



**ORAL HISTORY PROJECT**

# **Joseph Dancis, MD**

**Interviewed by**

**Norman J. Sissman, MD**

September 20, 1996

October 4, 1996

November 1, 1996

New York, New York

<https://www.aap.org/pediatrichistorycenter>

©1999 American Academy of Pediatrics  
Elk Grove Village, IL

**Joseph Dancis, MD**  
Interviewed by Norman J. Sissman, MD

Preface	i
About the Interviewer	ii
Interview of Joseph Dancis, MD	1
Index of Interview	84
Curriculum Vitae, Joseph Dancis, MD	87



## **PREFACE**

Oral history has its roots in the sharing of stories which has occurred throughout the centuries. It is a primary source of historical data, gathering information from living individuals via recorded interviews. Outstanding pediatricians and other leaders in child health care are being interviewed as part of the Oral History Project at the Pediatric History Center of the American Academy of Pediatrics. Under the direction of the Historical Archives Advisory Committee, its purpose is to record and preserve the recollections of those who have made important contributions to the advancement of the health care of children through the collection of spoken memories and personal narrations.

This volume is the written record of one oral history interview. The reader is reminded that this is a verbatim transcript of spoken rather than written prose. It is intended to supplement other available sources of information about the individuals, organizations, institutions, and events which are discussed. The use of face-to-face interviews provides a unique opportunity to capture a firsthand, eyewitness account of events in an interactive session. Its importance lies less in the recitation of facts, names, and dates than in the interpretation of these by the speaker.

### **Historical Archives Advisory Committee, 1996/97**

Howard A. Pearson, MD, FAAP, Chair  
David Annunziato, MD, FAAP  
Jeffrey P. Baker, MD, FAAP  
Lawrence M. Gartner, MD, FAAP  
Doris A. Howell, MD, FAAP  
James E. Strain, MD, FAAP

## **ABOUT THE INTERVIEWER**

Norman J. Sissman, MD, FAAP

Norman J. Sissman, MD, graduated from Harvard Medical School in 1950 after his undergraduate years at Dartmouth College. Following a rotating internship and two years of active duty in the U.S. Naval Reserve, he was a resident in pediatrics at the Childrens Hospital of Pittsburgh (his hometown), and a Fellow in Pediatric Cardiology under Dr. Helen B. Taussig at Johns Hopkins. He was a member of the faculty of Stanford Medical School, as Director of the Division of Pediatric Cardiology, from 1958 through 1971. From 1975 until the present, he has been Professor of Pediatrics and Director of the Division of Pediatric Cardiology at the University of Medicine and Dentistry of New Jersey - Robert Wood Johnson Medical School. Although it might be assumed that he exemplifies a paraphrase of General Douglas MacArthur, "Old pediatricians never die; they just become involved with history!" Dr. Sissman has had a keen interest in historic, economic, political, artistic and social aspects of pediatrics, and medicine in general, throughout his career. He greatly regrets not having known Dr. Dancis personally until these interviews.

DR. SISSMAN: This is an interview with Dr. Joseph Dancis, part of the oral history project of the American Academy of Pediatrics. My name is Norman J. Sissman. We are conducting this talk in a beautiful, sunlit conference room at New York University Medical Center on First Avenue in Manhattan on Friday morning, September 20, 1996. This is side one of tape one. Good morning.

**DR. DANCIS: Good morning.**

DR. SISSMAN: Thanks for doing this interview. It's a great pleasure and a great honor for me to do this and to talk to you about your past and the past of pediatrics. On the way in we stopped and saw some paintings of medical school life in the 1930s, by Dr. [Frank H.] Netter. So, I'd like to begin to ask you something about your own personal background, where you grew up and what your education was like.

