Chapter 2

RESEARCH COMES OF AGE

The Great Depression affected the College of Pharmacy as it did every other institution in the country. But even so, the period between 1929 and the Second World War was a time when the stature of the department would continue to rise.

When the stock market crashed in 1929, that same year 27 students graduated from the College with an undergraduate degree in pharmaceutical chemistry. The medicinal plant garden bloomed with some 500 species. Charles Rogers, a faculty member in pharmaceutical chemistry who was long-seen as the eventual replacement for Dean Frederick Wulling, was putting the finishing touches on his textbook, *Inorganic Pharmaceutical Chemistry*, to be published the next year. The book was the first-ever published by a member of the College of Pharmacy faculty, although Wulling had written a textbook before coming to Minnesota. Rogers’s book quickly became a standard text in the field for some 20 years, and was then only superseded by another text written in collaboration by University faculty members in medicinal chemistry (Wulling Collection, folder 65, undated; Netz, 1971, 69).

Numerous research projects in both pharmaceutical chemistry and pharmacognosy were underway during this time. Earl Fischer, who had just been appointed to replace Edward Newcomb as head of pharmacognosy, was overseeing studies on the effect of propylene gas on medicinal plant growth, as well as research on one of the staples of the natural products field—digitalis—and in particular investigating the effects of different methods of drying and storing the substance (Minnesota State Pharmaceutical Association, 1930). Fischer was busy in other areas, too, such as analysis of ash derived from 300 drugs then on the market. That year the pharmacognosy program was also the beneficiary of research-related gear, including 15 compound microscopes, additional drying racks, cameras, and more (Wulling, 1930; Minnesota State Pharmaceutical Association, 1930).

During this period, Rogers led research into, among other things, the hydrolysis
of some smoke-producing medicinal compounds and creosote distillation; the latter work would eventually bear fruit in the following decade when he and Ole Gisvold, a new pharmaceutical chemistry instructor, isolated a powerful anti-oxidant that for many years was the standard ingredient added to lard to prevent spoilage (Minnesota State Pharmaceutical Association, 1931).

Gisvold, who had just received his Ph.D. at the University of Wisconsin, was actively recruited by Rogers. Rogers made the drive to Madison to convince him

Microscopes acquired in the 1930s were as essential to research back in those days as nuclear magnetic resonance spectroscopy is an important tool in research from the 1970s to the present day.
to come to Minnesota because of Gisvold's potential as a researcher. As it turned out, Roger’s foresight proved correct, as Gisvold ultimately emerged as one of the department’s most prominent scientists from the time he arrived at the University until well into the 1960s.

By 1935, Rogers could report to the MSPhA that there were 12 research projects underway at the College of Pharmacy, all of them in the field of pharmaceutical chemistry or pharmacognosy. This included work he himself was leading that was investigating wood alcohol and another collaboration involving him, Fischer, and Gisvold (ibid., 1935). Over the next several years, research projects came to include studies of both natural and synthetic products, including sleepy grass, ergot, and, of course, digitalis. To help with these studies, the pharmaceutical chemistry department acquired a piece of equipment known as a Barnstead Extractor.

Two factors helped create additional impetus to pharmaceutical research during this period before the federal government undertook large-scale funding of projects. One was volunteer work by faculty members on the committee responsible for updating the U.S. Pharmacopoeia. University of Minnesota participation with the Committee of

OLE GISVOLD
B.Sc. 1930, M.Sc. 1932, Ph.D. 1934, University of Wisconsin
Assistant Professor 1935-40, University of Minnesota
Associate Professor 1940-41, The Ohio State University
Professor and Head 1941-69, University of Minnesota

Awards
• APhA Ebert Prize Medal, 1942
• APhA Ebert Prize Medal, 1953
• APhA Research Foundation Award in Natural Products, 1962

Barnstead Extractor.
Revision began with Frederick Wulling, and continued on under Edward Newcomb of pharmacognosy, and later further advanced under Charles Rogers of pharmaceutical chemistry.

