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Research Article

A history of the geology program at the University of Tennessee at Martin

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ABSTRACT

The teaching of geology has as long a history as The University of Tennessee at Martin has itself, extending back to 1901 when the first geology class was offered at the campus's original institution, Hall-Moody Institute, a small Baptist college. Geology, usually with geography, was offered as a service course to the primary programs of agriculture, education and, later, engineering. Faculty turnover during these formative years was frequent. When the school was acquired by the University of Tennessee in 1927 and became UT Junior College, geology remained a service course. Geology offerings had been expanding since 1947 and, in 1951, the school became the UT Martin Branch. Geology continued to expand and, in 1967, UTMB became the University of Tennessee at Martin (UT Martin). The groundwork was laid for geology, and geography, to expand, so that in 1972, geology established a B.S. degree granting program with three geology faculty members and a full curriculum. In 1975, geology and geography split from the Department of Physical Science to become the Department of Geology, Geography, and Physics. The subsequent evolution of the geosciences department and geology program through periods of expansion, contraction, and reorganization is presented.

KEYWORDS

University of Tennessee at Martin, Hall Moody Institute, department history, geosciences

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INTRODUCTION

The geology program at what is now the University of Tennessee at Martin (hereafter, UT Martin) was established 52 years ago in 1972; however, the first geology course taught occurred in 1901 when the school was called the Hall-Moody Institute. Although college education in Martin dates from 1927, UT Martin was not the first educational institution that used the current site and geology education was deemed essential from the beginning. To understand the establishment and evolution of the geology program at the UT Martin, we first must know the evolution of UT Martin from its inception as Hall-Moody Institute and how it arrived within the University of Tennessee system. In celebration of 2022 Sigma Gamma Epsilon 46th National Convention, hosted by the UT Martin Eta Alpha Chapter, this paper is a synopsis that celebrates the history of teaching geology and the geology degree program at UT Martin, with some inclusion of the geography, travel and tourism, physics, and meteorology concentrations where appropriate to understanding departmental history.

RESOURCES

University catalogs, journals, announcements, annuals, newspaper stories, historical documents (e.g., correspondences, annual reports, self-studies, external reviews, town histories), and personal testimonies were analyzed to chronicle the history of geology at UT Martin. The publications cited in this summary, including recorded interviews of surviving faculty members recorded in 2016, and additional historical photographs and documents that

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were consulted but not cited, are housed at Paul Meek Library on the campus of the UT Martin in the Office of Special Collections, in University Relations, and in the departmental files of the geology program housed in the Joseph E. Johnson EPS building. These documents and testimonies span over 124 years. The University's online database of *Addenda* articles, yearbooks, archival photographs, the department's faculty newsletter were used to gather information that served to highlight of the chronology of changes at UT Martin. Some source language and grammar may contain variations of spelling no longer in practice. Furthermore, personal testimonies and informal records should be taken with an appropriate air of subjectivity. Efforts were always taken to fact check subjective information. Over the years, what most colleges would refer to as their "catalog" has been referred to as "announcement," "journal," or catalog. Hereafter, any of the annual documents will be referred to as the catalog and cited by institution name and year (e.g., UTM, 2024); however, to save space and avoid excessive repetition, all citations are grouped within the same citation reference in the references cited. Due to space constraints, the history of student organizations will be treated elsewhere (Gibson and Hudson, 2024, this volume). Where the dates for a geology faculty member's birth and death are known, they are indicated.

HISTORY OF THE UNIVERESITY OF TENNESSEE AT MARTIN

The town of Martin, originally called Green Briar Glade, was named after William Martin in 1873 and began as a train stop on the intersection of the Nashville and Northwestern Railroad and the Mississippi Central Railroad (Vaughan, 1997; Melton, 2018). The importance of the construction and operations of railroads throughout rural West Tennessee cannot be overestimated. Many West Tennessee towns owe their founding and subsequent prosperity to the arrival of rail lines during the latter half of the 19th century.

In 1900, Ava Gardner Brooks, who lived a few miles west of present-day Martin in the Gardner Community, donated land on the outskirts of Martin to the Tennessee Baptist Convention for the purposes of opening a school to provide religious training (Hall-Moody Institute, 1901; Inman, 1960; Vaughn, 1997; Carroll, 2000; Dennis, 2009). The school opened as the Hall-Moody Institute (1900–1917), named for two locally prominent Baptist ministers. Hall-Moody Institute originally offered students curricula that spanned elementary grades to the equivalent of the first years of collegiate work. In 1917, Hall-Moody Institute changed its name to Hall-Moody Normal School reflecting a focus shift to teacher training as its primary focus. By 1923, Hall-Moody again changed its name, to Hall-Moody Junior College, reflecting curriculum expansion after World War I. However, declining enrollment and financial difficulties in the mid-1920s nearly resulted in the school's closing. So, in 1927, the Tennessee Baptist Convention made the decision to consolidate Hall-Moody with a similar institution, Union University, in nearby Jackson, Tennessee (Inman, 1960; Vaughn, 1997; Carroll, 2000).

This decision was not popular and motivated civic and political leaders in Martin to ask the State of Tennessee to allow the Hall-Moody facilities to be acquired by the University of Tennessee. University of Tennessee president Harcourt Morgan agreed to accept the proposition on the condition that the Martin community would acquire the existing property as well as additional land for future expansion. On February 10, 1927, Senate Bill Number 301, approved by Governor Austin Peay, established the University of Tennessee Junior College (UTJC). UTJC began operations with 120 students on September 2, 1927 (Inman, 1960).

UTJC nearly closed twice during its first quarter-century, first during the hard times of the Great Depression and again in the early 1940s when nearly all male students enlisted in the various branches of the U.S. Military (Inman, 1960; Carroll, 2000). Mirroring developments nationally, an influx of returning servicemen to UTJC in the post-World War II years, largely under the influence of the G.I. Bill of Rights, ushered in rapid growth both in enrollment and educational offerings. From 1934 to 1967, the school was led by Paul Meek providing stability in leadership.

In 1951, with the addition of four-year fields of study leading to a bachelor's degree, UTJC was redesignated the University of Tennessee Martin Branch (UTMB). In 1961, it was the first campus in the University of Tennessee system to begin racial desegregation of undergraduates (graduate schools at other campuses had begun desegregation in 1952). Until 1967, the academic units at the UTJC-UTMB campus were treated as offsite departments of their counterparts on the main campus in Knoxville, meaning that program governance was controlled by the flagship institution in Knoxville. For example, geology at UTJC was under administrative control of the geology program in Knoxville and faculty had to routinely travel across the entire state to

attend faculty meetings. In 1967, UTMB was granted equal status with the main campus in Knoxville and its presiding officer was granted the title of chancellor. The school's name was officially changed to The University of Tennessee at Martin (UT Martin or UTM) (Carroll, 2000). For a short time during a reorganization of science programs, geology was housed in a Department of Natural and Physical Sciences, but by the end of 1972 the Department of Geology, Geography, and Physics (GGP) was established. Regardless, the geology program had its roots in courses from the turn of the 20th century as geology was offered at each of the predecessor colleges to UT Martin.

TEACHING GEOLOGY

The Hall-Moody Years (1901–1927)

Geology was an integral part of the curriculum at Hall-Moody Institute, "a school for the masses" (Dennis, 2009) from the establishment of the school. Hall-Moody Institute was the first college-level school in Martin. According to the 1901–02 Hall-Moody Announcement (HMI, 1901 and succeeding catalogs) students could follow one of two curriculum pathways: "Classical College Course" or "Scientific College Course." The classical course was a four-year pathway in which geology (or political economy) was taken as the junior-level science course, but most of the curriculum was centered on the classics related to religious studies and public education (history, languages, religion). The scientific pathway, essentially a "junior college tract" with focus on sciences and nature, was a three-year program in which geology or physics satisfied the second-year science requirement. Geology was not listed for teacher preparation at this point. These first catalogs, called announcements or journals, were rudimentary, listing titles of courses only. They did not usually contain course descriptions, textbooks, or necessarily indicate which faculty were teaching specific courses (although some did). These early announcements published the names of individual students and the programs that they were pursuing. Geography was not listed in the first catalog, but a senior could take astronomy for their science requirement.

Attracting qualified teachers for courses was difficult in the early years of HMI, as indicated by the high turn-over rate of faculty. The requirement of a terminal degree (M.S. or Ph.D.) was not uniform for faculty. Often the expertise of the faculty member hired to teach geology was shallow as most faculty held specialties in other allied fields (e.g., geography, chemistry, etc.) and not specifically in geology. Many of the science faculty were part-time or shared with other programs; their day jobs often were at high schools. Undoubtedly, the rural nature of Martin during these early years was a hindrance to attracting and keeping candidates. The religious nature of HMI may well have also been a factor who taught the geology course, as well as its content. Geology was included as a service course to agriculture at HMI. This geologic content would have focused on minerals, rocks, weathering processes, and landforms (i.e., physical geology). Historical geology aspects (e.g., geologic time, evolution, age of the Earth, etc.) would probably have been considered too "controversial" and contradictory to HMI's religious nature. Finding qualified experts would have been difficult.

Early records are sparse as to who taught the first course to contain geology (or geography) at Hall-Moody Institute, but there is some indirect evidence that the most likely person was Ms. Frances Copass in the Fall of 1901, who headed HMI's Expression Department (Dennis, 2009). Ms. Copass' time at the school was a short five months (Carroll, 2000) as she was dismissed for not adhering to demands made by the school trustees for her to cease her frequent dating (perhaps as many as sixteen dates within a four-month period) and to better serve her duties as a study hall monitor (which she would evidently do coincident with the time that she would be teaching a 45-minute class in a different room). Expectations of female behavior were quite strict and draconian at this point in American history, especially in the rural deep South. The terms of Ms. Copass' termination eventually were taken to Weakley County Court (she lost that case) and later were appealed on her behalf in the Tennessee Supreme Court. That Court ruled that Hall-Moody Institute owed her $275, the amount she first sued for, which was worth about half of her annual salary (Carroll, 2000). It appears that the institute received both positive and negative publicity over the incident, especially considering the rise of feminism at this time in history. One local farmer declared that the monetary loss was the greatest investment made by Hall-Moody history because it publicized the high moral standards of the institute and its board of trustees (Carroll, 2000).

