

OREGON HEALTH SCIENCES UNIVERSITY HISTORY PROGRAM

ORAL HISTORY PROJECT

INTERVIEW

WITH

*William B. Youmans, Ph.D., M.D.*

Interview conducted July 18, 1998

by

Joan S. Ash

## SUMMARY

In this interview, University of Oregon Medical School alumnus and former faculty member William Barton Youmans, Ph.D., M.D., talks about his education and the early years of his career in physiology. He begins with a brief synopsis of his early years in Kentucky, noting that his mother chose the ministry as his initial career path. After a year at the Vanderbilt University Divinity School, Youmans left for Western Kentucky State College to embark on the search for another course of study.

Shortly after arriving at Western Kentucky, Youmans found himself employed as a laboratory assistant in zoology. He talks about his mentors in the basic science departments at the school and their efforts to secure for him admission to the doctoral program in physiology at the University of Wisconsin. Once at Wisconsin, Youmans worked under Walter J. Meek, who provided Youmans with the raw materials necessary to begin his own original research. Youmans describes Meek and the strong influence he had on Youmans' education and later career.

Convinced by Dr. Meek that he should pursue a medical degree as well as the doctorate in physiology, Youmans planned to stay at Wisconsin and complete both degrees in three years. A call for help from Wisconsin alumnus and Meek protégé Dr. Hance Haney resulted in Youmans' departure for the University of Oregon Medical School, where he intended to fill in for one year as an instructor in the Department of Physiology. When the year was up, Youmans decided to stay on in Oregon. He talks about why he made that decision and about his experiences as both teacher and student at the Medical School during the war years of the 1940s.

After an internship in Detroit, Youmans returned to the faculty at UOMS, becoming chair of the department in 1946. He talks about his research, the faculty he recruited, and the graduate programs he established. He compares the departments at UOMS and Wisconsin, noting that the desire to mentor doctoral candidates was one of the primary reasons behind his move back to Wisconsin in 1952.

In concluding, Youmans gives credit to the John and Mary R. Markle Foundation for supporting his early research, and notes that the Foundation personally sought his advice concerning the selection of Markle Scholars when that program was first established. Finally, he looks back on a long career and discusses his most well known discovery, the use of phenylephrine in the treatment of paroxysmal supraventricular tachycardia.

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Interview with William B. Youmans, Ph.D., M.D.  
Interviewed by Joan S. Ash  
July 18, 1998  
Site: Dr. Youmans' home, Port Angeles, Washington  
Begin Tape 1, Side 1

ASH: It's July 18, 1998, and this is Joan Ash interviewing Dr. William Youmans in his home in Port Angeles, Washington.

The first question I have for you is if we can go back, probably a little further than you did when you talked to the University of Wisconsin, and tell me where you were born and raised.

YOUMANS: Well, I was born in a suburb of Cincinnati that is called Mt. Healthy, Ohio, and that was on February the third, 1910. And my parents lived in that suburb for just about a year, and I was the only child in our family that was not born in Kentucky. There were four other children, and they were born in Kentucky.

ASH: So your parents had moved from Kentucky?

YOUMANS: They lived in Covington before they moved over there, and then they lived in this suburb of Cincinnati for just a very short time, and then they moved back to Covington. So I grew up in Covington, Kentucky, until I started going away to school.

ASH: At what point was that?

YOUMANS: Well, I went to high school at a place called Holmes High School for the first two years; then my mother, who was quite a religious person, wanted me to become a minister and decided that I should go to Kingswood, Kentucky, for the last two years of high school. There's a little high school there that's part of a college, Kingswood College, which was a religious school. So I took the last two years of high school in Kingswood, Kentucky.

ASH: And at what point did you decide the ministry was not for you?

YOUMANS: Well, it turned out that one of the teachers at Kingswood, Kentucky, was a minister who was familiar with a program that was being started by Vanderbilt University. Vanderbilt was in the process of trying to unify churches. They felt that there were too many little towns in that area where there were four churches just almost across the street from each other, and they were trying to create a unification. And so they had a special program they were putting on.

This man went down there and became familiar with Vanderbilt University, and when he came back to Kingswood, he told me that I should go to school at Vanderbilt University and get a fellowship down there. So I did; I got a fellowship in the divinity school at Vanderbilt University, and I spent one year there, and I decided at the end of the year that I was going to go into some kind of science rather than into the ministry.

ASH: What was it that made you decide in the course of that year to change your career path?

YOUMANS: Well, it would be, I think, impossible to say just what it was, but I think that I lost interest in becoming a minister at that time, rather than that I had developed the idea of becoming a scientist.

ASH: So you were looking for something else, actively?

YOUMANS: I was looking for something else.

ASH: So sophomore year of college you started taking science courses?

YOUMANS: Not the sophomore year of college. [Pauses] See, this would be—that was the first year of college at Vanderbilt, and when—I should tell you how, then, I went from there to Bowling Green, Kentucky.

At Vanderbilt they were holding these conferences for visiting ministers, and a man by the name of Herman Ogles came from Bowling Green, Kentucky, down to one of these conferences, and he heard me playing hymns on a tenor banjo. So he said to me, “I would hope that you would come to school at Western Kentucky.” At that time it was called Western Kentucky State College. He said, “If you will come to Bowling Green,” and I didn’t have financial backing, so he said, “I will find you a place where you can work for your room, and I will lend you money free of interest if you will take part in playing this banjo at our Epworth League.” So he talked me into coming to Bowling Green, Kentucky. And I did play the banjo; and there was a girl there that played the violin, so she played the violin, I played the tenor banjo, and, of course, somebody played the piano. [Laughs] That was the music at their Epworth League two or three years.

ASH: And you were going to college?

YOUMANS: And I was going to school then, you see, at Western Kentucky, and I was taking things that you had to take just to meet the requirements for a bachelor’s degree. I had not yet really got into science.

ASH: I see.

YOUMANS: Then, one of the courses that I took, I chose to take, was zoology. And one day in the laboratory, in zoology lab, the professor—he was a man by the name of Loudermilk [laughter]—came by where I was drawing a picture of a grasshopper for

the lab, and I had done this and various other things. He looked at this picture that I was drawing, and he said, “Anyone that can draw these specimens as well as you do ought to be able to help students see how to do this. Would you like a job as an assistant in zoology lab?”

ASH: Had you taken biology before this?

YOUMANS: No. This was my first course [laughter]. I said to him, then, “Yes, I would like a job.” And that was the beginning; that was the first job that I had.

