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DANIEL D. FEDERMAN, MD

Interview conducted by  
Michael Chappelle  
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## INTRODUCTION

Daniel D. Federman, MD, Carl W. Walter Distinguished Professor of Medicine at Harvard Medical School (HMS) is a nationally respected and influential medical educator and academic leader. His exceptional skills as a communicator have proven invaluable to promoting high standards of medical education and ethical practice as well as implementing innovative changes in the medical curriculum. Dr. Federman has also been a leader in postgraduate education for physicians, contributing effectively to the educational programs of the American College of Physicians, of which he was president in 1982. Throughout his career he has remained a spokesman of the field and has contributed thoughtful articles analyzing changing demands and new approaches for medical student teaching.

## BIOGRAPHICAL SKETCH

Dr. Federman was born in New York City in 1928. He graduated *summa cum laude* from Harvard College in 1949 and *magna cum laude* from Harvard Medical School in 1953. Following an internship and residency at Massachusetts General Hospital (MGH), he became a clinical associate at the National Institute of Arthritis and Metabolic Diseases where, under the guidance of Ed Rall, he studied the effects of androgens on thyroid function, thyroxine metabolism, and thyroxine-binding protein. In 1957, he began a two-year clinical research fellowship with Sir Edward Pochin at the University College Hospital Medical School, London, pioneering in the use of radioactive iodine for the treatment of thyroid cancer. Following his time in London, he returned to HMS and the MGH and worked his way up the ranks, becoming chief of the endocrine unit at the MGH in 1964, assistant chief of medical services at the MGH in 1967, associate professor of medicine at HMS and physician at the MGH in 1970, and associate chairman of medicine in 1971. During this period, Dr. Federman produced his classic text, *Abnormal Sexual Development: a genetic and endocrine approach to differential diagnosis*, which has been credited as bringing order to a hitherto disorganized field. In 1973, Dr. Federman was recruited to become physician-in-chief and chair of the Department of Medicine at Stanford University for the purpose of bringing the MGH ethos of clinical teaching, its historical connection between doctors and patients, and its popular residency programs to Stanford, as well as to provide leadership in transforming Stanford's clinical departments up to the standards of its basic science departments. Daniel Tosteson, dean of the faculty of medicine at Harvard, was able to lure him back to HMS in 1977 with the position of dean for students and alumni. Working closely with Dean Tosteson, Dr. Federman was instrumental in implementing Harvard's innovative curriculum of problem-based learning, the New Pathway. The New Pathway featured a shift away from lecture-laden, passive methods of learning to the development of the learning skills at the heart of a career as a lifelong learner, a competency necessary to satisfy the unremitting need to acquire new knowledge. Dr. Federman became dean for medical education in 1989 and senior dean for alumni relations and clinical teaching in the year 2000. In the later capacity, he initiated the Resident-as-Teacher Program, which as the name suggests was designed to prepare residents to teach, acknowledging their important role in the education of students in core clerkships. Throughout his career at Harvard, Dr. Federman has been an endocrinologist in practice and in teaching. He was responsible for the endocrine part of the Harvard curriculum for more than a decade, and co-founded and taught the endocrine course titled Genetics, Developmental Biology, and Reproduction for eighteen years. In recognition of his

teaching contributions, the American College of Physicians awarded him its Distinguished Teacher Award, while from the Endocrine Society he received the Distinguished Educator Award. Dr. Federman has served as chairman of the American Board of Internal Medicine and president of the American College of Physicians and is a member of the Institute of Medicine. In 2001, the Association of American Medical Colleges honored Dr. Federman with their Abraham Flexner Award for Distinguished Service to Medical Education.

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## I. FAMILY BACKGROUND AND EARLY YEARS

- Chappelle: Dr. Federman, would you please tell me a little bit about your family background starting with your grandparents?
- Federman: My grandparents on both sides were European immigrants, a classic story--especially on my mother's side--of a man who came first, established a business, went home to get his wife, and then had a family of seven children. My mother was among them. She was an excellent pianist, studied professionally--not even at the Julliard School but at the Damrosch Institute, which preceded the Julliard School--and taught piano for her professional life. My father was a traveling salesman, sold jewelry, and went all over the eastern half of the United States by rail. I remember the first time he called us from Oklahoma, and he said he would see us the next day. Well, that didn't fit rail travel, so he was going to take a plane for the first time in his life in order to be home for the holidays.
- Chappelle: When and where were you born?
- Federman: I was born in 1928. The hospital was in Manhattan, but we lived in the Bronx. I lived there at two different addresses and went to public school there until I left at age seventeen to go to Harvard College. I have never been back except to visit my parents and occasionally to look at the old neighborhood for nostalgic reasons, but it was a fine life in the Bronx at that time. We were actually at the edge of rural land--about half a mile from us, there were farms. They were still farming actively, but my own neighborhood was fully built up.
- Chappelle: What was your experience growing up at the end of the Depression and during World War II?
- Federman: Well, it wasn't the end of the Depression, but we grew up in the midst of it. You couldn't escape an awareness of it at that time. My family were employed; we had no loss of income, but everywhere around us there were people out of work and turning to selling apples and features like that. We also had a daily consciousness of the president; FDR--although never seen on television--was as close to each of us from the radio announcements as you could image. The war was next after the Depression in our awareness of the world. We weren't in it for quite a while, of course--it started on September 1, 1939, and we didn't get in until 1941--but the Lend-Lease program, the connection between America and the British, and the emerging connection between Hitler and the Japanese, all of that was daily newspaper fare; we read it constantly.
- Chappelle: What type of education did you have?

Federman: I went to a public boy's high school. There were fourteen hundred people in my class, and we were drawn half locally and half were subway commuters, who came up in large part from Harlem and Northern Manhattan to go to the school. It was not a distinguished school, but if you maintained an eighty-five average or better, you were in what was called an honor school, a segment. And we had a terrific education in that place: language, English, science, history, remarkable teachers, and a closeness between them and the students--carved out of a school of fifty-six hundred boys. It was magical and it worked.

Chappelle: What kind of a student were you?

Federman: I was a compulsive student. [laughs] I did as I was supposed to. I read extensively: every day, every meal, every spare moment, I was reading. I was never good in math and not really interested in science, but I loved English, poetry, French, and social studies; that is mainly what my interests were. There was another Daniel in my class, and we were often compared; he knew five times as much math as I did and was a real scientist--died young of what would now be a treatable disease--but he and I were close, and our interests complemented each other.

Chappelle: What about hobbies or sports?

Federman: We played a lot of local sports. I was never a varsity "anything," but there was a schoolyard, half a block from my house. There were handball courts and outdoor half-court basketball courts, and that's what I did most of the time. I wasn't tall enough or aggressive enough to be an excellent basketball player, but we just liked playing locally.

Chappelle: Were you interested in science or medicine when you were in grammar school or high school?

