College of Natural Resources to have an endowed chair (and the only department in the University with two endowed chairs). Ed says that when he earned his BS in geology the faculty were like his Dutch uncles who were always there to help and support him and the other students, and especially appreciates the help and advice that he obtained from his academic advisor, Malcolm McCallum. The annual Fall field trip, initiated Eric Erslev in 2002, has become a tradition of the department. Ed Warner has participated in most of these trips, subsidizing a day of rafting or canoeing, and sharing his expertise and sage advice with many of our students and faculty. The Department has a long tradition of fostering field projects and field trips as an integral part of the geologic education of our students. Photos of past summer field camps, and academic-year field trips are included in Appendix VII.

Department of Geosciences

Kelly Elder resigned from the University in 2001 to take a position with the USDA Forest Service Rocky Mountain Station and Steven Fassnacht was hired as the new snow hydrologist in the Watershed Program. However, before Steven arrived on campus in the fall of 2003 a reorganization of the college was completed. In this reorganization the Watershed Program became part of the newly formed Department of Forestry, Rangeland and Watershed Stewardship and the Geology Program became the Department of Geosciences. In addition to the regular Watershed Science faculty (Stephen Fassnacht, Lee McDonald, Freeman Smith, and John Stednick), Ted Chamberlain and Melinda Laituri became faculty members in the new department. With this reorganization the management of the PhD program in Watershed Science remains in the Department of Geosciences. As a result the Watershed Science faculty (who hold principal

affiliations within Ecosystem Science and Sustainability, and within Forest and Rangeland Stewardship) have a joint appointment in both department and all PhD students in Watershed Science are currently registered within the Department of Geosciences.

John Morgan retired from the AIRIE Program in 2001. In 2006 Rich Markey resigned to pursue a career as a science teacher in the Poudre R1 school district in Fort Collins. Recent research associates supported by the AIRIE Program are Aaron Zimmerman (2006), Gang Yang (2005), Guangping Xu (2008), Svetoslav Georgiev (2009), and Gyana Tripathy (2012), and, once again, Rich Markey (2013-2016), who returned to high school teaching once more in 2016.

To tap the wisdom of our alumni and friends the department formed an advisory council in 2002. The council is now known as the Geosciences Advisory Council (GAC). The initial membership on the council consisted of Ed Warner (B.S. 1868), Robbie Gries (B.S. 1969), David Kelley (B.S., 1985), Robert Stollar (M.S. 1969), Bruce Jones (B.S., 1964), John Goodier (B.S. 1959). Bill Houston (M.S., 1994), Lesli Wood (Ph.D., 1992), John Dolson (M.S., 1981), and Brandon Eisen were added a year later. (A list of all members who have served on the GAC for any period of time to date is given in Appendix VI). The advisory council meets semiannually in the fall and spring, and its goal is to promote, support and advise the Department. Activities of the GAC over the years have included a "Student Oral Presentation Competition", primarily for graduate students, and funded cash prizes for this competition. Beginning in 2014, the new department head, Rick Aster has re-engaged the a new GAC to help guide and advance the department.

Richard Chalcraft was hired in 2002 as a part-time, temporary instructor to teach a section of the freshman physical geology course. He also taught igneous and metamorphic petrology when in the spring of 2004 while Judy Hannah was on sabbatical leave and again in the spring of 2006.

Bev Johnson retired in the summer of 2003 after 19 years of outstanding service in the department office. Bev's friendly smile and efficiency is missed by all who worked with her and whose lives she touched, and especially the legions of students that she served so well over the years. Bev was replaced at the front desk by Sharyl Pierson who came to Geosciences from the Department of Fisheries and Wildlife Biology. Judy Hannah received a Fulbright Scholarship and took a sabbatical leave to Norway during the 2003-2004 academic year. Frank Ethridge served as acting department head during this year.

