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Bennett, Ph.D., M.D., A. Lawrence

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Interview with Dr. A. Lawrence Bennett
2921 Mesa Road
Colorado Springs, Colorado

Dr. Grissom: Today I am sitting with Dr. A. Lawrence Bennett in his home which has a study looking towards Pikes Peak and the Garden of the Gods, an ideal location. In this room, I am pleased to see a plaque which was presented to Dr. Bennett "from a grateful University of Nebraska Medical Center for his years of dedicated teaching and research" listing the years 1934 to 1972 in the Department of Physiology. Dr. Bennett, when you left the department, it was the Department of Physiology and Biophysics, and at one time, it was the Department of Physiology and Pharmacology. Perhaps you would say a few words about the department and its development.

Dr. Bennett: When I came to the department in 1934, I was very happy to find a colleague of mine, Dr. McIntyre, who had been in school at the University of Chicago at the same time as I. Incidentally, Mrs. McIntyre was one of my instructors at the University of Chicago, so I felt at ease joining the department — as a matter of fact so much at ease, that I stepped up to Dr. McIntyre and called him "Mac" which took him a little bit by surprise. But from then on, we collaborated very congenially and developed a department that was located in the lower floors of the South building which was originally planned as a pharmacy school. The large benches that were used for the expected pharmacy students pretty much filled the rooms making them very difficult to use for a physiological laboratory.
Dr. Bennett: Dr. McIntyre had arrived just two years before I did and already had plans for developing a strong physiology and pharmacology department. His background was largely in pharmacology, while mine was in physiology. Much of the early work was simply in adapting to the physical facilities to make them available for the many experiments and to create a typical physiology laboratory. Dr. McIntyre had considerable background as an engineer in Britain and was very good at setting up physical facilities and providing for a workshop where we could make our own equipment. A considerable amount of our time was occupied in the early years in designing and building laboratory equipment, which received national attention at one of our physiological meetings in Chicago, because we were building "from scratch" and some of the laboratories around the country were interested in duplicating our equipment. Our responsibility was doubled because the department at that time was a Department of Physiology and Pharmacology so that we had the students during the sophomore year for both major courses. We divided the responsibilities in teaching in such a way that each of us had sections in both pharmacology and physiology.

Dr. McIntyre was very much interested in developing the research aspects of the department, and as a pharmacologist, he had contacts with pharmaceutical companies, particularly with the Squibb Company, which made it possible for us to get some funds for research, particularly if oriented toward drugs. Amongst them were experiments on some experimental local anesthetics for the Squibb Company; also, through the Squibb Company and a botanist
who was exploring in Equador for sources of curare, we received
original samples of curare sent to us in pots as "pot curare"
and in bamboo tubes as "tube curare", all of which looked like
tar. Dr. McIntyre purified the material and I tested it on dogs
for toxicity and for dosage level. This effort became an important
source of data to make it possible for the pharmaceutical company
to market it for clinical use.

There were two or three graduate students who had started on a
masters degree program in physiology or pharmacology when I came.
The graduate program was developed over the years as gradually
we increased the number of graduate students and the courses
available for them. My research interests were primarily in the
area of electrophysiology and as a result, it was natural to
become interested in biophysics. So toward the latter part of
my service in the department, I was very much interested in
establishing expertise in biophysics. Eventually, the designation
of the department was changed to Physiology and Biophysics, having
separated from the pharmacology responsibility at the time that
I assumed the chairmanship in 1967.

As we developed a more active graduate program, it was a familiar
pattern to encourage students at the end of their sophomore year
and after they had a taste of physiology, pharmacology, and the
other basic sciences, particularly biochemistry, to consider
taking a year out to do some research, learning something of
what it is like and perhaps become interested in research
careers or combining research with clinical medicine. This was
a pattern which had been familiar to us when we were students in
our graduate programs and we encouraged it amongst our students.
And there were several very promising students at that time who
followed our suggestion. Dr. Fritz Ware was one who took out a
year to do some research with me on muscle potentials. We
were at the time when the first microelectrode studies were
being done using the ling microelectrodes. As a matter of fact,
we made our own capillary electrode puller in the shop and were
able to make some of the first measurements of resting potential
in the muscle. This intrigued Dr. Ware very much and
he continued his graduate work to finish his Ph.D. in the Depart­
ment of Physiology and Pharmacology. Then he proceeded with his
clinical work and residency in internal medicine and a very fine
career as a clinician, but also, a unique career in that he has
continued to be interested in basic research and teaching
graduate students as well as teaching undergraduate students.
One of the best teachers that we produced was another student
who came to us more or less by accident with considerable back­
ground in electronics. After working around the department
mending equipment, he found that medicine involved so much
electronic equipment use, that he became very much interested
in finishing a physiology degree; that was Dr. Stratbucker.
As a result of his work in the department and learning of the
application of electronics to medicine, he not only finished a
masters, but a Ph.D., and decided that if he was going to do
research in the medical field, he ought to know something about
medicine so he started all over as a freshman, finished his
medical work, and taught in the department for sometime. He
made a contribution, I am sure, in the application of electronic
techniques in the transmission of the electrocardiogram over the telephone and its interface with the computer. Other students such as Dr. Wagner and Dr. Chinburg, studied with me in the relation to neurotransmission and action potential recording both in nerve and muscle.

