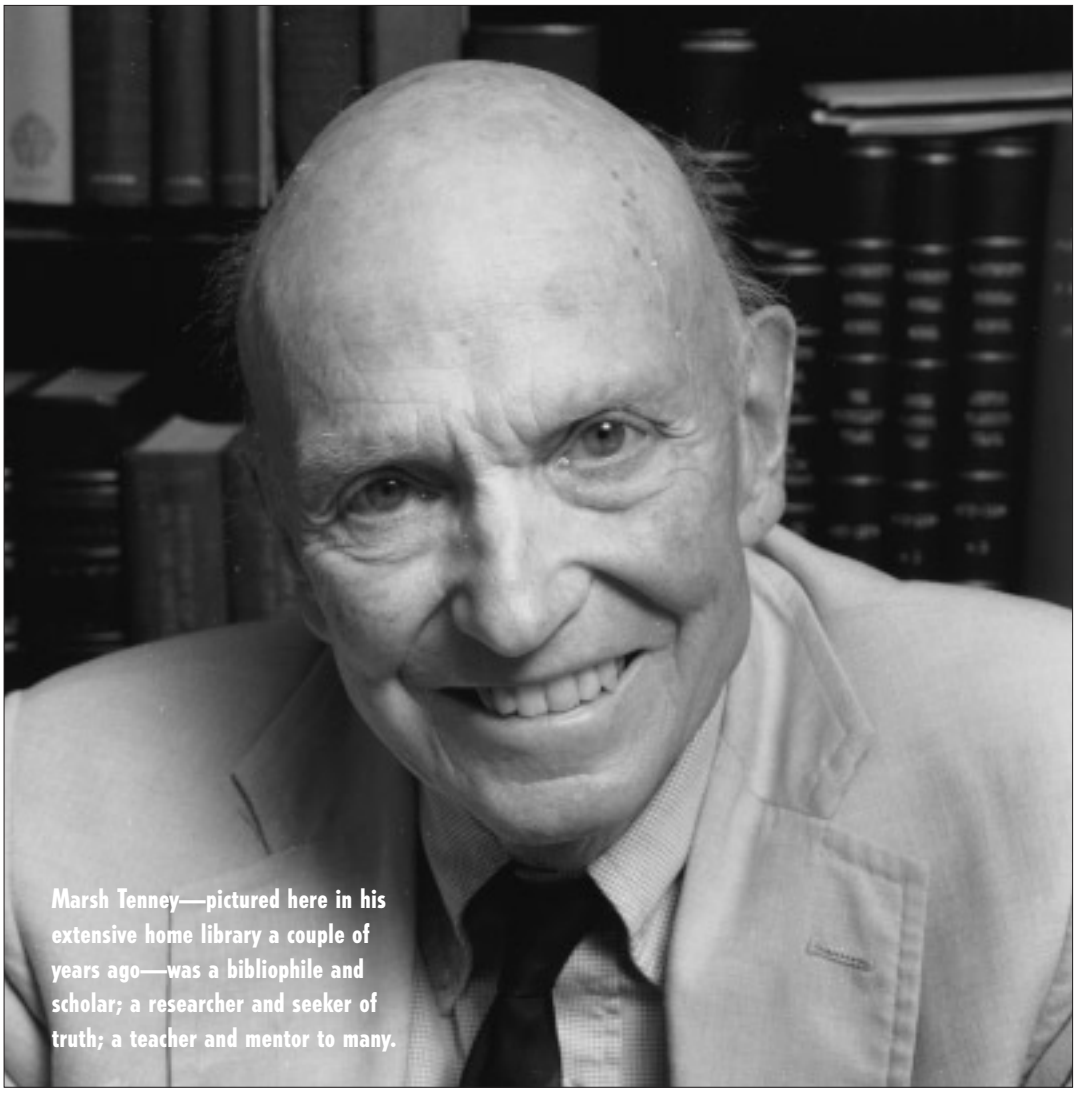
S. Marsh Tenney, who was charged by the Dartmouth Trustees with revitalizing Dartmouth Medical School in 1956, died in October at the age of 78. Had his "refounding" of the institution not been such a success, DMS would probably not exist today, and DHMC would be a very different place.



JOSEPH MEHLING

Marsh Tenney—pictured here in his extensive home library a couple of years ago—was a bibliophile and scholar; a researcher and seeker of truth; a teacher and mentor to many.

END OF AN ERA

By Jonathan Weisberg

Twelve years after his 1944 graduation from Dartmouth Medical School, Stephen Marsh Tenney returned—to stay. Although he was only 33 years old, he had been invited by the Dartmouth Trustees to try to revive a school that had grown stagnant. DMS had been put on "confidential probation" by a national accreditation committee, and some of the Trustees were ready to dissolve the School. But within just five years of his 1956 return, the young graduate had engineered a dramatic turnaround at his alma mater.

Marsh Tenney's death two months ago—on October 28, of cardiac failure—thus marked, without hyperbole, the end of an era. It served as a poignant reminder of how very far Dartmouth Medical School has come since it was on the brink of closure in 1956. Few then could have foreseen the

Jonathan Weisberg is Dartmouth Medicine*'s editorial assistant; he is a 1996 graduate of Dartmouth College.*

An impasto portrait of a "multidimensional man"

Because Marsh Tenney's impact was both broad and deep, Dartmouth Medicine invited a couple dozen individuals who knew him in various capacities to share a personal vignette. We asked for a telling anecdote, an intimate insight, or a description of a specific characteristic.

"What a task you've given us," wrote one respondent, "to write something specific about that multidimensional man." But just as the impasto technique of painting, through the application of layer upon layer of paint, turns a two-dimensional canvas into a textured, three-dimensional surface—so, too, do we hope that the individual reminiscences below and on the succeeding pages will, collectively, paint for readers a fully featured portrait of "that multidimensional man."

Leon Farhi, M.D., a physiologist at the State University of New York at Buffalo

My relationship with Marsh Tenney covered a far broader area than our shared scientific and educational interests. A few months ago, he sent me a quotation from Saint Augustine that he liked so much he had it handset on special stock by a renowned printer. The text reads: "There is ingrained in our souls an insatiable desire to behold the truth." Duly framed, this memento now rests in my office, where it reminds me daily of a dear and sorely missed friend, collaborator, and mentor who was so uncompromising in his search for truth that he made it not only his abiding professional goal, but his way of life.