**DR. DANCIS: OK. Actually I was born in Brooklyn. That I don't recall except from stories I received from my mother, but at that time it was country and they had goats eating grass in the street. We moved to the Bronx when I was only a year old. And most of my growing up was in the Bronx until I went to college. I went to college at Columbia [University], at which time my parents had lost most of their investments because of the Depression. Contrary to most, as we lost all our holdings, we moved to an apartment in Manhattan and gave up our home in the Bronx. I still think the Bronx is really part of my boyhood growing up.**

DR. SISSMAN: Manhattan was less exclusive, or expensive than the Bronx in those days?

**DR. DANCIS: Well, it had less community spirit to me. I was young as a graduate of high school, I entered Columbia when I was not quite 16, and focused my life at that time around the school, the college itself. It was a very full life. College life was highly competitive and highly focused.**

DR. SISSMAN: Even then.

**DR. DANCIS: Even then. Oh, I think maybe we felt it even more then.**

DR. SISSMAN: I noticed that you started college when you were 15?

**DR. DANCIS: That's correct, yes. I was over 15. I passed my 15<sup>th</sup> birthday in March and started in September. The philosophy of my family was to get schooling out of the way. Life started after school. It was also expensive. So I was advanced just as rapidly as possible through the elementary school and high school life, and I even entered medical school after three years of college, always also seeking to gain a lot of time.**

DR. SISSMAN: Were your parents immigrants, or were they born...?

**DR. DANCIS:** Both came from Russia. They met here. They came here about the turn of the century, and they were both in my eyes unusual people, if not remarkable. They met when my mother attended a lecture at Cooper Union. Cooper Union was the intellectual center of lower Manhattan, particularly for the immigrant population in those years, and the lecturer was my father. As my mother tells the story, she came up after the lecture and asked a few questions, and my father said, "Why don't I explain it to you further," and they walked out together. I think that gives you a flavor of what their lives were like.

DR. SISSMAN: What was his profession?

**DR. DANCIS:** My father, if you asked him, his focus of interest was Zionism, establishing a homeland in what was then Palestine. He devoted most of his energies and most of his interests to that. And in pursuit of that, he was a lecturer and a writer. This is what he really did. Unfortunately he died in '42, so that he never saw the establishment of Israel. It would have been a great occasion for him. That was my father. He actually started in law school. He dropped out when there were problems in Russia. He felt it more important to go to Russia.

DR. SISSMAN: Your choice of medical school, was there something special that determined that?

**DR. DANCIS:** Medicine, or medical school?

DR. SISSMAN: Well, going to medical school and entering medicine.

**DR. DANCIS:** Well, going to medical school was almost fore ordained. My mother was a pharmacist. At least she graduated from Columbia School of Pharmacy, at a time when this was highly unusual for a woman. But she was a highly unusual woman. And she always felt that medicine was *the* profession. My sister, the oldest in the family, is a physician. And so my thought of being a doctor was just there, from early childhood. I never questioned it; it was just going to be. The choice in medical school was, I guess, symptomatic of the times. You know, getting into medical school as a Jew in those times you faced a very strict census. And it was not all that easy.

DR. SISSMAN: This was in the mid '30s.

**DR. DANCIS:** '34. And the opportunity came in a strange roundabout way. There was a professor at St. Louis University (St. Louis U is a Jesuit school), by the name of [Gustave] Klausner, who was devoted to my father



with the common interest again of Judaism and Zionism. And Klausner had a unique position in St. Louis U. Father Schwitalla, who was the Dean of the Medical School and a Jesuit, and a very typical Jesuit, had a great affection for Klausner in a strange way. Klausner was in the undergraduate school. Klausner spoke up for me and I was admitted. I had a good record.

DR. SISSMAN: You applied there because of the contact.

DR. DANCIS: I got in there because of the contact. So that's how come I came to go to St. Louis U of all schools, and that's why I was admitted after three years of college.

DR. SISSMAN: Were there other actual encounters with anti-Semitism in your early career, or during your career?

DR. DANCIS: This was not gross anti-Semitism, Norman. This was a way of life. When I was at Columbia, the professor of physiology, Farwell, took a liking to me, and I don't know why, because it was an enormous class. And he saw fit to call me into his office one afternoon for a chat, and I still don't know why, during which he defended the fact that they had a 10% cap on Jews at Columbia.

