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Dr. John O. Lindower interview (1) conducted on January 30, 1985 about the Boonshoft School of Medicine at Wright State University

John O. Lindower

James St. Peter

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WRIGHT STATE UNIVERSITY
School of Medicine Oral History Project

Interview date: January 31, 1985

Interviewer: James St. Peter (JS)

Interviewee: John O. Lindower (JL), Associate Dean for Academic Affairs; former chair, Department of Pharmacology, Wright State University School of Medicine

JS: Dr. Lindower can you tell me a little bit about your background prior to coming to Wright State, where did you go to school.

JL: I went to medical school at Ohio State University, graduated there in 1955 and then I came to Dayton, Ohio for my general rotating internship at Miami Valley Hospital.

JS: Have you been in the Miami Valley since then?

JL: I stayed in the Miami Valley just for a few years, what, after my year of rotating internship at Miami Valley, I spent two years in the Army as a general medical officer, then returned to Miami Valley for a one-year general surgical residency, and then spent six year in family practice in Vandalia, Ohio before I went back to Ohio State and academic medicine.

JS: When did you go back to Ohio State to teach?

JL: In 1965 I returned to the Department of Pharmacology at Ohio State University as an NIH postdoctoral fellow and stayed in that role then for three years until I received my PhD degree and then in 1968 I went on the, fully affiliated faculty at Ohio State in the Department of Pharmacology.

JS: And you were essentially at Ohio State until you came here?

JL: Until 1975 I was in the Department of Pharmacology in the College of Medicine at Ohio State.

JS: What was your last position there?

JL: I was Associate Professor Of Pharmacology and coordinator for the year three, correction phase three, part of the College of Medicine curriculum, which really is similar to our pre-clerkship curriculum in the second year.

JS: When did you first hear about Wright State?

JL: I heard about Wright State University being planned while I was still in the Miami Valley and practicing medicine, but while I was Columbus I would see sketches of Wright States development as a consortium between Ohio State University, Miami, and Central State. I had heard rumblings about an interest in medical school development but really didn't take that seriously. After Toledo was established I didn't think the state of Ohio, at that time, was ready to develop any more medical schools than the four established in the middles 60s.

JS: Even Ohio State, you were there when Tallulah was first considered and then established, was that viewpoint that you just stated pretty widespread among Ohio State faculty.

JL: I really don't know what the feeling at Ohio State was, I think the feeling that I had was that if Toledo was given the option to start up a medical school, and I felt at the time that was primarily because the Governor of Ohio was from Toledo at the time they got their funding, that there was little chance in the 60s for any other medical schools to be developed and I didn't even consider the possibilities of Dayton developing a medical school.

JS: Did you hear about the original proposals that came to Columbus?

JL: I heard rather tangentially of the interest to develop a medical school in Dayton while I was still in Columbus, but I really didn't, I wasn't in a position to know what some of the details were and I felt all along that Dayton was right for a medical school because I practiced in the community, I knew that they had all the clinical resources in terms of the County Medical Society, they had all the specialties represented and the thing that impressed me about Dayton was the fact that they had a lot of primary care that was of high quality, that was the kind of medicine that I thought needed to be espoused in the development of a new medical school, but at the time I was in a postdoctoral fellowship, I wasn't in touch enough to know what the ground support for the medical school in this area really was.

JS: Do you feel that a teaching hospital could have been supported by the community?

JL: My personal opinion is that a teaching hospital would not be supported by the Dayton community and that was one reservation I had, on the other hand I felt that a teaching hospital was really not necessary for the kind of medical education I thought the state of Ohio needed, and that's what really enthused me about the Dayton plan for a community-based medical school using clinical resources and the clinicians that were already established in the community.

JS: When the plan began working its way through very determined opposition in Columbus, up through the system, both legislatively and the Board of Regents, what were your feelings then about the medical school in Ohio.

JL: My personal feeling was one of interest, but when it first was raised, since I was on the Ohio State University campus, I didn't really think that it would flourish, the feelings of the people I talked to in Columbus was that Ohio had enough medical schools and they didn't really need anymore. My personal feeling was not in concert with that, but there wasn't all that great support for a medical school being developed in Dayton in the Columbus area and I began to look at this after returning back to visit family and friends in the Dayton area and found that there was a growing concern and interest on the part of the community and in the part of legislators like Clara Weiseborn who later exerted herself considerably in support of this project.