James Strickler, M.D., DMS '51, a retired internist on the DMS faculty, and former dean of DMS

I was a student at DMS and Marsh an instructor in physiology when we met. I was on my hands and knees in the old physiology lab, retrieving mercury spilled from the Van Slyke apparatus that I'd been using. To this day, I can recall Marsh's puckish expression and his droll inquiry as to whether anything had gone wrong. Now flash forward to about four years ago, when I received a phone call from Associate Dean Adam Keller. Adam said the old physiology building had been found to be contaminated with mercury—though fortunately not a very toxic form. He asked if I had any idea how this had occurred. I explained that spilling mercury from the Van Slyke gas analyzer was a rite of passage for students of my era. The call reminded me that perhaps only those of us who knew DMS before Marsh was summoned to "refound" it can fully appreciate the challenges he faced—for although it was a fine school, it was tiny, had outmoded labs and classrooms, and had entirely missed the postwar wave of research funding. Yet Marsh saw the School's needs and, clairvoyantly, its potential.

Valerie Galton, Ph.D., a physiologist on the DMS faculty

In 1961, my late husband was offered a position in pathology at DMS, but I needed a position. Marsh came to the rescue with an appointment in physiology, even though I was pregnant and not a U.S. citizen; in fact, I was supposed to leave the country for two years before applying for a green card. That never came to pass, thanks to Marsh's diplomatic efforts. A 1969 move to Case Western Reserve also never came about, because of Marsh's invitation to remain at DMS after my husband's death in 1968. The stature of the physiology department during and since Marsh's tenure as chair testifies to his leadership. His ability to make constructive suggestions without adding pressure was extremely effective. But my respect for Marsh went far beyond the professional; he was a remarkable human being. I enjoyed many a conversation with him on topics ranging from Chinese art, Mayan culture, and the British Museum to mushrooms and plum puddings. His knowledge of the first four topics far exceeded mine, but maybe not so puddings—he was a recipient of the authentic item (albeit made in New Hampshire) each Christmas for the last 30 years!

Donald Bartlett, Jr., M.D., DMS '61 and the current chair of physiology at DMS

Marsh was a man with an extraordinary range of interests and abilities. His most unusual characteristic may have been that his dazzling intellectual abilities and accomplishments were so well balanced by common sense and a rock-solid sense of ethics. This balance of intellect and character enabled him to make sound decisions and to engage a wide range of other people in joining him to pursue worthy goals. He led by example and persuasion, never by edict. For those lucky enough to be his students, colleagues, and friends, his influence has been decisive and continues to be so.

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DARTMOUTH COLLEGE ARCHIVES

Tenney—pictured above in 1959, just a few years after his 1956 return to DMS—not only revitalized and expanded the institution, but also hired the first full-time women faculty members. Below is biochemist Lucile Smith, a 1958 recruit, in one of the aged buildings that then housed the DMS labs.

thriving institution it has become—an institution to which Tenney devoted the rest of his career.

"If you had known him then, you would have discovered his bright, shiny blue eyes and the impression of great vitality that he gave," recalls Robert Gosselin, M.D., Ph.D., a friend and colleague of Tenney's for over 50 years. Other admirers describe him as "brilliant," "buoyant," "remarkable," "charismatic," "insightful," "dignified," and "loyal." Indeed, Gosselin finally declared, after an hour of trying to capture Tenney's essence, "I'm running out of adjectives." Such a cloud of superlatives almost obscures the man, but the facts of the story are equally stunning.

Tenney faced clear but daunting goals in 1956, when he was named associate dean for planning and research and chair of physiology at DMS. The School then had only half a dozen full-time faculty members, three small and aged buildings, and virtually no research activity. He was charged with recruiting new faculty, constructing a new campus, and establishing a research presence—as well as with raising the money to accomplish it all.

Tenney returned to Dartmouth from the University of Rochester, where he held an appointment as an associate professor of medicine and of physiology. He'd also done his internship at Rochester, after completing his M.D. at Cornell (DMS then had only a two-year, basic science program). Tenney brought three colleagues with him from Rochester as the first of his new recruits—fellow physiologists Robert Nye, M.D., and Robert Miller, M.D., and pharmacologist Robert Gosselin—who became known at DMS as the "three Bobs."

The structure of the Department of Physiology was one of Tenney's first challenges. It was then called the Department of Physiological Sciences because it also encompassed pharmacology and biochemistry. He split apart the three disciplines and, with himself heading physiology and Gosselin installed as chair of pharmacology, went in search of a leader for biochemistry. In 1957, he convinced Manuel Morales, Ph.D., then chief of biochemistry at the Naval Medical Research Institute, to join the expanding enterprise.

The Department of Physiology alone grew from two full-time faculty members before Tenney's arrival in 1956 to 11 in 1959, while also welcoming its first postgraduate fellows. At the same time, groundwork was being laid for the creation of doctoral programs in physiology, pharmacology, and molecular biology. "How did he manage in such a short time to recruit such really superior scientists?" asks Heinz Valtin, M.D., who joined the physiology department in 1957. "The moment they met him, they sensed the high intellectual caliber of this person, his energy, his imagination. They all felt, I think, the excitement."

Philip Nice, M.D., was already at DMS as an assistant professor of microbiology when Tenney arrived, and he says the existing faculty immediately recognized Tenney's excellence as a researcher. Though he threatened the stability and status quo of the School, Tenney brought with him a tangible argument for his approach in the form of a Markle Scholarship and a research grant from the National Institutes of Health (NIH), which together supported his salary as well that of a faculty collaborator and a lab assistant. This was the model he used in executing his mission, supporting the growing faculty primarily on external grants.