Federman: Not particularly. We took all subjects; they were all required. I was interested in the mind, and my high school yearbook *says* I was planning to be a psychiatrist. Well, I wouldn't fake it, so I guess it's true. But it wasn't as a branch of medicine, but more as a form of study of the mind that it appealed to me.

## **II. HARVARD COLLEGE (1945-1949)**

Chappelle: Why did you choose to attend Harvard College?

Federman: Well, I applied to three different schools: Cornell because both my father and brother each had two years there before going to the respective World War I and II; Wesleyan because I thought a small collegial campus would be a wonderful way to study; and Harvard because in our neighborhood that was a magical, if remote, possibility. Strong students--and I think I was among the

two or three best in my class--were urged to apply to Harvard by the faculty. I took it seriously--hadn't any idea what it meant, didn't visit.

Chappelle: How were you supported as a student?

Federman: My father paid for all my bills. Education was a very high priority, and as long as I went somewhere good and kept up with my work, he was determined and proud to support it. I worked. I was a librarian; I did other small jobs, but they were token more than anything else--mostly a little food and a slight stipend. I was really, basically supported by a believing family.

Chappelle: What was your major?

Federman: I majored in a field called social relations; it sounds like a joke, but it isn't. It was a blend of psychology--especially clinical psychology--sociology and cultural anthropology. It was formed the year I started in it, and it was *dazzling*. Every course without exception was first class, often being given for the first time because it was a new course. The teachers were very conscious of this responsibility. And it was an interesting time at Harvard because the class was enriched with veterans, and they had none of the classical, private school idolizing of Harvard. They were there on the GI Bill; they looked on it as a purchase to which *they* were a party, and they were going to get the education they thought they should. Having just come back from the war, they had clear ideas about what they wanted to do. So Harvard was very exciting at that time, not at all stuffy, inbred, New England colonial atmosphere at all. It became a national university. And what with the excitement of my own studies on the one hand, and the changes in Harvard on the other, it was a great time to be there.

Chappelle: What were your career plans at the end of your college experience?

Federman: Well, the end is less significant than the year before. I was planning to go into clinical psychology--probably a PhD program--and a woman that I was going out with at the time said, "That isn't what you really want; you want to be a psychoanalyst." And she was right on. As a result I took organic chemistry between my third and fourth years in order to be able to go to medical school. And I went to medical school strictly to become an analyst. At that time you couldn't be an analyst without an MD degree, so to me it was a means to an end. I wasn't interested in medicine at that point.

### **III. HARVARD MEDICAL SCHOOL (1949-1953)**

Chappelle: Did you consider going anywhere else than to Harvard Medical School to become a psychoanalyst?

Federman: Oh, I wasn't interested in analysis anymore at that time. No, the first-year course in physiology was so exciting and so full of mystery on the one hand, I never looked back. I switched at that point to internal medicine, and that was what I was planning when I left the school. So I was still interested in psychology and psychoanalysis, but more as a personal sideline, not a professional goal at that time.

Chappelle: How did you envision your career in medicine after that course?

Federman: I thought I would go into one of the pre-paid programs: experiments in healthcare that had emerged during the war. I took out a California license; I imagined I would probably end up in the Kaiser Permanente healthcare system, and that was what I had in mind as a likely goal when I finished my two years of residency.

Chappelle: What attracted you to the Kaiser program?

Federman: I thought it was a socially oriented innovation, which already had high standards and was meant to serve medium and poor people, and that social consciousness was very important to me. That was why I thought at that time I would go there--never got there--but that's what I was thinking.

Chappelle: Did either the McCarthy era or the Korean War have a special impact on you?

Federman: Both of them had a lot of influence. The McCarthy Era was for those--if you have any viewers who don't remember it--an era identified with a single senator, Joseph McCarthy, who was finding and seeking out communists behind every bush and every couch pillow. And whether or not you had ever been associated with the Left, you were queried about people who were associated with the Left. And it was, I thought, one of Harvard's finest hours when they supported several faculty who refused to cooperate with McCarthy and wouldn't take him at his terms. I had several of them--two of them as instructors--while I was in medical school. They were local heroes because of their resistance, and Harvard was very highly respected by the students because it backed these people.

The Korean War had a different influence. The Korean War kept us all in school because if we hadn't stayed in medical training, we would have been drafted. Putting it briefly, the wonderful experiences young doctors take now to work overseas, to travel, be of use somewhere--we were forbidden any of that because it was an absolute equation: as soon as you left medical training you would be drafted. So it had a remarkably compelling influence on keeping us focused.

#### IV. MASSACHUSETTS GENERAL HOSPITAL (1953-1955)

Chappelle: You did your internship and residency at Massachusetts General Hospital from 1953 to 1955; what was the ethos of the MGH in the mid-1950s?

Federman: It was simply glorious. It was so focused on excellence of care and so committed to caring for people in the neighborhood that it was much less a referral hospital than it is now. At that time we were local doctors, and on Poplar Street, Blossom Street, Allen Street--right behind our doors--lived the patients whom we mostly took care of. We got very close to them. A few new drugs were coming along that actually changed the likelihood that any of them would benefit from medical care, and the excitement of trying to give good care, right after the war with limited supplies--but some new ones like penicillin--it was dazzling time to be there.

Chappelle: How did you envision a career teaching medicine at this juncture?

Federman: I didn't at that time. My interest in teaching was awakened in medical school. In a number of classes we had to stand up and give a talk, and I really enjoyed it. Most people looked on it as a chore. After the first one, I realized I got a kick out of it. I was careful to do the homework, I thought about who was in the audience, I figured how long I had. In other words, I took it as a very serious assignment. I found that I loved it. So I was *interested* in teaching; but almost all of academic medicine at that time--given the effect of the National Institutes of Health--almost all of my colleagues were doing research, and that was the route to promotion. It never occurred to me that I would have a full-time position and one that would be based on teaching. It didn't seem possible. I was interested--and I maintained that interest--but it didn't seem to me the basis of a career.

#### Marriage

Chappelle: How did you and your wife [Betty] first meet?

Federman: She was the head nurse on a floor where I had a rotation as a student. She was unusual among nurses at that time because she had a very serious high school training in science and in math. If her family had been of a little different work background, she probably would have gone to medical school. But she was a *colleague*, not just to me, but to generations of my friends. By generations I mean successive classes at Harvard Medical School. And when I saw how much I had learned in three months working on her service, I knew I could never learn all she had to teach in three months, so we got married. [laughs]

Chappelle: Did you have any children?

Federman: We had two girls--later, not at the time. After my residency, I went to the National Institutes of Health, and Betty joined me there. She worked at a local hospital as a nurse, and we had our first child while we were there and another one two years later.

Chappelle: Did either of your two daughters pursue a career in health or medicine?

Federman: It is interesting, the way you word it; that is, a career in health--both pursued a career in health. The older one is interested in public health; she has a degree in public health. She worked for Medicaid, for welfare, she drafted legislation in 1994 for universal healthcare in Massachusetts--it was never funded--but she has basically been working in--what has just come about--for over ten years. My other one became a child and adolescent psychiatrist, and my interest in psychiatry is still kept alive by talking about things with her. So yes, both are involved in health.