Frank Ethridge retired in the summer of 2005, but taught the undergraduate stratigraphy and sedimentology course in the fall. The stratigraphy/sedimentology position was filled by Sven Egenhoff who arrived on campus in January, 2006 from Germany where he had been teaching at Freiberg University. Sven's research interests are in shale/mudstone depositional environments, siliciclastic and carbonate sedimentology, sequence stratigraphy, hydrocarbon reservoir characterization, basin analysis, and graptolite ecology. In the Fall of 2005 Dean Joyce Berry of the College of Natural Resources announced that Ed Warner was making an additional college donation in the amount of 26 million dollars. Coupled with his previous donations to Geoscience this became the largest single donation by an individual to CSU and the largest ever to a Natural Resources College. As a result of this donation the college The College of Natural Resources was renamed the Warner College of Natural Resources in the spring of 2006.

Barb Holtz retired at the end of December 2005 after 25 years of service to the department. Barb excelled at her job of handling the financial affairs and the graduate student records for the department. After her retirement the department financial record keeping was transferred to the CNR central business office. Judy Hannah stepped down as Department Head after 10 years of service at the end of June 2006. She will continue to teach and conduct research with the department and as part of the AIRIE Program. As of 2008, Judy assumed a half-time faculty appointment within the department, spending one semester every year at CSU and the other in research positions in Norway, first at the Norwegian Geological Survey, and later at CEED-University of Oslo. Sally Sutton assumed the duties of interim Department Head in July 2006 and regular Department Head in July 2007.

Donna Willette was hired as a part-time, temporary instructor for one semester each in 2005 and 2007 and for the academic year 2012-2013 to cover required undergraduate courses taught by faculty on sabbatical.

As part of University growth, and in response to the Warner gift to the College, two new tenure-track faculty were added in 2008. Derek Schutt joined the faculty in August. Derek's research interests are in using seismology, combined with mineral physics, geochemistry, and geodynamical modeling, to understand the mantle's physical properties, flow, and interaction with the crust. Michael Ronayne joined the faculty in October. Mike's research interests are in hydrogeology, chemical transport in the subsurface, groundwater modeling methods and inverse modeling, karst aquifers, geostatistics for hydrogeologic applications. Sara Rathburn, then a non-tenure track faculty member, was promoted to a tenured, associate professor in 2008. Her research interests are in fluvial geomorphology, hydraulics and sediment transport.

Structural geologist Eric Erslev retired in July 2009 (returning in spring of 2015 to teach CSU Structural Geology). His position was filled on an interim basis by Kaleb Scarberry (2009-2012). Jamie Kirkpatrick came on board as the new assistant professor of structural geology in January 2013 with research interests in earthquakes, especially past earthquakes in the geological record. Jamie accepted a position at McGill university beginning in January of 2015. The department hired Assistant Professor John Singleton, beginning in summer 2015 to take the helm of structural geology. John was previously at George Mason University, where he served for three years as an assistant professor.

In 2011 the National Park Service (NPS) Geologic Resources Evaluation program (GRE) became the Geologic Resources Inventory Program (GRI). The GRI is one of 12 fundamental natural resource inventories conducted by the National Park Service and its partners. In addition to the six Research Associates mentioned above, Heather Stanton, Michael Cox and Rebecca Port have worked with the group for various time periods. Kathy KellerLynn was hired in 2008. Judy Hannah has overseen the activities of this group since its inception.

Sally Sutton stepped down as Department Head in 2012. She continues to teach and conduct research in sedimentary petrology and geochemistry. Sean Bryan was hired as a non-tenure track instructor to cover course formerly taught by Sally Sutton and Sara Rathburn, both on sabbatical leave for the 2013-2014 academic year. Sean has become a valuable asset and colleague for the department, assuming the critical role of leading the introductory Geology 120 and 121 (lab) courses.

John Ridley was appointed interim head and served in that position from the Fall of 2012 to the end of 2013. Richard (Rick) Aster, Professor of Geophysics and recent Department Chair at the Department of Earth and Environmental Science at New Mexico Tech was hired in an external search as the new Department Head, taking over from Ridley in January, 2014. Rick is a seismologist and geophysicist with interests in both deep and shallow Earth processes and structures. One of Aster's first efforts was to lead the development of a new department Strategic Plan (December, 2013) that emphasizes a heightened regional, national, and international profile for the department into the future.

