

*The Rockefeller University—  
The Dream That Almost Came True*

Late in the fall of 1959 I received a letter from George Uhlenbeck. The gist of it was that Sam Goudsmit had approached him, on behalf of Detlev W. Bronk, to inquire whether he (George), Ted Berlin and I would be interested in joining the faculty of the Rockefeller Institute in New York. If our reactions were favorable, detailed negotiations could begin. George sounded skeptical ("It seems a little crazy," he wrote) but dutifully passed on Sam's inquiry to Ted and me. Ted responded with immediate enthusiasm. As a professor of physics at the Johns Hopkins University he knew Bronk, who had been president of the school from 1948 to 1953. The two men liked and admired each other.

Bronk left Hopkins in 1953 to assume the presidency of the Rockefeller Institute for Medical Research and was given a broad mandate by the trustees to transform the institution into a graduate university in science. Bringing in a group in mathematics and physics was high on Bronk's list of priorities and he sought advice from Sam Goudsmit, who was a longtime friend.

Founded in 1901 by John D. Rockefeller, Sr., the Rockefeller Institute for Medical Research was one of the most famous of its kind in the world. Some of the great discoveries in biology and medicine were made within its walls, including the first cancer-causing virus (by Peyton Rous), the M, N and P blood factors (by Karl Landsteiner, the discoverer of blood groups) and the proof that DNA is the carrier of genetic information (by Oswald Avery, Colin MacLeod and Maclyn MacCarty). At the height of its fame in

the late forties, the Institute stood at a crossroads, owing in part to the impending retirement of its director, the distinguished neurophysiologist Herbert Gasser.

Bronk, who was a member of the Institute's Board of Scientific Directors, was appointed chairman of the special subcommittee to seek Gasser's successor and to propose new policies and directions. In the end Bronk was persuaded to accept the presidency of the Institute and to implement the recommendations of his subcommittee that the Institute become a graduate university of science.

Thus in 1953 the second era in the history of the Rockefeller Institute began. The first students (or Graduate Fellows, as they were called) came in 1955 and the first degrees were awarded in 1959. In 1965 the name was changed to the Rockefeller University.

I had heard, of course, of the Rockefeller Institute for Medical Research and I think I knew that it was the model for the McGurk Institute in Sinclair Lewis's *Arrowsmith*. But that was about all I knew and I was not aware until I received George's letter that the Institute was in the process of undergoing a profound change.

My attitude toward Sam's suggestion was about halfway between George's skepticism and Ted's enthusiasm. I had just declined an attractive offer from another institution and while offers are flattering they are also unsettling. To go through the ritual of the academic dance so soon again was not a welcome prospect. Yet the opportunity to participate in a novel experiment with two of my closest friends and scientific associates was obviously tempting.

With Sam acting as intermediary, there began a somewhat protracted three-pronged negotiation. The result was that the three of us accepted an offer to join the faculty of the Rockefeller Institute (the "for Medical Research" was dropped to underscore the change in the nature of the institution). George and Ted moved to New York in January of 1961 and I followed in July of the same year.

The first year was idyllic. We were a part of an exciting, lively scientific enterprise and no one could have wished for better conditions in which to do research and teach. Whatever doubts we may have had before making the move vanished in the glow which surrounded us. But in November 1962 tragedy struck and all but shattered our newfound joy. Returning to New York on a train from Washington, Ted, the youngest member of our group, was seized by a heart attack. Feeling ill but apparently not realizing

what was wrong, he left the train in Baltimore and managed to get to a hotel room, where he phoned friends for help. He died before they could reach him.

Our sense of personal as well as professional loss was overwhelming. For a while we were literally paralyzed, but practicalities had to be faced. Ted had brought with him from Johns Hopkins a gifted post-doctoral fellow and he had been involved in a number of tutorials. Irreplaceable as Ted was, finding a successor was urgent. We were lucky to have with us as a short-term visitor E. D. G. (Eddie) Cohen from the University of Amsterdam. Eddie was a natural successor to Ted. Three years earlier he had spent six months with George at the University of Michigan and another six months with Ted at Johns Hopkins. His scientific interests meshed perfectly with ours and it took only a few minutes to persuade Det to offer him the position. Several months elapsed before the immigration formalities could be ironed out but eventually the problems were dealt with successfully and he arrived in the United States with his family to begin a new life. Eddie is still at the Rockefeller doing excellent work.