DR. SISSMAN: You mean he volunteered to discuss that with you?

DR. DANCIS: Yes, I didn't ask. I accepted this as a way of life. And he went on at length to explain that this was an attempt to have a more diverse student body, the usual story at the time. And I had no comment. I had no criticism of it; this is the way it was. But as far as gross anti-Semitism, no.

DR. SISSMAN: Well, do you think that kind of thinking was that influential in other choices, or other experiences you had at the time? You said that was one of the things that...

DR. DANCIS: You meet it along the way, Norman. And I'll give you just a few examples which bridge chronology. At St. Louis U we had a Jewish fraternity, which was highly respected as far as their scholasticism. It was exemplary as compared to all of the other fraternities. But we were recognized as the Jewish fraternity. The faculty was almost entirely Gentile, and they treated us properly. They expected us to respect our own religion, but there was a difference. It was, again, subtle.

I was elected to AOA [Alpha Omega Alpha] in the fourth year. The policy was never to elect a Jew in the third year, it was always the fourth year. Did it bother me? Not at all. I thought they treated me very fairly and

**very properly. I was a good student and there was no question about it, I was in medical school.**

**When I came back, in the Army, well the Army was not known at that time to be particularly favorable to Jews. I entered as a Lieutenant and then I was promoted to a Captain...**

DR. SISSMAN: That was in the medical corps?

**DR. DANCIS: In the medical corps.**

DR. SISSMAN: That was after graduation?

**DR. DANCIS: Yes, it was after graduation, after a couple of years of training. My superior, this was in Hawaii, came to me; again, he had taken a liking to me.**

DR. SISSMAN: In the Army. During the war.

**DR. DANCIS: He was from upper New York State, and why he liked me again I don't know. He happened to be quite an alcoholic and one of my functions was to take him home at night, which I didn't mind doing. He was a nice old fellow, not much of a doctor, but a nice old fellow. And he came to me in some distress, and he said, "You know, I've been trying to get you promoted to Major, but Colonel Herndon will not hear of promoting a Jew. In fact he's come down hard and you have two alternatives. One, you could go to the South Pacific with an anti-aircraft balloon type of brigade. You'll be in charge, be head of the thing, but still as a Captain. And the other is to go home for an unknown assignment." So it was quite clear that there was again this, now they call it glass ceilings, but there was this barrier. It was a recognized thing. And there was an amusing incident when I came back from the Army.**

DR. SISSMAN: Excuse me, which did you choose from those two options?

**DR. DANCIS: I came home. I was homesick by that time and I didn't fancy going to the South Pacific. I think I did wisely. I didn't stay home very long, but I came home. Then there was a strange, almost reverse picture. When I got back from the Army, I went looking for a job. And in doing so, I traveled up and down the East Coast. These were the best schools at the time. And I would be made welcome back where I trained, at Queens General Hospital, but I wanted something different. I assumed I was going into practice, and I wanted a different experience.**

DR. SISSMAN: Now this was after your residency?

**DR. DANCIS:** I had had two plus years of training, it was two of rotating internship...

**DR. SISSMAN:** Before you went to the Army.

**DR. DANCIS:** And I had about six months as a pediatrician, in pediatric residency.

**DR. SISSMAN:** In Queens.

**DR. DANCIS:** Queens General Hospital. And it carried into my Army career, because I was accepted as an experienced pediatrician wherever I went. Which was an advantage I'll tell you in some instances. At any rate, when I came back I wanted to finish my training in pediatrics, so I visited in Boston. I visited in Baltimore; I went down to Hopkins [Johns Hopkins Hospital].