The Geosciences office received a significant staff boost in 2014 with the arrival of Jill Putman, the department's first Academic Success Coordinator. Jill's arrival led to significant enhancements in professional advising and support, as well as more efficient management of academic progress and career guidance, for undergraduate students across the department.

The department welcomed Assistant Professor Lisa Stright in Fall of 2015. Lisa, a petroleum geologist, was previously on the faculty at the University of Utah. Research scientist Dan McGrath also joined the department in 2015 from the University of Colorado, bringing new directions in glaciology and shallow Earth geophysics to the Geosciences curriculum and research portfolio. In 2016 we expanded our office staff with the addition of Patti Uman.

Enrollment in the undergraduate geology program and to a lesser extent in the MS program has been steadily and rapidly increased with the mid 2010's oil boom, reaching a high of around 180 undergraduates in 2014. Since then we have seen modest decreases as oil prices have fallen. As of 2018 enrollment still shows appreciable sensitivity to oil prices. In the summer of 2016 the

Geology Field Camp had the largest number of students (41) since the early 1980s. The format of Field Camp has settled in the last few years to involve five faculty members each teaching about a week, with two of these weeks based in northern New Mexico, and three around Silverton in the San Juan Mountains of southwestern Colorado. Recognition of the importance of Field Camp to the major continues, and the department began work with the GAC beginning in 2016 to successfully establish a substantial scholarship program to assist students in financing this major summer requirement.

In 2018 the department welcomed two additional tenure-track faculty members: Dan McGrath, who transitioned from Research Scientist to Assistant Professor, and Sean Gallen joined the department as a specialist in Critical Zone geosciences and a new core contributor to Field Camp. These hires continued an ongoing diversification in near-surface geosciences specializations as well as a general growth in faculty numbers. 2018 also saw the completion of a major addition to the Natural Resources Building and NR was rechristened as the Michael Smith Natural Resources Building, in honor of principal donor and natural gas entrepreneur Michael Smith. Completion of this building and its new teaching labs enabled the department to retire its NR 316 Teaching Laboratory and renovate it for high quality graduate student offices, as well as to create much needed swing/visitor office space within the department.

**The Michael Smith Natural Resources Building Addition
Opening Fall 2018**



The 2018 Michael Smith addition to the Natural Resources Building.

Epilogue

With strong enrollment at the undergraduate and graduate level, the addition of three tenure-track faculty positions in 2008, a new department head in 2014, four new faculty arriving in 2015- 2018, as well as a changing world in which geosciences will play new and exciting roles in society, and one in which the career of “geologist” will continue to evolve, the Geosciences Department at Colorado State University lies at another threshold. It is one which can be crossed successfully if an adaptive vision of the future can be developed and implemented with planning, dedication and enthusiasm by faculty, staff, research associates, students, and our far-flung alumni and many other partners and supporters.

Prepared by Bob Johnson May, 1995

With edits, appendices and updates by Don Doehring and Frank Ethridge Spring, 2007

With additional updates by Frank Ethridge and Rick Aster Fall, 2018

APPENDIX I - Photos of Department Heads

Department Heads, Dept. of Geology, Department of Earth Resources and Department of Geosciences (Years given as head and as a faculty member in Dept.)



Roy G. (Major) Coffin
One-Person Geology Program
(1922-1946)



Scott Creely
Head, Department of Geology
(1965-1968)



David V. Harris
Chairman, Department of Geology
(1957-1965) Faculty (1946-1975)



Robert (Bob) B. Johnson
Head, Department of Geology
(1968-1973)
Head, Department of Earth Resources
(1979-1981) Faculty (1967-1988)



Bill Marlatt
Head, Department of Earth Resources
(1973-1975) Faculty (1973-1991)



Theodore C. Chamberlain
Head, Department of Earth Resources
(1975-1979) Faculty (1975-2003)



Hal Boyne
Head, Department of Earth Resources
(1981-1989) Faculty (1979-1989)



Donald O. Doehring
Head, Department of Earth Resources
(1989-1995) Faculty (1975-1996)



Judith L. Hannah
Head, Department of Geosciences
(2003-2006) Faculty (1996-)



Sally S. Sutton
Head, Department of Geosciences
(2006-2012); Faculty (1992-)