Despite the scandals associated with Frances Copass, science education quickly gained more support and prominence at Hall-Moody. In 1908, the campus opened its second instructional facility, the new Science Building (FIGURE 1; Dennis 2009). Furthermore, by 1909, HMI was conferring

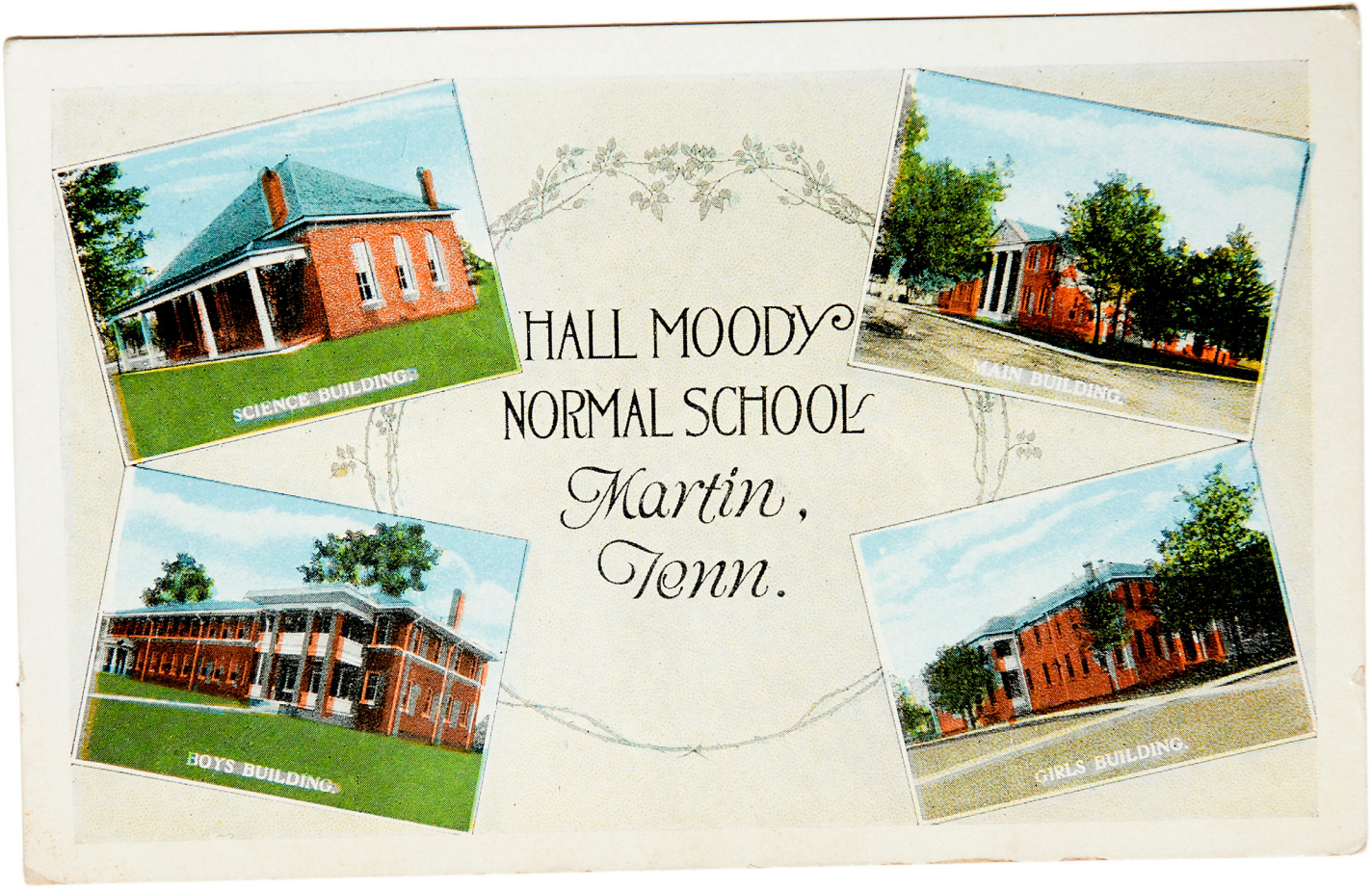

Figure 1: Postcard of Hall Moody Institute showing the Science Building (upper left), constructed in 1907 where geology and geography classes were taught (University of Tennessee at Martin Archives).

both A.B. and B.S. degrees and stressed mathematics and science (Dennis, 2009). By the 1911–12 academic year, the two curriculum pathways remained as they were in 1901 but, in the Classic Curriculum, General Geology was offered in the junior year. A textbook by geology icon James Dwight Dana (1813–1895) was used in this course. There is no information on the precise title, date, or edition, but the course emphasized "Earth composition and structure," and so the most likely book was probably one of the editions of Dana's "*Manual of Geology*" or "*A Text-book* (sic) *of Mineralogy*." The course description also indicated that Hall-Moody Institute had acquired collections of minerals and rocks for laboratory use. There was no indication from where the collections were obtained. Physical Geography was taught as a second-year course and geology was required for a secondary education teaching endorsement certification. The faculty member listed for teaching geology in that year was W.W. Dunn (B.A., A.B. in "modern languages and science"), who had been at HMI since 1904.

There were no changes in the trackways, teaching endorsement requirement s, courses offered, or textbooks used from the 1912–13 through 1914–16 academic years (HMI, 1912; HMI 1914); however, there was a high turn-over in instructors for geology. According to Dennis (2009), a new science lab that was completed in 1908, the second building on the campus, that was 24 feet by 30 feet in size and stocked with newly purchased equipment (specifically mentioned was a $17 barometer and an 18-inch globe). W.W. Dunn was not listed as the instructor in 1912–13. Instead, Nolan M. Stigler (B.S. Assistant in Science and English) and Jas. T. Warren (B.S., A.B., V.P. Science, Mathematics, and English) were listed as faculty. By the 1913–14 academic year, Nolan M. Stigler had departed leaving Jas. T. Warren to teach geology (HMI, 1913). In the 1914–15 academic year, H.E. Watters (A.M., D.D.) was a new hire to serve as HMI President and had a background in science, literature, mathematics, the Bible, and teacher training. It is unclear whether Watters taught geology (HMI, 1914). The available faculty in sciences changed

again for the 1915–16 academic year with the departure of Watters and Warren (HMI, 1915). L.D. Rutledge (A.B. from Valparaiso University) was hired to teach courses in science, math, English, Latin and H.C. Witherington (B.S., A.B.) to teach science, Latin, French, and German, but there was no indication as to exactly who taught the geology classes. There is little information available on what prompted the high turn-over rate of faculty during this decade, except for the fact that the school was still relatively new and was establishing itself.

1916 saw the first significant change in the geology offerings at Hall-Moody. Geology of Tennessee was listed as an available course curriculum pathway in the Announcement (HMI, 1916), but was not included in the list of courses being offered in either semester. Additionally, geology was listed within the Department of Natural and Physical Sciences, not under the Department of Science. "Professor Wooldridge" was listed as teaching Physiography as a junior-level course for the "monor" (sic), as well as General Geology and Economic Geology (junior standing) for the major. This catalog (called a journal) marked the first time that specific instructors were listed individually for the courses that they taught. Wooldridge also served as co-president, professor of biology, philosophy, and education. He held a B.S. and A.B. from Bethel College (Jackson, Tennessee) and an A.M. from Potomac University (Washington, D.C.). L.D. Rutledge and H.C. Witherington were not listed in the faculty for 2016.

Geology at Hall-Moody began an unexplained hiatus with the 1917–18 academic year (HMI, 1917). The courses remained on the books, but not on the semester offering lists. Presumably, Wooldridge left the school unexpectedly as he was not listed as faculty anymore. Only one person, N.M. Stigler, was listed as science faculty. Physical geology remained missing from the 1918–19 course (HMI, 1918) offerings (although Geology of Tennessee was listed with biology and physical geology in the course listing). No faculty member was specified for geology. Stigler was still on-staff along with J.W. McKay, a new hire in science subject to "military duty." Presumably the hiatus of geology and geography offerings can be explained by America's involvement in World War I. McKay earned his B.S. and A.M. from Mississippi College in 1918. 1919 saw the beginning of summer catalogs at Hall-Moody. Neither geology nor geography were offered during the summer of 1919 or the summer of 1920 (HMI, 1919; 1920).

No catalog is available for the 1919–20 academic year, but the post-war 1920–21 catalog reflected several changes (HMI, 1920). Geology was then listed along with physiology as a second-year science class in the "Academic or High School" curriculum pathway. Within the Department of Science section, geology was listed as a Fall Term course, with "physiography, general geology, and geology of Tennessee" offered. Within the faculty listing section of the catalog, there was no one listed as teaching any geology courses specifically. Instead, one faculty member, Henry Carl Witherington, was listed as teaching all science and Latin courses.

Things became even more confusing in the 1921–22 catalog with geology being listed under "Grammar School" as a second-year course, but not included in the Junior College listing (HMI, 1921). As with the year before, the catalog listed "Fall Term – Physiography and including general geology and geology of Tennessee" as being offered. The general geology course was listed as being taught by Albert Tennyson Barrett, who was also the Dean of Education, with degrees from the University of Rochester, Mary Sharp College, and Union University. Interestingly, Barrett also served as the superintendent of schools for Chattanooga, Tennessee. The chair of the science department at this time was H.C. Witherington and both men were also listed as co-chairing the philosophy department. This same arrangement remained for the 1922–23 academic year (HMI, 1922); however, Oscar Lee Rives, who was a teacher in nearby Obion County, with his A.B. degree in science and history from Union University, joined the staff at Hall-Moody. For the first time, the room where the courses were to be taught was listed in the catalog (Room 11). There was no geology offered in the summer of 1923, but geography was listed with Mrs. James T. Warren as the geography faculty teaching it (HMI, 1923). The course descriptions and offering s remained the same for the 1923–24 academic year, but with a change in faculty. Barrett and Witherington were still listed as science faculty, but Oscar Rives was now gone. In his place was Ira Dance, who was listed as "science and coach." Dance was a Hall-Moody alumnus, the first one to return to teach science at Hall-Moody, with a B.S. from Carson-Newman College in East Tennessee in 1923. He was also listed as a "rural pastor." No geology course was offered for the summer of 1924, but Witherington taught physical geography in Room 3 and Miss Lois Bowden taught geography in Room 16 (HMI, 1924). She was a Hall-Moody graduate candidate in the "Demonstration School" at Peabody School for Teachers in Nashville.

Geology was listed in the 1924–25 catalog; however, it

appears that no courses were offered, and no instructor was listed as teaching geology (HMI, 1924). One new science faculty, W.E. Wilson, was listed as "science and coach." Wilson was a West Tennessee Normal School graduate with an A.B. from Union University and served as the Crockett County High School principal. Although still listed in the catalog, geology was not offered in the summer of 1925 (HMI, 1925).

The 1925–26 catalog is reflective of a fiscal storm brewing for Hall-Moody for 1926. The official catalog in the UT Martin archives actually is a 1924–25 catalog with numerous handwritten strikeouts and corrections. For example, the listing of the campus president was changed from J.T. Warren to William Hall Preston, reflecting the turnover in administrative leadership in 1926. Geology was not listed anywhere in the catalog, nor was there any faculty identified as teaching any geology course. Witherington (now promoted to dean) and Bowden were still the listed science faculty. W.E. Wilson was gone, but coach H.K. Grantham (A.B. from Union University and a teacher at Millington High School and at Newbern High School) was listed as "science and physical education." Geology was not offered in the summer of 1926. A new science faculty member was listed in the faculty section for the summer term. H.G. McCorkel, also a Hall-Moody alumnus, was listed as "science and mathematics." McCorkel was an Obion High School science and math teacher with some training at Union University and one semester from Peabody Teacher College. Although no records were located to indicate any direction connection, one wonders what impact the 1926 "Scopes Monkey Trial" would have had on the teaching of geology and the faculty teaching sciences at HMI. This trial was a major legal event in Tennessee and nationally. Many of the religious organizations in Tennessee were participants.

In the Spring 1926 catalog, geology was not listed in the catalog as a full course (HMI, 1926). Under the "science" section, the catalog indicated that one year could be devoted to "physiography" with one-half unit being physiography and one-half unit being geology, but no instructor was named. A.T. Barrett was listed as "emeritus," Miss Lois Bowen was absent from the listing altogether, leaving only H.K. Grantham as the faculty member that could have been responsible for this course. He was also listed as teaching chemistry, which was probably his primary training field.

1926 was Hall-Moody Institute's final academic year before being absorbed into the University of Tennessee. The instability of faculty, along with a continually growing debt without new sources of income (e.g., failed efforts at fundraising, etc.) resulted in the decision to either close the doors to HMI or merge it with another institution (Carroll, 2000; Dennis, 2009). While there was a valiant effort to raise funds for HMI, the Baptist State Convention decided that the best option was to merge HMI with Union University (Carroll, 2000). HMI ceased operations at the end of that year and the property was transferred to The University of Tennessee (Inman, 1960; Dennis, 2009).

The University of Tennessee Junior College Years (1927–1952)

Departments of Instruction

The campus began classes on Sept. 2, 1927, as The University of Tennessee Junior College (UTJC, 1927). Much of what was Hall-Moody Institute was assimilated by Union University in Jackson, Tennessee (Inman, 1960; Dennis, 2009). Construction at UTJC on a new science building, Science Hall, began immediately and was completed in 1929. That building, which became known as the "Sociology Building" also housed the anthropology program and still stands today. UTJC started without a science department per se and geology courses were listed as in "departments of instruction" for a few years (UTJC, 1927).