The other factor was the intense activity leading up to and following the adoption of the Food, Drug, and Cosmetic Act of 1938, which greatly expanded and detailed the powers of the Food and Drug Administration (FDA), created in 1906 by the Food and Drugs Act. Among other things, the act gave the FDA regulatory power over the labeling of medical and cosmetic products. Perhaps even more significantly, the act required drug manufacturers to prove that their products were safe for recommended usage before they could be released to the market, a provision that placed a new premium on determining not only what products a medication contained but also how those products might interact with each other in the human body (Anderson & Pennigton, 2005, 23-4).

To keep up with the research load, the number of graduate students admitted had climbed during the decade, even as in the early years the number of undergraduates enrolled in the College of Pharmacy had declined. From 10 graduate students in 1934, enrollment climbed to 29 by the end of the decade, with the first Ph.D. in pharmaceutical chemistry awarded in 1938 to Karl Goldner, who later went on to serve as dean of the College of Pharmacy at the University of Tennessee. During this time, the University also began funding for up to seven graduate teaching assistants (Anderson & Pennigton, 2005, 28).

A few years later, the graduate program got another, albeit belated, boost in funding with the establishment of the Melendy Fund. Samuel W. Melendy was one of the founders of the Minnesota State Pharmaceutical Association, a supporter, and eventually a close friend of Frederick Wulling. Melendy was one of the leaders in the drive to establish the College of Pharmacy in the late 19th Century.

Shortly after the College was founded, Melendy let Wulling know that he intended to donate part of his personal fortune to the College. Melendy, however, died unexpectedly in 1916, and the promise of his bequest remained until 1941 when his widow died and left a total of $100,000 to pharmacy. The money was directed towards several purposes, including undergraduate scholarships, a lecture series, and two $750 graduate assistantships (Anderson & Pennigton, 2005, 31; Netz, 1971, 88-9).

Of course by far the biggest news of the 1930s at the College was the retirement of Frederick Wulling in 1936, a year after he’d reached mandatory retirement age. The Board of Regents had granted him a special one-year extension in recognition of his contributions to the University. As expected, he was succeeded as dean by
Exhibit of the College of Pharmacy at the Minnesota State Pharmaceutical Association annual meeting, 1934.

An autographed page of a book was presented to Dean Frederick Wulling on his birthday by his staff, 1935.
Charles Rogers, who immediately instituted significant changes to the structure and curriculum of the College.

The faculty and their spouses at the Christmas Lake cottage of Dean Emeritus Frederick Wulling and Mrs. Wulling after a luncheon in honor of Dean Charles Rogers and Mrs. Rogers in September 1936. Left to right, top row: Gustav Bachman, Earl B. Fischer, Ragnar Almin, Mrs. Netz, Ole Gisvold, Frances Larson, Mrs. Johnson, George Crossen, Helen Pederson, Mrs. Smythe. Middle Row: Hallie Bruce, Dean Emeritus Wulling, Mrs. Wulling, Dean Rogers, Mrs. Rogers, Mrs. Fischer, Mrs. Almin, Mrs. Bachman; Lower row: George Balok, Ralph Voight, Frank Johnson, Edward Pavek, Charles V. Netz.

Perhaps the most important change Rogers made was the separation of the College into three departments: the Department of Pharmacognosy, headed by Earl Fischer, who'd been a faculty member since 1922; the Department of Pharmacy, headed by Gustav Bachman; and the Department of Pharmaceutical Chemistry (renamed 30 years later to the Department of Medicinal Chemistry), led by newly recruited faculty member Glenn Jenkins. Jenkins would only remain at the University for five years before leaving Minnesota to become the dean of Purdue’s College of Pharmacy. Jenkins was a prolific researcher and a superb administrator as head of the Department of Pharmaceutical Chemistry at Minnesota and later as dean of pharmacy at Purdue University. He published more than 200 research papers largely dealing with the phytochemical and synthetic medicinal chemistry and was the recipient of the APhA Ebert Medal in 1936. Following his departure to Purdue, Jenkins would be succeeded by Ole Gisvold.

By then, Gisvold was head of the Department of Pharmaceutical Chemistry at The Ohio State University, but once again Rogers made his high opinion of Gisvold’s abilities clear, tracking Gisvold down while he and his wife were on a fishing trip in
GLENN J. JENKINS
B.Sc. 1922; M.Sc. 1923; Ph.D. 1926, University of Wisconsin
Assistant Professor 1927, University of Maryland
Professor and Head of Department, 1936-41, University of Minnesota
Born, Sparta, Wisconsin, 1898; died, 1979.