Richard C. Aster
Head, Department of Geosciences
(2014-)



John Ridley
Head, Department of Geosciences
(2013-2014); Faculty (Malcolm McCallum
Chair of Economic Geology)
(2004-)

APPENDIX II - Photos of Tenure-Track Geology Faculty (Excepting Dept. Heads)



Joseph (Joe) Weitz
(1960-1983)



Malcolm McCallum
(1962-1995)



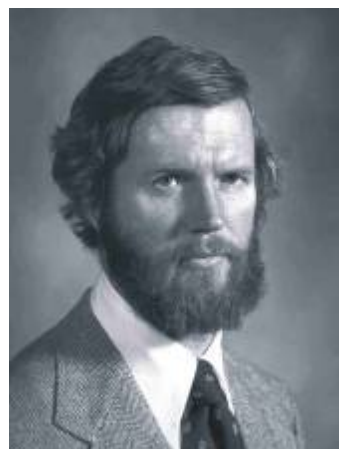
James Waltz
(1965-1994)



Tommy Thompson
(1973-1995)



Stanley A. Schumm
(1967-1998)
University Distinguished Professor
(1986-1998)



Lary Burns
(1970-1991)



Frank G. Ethridge
(1975-2005)



Eric A. Erslev
(1983-2009)



Ellen E. Wohl
(1989-)

University Distinguished Professor (2017-).



Jerry F. Magloughlin
(1996-)



William E. Sanford
(1996-)



Dennis Harry
Ed Warner Chair of Geophysics
(2003-)



Sven Egenhoff
(2006-)



Sara Rathburn
(2008-)



Derek Schutt
(2008-)



Jamie Kirkpatrick (2013-2014)



Michael Ronayne
(2008-)



John Singleton (2015-)



Lisa Stright (2015-)



Daniel McGrath (2018-)



Sean Gallen (2018-)

APPENDIX III - Photos of Non Tenure-Track & Instructors

No Photo

Carol Ann Hodges
(1967-1968)



Michael Smith
(1991-1992)



Nazli Nomanbhoy
(1998-1999)



Deb Anthony
(1992-2000)



Andrew Warnock
(1998-2001)



David Mayo
(1994-1995)



Sara Rathburn
(2001-2008)



Richard Chalcraft
(2002-2008)



Kaleb Scarbery
(2009-2012)



Donna Willette
(Fall 2005, Fall 2007 and
2012-2013)



Sean Bryan
(2013-)



Greg McDonald
(2014, 2015)



Catherine
Sartin (2017)

APPENDIX IV - Photos of Research Associates and Research Scientists



**Rich Markey, AIRIE Program
(1997-2006 & 2013-)**



**John Morgan, AIRIE Program
(1997-2001)**



**Holly J. Stein, Senior Research Scientist,
Director AIRIE Program
(1998-)**



**Stephanie O'Meara, NPS-GRI Program
(1998-)**



**John P. Graham, NPS-GRI Program
(2001-)**



**Aaron Zimmerman)
(2001-)**



Trista Thornberry-Ehrlich, NPS-GRI
Program (2002-)



Katie KellerLynn
(2008-)



Heather Stanton, NPS-GRI
(2004-2012)



Gang Yang (AIRIE Program)
(2005-)



Jim Chappell, NPS-GRI
(2004-)



Guangping Xu (AIRIE Program)
(2008-)



Ronald Karpilo NPS-GRI
(2006- Present)



David Dust (Fluvial Geomorphology)
(2010-)



Gyana Tripathy (AIRIE Program)
(2012-2015)



Dan McGrath (Remote Sensing, Glaciology,
Shallow Geophysics)
(2015-2018)



Syetoslav Georgiey (AIRIE Program)
(2012-)



Andy Darling (Fluvial Geomorphology)
(2016 -)

APPENDIX V - Photos of Office Staff (Dept. of Geology, Dept. of Earth Resources, and Dept. of Geosciences)



Helen McClure
(1959-1979)



Bev Johnson
(1984-2003)

NO PHOTO

NO PHOTO

Colleen Templer
(1973-198?)