Because of the School's dependence on outside funding, Tenney had to spend a lot of time traveling—meeting with donors and petitioning foundation officers. He eventually garnered funding from private organizations such as the Rockefeller, Commonwealth, and Ford Foundations, as well as from federal programs such as the NIH and the Public Health Service. By 1961, in fact, Tenney had raised enough to build the buildings now known as Remsen, Kellogg, Strasenburgh, and Dana Biomedical Library—completely reshaping the DMS campus.

Donald Burnham, M.D., DMS '44—a Dartmouth College and DMS classmate of Tenney's

Marsh's decision to enroll at Dartmouth was based partly on misinformation from an old family friend—a physician who advised that DMS had a strong research program. Little did Marsh know it would be his life's task to create that program. He also found that Sanskrit, which he had hoped to study, was unavailable. This disappointment was eased, however, when he discovered Professor Lattimore's courses in Chinese, another pictographic language. Marsh happily took all of these courses on top of the accelerated wartime premed curriculum. He also engaged in extracurricular work with Drs. Campbell and Maes, physiologists who shared his zest for knowledge beyond the conventional and generally accepted. Marsh's mind was so tirelessly keen that it seemed he never slept. A legend at the medical fraternity house was that the last one to bed in the attic bunkroom was certain to find Marsh wide awake, eyes shining brightly, pondering some fresh intellectual puzzle.

Robert Nye, Jr., M.D., a retired physiologist on the DMS faculty

One morning in 1946, when I was a fourth-year medical student at the University of Rochester, I remember being amazed by the night-float intern's grand rounds presentation of a patient with life-threatening disorders in fluid and electrolyte balance, which he had masterfully sorted out and treated during the night. This, my first impression of Marsh Tenney, stayed with me as over and over I was impressed by the breadth of his knowledge and curiosity. He taught himself Chinese as a Dartmouth student and argued with the librarian about signing out the only dictionary when no one else wanted it. Once we almost got an elephant in the lab to study its respiratory dead space. From high-altitude research in the Sierra Nevada to underwater physiology, from humans as animals to molecules, his mind discovered questions and found answers. To have been one of the "three Bobs" he brought with him from Rochester to refound DMS in 1956 was the best thing that has happened to me. I became a physiologist instead of an internist and had the privilege of teaching wonderful students in a great medical school with a leader who loved learning.

E. Lucile Smith, Ph.D., a retired biochemist on the DMS faculty

I met Marsh when I was a student at the University of Rochester, but I did not know him well. Then I came to Hanover in 1958 to be considered for a position in the biochemistry department. He had been brought to Dartmouth to engineer the revitalization of a small, rather deficient medical school, and the place looked exciting. I attended a meeting of basic scientists in Atlantic City shortly thereafter and heard some scientists on the boardwalk asking, "Have you heard what's happening at Dartmouth?" Marsh was always helpful in things large and small—such as the problem of having a woman faculty member but only one bathroom in the building; the bathroom was declared unisex. Over the years, Marsh was always available for talk and advice, sometimes with a surprising point of view. To me, the present excellence of DMS is associated with the flying start given to it by Marsh Tenney.

Kurt Benirschke, M.D., a pathologist at DMS in the 1960s, now retired from the University of California at San Diego

It was Marsh Tenney, and he alone, who persuaded me to move from a very secure job in Boston to join the new development of a very old Medical School. I was young and brash then but full of energy, and I became enthusiastic because of Marsh's leadership. I was soon to be tested, with having to assume the chairmanship of a difficult committee, but Marsh's optimism and support made it possible to make progress quickly. Soon he put DMS back on the map and truly built the School anew, all the while making the rest of us feel as though it was due mostly to our activity.

Eugene Nattie, M.D., DMS '68 and a physiologist on the DMS faculty

In 1969, Marsh invited me to take a year off from medical school to do research. He had developed a tradition of such year-off fellows, virtually all of whom went on to academic careers. The invitation was a vote of confidence, and our daily contact a treasure, as his interests extended far beyond science and academic politics. Shakespeare, opera, hockey, and skiing were part of my curriculum, and other fellows and young faculty in the lab made for an engaging mix on a day-to-day basis. It was a fabulous experience. That he had the time, energy, and foresight to have research fellows is amazing, given his other responsibilities. My guess is that our youthful naïveté and enthusiasm provided him a source of energy and renewal. We wanted to learn, and, boy, could he teach!

His interests extended far beyond science and academic politics. Shakespeare, opera, hockey, and skiing were part of the curriculum for all of the fellows in his lab. . . . We wanted to learn, and, boy, could he teach!

Tenney took his family on many adventurous vacations—including the one pictured above, a 1964 excursion by bush plane into Mexico's Lacondone rainforest. From left to right are Karen, Marsh, Carolyn, Joyce, and Stephen Tenney. And below is a young Marsh Tenney on his fifth birthday—October 22, 1927.

However, the process was not without its disappointments. Gosselin recalls that Tenney's first big grant application to the Rockefeller Foundation was initially shelved. He was deeply disappointed, until the next year, when the money came through. "That, I think, was the most encouraging thing that happened in those first two years, and it really made it possible to proceed," Gosselin says.

Tenney also coped with an unusual administrative structure. When he first came back to Hanover, "the College put him in an awkward position," Gosselin recalls. "He was certainly junior to almost everyone who was already here. . . . But one saw very little hostility toward Marsh. I think he had a capacity for turning that off. It was the strength or power of his personality."

A year later, in 1957, Tenney was named director of medical sciences and was placed on the organizational chart above the School's dean, Rolf Syvertsen, M.D. This introduced a new element of awkwardness, for it meant the longtime dean—much loved by generations of students—was subordinate to the young import. But, adds Gosselin, "most of the people who differed with [Tenney] on policy matters still very much admired him." So much so that in 1960, upon Syvertsen's untimely death in a car accident, Tenney was named dean.

Despite his enormous responsibilities, Tenney "always reserved time for his family and for personal things," says Gosselin. He was a man of far-reaching interests. He led his wife, Carolyn, and children—Joyce, Karen, and Stephen—on a succession of adventurous vacations that they came to call "Tenney Tours." They traveled to Mexico several times, flying by bush plane to see sights such as a Mayan development at Tulum. Mayan culture was a particular interest of Tenney's, and in 1964 the Tenney family accompanied anthropologist Gertrude Duby into the jungle to find the Lacondones, a tribe of pure Mayan descent. Tenney provided the remote, stone-age people with medical care, took photographs, and studied their culture.