ASH: You were still playing the banjo, of course.

YOUMANS: I was still playing the banjo at the Methodist church, Epworth League, and so on [laughs], and I was needing to make some money very much. And you worked in the zoology lab—there were two, two-hour labs per week, and you did that course every week, and you got fifteen dollars per month for this work. He started me out in one lab, and then he very quickly put me in two labs. Then he fixed me up with a desk in his office, for what reason I don’t know [laughs], and so I sat in his office when I did paper grading. I helped out with some other things, and I got very well acquainted with this individual. He helped me, of course, get into science.

ASH: What was your next step, then, after the zoology course?

YOUMANS: Well, the next step was that there was a doctor, M.C. Ford, who was at that time working toward a Ph.D. in soils at the University of Wisconsin. Dr. Ford was on leave from a full professorship, and actually the head of the department of biology and agriculture at Western Kentucky. After I had been working there for a year in the zoology lab, then M.C. Ford came back from Wisconsin to Bowling Green, back to his duties as the head of this unit. And he very quickly offered me a job in a new course they were putting in in general biology, and he asked me to develop and run the laboratory in general biology. This was the first time that they had offered it there. And this I did.

And let me say that at this point I was expecting to major in history, because I felt I could get a degree more quickly in history than I could in anything else after the couple of years that I had had, you see. I took courses, for example, down at Vanderbilt in church history and other things of that type; and so in figuring out how I could get a degree in the shortest time, I decided history would be my major. And I held to that for a year or two. But then, after this experience that I had in zoology and biology, I decided that the proper thing for me to do was to major in biology and minor in chemistry.

So this is not a story that really needs to be told for something like this, but I had qualified to get a degree in history, but in the meantime I had sort of disengaged from the history department, and they then told me that there were additional courses that I needed to take. They didn’t really care for the idea that I was now planning to go on for another year and major in biology and minor in chemistry, so they didn’t want to give me a degree in history unless I took a couple of additional courses. The chairman of the

department had already signed a statement saying that I had completed the requirements, but then he put in the new requirements.

And so I took this up with Dr. Ford, pointed out that I was supposed to get this degree in history and now I was not going to get it, and he said, “We can see to it that you do get this degree if you insist on it [laughs], but we advise you to simply go ahead with your degree in biology and chemistry and wait another year.” And, of course, I now had a job which was supporting me, and I decided to take their advice and not make an issue of getting the degree in history. And so then I spent a fifth year in college, and during that time I met the requirements for the B.S. degree with a major in biology and a minor in chemistry.

ASH: It sounds like Dr. Ford was fairly influential in your decision-making.

YOUMANS: He was very influential. You see, I no longer, then, had Dr. Loudermilk as my supervisor; I now had the man who was the head of the whole unit, biology and agriculture, which was a pretty big unit of Western Kentucky. And Ford obviously took a great interest in me. He made it very clear just what I told you, that I could make a point of this thing and that they will follow through on it. But I thought his advice was good, and instead of making a problem, to go ahead and do what he suggested.

ASH: Did you then get a degree in biology and history, or biology-chemistry?

YOUMANS: No, biology major and chemistry minor. And then, by this time, this picture becomes very clear what I was going to do. They were putting in a master’s degree in biology, and I decided to work on the master’s degree. They offered me a job which was pretty good, and the time was coming when I was about to get married, and I found that they would give me an instructorship while I was working toward a master’s degree, and so I decided to do that.

During that time I took a lot of biology courses and a biochemistry course. And two of the people who were professors that were teaching these courses had Ph.Ds from the University of Wisconsin. Of course, Dr. Ford had received his degree on soil chemistry from Wisconsin, and he had hired two other people from Wisconsin. One of these was named Stevens, who had taken a degree in plant physiology and plant pathology at Wisconsin, and another one was Dr. Skinner, who had taken a degree in biochemistry from the University of Wisconsin.

So I got very well acquainted with these two individuals, of course, and now I began to think that I would want to go to the University of Wisconsin to work on a Ph.D., and I decided I wanted to do that in biochemistry. I applied in the agriculture—in those days they called this department at Wisconsin Agricultural Biochemistry. So Skinner had his Ph.D. in agricultural biochemistry, and Stevens, of course, as I said, was also in their school of agriculture.

And so I at this time tried to go to Wisconsin in biochemistry, and, interestingly enough, a man by the name of Conrad Elvehjem, who later became head of the graduate school and president of Wisconsin, was at that time a professor in biochemistry.

Dr. Stevens came back and told me about what happened to my application at Wisconsin. This was right during the Depression, of course, when everybody was trying to go to school and couldn't find a job. He said, "There's a young man there by the name of Conrad Elvehjem who said, 'You know, we've got far more applications than we can handle, and we don't know much about Western Kentucky State College. In fact, we don't'"—he was saying that he didn't know anything about that school, and he had these four point averages, and so forth, from other places. Stevens told me that Elvehjem was the one that turned us down at that time, my application. He said, "You're not going to get it."

So I went ahead teaching biology. By this time they had made me—I was an instructor in biology, and I could continue to teach there, and I finished the master's degree there, and then I went on another year, simply teaching biology.

But then—and I can't tell you exactly how I decided this, but I decided I wanted really to study physiology rather than biochemistry. So I consulted with Skinner and Stevens, and they had minored in physiology. In fact, all of Elvehjem's people were minoring in medical physiology [laughs]. They knew Dr. Meek, this man that was head of the physiology department at the University of Wisconsin, and I asked them if they would write letters of recommendation to him for me to get some sort of a fellowship at Wisconsin, assistantship or fellowship. And they did do this.

And there are other complications, et cetera, which you don't need, I know, or you don't even need, really [laughs], what I've told you this far. But at first Dr. Meek wrote to me and said that unfortunately they didn't have any more fellowships available. He got my application, but he didn't have the letters from these two people. And he wrote back and told me that they were all full.

ASH: This was your second rejection, then.

YOUMANS: That's the second rejection. So, then, I got a letter in about two weeks back from Dr. Meek, in which—and I learned that by then he had got these letters from Stevens and Skinner, and he said, "We can make you a Wisconsin Foundation Fellow" [laughs].

ASH: So he retracted his rejection.

YOUMANS: He retracted the rejection. And I knew it was these two men, you see, that were responsible. Of course, I thanked them profusely for that.

ASH: Any idea what they said in their letters?

YOUMANS: [Laughing] I never saw the letters. I don't know what they said in the letters.