Partly because of the transition to UT and partly in response to the Great Depression, UTJC, and the geosciences at UTJC in particular, entered a period of stagnation that would go on for 14 years during which no geology or geography courses were taught. The Depression caused reductions in operating budgets and a 10% reduction in faculty salaries that did not bottom-out until 1933, when the operating budget at UTJC fell from $90,000 to $36,000, the number of faculty was reduced to seven, and enrollment plunged to 92 students (Carroll, 2000). It would take the rest of the decade for UTJC to fully recover from the effects of the Depression. Undoubtedly, geology offerings suffered during this period of time.

Finally, in Fall 1941, Geography 171 and 172 – Elements of Geography were offered as 8 a.m. lectures in Room A-7 of Science Hall (UTJC, 1941) and were taught by Jannie Miller. Miss Miller had a B.S. in education and was an instructor of elementary education primarily. She taught these courses until 1942 when Marion Preston Laster (B.S, M.A. in education), the principal of Dresden, Tennessee High School, was hired as instructor of geography and took over

the classes for the Spring 1943 semester only (UTJC, 1942). For the 1943–1944 academic year, only geography was taught by Miss Lavella Mae Corley, who also taught mathematics (UTJC, 1943). Miss Corley was now listed as a part-time faculty and the catalog listing for geography did not have her name listed as instructor (the instructor was listed as "Mr. -----"). Mrs. Corley, she evidently had married, was listed as the instructor for the 1944–1946 academic years (UTJC, 1944). Catalogs for the period of 1942–1945 indicated that there were many professors teaching classes related to "war training" (e.g., UTJC, 1945).

Physical Sciences Department

After an absence of nearly two decades, geology returned to the campus shortly after World War II and it did so in a big way. At this point in time, the college began to hire highly trained experts with specific disciplines who were allowed to devote their full-time efforts to their respective fields of study. It also began to offer more sophisticated, college-level geology and geography courses. In Fall 1947, UTJC hired Allington Paul Wishart, Sr. (1921–1996); A.B. geology, B.S. and M.S. in education from UT Knoxville, Ph.D. in education from University of Texas—the first graduate from UT Science Education Center—as instructor of geology and geography (Wishart, 1981; UTJC, 1947). Wishart became the first full-time geology instructor (specifically trained in geology) in the school's history and proved instrumental in laying the groudwork for establishing the geology major later in time. Wishart's first course was Geology for Engineering Students (Geology 121), along with General Geology for Students of Agriculture (Geology 131), demonstrating the service support role that geology played to the more established programs at the school (UTJC, 1947). At this time, geology was housed in the School of Liberal Arts within the Physical Sciences Department. Geology was not offered during the summer of 1947; however, Wishart did teach geography that summer, which included a listed field trip as part of the course (UTJC, 1948). 1948 is the first year that geology was specifically listed as a faculty position within the catalog. Wishart was listed as "instructor of geology and geography." Additionally, 1948 was the first year that geology was specifically listed as a required course in a curriculum and not an elective (UTJC, 1948). Agriculture students were required to take Geology 131 (General Geology for Agriculture Students) during their sophomore year and civil engineering students were required to take Geology 121 (General Geology for Engineering Students) in their sophomore year. The civil engineering geology requirement was dropped in 1951 (UTJC, 1951).

Wishart, who preferred to go by A. Paul Wishart, was the first trained geologist to be hired and provided stability and growth to geology during the 1950s and stewarded geology during the shift from UTJC to University of Tennessee, Martin Branch. Even though the geology degree program was still years into the future, he could be considered the "founding father" of the program due to the groundwork he laid. He clearly intended to expand geology into a major (see more below) as there was a general geology curriculum listed in the 1949 and 1950 catalogs (UTJC, 1949; 1950). The geology course sequence expanded to include Geology 111, 112, and 113 (in a quarter system) with Geology 113 a "historical geology" course. This numbering sequence remained in place until 1988. Interesting, this sequence did not satisfy requirements for a "liberal arts degree" at this time; however, Wishart got it accepted for the 1951 catalog (UTJC, 1951). Beginning with the 1950 catalog, Geology 131 (General Geology for Agriculture Students) became a prerequisite course to the first soils course, Soils 213 for agriculture majors (UTMB, 1950). For most of the next decade, there were no changes in geology course offerings and Paul Wishart remained the sole geology and geography instructor until 1952 (UTMB, 1952).

In 1959, Wishart was promoted from instructor to assistant professor of geology and geography. After laying the foundation for what would become a geology program at UTMB, Wishart left UTMB and returned to UTK in 1961 to become professor of education in the Department of Curriculum and Instruction, where he remained until his retirement in 1986. Also in 1986, Wishart received the National Science Teachers Association award for science education and a University of Tennessee National Alumni Association Public Service Award. Wishart passed away in 1996. The College of Education at UT Knoxville established the Dr. A. Paul Wishart, Sr. Scholarship in his honor.

The author (MAG) had the honor of meeting Paul Wishart during his graduate school days at UT Knoxville working toward his Ph.D. in geology. Wishart, who had obtained his A.B. in geology from UTK and had briefly been a petroleum geologist in Colorado early in his career, would occasionally visit the UTK geology department, especially to listen to some of the speakers in the weekly colloquium. As my dissertation topic was focused on the paleontology of West Tennessee, we occasionally conversed about the geology of the region (or perceived lack of geology as the region is "flat" compared to East Tennessee) and he shared his UT Martin

history with me, including his time at UTMB. He highlighted West Tennessee geology in his courses. Wishart felt that students, and especially his beloved science teachers, should know that West Tennessee was home to interesting and important geology (e.g., Reelfoot Lake, fossil deposits, glacial deposits, and the unusual course of the Tennessee River). He shared with me that he was the "first geology professor" on the campus and that he "helped to organize" the department at UT Martin with that goal in mind. When the Department of Geology, Geography, and Physics (GGP) was proposed to be established in the late 1960s (see below), Wishart was one of its early supporters. He was proud enough of this achievement that he highlighted it in his Tennessee Academy of Science presidential address (Wishart, 1981).

The University of Tennessee Martin Branch Years (1952–1967)

Physical Science Department

In 1952, the state legislature passed House Bill 264 which changed the UTJC name to the University of Tennessee Martin Branch (UTMB), and a massive program and facilities expansion effort began. UTMB was empowered to offer bachelor of science degrees (Carroll, 2000). The UTMB 1952 catalog marked the first year that pictures of geology and geography classes and faculty were included in the catalog (UTMB, 1952, p. 21); however, no geology pictures were included in the next two catalogs. Summer 1953 became the first year that General Geology 131 was offered as a summer school course (UTMB, 1953), aimed at agriculture majors.

1953 saw another faculty change with the addition of Gilbert H. Boyd (1935–2019), who was hired to teach both geology and geography as Paul Wishart was listed as being on a leave of absence. Boyd earned his B.S. and M.S. in geology from UTK where he worked under UTK geologist James G. Walls from 1952–1956. In 1955, he completed his master's thesis "A geologic study of the Chickamauga formations or Raccoon Valley, Roane County, Tennessee" (Boyd, 1955). While teaching geology at UTMB, he was an offensive line assistant football coach. Boyd later became successful in the petroleum industry working for Texaco, Hunt, and Tatham oil companies. According to his daughter, when he started his own petroleum company in 1971, he called it United Texas (UT) to honor is alma mater and his time at UTMB (Sarah Boyd Jimenez, personal communication, 2024). In 1994, Boyd and his wife Jo Ann, now living in Houston, Texas, established an endowment in the Department of Geology (now Earth and Planetary Sciences) to honor Walls. The author met Gill Boyd in 1989 and the discussed the geology program. Boyd was in Tennessee for a UTK football game and visited GGP as part of the trip. Boyd participated in a field trip lead by the author to the Devonian fossil beds near Parsons, Tennessee. Like Wishart, Boyd was proud of his time at UT Martin and how the program had grown. In 2016, Boyd donated numerous specimens from his geology collection to UT Martin geology.

In 1954, geology was still housed within the Department of Physical Sciences at UTMB, which was under the chairmanship of A. Norman Campbell (UTMB, 1954). Geology was listed as satisfying requirements for a liberal arts degree from UTMB and geology was now listed within the education curriculum to satisfy requirements for endorsement in secondary education (UTMB, 1954).

For 1955, Wishart was again listed as "on leave" and Boyd remained the sole geology and geography instructor until the 1956 academic year when he was replaced by George F. Beatty for one academic year. Beatty received his B.S. from Ball State University (1949) and his M.S. from the University of Illinois (1951). The catalog (UTMB, 1955) listed Boyd as "resigned." Beatty had returned to Ball State to obtain his Ph.D. (1958), where he remained as a geography professor until his retirement in 1983 (American Association of Geographers (AAG), 2004).

Geology, and geography, was then taught by Assistant Professor Horace Greely McDowell, Jr. (1922–1997: B.S., M.A. University of Nebraska) for the 1957 academic year. Inexplicably, a Max S. King (B.S.) was listed in the faculty listing as being a geology and geography faculty, but all the courses were listed as being taught by McDowell (UTMB, 1957) and by 1958, King was listed only under the chemistry faculty (it is not clear if his listing as a geology faculty was a catalog error). For the 1958 academic year, McDowell taught all the geography courses, including the new Geography of Tennessee, but he was listed as co-teaching the geology course with John T. Neece (M.A.) who was identified in the catalog as a professor of chemistry (UTMB, 1958). Neece was listed as teaching geology for the one year and resigned by the 1962 academic year (UTMB, 1961). McDowell left UTMB and moved to the University of Chattanooga , which became the University of Tennessee at Chattanooga in 1969. For 1959, no geology or geography instructor was listed (e.g., "Mr. ----"), as McDowell had resigned (UTMB, 1959).

The early 1960s was a time of expansion for UTMB as the student population had risen significantly. This was a direct

result of a 1956 committee report to the UT Board of Trustees that recommended that UTMB should expand its liberal arts programs, including physical and biological sciences, primarily in support of the anticipated move to become a degree-granting four-years institution (Inman, 1960). Senate Bill 31 by the Tennessee legislature in 1957, signed by Governor Frank G. Clement, provided the funds to expand UTMB significantly and placed control of future new degree programs under the UT Board of Trustees (Inman, 1960).

In 1960, the Department of Physical Sciences had new co-chairmen in Lloyd A. King and Henry C. Allison as Campbell had returned to the chemistry faculty (UTMB, 1960); however, he returned as chairman in 1961 (UTMB, 1961). 1960 began with William Wayne Chester (1932–2023; M.A., St. Louis University) being hired to replace McDowell. In the 1960 catalog, Chester was listed as the instructor for all geology (Chester was a geographer by training and claimed to have been a "self-taught geologist") and geography courses; however, he was not listed as part of the departmental faculty on the same pages, suggesting that his hire was considered temporary at first (UTMB, 1960). According to Chester (Chester, recorded interview, 2016), he was hired by Dr. Harry Houff from a pool of six other candidates. Chester had been a cartographer for the U.S. Navy with his most notable contribution having been to produce one of the first physical models for Antarctica. Chester's hire came after the catalog revision deadline as geology and geography courses listed the instructor as "Mr. ----" (UTMB, 1960), but listed Chester as instructor for the next year (UTMB, 1961). Geology was not required for engineering or education students, but Geology 131 was still required for agriculture students.

As noted by Carroll (2000), the late 1950s and early 1960s were a period of extensive growth for UTMB. In 1957, UTMB had over 800 students and by 1960, the student population was risen to 1,123 students. As a result of the Soviet Union's 1957 Sputnik achievement and the perception of the U.S. was falling behind the Soviets in science, the U.S. launched an expansive national endeavor to expand science education and research (e.g., Geiger, 2004). To accommodate this growth of science and engineering programs, as well as the influx of students to UTMB, new building construction began. In 1960, the three-story Engineering and Physical Sciences (EPS) building (Figure 2A) opened on the site of the old Mechanical Arts Building. The 1962 catalog highlighted the opening of the "EPS Building," which was depicted on the cover of the catalog (Figure 2; Issue Cover; UTMB, 1962). Chester moved all of the geoscience courses and materials onto the 2nd floor of the new EPS Building which then housed all "non-biological" sciences. In 1969, EPS was expanded by adding a T-shaped extension to the west side of the building (Figure 2B). Chemistry occupied the third floor and engineering occupied the first floor. EPS has remained the home of geology even after the construction of the Latimer-Smith Science Building in 2022.