Tenney actually started striking out on adventures at age nine, when he took the train by himself from Illinois to Los Angeles to see the Olympics. And as a teenager, he traveled to Chicago to hear jazz and to Mexico to hunt.

Another Tenney Tour took the family to Hawaii, thence by propeller plane to Tahiti, and finally aboard a boat crowded with livestock and goods to the island of Mooréa, where they spent several weeks. "He always said, 'We're not going to put off traveling and going places until I retire,'" Carolyn Tenney recalls. "So [the children] went everywhere with us."

Back at Dartmouth, Tenney's efforts had proved so successful that in September of 1960, a convocation was held to celebrate the refounding. Titled "Great Issues of Conscience in Modern Medicine," the three-day event included as speakers luminaries such as Aldous Huxley and C.P. Snow.

At the end of 1961, feeling that he had accomplished his charge, Tenney stepped down as dean to concentrate on his research and his role as chair of physiology. At the time, Dartmouth President John Sloan Dickey called him a "miracle worker."

Indeed, the Medical School had been transformed. Brand new laboratories, classrooms, and dormitories were completed or under construction and a new library was on the drawing board. The faculty had grown from six to 60 and the student body from 24 students per class to 36 per class (and that number increased again just a year later to 48 per class). Graduate programs had been established in the basic sciences and were poised to accept their first doctoral candidates. The School had hired several women as full-time members of the faculty and, in 1960, had admitted its first woman student (more than a decade before Dartmouth College admitted women). And, furthermore, Tenney had raised $12 million to accomplish all of this. He had, in short, reinvented Dartmouth Medical School. (When, in

Walter St. John, Ph.D., a physiologist on the DMS faculty

Marsh had an active dislike of pretentiousness. When I came to DMS in 1976, he provided me with salary support for an initial period. Afterward, I learned that this salary had come from my having been a Francis Foundation Fellow. About 20 years later, a young investigator told Marsh and me of his "extraordinary achievement" in obtaining a Francis Fellowship. The next day, I jokingly told Marsh that I should have recognized this "extraordinary achievement" in my day. Marsh then pointed out that, in my day, "there was no quality control" since the director of the foundation allowed the directors of the training programs to appoint anyone. Of course, in my day, Marsh himself was director of both the foundation and the training program. For whom this reminder of humility was intended—the young investigator, me, or Marsh himself—is uncertain. But Marsh loved it!

John Hennessey, Jr., former dean of Dartmouth's Tuck School of Business and former chair of the DHMC board

I knew Marsh for 42 years and always found our encounters refreshing. His interests were so broad, his alertness to world happenings so acute, his sensitivity so exceptional, and his wry perspective on the human condition so attractive. One vivid memory is of the warm, glowing fulfillment he exhibited during the 1960 convocation, "Great Issues of Conscience in Modern Medicine," which brought to Dartmouth such giants as C.P. Snow and Aldous Huxley. Another is of a tale he loved to tell, about the day his llama went astray in Remsen. En route to a class, Marsh and his llama, which he used in his pulmonary research, got on the elevator. When Marsh got off, the doors closed too quickly and the creature rode alone to the top floor, where a group of distinguished visitors awaited the car. The doors opened, the startled llama expectorated a spray of pungent juice on the incredulous guests, and the doors closed. The llama then rejoined Marsh, but it was several hours before Marsh heard what had happened in the interim. He dealt with that small issue of conscience in modern medicine by claiming credit for making the visitors' experience memorable.

Lo Chang Ou, Ph.D., a 1971 graduate of DMS's doctoral program in physiology and since then a member of the physiology faculty

I worked closely with Marsh Tenney for 36 years. He made it possible for my family to immigrate to this country. He guided me from a research technician to a research professor. He was instrumental in helping my wife, Cynthia, embark on a successful and rewarding food service career. When we first arrived in the United States, he gave us a big atlas so that we would know how to get around in this new land. When I recently retired, he gave me a book on the history of the American people—to "enlighten me further on the characters of my adopted country." He will be greatly missed.

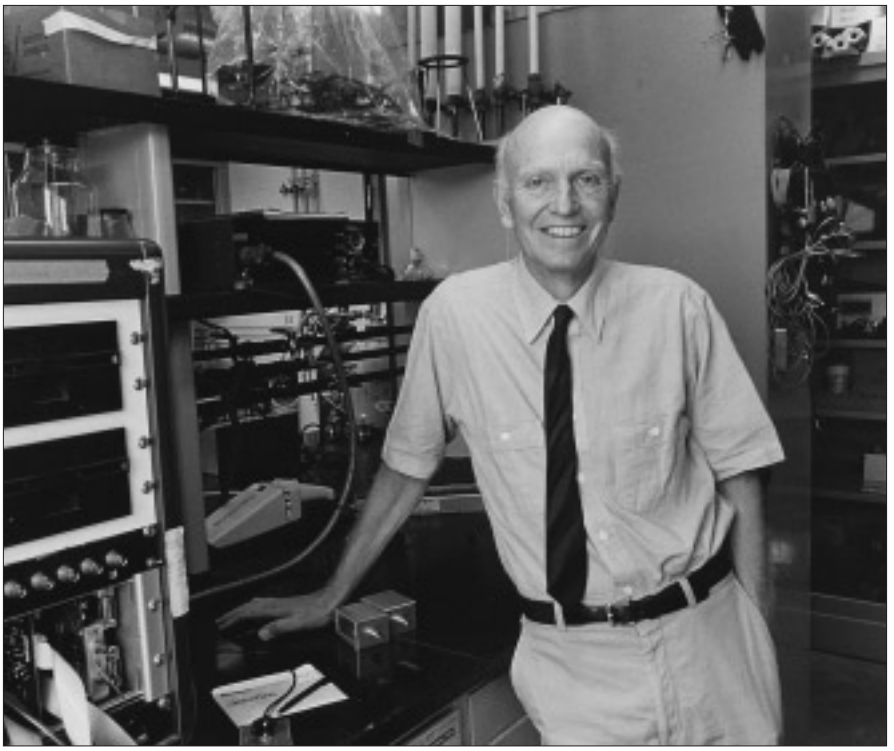
Robert Gosselin, M.D., Ph.D., a retired pharmacologist on the DMS faculty