JS: Why do you feel that the people in Columbus, the people in medical school, the medical school personnel and staff, were against the formation of medical school in Dayton, apart from the fact that there was enough medical schools, do you feel that it was a threat to Columbus or Cincinnati, or both?

JL: I don't feel that they really felt threatened, they may have felt that it was not necessary, because the feeling in an institution like Ohio State or Cincinnati is that they are doing the job and the numbers are sufficient and there's no real need for anymore, also it's an expensive operation to set up a new medical school, but I don't think the people in Columbus area aware of the real needs that the areas had in Dayton, Ohio that there was a concern for the need of physicians in underserved areas, there was a need for more

primary care oriented people in the state of Ohio and the only way that was going to happen was to set up a school where a lot of that kind of care was taking place.

JS: You went from essentially primary care to teaching pharmacology that seems to be a bit of an abrupt switch, why did you make that change?

JL: The switch is not really that abrupt in primary care operations you're constantly concerned with the needs of your patients in terms of appropriate therapy and that was the interest that turned me back into academic type of medicine, proper therapy is really dependent upon the appropriate development of new drugs, for example. And the appropriate understanding of practitioners about the mechanisms of drugs they're using, and that kind of interest is what turned me back into the study of drug development. And then when I became interested and discussed my interest with some of my old friends in the Pharmacology Department of Ohio State, particularly the Chairman, then he encouraged me to return to some basic studies as a background for being a teacher in basic medicine. And this flourished after I had done some laboratory work, almost 100 percent of my time for two years and then gradually got more involved in the teacher program. So by the time I finished the requirements for my PhD degree I was asked to participate almost 100 percent of my time in some of the newly developed teaching programs at Ohio State's College of Medicine.

JS: Do you like teaching?

JL: I enjoy working with students and I wish there was more time to be with the students, that's the only way that people can keep up to date is to be forced to interact with vigorous young minds like medical students.

JS: You're listed here at Wright State as a professor in pharmacology and toxicology, can you describe for me briefly in fairly layman's terms what pharmacology and toxicology consist of?

JL: Pharmacology is really the science or the discourse on drugs and a drug is any chemical agent that brings about a biologic response and it's well known that the practice of medicine is supported by drug therapy and we everywhere assume in the study of pharmacology, at least medical pharmacology, that we don't apply drugs until the appropriate diagnosis is made. But the line to appropriate drug therapy is the appropriate support of the study of drugs and therefore colleges and schools of medicine have set up departments that do research in these areas so that those facts can be made available for the study and new development of drugs, most important to me though is the fact that medical students, residents, and even practitioners in the field need to be constantly updated on new drug developments and how drugs act on patients and how several drugs interact with one another on that patient. And the only way that the practitioner of medicine can understand these things is to understand the basic mechanism, or the pharmacology behind the drug. We also want to know how drugs act in the individual once they're taken in, how are they gotten out, and how is the patient's status related to that drug. If the patient has gastrointestinal disease and they have problem taking up the drug into their system, if their liver is not function the way it should and they are having trouble metabolizing the drug, or if their kidneys aren't working right they have to, we have to consider how is the drug going to be excreted. So the problem of drugs in the medical field is very significant and it has to be based on a serious number of facts and pharmacologists have a responsibility to share those facts with students, residents, and physicians.

JS: And how does toxicology tell you about that.

JL: Well, toxicology is sort of a permutation of pharmacology. Pharmacology we say is the therapeutic application of drugs, or clinical pharmacology is the therapeutic application of drugs. Toxicology is the

study of the toxic or adverse events that are brought about by drugs. So that the physician must understand what the potential intoxication is possible with any drug they are exposing patients to. In addition to that there are many products in the environment and other agents that the patients may come in contact with or even the problem with drug overdose that the physician must fact and know how to handle, how to detect.

JS: In the teaching methodology that both exists here and at Ohio State, are there any marked differences between the two medical schools.

JL: I don't detect any marked differences, Ohio State being a much larger institution and have many more faculty at hand and many more resources can do some different things. At Wright State we have a small number of faculty, a growing number of faculty, but our curriculum is rather traditional in the sense we teach here by departments and by topics such as biological chemistry, anatomy, physiology, pharmacology. At Ohio State's College of Medicine, they have entered into what's known as the systems approach to teaching of medical students, so that they will teach basic science to first year medical students in the cardiovascular system and the gastrointestinal system, the central nervous system and they bring in a spectrum of scientists, both basic and clinical to teach those topics. At Ohio State they have unlimited numbers of faculty members that can contribute to a systems approach and they've been able to successfully employ that systems since about 1970, excuse me 1969. Here at Wright State we developed our curriculum first for the class entering in 1976 and we developed it along departmental lines because those were that units that had that kind of responsibility and as long as we have a limited number faculty members in this school we've been able to set up curriculum and teaching programs that have been very acceptable and we've undergone several accreditation studies by outside creditors and they've given us high marks for our curriculum in this school.