Students enjoying sodas in Coffman Memorial Union, 1940.

In 1939-40, Coffman Memorial Union was built to house facilities for student recreation and relaxation. The photograph above shows the building under construction in 1939.
northern Minnesota. Rogers convinced him to return to the University to lead the department.

With Gisvold in charge and the addition of new faculty, including Frank DiGangi, Charles Wilson, and Taito Soine, pharmaceutical chemistry at the University continued to rank as one of the top programs in the country.

In addition to projects initiated by the members of the department, a program inspired by the national war effort also provided funding and research material for the University. Sponsored by the Bureau of Plant Industry in the U.S. Department of Agriculture, a phytochemical and pharmacological study was carried out by several institutions of Indian medicinal plants. The University’s portion of the project was under the direction of the Pharmacology Department in the College of Medical Sciences, but it involved researchers from other departments, including pharmaceutical chemistry, where research was initially directed by Glenn Jenkins and then by Ole Gisvold after he succeeded Jenkins as department head.

Interestingly, the Indian medicinal plants study did not involve fieldwork by University researchers per se. Rather, government representatives interviewed Indian healers in Nevada about what plants they used and why. Armed with this information, these representatives gathered samples of the plants in season, dried them, and shipped them to the University for study where staff members in pharmaceutical chemistry would subject the material to extraction using solvents. The resulting residues were examined for their pharmacologically active components, which
were purified and their structures mapped out through a combination of processes.

The program was certainly not on the scale or scope of something as critical as the Manhattan Project, but it yielded research that became the basis for numerous Ph.D. dissertations at the University as well as other important economic benefits.

Gisvold was part of a research team that identified a compound—nordihydroguaiaretic acid (NGDA)—found in the creosote bush. It proved to have potent antioxidant properties in even small quantities when added to animal fats. A Chicago company, W. J. Stange, was interested enough in NGDA’s commercial applications to enter into a royalty agreement with the University for use of the product. While isolating and producing NGDA was never easy, the compound appeared in lard and other products sold in the United States for nearly 20 years. The money was used in part to fund a post-doctorate fellowship for NGDA research supervised by Gisvold; Gisvold went on to hold a number of patents on the processes of isolating and producing the antioxidant. Still later, NGDA was shown to have effect in combating certain kinds of malignancies, although it did not emerge as a major weapon in the fight against cancer.

Gisvold’s stature as a gifted researcher earned him the coveted Ebert Prize, an award given annually for the most outstanding research paper published in the Journal of Pharmaceutical Science, not once, but twice: the first time in 1942, the second in 1953. Gisvold is one of the few medicinal chemists to have received the prize more than once (College of Pharmacy, 1977, 5).

With increases in enrollment and number of research studies, the size of the faculty in the College rose as well, and in a way that reflected the College’s changing priorities.

Although the change in absolute numbers was slight—from 10 faculty in 1940 to 11 in 1950—there were critical alterations in a few areas. First, and most impor-
tantly, the faculty recruited to the school were better qualified to carry out research. Secondly, the balance in the College shifted from an almost exclusive emphasis on teaching toward a broader combination of teaching and research on the part of faculty in both pharmaceutical chemistry and pharmacognosy. Research in the 1940s and 1950s continued to focus largely on natural products—isolating and analyzing the structure of their components and determining their pharmacological properties.

After the additions to the faculty of Ole Gisvold and Glenn Jenkins (whose hiring in some ways indicated a new emphasis on research as his first Ebert Award was awarded prior to his joining the College as the head of pharmaceutical chemistry), the College during this period took on several new faculty members with strong research agendas.

In 1940, Charles O. Wilson was appointed to the faculty in pharmaceutical chemistry. Although he would leave Minnesota in 1948 to eventually become dean of the College of Pharmacy at the Oregon State University in Corvallis, he published numerous research articles while in Minnesota and served in the Anti-Malarial Synthesis Program, a project initiated by the Federal Office of Scientific Research Development during the war years. He was also chief chemist for the Minnesota State Board of Pharmacy (Wilson, 2008).