Dr. Grissom: Dr. Bennett, I know that you came to the campus in the depth of the depression in 1934, having been a graduate student at the University of Chicago. There you worked in the department that was headed by Dr. Carlson especially in the area of gastrointestinal diseases although that was never your principal interest. Would you say something about your impressions of the University of Nebraska and how it was that you came here?

Dr. Bennett: Yes, Dr. Poynter came to the University of Chicago and talked with Dr. Carlson and wanted to know if he had any graduate students who might be interested in a position at Nebraska. I was just finishing my graduate work and was very much intrigued with Dr. Poynter's interview. He impressed me as a very strong personality and a very affable person. So, with very little encouragement, I accepted an appointment as an instructor at the University of Nebraska in 1934. As mentioned, it was at a low time as far as the economy was concerned and particularly my economy. I remember very well when I first arrived in Omaha, having anticipated as best I could, what expenses I would have, being very much distraught to find that I still owed the city a $25.00 deposit in order to have my utilities turned on. This I had not planned on. I went to Reubin Saxon who was the maintenance man and the right hand administrator under Dr. Poynter,
asking him if it would be possible for the University to advance me $25.00 on my salary. Well, the University had no mechanism for that. After Mr. Saxon had personally loaned me the $25.00, I went back to Chicago that summer to finish up some clinical work and came back to the office at Omaha completely unaware that I had been on salary for the summer and they had two monthly checks waiting for me. Reuben was astounded to think that here I arrived not able to pay the $25.00 for utilities and had left a total of two months pay sitting unused for the summer! Obviously, that was a great windfall that made it possible for us to get our first used car. Of course, the funds were not abundant for the University in those days, and there was no such thing as a grant from the federal government. We were dependent, as I have already mentioned on funds from pharmaceutical houses or other private institutions that might be interested in a specific research project.

Dr. Grissom: Dr. Bennett, would you comment on what you would regard as the highest points in your association with the University. I know, of course, that you became the department chairman. Would that have been the highest point, or would you have thought of some of your student work or your teaching honors or research accomplishments?

Dr. Bennett: My main interest throughout my time at Nebraska was teaching medical students, and I guess that I would have to say the highest points for me were when I received some recognition from the students. This they gave me on two or three occasions at the senior banquet. I also felt that there was a new opportunity
to develop the department and I was proud to have a part in establishing it as a single department in physiology and biophysics and with graduate approval through the Graduate College, having added some to the faculty and to the expertise in the department for graduate study.

Dr. Grissom: I know too, Dr. Bennett, that you were proud of the research activities when the students would drop out for a year or for a quarter to do special work in the Department of Physiology before going on into the clinical years, a practice which no longer seems to be common. What about the low points in the curriculum or your teaching activities or research activities?