But, then, the next step—you see, I have to paint a little bit of a picture of the kind of man that Walter J. Meek was, you see, who had been head of that department. He was getting up in about the sixties and had been head of that department for many years by then, scores of years, really. He wrote me again, later, and he said, "I find that I want to give you a research assistantship. I thought we had enough of these fellowships, but I don't—but I think now I will give you a research assistantship," which paid a couple of hundred dollars a year more than the other.

ASH: With a fellowship would you be teaching?

YOUMANS: No, I wouldn't be doing anything, I would just be going to school, you see.

ASH: But this way you would be earning—

YOUMANS: This way I was supposed to be an assistant, and it would be his research assistant. Well, I had, of course, had the physiology, human physiology, as an undergraduate, and so on. Anyway, I wrote him a letter back in which I said, "I'm not really qualified to be a research assistant. I've had only this introductory type of course, and I'm not really qualified." And I raised the question whether he should do this. And I thought a little bit, too, that I wouldn't be able to take as many courses. But anyway, when I wrote the letter to him, I got a letter back saying that it didn't really make any difference whether he called me a research assistant or a fellow. He could even treat me like I had a fellowship, even though I was on a research assistantship [laughs].

ASH: Now he really wanted you to come.

YOUMANS: I tell you that because that—see, Dr. Meek is one of my role models. He's a perfect red tape cutter. You never saw a man that could cut red tape the way he could. And that happened throughout the time I was there.

ASH: And it was probably a skill that you needed when you came to University of Oregon Medical School, too [laughter].

YOUMANS: Well, you see, the way this developed, I arrived there and I found that I was Dr. Meek's research assistant. He was doing some research mixed in with a very busy job that he had there. He was doing a lot of teaching, and, of course, as the head of the department he had a lot of administration, and he didn't have very much time to do research.

But he had bought—that first month that I was there he had bought a new electrocardiograph, the Victor Electrocardiograph; and he says, "I'm going to be doing this certain experiment where we have to take electrocardiograms, and I've got this new

electrocardiograph, and we'll get started on this." About two afternoons a week we would go down and take records on dogs that were being given various anesthetic agents and see what the anesthetic agents were doing to the electrocardiogram. So, of course, immediately I familiarized myself with this electrocardiograph.

[Laughing] I was starting—

ASH: Which is very new.

YOUMANS: It's brand new, and he didn't know any more about it than I did, actually. We were both starting here—he was a tremendous, outstanding physiologist and had been president of the American Physiological Society, and so forth, but [laughs] he was starting at the same place that I was with the electrocardiograph, and so I could go ahead and work with him. And I was working with him on his projects, but he didn't have enough time, really, to be doing research. And he and another man in the department had already prepared some animals that had intestinal fistulas, and they were through with these animals, they had already done with them what they were going to do with them, and I devised several experiments that could be done on these animals that I would do myself. So within about three months, I was my own research assistant.

ASH: Was this working towards your dissertation?

YOUMANS: Three of the papers that came as a result of this research were submitted as my Ph.D. thesis. I've got the records here that I'm giving you, the papers that I published while I was a grad student. I've forgotten just how many are listed there, but there are several.

ASH: Is that in that?

YOUMANS: No, it's—I've got a sheet that is not easy to—I think it's underneath yours. Or is it?

ASH: No.

YOUMANS: Or have I given this to you yet?

ASH: You haven't given it to me yet.

YOUMANS: No, I haven't given it to you. Okay. Here is—[sounds of papers being shuffled]. I'm not so sure that this will tell you. That's not on the sheet. I'll have to tell you from looking at this sheet, the bibliography. I'll go down here to—the first eight papers—

ASH: Eight papers?

YOUMANS: The first eight papers, my name is first on [counting]—six of those, and Dr. Meek's name is on most of them, and then some other people that were graduate students are on them. Three of those eight papers I used for my Ph.D. thesis. They were doing that right along at the University of Wisconsin. You didn't have to sit down and write a thesis as such. You could submit a paper that had been published by a national journal, and so I had three papers that were published by the *American Journal of Physiology*, and they served as my Ph.D. thesis.

ASH: That's quite a publishing record for someone who's a graduate student.

YOUMANS: Yeah, that's an unusual publishing record. It was made possible, as I say, because these people had already prepared these animals that I could use, and that was a time-consuming thing for them. They had published various papers about this. They had made a lot of studies on, actually, effects of intestinal obstruction; and then they had begun to study reflex effects from strips of intestine that were disconnected from the rest of the gastrointestinal tract. And they would make them with two separate fistulas, which meant that you could distend one of these and see if it affected the motility of the other. And this is what I told them that I wanted to do with one of these things, you see.

[End of Tape 1, Side 1/Begin Tape 1, Side 2]

ASH: They hadn't done anything yet about—

YOUMANS: They hadn't done anything to determine reflex effects from one of these loops to the other. They had done something to determine effects of distending one isolated loop on the stomach motility, so they had got started looking at reflexes elicited by distension of the intestine, but they had not got beyond the stomach with that. And so I saw that—another thing, they had done this: they had made several fistulas on the one animal so that you could distend one and determine the effect on the other, or vice versa.

And then they had also cut the nerve supply to one of these. In some animals they had prepared three fistulas and had cut the nerve supply in one of them, so it was a perfect setup. It was all ready to go. You could distend an innervated one and find that the other innervated one would be immediately inhibited but would not do anything to the other one that was denervated.

So I did that, and then next I became interested in these chemical mediators that were just getting so important at that time, and Walter Cannon, of course, who has done, really, the large amount of work on this, a tremendous amount of work on the autonomic nervous system—he had been studying sensitization of various visceral effectors by denervation. And so I knew that I could find out, by giving these animals epinephrine, if the innervated ones were more sensitive to epinephrine or if the denervated ones were more sensitive. So I determined that, and these other studies were forthcoming on it.

ASH: This was independent research, though. This was your own independent research.

YOUMANS: Yeah. I was doing this—you see, Dr. Meek didn't have to be in the lab when I was doing any of this work. He was too occupied. But, you see, these people—he wasn't signing in on research that he was not concerned with. This I have to make very clear. And there was another man, R.C. Herrin, who was a professor there, and he had worked with Dr. Meek on the surgery in preparing these animals. And then, when I needed these myself for other things, I learned to do the surgery, and then I got to those where they were not concerned. So they were—well, they read all the papers that I wrote; they made the corrections, [laughs] important corrections; but I did the writing. I wrote the papers, the initial paper. And the paper would sit on Dr. Meek's desk for maybe a couple of weeks, and then he would get around to reading it, and then he would say, "Look at this, this, and this," and I would rewrite it according to his suggestions, and it would go off to the *American Journal of Physiology*. With Meek's name on it, they would accept it [laughter], even though my name was first.