JS: When did you first find out about the positions available here at Wright State?

JL: I was first contacted by the founding dean, John Belgian, in about 1974, it was I guess the summer or fall of 1974 when he called me in my laboratory and office in the Ohio State University College of Medicine, and he had been given my name by people in the Dayton community that recognized my background and a few of them had recognized my interest in teaching at medical school, and they had nominated me for the position of Chairmen of Pharmacology. So when I first heard of the request and Bean Belgian's invitation I thought I would at least come over and listen to what he had to propose and I hadn't given it much thought until that time. And so, after I visited with Dean Belgian, my interest was suddenly stimulated and a lot of the interest was because some of my old friends were assuming responsibilities in the new school such as my now departed friend Nick Thompson was assuming the chairmanship of obstetrics and gynecology and at that time Jim Funkhouser was assuming the responsibility of the department chairmanship in pathology. So that tweaked my interests and I decided to look into it more thoroughly and the more I look the more interest I had, the more opportunity I saw for the development of a new kind of educational program here in a community based medical school. So that's what caused me to come to Dayton.

JS: Did you go through the search process?

JL: Did I go through the search process?

JS: Yeah did you go on a series of official visits?

JL: Oh yes, there were several visits and I remember the last visit I brought my wife along, we looked at the community, my wife is from Dayton so that was another reason for my interest in coming back to Dayton.

JS: How are you, recruited for Ohio State, and how does that contrast with what you went through here, are the recruiting process similar?

JL: the recruiting process is similar, of course I was not, the recruiting process for me at Ohio State was different because I had been a postdoctoral fellow and when I finished the fellowship the departmental chairman wanted me to assume some departmental responsibility. So I went and visited the Dean, and he and the Dean of the College of Medicine, asked me to take on an appointment in the college, so that was not much of a recruitment process, but here at a new school we obviously had to go through that in order to satisfy Equal Opportunity requirements and the recruitment programs for any school.

JS: What can you tell me about your recruiting visits, impressions of the university and faculty?

JL: Well when I was recruited there were very few faculty members around. It was mostly administration, but the thing that impressed me most first of all was John Belgian, who was a superb organizer and developer and also with a very astute interest in relationships with the university, with the community, and with the clinicians and hospitals in the area that impressed me a great deal. I thought, at the time, that if anybody had the opportunity to make a community based operation work, that John Belgian could do it. I was also impressed with the other members of the executive committee, at the time as already mentioned Dr. Thompson in Obstetrics and Gynecology, Dr. Funkhouser in pathology and among the others were Dr. Reese in medicine and surgery and at the time Dr. Emanuel Couter in Pediatrics. That spectrum of initial leaders of the school impressed me greatly and I should also mention Dr. Ed Spangier who had the responsibility for the administration of the new school. I felt that a lot of the success of the developer Dean Belgian was due to the great support he got from an administrator like Ed Spangier. That gave me great comfort and interested me in the School of Medicine here at Wright State University.

JS: You were brought in as Associate Dean for academic affairs?

JL: No, I was brought in as Chairman of Pharmacology and as Chairman of Pharmacology I was a faculty member of one, well upon my arrival Dean Belgian told me that within month after I arrived June 15, 1975 that a team from the Liaison Committee on Medical Education was going to visit to review what plans we had for the curriculum so he asked me in view of my past experience with curriculum development at Ohio State to get the group together and to assure that we had our initial programs for at least the first year of curriculum completed. And this was a challenge and fortunately I had people around me that responded quite well and they were able to satisfy the enquiries from the Liaison Committee on Medical Education, which ultimately led to an early stage in our accreditation process. That was one year prior to our acceptance of students, so they insisted that we have a considerable portion of the first and second years of the curriculum outlined.

JS: What experience you had, had you undergone at Ohio State that would give you the expertise to develop a curriculum.