#### **V. NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES (1955-57)**

Chappelle: How did you come to be at the National Institute of Arthritis and Metabolic Diseases as a clinical associate in 1955?

Federman: Well, things were much looser at that time. There was not a paper application process, and there was not an interview and all that. A classmate of mine called his uncle--and the uncle was the head of the Arthritis Institute--and told him I would be interested in coming, and so they gave me a job. It was as nepotistic as that, you might say, at that time. And I went. My principal interest was pulmonary at that time, but the only position was in endocrine, so I took an endocrine position.

Chappelle: Was there a doctor draft going on at that time?

Federman: Yes.

Chappelle: And whose lab did you work in?

Federman: I worked in the lab of a man named Ed Rall. He and Jack Robbins had just come from Cornell to work at the NIH. I was the first--among three--of what they call clinical associates: people who were just finishing residency and ready for research training. My whole life was set by an afternoon making rounds with Rall. He asked me a question to which I didn't know the answer, and he said, "God damn it, Federman! I have only got eighteen months to turn you into an endocrinologist; you better get to work." See, I never thought I was going to be an endocrinologist, even though that's what I was doing. But he settled it that moment.

- Chappelle: How did that settle it for you? Was it the way that he said it? Was it what he was showing you?
- Federman: Why was it so influential? First of all, everybody respected and admired him. You wanted him to think well of you. Second, he was willing to start from scratch. I had no background in the field, whatsoever, and he knew I was not research oriented. He knew I wanted to be a clinician and a teacher, and he accepted that. So I think it was that combination as well as a magnetic personal quality that exuded from him into the place. I think the combination of things immediately made me turn to. I got to work and took it on.
- Chappelle: What research did you end up doing?
- Federman: The study that I did was an effect of androgen--the male hormone--on the control of thyroid hormone. Thyroid hormone circulates in the blood bound to a protein, and we found that androgen lowered the level of that protein in the blood, which had certain consequences for test results--didn't mean a lot clinically--but that was the first paper I wrote. At the same time, another field was getting going, and that was one that ultimately led to insights into sex differentiation and how the baby becomes a male or a female. I didn't do any research in it, but I was very interested in it, and I started reading about that.
- Chappelle: What was the salience of this research and your experience at the NIH towards your career?
- Federman: Well, the experience of research convinced me that I didn't want to do research and didn't have the mind set for it. I might have wanted to, but I could tell I wouldn't be good at it. On the other hand, the excitement of learning in an academic atmosphere *did* take hold, and by then I had pretty well given up the idea of practice in California. I made the decision to go back to Mass General and start a fellowship and then a life there.

## **VI. UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL, LONDON, ENGLAND (1957-1958)**

- Chappelle: How did you obtain a clinical research fellowship at the University College in London?
- Federman: Again, a telephone call. Ed Rall called a friend of his in London named [Sir Edward (Bill)] Pochin--settled it on the spot--and that's how I got it. I did apply for fellowship and got one, but the NIH was generous at that time, had a lot of money, and was willing to spend it on international fellowships for people who were by then serious about academic work.
- Chappelle: What was Dr. Pochin's scientific stature?

Federman: Pochin was a very interesting man. He was the Queen's representative--her Majesty the Queen's representative to an international atomic energy commission--and he worked for the Queen in developing standards for radiation exposure, use of radionuclides in medicine and in research, and was very widely respected. The background of it--physiologically--was that radioactive iodine was already in use in thyroid research. So Bill Pochin could cover both fields from his own work in radioactive iodine in thyroid, but he was also a national figure, very highly regarded.

Chappelle: What were your duties as a research fellow?

Federman: I did some research there using radioiodine labeled thyroid hormone and was closely involved in Pochin's use of radioactive iodine for the treatment of cancer of the thyroid. Pochin was a national authority in that area. Since he had equipment for the safe use of radioactive iodine, we could give as much as 150 or 200 millicuries. Now, by comparison, a patient with an overactive thyroid these days would be treated with 6 or 8 or 10 millicuries. We were giving 150 or 200. The patients were hospitalized, their urine was collected in lead containers, and they were kept there for four days while most of it left their body. Because of his skills in nuclear medicine, our group was able to do that kind of study, and I worked actively with him in caring for the patients and in administering and collecting the radioactive material.

Chappelle: How did you and your wife enjoy the experience of being in London?

Federman: We loved London. For the rest of her life if I had called Betty and said, "We are going to go back to London," she would have been ready the next day. It was very exciting. We went around the city a lot, entirely by the underground. We went to a fair amount of music and theatre. There were pretty cheap seats available almost all of the time in London, so you could get to things that we would have never been able to afford in this country. And we made some very close friends--still among our closest friends, fifty years later. It was a thrilling experience. British healthcare was also very interesting at that time.

## **VII. HARVARD MEDICAL SCHOOL AND MASSACHUSETTS GENERAL HOSPITAL (1958-1972)**

Chappelle: What brought you back to Harvard Medical School and the MGH in 1958?

Federman: We were narrowly, but forcefully, convinced that there was no other place to be, and once you accept that it's easy to go back. She had been there as a nurse; I had been there as a doctor. We had many good friends, and we both thought Boston was a great city. So it was an easy decision to make. I didn't consider anything else.

- Chappelle: And that was a research fellowship that brought you back?
- Federman: Yes. It was a clinical and research fellowship. You were supposed to take care of patients, but get going on an independent research project as well. But even then, I wasn't *in the mold* of effective research training. So I did mostly clinical work.
- Chappelle: What was the mold you were in? Were you thinking now of clinical teacher?
- Federman: No, I was thinking of clinical medicine and a part-time--not very academic--interest in teaching. There just was no model for an academic person whose life was centered around clinical work and teaching. We didn't see anybody like that. In the full-time faculty at Mass General, we had so-called clinical faculty--self-paid--who showed that model, but they were not on the full-time faculty.
- Chappelle: Were you working in someone's lab at this time?
- Federman: Not really. I did more clinical research. I got interested in a form of laboratory work in something we haven't mentioned yet. The cytogenetic field of genetics got going in medicine at this time, and through almost an accident I got interested in it. So I did work in that field in the laboratory and actually published a few papers in that area.
- Chappelle: What lead to your interest in reproduction?
- Federman: Almost an accident. Our grand rounds were very different from what it is today. Grand rounds was always about a hospitalized patient; that patient was demonstrated at the conference, Thursday morning at eleven. Young residents can't imagine this; they have never seen a patient at a conference. Those patients were presented on Thursday--they were chosen on Tuesday--and the chief resident would ask somebody to talk about some new insight about that patient's problem. Well, it was August and the woman they wanted to do the discussion was on vacation, so they turned to me. And that was how I got started. Never looked back, became interested, stayed with that field, wrote a book on it, and I am still interested in it. And so it was almost an accident, but that is exactly what happened.
- Chappelle: What about your interest in Klinefelter's syndrome.
- Federman: This was a patient with Klinefelter's syndrome. And it was a new method of study of the cells of the body, which for the first time distinguished cells from a male from cells from a female. That was discovered in 1949--also by accident--and when it was applied to Klinefelter's patients--to everyone's surprise--they had the marker of the cell of a female. *That* was what they wanted to discuss at grand rounds, and that was what they asked me to talk

about. I happened to have been following that on my own--for now for years--and that's what I spoke about.