ASH: Well, were you thinking, as you were doing these experiments, about what you wanted to do after you got your doctorate?

YOUMANS: Well, that brings up another one of Dr. Meek's approaches. At the end of the first year, my first year there as a student—and I did make excellent grades; I should point that out—he said, "I think that you should work toward an M.D. degree as well as a Ph.D." I said, "Well, why do you think that?" He said, "Well, because I think that someday there will be something you will not get that you should get because you don't have an M.D. degree." And he himself did not have an M.D. degree, you see.

ASH: Did not get intellectually or did not get jobs career-wise?

YOUMANS: Career-wise, yeah. That was clear. And he had been telling his other students this. He had other students. I'll tell you about Dr. Haney after a while.

See, Dr. Haney had done there a little bit like what I was doing. He had gone there as a medical student but had become employed as a research assistant in physiology, and had worked on a combined Ph.D./M.D. program. Then, he had not finished the M.D. at Madison, he had gone to Chicago for the last two years, so that was his—but anyway, the point I'm making is that Dr. Meek had done this with several people already, had advised them to work on both degrees, and so I said, "Yes, I will be glad to do that."

I had not gone to Wisconsin with the intention of working on an M.D. degree, and when he told me this it didn't lead me to believe that I was going to become a practitioner, either. But I decided, again, I should take my major professor's advice, and so he pointed out that he could take care of this crediting business. I was going to be spending three years finishing a Ph.D. degree. I already had a master's when I went there, you see, and theoretically I could have—according to the minimum, I could have finished a Ph.D. in two years, but I was planning three years there. And so he figured it out that I

would—at the end of three years, I would get my Ph.D. and take most of the courses of the first two years of medical school.

So what happened was, then, that—see, I had gone there in 1935; I don't think that had been mentioned before—I went there in 1935; and now, in the second year I was there, I make the plan to, in '38, get a Ph.D., degree if I could, and finish the first two years of medicine. So now what happened was, in 1938, a few months before the end of the year, I got the word that they were looking for an instructor at the University of Oregon Medical School. Dr. Meek came into the lab one day and he said, "I don't think that you would be interested in this, but I thought I should tell you that Hance Haney, who has gone out to Oregon, is now looking for an instructor for this next year. The man who was head of the department, Dr. George Burget, had died, and Haney was made acting chairman, and he's in a bind." So, Dr. Meek presented this to me as though he thought I would not be interested, and he said, "Would you be interested?" I said, "Well, I will be interested if I can go there on a one-year leave of absence from here and then come back and do what I was planning to do here about finishing the M.D."

ASH: Why were you interested?

YOUMANS: Well, I thought I should do what he had advised me to do, that I should take both degrees.

ASH: But why were you interested in interrupting your plan to go to Oregon?

YOUMANS: Money [laughter]. I was being paid—I think that these figures are correct, but let me just not give you the figures. Let me just say that the amount that I was going to get in Oregon was exactly double what I was going to get the next year in Madison, and I was in debt and—

ASH: You had a family?

YOUMANS: And I had a family, and I needed the money. I was interested in seeing the Northwest, too. I thought it would be an interesting year, that I would make the money and it would be an interesting year. So I took the job. I said I was interested, and he wrote back to Hance Haney, and Haney says, "Fine," and they sign me up. And that was in 1938.

ASH: At that moment when you arrived at our medical school, what was your feeling, comparing it to Wisconsin?

YOUMANS: Well, there was absolutely no comparison [laughs]. I know I might be quoted, but there wasn't—you see, Wisconsin was a great school, a prestigious school, and its physiology department was highly prestigious. Meek and Eyster were the old-time professors there, and they were known well, and a lot of people had been trained at Wisconsin. So there was a big difference in the prestige.

But, then, as far as the school itself was concerned, their laboratory was sort of a trumped-up arrangement with all sorts of desks that didn't match. It wasn't a good-looking setup at all, but [laughs] you could do the experiments in it, I knew that. They had a good animal care department, and so forth. I knew that the job could be done there. Of course, it was a very small department. Burget and Haney were the only regular, full-time professors in that department—full-time employees, of course. Haney was not a full professor yet. But there were only two full-time teachers in that department; and, of course, Burget had died, and when I went, there were still only two full-time teachers, you see. There was some assistance with some students, and even some assistance by a practitioner of medicine there that would come to the lab and help out. But it was a very small department. And they had no graduate students or anything like that.

You see, the University of Wisconsin was an important department in training Ph.Ds in physiology, so there's no comparison there that would favor, of course, the department in Oregon.

ASH: There was no master's program in Oregon at that time?

YOUMANS: No, there was no master's program—and another thing, the fact that the medical school was in Portland and these courses that people have to take as background for a Ph.D., those were all down in Eugene. And so it wasn't feasible to be training graduate students in physiology there. I knew that when I went there, that I would—if I stayed there, that I would not be training any graduate students in physiology. So that was really the setup. And I didn't intend to stay there, but by the end of the year Dr. Haney wanted me to stay, and I decided I would stay.

ASH: Now, during that year were you both teaching and doing research?

YOUMANS: I was very definitely doing research in a big way, and I was teaching everything that they gave me to teach. Yeah, I was giving part of the lectures; and I was teaching the nurses' course one semester; and I was giving part of the lectures of the medical course, and running labs. You see, Hance and I were, of course—when lab was on, we were both working in lab. We were giving different experiments, and he would be running one and I would be running another. So I was doing not quite as much teaching, lecturing, as Dr. Haney was, but I was doing as much lab work, and I was doing a whole lot of research.

And one reason I could do that: when Dr. Haney knew that I was coming and he knew that I wanted to do research, he arranged for hiring Kurt Aumann, which is a very important thing in this thing. Kurt Aumann—do you know of him? He's on these—this list of papers. He's on more of these than anybody else except Haney. But the point right now is simply that he was there to work as a research assistant; and when I got out there, he and I worked together, and we accomplished a great deal there. There are eleven papers that he and I published together.

And Dr. Haney and I did work together. Somewhere on here it tells how many papers we published together.