Elaine Bacca
(2003-2004)



Barb Holtz
(1980-2005)



Sharyl Pierson
(2004-2011)



Sharon Gale
(2011-)



Jill Putman
(2014-)



Patty Uman
(2016-)

APPENDIX VI - Photo and Listing of Dept. of Earth Resources and Geosciences Advisory Council (GAC)



GAC Members from 2005. Left to right:
Bruce Jones, Bill Houston, Edward Warner, Robbie Gries, Lesli Wood, Brandon Eisen,
Robert Stollar

List of GAC members who have served since 2002. Degrees and date are shown for CSU alumni.

Joby L. Adams	MS, 1994	Karen Berry	
John C. Dolson	MS, 1981	Roger Steininger	PhD, 1986
Brandon Eisen		Chris Lidstone	MS, 1981
John T. Goodier	BS, 1959	Matt Morgan	
Robbie Gries	BS, 1969	Hal Pranger	MS, 1988
William S. Houston	MS, 1994	Tara Tafi	BS, 2001
E. Bruce Jones	BS, 1964		
David L. Kelley	BS, 1985		
Vince Matthews			
Ana Meyer	MS, 2007		
John Robbins	BS, 2005		
Ralph J. Stegen	MS, 1988		
Robert Stollar	MS, 1969		
Edward M. Warner	BS, 1968		
Lesli J. Wood	PhD, 1992		

APPENDIX VII - Geology Field Camp and Other Field Photos



Field Camp at Little Molas Lake, CO – 1982 – During the year of highest enrollment in undergraduate majors. Faculty members Frank Ethridge on far left and Larry Burns third from left in front row seated.



Field Camp 1986, Faculty include Larry Burns (second row, on left with beard) and Eric Erslev (behind and to the right of Larry Burns)



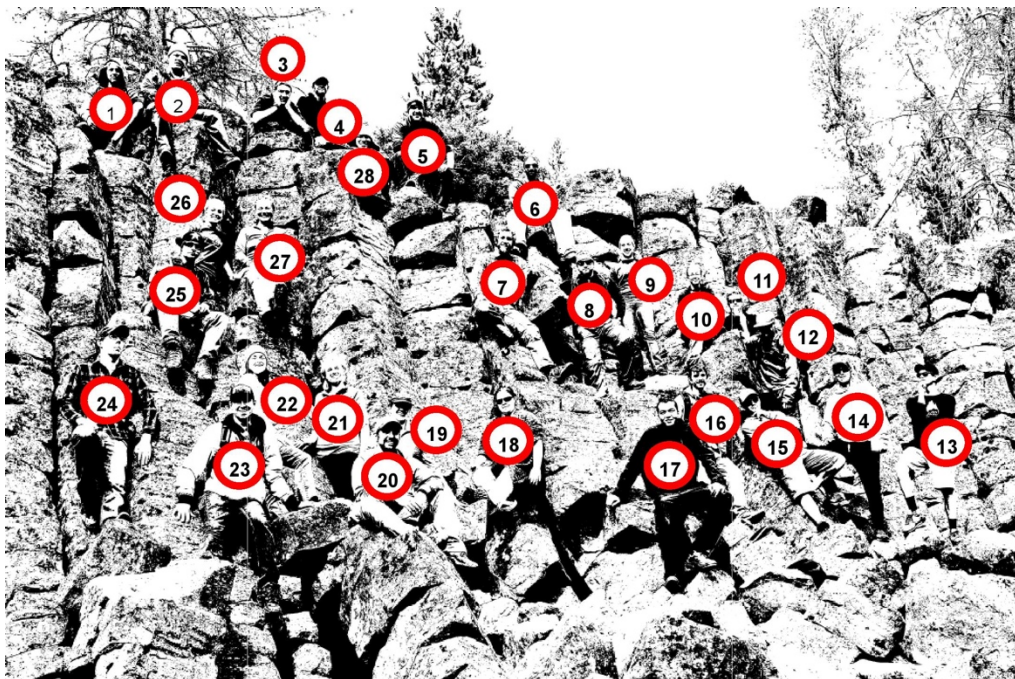
Geology Field Camp 2013, Largest enrollment since the early 1980s (Faculty member Jerry Magloughlin, first from left on back row). (Thirty-eight students, two TA's and five professors from Colorado State University's renowned Department of Geosciences spent five weeks hiking over mountains, exploring mines, and mapping the geological landscape across New Mexico and Colorado this summer. GEOL 436 is a rigorous capstone geology field course for all geology majors that combines what students have previously learned in the classroom and applies those lessons in a real-life setting. The course saw record enrollment this year as the major continues to attract new students excited to work in the growing field of geosciences, (from Warner College of Natural Resources Newsletter, Fall, 2013). Other faculty not shown who led the 2013 field camp were Sven Egenhoff, Jamie Kirkpatrick, Bill Sanford and John Ridley.