The 1963, and 1964, UTMB catalogs reflected the expansive changes in science at the higher education level as it was a significantly longer catalog (UTMB, 1963). Several changes occurred in the catalog, including the omission of student names within majors that had been so common in earlier catalogs. The EPS building was featured in the 1963 catalog, especially the fact that it was "air-conditioned" (including a photograph). Faculty listings moved to the back of the catalog, where they remain to this day. For the first time, geology was listed as a high school entrance requirement satisfier. Oddly, within the endorsements for secondary education, geology topics (but not any specific geology course) were listed to satisfy "physical science or Natural (sic) science" requirements. There was still no geology required in the engineering program this academic year. Coincident with the above change in the 1963 catalog was that there was a "physical science" sequence entitled "Elements of Physical Science 101, 102, 103" which had geology and meteorology content within it. Several faculty were listed as teaching the course sequence including Henry C. Allison and Charles R. Graham (physics), Glen Bremer (chemistry), and Wayne Chester (geosciences). That year Chester was listed as teaching all geology and geography courses, eight courses in total (UTMB, 1963).

The 1964–65 academic year was a banner year for geology at UTMB, and changed the direction of geology for the years that come. Chester, having been promoted to assistant professor, had a heavy teaching load (nine courses) and enrollments were up. It was time for another trained geologist to handle the geology program and enable its growth. It is also notable that the long-running Geology 131: General Geology for agriculture students was dropped from the course offerings and a geology course was no longer required for the Agronomy 131 soils course in the agriculture curriculum.

In 1964, the first of "three founding fathers" of the geology degree program, William Thomas "Tom" McCutchen (1939–), was hired as an instructor of geology to relieve

Chester's heavy teaching load by taking over the introductory geology sequence (Geology 111, 112, 113), which was one of the sequences that satisfied science requirements for a liberal arts degree (Figure 3A). McCutchen earned his B.S. in geology from Berea College in Kentucky (1957) and his M.S. in geology from Florida State University (1959), after which he completed one year toward his Ph.D. at the University of Texas at Austin (1959–60). McCutchen was an instructor at Miami Dade Junior College from 1961 to 1964, before coming to UTMB. His geologic specialty was mineralogy, thus making him the first "hard rock" geologist in the program. By summer 1965, McCutchen had been promoted to assistant professor and taught the first summer geology offering in over a decade (UTMB, 1965). Almost immediately, McCutchen's introductory classes rose to over 150 students, and his first teaching class included future UT Martin Chancellor Nick Dunagan (McCutchen, recorded interview, 2016). McCutchen would remain on the faculty until his retirement in 2000 after 39 years of teaching in higher education (Ogg, 2012; Shaw, 2016). McCutchen had the distinction of being the first "published" geology faculty member having published an article on glacial moraines in models in the 1959 Bulletin of the Geological Society of America (McCutchen and Tanner, 1959). He also had the distinction of being the first geology faculty at UTMB to publish a paper while on the faculty. In 1966, he published an article on using set theory to better teach rock classifications in the Journal of Geological Education (McCutchen, 1966). He also completed mapping of some crystalline rocks in Edgefield County, South Carolina in 1965 (McCutchen, 1970). In 2017, McCutchen was honored by the endowment of the Tom McCutchen Geology Scholarship, spearheaded by 1971 UT Martin geology graduate Walter Parrish (Shaw, 2016).

University of Tennessee at Martin Years (1967–)

Department of Physical Sciences

In 1967, the University of Tennessee Martin Branch was

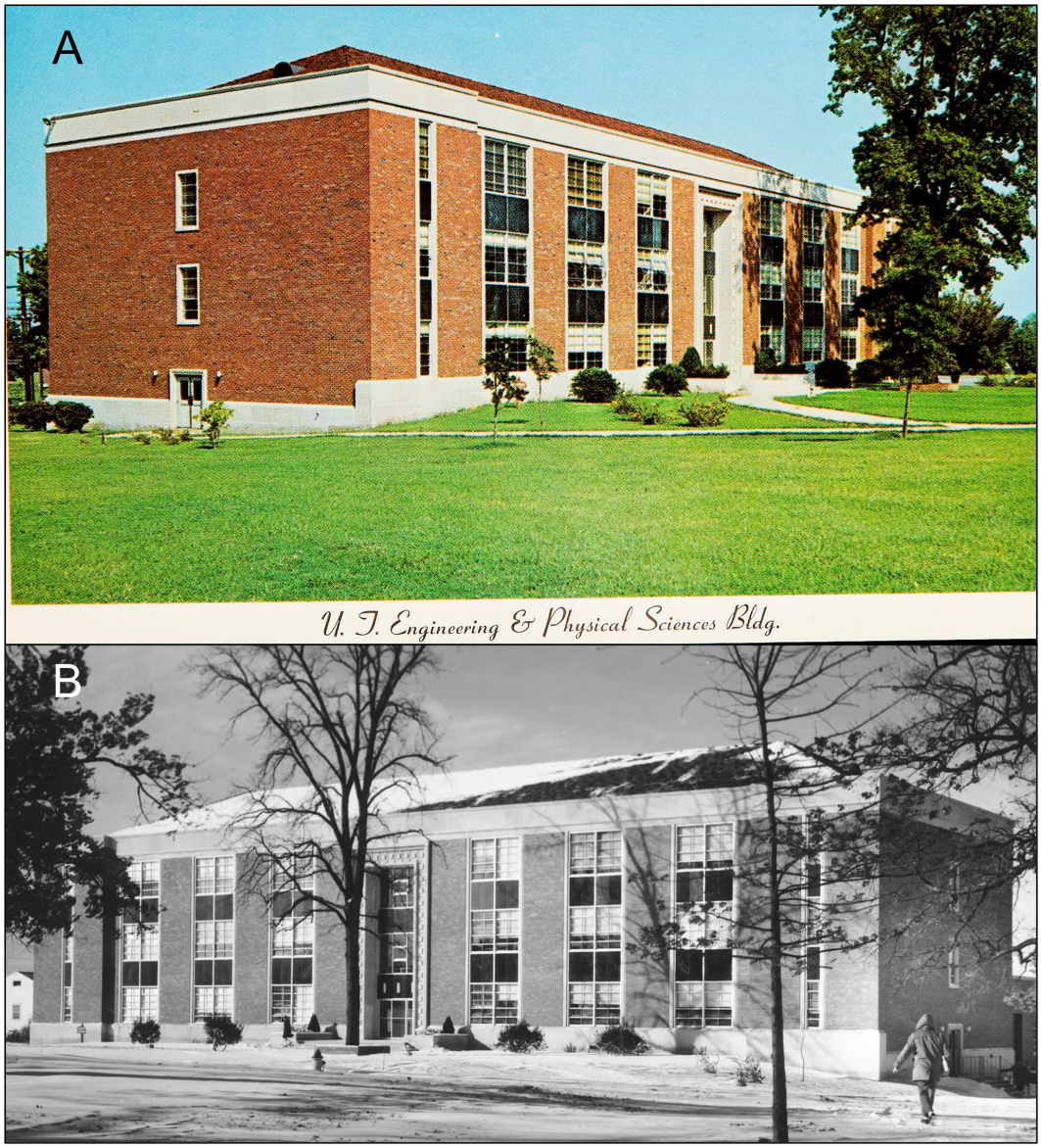

Figure 2: Photographs of the Engineering and Physical Sciences (EPS) Building. (A) EPS soon after it was constructed in 1960. (B) 1970s photograph of EPS after an addition was added (just visible to the right side of the photograph). Geosciences occupied the second floor. In 1991, EPS was rededicated as the Joseph E. Johnson EPS Building. EPS has been home to the geosciences since it opened in 1960 and is scheduled for a second renovation in 2025 (Photographs supplied by University of Tennessee at Martin Archives).

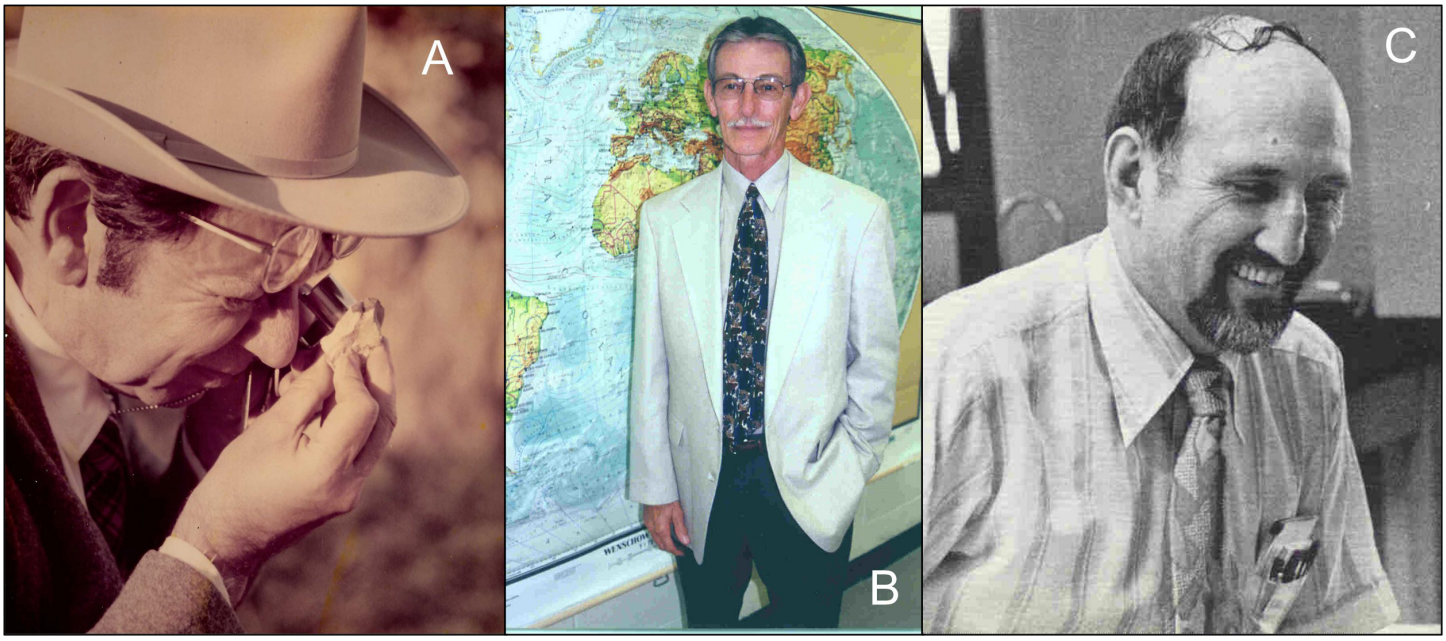

Figure 3: The "founding fathers" and "first generation faculty" of the geology degree in the Department of Geology, Geography, and Physics program at UT Martin. (A) William T. McCutchen, (B) Kenneth V. Bordeau, and (C) Ernest Blythe, Jr. (Photos supplied by University of Tennessee at Martin Archives).

renamed The University of Tennessee at Martin (UTM, UT Martin) with passage of Senate Bill 488 by Governor Buford Ellington (Carroll, 2000). Longtime chancellor Paul Meek, chancellor from 1934–1967, was replaced by Archie Dykes. Geology and geography remained within the Department of Physical Sciences, but changes were looming. Beginning that year, UT Martin catalogs no longer listed which faculty member was teaching a specific course. In the summer of 1967, the course numbering system changed and the quarter system geology courses became Physical Processes 1110, Geomorphology 1120, and Historical Geology 1130 (UTM, 1967).