Dr. Bennett: Perhaps I can give a low point in relation to the Dean's Office that occurred during the time of Dean Lueth. I happened to be chairman of the admissions committee at that time following World War II and we were having, as usual, a tough job with a lot of applications to go over and sort out. At that time, I think we had as high as 1600 applicants in one year, and the committee was dog tired toward the end as we approached the final selection of the few best students that we had spotted in our list. It turned out that our committee was to meet on the first of April. I asked Miss Pospischal, who was the secretary, to make up a dossier on a student application using the best credentials she could find from Harvard, Yale, or any of the big schools and make it as imposing as possible with all the best credentials she could round up and put it in a folder under the name A. P. Rilfirst (for April 1st); and just put it in a stack of applications. Dr. Latta was the first one to find it at the
meeting. It was an evening meeting, as I remember, and he just about exploded. He said, "My goodness! Here's the best one we've ever found so far." and began reading some of these credentials. This student already had a Ph.D., then we asked what his age was; he was only 12 years old, and I kept asking what was his name. Well, he would read this very casually, but he didn't catch the point at all. We were in hysterics before long, and about this time, Dean Lueth walked in. Dr. Latta said to the Dean, "My goodness, we've missed a whole lot here." The Dean asked, "What's his name?" "Oh, it's A. P. Rilfirst." "Oh, Dean Leuth said, "I remember interviewing him." About that time, I was ready to crawl under the table! Dean Lueth was always very kind to me and we were very close to his family and his daughters. We enjoyed them very much and I really felt sorry for the Dean for his lack of humor. In some respects, I think this lack caused his downfall as Dean. In many respects, he was ahead of his time in the ideas he had for the College of Medicine.

Dr. Grissom: I believe, Dr. Bennett, that you knew President Gustafson and you had some connection with him as you were both at the University of Chicago as also was Dr. McIntyre. Would you comment on some of those experiences please?

Dr. Bennett: Dr. Gustafson was a teacher in biochemistry at the University of Chicago when I was taking my graduate work there. Dr. McIntyre was there at the same time, but about two years ahead of me. The two of us knew "Gus", as we called him then, and enjoyed being with him, particularly at the scientific meetings. He was a
wonderful companion, full of fun and we felt almost as though we were classmates of his instead of students. He was on Dr. McIntyre's Ph.D. examination committee. I did not have him as an instructor at any time, but I knew him at the University of Chicago campus and then certainly enjoyed him when he came to Nebraska and often went to the football games with him as a guest. So I felt privileged in that respect. I always thought of Dr. Gustafson as a remarkable teacher and a wonderful man. I was glad to know him.

Dr. Grissom: I'd like now to ask you about the changes you have seen in the curriculum. You, of course, were there in the period of tremendous growth. The number of students in 1934 when you arrived, was much smaller than it was immediately after the war and then, of course, there was a great increase in the size of the student body under Dr. Kugel. Could you comment on whether that made any change in relationship between the faculty and the students and how you felt generally about these increases in numbers of students?

Dr. Bennett: It's true that when I started in Nebraska, the classes were smaller. I think we were admitting about 70 or 75 students in each freshman class. Also, at that time, and for sometime after that, the curriculum was quite a traditional block curriculum in which each department had the students for a considerable period of time. In the case of the Physiology and Pharmacology Department at that time, there was considerable time spent with the class in sequence. That is, we would have them for a matter of a quarter pretty solidly and with considerable
time spent in the laboratory. As the newer curriculum changes were made, the tendency was to develop more and more inter-departmental teaching procedures. As a result, that meant committee planning and also, the time intervals with the students were shorter, were more apt to be interrupted; and in general, the basic science departments were spending less time in laboratory. As a result, I had the feeling that I was losing contact with the students personally; and it was much more difficult to keep track of who they were because I might have them for a short series of lectures, or for a brief experience in the laboratory. This, I regretted because when I first taught in medical school, I was proud of the fact that after the first two weeks with the class in my care, I knew everybody by name. I was interested in them as individuals and much of the fun of teaching was the personal contact with each student as an individual. This, I was sorry to lose as the curriculum developed in a more complex fashion with less teaching by our department. We had the wartime experience and this was another experience that I would not want to repeat. For one thing, the curriculum was speeded up, we were teaching "around the calendar" and the faculty and students became thoroughly tired just with the continuous program. There was an interesting aspect; however, of the time that we received students handed to us from the Army because in general, the quality of students was lower. There were some exceptional students who had no intention of going into medicine, but when they got into medicine, found a real love of the subject and made exceptional students. So, it was an interesting time.
Dr. Grissom: Was one of those Dr. Tupper?

Dr. Bennett: That's right.

Dr. Grissom: And you have kept up a friendship with Dr. Tupper?

Dr. Bennett: Yes, Dr. Tupper was one of those students and I had the pleasure of being in his office as Dean at University of California Davis Medical School not long ago because our daughter and her family lived in Davis and were connected with the University. I enjoyed talking with Dr. Tupper, and remember him as an unusual student who came to us during the time of the military admissions program.