1990 Thanksgiving break field trip to Rio Grande Rift - Top row, from left Bruce Henry (student), Larry Burns (Geology faculty), John Stednick (WS faculty), Mario Mejia (student), ? (student) - Middle row, ? (student), Ellen Wohl (Geology faculty). Ben Hayes (student), Kathy Adenlof (student); Front Row Dave (Jogrensen) Harbor (student), Dorrie Panayotou (student)



2012 Fall Field Trip to Yellowstone Trip led by Jerry Magloughlin and Bill Sanford. (NOTE: See black and white photo below with names of each of the 28 students shown by number).



(1) Hunter Hayes, (2) Samuel Hockett, (3) Erik Raab, (4) Erik Phillips, (5) Jay Thomas, (6) Brian Gabel, (7) Zander Hamilton, (8) Matt Newcomb, (9) Monica Malinowski, (10) Rachel Yoder, (11) Kyle Basler-Reeder, (12) Justin Blumenthal, (13) Derek Witt, (14) Mitchell Sigler, (15) Chris Wenman, (16) Sam Thurlow, (17) Ian Hageman, (18) Crystal Rauch, (19) Eve Bugarin, (20) Matthew Ejtehadi, (21) Kaylie Griffin, (22) Nicole Kessinger, (23) Geoff Lee, (24) Andrew Groth, (25) Chris Bird, (26) Anna Hissem, (27) Amanda White, (28) Jacob Madecky (compliments of Jerry Magloughlin)

APPENDIX VIII - Chronological Listing of Dept. Heads and Selected Individuals

Roy G. (Major) Coffin (1912-1947) was a chemistry professor who taught the first formal Geology course in 1923 and continued to teach geology until 1946 when he hired Dave Harris to develop the geology program and department.

Dave Harris (1946-1975) shared an office with Roy Coffin in the Agronomy building upon his arrival Colorado A&M. Geology was part of the Agronomy Dept. at that time. Dave was the first department head of the newly created Geology Department from 1957-1965.

Helen McClure was a secretary in the Department of Geology from 1959-1975 and then in the Dept. of Earth Resources (formed by combining the Departments of Watershed Sciences and Geology) until she retired in 1979.

Scott Creely (1960-1968 Head, Department of Geology 1965-1968).

Bob Johnson (1967-1988) Head, Department of Geology from 1968-1973 and Head, Department of Earth Resources from 1979-1981.

Robert Dills (1958-1977) Watershed Sciences Professor and Dean of College of Forestry and Natural Resources from 1969-1977.

Bill Marlatt (1969-1991) First Head, Department of Earth Resources from 1973-1975.

Lary Burns (1970-1991) Dedicated teacher, geologist and mentor, deceased March, 1991.

Stanley Schumm (1967-1998) was one of the first University Distinguished Professors appointed in 1986.

Ted Chamberlain (1975-2003) Head, Department of Earth Resources from 1975-1979.

Hal Boyne (1979-1989) Head, Department of Earth Resources from 1981-1989.

Don Doehring (1975-1995) Acting Head, Department of Earth Resources from 1986-1987 while Hal Boyne was on sabbatical leave and Head, Department of Earth Resources from 1989 to 1995.

Frank Ethridge (1975-2005) Interim Head, Department of Earth Resources in 1989-1990 when Don Doehring was on sabbatical leave and acting Head, Department of Geosciences in 2003-2004 while Judy Hannah was on sabbatical leave.