Figure 3B depicts Kenneth V. Bordeau (1923–2011), regarded as the "second founding father" of the geology program at UTMB, who was hired in 1967 (after finalization of the 1967 UTMB catalog, which included the 1968 academic year as well), thus expanding the geology program to two full-time faculty members (Gibson, 2022). Bordeau was a World War II veteran stationed in the European Theater and married his wife "Elvi," who was an Allied translator during the Nuremburg trials, while overseas. The G.I. Bill funded Bordeau's higher education and he received his B.S. from the University of New Hampshire and M.S. and Ph.D. from the University of Oklahoma. He was a micropaleontologist trained under the influential R.W. Harris. Before he came to UT Martin, Bordeau worked for Union Producing Company and then spent three years in Libya, North Africa working for American Overseas Petroleum Company. He was the first Ph.D. level geologist to be hired at the school and the first "soft rock" geologist. Upon his arrival to UT Martin in 1967, Bordeau expanded the paleontology offerings by adding several micropaleontology courses normally only found in graduate programs, including biostratigraphy, which became known as the "scourge of the geology program" because of the amount of memorization of the scientific names and geologic ranges of important biostratigraphic fossils. He was also well-feared for his grading system on exams. In his system, it was possible to get a negative exam score! While at UT Martin, he continued his research on conodonts from the Ordovician Fernvale Formation, which had been his dissertation topic. The geology department still houses his vast micropaleontology fossil collection (with tens of thousands of specimens) within the Bordeau Micropaleontology Collection. With his passing in 2011, and that of his wife in 2013, his estate was donated to UT Martin and the Kenneth V. Bordeau Paleontology Endowment was established as their legacy. It remains the largest donation to the geology program in the history of the school (Gibson, 2022).

The 1969 academic catalog for UT Martin noted that geography had an A.B. major as well as a B.S. major in geography, with sixteen courses in the program; however,

geology offered no major or degree at this time (UTM, 1969). Geology was expanding, however, as McCutchen had added Geology 3170: Crystallography and Methods of Mineralogy and Bordeau added a two-quarter sequence, Geology 3210–3220: Invertebrate Paleontology (UTM, 1969).

In Fall of 1969, the third "founding father" of the geology program (FIGURE 3C) was hired, Ernest W. Blythe, Jr (1930–2005; B.S., in Industrial Management, Tennessee Technological University, M.S. Geology, UT Knoxville). At the time, Blythe was also working toward his Ph.D. in geology from the University of Tennessee Knoxville coincident with his first few years of teaching at UT Martin, which he completed in 1974, working under Kenneth R. Walker (see Gibson [2007] for Blythe's GSA memorial). Blythe's dissertation research centered on the Ordovician stratigraphy of the Carters and Hermitage formations exposed in Sequatchie Valley of Tennessee. Blythe would expand his research interests while at UT Martin to include the stratigraphy of the Reelfoot Lake region and earthquake hazards associated with the New Madrid Seismic Zone. Much of this research was in collaboration with Richard Stearns of Vanderbilt, and resulted in the publication of several guidebooks to the region, including the popular Tennessee Geology Survey, Reports of Investigations 36 (Gibson, 2007).

Also in 1969, the geology program, still without a degree pathway (although it did offer a minor in geology), expanded even more with the addition of a second historical geology course at the sophomore level (Geology 2130: Historical Geology), Mineralogy 3180, Lithology 3310, Geology of Central and West Tennessee 3340, Structural Geology 3370, Biostratigraphy 4210, and Principles of Geomorphology 4510 (UTM, 1969). The addition of these courses laid the foundation for the formal approval of a B.S. degree program in geology, which was accomplished by the beginning of the 1972 academic year. Oddly, for the 1971 year, the department was listed as the Department of Natural and Physical Sciences in the yearbook (FIGURE 4A). It was listed as the Department of Physical Sciences and Chemistry in the 1972 catalog (UTM, 1972). The first student club, the GeoClub, was established during this transition. See Gibson and Hudson (2024, this volume) for the history of clubs and student professional organizations in the geology program at UT Martin.

Several new courses were developed in 1971 and added to the 1972 geology curriculum catalogs (UTM, 1972) including Micropaleontology 3250, Special Problems in Geology 4000, Sedimentation-Stratigraphy 4110, Principles of Economic Geology 4410, and Field Geology 4440, all of which were listed as awaiting final approval by the Faculty Senate for the 1972 catalog. Also listed as waiting for final Faculty Senate approval was the removal of Historical Geology 2130 with the replacement course being Advanced Historical Geology 3120, a junior level course (UTM, 1972). Moving historical geology to an upper division level was innovative for its day as nearly all other schools used historical geology as the second half of their introductory sequence and as groundwork for most upper division geology courses. The first night course in geology was offered by Blythe in 1971 (UTM, 1972). It is an interesting event as the course was Structural Geology 3370, which was a major's course listed in the UT Martin graduate catalog (see below for a discussion of graduate courses).

The first complete degree granting geology class of students matriculated in 1972. Majors were required to complete the introductory sequence (Geology 1110, 1120, and 1130), Crystallography and Methods in Mineralogy 3170, Minerology 3180, Invertebrate Paleontology 3210 and 3220, Lithology 3310, Structural Geology 3370, Sedimentology-Stratigraphy 4110, Biostratigraphy 4220 with an additional eight hours of upper division geology electives (UTMB, 1972). This curriculum was typical to the curriculum for most undergraduate geology programs across the country at that time, and mirrored what was being offered at UTK (and had been subject to the approval of the UTK geology faculty). By the 1973 academic year, Bordeau had been promoted to associate professor (UTM, 1973).

Additionally, geology hired its first laboratory assistants for the introductory course sequence to help relive the increased teaching loads of the faculty (UTM, 1972). Mrs. Gloria C. Mansfield (1945–2009; B.S. and M.S., UT Martin), a 1973 alumna of the expanded geology program at UTMB, who later earned her M.S. in education, was hired as the first laboratory instructor in the program. Also serving as laboratory instructors were Fred Davis (M.S., UT Knoxville), who later became a science teacher in Gibson County, and Walter C. Parrish (1952–; another UTMB geology alumnus). All three returned for the 1973 academic year. Mansfield, the longest running geology lab instructor (35 years), oversaw the laboratory sequences until 2007 when she was forced to retire due to declining health.

Department of Geosciences and Physics

1974 and 1975 would prove to be years of transition for both geology and geography. Individually and separately, the

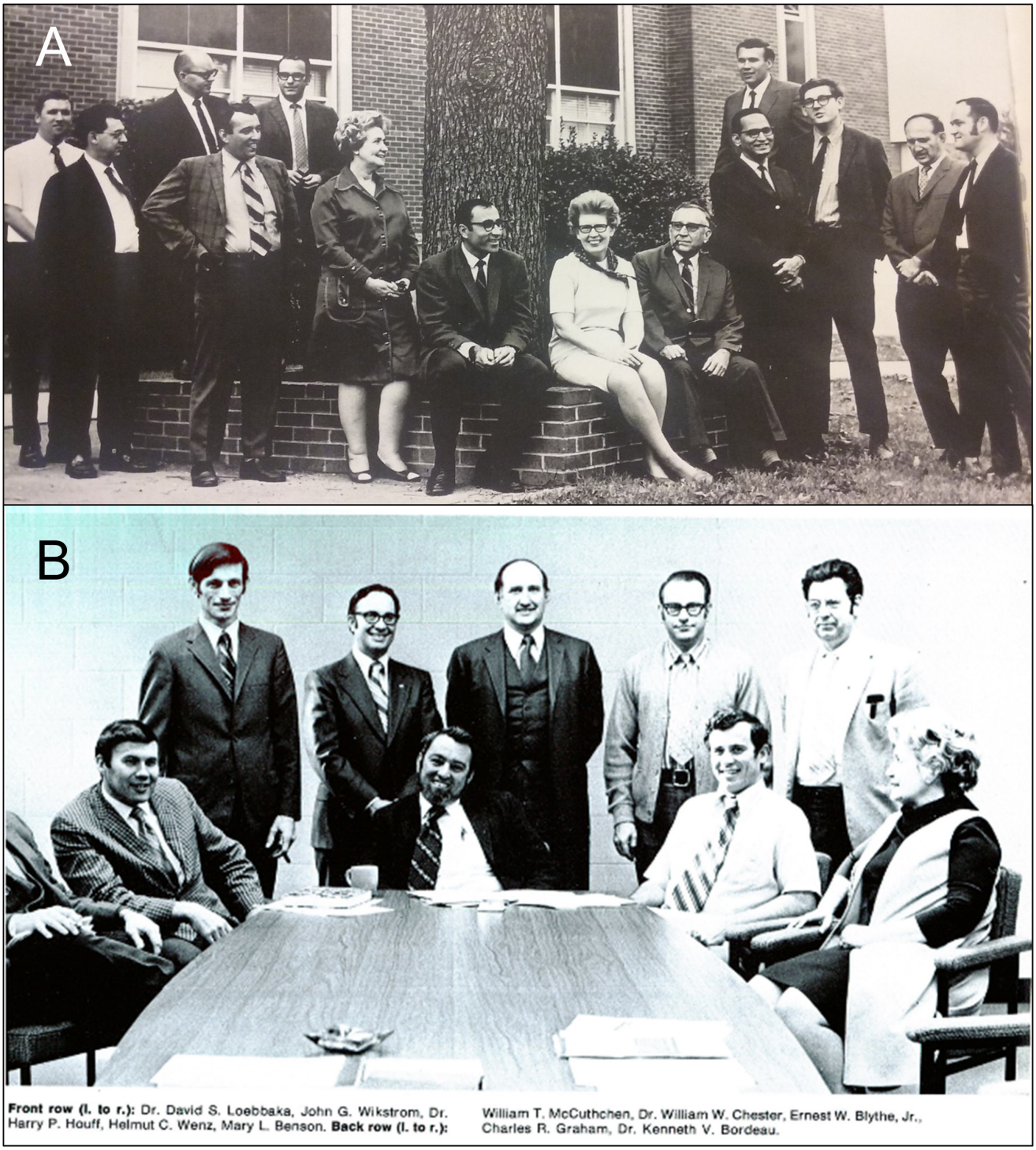

Figure 4: Photographs of the earliest iterations of the geosciences. (A) Department of 1970 interim taken in front of the EPS Building (1971 Spirit Yearbook). Geologists Ernie Blythe is second from the right and Ken Bordeau is second from the left on the front row. William McCutchen is not pictured. The other members were geography and physics faculty. (B) 1974 GGP faculty meeting in EPS conference room (1975 The Spirit Yearbook). Standing (left to right) are William McCutchen (geology), Wayne Chester (geography), Ernie Blythe Jr. (geology), Charles Graham (physics), Ken Bordeau (geology). Seated (left to right) are John Wikstrom (geography), Harry Houff (physics, chair), Helmut Wenz (geography), and Mary Benson (physics). David Loebbaka (physics) is seated to far left partially pictured (Photos supplied by University of Tennessee at Martin Archives).

fledgling geology and geography programs had low numbers of majors and graduates, and was falling under scrutiny. The geography and geology faculty (FIGURE 4B) determined that a combined degree "umbrella" would be prudent and submitted a proposal in May of 1975 to merge the two degrees into a single geoscience degree program, still within the Department of Physical Sciences (UTM, 1975). The report noted that, if successful, the UTM geoscience program would be the first such merger of geology and geography within Tennessee. There was little change to each discipline's degree curriculum requirements.

The proposal was accepted and approved; however, with modification. Geology and geography were effectively removed from the Department of Physical Sciences (which underwent other changes) and geology and geography were elevated to being a new department (UTM, 1976). There was no change in the physical location of geology or geography (still located on the second floor of the EPS building). The department office was established in Room 222 of the EPS building, which was also the outer office suite for the physics faculty, as it was determined that the physics faculty, including astronomy, would be included in the newly formulated department. It should be noted that there was no major in physics at this time, nor has a major in physics ever been established. Physicist Harry Houff became the first chairman of the department.

The 1976 academic year catalog listed, for the first time, the Department of Geosciences and Physics (UTM, 1976). By 1978, Bordeau had been promoted to full professor and Blythe and McCutchen to associate professor. Also in the new umbrella geosciences department were department chairman Harry P. Houff (physics), Davis S. Loebbaka, Henry C. Allison, Mary Benson (physics), Wayne Chester (geography), Charles R. Graham (physics), Helmut Wenz (geography), and John G. Wikstrom (geography) (UTM, 1978).