My first encounter with Marsh Tenney occurred in 1946, when he was an intern at the University of Rochester. He was conducting a bedside teaching session for a group of third-year students; I was one of them. I recall the occasion, but the details were related to me many years later by Marsh, whose memory was always better than mine. He told me that I asked a question about the mechanism responsible for one of the patient's symptoms. We students were completely satisfied by his answer, but he was not. As a result, he later spent several hours in the library trying to clarify the issue for himself. We next met in 1949, after he had returned from the Navy and I from internship in New Haven. We then began a friendship, the memory of which I shall always cherish. His uncompromising intellectual honesty and curiosity were qualities that I had many opportunities to witness.

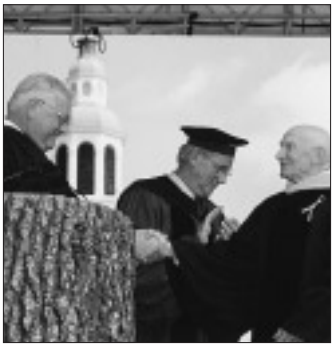
Allan Munck, Ph.D., a retired physiologist on the DMS faculty

In 1959, in search of a position at Dartmouth, I traveled to Hanover. Before visiting the physiology department, I chatted with some of the young faculty in biochemistry. I vividly recall the awed tones in which they described the magician up the road (where physiology was located in an old mansion) who was refounding DMS on the remains of Nathan Smith's ancient institution. Seemingly just by waving his wand, he could overcome the inertia of Dartmouth College and summon forth unlimited funds, buildings, and new faculty. The magician, of course, was Marsh. To everyone, he brought a sense of exhilaration and confidence that anything was possible. I soon caught a whiff of his enthusiasm when he recruited me to teach endocrinology despite my complete lack of formal training in that discipline. As he predicted, all went well, for both our students and me.

I vividly recall the awed tones in which the faculty described the magician who was refounding DMS. Seemingly just by waving his wand, he could summon forth unlimited funds, buildings, and new faculty. The magician, of course, was Marsh.



Tenney was, first and foremost, a scientist. He is pictured above in his lab in 1979, two years after he'd stepped down as chair of the Department of Physiology—a post he held for 21 years. His work earned him many scientific plaudits, as well as a 1999 honorary doctorate from Dartmouth, pictured below.



DARTMOUTH COLLEGE ARCHIVES

1974, Tenney was appointed to the Nathan Smith Professorship—an endowed chair named for the visionary who established DMS in 1797—it was fitting that the institution's "refounder" should hold a chair dedicated to its founder.)

But should be remembered that in 1956, none of this was guaranteed or even very likely. Tenney made the decision to return despite the risk and challenge, because of what he called an "emotional tie and profound interest in Dartmouth Medical School." Not only had he gone through Dartmouth as an undergraduate and a medical student, but he had spent a year as a teaching fellow at DMS in 1950-51. In accepting the charge of refounding the institution, he acted so much from affection for the place that, he wrote at the time, "my more realistic friends tell me I am crazy."

After stepping down as dean (although he was twice enticed back into the post on an acting basis), Tenney continued the research he had conducted ever since establishing his own lab at Rochester. Heinz Valtin says that Tenney "was wonderfully imaginative in his experiments. He was, I think, one of the rather rare investigators who used comparative physiology in the right way: that is, he would pose a general question, then look all around the animal—even the plant—kingdom, for an individual or a species in which that particular question had been solved, and then find the answer by studying that species."

Nye recalls, for example, that when Tenney was still at Rochester he became interested in the mechanics of respiration of birds in flight. His lab acquired a goose and named her Edith Sitwell, after the British poet and novelist. "They trained Edith so that when they held her by her legs up over their heads," recalls Nye, "she would flap her wings as though she was in flight. And also they trained her [to] stick her bill into a mask, so they could measure her inflow and outflow."

Tenney's research interests even seeped into his home life. He brought llamas and pythons home from the office and always kept pets. At one point, the Tenney ménage included a Great Dane, a raccoon, and a crow named Beelzebub. Despite the unusual menagerie that tramped through his home and lab, Tenney's experiments involved serious questions. Valtin notes that his colleague's primary focus—on physiological adaptations to lack of oxygen—had many applications in human disease. "The lower levels of oxygen at high altitudes may have implications for how you adapt to the same problem in anemia [or] heart failure," he says.

For his scientific achievements, Tenney was named a fellow of the American Academy of Arts and Sciences in 1970 and a member of the Institute of Medicine of the National Academy of Sciences in 1974. He served on numerous committees within the NIH and for other national organizations and on several journals' editorial boards. In 1988, Tenney received the highest honor of the American Thoracic Society, its Presidential Citation, for "lifelong contributions to the understanding of pulmonary and circulatory physiology and disease."

A hallmark of Tenney's work was its intellectual integrity. Valtin remembers that Tenney once discarded months of work because of the careless mistakes of one assistant. Nye calls him "a very principled guy. He wouldn't hesitate to be critical of things that seemed to him to be wrong, even if they were being perpetrated by people who were his superiors."

He also demonstrated remarkable prescience in scientific matters. In 1966, for example, Tenney invited mathematician George Stibitz, Ph.D., an inventor of the digital computer, to become a professor of physiology. This was long before computer modeling was widespread, but the appointment became "a wonderful impetus for many members of the department to bring their problems to Stibitz and see if they could be programmed," says Valtin. Tenney also recruited a biophysicist, Allan Munck, Ph.D., and a bioengineer, Andrew Daubenspeck,

Stephen Plume, M.D., a cardiovascular surgeon on the DMS faculty

My introduction to Marsh Tenney was abrupt and intense. In 1981, he sustained a major heart attack, complicated by a dangerous rhythm irregularity. Usually, this would have called for heart catheterization to determine the next steps. But Marsh's situation was desperate. He told us a diagnostic study in California a few months earlier had documented three-vessel disease and said, "Let's get on with it." No studies. Immediate surgery. As I got to know him during his convalescence, I learned that this was vintage Marsh: not impulsive, but unflinching and decisive in the face of what he regarded as adequate information for taking action. I also learned about his remarkable range of interests and his unfailing courtesy. It was a privilege to participate in his care.