Chappelle: How did that impact your career?

Federman: Fully, absolutely fully. Because in 1959 these studies--this new form of study--was applied to women who had never had a period. That condition, known as Turner's syndrome, was first described by Henry Turner, but it was clarified by--my then leader--Fuller Albright. So everyone at MGH knew about those patients; and when this announcement came out, it galvanized us. Everybody got interested in it, and I stayed with it. I began to see those patients in consultation; we did studies on them. I have been interested ever since, including this morning. I went to a paper here at the Endocrine Society, today, that illuminated one of the remaining mysteries in that area. Fascinating!

### **Rising through the ranks at Harvard and the MGH**

Chappelle: Would you sketch out your rise through the ranks during years leading up to your appointment to the faculty as assistant professor of medicine in 1966?

Federman: Well, Harvard had the slowest, most glacial approach to promotion you could imagine. There were three categories before assistant professor. Most schools with any sense start you as an assistant professor, but not there. We were associate, then clinical associate, then instructor, and only at the end of that, assistant professor. It happened to correlate with changes in the structure at MGH as well. I was in the endocrine unit; the man ahead of me was a more senior trainee and ready to be chief of medicine. He did not get the chief position at MGH, but while on sabbatical he decided to go to California. So he never came back. And being the next in line, although very junior, I was suddenly the acting chair, actually the head of the endocrine unit at Mass General--a very unlikely role because it was really meant for a researcher. And we knew that--I wasn't at all doubtful--but we didn't have anybody at that time. So while we did a search and looked for a unit head, I ran the endocrine unit. And that went with the assistant professor recognition, so that went up to that.

Chappelle: What were your new responsibilities as acting chief? What was your day like?

Federman: This was a very exciting, very, very busy time. I didn't have much of a salary and I got part of my pay from private practice. I was very interested in patients anyway, so that was natural to me. The hospital paid a certain stipend--very low at the time. But suddenly I was responsible for our fellows, for being sure they got into a research laboratory--and there were people around me with excellent research laboratories; they just were not asked to be the chief. And we had to choose a new group of fellows each July, and we had to put on a teaching program for them--that I loved. So I was able to know them very

well--I ran into one of them this morning, here. Another man from pediatrics and I established a joint adult-pediatric endocrine program. We met Saturday morning, and he and I managed the discussion of a pediatric and an adult patient over about an hour and a half. It was magical; there was so much learning for everybody because--except for him--none of us were very established as a clinical person. So it was a very exciting time. I had modest action at the school, but I did begin to teach in courses, especially endocrine courses, given at Harvard Medical School. So an academic life emerged even though it did not have an anchor in research, as just about all of my colleagues did. That was different.

***Abnormal Sexual Development: A Genetic and Endocrine Approach to Differential Diagnosis***

Chappelle: Your book, *Abnormal Sexual Development: A Genetic and Endocrine Approach to Differential Diagnosis* was published in 1967, would you talk about how it came to be written and published?

Federman: Oh, yes, very specifically. There was an extraordinary editor, a model to everyone in the field, named John Dusseau; he was at Saunders, and he sought out authors. He read a clinical pathological conference that I had given--it was in the *New England Journal of Medicine*--and on the basis of that, he came to see me and said, "Would you like to write a book?" and "Saunders would be interested." I said, "Not a chance, I don't have anything to write about." Over the next couple of years, I was still very active in the field. And the progress in the field *allowed*--to bring genetics and endocrinology together. Sounds absurd, *now*. But at that time there was no book that dealt in both disciplines with a body of patient problems. I went skiing, I hurt my back, I lay on my back for a month, and started to write what I thought would be a review article. And then I realized this is getting too long; it could be a book. I got in touch with Dusseau, he took it in a minute, and it was published.

Chappelle: Would you outline the content of that book and its significance for its time?

Federman: Yes. The content was starting with the basic biology of the chromosomes: how do you become a male or a female. And by that time, 1965, it was evident that there was a piece of the Y chromosome that makes the testes develop, and therefore, you become a male. There was no similar insight for how you get an ovary, but it was recognized that if you didn't become a male, then your chromosomes would let you develop as a female. Now also, though, it became possible to measure the male hormone level--testosterone--and a little later the female hormone--estradiol--and you could bring the genetics and the endocrinology together; that's what my book did. It brought the two fields together. It proposed a classification for patients whose sex development was abnormal--they didn't look quite like a boy or quite like a girl--and the combination being relatively straightforward. That's what the book was--the

underlying biology and the clinical problems of patients whose sex development goes awry in some way.

Chappelle: And what was its significance for that time?

Federman: Of course, I'm not supposed to say; but it did organize a set of patients and a set of explanations that hadn't been brought together before, because the techniques in use were new. Second, it was short, two hundred pages--not a big blockbuster of a medical textbook, typically seven hundred or eight hundred pages. So you could get the problems into your hand easily. And third, it was very practical. So people from endocrine, from genetics, from pediatrics--almost any field--could see how it related to their daily life. That was, I don't say its importance, but that was its effect at the time.

### **Associate Professor of Medicine (1970-1972)**

Chappelle: How was it that in 1970 you were the first clinician teacher at Harvard to be promoted to the level of associate professor on the basis of teaching and clinical work, rather than research?

Federman: It was very hard to say *how* it was. I was *from* there, and that's very important. In this kind of development, a teacher-clinician usually is recognized locally, rather than at a distance. If you don't publish, people in Seattle don't know what you are doing in Boston. I had published very little, but I had published that book, and it got attention. Second, I was given responsibilities--heading the endocrine unit and responsibilities for courses at Harvard Medical School--that mostly went to someone more senior. So since I was there and doing these things, it became possible to recognize it with promotion to associate professor, which was a tenured position at that time. And there was a whole group of people who would have liked to have an academic life like mine, and they took encouragement from this trend. So it had an impact on the area.

Chappelle: Was it actually path breaking, or did it just encourage them?

Federman: No. It was path breaking to a degree. Harvard being extremely slow to recognize clinician teachers, this was a kind of signpost on the way. And other people recognized it, and some decided, I think, to go that way. They would have done it before, but there was no encouragement in the environment, and this was--in a way--a signal that helped start a trend. Now we have a very considerable faculty who are basically clinician teachers, and that experience was part of their development.

Chappelle: What were your responsibilities as associate professor?