Dr. Grissom: Let me ask you about your relationships with others in the administration. You worked some with the Graduate Council or the Research Council with Dr. Cromwell. Would you relate something of those experiences?

Dr. Bennett: The time that I spent on the Research Council and Graduate Council in Lincoln was a very stimulating time. Without that, I would not have come into contact with many of the fine members of the staff in Lincoln. I remember particularly Dr. Cromwell and I served with him on some committees. Also, I was very much impressed with the leadership of Dr. Weaver before he left Lincoln. I had high respect for the standards set by the Graduate Council in Lincoln and was anxious that the medical school in its graduate program would measure up to the standards that were being set in the University as a whole. This was a challenging and interesting time for me.
Dr. Grissom: You, of course, have worked with Dr. Tollman for many years as a fellow faculty member for a long time and then during the time when he became Dean. Would you comment on some of your recollections of Dr. Tollman?

Dr. Bennett: I never had Dr. Tollman as a teacher, but certainly enjoyed my association with him in the Department of Pathology and as Dean. He was one of Dr. Poynter's protégés and the contrast in their personalities was quite marked. It was always easy to talk to Perry and to express one's feelings and have a receptive ear. In contrast, I felt that Dr. Poynter already had made the decision before I made my remarks. Perry Tollman has been a very close friend of mine and a close neighbor and I have enjoyed him in Tucson. It always amused me and somewhat surprised me to see the reaction of the students when they often joked about the "soperific effect" of his lectures, but I can understand that his sober sincerity might not arouse the greatest enthusiasm during a lecture.

Dr. Grissom: You worked also with Dr. Wittson. Will you comment on your recollections of Dr. Wittson?

Dr. Bennett: Dr. Wittson really took a chance with me because at the time he was Dean, the decision was made to divide our department into separate physiology and pharmacology departments and to turn over to me some of the reorganization at the time of Dr. McIntyre's retirement. I appreciated Dr. Wittson's confidence; he was always very kind to me personally, in many ways. I sometimes
wondered about his real concern for the individual medical students, but he was a very effective promotor and I respected the ability he had for raising money and for broadening the outlook of the Medical Center and involving citizens of the community, as well as the profession, in the development of our medical college.

Dr. Grissom: Dr. Bennett, you were on the faculty when we had the traditional 4-year curriculum; then you witnessed the changes during the war with the accelerated curriculum; and subsequently, the return to a more or less standard curriculum; and finally, the accelerated 3-year program which was instituted under Dr. Kugel. Would you comment about your feelings at the time of that 3-year accelerated curriculum change?

Dr. Bennett: I am sure that the experience during the accelerated schedule during the war prejudiced me to a certain extent. As I understood it, the change to the 3-year curriculum was, at its beginning, in an attempt to carry students through both a four year and a three year schedule; it appeared to me that the complexities of scheduling and the breakup of sequence between teacher and student in various departments would inevitably result in some loss of personal contact between teacher and student. I regretted that and was dubious that it would be found fully satisfactory, which apparently it was not.

Dr. Grissom: Dr. Bennett, you were with the University of Nebraska for 38 years with a distinguished career that culminated in a special recognition
of your work. As you think about the future of physiology and the medical student and the lack of laboratory usage because of lack of space, and for other reasons, what thoughts have you that you feel have lessened the effectiveness of the teaching of physiology and what thoughts about what has improved over the years of teaching physiology?

Dr. Bennett: Although prejudiced as a physiologist, I also feel prejudiced in the sense that I combined clinical work with physiology in my training for the M.D. and Ph.D., and I always felt that physiology was at the heart of medicine. So I was anxious throughout my teaching time that the student would think in terms of the clinical application of physiology. The laboratory, it seemed to me, gave an opportunity not only to get to know the student better, but to have him experience actual changes in the tissue and in organ systems under his eye and under his hand. I am sorry to see that the time in the curriculum is not adequate to continue to provide that experience for the student. I have the feeling that in many respects, the basic science departments and perhaps particularly physiology have become preoccupied with research to the extent that the medical student is at a lower priority than he once was; and this, I am sorry to see happen. It's true that the real advances in physiology have been made in departments that are strong in research and we need that kind of highly trained and highly motivated research individual; but I would hope that the medical schools could attract and encourage teachers who are anxious to have the students apply their basic science to medicine and to see the relevance of basic science and clinical medicine.
Dr. Grissom: Dr. Bennett, on behalf the University of Nebraska and the Committee on Oral History, our very great thanks to you.