The major changed to a B.S. in Geoscience, with four concentrations. Option A – Earth science concentration required a variety of geology, geography, and astronomy courses with upper division electives. The Option B – Individualized are a of concentration was subject to the approval of the geoscience faculty and the Dean and designed to provide maximum flexibility in curriculum design for a student. Option C – Geography Concentration was the primary geography major's option and Option D – Geology Concentration was the primary geology major's pathway. For Option D, aspiring geology students were required to complete the Geology 1110-1120-1130 introductory sequence followed by the original B.S. geology curriculum. No minor was offered in the geology concentration within the geoscience degree. Geology added several courses including the return of a course for engineering students (1210 Engineering Geology), Survey of Petroleum Occurrence and Development 2990, and Earth History and the Fossil Record 3110 (UTM, 1976).

The rest of the 1970s and early 1980s were a period of relative stability in the geology program. However, in 1979, a reorganization of the University resulted in the Department of Geoscience and Physics being reassigned from the College of Liberal Arts to the newly named College of Arts and Sciences. In 1987, geographer Helmut Wenz received funding for a travel study trip to Venezuela that would be the precursor to the very successful travel-study program in the department for the next several decades (see below). Geologists McCutchen and Blythe participated in the trip to study (their first international travel for the program). McCutchen assumed the role of acting department chair from 1988–1989.

The next major change in faculty occurred in 1988 when Bordeau unexpectedly retired at the end of the academic year after 21 years of teaching. Michael A. Gibson (1957–) was hired becoming the first of the "second generation" geology faculty (the last geology faculty had been hired in 1969). He earned his B.S. in geology from the College of William and Mary, an M.S. in geology from Auburn University, where he taught for one year, and his Ph.D. University of Tennessee Knoxville. Gibson's Ph.D. research centered on the paleoecology of the Lower Devonian Ross Formation in West Tennessee. With the hire of Gibson, geologic research production increased significantly, and he was considered the program's "first research hire" (McCutchen, personal communication). Over the years, his research interests expanded to include the geology of Belize, Central America and Quintana Roo, Mexico, the Reelfoot Lake region, and ultimately the Cretaceous Coon Creek Formation (Gibson, 2024A). He was also active at the national level in the Paleontological Society and National Association of Geoscience Teachers, winning the Neil Minor Award in 2007 (Byerly, 2008). He was one of the founders of the Tennessee Earth Science Teachers association (Gibson, 2024B, this volume) and helped establish Tennessee's state fossil (Gibson, 2024A). He also served as president of the Tennessee Academy of Science (Gibson, 2010). Gibson

remained at UT Martin for 35 years, making him the second-longest running geology faculty member in the history of the department.

Gibson added additional paleontology offerings to the program by adding Paleobiology 351 in 1989 and Paleoecology 471 in 1990. After teaching it once, Gibson dropped Bordeau's Biostratigraphy in 1990. Geology of Tennessee 334 returned to the curriculum as an elective in 1996 (UTM, 1996), along with Geodynamics 371, which was a course that focused on geophysics applications in geology, Geohydrology 440, Special Topics in Geology 481, and Senior Research 490 (UTM, 1996).

Blythe had become the founding director of the UT Martin Honors and Scholars programs in 1981, where he would remain until his retirement in 1997, although he continued to teach sedimentology and stratigraphy until 1990. As the Honors and Scholars programs grew, his time commitment to those programs grew as well. In 1990, Blythe moved to the Honors and Scholars programs full-time. Gibson took over teach structural geology and a new sedimentologist was sought. Blythe passed away in 2005 (See Gibson, 2007 for his GSA memorial).

The middle 1990s was a time of faculty turnover in the department. Geographers John Wikstrom (who taught geography from 1970–1995) and Wayne Chester (who taught geology and geography from 1960–1995) both retired. Cultural geographer Jefferson Rogers was hired in 1995 and meteorologist Mark Simpson was hired in 1996, both originally in temporary positions, as their replacements. Geology needed need of another faculty member to cover its expansion and Blythe's move out of the department.

Changes in department leadership transpired as well. For the 1988 academic year, McCutchen served as acting chair and for the 1990 academic year, physicist David Loebbaka served as interim chair and oversaw the hiring of a new department chair, Robert P. Self, who became the first geologist to chair the department. Self also filled the faculty position vacated by Blythe and the second person in the "second generation" of geology faculty.

Robert P. Self (1940–2019; A.A. Pasadena City College, B.S. and M.S. University of Oklahoma, Ph.D. Rice University) assumed the mantle of Department Chair in 1990 (see Gibson [2020] for Self's GSA memorial). Self, a sedimentologist, had retired from Nicholls State University in Thibodaux, LA, after nineteen years of service, which included serving as their department chair from 1980 until the Nichols State geology department closed down in 1990. For his master's degree at Oklahoma, Self studied under Charles J. Mankin, doing his dissertation on the Permian Duncan Sandstone. After one year at Florida State University working toward a Ph.D., he transferred to Rice University in Houston, TX to study under Robert Lankford. For his dissertation, Self studied the petrology of Holocene age carbonates on the modern beaches of Veracruz, Mexico. While at Nichols State, he developed an interest in gravel deposits of the Citronelle Formation along the Gulf Coast. When he moved to UT Martin, he expanded that research to include the Paleogene and Neogene gravels of West Tennessee, publishing several papers, including one paper that postulated a new explanation for how the Tennessee River changed its course to flow northward (Self, 2000). In addition to teaching sedimentology and stratigraphy, Self added Environmental Geology 341 in 1990 and Oceanography 310 to the UTM curriculum in 1991 (UTM, 1990; 1991). Self served as the chair of the department until 1994 when he stepped down to assume full-time teaching responsibilities; he remained part of the geology faculty until his retirement in 2007 (Gibson, 2020). After his retirement, Self relocated to central Florida, where he continued to teach geology for Ocala Community College until his passing in 2019.

Department of Geology, Geography, and Physics

In 1992, the department underwent a name change to become the Department of Geology, Geography, and Physics (GGP) to give greater name exposure to the individual disciplines (UTM, 1992). Physicist Harry Houff was elected as chair of the department from 1991–1996. Physicist David S. Loebbaka became chair of the department in 1995 and served until Harry Houff returned as interim chair for the 1999 academic year (UTM, 1990–1996). Houff retired in 2000.

During this time the geography program added a concentration in Travel and Tourism under the leadership of geographer Helmut Wenz. The popularity of this program grew rapidly and many of the international trips were cooperative ventures with faculty in geology and with cross-listed course numbers. These travel-study courses included trips to Europe, Africa, Central America, South America, as well as Japan, Mexico, and Canada. The Travel and Tourism Club was established in 1997 (see Gibson and Hudson, 2024, this volume). The Belize, Central America trip became a yearly offering through the late 1990s and early 2000s.

In 1991, Gibson traveled to Japan as part of the UT

Martin – Hirosaki University sister school relationship. This resulted in sedimentologist Kotaro Kamada of Hirosaki University coming to GGP as a visiting professor for the 1993 academic year. He taught courses on the geology of Japan and seismology.

As noted above, in 2007, Bob Self retired. Following the tradition of informally renaming rooms in the EPS building to honor retiring faculty, the geology field equipment storage room that is outside of EPS 204 was renamed "Self Storage" in his honor.

Stan P. Dunagan (1970–) was lured away from Austin Peay State University to become UT Martin's third sedimentologist. Dunagan was the first tenure-track faculty member who was also an alumnus of the same UT Martin geology program. Dunagan graduated from UTM in 1993 and entered the Ph.D. program at UT Knoxville under Kenneth R. Walker, the same professor who mentored Ernie Blythe, graduating in 1998. His research focused on lacustrine and palustrine carbonates from the Morrison Formation (Upper Jurassic) in Colorado. Dunagan assumed most of Self's courses (except Oceanography which went to Gibson). Over the years, Dunagan's research focus continued in sedimentology, often collaborating with Gibson, and geohydrology. Dunagan enhanced the travel opportunities for students in the program by routinely running field trips within the U.S. and internationally, including Central America, Iceland and Africa, as part of the UT Martin Travel Studies program.

Geology underwent a major revision of its curriculum in 1996 including the introductory geology sequence (UTM, 1996). The introductory geology sequence used to satisfy entrance into the geology major, and to satisfy general education (the GenEd) requirements in science, would now consist of Physical Geology 111 and Applied Geology 112. This was a direct response to many students telling the faculty that if they had only known about the geology major earlier, they would have majored in it. Most students taking the introductory sequence to satisfy GenEd science requirements waited until their junior and senior year to take geology. Another issue facing the geology program was the rotation schedule of classes. Most upper division course were only offered on a every-other-year basis, which created difficulties for students scheduling require classes.

Applied Geology 112 was designed to be a modified version of environmental geology that would provide students with exposure to geology topics most relevant to their lives as citizens. It was felt that this change, away from a traditional geology sequence to one that introduced environmental topics (e.g., global change, medical geology, engineering geology, etc.), would increase recruitment of new geology majors by exposing them to these topics earlier in the academic progression. Geology majors could not use the Applied Geology 112 course to satisfy their degree requirements. Historical Geology 113 remained at the introductory level for the time being, but was targeted toward geology and education majors.

The geology degree required Physical Geology 111, History of the Earth 113, Mineralogy 318, Igneous and Metamorphic Geology 331, Structural Geology 337, Principles of Paleontology 351, Sedimentology 441, Principles of Stratigraphy 412, and Methods in Field Geology 462–463, along with an additional 6–9 hours of geology electives. This sequencing was standard for most geology programs nationally. This curriculum would remain steady until 2000, when one addition to the required geology curriculum was made. Career Exploration and Development 200, for one credit hour, is added as a vehicle to help geology majors work on skills such as writing mechanics and career portfolio development (UTM, 2000).

The UT Martin celebrated its 100th anniversary beginning in 2000, with Chancellor Phillip Conn at the helm (Conn had replaced Margaret Perry as chancellor, who retired in 1997.) Also in this year, UT Martin reorganized its colleges within the University. The School of Arts and Sciences was reorganized such that GGP was now moved into the newly formed College of Engineering and Natural Sciences (CENS) with engineer Doug Sterrett as the Dean. The GGP office moved out of the "physics suite" to the newly remodeled Room 215, a more centralized location within the department with more space.

Due to Harry Houff's stepping down as department chair (1998), and having an interim chair for two years, and followed by geologist Tom McCutchen's retirement in 2000, the GGP was in need of both a new chair and a "hard rock" geologist. At that time, McCutchen was the longest running member of the geology program, 36 years, and the last of the "founding fathers" to retire. Upon his retirement, the faculty wanted to provide him with a memorable sendoff, so the Outstanding Senior Geology Major Award was renamed the William T. McCutchen Geology Award in his honor. As noted earlier, this award was later endowed by alumnus Water Parrish and remains the largest geology award given annually

to a geology major. A favorite of the students, McCutchen was known for his great sense of humor. When initially asked if he would like EPS 204, the introductory classroom, named in his honor, he jokingly said to rename the faculty men's room for him instead… and that is just what happened, beginning a tradition in the department to that survives to this day.

In 1997, the University hired geologist Christopher I. Chalokwu (1952–) as Vice Chancellor for Academic Affairs, becoming the first geologist to serve in the upper administration at UT Martin. Chalokwu earned his B.S. and M.S. in geology from Northeastern Illinois University and his Ph.D. from Miami University. Chalokwu did not carry regularly scheduled teaching duties in the geology program at UT Martin; however, he participated in numerous geology events. The geology program had now grown to five faculty; however, this is short lived as Chalokwu left UT Martin in 2000 to accept a position at St. Xavier University, Chicago.