So I was doing—that was my whole interest, really, for that year, was getting this research done. But at the end of the year, I simply decided that it was a good enough job [laughter].

ASH: Why?

YOUMANS: Well, I liked the Northwest, and I liked working with medical students, and they seemed to like things, and it was just a pleasant job. And, of course, they advanced me in rank considerably and they advanced me in salary considerably.

ASH: So you went from instructor to?

YOUMANS: Well, it's on this list, and—well, I went from instructor—as you go over this list, I went from instructor to full professor in almost record time. It was only four or five years.

ASH: That would be record time.

YOUMANS: [Laughs] So I then wrote back to Dr. Meek and resigned my one-year leave of absence and told him I had decided, considering my financial situation and so forth, and it was a good job and it was working out, that I was satisfied to give up the idea of coming back and finishing the M.D. degree.

And then—you see, this was in '39. But then, when the war came along, we had to go on an accelerated schedule. I began to evaluate the situation about the M.D., finishing an M.D. degree, and I began to check various places in the country where I might work on the M.D. and in eighteen months get through with it. I checked out with Wayne State University, and they agreed that I could come back there and do it, but then I checked out with Dean Baird, and he said I could do it there in eighteen months on a part-time basis. They would pay me something for the eighteen months—a fraction, of course, of what I would be paid if I were not working toward the M.D.—and so in eighteen months, then, I did finish the M.D. degree.

ASH: So normally the accelerated program was three years. They cut it down to eighteen months for you because you had the basic science portion already?

YOUMANS: No, it was cut to eighteen months for the two years because of the war, jamming it together. You see, it used to be that you had your nine months and then you had a three-month vacation and then you had nine months. They gave up the three months' vacation, so that if I started on an M.D. degree at that particular month, it would be only two consecutive nine-month periods. And, you see, they actually gave—they gave M.D. degrees twice there in one year because they had the early finish of a group. So it was possible. I really thought that, whether I ever made use of an M.D. degree or

not, I'd just as well do what Dr. Meek had told me to do [laughs], if I could do it in eighteen months.

ASH: You weren't teaching at this time, though?

YOUMANS: Yes, I was teaching, too.

ASH: You were? You were also teaching.

YOUMANS: Yes. I was teaching right along.

ASH: So you were one of those medical students during the war years who marched on campus in uniform, were you? Do you remember that?

YOUMANS: Oh, I don't remember marching on campus in uniform. No, I don't remember that.

ASH: [Laughs] We have some pictures of—

YOUMANS: But I was in an unusual situation, very unusual situation, because I was taking classes with people that I had taught physiology, you see. That's an unusual situation. But I had had a similar situation, though, even in Wisconsin, because I helped teach laboratory in the medical physiology there the last two years that I was at Wisconsin, so I went to school with people that I had taught. I took the pathology course, for example, with medical students that I had taught laboratory in physiology. And I had this unusual situation there, and I also had this unusual situation here. And it worked perfectly okay. And I was, of course, six or seven years older than the average age for the students that I was going to school with there (at Oregon), but that was no great problem.

ASH: What was your rank in the Medical School at the time you were a medical student? Were you an assistant professor?

YOUMANS: No, I was, at this—you'd have to get it from the dates on here.

ASH: I'm just curious.

YOUMANS: [Pauses] At Oregon—what it says here, this doesn't quite take care of that. University of Oregon Medical School in Portland from '38 to '42. It doesn't indicate what I was here.

ASH: And when did you get your M.D. degree?

YOUMANS: In '44 I got the M.D. degree. But I kept my rank; I retained the rank that I had. Whatever rank I had when I decided to do this, I retained that rank. They didn't change that. This is an interesting point, because that's the way it was done [laughs]. And it's also true, you see—I should bring this out—that first year that I was at

Wisconsin I was a research assistant, as I explained, but I was made an instructor at the end of that year at Wisconsin. And so from—the next two years at Wisconsin I was instructor of physiology while I was working on the Ph.D. degree. That is not possible anymore at the University of Wisconsin—

ASH: You must have a Ph.D. degree?

YOUMANS: Or maybe not anywhere else. I don't know when they quit allowing that, but the time came that you could not be an instructor while you were working on the Ph.D. You had to be something other than that.

And so, while those are irregularities, I was a very irregular student all the way through, you see. It was irregular that I was working as a lab assistant in zoology as an undergraduate, of course, at Western Kentucky, but they had them there; and then it was irregular that I was instructor at Wisconsin and working on a Ph.D. I don't know how irregular this was, about having some rank well above instructor—I don't remember now exactly what it was, but it was well above instructor—and keeping that rank and continuing to do the teaching. You see, the laboratory teaching and that type of thing.

ASH: When you were in medical school, were you especially influenced by any particular individuals?

YOUMANS: Well, I would say that as impressive a person, as impressive as I had, was Howard Lewis, Dr. Howard Lewis, who was—he was teaching physical diagnosis to medical students at that time. And later he, of course, became head of the Department of Medicine. He was a very influential individual. Also, I had some very close contact with him later in some of the things that I did there. I was very impressed with him.

Of course, Osgood, Edwin Osgood, has got to be put up at the head of the list. A very important person there. I was impressed with him. He was author of the textbook we used on hematology; and in the clinical lab diagnosis course that I took, we used the textbook that he wrote. Well, he perhaps was the most outstanding person in the medical school there at the time.

ASH: Now, a number of people I've already interviewed had said that you were a superb instructor and teacher, and I wondered who might have influenced your teaching skills.

YOUMANS: Well, it's hard to state one individual that did this, although I felt that the teachers that I had at the University of Wisconsin in the basic medical sciences were all outstanding. Dr. Meek had the reputation of being the best teacher in the basic sciences, and, of course, I took his course one year and got my grade in it, and I audited it the next year. So I listened to all of his lectures through the two years, and a few additional in another year.

I don't know where I developed my approach to teaching, and I don't think that I got it—I don't think I'm as good a teacher as Meek was, you see. I did not copy him or take on his method, and I did not copy or take on anybody's method of teaching. It's my feeling that if I list about four or five outstanding teachers, each one had an entirely different method than the other, and I didn't develop my method from any of those [laughs]. My method was basically writing the textbooks—I mean, when I got through preparing my lecture notes, I wrote the textbooks from the lecture notes.

ASH: And you published your first textbook when?

YOUMANS: Well, the first one—the first, which can hardly be called a textbook, I guess. Just a minute. I'll get a couple of them.