In another sign of the new trend toward research, the departure of George Crossen to become dean of pharmacy at Drake University led to the appointment of Taito Soine to succeed him. Although Soine’s initial appointment was in pharmacy, he would emerge as one of the faculty mainstays of medicinal chemistry over the next 35 years (Netz, 1971, 91). His research interests were primarily on alkaloids, coumarins, local anesthetics, and anticholinergics.

With Charles Wilson’s departure in 1948, the College appointed Frank DiGangi as assistant professor in pharmaceutical chemistry to replace him. At the time, Di-
Gangi was completing his doctorate under Ole Gisvold, and finished his degree a few months later. During the next decade, DiGangi would join Soine and Gisvold as one of the triumvirate of faculty members who helped create a tight-knit, highly collegial department. While Soine and Gisvold maintained a very active research program, DiGangi spent much of his career in administration, initially as assistant dean for student affairs (1969-76), and then as associate dean for the College ad-

DiGangi was known for his exceptional memory of names and faces. There was hardly a pharmacist or friend of pharmacy in Minnesota whom he did not know and about whom he couldn’t provide at least a brief history. DiGangi was heavily involved with the Minnesota State Pharmaceutical Association, serving as president in 1971-72. He was the recipient of the Lawrence C. and Delores M. Weaver Medal and the Harold R. Popp Award for his outstanding service to the profession.

During the war years and into the rest of the decade, the Indian medicinal plant project was far from the only research program undertaken by College faculty. Reports submitted to the MSPhA during these years make it clear that the scope of scientific investigation continued to expand.

Indeed, by 1947, the College had 14 graduate students in pharmaceutical chemistry, all pursuing research projects (Minnesota State Pharmaceutical Association, 1947, 42).

During this time investigations included potential anesthetic and antibiotic properties of natural products in addition to the antioxidant products found in creosote, as well as investigations into the potential for these products as well as barbiturates from synthetic compounds. After completing his doctorate, for example, Soine attempted to prepare synthetic local anesthetics. Besides working on the Indian plant project, Gisvold pursued research into the venerable digitalis; later in the decade, he and Soine collaborated on a project that sought to synthesize compounds that would prove effective as antispasmodics.

Meanwhile, in pharmacognosy, Fischer continued his studies of medicinal plants, contributed research to developing standards for the U.S. Pharmacopeia, and collaborated with Charles Rogers on study of the adaptability of Minnesota peat for
use in cultivating different species of mint (ibid., 1940-50). In 1948, Wallace White was hired as an associate professor of pharmacognosy, although he had no background in that discipline. His undergraduate training was in biological sciences, and he held a Ph.D. from Yale in pharmacology. He did not conduct research or teaching in pharmcognosy as his research interests were in the area of programmed instructions in pharmacology. Wallace’s appointment most likely was to establish a role of pharmacology teaching at the College of Pharmacy. At that time pharmacology was—and still is—taught by faculty from the Department of Medicine.

The role of research at the College of Pharmacy was highlighted by an exchange that took place in 1944 between Gisvold, the head of the Department of Pharmaceutical Chemistry, and the head of the Committee on Pharmaceutical Research, which was a group that had recently been created by the American Association of Colleges of Pharmacy.

Committee chair E. V. Lynn, a faculty member at the Massachusetts College of Pharmacy, noted in a report issued by that committee in September 1944 that most of the truly significant breakthroughs in materia medica, medicine, and pharmacy during the previous 50 years—like the development of sulfa drugs, insulin, and the discovery of vitamins and hormones—had taken place outside pharmacy colleges, pointing to a shortage of research by such colleges. The committee’s goal was to “devise an arrangement whereby the individual and collective efforts at research in our schools could be stimulated, directed, and coordinated toward a goal of highest quality” (Lynn, 1944). In the absence of any other body in the profession available to carry out this task, Lynn volunteered the committee to serve, at least for the interim.

Toward that end the committee would collect “ideas” for research projects to be used to stimulate research—under some kind of unspecified “direction” from the AACP committee on research.

The report went on to state that, in the interest of discovering what faculty
at pharmacy colleges might direct or perform future research, deans at member schools had been sent a letter asking for the names of “research-minded” faculty, together with their curriculum vitae. By the time of the report, the committee had already collected the names, research interests, and publication information on about 250 faculty around the country.