The early 2000s was another time of turnover in GGP. Geologist Aley K. El-Shazly (1962–) joined the department in 2000 becoming the program's third chair. Egyptian-born El-Shazly earned his B.S. in geology from the University of Alexandria, Egypt and his M.S. and Ph.D. in geology from Stanford University. El-Shazly was a geochemist and metamorphic petrologist by training, so he assumed the "hard rock" position vacated by the retirement of Tom McCutchen in addition to his duties as a department chair. El-Shazly served as chair until 2002 when he is resigned from the chair's position and assumed full-time teaching responsibilities. Geographer Jefferson S. Rogers (1962–) became interim chair in 2002. In 2007, Rogers became the chair of GGP, the first geographer to chair the department (UTM, 2007). Rogers remained the chair of the department until 2009 when the program is removed from the CENS to be a program within the College of Agriculture and Natural Sciences (see below).

In 2005, El-Shazly left UT Martin to accept a position at Marshall University in West Virginia. The "hard rock" position was again vacant. Gibson and Dunagan covered the hard rock classes for one year. Structural geologist Elizabeth A. McClellan (1953–) joined the faculty for the 2007 academic year as the third "hard rock" geologist. McClellan earned her a B.S. from the University of South Alabama, a B.S. and M.S. in geology from the University of Alabama, Birmingham, and had just finished her Ph.D. from the University of Tennessee Knoxville, where she worked under the iconic structural geologist Robert Hatcher. While at UT Martin, McClellan continued much of her research on the structural relationships and tectonics of the Appalachians. McClellan was the first female faculty geologist in the program's history.

In 2006 (UTM, 2006), geology restructured its course offerings by moving the historical geology course to become History of the Earth 340 and added a new paleontology course entitled Fossils: History of Life 325 to capitalize on the very large fossil collection the University had just obtained from Vanderbilt University.

Beginning in 2005, GGP faculty Gibson and Lionel Crews (astronomy) became the natural science experts tasked with helping to design the natural history exhibits for a new museum-park to be constructed in Union City, the Discovery Park of America (DPA). Their natural history committee worked with design firms and the Kirkland foundation to obtain over $2-million worth of fossils, mineral, and rocks for indoor and outdoor exhibits (e.g., Discovery Park of America (DPA), 2019). The DPA, which opened in 2008, features many of UT Martin's collection of minerals, rocks, and fossils on loan to the park and includes a mosasaur skeleton discovered by a UT Martin student on an expedition to Kansas to obtain specimens for the DPA. The relationship between the DPA and UTM resulted in geosciences having a dedicated, funded, natural history internship at the DPA that has served as a career pipeline for geoscience students upon graduation. Gibson continued to serve as a consultant to the staff at the DPA into his retirement.

The 2007 academic year saw the next major change in the geology curriculum with a total restructuring of the course numbering system (UTM, 2007). Numerous revisions over the years, compounded with a Registrar's stipulation that no course number that was removed could be reused for ten years, had resulted in a disjointed system of course numbers that students found confusing for advising. A new numbering system was devised in which all required geology core courses would end in "0" (e.g., 110, 120, 130, etc.) and all geology elective courses would end in "5" (e.g., 315, 345, etc.). Non-major's courses like Engineering geology retained course numbers ending in a "1" (e.g., 121). Honors sections were added to the introductory sequence for the Honors Program students (e.g., Geology 110H, Geology 120H). This numbering system is still in effect.

Geology 200: Career Exploration was removed from the geology curriculum and replaced with Geology 210: Methods in Geoscience. This course had a mirror section in the geography curriculum and was team-taught by Gibson

and Rogers. The course was primarily a course in how to conduct scientific research, write scientifically, and included other skills needed by professional geoscientists (e.g., photography, oral speaking, etc.). Geology of Tennessee was renamed Tennessee's Geologic and Culture Landscape 365, cross-listed with the geography program to replace their Geography of Tennessee course, and became the second team-taught course by Drs. Gibson and Rogers. The entire state of Tennessee was traversed as part of the course, which demonstrated the role that geology and landforms played in the history and culture of Tennessee (Gibson and Rogers, 2010).

In 2008, the geology program expanded again with the hire of Thomas A. "Lan" DePriest (1974–) as the new lab instructor. Gloria Mansfield (1945–2009) had served as the geology lab instructor until her health declined and forced her to unexpectedly retire in 2008. DePriest earned a B.A. in environment geography from the University of Memphis (1997), a B.S. in geology from UT Martin (1999), a M.A. in curriculum and instruction from the University of Mississippi (2005), followed by a Ed.D. in educational from Union University (2009) and a Ph.D. in Earth science from the University of Memphis (2018).

The Department of Agriculture, Geoscience, and Natural Resources (2008–Current)

Beginning in 2007 and culminating in 2009, the largest global financial crisis since the Depression—The Great Recession—gripped economies around the world (e.g., Weinberg, 2013). The impact on higher education was far reaching. Faced with a financial crisis, the University of Tennessee System looked to save money by downsizing and by removing or restructuring "low producing" programs to survive the financial crisis. In Fall of 2008, the UT Martin administration created a committee, Academic Program Discontinuance Committee (APDC), to address this issue on the UT Martin campus. This committee, along with Dean of the College of Engineering and Physical Sciences Doug Sterrett, identified the GGP as program to cut and unceremoniously informed the GGP faculty and staff in November of 2008, just days before their Thanksgiving recess. Some changes were immediate, and others were to take effect at the end of the academic year. Immediately, GGP chair Rogers worked with the faculty to produce a document in defense of the department that highlighted the accomplishments of the department and its importance to the mission of UT Martin, in particular noting how the discontinuance of the program would likely cost UT Martin more money than it would save (APDC minutes, February 3, 2009; February 13, 2009; March 5, 2009).

The same day of the announcement to the GGP faculty by Dean Sterrett , the Dean of the College of Agriculture and Applied Sciences (CAAS), James Byford, contacted the geology faculty with a hopeful proposition. Byford recognized the utility of geology, and the meteorology courses in geography, to the CAAS Department of Agriculture and Natural Resources program. Byford presented a proposal to the chair of that department, Jerry Gresham, who took the proposal to his faculty a few days later, to merge geology and geography with agriculture and natural resources. The agriculture and natural resources faculty were enthusiastically receptive to the proposal. By spring 2009, the University administration had also signed off on the merger. In his last e-mail to the GGP faculty on June 16, 2009, Rogers explained the changes that were now coming: Effective Wednesday July 1, 2009, the Department of Geology, Geography, and Physics (GGP) on the UT Martin campus was dissolved and its units reassigned to other departments. The geology and geography programs, and their faculty, were to be absorbed into the newly renamed Department of Agriculture, Geosciences, and Natural Resources (AGN) under agriculture faculty Jerry Gresham as chair. The "P" of GGP, physics, was briefly stated to move into engineering, but ultimately was combined with chemistry into a new Department of Chemistry and Physics. GGP chair Rogers (chair from 2002–2009) resumed his duties as a full-time faculty member in geography and GGP's administrative assistant, Janice Lee, left UT Martin. GGP's department office in 215 EPS was closed-down and administrative duties moved to the AGN office in 256 Brehm Hall under the AGN administrative staff. All EPS spaces occupied by geology and geography remained under their control.

In 2011, the leadership for AGN underwent its first change since the arrival of geosciences into the department two years earlier. Jerry Gresham became the dean of the college (CAAS) and the Department of AGN faculty selected AGN faculty member Tim Burchum as interim chair. Burchum took a position at Arkansas State University in 2013. AGN faculty member Wes Totten became the chair of AGN in 2014 and has remained in that role. During this span of time, Dean Gresham retired (2013) and was succeeded by Todd Winters, who remains the college dean to this day. Dean Gresham passed away in 2017.

The move to AGN proved to be beneficial for both the geology and geography programs in terms of resources and budget, both of which increased significantly in the years after the merger. Agriculture was the largest program on the UT Martin campus, which is a land grant school. Geosciences were traditionally STEM, and usually was housed in science colleges elsewhere, so there was a period after the transition that the geosciences at UT Martin struggled to maintain its STEM status and image. Regardless, the move to AGN provided more money, space, and other resources that could not have been achieved otherwise. Additionally, AGN benefitted from the addition of a meteorology concentration in 2011 (UT Martin had collected climate and weather data since 1939 (UTM, 2011; Grimes, 2014). As geology was part of the GenEd science core in the liberal arts degree in the College of Engineering and Natural Sciences (CENS), AGN, in a different college, now had access to the money generated by these courses.

In the spring of 2009, McClellan announced that she would be taking a position at Radford University in Virginia. Gibson once again taught minerology and structural geology and Dunagan taught igneous and metamorphic petrology. For Fall of 2011, Benjamin P Hooks (1978–) joined the geology program as its fourth "hard rock" geologist. Hooks earned his B.S. in geology from Allegheny College and his M.S. and Ph.D. in geology from the University of Maine. His dissertation topic revolved around the geodynamics of exotic terrane accretion in southeastern Alaska. Hooks remained at UT Martin until 2016, when he left UT Martin to work in the private sector.

Angela Van Boening (1980–) became the fifth "hard rock" geology faculty member in 2017. She had a dual geology and geography B.S. from Northwest Missouri State University, a M.S. in geology from the University of Missouri, and was finishing her Ph.D. from the Texas A & M University at College Station when hired (completed in 2020). She was originally hired as a three-year instructor, but became tenure track in 2020. Along with her expertise as a structural geologist, Van Boening had developed research in geoscience education involving geologic learning and cognitive science principles. Her dissertation focused on how geology undergraduates used gestures to convey information and illustrate ideas when they were describing and explaining geologic features.

Rapid turnover of the laboratory instructor position became an ongoing issue for geosciences. By 2010, Lan DePriest had shifted roles in the program and was now responsible for the growing online and extended campus offerings of the geology introductory sequence. Geology the first dual enrollment and online science courses at UT Martin. Also, UT Martin had satellite centers in Selmer, Parsons, Bolivar, and later Sommerville and Jackson State Community College. DePriest became the program's traveling educator.

Mary Varnell Jubb, (1982–) joined the department in 2010 becoming the program's third laboratory instructor. She earned her B.S. in geology from UT Chattanooga and her M.S. in geology from UT Knoxville having studied structural geology under Robert Hatcher. Jubb left the program after just one year and Eleanor Gardner (1985–) became the program's fifth lab instructor in 2011. Gardner received her B.S. from St. Agnes Scott and a M.S. in geology from the University of Georgia where studied the evolution of birds under the mentorship of Sally Horn. She left the program in 2016 and was succeeded by Claire Landis. Landis (1986–) earned her B.S. in geology from the Tennessee Tech University and a M.S. from the University of Wyoming, where she worked in the planetary geology field. She left UT Martin in 2017, and was replaced by Audrey Pattat. Pattat (1992–) had earned her B.S. from Tennessee Tech University and her master's from Texas Tech University in Lubbock, TX.

Even though the geology program saw several changes in faculty, 2009–2018 were relatively stable years in terms of the courses offered in the geology program, with a few notable exceptions. In 2010, Marine Geology 415 was added to the geology curriculum, capitalizing on Gibson's teaching as an adjunct summer faculty for the Dauphin Island Sea Lab, Alabama (2004–2018).

In 2018, the geoscience faculty began a major overhaul of the entire geosciences program in response to declining student recruitment for the major, and as an attempt to modernize the course offerings, adapt to changing learning styles of students, alleviate scheduling problems for students due to "every other year" course rotations for required courses, and to take advantage of the unique position that geoscience held within the AGN. This revision was the most extensive program change in the history of the geosciences program. It included the move to a three-semester rotation to the required core courses for the geology major as one step towards solving the problem of new majors having to wait so long for a required class to be offered. Another major shift was to more-fully integrate the geology and geography curricula at the introductory level, which could help recruit more majors, by including a 100-level meteorology laboratory course. The revision also readdressed issues related to

the scientific writing, speaking, and mathematics skills of students seen as becoming increasingly more deficient. Geography was removed as a concentration to make room for the new meteorology program, although courses in physical and cultural geography were still offered as service courses to other programs. The new program went into effect Fall 2019, several months prior to the breakout of the COVID-19 pandemic (see below), and underwent a few minor tweaks for the next several years (UTM, 2019–2023).