Soon a small but excellent group in high-energy theoretical physics was added under the leadership of Abraham Pais, a disciple of George's and yet another Dutchman. Then came a distinguished group in behavioral sciences and another in philosophy. In mathematics we expanded by appointing the renowned logician Hao Wong from Harvard and two young rising stars, Henry P. McKean and Gian-Carlo Rota from MIT. We had sufficient funds to bring visitors from all over the world and we provided an intellectual domicile for the great Hans Rademacher after his retirement from the University of Pennsylvania and to that master of *ars combinatoria* John Riordan after he retired from the Bell Telephone Laboratories. In short, things were humming.

No one was more pleased by the growth and expansion of the institution than its president. Det's long-cherished dream of a graduate university which would also be "a community of scientific scholars" was coming true. A unique experiment in the history of American education was on its way to becoming a spectacular success.

Detlev Wolf Bronk, the man with the dream, was one of the most remarkable contemporary figures in America. That he is hardly

known to the general public is a sad indication that more than one hundred and twenty years after Andrew D. White wrote his letter to Gerit Smith we still have not succeeded in turning "the spirit of mercantile morality."

Bronk's long and distinguished service as president of the National Research Council and the National Academy of Sciences, his chairmanship of the National Science Board and his membership (under three presidents) in the President's Science Advisory Committee (PSAC) are sufficient proof of his deep dedication to the concept of science in the service of the nation and of mankind.

Most important, there was Bronk's deep conviction that science is a great adventure of the human mind, that it is indivisible and that it is a part of the humanistic tradition on which our civilization rests.

In recommending to the trustees the appointment of Ludwig Edelstein in 1961 as professor at the Institute, Bronk stated: "It is only of incidental significance that he is a distinguished historian of biology and medicine. It is of deep significance that he is a great humanist; as a community of scientists we have suffered too long from the lack of association with scholars such as he who is versed in the origins of modern science and the influence of science on ideas and habits of man." One must go back to Andrew D. White to find a university president of such eloquence.

I liked Det from the moment I met him. He had great charm and at the age of almost sixty-five there was a certain boyishness about him which Kitty and I found singularly engaging. He once surprised Kitty enormously by remarking to her that he was usually ill at ease with young people but that he enjoyed our children because he found them easy to talk to and comfortable to be with. This from a man whose life was devoted to the education of young men and women!

He could be as hard as nails. His temper was legendary and he was not above throwing a tantrum. He made me angry only once. It was early in my Rockefeller days and I don't remember what the whole thing was about except that I had heard, secondhand, that Det criticized—unjustly, I thought—something that I had done or, more likely, failed to do. I was indignant. Since Det was temporarily out of town (as he often was) I went to Frank Brink and asked him to convey to Det my intention of resigning. A couple of hours later

I got a phone call from Mabel Bright, the great lady who, as Det's administrative assistant, managed with wit and tact the complicated activities of her mercurial and ubiquitous boss. "Dr. Bronk is back. Could you have a drink with him in the bar at 5:30 today?" she asked. Still fuming, I accepted. I was a minute or two late and Det had already ordered his customary Manhattan. My equally customary Martini came almost at once and before we had taken two sips I was charmed out of my wrath.

Truly indicative of the nature of our relationship was the following episode. Since Det abhorred the departmental structure of universities, he kept the old Institute structure in which, with a few exceptions, each professor was the head of a laboratory, which was the administrative unit. Thus each professor negotiated the budget of his laboratory directly with the president. Once, after the budgets were all in and approved, I went to Det with a request for an additional appointment. He approved at once. Somewhat startled by the speed with which the matter had been handled, I asked, "What would you do if I asked for something quite unreasonable?" "But you wouldn't," he replied and, to the best of my knowledge, I never did.