A reading of submitted papers, however, had led Lynn to conclude that the quality of the work evidenced by the papers was “not been very impressive as a whole.” He argued that colleges must have adequately trained faculty to conduct research, proper equipment and laboratory space for the work, and sufficient time free from teaching to devote to their scientific investigations. Furthermore, Lynn felt that each college should have a research program and that graduate students should be given the opportunity for research fellowships, scholarships, and assistantships. Colleges also needed adequate libraries, he said. He noted that of 59 member institutions, 28 did not have a graduate program and offered no advanced degree. Of the remainder, only 15 offered master’s degrees and only 12 offered Ph.D. degrees (American Association of Colleges of Pharmacy, 1944).

As the chairperson of the leading research department at the College of Pharmacy—which, in addition to offering graduate degrees and fellowships also housed a pharmacy library created much earlier by Frederick Wulling—Gisvold took issue with Lynn’s report and the committee’s intent. He wrote to the committee early in 1946, outlining his objections: “Those who are actively engaged in doing and directing research may not want to divulge any problems they think are worthwhile or that they may want to use, however distant in the future” (Gisvold Collection, 1952, box 2). The priority placed on research in the pharmaceutical chemistry and pharmacognosy departments made itself known in other ways as well.

During the period between Wulling’s retirement and the 1950s, faculty members published dozens of articles in numerous journals. But that was not all. This was also a productive time for the publication of textbooks—some of which became the standards in their field—written or edited by members of the College faculty.


In 1941, meanwhile, Rogers and pharmacy faculty member Charles Crossen published *A Laboratory Manual of Inorganic Chemistry*; the manual was later reissued as a collaboration between Rogers and Soine. As early as 1938, Gisvold and Rogers
co-produced *The Chemistry of Plant Constituents*, which was written primarily by Gisvold, with Rogers serving as consultant on the project (Netz, 1971, 84).

Gisvold followed this up with Organic Chemistry in Pharmacy, published in 1952 by J. B. Lippincott. Co-edited with Soine, it was a collection of three dozen papers gathered from researchers around the country. Several were written by Gisvold and Soine (Gisvold Collection, 1952, folder 6, Box 3). In 1949, the department also published a tome that went through several editions as *Textbook of Organic Medicinal and Pharmaceutical Chemistry*, edited by Wilson and Gisvold (College of Pharmacy, 1964). Currently Wilson and Gisvold’s *Textbook of Organic Medicinals and Pharmaceutical Chemistry* is in its 12th edition.

**A Community of Faculty**

With the appointment of Frank DiGangi in 1949, the faculty makeup of the department of pharmaceutical chemistry was set for the next decade. Ole Gisvold served as chair and continued his research in natural products, as did Taito Soine. Over the course of the 1950s, the number of graduate students continued to grow slowly. Laboratory and office facilities in Wulling Hall were limited at best; both Soine and Gisvold maintained small laboratories in their offices, which faced each other across the workbenches of a communal laboratory.

The cramped space, the small number of faculty (during this period, the entire academic field of pharmaceutical chemistry in the United States was confined to a handful of schools), and the type of time-consuming, labor-intensive research that was standard of the day were conducive to engendering a working atmosphere that was informal, collegial, collaborative, egalitarian, and even family-like where faculty and graduate students worked side-by-side almost as equals.

A graduate student during the latter part of this decade, K. H. Lee, who is now professor of medicinal chemistry at the University of North Carolina, recalls how Soine offered guidance to Lee on how to complete his studies. Lee, who took his master’s degree at Kyoto University, also found himself the object of DiGangi’s concern as the professor frequently asked the slender graduate student whether he was getting enough to eat (Lee, interview, November 2009).