Federman: Becoming an associate professor really made a change. The appointment is a Harvard appointment, and at Mass General your position or appointment is not

necessarily coupled with your Harvard appointment. We had lots of people who were distinguished senior physicians at MGH and were clinical assistant professors at Harvard which was very disappointing to them but was a fact of life, but historically part of our life. But to be made an associate professor--for one thing, it gave me senior responsibility for courses. I was included in a group of eight at Mass General who had tenure positions at Harvard and were there judging all future appointments for promotion. I was given responsibility for younger people's careers, so that I was their mentor or was the person to whom they were assigned to be sure their development was progressing. It made quite a bit of difference. It was no longer at Mass General only, but also at Harvard; it was a blended role, which made a lot of difference. I enjoyed it thoroughly.

### **Associate Chairman of Medicine (1971-1972)**

Chappelle: What brought about your appointment as associate chairman of medicine?

Federman: Well, our chief, Alex Leaf decided to go on sabbatical for a year at Oxford and it turned out that I was asked to be the chairman of the department for a year. I was in his office already and knew the staff and knew the operations in a way that my colleagues, senior to me, didn't. And so they decided to do it that way, and that is what I did.

You have a department of about four hundred people, they are divided into units: so there is the cardiac unit, a GI unit, and an endocrine unit. You are not expected to run each of those, but all action from those units comes through the chair's office. So every appointment, every promotion, every consideration--including for discipline--would end up on my desk with a recommendation from the unit chief--almost always a perfectly good one--but with a responsibility with me. The residents, the interns--all of them--are directly under the chief, so I was responsible for the house staff program. I had been the program director before--but suddenly in a senior position that I hadn't had. *And* you are suddenly relating to the other services at Mass General--surgery, radiotherapy, radiology--and you're the spokesman for the Department of Medicine. And, similarly, you relate to other professors at Harvard, those at Brigham, those at Boston City, those at Beth Israel. So it's a quantum change in what you do, full of surprises that--although I was close to the chair--I hadn't anticipated. Always something new coming up in that year for which you have little experience to guide you, but you are making decisions yourself.

Chappelle: How did that change you?

Federman: Oh, I found it fascinating. I had not had *the* chairman's responsibility before, I saw much more of Harvard Medical School--MGH was rather an isolating place at that time and you didn't see much of the school unless you were at that

level. I had a major responsibility for recommendations of others for tenure--a permanent Harvard appointment--and I began to see more of the school and what medical education meant, what the dean did and it was transforming, it really was.

### **Harvard during the turbulent 1960s and early-1970s**

Chappelle: What was your experience on the Harvard campus and at Mass General during the social changes of the 1960s, early-1970s?

Federman: I was very active at Harvard in running a course and in working with other people running courses, and it was very, very difficult. I have seen senior professors--good friends of mine--leave the classroom in tears because the students were so rude, so uninterested in what was going on, reading the paper in the back with their legs slung over the seat in front of them. And our dean was a polarizing figure at that time, but in a surprising way. He was with the protestors. He marched downtown; he carried a placard objecting to the Vietnam War. It was in our alumni bulletin--and drew strong criticism from alumni all over the country. It was a time when every feature of academic life at that level was being re-examined. They were tough times, difficult times. The Mass General was less affected by that because it's at the extreme of the academic world--taking care of patients--and nothing was allowed to interfere with that. So this was felt much more on the campus than at the teaching hospitals.

### ***Journal of Clinical Endocrinology and Metabolism (1971-75)***

Chappelle: Would you speak to your service on the editorial board of the *Journal of Clinical Endocrinology and Metabolism*?

Federman: Oh, yes. I was very flattered to be given that role. I, of course, read endocrinology actively. I was trained in how to evaluate papers and how to sift new evidence and relate it to what went on before. So I felt comfortable working for them, but I probably was at that time one of the few, if maybe not the only associate editor who didn't have a laboratory of his own. So I took the responsibility very seriously. I always was trying to think, What would this paper mean to the person in practice? I did bring that slant to the judgment because I felt close to that. I was one of them.

Chappelle: Who brought you into the *Journal*?

Federman: I don't remember to tell you the truth [laughs]. I imagine it was a decision of a group, but I don't remember who was the editor-in-chief at that time.

Chappelle: Why do you think they brought you in?

Federman: Well, I had written a few articles: I had a book in an area that everybody knew about. I was invited to other schools as a visiting professor by then, and with a responsibility for an area of knowledge within endocrinology. I think it was not a radical idea that I would be on the editorial board. It fit.

Chappelle: Even though you weren't a researcher?

Federman: Yes. I think that was part of--the Endocrine Society has always tried to *connect* with the practicing community, so I think that--maybe in an unspoken way--it was part of it. But they have tried to cover the region from really fundamental new research to its application in clinical endocrine--one of the great strengths of the Society, I think.

### **VIII. STANFORD UNIVERSITY SCHOOL OF MEDICINE (1973-1977)**

Chappelle: What circumstances lead to your accepting the position of chairman of the Department of Medicine and physician and chief at Stanford University Hospital in 1973?

Federman: The circumstances leading to my acceptance were slightly different from their offering it to me, but at this time Stanford was in a major new phase. Twelve years before, in 1961, they had fully implemented a radical change. Before that Stanford had two years of medicine in San Francisco and its basic science in Palo Alto, but at that time they decided to develop a first-class, indeed a great, medical school by consolidating it all in Palo Alto and bringing to the school really, a truly future Nobel-level science. That was complemented by a decision that they should change the nature of their clinical world, as well. And the best model that they could find for what they wanted--was not I--but the Mass General ethos of clinical teaching and a historical connection between doctors and patients and, basically, one of the two or three most popular residency programs in the country. So I always thought--I was quite clear--what they wanted was something that would bring the MGH ethos to Palo Alto, and the fact that it happened to be myself was almost minor. By then I had been acting chief for a year; I had a tenured appointment at Harvard, and they could feel that I would be a person you might try to do this. I think that was their feeling. On my side: accepting it was dazzling opportunity. I was forty-five; I loved what I was doing; but I did wonder, Do I want to do this forever? And, I think, I said, "No. I would like to try being a chairman and I would like to do it at a great school." And after a lot of family agonizing we went. It wasn't an easy decision--a very difficult decision--but the logic of doing it was compelling.

Chappelle: What was your goal for the department?

Federman: I wanted to make the clinical qualities of the Department of Medicine up to--on a par--with the qualities of the basic science departments that had been

established in this transformation. Stanford was suddenly among the world's leading academic medical institutions--had not been before--and I felt that we should aspire to the same level; but now, because of the background from which I came, trying to be sure it was as good clinically and in education, as the science of Stanford was quickly established to be. So that was the change. There were also other things: the relations between the practicing faculty and doctors of Palo Alto and the full-time department were not good, and that was *excellent* at Mass General. So there was another goal--a sub goal within it--to strive for. And that was an area where a clinician was very welcome in that role. The community saw that I was interested in *doctoring*, and they tested me on the first day I was there. I was sent a consult, one of them was on an iconic baseball star, who lived out there at the time, and someone asked me would I see him. And another person asked me to see an in-patient who had a complicated problem. I knew I was being tested by both to see whether I was really a doctor. [laughs]

Chappelle: What was the institutional situation that you encountered at Stanford?