Det's educational ideas were strongly influenced by two men—Daniel Coit Gilman (1831–1908) and Abraham Flexner. Gilman was the first president of Johns Hopkins University and he had tried to make it a purely graduate university. Although it soon became necessary to add an undergraduate component to the institution, graduate education and research emerged as the main objectives of the new university. The example of Hopkins was soon followed, in part at least, by many leading universities which, albeit belatedly, recognized the central role of graduate education and research.

Abraham Flexner (whose older brother Simon was the first director of the Rockefeller Institute for Medical Research) was the first president of the Institute for Advanced Study and a longtime critic of American medical education and of higher education in general. To him, much of the undergraduate education was wasteful and inefficient, especially for the gifted. He admired Gilman, espoused his ideas and wrote a biography of him.<sup>o</sup>

As president of Hopkins, Det went back to Gilman's ideas and

<sup>o</sup> *Daniel Coit Gilman: Creator of the American Type of University* (Harcourt, Brace).

was guided by them. In his last annual Hopkins report he wrote that he believed that "research, as the basis of thought and as a prelude to action, was essential to modern life" and he wanted "little emphasis on pedestrian instruction" and no "distinction between faculty, graduate and undergraduate students."

In the same report he states: "The growth of knowledge and the increase of information regarding man and nature require specialisation. But understanding requires comprehension of many related fields of learning. Unless creative scholars and students learn in universities which stress the unity of knowledge and scholarly endeavor, universities fail to provide the intellectual leadership sorely needed in our complex civilization."

At the Rockefeller, Det finally had an unrestrained opportunity to build his ideal university. Though the following excerpt is from the 1967-1968 catalogue, it describes perfectly the university as I found it in 1961.

The purpose of this University is to further natural science and its applications for the improvement of human welfare.

The University is not an aggregate of departments dealing with specialized fields of science. It is a community of scientific scholars who are free to follow their interests in any field of scholarship.

The students are few, and the faculty are many. This enables close association between the two, they live and work as junior and senior colleagues.

Students must be capable of self-directed study. Although many courses are offered, teaching is done primarily in seminars, in tutorial conferences and in faculty research laboratories. There is thus considerable freedom for the active process of independent learning.

It is clear that the students would have to be quite unusual to survive and grow in such an environment. It may seem strange, but unrestrained freedom can be a heavy burden and lack of pressure the worst pressure of all. It is therefore not surprising that there were failures, some even tragic, but the overall record was that of spectacular success. Of the one hundred and twenty-five students who received their doctorates from Det's hands, two went on to win Nobel Prizes, many adorn the membership of the National Academy of Sciences and almost all occupy distinguished positions in leading universities and medical schools.

In the early years Det depended on his wide acquaintanceship

in academic circles to bring promising candidates to his attention. To the last day of his presidency he interviewed personally every candidate for admission. He undertook this task with utmost seriousness and I know of several occasions when he left meetings of important government committees in Washington to catch a shuttle to New York to meet with a prospective student.

One of the requirements for a Ph.D. was a public presentation, in a popular form, of the candidate's doctoral dissertation; to the best of my knowledge, Det attended every one. With his manifold time-consuming obligations in Washington and elsewhere, the affairs of the University were uppermost on his mind. During the years I knew him the University was his life. It was as if he had staked his immortality on the success of his grand experiment.

Eventually, the "mercantile forces" dimmed the luster and thwarted the dream, but the "Bronkian era" is still cherished in the memory of those who were a part of it. On May 29, 1968, at Det's retirement dinner, Gerald M. Edelman, one of the members of the second graduating class (1960) and a future Nobelist (1972), paid tribute to Det. A paragraph from this moving speech is worth recording.

Let me say at the outset what I think is original, precious and remarkable about this University as Dr. Bronk has conceived it. It is best said, I think, by borrowing a phrase from a famous historical work, *The Civilization of the Renaissance in Italy* by Jakob Burckhardt. Part One of that book speaks of the State as a work of art. In the Renaissance this was a new fact in history—the State as the outcome of reflections and calculation, the State as a work of art. In the present age of overwhelming bureaucracy and specialism in multiversities, it is the idea of the university as a work of art which Dr. Bronk has espoused and reinvented.