The casual tone in the department—and indeed, throughout the College—was set by Dean Rogers who was known to keep a can of Coke mixed with a little alcohol on the windowsill of his office during winter months for a handy chilled drink. Faculty members who visited Rogers in his office often found the Dean’s Golden Retriever lounging on the rug, and children accompanying a parent faculty member were invariably offered a candy bar from a stash Rogers kept in his desk (Kier, interview, November 2009; Soine, interview, January 2010). In the laboratory area, those same children would often also be allowed to shine their dimes in a little
puddle of mercury poured out by Soine (Soine, 2010). Beginning in the late 1930s and continuing into the 1960s, faculty and graduate students attended an annual picnic at Loring Park in Minneapolis, which was a potluck featuring burgers and hotdogs grilled by male faculty members and side dishes provided by their wives. Rogers also had a “shack,” as it was invariably referred to, in northern Minnesota, where he and faculty members would go once a year on a fishing trip (ibid.).

Socializing was also a regular feature of life at the departmental level. Gisvold had been Soine’s Ph.D. adviser, and the two remained colleagues and friends for the rest of their lives. An avid gardener who specialized in growing strawberries, Gisvold held regular dinner parties during growing season featuring his prize crop—parties where Soine would point out to his son, Bill, that it was Gisvold who isolated the antioxidant found in his son’s favorite candy bars. Once a year, in turn, Soine hosted a faculty dinner at his house as well.

The department was both collegial, then, and very informal—a virtual “Belle Epoque” in the words of one graduate student, Lemont Kier, at the time (Kier, 2009). Kier, who is now a professor emeritus at Virginia Commonwealth University and a senior fellow at its Center for the Study of Biological Complexity, arrived at the University of Minnesota in 1954 and completed his doctorate in 1957 in medicinal chemistry. In the department’s communal laboratory space, the graduate students would sometimes drop-kick empty milk cartons over the benches or pitch pennies down the length of the floor as ways to pass time while awaiting the outcome of chemical reactions.

The egalitarianism and informality of the department were perhaps best typified by Soine, whose office door was always open to graduate students. Swinging around from his desk, Soine would make inquiries in a student’s ongoing research, offer advice, hand out recent articles germane to the subject at hand, and make fre-
quent—and enthusiastic—visits to the common laboratory where he would check on progress. He was also known for pushing graduate students to go out on a limb in their research, to think conceptually and creatively about their investigations, and to step back and see the big picture (Kier, 2009).

Department research continued to focus on natural products, with DiGangi, whose specialty was analytical chemistry, pursuing inquiries similar to those of Gisvold’s, and Soine developing studies into alkaloids. “By present-day standards, research facilities and instrumentation were rudimentary and there was no UV analysis,” recalls Kier. Everything had to be measured chemically through reactions, which were then studied to analyze the structure of products.

Meanwhile, the communal laboratory space smelled strongly of green plants being dried for study and stored until use in bags and boxes stacked up in every available space. In his office, Soine kept a gold-chain balance and was very proud of the fact that he could measure out a tenth of a milligram in just five to ten minutes, or about as fast as could be achieved using that particular instrument. Soine sometimes enlisted his son, now a retired faculty member in medicinal chemistry at Virginia Commonwealth University, to help prepare research equipment (Soine, 2010).

Not surprisingly, the time frame for even simple research projects was considerably longer than today. It also meant that much research was carried out in a way that would now be considered fragmentary, with researchers publishing observations that, over time, might lead to a breakthrough in the understanding of a substance’s ultimate structure. It was a trial-and-error method, and it could take years
before any definitive conclusions could be reached.

“Researchers would have to take a compound under study and, by means of analyzing by-products created by heat or exposure to acids or alkali, deduce structural facts about the original substance,” Kier said. “Sometimes it was a matter of simply heating a substance up with an acid or an alkali. A battery of two or three dozen chemical tests might be needed to eliminate, one at a time, all other possibilities except the right one” (Kier, 2009). It was no wonder that a faculty member like Soine would openly express joy when he’d finally nail down the structure of a product after earlier proposing two or three incorrect structures (Soine, 2010).

This is not to say that there wasn’t a keen interest in both pharmaceutical chemistry and pharmacognosy in the latest techniques and instrumentation. Despite his cherished gold-chain balance, Soine was fascinated by the possibilities of ultraviolet and infrared for chemical analysis, which began coming on stream in the Chemistry Department located not far from Wulling Hall; until the move to Appleby Hall, most of the analysis of products requiring more sophisticated techniques were carried out in the Chemistry Department’s laboratories (Soine, 2010).