Federman: It's pretty much as I described: a basically hostile relationship between the full-time faculty and the doctors in the community, a suspicion that the university would not be attentive to the daily clinical lives of patients on the one hand and the doctors on the other, a commitment to a very fundamental of science in the department I inherited, but not at all a comparable commitment to the education of the people who came through it as interns and residents, and a lingering *dis-ease* or unease from the late-sixties, still palpable in medical school and professional schools in the seventies. The angst of the sixties--you asked about a few minutes ago--was not resolved in the early seventies, so that was a bit of a part of this at that time and quite active on the Stanford campus.

### **IX. HARVARD MEDICAL SCHOOL (1977-present)**

Chappelle: What brought you back to Harvard in 1977?

Federman: A new dean [Daniel Tosteson] was just appointed in July of 1977 and started calling *everybody* to get advice about everybody else. He called me and asked for characterizations of people in the Harvard medical environment that he didn't know at all, all of whom I knew from so much time there. And we developed a comfort zone very quickly because I have a knack for summarizing people briefly, and he liked that. Then he would ask me what I thought about this and that, and we got to understand each other. And at the end of the conversation, he said, "Would *you* be interested in coming to join me?" And by then I was very tempted. We met once at a cantina in Phoenix, Arizona--a week later where we both happened to be--and I decided that I would love to work with him. By then, you see, my ideas had shifted. One of the reasons I went to Stanford was, it was a medical school that was a *part* of the university, which was hardly true at Harvard. The medical school is so

separate, in a different city, this and that. I wanted to see a medical school that was *part* of a university. Having tasted that, I liked that. So that was one of the reasons I was there. But I also saw ways to bring that to Harvard Medical School--and not go back to Mass General, but go back to Harvard. So it was a different position from what I had left a few years earlier.

Chappelle: Initially, what was a day or a week like for you as Dean for Students and Alumni?

Federman: Well, this was a totally different life. I was based at the medical school rather than at a hospital. I was in the office of the dean--all five of us that constituted that office had offices together--and Tosteson used conversations among us to shape policy. So I recognized medical school issues that I had never been in contact with before. I was responsible for the students, so they were in my office all the time, and I enjoyed that. They had issues about careers; they had concerns about the quality of courses; they had doubts about decanal decisions that our group had made. I was involved very actively in that. Then it got to be known that I was available--so I saw them a lot. I continued in practice--two half-days a week, I think, at that time. And I was invited to more senior consultation, I guess, than I might have done when I was at MGH before. And, of course, I had to learn all the things that were under me: admissions, financial aid, disciplinary issues, student health--all that was suddenly my responsibility. I could have just let each group go on and do it, but I wouldn't do that. I sat with the admissions committee for thirteen years--over every decision they made; I sat with the financial aid officers to learn what government loans were and what the advantages or disadvantages of a different practice were; I was *with* the promotions committee, although I wasn't the chair. In other words, in every segment of what I was now responsible for, I dug into it. So I was learning constantly and busy as hell.

### **Developing a new curriculum**

Chappelle: What was the state of the art in medical education when you returned to Harvard in 1977?

Federman: Medical education was a very didactic process. Most schools had progressively driven out laboratory time and increased the lecture time. Almost everywhere--with a very few salient exceptions--the school had twenty-eight, thirty, thirty-three lectures a week, from 8:30 in the morning till the afternoon, except maybe Friday. And all the schools were doing something like that, and so were we. The students were frustrated; the air called out for change, but the constituencies didn't. There weren't a lot of people calling for change; my chief, Tosteson, did. And that was a very exciting challenge that he introduced--was something that was ultimately called the New Pathway.

Chappelle: Maybe this would be a good place to sketch out the fundamental problems involved in improving the standards of education for medical residents at the national level.

Federman: What was wrong, basically, was that the Flexnerian revolution of 1910--that all medical schools should be associated with universities; that there should be a full-time faculty; that the first two years should be basic science and the second two years clinical; and that students should be chosen for their promise in science--probably more than their promise clinically--the Flexnerian revolution had run its course, and most people didn't know it. In other words, what we were then lamenting was, in fact, considered the triumph of the reform of 1910. *Now* that's apparent--this year--because of anniversary publications re-examining Flexner, it's become clear that his ideas, brilliant for 1910, had pretty well run their course, and people didn't know it. In addition, there were tremendous advances in science, which were going to have a big impact on medical practice. They weren't yet brought into the life of students. And probably the most important, the students were too passive. They weren't involved in discovery and they weren't involved in discussion and they weren't involved with each *other*. They were all sitting and looking up at a lecturer--no power point yet--they were all sitting looking up at a teacher and trying to internalize what he or she said, and it just wasn't intellectually exciting. That was what was going on, and that's where Tosteson had a tremendous impact. He turned all this upside down and got everybody else to think differently. He made a big impact--mistakes, too--but it was a giant contribution. I was given the chance to be part of that, so it was very exciting.

Chappelle: What was Dan Tosteson's background?

Federman: Dan was a Harvard College graduate--always interested in science. His interest was in physiology and pharmacology: the red blood cell transport of ions, including sodium and lithium, *et cetera*. And he was chairman of physiology and pharmacology at Duke; but by that time he had been in on a number of curriculum reforms, and none of them had taken. He decided it was because the school *structure* had to be changed as well. It wasn't enough to rearrange the deck chairs; you had to *think* differently about a motif underlying medical education, and change--if not the departmental structure--then the school's way of running education. That he did in his first few years at Harvard; that was what was so exciting.

### **The New Pathway**

Chappelle: How did he go about doing that in the early years?

Federman: Well, for three years he did it wrong. He appointed committees, gave them a very poor insight into what he wanted, and he trusted *them* to come up with ideas that would really change things. The committee reports were all

excellent, but too conservative. And he wasn't happy. At the end of that, he produced a draft of what he would like to see happen. He called a large meeting of faculty and students, threw out the draft for discussion, and then the changes really happened. In the next two years, the draft was listened to and mostly undone; but then changes in curriculum, changes in the structure of the school, changes in the structure of educational responsibility--everything changed. And then he really got action.

Chappelle: So this is the New Pathway?

Federman: This is the New Pathway. We started for an experimental group in 1985, twenty-four volunteers; for a larger group of forty in 1986; and extended to the rest of the class in 1987. It was supposed to be a demonstration project at the beginning, but it became hopeless to maintain the encysting of an experiment in the larger school, and we gave it up at that point and did it for everybody. So it was never possible to evaluate it, critically, because the conditions of an experiment were never met.

Chappelle: What were the core parts of the New Pathway?