ASH: This is ready to go off, so I think I'll change tapes now.

[End of Tape 1, Side 2/Begin Tape 2, Side 1]

ASH: It's July 18, 1998, and this is Joan Ash, interviewing Dr. William Youmans in his home in Port Angeles.

[Tape stopped.]

YOUMANS: You know, it's so easy to do it that way.

ASH: So that the pronunciation is Youmans?

YOUMANS: Youmans, yeah. And I think—[laughs] well, as far as I know, that's the way—although it comes from a name that certainly should be Yeomans. That's Y-e-o-m-a-n-s. They're interrelated: the Yeomanses and the Youmanses are interrelated.

ASH: Well, since we're talking about your name, I have to tell you that Herb Griswold kept calling you Billy, and I wondered if that was...

YOUMANS: My wife calls me Billy and my sisters and brother call me Billy, but nobody but real close relatives call me Billy [laughs]. All the rest of them call me Bill.

ASH: Well, others who have mentioned you called you Bill, but he called you Billy.

YOUMANS: Well, I'm not surprised, because Herb Griswold, you know, he and I had a very close relationship. He would be sort of next to Kurt Aumann as far as close relation was concerned. But Peterson is the one that—he and I have kept up with each other better than about anybody else there, so he's the one that really has sort of kept up with me.

ASH: Well, I spoke with Herb Griswold, I interviewed him last week, and he said to say hello to you, and I'm going back to talk to him further this coming Tuesday, I think it is.

YOUMANS: I've been wondering about his health. I heard that he did have various things wrong with him.

ASH: He's doing very well.

YOUMANS: I'll tell you, my wife and I have had life-threatening ailments within the last six years, but we've sort of got things under control now. You can tell him that.

ASH: All right.

YOUMANS: I'll tell him something a little more specific about it.

ASH: All right. So we're talking back now about the—

YOUMANS: Well, you said the first textbook. What I should bring out is, actually, this book is the first book that I put out that could be considered a textbook. It was not exactly written as a textbook, it was written essentially as a summary of the information that people needed to know about physiology.

ASH: That you were teaching?

YOUMANS: Yeah.

ASH: So this is what you were talking about, this is the one that's based on your lecture notes.

YOUMANS: Yeah, that's based on my lecture notes, and just shaping it up, you know, for publication, and it was put out by Yearbook Publishers. That's the most successful one that I wrote.

ASH: *Basic Medical Physiology* is what the title is, copyright 1952.

YOUMANS: That went through the first edition in less than a year, and then they brought out the second printing. I don't know if this one is the first or second.

ASH: I think it said second.

YOUMANS: [Pauses] Yes, second printing, 1953.

ASH: So this is based on the lectures that you had given at the University of Oregon Medical School from 1938 on?

YOUMANS: That's right. You see, I went back to Wisconsin in '52, and, well, this is '53. In a way, it might be better that—it was actually done, you see, and finished after I left Oregon, but it is based on what I was teaching medical students in Oregon, in as systematic a way as I could.

And, really, the sort of things also—you see, I never tried to teach students for national board examinations, but I was always conscious of the fact that they had to take national board examinations, and I knew something about what kinds of questions were on national board. At Wisconsin, the thing we can brag about is that our students averaged in the upper ten of those schools that were taking the national board. There were ninety, or something, schools, or more, and we—in other words, we were effective in preparing students to take national board examinations, and, yet, I wouldn't want anybody to think I did my teaching at all with the idea this is what they're going to have to know for national boards.

Then, after I wrote this book, you see, Yearbook Publishers wanted me to write a textbook: take this and modify it and make it a textbook, which I did; and that was one here—I guess I have it in here, *Fundamentals of Human Physiology*, and that was reasonably successful. Then I prepared a second edition of that, but in the meantime I had a job that took all my time.

ASH: That was after you got to Wisconsin?

YOUMANS: I had gone back to Wisconsin. I could not take the time to continue with these books. My move back to Wisconsin meant that I was not going to be going along writing textbooks edition after edition, so I didn't go on with that. I didn't have the time to do it.

ASH: Well, getting back to Oregon, you became chairman of the Physiology Department in 1948?

YOUMANS: Actually, it's earlier than that. You see—well, I went back to Henry Ford Hospital—

ASH: Now, let's see. You graduated from medical school in 1944.

YOUMANS: Graduated in '44, then I went to the Henry Ford Hospital—which I might say I had trouble arranging to get away from Oregon and go back and take an internship. I think that out there, there might have been the feeling that, "Actually, he's going to end up practicing medicine. Otherwise, why would he take an internship?" But that was not my intent. I did want to take the internship. And so it was kind of left up in the air whether I could come back to my job at the end of the internship, but I decided I was going to take the internship whether I could go back or not. So I did take the internship. And then—

ASH: Why did you take an internship in Detroit rather than Portland?

YOUMANS: Because they paid a salary in Detroit, and it was one of the few schools in the United States in those days where they paid a salary instead of having you stay in a dormitory. And I could take my family back, and it was all possible to take the family back there and take their salary and take the beating on the salary for the year and then go back.

That, of course, was a very unique experience, to spend a year in Detroit during the war, and the things that were going on there at that time, and the difficulty even of getting any housing. It was a big problem.

ASH: What do you mean about the things that were going on? At the hospital or in medicine?

YOUMANS: Well, just the general climate of a big city, the climate of a big industrial city. We did not like living in Detroit. [Laughs] Of course, everybody has his personal approach to these things. It's one place that I was pleased to leave, you see, after a year. And I knew I was going to leave, but it was one of the most important years of my life from the standpoint of my education.

ASH: Why was that?

YOUMANS: Because of the practical aspects of actually knowing more of what medical students were going to really need to know, you see. I learned what the medical students really needed to know about physiology better than I had just from teaching physiology and without having been seeing any patients, and so on.

ASH: And how did you end up back in Oregon?

YOUMANS: Well, if you will look at a catalog, or bulletin, I guess they call it, that came out from the Medical School that year, it had an asterisk after my name, and it indicated that I had resigned.

ASH: You hadn't though?

YOUMANS: I had not, really. And I got word back from Dr. Haney saying that he had seen this in the bulletin and that, of course, it was inaccurate and that the plans were there for me to come back. Well, it's unimportant that I got offered two or three other jobs after that appeared in that bulletin, because I was not interested in the other things that came up, and I told him, of course, I would be back.