Meanwhile, Herb Jonas’s expertise in employing radioisotopes to analyze chemical structure explains his appointment as assistant professor of pharmacognosy in 1958 despite the fact that his training was in plant physiology, not pharmacognosy (Schramm, interview, 2009). By this time, plans were also already in the works for an isotope research laboratory in Appleby Hall, and Frank DiGangi attended courses in the field, including one four-week seminar at the Oak Ridge Institute in Tennessee, as preparation for a wider application of isotopes both to research and teaching at the College (Netz, 1971, 121).

In perhaps one of the most important signs of the coming revolution in research, at the initiative of Dean George Hager, who’d become familiar with data processing during his years working in industry, Glen Hamor, a faculty member at the University of Southern California who took his doctorate in pharmaceutical chemistry in Minnesota, spent the 1959-60 academic year at the College. He was tasked with coding information about medicinal products so it could be entered into computer systems (Netz, 1971, 123).

The Physical Plant Grows

As from the very beginning, issues of space and facilities continued to dog the departments—and the College of Pharmacy as a whole. By the end of the 1930s, pharmacy had long outgrown Wulling Hall but it would take several more decades before the problem was rectified.

Dean Charles Rogers initiated efforts to alleviate the ever more pressing problem with his 1940 Biennial Report to the President in which he called for a $175,000
allocation to add space and equipment to Wulling Hall (Netz, 1971, 95). In 1949, the Board of Regents finally followed up on Rogers’s call with a legislative request for some $450,000 to upgrade Wulling Hall, but the proposal went nowhere, in large part because it appeared far down the list of priority projects. The following year, the MSPhA pointed out that Wulling Hall was now home to three times the number of undergraduate and graduate students than it had been designed for—almost 450 as opposed to 150. By 1951, the legislative request had moved up the list of Board of Regent priorities but was once again overlooked by the state.

In the next round of funding requests, the Regents dropped the idea of adding space to Wulling Hall and decided to ask the state for $150,000 to remodel Appleby Hall, the home of the School of Mines and Metallurgy, asking for an additional three-quarter million dollars to build a new structure to house the mining school. That request also went nowhere. In 1955, however, the University finally convinced the state to appropriate money for both projects. Minnesota appropriated more than $800,000 for a new mining and metallurgy building and more than $200,000 to retrofit Appleby Hall.

In addition, the College raised money on its own from private and corporate donors and landed a $76,000 grant from the U.S. Department of Health, Education, and Welfare to help with construction and equipment (Anderson & Pennigton, 2005, 45-6).

By then, there had been a change in the leadership at the College of Pharmacy, as well as in its administrative structure. Both would help pave the way for the rise of a new era in the department that would begin early in the 1960s.

In March 1956, Rogers’s wife died after an accident in which she slipped on street ice and fractured her skull. Distraught over his loss, Rogers soon announced that he would be leaving the University (Netz, 1971, 113). After a lengthy search for a replacement, the following year George P. Hager was appointed dean to replace Rogers, a position he took over in June 1957. Once again, the appointment reflected the College’s emphasis on research; in turn, this emphasis would benefit from the launch of the Soviet Union’s Sputnik satellite in October of that year, an event that led to an immediate surge in federal funding available to researchers in almost every discipline around the country.

Hager came to Minnesota from the University of Maryland, where he obtained his Ph.D. in 1942 and went on to serve as a faculty member in the School of Pharmacy and later the head of the Department of Medicinal Chemistry where he earned a reputation as an expert in pharmaceutical manufacturing and synthetic chemistry. Not long after arriving in Minnesota, Hager announced plans to create a new associate dean position in the College to help administer the increasingly complex needs of teaching, research, and outreach.

At first, then-President James Morrill balked at the idea, but in 1960, the new
position was finally established and Charles Netz, head of the department of pharmaceutical technology, was given the job. Hager revitalized the College’s alumni association by leading an effort to renovate Appleby Hall, home to the College of Pharmacy and the School of Mines and Metallurgy. State funding wasn’t available
for the renovations, so with the support of University leaders, Hager secured a $76,000 grant from the U.S. Department of Health, Education, and Welfare to construct and equip research buildings. Hager left Minnesota in 1966 to become dean and professor of medicinal chemistry at the University of North Carolina. That set the stage for the next development.