JL: Ohio State, in the College of Medicine, in 1968 received a considerable grant to support the development of independent study programs, because of the receipt of that grant, the Dean of the college at that time told the six basic science departments, and the department of medicine that they must select one individual each to serve a 100 percent of their time in the development of that program for at least

one year. So I was chosen from the Department of Pharmacology and during the course of the next year the seven of us spent 100 percent of our time writing independent study programs that could be adapted for computer assisted instruction. This required a lot of study of curriculum or curricula of many schools to see what would be most appropriate, particularly what could be applied to indented study and computer assisted instruction. Once the program was developed and we were asked to continue on, which I did, for the next three years in which we were actually tutorially assisting independent study students going through this program, because it was being martyred to see how successful it was going to be, and this took virtually 100 percent of our time for the following three years after development of the program. In that sense, you can't see students in a huge class at one time, you have to see students on an individual basis or independent basis as they cluster through parts of the curriculum that you're responsible for.

JS: So with that expertise you sat down with a committee here at Wright State to develop, what for the LCME?

JL: Well that type of independent study really didn't apply to what we did here, the background that I had in independent study was the study of the curriculum development of many medical schools to see what would have applied in that situation, so that helped me to understand, particularly what was necessary in the pre-clerkship sense and a lot of this was the writing of objectives and the creation of syllabi, the preparation of course outlines, but I did not prepare all the details of that, we had department chairmen in the other basic science that had considerable background and experience in these fields, such as Dr. Zapola in anatomy, Dr. Coleman in physiology and at that time Dr. Ira Fritz in biochemistry and of course Dr. Funhouse in pathology and Dr. Nancy Bigley came on later on in the Department of Microbiology.

JS: Were they on the committee?

JL: The department chairmen were on that early committee with the exception of Dr. Bidley, she didn't join us until one year later, but all of those members were on what we called the executive curriculum committee which was actually chaired by the dean, John Belgian, but Dean Belgian named me at that time coordinator for the curriculum in order to serve in some capacity to get all these people tighter. Another person who was instrumental in helping at that time was Dr. Roden who had been in the Pathology Department at Galveston Medical School of Texas. And Dr. Roden sat on some of those early curriculum committees and helped us to assemble the curriculum for the school.

JS: Essentially what time frame did you have before the LCME was going to come to Wright State, how long did you have to work with?

JL: Well, the initial visit I talked about was preparatory visit, they were giving us preliminary approval, they were seeing what our plans were, what our outlines were, so that by about August 1, 1974 which was a month to six weeks after I had arrived we had this visit to achieve a preliminary approval, then I'd have to look at the exact dates I don't think we had another full accreditation visit until about 1977 after we had gotten preliminary approval to take the first class. There was another visit by the LCME in about 1977 and then a full accreditation visit began in 1979 after we had started process of about three classes.

JS: After the first visit you had essentially finished your major task, that you assigned of preparing for that, did you move back into your department?

JL: I never left the department during all of this, in fact I was a departmental member of one to being with, in fact my second faculty member in the department was the chairman of Psychiatry, Dr. Barry Blackwell who was a pharmacologist in his own right after having come from Cincinnati and worked with Merrill Pharmaceutical Agency as well as teaching pharmacology and psychiatry at the University of

Cincinnati College of Medicine. So Blackwell was actually my second faculty member in pharmacology, but even after the LCME visit for that preliminary accreditation, Dean Belgian asked me to assume the coordination for a curriculum and he and I discussed at that time that it was going to take at least five years to make sure we had the entire undergraduate curriculum outlined and established and indeed it did. And then of course after we had our bylaws established early in 1976 then the curricular responsibilities became that of the Faculty Curriculum Committee under the new bylaws. And then Dean Belgian then named me as chairman of the Faculty Curriculum Committee and Assistant Dean for Curriculum for the assurance of a development of this curricular program until we got it fully established.

JS: So, Assistant Dean for Curriculum became Assistant Dean, Associate Dean for Academic Affairs?

JL: Yeah, and then in later on, after the arrival of Dr. Jewet who assumed the initial post of Associate Dean for Academic Affairs, Dr. Jewet asked the Dean to name me as an Associate Dean for Curricular Affairs until the curriculum was fully established. It was after Dean Sawyer arrived in 1980 that, after, and then at that time Dean Jewet went on to the National Board of Medical Examiners, Dean Sawyer asked me to consolidate the faculty affairs that previously had been in chuck, given charge to Associate Dean Jewet and asked me to consolidate curricular and faculty affairs together under the Office of Academic Affairs. This was done in 1980 to 81.