When I left Cornell to join the Rockefeller Institute many of my friends were frankly puzzled. New York City has two major mathematics departments, one at Columbia and one at New York University (The Courant Institute of Mathematical Sciences). There are two more within fifty miles, at Princeton and at Yale. Why another? Furthermore, our size precluded us from offering the variety of courses and seminars which are required these days for mathematics Ph.Ds. But the proliferation of specialized courses tended to isolate mathematics from other sciences at other institu-

tions. At the Rockefeller we had an opportunity to bring mathematics back into its traditional partnership with physics and perhaps even to open lines of communication with biology. One could even dream of educating "bilingual" scientists, as fluent in the language of mathematics and the exact sciences as in the quite different language of biology, in which the rules are few and the exceptions many.

When I first visited the Rockefeller during our negotiations I was impressed, as are all first-time visitors, by the physical beauty of the campus. It is an oasis in the city with superbly landscaped grounds transversed with marble-chip walks; the Alexandrian school transplanted to our century. "How exciting," I thought, in a romantic glow, "to once again, after all these centuries, teach while walking in the gardens!" Well, it didn't last. Romantic dreams seldom do.

First my younger colleagues, Rota and McKean, found the smallness uncongenial. Not being as strongly tied to physics as I was, they felt isolated. They left for larger institutions where there were more mathematicians to talk to or to stay away from. We tried to compensate for these losses by making a major appointment in mathematical physics in the person of James A. Glim and by attracting from Harvard Joel Cohen, who is one of the truly "bilingual" scientists and a Renaissance man to boot. But the prospects for even modest growth were, for all intents and purposes, nil.

All this happened after Det's retirement. His successor, Frederick Seitz, a noted theoretical physicist, was at the time of his appointment president of the National Academy of Sciences just as Det had been when he succeeded Herbert Gasser. But the times were different and although Fred committed the University to a new program in experimental high-energy physics and was very helpful in keeping mathematics afloat, the rising deficits soon forced him to institute drastic economies.

For three years (1971-1974) I served as the faculty representative on the Board of Trustees and I can vouch for the painful reality of the deficits. Skyrocketing oil prices alone added almost a million dollars to the heating bill. The administration judged the situation to be critical and called for Draconian measures.



The rapidity with which we went from riches to rags was unsettling and the morale of the faculty plummeted. Faced with a shrinking pie, it was only natural for some of the faculty to put at least part of the blame on Det's so-called "extravagance" in expanding the institution by adding "peripheral" areas of research and graduate study. The community of scientific scholars began to show signs of strain.

Fred tried to maintain the integrity of Det's idea. When the first unmistakable signs of an impending financial crisis appeared in 1970, he received a letter from one of the most distinguished members of the faculty, a world-renowned biochemist, who argued that perhaps contracting to the old bio-medical core might help solve the financial problem. Fred sent me a copy of this letter. Soon after, I visited a leading West Coast institution, where I was invited to join the faculty. I was greatly tempted by this invitation, as my faith in the future of the Rockefeller had been somewhat shaken by my colleague's letter. I went to Fred to discuss the matter, prepared to resign. Somewhat to my surprise, Fred used every argument at his disposal to persuade me to stay. He minimized the significance of the letter and reassured me in a number of ways. I had known Fred for many years and I trusted him completely. I decided to stay.

Several years later the financial situation worsened to such a degree that something like panic set in. One of the results was the dissolution of the philosophy group, which was not done skillfully, thus bringing the University some adverse publicity. Under Fred's successor there was further shrinkage. A distinguished group in psychology was the victim this time.

By the time I left the Rockefeller in 1981 after twenty happy, productive years all signs indicated that, except for the presence of students, the institution was moving in the direction of becoming again primarily an institute for bio-medical research.

When I left I was four years away from the compulsory retirement age. The Bronkian Camelot was long since gone. Kitty and I were getting tired of the Eastern winters and I found commuting from Scarsdale an ever growing aggravation. Our daughter and her two children lived on the West Coast. To make things even easier, the University of Southern California expressed interest in my joining

MARK KAC

ENIGMAS  
OF CHANCE

*An Autobiography*

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