Philip Nice, M.D., a retired microbiologist on the DMS faculty

I was surprised and flattered when Marsh invited me to become associate dean of DMS in 1959. He had the good sense to give me responsibility—for faculty relations and student affairs—and then leave me alone. He was available when I sought advice but waited for me to come to him. We often traveled together to seek support for the School. We enjoyed long periods of silence, as Marsh was not great on small talk. In any city, our first stop would be a bookstore Marsh knew. He would go to the Chinese and I to the mountaineering section. At dinnertime, he would say, "Would you like to try so-and-so?" I always said yes, because it would be an experience new to me; the restaurants were often ethnic and not necessarily expensive. Marsh was always open to new ideas, willing to move ahead—in ways small and large. His death marks the end of a special era in DMS history.

Donald Tierney, M.D., an internist at UCLA and Tenney's successor as the Francis Fellowships medical director

Marsh Tenney had a huge impact on U.S. pulmonary research and medicine. He provided inspiring leadership for the Parker B. Francis Fellowships, which began when the Francis Families Foundation of Kansas City asked him to organize and direct a pulmonary research program. Indications of his success are that 95% of the recipients remained in research five years after their awards ended and that several hundred awardees are now leaders in pulmonary research and medicine. When the American Thoracic Society honored Marsh for this role, his humility and humor were apparent in a story he told about a turtle on a fence post that "didn't get here by myself." Marsh, far more than most, *did* get there by himself, and many of us got where we hoped to be with his help.

Barbara Blough, the retired director of alumni affairs at DMS

In the late 1970s, we were looking for ways to encourage participation in our new alumni program. One day Marsh found his way to my office and told me about his "stash" of some 20 or 30 old-fashioned desktops. He had saved them from the dump in the early 1960s when the "Old Medical School" was torn down. That building was, to alumni who'd studied there, almost a holy place. Marsh had tried to save it from the bulldozer and, when that proved impossible, had retrieved what artifacts he could—including the desktops, which were heavily carved with names and class years. Marsh offered them to me for use in the alumni program; I think primarily he wanted them in safe hands. Soon after, we learned of the death of the last member of the last class (1914) to graduate from the original M.D. program, and we gave the desktop bearing his name to his family. Marsh was pleased: the grand old building would not be totally forgotten.

Frances McCann, Ph.D., a retired physiologist on the DMS faculty

My first encounter with Marsh Tenney occurred in 1959, when I presented myself to interview for a position in physiology. Upon entering the department, I was faced with the appearance of utter chaos—boxes, packing crates, and people scurrying about in an uncoordinated ballet. I later learned they were preparing for an expedition to study high-altitude respiration. To a young man standing half in and half out of a packing crate, I said, "I'm Dr. McCann. Is Dr. Tenney here?" He gave me an impish grin and said, "Yes." I somehow sensed that my next question would determine my life. "Are *you* Dr. Tenney?" I asked, and he responded, "Yes." At that moment, I knew that I had met an extraordinary person; in 40 years of working with him as a colleague and friend, my first impressions were amply confirmed. He exhibited a quality rarely seen then—the willingness to chart new territory in appointing the first woman to the Department of Physiology. Thank you, Marsh.

His humility and humor were apparent in a story he told about a turtle on a fence post that "didn't get here by myself." Marsh, far more than most, *did* get there by himself, and many of us got where we hoped to be with his help.

Within just five years, Tenney raised funds to construct the buildings in the foreground of the mid-1960s view above of DMS. They replaced the two buildings pictured below, which, together with a converted wood-frame mansion, constituted the sum and substance of the Medical School's facilities in 1956.

Ph.D., long before those disciplines became common within physiology departments.

"As far as being a guy to work for," says Bob Nye, who was part of Tenney's respiratory physiology group, "you can't imagine anyone better. He was so loyal to the people who worked for him and was so conscious that people have what they needed and be well taken care of."

Valtin succeeded Tenney as the chair of physiology in 1977 and credits Tenney not only for establishing the department, but also for his excellent example. "If I learned how to run a department, I learned it from him," Valtin says.

Tenney was also a resource to those who followed him as dean. James Strickler, M.D., dean from 1973 to 1981, often sought him out for advice. "I found him quite a good counselor. . . . Marsh was very creative and very imaginative, but he was also a pragmatist. He didn't go off on wild tangents that couldn't be implemented. . . . He coupled creativity with reality."

Tenney's intellect and interests ranged far beyond the confines of physiology or even medicine, over all the sciences and into the humanities. Gosselin recalls not only Tenney's mental acuity but his encyclopedic memory. "He had a capacity to recite conversations from the past in a way that you were certain that this was verbatim. . . . I never knew anybody that had that kind of a memory."

Referring to the depth and breadth of Tenney's scholarship, Valtin says, "You could talk [with him] on most topics, but you had to have the self-confidence not to be intimidated, because he was likely to know more about a given topic than you."

An example was his interest in Chinese language and culture. Tenney was first exposed to the subject at Dartmouth, and it became a life-long interest for him. During his clinical studies at Cornell, he communicated with one of his professors by means of Chinese symbols on the blackboard.

In 1947, Tenney resolved to complete his two-year service commitment to the Navy and requested assignment to China. He and Carolyn had met earlier that year, while he was on the housestaff at Rochester and she was a nursing student there. They were married in October, and he shipped out the next month. Carolyn followed as soon as he'd secured housing, arriving in Shanghai in February of 1948. They had a tiny, one-room apartment wedged between noisy neighbors. But they also had "a little balcony, which overlooked a beautiful, private Chinese garden," she recalls.

Tenney ran a general practice in Shanghai's Navy hospital, treating a cross-section of the city's international population. He also pursued a number of other interests, such as calligraphy, and found a teacher with whom he could continue his study of the Chinese language.