JS: When you came to Wright State at first, what was your impression of the react, of the mood of the university faculty towards the school of medicine?

JL: My own personal impression, the atmosphere was very cordial, when I first came to Wright State my office was actually in the Kettering Center down on Monument Street where the Dean had his office and I made occasional visits to the University and I was always received very warmly and even beyond the offices we had at the Kettering Center, we went on out to the Veterans Administration for our offices, so that put us again at a little distance. But Dean Belgian asked me when I first arrived to start making some contacts with the University and asked me to sit with the University's Curriculum Committee and I learned to know some of those people to learn what the process was they were going through and let them be informed about what our process was. I didn't actually participate in their proceedings, but I did learn to know some of the people on the campus. My interactions with people on the campus has always been very cordial and they had a lot of questions to ask and they wanted to know then after we arrived on campus here how the school medicine was going to be absorbed into the university family and my own position was that we were a part of the university family and even though we are sort of a special case because of the widespread community interactions that we had. So my initial years, even though I had an office on the campus after 1977 were still limited because a lot of my responsibilities were teaching at hospitals in the community and at the VA, which is another hospital, but it's where we did a lot of our undergraduate teaching in the school. I never had negative feelings or was never shared any negative feelings personally by members of the university community.

JS: Who was your first hire in the department of pathology?

JL: Pharmacology?

JS: Pharmacology.

JL: Like I told you a while ago, my first faculty member was another chairman who contributed a good deal in the beginning of the pharmacology program development. The first actual fully affiliated faculty member or hire in the department was Dr. Robert Gardneia (spelling?) who came to the school, also from Ohio State University. We'd gone through the recruitment process and had several others looking at the

position in addition to Dr. Gardner, and after we received those applicants, Dean Belgian and I felt that Dr. Gardner was the person to come take the responsibility for the general pharmacology program in the department. I had some interest in developing the department along clinical pharmacology lines in addition, so I asked Dr. Gardner to assume some of the responsibilities of establishing the sophomore pharmacology course, it was very helpful that Dr. Gardner also asked that we bring with him one of his students that he had at Ohio State, Albert Langley. This was a very significant choice, because Albert Langley is the President, President Chairman of Pharmacology. He had been a student with Dr. Gardner receiving his PhD at Ohio State's College of Medicine and Dr. Langley went on to do postdoctoral work under Norman Winer, who is the chairman at University of Colorado's College of Medicine, and then after that went to Warner Lambert Pharmaceutical Company. So this was a very significant one-two kind of addition to the department and those two men are still with the department contributing to both the School of Medicine's academic program and the biomedical science PhD program.

JS: When we (you?) became director of the faculty or the coordinator of the faculty committee, what percentage of the responsibilities did that entail, how much of your day was spent with that as opposed to pharmacology?

JL: When I first assumed the responsibility as coordinator that position probably took 95 to 100 percent of my time. Gradually after we began to get the curriculum developed then I started working more on the development precisely of the pharmacology program. Then after Dr. Gardner arrived with Dr. Langley then the two of them assumed a lot of the responsibility for the fleshing out of the pharmacology program that is taught to the medical students in the second year.

JS: Has the curriculum here undergone revision since then?

JL: We've had some revisions and changes, we've had some additions like the medical genetics course, was added to the second year of the curriculum. After about the first year of our operation this was done because it was felt that many of our medical students needed to have a better background as they are interviewing patients and families, particularly in pediatrics so that they can be conversant about genetic problems and disease. We did extend or increase the exposure of our students to behavioral science in the first and second years of the curriculum because of the needs of the students when they get down into studying psychiatry in the clerkships of the third year. In general though the rest of the programs have remained about the same in content, we made some changes in the approach to the curriculum in that the first year we implemented the curriculum for the charter class we taught gross anatomy over the entire first 3 quarters, but sooner or later the Department of Anatomy because of their wide responsibilities decided it would be easier and more appropriate to teach gross anatomy in one quarter. So after about the first two years of operation, the anatomy, gross anatomy, was taught in one quarter, micro anatomy in one quarter, and neuron anatomy in one quarter. This allowed for a little bit more productive use of the anatomy faculty members.

JS: How does the nature of Wright State's community based School of Medicine affect curriculum development? Has it added any, either extra problems or extra advantages to the development of a curriculum?