Federman: The biggest change was introducing problem-based learning into the first two years. We didn't start it; McMaster, one of the Canadian medical schools, is properly given recognition for having started it. We each made a pilgrimage there at the right time to see what they were doing, and we all--in the planning group--had the advantage of an experience with one of our *major* teachers at Harvard Business School.

The first year class was broken up into tutorial groups of eight with one tutor to take up problems that were not fully apparent at the time. And the goal was to work your way through an understanding of the problem by *finding* published material in basic science and pathophysiology that would relate. So you weren't given it in class; you were out there trying to find it. Basic science courses were held at the same time; but they weren't addressed to understanding the problems, that was your own work as a tutorial or problem-based group. That was the biggest change. There were other changes in the delivery of the curriculum: many, many fewer lectures, two a day, as opposed to six or seven; a lot of free time for the students to work through problems on their own by independent reading; a great emphasis on student direction of the discussion rather than you as the faculty member leading the group of eight. There was much less change in the clinical years, which ultimately undid this effort because people wanted change in the clinical years as well. But those were the big things: a reduced reliance on lectures; a very high reliance on the student's *independence*; and--in Tosteson's term--the goal was to produce lifelong learners because he pictured science as changing medicine so fast and

so continually that if the graduates didn't learn to learn, then they weren't ready to be in medicine. That was the core of what he was after.

Chappelle: What was your role in promoting, implementing, and in evaluating the New Pathway.

Federman: Being part of the steering committee of eight, I had an active role in deciding or thinking about what we did. When it came time to implement it, I was the one who wrote [to] entering students, telling them what we were about to do, and asking if they would want to volunteer. In retrospect, they told me my description was awful: they didn't have a clue what was really going to happen, and that was because we didn't know what was going to happen--we were about a month ahead of them, that was all. My description, therefore, was a rather pallid representation of what was going to happen, and I heard it. My third role, and the heaviest one, was explaining to the students who *didn't* enter this new experimental curriculum *why* they were still having the old fashioned education. My office was constantly full of students who were complaining that they hadn't been included; that their curriculum was old fashioned; they didn't want to be the last person to die in a war--all that kind of thing. So I was very active in that role. I can name some of the students who were in there almost weekly to talk things over. Gradually, I became responsible for the administration of it as dean for medical education. I didn't have that role at first, but that grew up with time.

### **Dean for Medical Education (1989-2000)**

Chappelle: You were made dean of education in 1989, what were your new duties at that point?

Federman: These courses were actively evolving, so we tried to make judgments year-by-year and correct things that we thought weren't going well, or still try some new things. We were trying to get the faculty to teach differently, so I was in charge of faculty development efforts. We found new needs for collaboration among courses, so I was responsible for committees that would bring together faculty teaching in different areas. We found new ways that we had to evaluate student performance, so evaluative efforts were under me, although I didn't lead them personally. And we now had a group of people at the school--four at that time--who were medical educators brought to the school to help us be better teachers. We had never had people in that role at Harvard. So I was the leader of a group of them brought for this purpose--almost like an internal revolution since their job was to get us to stop teaching the way we always had and begin to teach in this new way--very interesting, radicalizing time. So I was at the nexus of a bunch of different efforts required to bring this new program to life. Very, very interesting time, fascinating.

Chappelle: How far along was the New Pathway at that point?

Federman: By 1989, one group of twenty-four students had been there from the beginning. The next group was forty; they were in their third year, and the whole class was only in their second year. So it was still nascent and developing. It still needed a lot of cultivation and almost on-site tweaking to make change. It wasn't at all an established, concretized mechanism. It was written in pencil and constantly being changed. That was the excitement of it.

### **Senior Dean for Alumni Relations and Clinical Teaching (2000-present)**

Chappelle: You stepped down as dean of Medical Education in 2000 and became a senior dean, what was the status of the New Pathway at that point?

Federman: The New Pathway by then was accepted; it was universal except for a cohort of students that study with MIT--that's a special group we haven't talked about yet--and there was a general feeling that a major change had been made--probably mostly for the good, by no means always, but that we hadn't really touched the clinical years. And the reason I stepped down, I was over seventy and I knew we needed a new change and I wouldn't be around, I thought, long enough to be carrying it through. So I thought they should have somebody new to do that; that is why I stopped. I wasn't pushed out, but I felt it was time for some new thinking and someone new to take the overall responsibility.

### **Residents-as-Teachers Program**

Chappelle: What new programs in other areas did you initiate when you were a senior dean?

Federman: I wanted to do something that no one else was doing so that I wouldn't be in the way or stepping on anybody's toes, and the first thing I did--I am rather happy about this--was a program to teach residents to teach, called the Resident-as-Teacher Program. You have to understand the background. Through the seventies and eighties and nineties, the role of the senior faculty in student education was diminishing, and recent graduates, two, three, four years out of school--residents--were having an increased role in the teaching of medical students. As I saw that, I thought that those residents should be helped with the responsibility of teaching students. The details don't matter, but a very good medical educator and myself took on the program--first voluntarily: medicine, pediatrics, and OB--and then every group that had beginning students--or so-called core clerkship. Now the present dean has universalized this program. The essence of it is to prepare young residents to be better teachers of medical students and each other.

Chappelle: Did the faculty support this?

Federman: Yes. For those few who knew about it, it was widely considered a good idea whose time had come; but something that somebody else should do, not they. So I had complete freedom and very good support from the department chairs. Everybody could see it was good idea; they just didn't want to do it; but if someone was going to take it on and lead it, they would be happy to have it done. And that's what I did.

Chappelle: What was the response of the residents?

Federman: The residents liked it very much. Their anxieties, their needs were very openly dealt with; and their concern about being unprepared for student teaching, their not knowing anything about how to give feedback, their need to incorporate teaching into their daily activity so it didn't require more time--all of that--they felt, and they liked the idea. And what happened in each department--a few faculty emerged who shared my concern and the understanding of the need, and then they took it over. I didn't run it in every department; you couldn't possibly. For one thing, I don't know those disciplines; I couldn't teach surgical residents. But some young surgeons emerged, and pretty soon it was flying. And that's one thing that I feel, unequivocally, has done well. Not a big effort compared to the size of the school, but one that met a need, which is the way anything happens that's going to last.

### **Academic Societies at Harvard Medical School**

Chappelle: What is the Academy at Harvard Medical School?

Federman: You remember a few minutes ago that I said that the dean, Tosteson, had been in on several curriculum reforms; but they didn't last, and that was when he decided the governing structure of the school should change at the same time that the curriculum changed, and the "societies" were the beginning of what are now called "colleges" or "academic communities"--every school has a different term for them. Basically, the entering class is divided by random into smaller groups--forty--and a master and associate master, a couple of other faculty, and a physical area comprise the society. And they have their education *largely* within that grouping. They don't have all their teaching [in that grouping]; there are still lectures for everybody. But where there are subgroup experiences--especially tutorial and problem-based--those were done within the academic societies. There also was hope that the faculty of those societies would take over responsibility for the education of the students. That didn't happen; that didn't work. We still had a curriculum committee. We had department chairs looking at the whole thing askance, and we had a gradual tension around who was really in charge, and it never devolved to the societies the way Dan Tosteson wanted it to; that was a final disappointment for him.