Then I went back, and—but then, you see—the date that you mentioned I think is not right. I think it was '46 that Dr. Haney went into full-time in Medicine. You see, he was still head when I went back, and then he decided he was going to become full-time in the Medicine Department.

This is a very interesting thing about Dr. Haney that everybody really should understand. Dr. Haney got deflected from being a practitioner by taking a Ph.D. in physiology at Wisconsin. He went to medical school in the first place to become a practicing clinician, and he was so successful in what he was doing that he almost got permanently deflected from being a practitioner. But his interest really was in clinical medicine, and now, by 1946, he had decided that he was going into clinical medicine. So he did that. Then they had to find a chairman for the Department of Physiology, and that's when they made me chairman.

ASH: How many people were in the department at that time?

YOUMANS: Well, there were only three people. There was Hance Haney and Carl Heller and myself. Carl Heller came in while I was back in Detroit, and he was taking my place, see, there; and then he continued on, he continued on after I came back, so it was Haney and Heller and myself. And then Haney—Heller and I knew that Haney was leaving and going into the clinical end of things. And so then Dr. Baird had to decide who was going to be offered the chairmanship of Physiology, and he offered me the chairmanship, and I accepted it. And so that was, I think—if you check the dates, I think it was definitely '46.

ASH: Were you a full professor at that point?

YOUMANS: Oh yes, yes, sure. I was full professor, you see, long before I became chairman of the department. That's all in this. You can check those dates out. And it's in the other, *Who's Whos*, too. So here was a period that I was chairman from '46 to '52. Then I was offered this job to go back as chairman at the University of Wisconsin. After having relinquished a one-year leave of absence, I then agreed to go back after fourteen years.

ASH: Why did you make that decision?

YOUMANS: Well, the decision was based on, [laughing] not just, loyalty, but partly, partly appreciation and realizing that it was an outstanding department. But the big reason was that I wanted to train some Ph.Ds in physiology, and I didn't believe that at that time I could be doing that in Oregon.

ASH: You had started a master's program in Oregon?

YOUMANS: I started—oh, that is one of the things that I wanted to point out as one of the main things that I did that was different there. I started this program where a person could plan to spend three years taking the last two years of medical school and a master's degree in physiology. There were several of these people. It's on that list that I gave you, there. Several of these people are the ones who later were heads of things on the faculty, like Peterson and like Griswold and—Pitcairn, I don't remember now if he was one who took a master's, but Pitcairn became head of the respiratory unit. And, of

course, Griswold became head of the cardiovascular, and Peterson was the leading surgeon there for scores of years.

Trainer was not on this program, but I'm the one that brought Trainer back there. I kept up with Trainer all the time he was in the Army, and he and I had an agreement that when he got out of the Army, he was coming back. And you know about Trainer, I guess. They've got things named after Trainer there now.

And I was—I'll brag about this. I was responsible for hiring Renshaw and Brookhart. And in those days we did not have these people hired by committees, they were hired by individuals.

ASH: Well, I heard a little bit from Dr. Griswold about your search process for a neurophysiologist.

YOUMANS: [Laughter] What did he tell you? Did he tell you that I wrote to about a half a dozen leading neurophysiologists in the United States?

ASH: Yes, and you asked for five nominations.

YOUMANS: Give me five names. And there was only one man that was on there more than once.

ASH: And that was?

YOUMANS: That was Brookhart, and I offered him the job, and initially he turned it down, and then later on he decided to come out and look, and when he came out and looked and got used to the place, he took the job.

ASH: I see.

YOUMANS: I gave Dr.—Faber, isn't it?—a picture showing Brookhart when he was visiting out there looking at the job. You should ask to see that picture. It's got—

ASH: Who has the picture?

YOUMANS: Faber. [Pause.] Isn't that his name? He's in—you don't know him?

ASH: No.

YOUMANS: Job Faber, who is now professor of physiology and pharmacology. He is developing a Renshaw room—which that reminds me, I particularly wanted to bring that up because I've got something I would like for you to take back to him.

ASH: Oh fine. Then I'll get to meet him. That would be perfect.

YOUMANS: It's some of Renshaw's monographs that were left by him when he passed on. See, Renshaw died from polio. It was a very sad situation. He was there only a few years, and his whole family developed polio, and Renshaw died from it. He's one of your most famous people. Now, this man [Faber] is a neurophysiologist. He can tell you all about him. They've named cells after him. They've named Renshaw cells after him, and he may turn out to be the most famous physiologist that they've had at the University of Oregon Medical School.

ASH: And so they are developing a Renshaw room?

YOUMANS: They're going to have a Renshaw room and get the word around about him and make a memorial to him.

ASH: I'm glad to know about that. I'll definitely talk to Dr. Faber about it.

YOUMANS: And, see, Renshaw is one that I hired earlier. And, of course, the unfortunate thing that this did not work out for him; of course, it's very, very unfortunate. I actually believe that Renshaw, if he had lived, would have been a co-winner of a Nobel Prize. There are two men that got this prize one year. One of them was John C. Eccles, and Eccles and Renshaw had correspondence about these cells that are named after him now, and Eccles is the man that named the cells after Renshaw. That is Eccles' memorial to Renshaw. And, as I say, they were on a par, people like Eccles and Renshaw were on a par in what they were accomplishing. I think that if Renshaw had been alive, there would have been three winners of that prize instead of two.

ASH: That's sad, very sad.

YOUMANS: But I don't know this man [Faber] personally. I have trouble remembering his name, and I have not met him personally, but I've had a fair amount of correspondence with him and trying to help him out on getting that room in shape.

ASH: Well, anything I can do to serve as a messenger I'd be happy to do.

YOUMANS: Well, to go back to this program about the combined M.S. and M.D., see, this was unusual in that, of course, these people had had contact with physiology before they went into this program: had that year, and then they had three more years where they had close contact with the Department of Physiology. They actually had as much training in physiology as a Ph.D. in physiology would get, but, of course, they all went in the clinical direction, which is fine—they were using their background and had become more useful than some people that hadn't been through this kind of a program.

ASH: And did you ever try to set up a Ph.D. program?

YOUMANS: No.

ASH: There just weren't the resources.

YOUMANS: You see, I didn't feel that that was a feasible thing to do when your physical chemistry and physics and all sorts of courses that were essential had to be taken down in Eugene. I didn't think that we could compete with other schools around the United States on a thing like that.