The result was an innovative and modern curriculum focused on the student's needs and proclivity to be mobile in their career paths and with more flexibility in course timing and offerings. Greater emphasis was placed on experiential learning and broader global issues. The current (2024) geosciences program consists of a major in Geoscience with three possible concentrations: geology, geosystems, and meteorology (UTM, 2024). Within the geosystems concentration, students can follow a geographic information systems (GIS) option or a more general Earth sciences option.

For the Geology Concentration, students need a minimum of 42 credit hours in of upper division geology courses. The courses are organized into four content areas designed to ensure a common core based in classical geology while allowing the students some flexibility in their upper division courses and electives (UTM, 2024) for specialization. "Geology Foundations" is a sequence of 100–200 level introductory courses required of all geology majors: GEOS 120 – Earth Materials and Processes; GEOS 130 – Global Change and Earth History; GEOL 210 – Geoscience Literacy; GEOL 220 – Methods in Field Geology; and GEOL 230 – Geoanalytics. Geoscience literacy, methods in field geology and geoanalytics were designed to provide majors with the writing, speaking, field, and mathematical skills commonly used in the geosciences and whose mastery is expected for the upper division geology courses.

The "Geology Core" consists of the specialty areas typical in geology (any four of the six courses listed can be used to satisfy this requirement): GEOL 320 – Mineralogy; GEOL 330 – Igneous and Metamorphic Petrology; GEOL 350 – Principles of Paleontology; GEOL 360 – Sedimentology and Stratigraphy; GEOL 400 – Structural Geology; and GEOL 445 – Geohydrology.

The third content area is "Geology Electives," mostly three-hour non-laboratory courses, and requires at least eight hours to be taken from: GEOL 285 – Topics in Geology; GEOL 315 – Principles of Oceanography; GEOL 355 – Principles of Geomorphology; GEOL 385 – Plate Tectonics; GEOL 395 – Economic Geology; GEOL 485 – Special Topics in Geology: (Title); and SOIL 321 – Soil Genesis, Morphology and Classification.

Finally, geology majors are required to have at least six hours of coursework of an applied, experiential, travel, or work-study nature ("Experiential Courses") drawn from: GEOG 410 – Geographic Information Systems: Modeling and Applications; GEOL 275 – Travel Studies in Geology; GEOL 365 – Tennessee's Geologic and Cultural Landscapes; either GEOL 401 – Research Participation or GEOL 402 – Research Participation; GEOL 415 – Marine Geology; GEOL 465 – Geology Internship; GEOL 475 – Travel Studies in Geology: (Title); GEOL 495 – Senior Research Project; and GEOL 499 – Senior Seminar.

COVID-19 Pandemic

In December 2019, a new respiratory coronavirus, COVID-19, originated in Wuhan City, in the Hubei Province, China (e.g., Centers for Disease Control (CDC), 2023). By March of 2020, the campuses in the UT System, and nationwide, were sending their students home for safety. The pandemic quickly spread worldwide. University faculty were forced to shift classes from "face-to-face" to online deliver, including labs and field trip experiences. Most faculty were told to work remotely from home and travel was severely restricted. Geology responded by shifting ongoing courses to the new format, using Zoom technology and filming resources, and prepared take-home laboratory kits for student to use in laboratories. Nearly all public events were cancelled, including the Eta Alpha Chapter of Sigma Gamma Epsilons plans to host the 2019, and then rescheduled, 2020 biennial convention (Gibson and Hudson, 2024, this volume). The "lockdown" and online programming remained in effect until Fall, 2020 when the campus reopened for classes under rigid COVID-19 safety protocols that included wearing masks to class, limited class enrollments and distances between students, continuous cleaning of classrooms, and limited travel. University budgets were severely impacted, but the geology program managed to weather the pandemic reasonably well and benefitted from having all courses converted to online delivery formats that could be used whenever needed. Additionally, faculty had been receiving pedagogical training in online course delivery. By 2021, several vaccines had been developed. Despite a public controversy about the vaccinations and face mask-wearing,

including a UT System policy that vaccinations could not be required, by Fall of 2021 the pandemic seemed to be under control and the University again offered in-person classes and things began to get back to normal.

The most recent faculty changes in geosciences began with the arrival of Allison Bohanon (1998–) in 2022 to take over as the laboratory instructor from the departed Audrey Pattat. Bohannon had a B.S. from Tennessee Technological University and a M.S. GIT from Mississippi State University. In 2023, Gibson retired after thirty-five years in the geology program. In 2024, Gibson's paleontology position was filled by his son, Brandt M. Gibson (1992–). Brandt Gibson is an UT Martin geology alumnus, having earned his B.S. in geology and a B.S. in biology in 2015. He completed his M.S. and Ph.D. at Vanderbilt University, working under paleontologist Simon Darroch. He was also a post-doc for both Vanderbilt University and University of Toronto, Canada. Gibson's research interests are focused on the early evolution of life and taphonomy. This also represents the first "father–son" legacy in the geology program at UT Martin.

Graduate Courses and the GEDU Program

Throughout its history, the geology program has always been primarily undergraduate, offering a B.S. in geology and a minor in geology. Graduate level geography courses were added to the course listing beginning in 1968 (UTM, 1968), soon after the name change from UTMB to UT Martin. Geology began offering graduate level courses in 1971 when their major was approved (UTM, 1971). Most upper division geology course carried 500 and 600 (graduate) level numbers. These courses were targeted primarily toward teachers and students in the education program working on advanced degree requirements. Additionally, the GGP faculty, and later AGN geoscience faculty, were active in grant-funded summer professional development programs for educators that were seeking advanced course work at the master's level. These courses could only be taught by faculty who had earned graduate faculty status as approved by the UT Martin graduate school.

In the 2000s, a need for qualified teachers to teach geology and Earth science at the secondary level was identified by the Science Consultant to the Tennessee Department of Education (see Gibson, 2024B, this volume). At that time, there was no graduate-level program in Tennessee for geoscience education. Additionally, online courses and programs were becoming popular avenues for teacher development. At the urging of the Tennessee State Science Consultant, a cooperative program between geology program and education department at UT Martin devised an innovative way to offer graduate level geoscience training that could lead to a geoscience education endorsement for teachers. The program was housed within the graduate program in the School of Education, but primarily ran by M. A. Gibson in geology. The only other graduate geoscience education program in the southeast was the Teachers in Geoscience (TIG) program at Mississippi State University (e.g., Binkley and Johnston, 2007).

The Master of Science in Education with Major in Teaching and Concentration in Interdisciplinary: Geoscience Education (GEDU) supported teachers seeking advanced training in geoscience disciplines of geology, astronomy, meteorology, or general Earth science. The GEDU was offered as professional development for teachers moving into geoscience education from another science content area, adding Earth science or geology courses, or seeking to teach AP or dual enrollment (DE) courses. The GEDU courses could be taken for the degree or as professional development (UTM, 2024).

In 2008, the first teachers matriculated into the GEDU program (UTM, 2008). All coursework was online except for a field course experience, which was usually offered in the summer and could be satisfied by a travel-study program transferred from any institution. Education faculty included courses in advanced topics of and geology faculty provided the geoscience content. The GEDU curriculum consisted of: GEDU 700 Advanced Earth Systems Science; GEDU 705 Earth/Space Science and STEM Integration for Middle Grades 5–9 Teachers; GEDU 710 Advanced Physical Geology for Educators; GEDU 720 Oceanology for Educators; Geoscience Education 730 Understanding Evolution; GEDU 740 Field Experience in Geoscience: [Topic Title]; GEDU 750 Global Climate Change; and GEDU 760 Astrophysics for Educators. Geoscience instructors in the program included UT Martin geologists and geographers, as well as geologists from UT Chattanooga and UT Knoxville. The program was marginally successful resulting in eight graduates.

Coon Creek Science Center

The geology program at UT Martin administers a unique asset, the UT Martin Coon Creek Science Center (UTMCCSC). The UTMCCSC is an internationally recognized fossil lagerstätte deposit from the Upper Cretaceous. It is the

type locality and type section for the Coon Creek Formation, which is a marine clastic deposit that preserved unaltered invertebrates (including the State Fossil of Tennessee, *Pterotrigonia thoracica* (later renamed *Tennessiella thoracica*), vertebrates, plants, and trace fossils. The site, located in rural McNairy County, Tennessee, was preserved for research and education in 1988 by the Memphis Pink Palace Museum (MPPM). UT Martin geologist Michael Gibson began serving as Associate Curator to the MPPM and oversaw the scientific research at the site, along with geoscience education for teacher professional development. In 2019, UT Martin acquired control of the site and rededicated the facility after upgrades that included a new paleontology laboratory. M. Gibson served as the director of the UTMCCSC until his retirement in 2023. Alan Youngerman, director of the Selmer Center, assumed the directorship of the UTMCCSC with UT Martin geology alumnus Joshua Ratliff becoming the head of instruction. Josh Ratliff is a lecturer in geosciences in AGN with a B.S. in geology from UT Martin and a M.S. in paleontology from the South Dakota School of Mines.

Currently, the 232-acre UTMCCSC is the only geoscience education facility of its kind in the southeast and is visited by over 5000 students, researchers, and the public per-year. The reader is referred to Gibson (2024A) for a complete history of the site, including a description of geoscience programing.

SUMMARY

The subject of geology has been taught at this institution for more than 124 years and has been an integral part of higher education in West Tennessee dating back to the original days of Hall-Moody Institute. It began as a service course to support agriculture, engineering, and education programs and continues its strong service mission. There was high faculty turn-over during these earliest years, along with a hiatus in offering geology from the Great Depression until after World War II. By 1947, Hall-Moody Institute had been acquired by the University of Tennessee system as the UT Junior College. A. Paul Wishart, the first trained geologist to be hired, championed the development of a broader geology course curriculum that laid the foundation for later expansion. The sequence established by Wishart remained largely unchanged through the transition of UT Junior College to UT Martin Branch, and then through most of the earliest part of the UT Martin years. The geology program remained predominantly service oriented during this time.

High college enrollments of the late 1950s and early 1960s, along with a revolution of science education (K–16) prompted by national and political events, paved the way for a greater demand for geology and created a need for more geology faculty Nationwide. In 1962, the Engineering and Physical Sciences (EPS) building was constructed, and geology moved into the second floor of EPS and remains in that building to this day. There was strong support within the Department of Physical Sciences to expand geology. In 1964, the first "founding father" of what will become a degree-granting program in geology in 1971, William T. McCutchen, was hired. Kenneth Bordeau and Ernest Blythe, Jr. were the next "founding fathers," hired in 1967 and 1969 respectively. The Geology, Geography, and Physics department was established in 1972 when geology became a degree program. In 1975, geography and geology combined degree programs to become geosciences (UTM, 1975).

For the next half century, the geology program continued to be a mostly undergraduate program providing service to many of the other programs at UT Martin. It went through periods of stability punctuated by periods of reorganization, some prompted by external crises. Currently, the geology program is housed in the same college as agriculture and natural resources. The faculty has enlarged to five full-time faculty that maintain active research programs with strong publication records. Over the years, geosciences graduated dozens of geology majors. Many of the UT Martin geology graduates have gone on to earn Ph.D.'s and have become leaders in their fields of study, with three returning to UT Martin as geology professors. The geology program has a vibrant online clientele, and the faculty are highly active at the state, national, and international levels. The program expanded to develop a master's program in geoscience education and is steward of the UT Martin Coon Creek Science Center, a unique fossil site for geoscience education. As this paper is coming to publication, the geology program is approaching its 52nd anniversary and geology, as a course, has now been taught on this campus for 123 years. Geosciences has remained in the EPS building since the building was opened in 1960 (it was renamed the Joseph E. Johnson EPS building in 1991), even when chemistry and engineering were relocated to the new Latimer-Smith Engineering and Science building in 2022. As of this writing, EPS is slated for a renovation that will significantly expand the classroom and lab space allocated to geosciences to two floors of the building, thus heralding a new age for geosciences at UT Martin.

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