Suddenly, in November of 1948, the Communist army advanced on Shanghai, and all military dependents—including Carolyn Tenney—were ordered home. Tenney himself didn't pull out until he heard the guns at the outskirts of the city, which meant he had to abandon many possessions.

Still, he was able to save some of the Chinese art and books he'd accumulated, and it was a collection he added to over the rest of his life. Tenney was also a great connoisseur of Chinese cuisine. In 1973, he approached Strickler, who was by then dean, to propose that Cynthia Ou—the wife of a member of the physiology department, Lo Chang Ou, Ph.D.—open a Chinese restaurant in the Medical School's Kellogg Cafeteria. Her fare was a fixture at DMS for more than 20 years. "That was the sort of thing Marsh would do," Strickler says. "He was a creative, imaginative person in many ways."

Tenney was also a skilled cook himself and could recreate a restaurant dish just from tasting it. He often cooked for his family and brought something of the scientist to the kitchen, working precisely and striving for perfection in taste and presentation. Indeed, before his final illness, he had planned

Richard Nordgren, M.D., a neurologist on the DMS faculty and a neighbor of the Tenneys'

While Marsh was a great man, I remember him best as a friend and neighbor. He was a tremendous walker, for example; he went out at least twice a day, and his pace was legendary. His favorite trip was through Pine Park. He was even appointed the unofficial "Pine Park Ranger." His "finds" in this role included a car abandoned by some teenagers and some artwork in the manner of Christo, including huge banners hanging from trees. His reaction to these events was always extremely entertaining. Marsh was also a fabulous cook. He hated the term gourmet, but it certainly applied to him. It was a great pleasure to be invited to the Tenney house for dinner. I once asked Carolyn for one of his recipes, and she told me he did everything in his head. He had the ability to experience a dish elsewhere and then come home and recreate it, even improving on the original by manipulating the spices—like Mozart allegedly hearing a piece by Salieri, and then turning it into something even better. He was a kind and witty man, and we will greatly miss him.

Nicholas Anthonisen, M.D., Ph.D., DMS '56 and dean of the University of Manitoba School of Medicine

I was a research fellow in physiology under Marsh Tenney from 1960 to 1963. Those years changed my life, forming the basis of my career. He was and is my scientific father and role model. He was full of ideas and enthusiasm, but always ready to listen to others. He was an intelligent and incisive critic, but waited until asked before volunteering his opinion. I left Dartmouth with not only new knowledge and skills, but real confidence in myself. During my time there, he supervised several junior researchers, ran the physiology department, and was acting dean—a performance I truly appreciated only in retrospect. His most striking characteristic was his intellectual curiosity. I once had a chance to introduce him at a meeting and did so by saying that if one set him down on a polar ice cap with nothing but a thermometer, he'd figure out a way to make original observations of great interest. He later said he appreciated the comment. I was, of course, enormously pleased. I'd thought long and hard about the introduction and strongly believed it to be true, as I do today.

Heinz Valtin, M.D., a retired physiologist on the DMS faculty and Tenney's successor as the department's chair

Marsh had numerous talents, among them an erudite way with words. Although his pithy style appeared effortless, I am reminded of his dictum that "seemingly spontaneous talks are usually the best prepared." His articles were preceded by much scholarship, and many dealt with the history of science or the role of physicians in the development of major scientific movements—for example, "The Concepts of Time and Process in Nature: The revolutionary view of James Hutton, M.D., that prepared the way for the theory of evolution." During the 1980s, Marsh produced the annual reports of the Francis Foundation. Each was a beautifully crafted booklet that, in addition to one of Marsh's essays, contained illustrations of old scientific instruments or publications—such as Malpighi's 1661 concept of alveolar structure or the title page from Spallanzani's 1803 *Memorie su la Respirazione*. For many years, Marsh also wrote a column for *News in Physiological Sciences*. It reflected his broad intellect and was reminiscent of Lewis Thomas's "Notes of a Biology Watcher." More than once, I suggested to Marsh that he publish his essays in book form. Each time, regrettably, he demurred.

James Snapper, M.D., DMS '72 and director of experimental medicine at Glaxo Wellcome

Marsh Tenney was my father-in-law, teacher, advisor; a sparkling intellect; a modest man who led by example; a man of total integrity. My memories go back almost 40 years, first to him as the unusual parent of a friend—a man who kept a crow in the kitchen and sloths and Mexican jumping beans in his laboratory, who was known to walk llamas down the street. Later, when I was a medical student and he was dean, I had the frightful task of asking to marry his oldest daughter. Later still, he became a guide who quietly suggested to me but never dictated major career decisions. He had a mischievously inquisitive mind and could turn simple conversations into an adventure. He was a humble man of immense stature who let me become a member of his family.

O. Ross McIntyre, M.D., DMS '55 and a retired hematologist-oncologist on the DMS faculty

In 1964, Franklin Ebaugh left DMS for the deanship at Boston University. A newly appointed instructor in medicine, I inherited his three research grants, full clinic, and 200-hour teaching load in

continued on page 59

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DARTMOUTH COLLEGE ARCHIVES

The refounding was celebrated in 1960 with a convocation whose speakers included Aldous Huxley, C.P. Snow, and others—pictured above with Tenney, left rear. His own address at the event (see the facing page) indicated his breadth of interests—also evident in the photo below, taken on a 1967 trip to Nepal.

and begun preparing his own 78th birthday dinner.

Tenney also collected books on the history of medicine and studied the subject with vigor. Recalls Valtin: "He liked to write. He liked to do the scholarship. . . . You can see how erudite [his papers] were just from the titles: 'Vulgar Errors in the New Science: The Transition from Medieval Scholasticism to Skepticism and Scientific Inquiry as Illustrated in the Lives of Two 17th-Century Virtuosos, Sir Thomas Browne and Sir Kenelm Digby.'"

"He was totally stimulating," says his daughter Karen. "I'm not a scientist, but he would engage in all these other things that a person who's a nonscientist would find fascinating."