You could see why, since I was thinking about it, why I had it in mind when the opportunity came to me to go back to Wisconsin. Then it came uppermost in my mind that I could go ahead and do this and that I really did want to be a major professor for some people that were going to be professional physiologists. At Wisconsin, I trained twenty-two of those.

ASH: Ph.Ds?

YOUMANS: Ph.Ds in physiology. I was a major professor for twenty-two of them, and they became scattered around the country, some of them doing a very good job, nearly all of them becoming members of the American Physiological Society. Some of them did go on into other directions.

ASH: Now, we have probably five more minutes to wrap up here, and the things that I definitely wanted to cover were administrative duties while you were chairman of the department.

YOUMANS: Well, administrative was rather simple there, actually, compared to Wisconsin [laughs]; that's the thing I have uppermost in mind. It was very simple at Oregon compared to Wisconsin. All I needed to do was go and talk to Dr. Baird about things, and we'd come to an agreement and it was done. He took the attitude that it was our job and he wanted to help us do our job. And it was simple.

ASH: So there wasn't a lot of red tape?

YOUMANS: There wasn't red tape, really, at all. He was very easy to work with, and he didn't try to run the department in any way. He never did anything but take the attitude that he would help us do what we were trying to do. At Wisconsin I have an oral history I would have to give you of the story of how difficult it is at Wisconsin, but at Oregon I didn't have any difficulties.

ASH: Well, that's good to hear. Now, Herb Griswold said that you had this philosophy that you never came in on Monday morning except to teach. This is something he remembers.

YOUMANS: Never came in early on Monday morning?

ASH: Right.

YOUMANS: Well, that is quite reasonable, I think, that that's true. Did he tell you that we taught at eight o'clock in the morning when we taught? This is what you have to recognize, is that we did have to come in by eight o'clock on the mornings when we were teaching.

ASH: So that could include Monday?

YOUMANS: Yes, that would usually include Monday. Monday, Wednesday, and Friday, I think, was probably most common, and I will say that I don't recall ever being late to a class [laughs].

ASH: He said you had a philosophy about it that—you said everybody has all weekend to think of things they wanted you to do, so if you came in late on Monday, or if you could come in late on Monday—and this was probably to the office.

YOUMANS: Monday was a good day to miss [laughter], he's right about that, and this is because, you see, people who are in practice and have not published any papers and want to do some research, they will call you on Monday morning. They think about it on Saturday and Sunday, and they call you on Monday morning and ask about setting up a research project [laughter].

ASH: So you could delay that if you weren't there.

YOUMANS: I didn't really need to be there for that. If I didn't get there till Tuesday, sometimes they'd forgotten it.

ASH: [Laughing] Or they'd ask somebody else, right?

YOUMANS: [Laughing] Oh, he's got me pinned down on that, all right.

ASH: Well, I just wondered if you had any questions for me or if there's anything I should have asked you that I haven't.

YOUMANS: Well, I could ask a lot of questions, but I really don't have, I think, any really important ones. But there is one thing I wanted to mention to you that I put down on this rough thing, here.

ASH: I'm going to have to turn this over. Hang on just a second.

[End of Tape 2, Side 1/Begin Tape 2, Side 2]

YOUMANS: What I wanted to tell you is that my research at Oregon was supported by the John and Mary R. Markle Foundation, and you will see on my papers that I gave credit to them. The reason I am now bringing it up is that when they decided to no longer support research projects but to go into support of scholars, the man who was the head of the organization, John Russell, came by my office and explained to me

that they were not going to continue to support research and they were going to establish these Markle scholarships, and he asked me how to select them. And we spent the necessary amount of time to discuss how this should be done, and I told him how I thought it should be done, and that is exactly the way they ended up doing it.

What I told him was that the best way to do it would be to let the school itself choose one individual as the one that they would want to nominate that year for a Markle Scholar.

ASH: And that's the way it's still done.

YOUMANS: And that is the way it was done. And now I think they are quitting that, too. I think that they have discontinued the Markle scholarships and they've gone into something else.

Then there were other things that were doing it that way later. I may be wrong about this, you see, but to me this was an original idea, that I thought it would be very simple to get the best candidates if you simply let the Medical School pick them instead of just asking for nominations to come in and then at some distance picking one or more of these people. And I think it was a very successful program. They picked some very good people.

So I found that interesting that when they told me they were no longer going to be able to support my research, they asked me about my ideas about selecting their scholars [laughs].

ASH: Well, one last question now. What would you tell me if I asked you what you were most proud of in your career?

YOUMANS: Well, I don't know what to tell you that I'm most proud of. I'll tell you the thing that is the best known and that got me into *Who's Who* when I was thirty-nine years old, and that was developing the use of phenylephrine to treat paroxysmal supraventricular tachycardia. And I did that, and I had Goodman and Gould that I brought into this, and they are on the paper, and, of course, my name was first, and I'm the one that pointed out to a medical conference that it could be done. It never had been done before. It was done, it was found to be the treatment of choice in selected cases, and it's now given in the pharmacopoeia as the way to do it, with phenylephrine. Of course, Neo-Synephrine is the trade name. Now, I'm not any more proud of that than I am of a lot of other things, but that is the best known and is why my name got before the public at an early age.

ASH: Very impressive.

YOUMANS: And it was published by the Associated Press, and so forth and so on.

ASH: Very impressive. Well, I'd like to say thank you so much for taking the time to do this.

YOUMANS: I'll tell you one more thing. I have written a paper that I published last fall [titled "Luciani's support of Cesalpinus as discoverer of circulation of the blood"], and I'll give you a copy of that and you can read it and your husband can read it, and you can let me know what you think of it, if you want to. I have a first cousin who is a professional historian, and he says that after that paper I have to be classified as a revisionist [laughter].

They don't really know who discovered the circulation of the blood. Everybody thinks of William Harvey as the one that discovered the circulation of the blood, but the circulation of the blood was really discovered well before Harvey, and nearly everything that he used to fall into the discovery had already been done, you see, but he is the first one who correctly described the entire circulation of the blood. So my cousin the historian would agree with the last paragraph, there, that it does not detract from the credit to Harvey, but let's give some credit to all this other work that was done and recognize that he was standing on other people's shoulders.

In a way, I'm as proud of this as any paper I ever wrote.

ASH: And this is reprinted from...

YOUMANS: That's reprinted from Alpha Omega Alpha publication, a quarterly, entitled *The Pharos*.

ASH: What's interesting to me about this is that you started out as a history major.

YOUMANS: [Laughter] That's right.

ASH: Well, thank you for this.

[End of interview]

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