Judy Hannah (1996-) Head, Department of Earth Resources from 1996 to 2003 and then continued as Head, Department of Geosciences until 2006. The Department of Geosciences was created in 2003 when the Program in Watershed Sciences became part of the newly created Dept. of Forest, Rangeland and Watershed Stewardship.

Sally Sutton (1992-) Interim Head, Department of Geosciences (2006-2007), Head Department of Geosciences (2007-2012).

John Ridley (2004-) Interim Head, Department of Geosciences (Fall 2012-Dec. 2013).

Richard Aster (2014-) Hired as Head, Department of Geosciences in an external search. He came to CSU from New Mexico Tech. where he was a Professor of Geophysics and Department Chair.

Ellen Wohl (1989-) Became the department's second (after Stan Schumm) University Distinguished Professor in 2017.

APPENDIX IX - Chronological List of Tenure-Track CSU Department Faculty

Major Roy G. Coffin (1922-1946)	Theodore C. Chamberlain (1975-2003)
David V. Harris (1946-1975)	Donald O. Doehring (1975-1996)
Ralph Davis (dates unknown)	Frank G. Ethridge (1975-2005)
Bob Ellingwood (dates unknown)	Eric A. Erslev (1983-2009)
Bob Beckett (dates unknown)	Ellen E. Wohl (1989-)
Bill Clark (dates unknown)	Sally S. Sutton (1992-)
Tom Bridge (dates unknown)	Judith L. Hannah (1996-)
Bill Laval (dates unknown)	Jerry F. Magloughlin (1996-)
Leo Brion (start date unknown-1957)	William E. Sanford (1996-)
Jack Campbell (1957-1974)	Dennis Harry (2003-)
Hank Holt (1957-end date unknown)	John Ridley (2004-)
John Welch (1959-1960)	Sven Egenhoff (2006-)
Ernie Wolff (1959-1970)	Derek Schutt (2008-)
Joe Weitz (1960-1983)	Michael Ronayne (2008-)
Scott Greely (1960-1968)	Sara Rathburn (2008-)
Malcolm McCallum (1962-1995)	James Kirkpatrick (2012-2014)
Jim Waltz (1965-1994)	Richard Aster (2014-)
Robert B. Johnson (1967-1988)	John Singleton (2015-)
Stanley A. Schumm (1967-1998)	List Stright (2015-)
Lary Burns (1970-1991)	Sean Gallen (2018-)
Tommy Thompson (1973-1995)	Daniel McGrath (2018-)

**APPENDIX X - Chronological Listing of Known Part-Time and Non-Tenure-Track
Geology Faculty**

Carol Ann Hodges (1967 – 1968)

Glenn Izett and Peter Lipman (1969 – 1970)

Bill Wilson (1970 – 1972)

Mike Harvey (1980 – 1989)

Joseph Butler (1991)

Michael Smith (1991 – 1992)

Sherry Oaks (1992-1994)

Deb Anthony (1992 – 2000)

David Mayo (1994 – 1995)

Linda Davis (1995 – 1996)

Andy Frank (1996 – 1998)

Nazli Nomanbhoy (1998 – 1999)

Andrew Warnock (1998 – 2001)

Sara Rathburn (2001 – 2008)

Richard Chalcraft (2002 – 2008)

Debra Krumm (2005 – 2006)

Donna Willette (2005, 2007, and 2012 – 2013)

Kaleb Scarbery (2009 – 2012)

Sean Bryan (2013-)