Tenney always argued for a general approach to the academic life. He wrote in 1969 that "the physiologist is obliged to keep the whole always in mind. He accepts the tactical necessity of reductionism to get at and understand the parts, but, once done, it is for him only the beginning, never the end. Synthesis is his overriding strategy." Tenney expanded this premise beyond his specialty in an address at DMS's Bicentennial Symposium in 1997, arguing for "a more undifferentiated manner of thinking" and concluding that "medicine, which strives to improve the health and welfare of mankind, resonates sympathetically with the humanities' goal of fostering human interests and ideals."

But at the same time, Tenney was first and always a scientist. In 1975, he was offered the opportunity by the Parker B. Francis Foundation to start a fellowship program in cardiopulmonary physiology. His work became a model for private support of research. In 1981, when a major heart attack forced Tenney to give up many professional activities, he chose to continue his work with the Francis Foundation. He enjoyed mentoring bright young researchers and valued the outlet the organization's annual reports offered for his scholarship.

That 1981 heart attack was the first sign of the coronary disease that was the eventual cause of Tenney's death. He'd spent 19 years carefully regulating and battling his condition, but it rarely slowed him down. He was admitted to DHMC a week before his death but remained intellectually vital to the very end. His wife and daughter recall that while he was in the cardiac care unit, he started a philosophical discussion with DHMC Chaplain John Mullin about the alternate use of the words "trespasses" and "debts" in the Lord's Prayer. "That's how sharp Dad was right up to the end," says Karen Tenney.

Carolyn Tenney adds that he was grateful to be "present at his own death." He had always wanted to have the intellectual acuity to investigate this final experience, she says.

Despite all his achievements, Tenney was the personification of humility. Heinz Valtin summarizes his colleague's legacy: "In my view, there's a direct line of influence from what he founded and what we see here today in superior medical care." There is an interdependence among the components of an academic medical center such as DHMC, explains Valtin. The Medical School relies on the Hospital and the Clinic for patients to underpin its educational and research endeavors, while the clinical operations need the Medical School to attract first-rate physicians. Had DMS closed, a vital component of that mutually supportive relationship would be missing. And it is because of that relationship, Valtin points out, that "we were able to build such a marvelous facility as the Medical Center."

Yet that is not a connection Tenney himself would have drawn, however firm its premise. Continues Valtin, "Just a week or two before his death . . . I happened to walk into my Borwell office, and, as I came from the parking lot, I looked [at the whole Medical Center] and said, 'Boy, this is really what Marsh started in '56.'

"I happened to see Marsh that day," Valtin concludes, "and I asked him, 'Does that thought ever occur to you?' He said, 'No.'" ■

The ultimate "literate scientist"

There is much discussion in education today of the need to ensure a "scientifically literate" citizenry—a populace sufficiently schooled in the sciences to make informed choices about the world we live in. Marsh Tenney actually embodied the reverse of that catch phrase, for he was the ultimate "literate scientist." He was so well informed about a multitude of disciplines, so fascinated by every aspect of the world we live in, that he is remembered by all who knew him as a fascinating conversationalist.

He also enjoyed opportunities to bring his diversity of interests together in writing and speaking—and he was exceedingly accomplished at both. An indication of his erudition and his breadth of interests can be seen in the remarks below, which he delivered on the occasion of a 1960 convocation—a three-day event titled "Great Issues of Conscience in Modern Medicine"—held to celebrate the refounding of the Medical School.

And note that just as Tenney praises the timelessness and the wisdom of the passage he quotes from Sophocles, those same qualities are evident in his own writing:

"There's a rather remarkable, and to me prophetic, passage that appears as a digression in one of the tragedies of Sophocles. I think it betrays that even then there must have been great concern, and certainly great interest, in the extensive range of human science. The passage begins: 'Wonders are many but there is no wonder wilder than man—only against Death he has fought in vain, and, yet, many a mortal illness he has conquered.'

"In the almost 2,000 years since this passage was written, the history of medicine has recorded a remarkable list of achievements against man's suffering and disease. And more recently the growth of medical knowledge and its application have accelerated enormously, due in no small part to the evolution of medicine as a scientific discipline.

"Historically, medicine was the first profession to join firmly on to the natural sciences, but together with biology it has only recently progressed from classification and dissection into an era more deeply concerned with quantity and circumstance. Though its foundations have become more rational, its practice—that supreme welding of science and humanism—is said to have become more remote and indifferent to human values, and once again medicine has been forced to remind itself that it is often the human factors that are determinant.

"Now, in the broader context, scientific medicine shares with science as a whole not only the glory of achievement but *all* those problems that are consequent to its deep permeation of our culture. In our attempt to interpret the effect of this phenomenon, we have been slow to appreciate that there is a profound difference between what science is and what science does, a difference between its content and its exploitation.

"Gillispie has written that 'even now science continues to be what it was in Greece, conceptual thought mediating between consciousness and nature. But it is also something more. It has become determinate instead of simply speculative.'

"Still, Bacon's dream of a scientific Utopia has not come to pass. And the reason for our disenchantment may be quite simple. Science tells us what we can do—never what we should do. While science itself can not be immoral, neither can it establish a morality. Its objective posture absolutely precludes competence in the realm of values. The popular tendency to equate scientific progress with ethical advance is as fallacious as were some of the early attempts to find morality in the law of evolution. In his allusion to this problem, Loren Eiseley commented as follows: 'The western scientific community, great though it is, has not concerned itself enough with the creation of better human beings, nor with self discipline. It has concentrated instead upon things, and assumed that the good life would follow. Therefore, it hungers for infinity. Outward in that infinity lies the Garden the 16th century voyagers did not find. We no longer call it the Garden. We are sophisticated men. We call it, vaguely, progress.'

"The purpose of this conference is to examine the issues of conscience in that 'progress.' The objective is not simply the question of the survival or the extinction of man. But it is *what kind* of survival? A future of what *nature?*

"'Thus with his wisdom,' Sophocles wrote, 'subtle past foretelling, man wins to joy or sorrow.'"

"Though medicine's foundations have become more rational, its practice is said to have become more remote and indifferent to human values, and once again medicine has been forced to remind itself that it is often the human factors that are determinant."