### **Assessing the New Pathway**

Chappelle: How would you evaluate the New Pathway at this point?

Federman: Well, I think the diminution of lectures, the elevation of small group teaching, the clear responsibility on the students to ferret out knowledge on their own, and the excitement of groups working towards the science needed to understand problems--I think those were terrific. I think that we went too far in giving students responsibility; we undermined the faculty potential contribution; I believe we went too far in that regard. And we certainly did not redo our clinical education; that the new dean, Joseph Martin, stimulated after he took over. So it was rethought. Pieces of it, I think, were terrific and have been sustained, but there have been major changes since then, and I favor almost all the changes. I think that it's better now than when we were doing it; but couldn't have been done without that, as it were, developmental phase.

Chappelle: What changes are likely to happen in the coming years?

Federman: Well, the best thing we are doing at the moment is to teach the third year of medicine at one hospital for a group of students. In the past, the students could choose where they wanted to go, and they would have surgery at MGH and medicine at Brigham and radiology at Beth Israel. The faculty didn't know who was coming and didn't know where they were going. *Now*--by the students' choice--they spend their third year either at Mass General or Brigham or BI. And the clerkship directors--the people who run surgery, medicine, radiology--work together for the whole year of the program; it's dramatically better. I was against it at first because I thought Harvard students should have the freedom to choose where they want to go; that is so dwarfed by the value of what is now being done--of which I have no role--that we can't compare it. What is happening in our third year now is terrific because it's a cohesive plan for the education of a group of students in which their *educators* are combined in an overseeing group that stays with them for a year; it's extraordinary, far better.

### **An endocrinologist in practice and in teaching**

Chappelle: You haven't said much about endocrinology.

Federman: I think I was faintly conscious of that myself. Well, I'll say a few things. One, I was responsible for the endocrine part of our curriculum for more than ten years. So although I didn't emphasize it up to now, our teaching of endocrine went through my thinking and my planning for more than a decade. Second, in the new curriculum--when we were reordered and re-associated in our planning--I founded, with three others, and then taught in a course called Genetics, Developmental Biology, and Reproduction for eighteen years. In that setting, the students had their first introduction to the genetics of sexual

development--a basic interest--and then the physiology and pathophysiology of reproductive endocrine. So I was active in endocrine throughout their time. Further, endocrine insights in other areas, such as cancer or such as molecular events in development--endocrine pieces of that were always in my mind in planning the curriculum. So that there was--maybe a decent word would be--an awareness of endocrinology in our whole curriculum that I was responsible for. I didn't do it all, but I *felt* the responsibility for that. So my own interest in endocrine was brought into the entire curriculum planning, and I have been an endocrinologist in practice and in teaching the whole time.

### **Philosophy of teaching**

Chappelle: Would you talk about your style as a "personal teacher?"

Federman: Well, I consider teaching a relationship, and I emphasize the relationship. If it's in a single one-to-one relationship--let's say with a student seeing a patient with me--or if it's a group of six, and I am going to be with them for a month, I always introduce myself and find out about them. And if it's a group of thirty in a different context, to me the connection between the teacher and the student is where education begins. The content is almost the easy part; but to know what a first-year student needs, what a third-year student needs on the same topic, and what a resident needs, and what to do about continuing medical education--which is another interest--that kind of thinking, to me, starts not with the content, but with an awareness of the other person as an individual and adjusting what you try to accomplish with what you perceive he or she needs. So for me it starts with a relationship. The second thing is [that] I have been complimented by the students for a willingness to simplify, and I do have a feel for--not keeping it simple in the sense of, Don't deal with any of the complexities--but to start with an understanding of basics, then move up to the more advanced information for which that patient and that doctor are then ready, and then try to get some of the current research into the discussion, so that they see the scholarly basis. That's my conception of teaching--more than teaching skills, such as educators emphasize, or how to give a lecture. I like lecturing, I know what I want to do; but that to me is secondary to a *feel* for what the students are ready for at that time. To me it's intensely personal, and meant to be. I think that's where we should be.

Chappelle: So you're in contact then with a lot of your former students?

Federman: Yes. I have been in charge of the alumni programs at Harvard for most of the past thirty years, and I have taught almost every student who has gone to Harvard since 1960, so I see a lot of them. I will see some on this visit to San Diego, and I certainly deal with them all the time. I am not running our alumni affairs anymore, but I am now doing projects that involve alumni so I keep close to quite a few, yes.

## **X. THE ENDOCRINE SOCIETY**

Chappelle: What has been the nature of your relationship with the Endocrine Society over the years?

Federman: I am called--I noticed today in the sheet that I received--an emeritus member; I didn't know that. I have been to the meetings, regularly. I find the breath of the Society trying to subtend the arc from the most recent research to the active practitioner--I think that's a worthy goal and well done. Certainly in the programs there is something for everybody. I have never been an officer, as I have in some other societies or professional groupings, but I consider this my principal society in terms of my educational life.

Chappelle: What presentations are you most interested in this year?

Federman: The ones I went to today--in addition to plenary--had to do with the understanding of some little wrinkle about the ovary that's been unclear for fifty years. So I go to the reproductive sections first.

## **XI. CURRENT VIEWS OF THE FIELD**

Chappelle: What are your current views of the field?

Federman: I think the field is absolutely exciting because, on the one hand, at the clinical level there are these remarkable discussions of what is a male, what is a female, what are the gray zones in between, and how can we make clinical thinking and even the law sensitive to that as an area of ambiguity and uncertainty; whereas, at the most basic level, there are truly new insights, new understanding--compared with a year ago--of issues that--once I and everybody got interested in this--we have been puzzled about for sixty years. So from this point of view, the combination of genetics and endocrinology and now neuroscience--the brain and even immunology--the capacity to understand things that we have wrestled with is extraordinary. It is a great time to be interested in that field. Of course, everybody is interested in something else; for me this remains the most compelling intellectual discipline.

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**Interview History—Daniel D. Federman, MD**

Dr. Federman was interviewed by Michael Chappelle on June 19, 2010, during the Endocrine Society's Annual Meeting held at the San Diego Convention Center. The interview lasted approximately 1.4 hours. The transcript was audit-edited by Mr. Chappelle and reviewed by Dr. Federman prior to its accession by the Oral History of Endocrinology Collection. The videotape and transcript are in the public domain, by agreement with the oral author. *The original recording, consisting of two (2) 45-minute mini DV cam tapes, is in the Library holdings and is available under the regulations governing the use of permanent noncurrent records.* Records relating to the interview are located in the offices of the Clark Sawin Library's Oral History of Endocrinology Project.