APPENDIX XI - Chronological Listing of Known Research Associates and Scientists

Randy S. Parker (1973 – 1975) Geomorphology Program

Mike Harvey (1980 – 1989) Geomorphology Program

Rich Markey (1996 – 2006; 2013-) AIRIE Program

John Morgan (1996 – 2001) AIRIE Program

Holly Stein (1998-) Director of AIRIE Program

Aaron Zimmerman (2001-) AIRIE Program

Stephanie A. O’Meara (2001-) NPS-GRI Program

John P. Graham (2001-) NPS-GRI Program

Trista Thornberry-Ehrlich (2002-) NPS-GRE Program

Heather Stanton (2004 – 2012) NPS-GRI Program

Jim Chappell (2004-) NPS-GRI Program

Gang Yang (2005-) AIRIE Program

Ron Karpillo (2006-) NPS-GRI Program

Guangping Xu (2008-) AIRIE Program

Katie KellerLynn (2008-) NPS-GRI Program

David Dust (2010-) Geomorphology Program

Svetoslav Georziyev (2012-) AIRIE Program

Gyana Tripathy (2012-) AIRIE Program

Dan McGrath (2015 – 2017) Glaciology and Geophysics

Andrew Darling (2015-) Geomorphology

APPENDIX XII - Major Events in the History of Geoscience at CSU

First formal course in geology taught in 1923 by Major Roy Coffin.

Geology major approved and Department of Geology formed in 1957 with six faculty members.
Dave Harris was appointed first department chair.

First B.S. Degree in Geology awarded in 1957

First M.S. Degree in Geology was awarded in 1964.

Departments of Watershed Sciences and Geology were combined in 1973 to form the Department of Earth Resources. Bill Marlatt was appointed first department head of the combined departments.

First Ph.D. Degree to a Geologist in Earth Resources was awarded in 1977 to Randy Parker.
One PhD was awarded in 1975 and one in 1976 in Earth Resources, but these were to Watershed Science students.

The Geology Program hosted the Meeting of the Rocky Mountain Section, Geologic Society of America in 1979.

Enrollment in Geology peaked in 1982 at 300 undergraduate majors. For several years in the early 1980s the Geology Program had to conduct two sessions of field camp back to back because of high enrollments.

The Geology Program at CSU hosted the 3rd International Fluvial Sedimentology Conference in 1985 and the Mid-Year Theme Meeting of the Society of Economic Paleontologists and Mineralogists (SEPM) in 1992.

Stanley Schumm appointed to the first group of University Distinguished Professors in 1986.

The Department of Earth Resources hosted a two-day "Schumposium" in November, 1996 in honor of Stan Schumm, University Distinguished Professor Emeritus of Geology at CSU.

Applied Isotope Research for Industry and the Environment Program (AIRIE) formed as a research unit within the Department of Earth Resources in 1996.

In 1999 Ed Warner (B.S., 1968) funded a teaching assistantship for the 99-00 academic year. Soon after Ed became involved in the annual fall field trip and funded a day or rafting for each trip. In May 2001 Ed agreed to endow two graduate teaching assistantships, one graduate research assistantship, and provide funds for continuing support of the Spatial Analysis Laboratory (SAL), and two endowed chairs in Geology.

National Park Service Geological Resource Evaluation Program (NPS-GRE), now the Geologic Resources Inventory Program (GRI), was formed as a research unit within the Department of Earth Resources in 2001.

The Alumni Advisory Council (now known as Geosciences Advisory Council) was formed in 2002 to promote, support and advise the Department of Earth Resources (now Department of Geosciences). Founding council members included Robbie Gries (B.S. 1966), David Kelley (M.S. 1985), Bruce Jones (M.S. 1964), Bob Stollar (M.S., 1969), and Ed Warner (B.S. 1968).

Department of Earth Resources became the Department of Geosciences and the Watershed Sciences Program merged with Forestry and Rangeland Science to form the Department of Forestry, Rangeland and Watershed Stewardship in 2003. The Ph.D. degree in Earth Resources was retained by the Department of Geosciences and all Watershed Sciences faculty have a joint appointment in Geosciences to supervise Earth Resources Ph.D. students.

The first chair in geophysics was filled in the fall of 2003 by Dennis Harry. The second chair in Economic Geology was filled in the fall of 2004 by John Ridley. At the time these chairs were established, Geosciences was the only department on campus with two endowed chairs and the only department in the Natural Resources College with an endowed chair.

The College of Natural Resources was renamed the Edward M. Warner College of Natural Resources in 2006 as a result of the largest gift ever to CSU and the largest gift ever to any Natural Resources college.

Geology Field Camp in the summer of 2013 was the largest since the peak enrollments of the early 1980s.

Warner College announces the anticipated construction of the Michael Smith Natural Resources Building, to be completed in 2018.