JL: For the community based operation, has not changed the first two years of the curriculum development that much when you consider through comparison with the rest of the medical schools, possibly with the exception of pathology. Pathology is, in this school, has been developed by a small number of fulltime pathologists on the faculty such as Dr. Logan to begin with, Dr. Patata and perhaps Dr. Jennings, but the main part of the pathology course in this school is taught by pathologists who are practicing in the area, and there's probably 25 pathologists that are hospital employees or in private

practice of pathology in the area that contribute to the teaching of that pharmacology course, so in that sense the community base has been very supportive of that part of the curriculum. But it's obvious a difference when we teach the clerkship type of operation. The department of medicine for example sends students to five different hospitals for their clerkship training, this training then is administered and monitored basically by fully affiliated faculty members in the department of medicine, but the teaching of those students then is done primarily by residents that are at those hospitals, and the clinical faculty members that attend patients at those hospitals along with our fully affiliated faculty members. So that's a little bit of a different process than the process that we have at a typical Big Ten university like Ohio State where they have a large number of fully affiliated faculty members and residents right on the spot in a university hospital. The same would go for the department of surgery which teaches medical students in four different hospitals so that the chairmen of that department and the fully affiliated faculty members, which are only a very few, have a responsibility for coordinating that operation with the support of a large number, well over 100 competent clinical faculty members who practice surgery in those community hospitals and federal hospitals like the Veterans Administration and Wright-Patterson Air Force Base.

JS: What impact did voluntary clinical faculty have on the development of the curriculum, was their systematic and organized input from them.

JL: We had made every effort to include voluntary faculty members without imposing on their time, this school at the present time has about 1,200 voluntary faculty members and we always have the problem when we know that there are people out there who are competent, very willing to teach, we want to do that, but with a little bit of consideration of their lot in life. So it's up to the department chair who has primary responsibility for the teaching programs to sort of coordinate with those clinical faculty members to utilize the appropriate people and all during the development of our curriculum we have had input from those clinical faculty members by way of the departmental structure. For example, when Dr. Elliot was working up the program in surgery for our clerkship in the third year, he had input from a significant number of very busy surgeons in the Dayton area, who are recognized as competent teachers. Many of these surgeons who work in groups have spent years in the Dayton area even before the School of Medicine helping to train residents in surgery. So the teaching was not foreign to a lot of these people and it was a very fortunate time that we moved into Dayton where they had a number of good residency programs available in surgery and medicine, obstetrics and gynecology. And then later on with the recent development of Children's Medical Center was an ideal complement to the school of medicine type of activity on a community base.

JS: In the department of pharmacology and toxicology, what's the turnover for faculty, they stay long?

JL: In pharmacology we've had a very small faculty and we've had a very small turnover, after I assumed the role of Associate Dean for Academic Affairs then I asked Dean Sawyer, allow me to move out of the chairmanship for the department so I could suit my administrative role with the school and after appropriate internal search with the department, then with the University Dr. Langley was named to be the chairman of that department. Dr. Gardner remains in that department and since that time we had first recruited Dr. Casul Kumar as a clinical pharmacologist and after he was with the faculty as a fully affiliated member for about two years he was then moved to go to the VA on a fully affiliated basis where he assumed the role of the associate chief of staff for research so in that regard that's not attrition, we also added to the department other fully affiliated faculty members such as Dr. Robert Curker and Dr. James Lucout and Dr. Tom Lockwood in about 1979, and all of those three people have remained, so we've had very little turnover with fully affiliated people. We have had however, turnover with our clinical, or joint appointments in addition to Dr. Berry Blackwell who was my first faculty member whose primary appointment was in psychiatry another significant contributor was Dr. Brian Roberts who was the

chairman of anesthesiology, but had a very burning interest in pharmacology being an anesthesiologist, and of course we were unfortunate that Dr. Roberts died several years ago. So that was another attrition, Dr. Blackwell has since moved on to be Chairman of Pharmacology at the Medical College of Wisconsin and therefore he has left us. Another significant contributor to our department who initially was a clinical faculty member and is now fully affiliated on a secondary appointment in pharmacology is Dr. Beret Bolton who was for a long time the director of the residency program in general medicine at Miami Valley Hospital. Now Dr. Bolton has assumed a similar position and a vice chairman of the Department of Medicine and has given a great deal of his time to teaching in the pharmacology program. Dr. Bolton has also had training in pharmacology when was a resident at the University of Iowa and he has made significant contributions as a practitioner of internal medicine and a teacher in pharmacology.