One of the places was Cornell. Sam Levine was Chairman. I didn't know Sam Levine at the time. I got to know him quite well over the years. But he was Chairman. I was still in uniform. I was on leave, terminal leave. And I visited there and he called me into his office and we sat and talked. And he was very frank, just what I would expect as I got to know Sam in later years. Wonderful man. I went there and he said, "You know," (did he call me Captain or Doctor, probably Doctor) "I'd love to take you on, but I have a problem here at Cornell. There are so many Jews on my staff that people here at Cornell are beginning to look very critically, and I just can't afford to take somebody else on." That was a reverse story.

[L.] Emmett Holt [Jr.] was totally blind as far as discrimination was concerned, and I was welcomed here, and I'm very glad I came here. It's been a wonderful life here.

**DR. SISSMAN:** So then you did your pediatric residency at NYU [New York University]?

**DR. DANCIS:** I finished it. I came here, after almost five years in the Army. I had left as a young, young intern, and came back as an old man, compared to the people who were pushed through medical school at that time. Remember, they had a quick program to get people graduated.

**DR. SISSMAN:** I was part of that.

**DR. DANCIS:** You were part of that.

**DR. SISSMAN:** In V-12.

**DR. DANCIS:** That's right.

DR. SISSMAN: Let me just check this once more.

**DR. DANCIS:** It's a better instrument.

DR. SISSMAN: That's from the Academy. So we're continuing.

**DR. DANCIS:** I had a peculiar position here, because the young people here looked to me with great respect. I had so much experience, compared to them, in faraway places, and I was older. And it was a totally new atmosphere for me. You have to understand the training at Queens General and the experience at Bellevue [Hospital]. You notice I switched from training to experience. You might have used it the other way around, but the intent there is that the experience, the exposure to Holt's thinking and attitudes toward education, was so different. I was bitten pretty hard. I was very excited about the whole thing. And the end result is I stayed for the next 50 years!

DR. SISSMAN: This was Emmett Holt, Jr.

**DR. DANCIS:** This is Emmett Holt, Jr.

DR. SISSMAN: And he was the Chairman of Pediatrics here?

**DR. DANCIS:** Yes.

DR. SISSMAN: And what about his, I mean I can guess what his attitudes were, but what struck you at the time, if you can remember.

**DR. DANCIS:** Well, I'll be repeating some of the things that I wrote in that history [Dancis, Joseph. *History of a Pediatrics Department. Department of Pediatrics, Bellevue Medical Center, New York University School of Medicine, 1970*], which I think you'll like to read. An important part of Holt's life was the development of people. And he felt the way to develop them was not to teach them, it was to sort of guide them. And it was a new experience. But I'll tell you one of the things that crystallized it. I had always been considered a pretty sharp diagnostician. I read a lot, and I remembered everything at that time. No longer. And we had an infant born with the typical picture of arthrogyrosis.

DR. SISSMAN: Arthrogyrosis.

**DR. DANCIS:** Yes, most of the staff had never heard it. They didn't know how to spell it, and I was very proud. I knew. Well, I told Holt about it, we had a child on the ward with arthrogyrosis. He said, "I know, but

what is that?" And that was the first time, well, it was a memorable time, when I was asked to go beyond the labeling of a disease into trying to think as to what it meant. And of course I was baffled completely, but it had quite an imprint. And that was characteristic of the environment there.

DR. SISSMAN: He liked to explore below the surface.

DR. DANCIS: He did, he was determined in two ways to imprint people to challenge what was known and try to think beyond it, and to explore it. He did this himself all the time, and he carried people with him. I found that tremendously exciting.

DR. SISSMAN: How big was the department?

DR. DANCIS: When I came back, it had expanded. There were 12 on the house staff, minimal by current standards. I've forgotten how large the faculty, he had also expanded that with full time faculty. He came up from Hopkins, where he had [both] partially trained. He had been there as a medical student, and then he went down, as a student of [Edwards A.] Park. Park is one of the real shining lights in pediatrics. Ned Park he was called. His name was Edwards Park. And Holt patterned himself after Park. When I got to know Park, it was easy to see the relation. Park was father and Holt son. And when he came up he developed a department similar to that that Ned Park had, where the chief was as much a student as any intern. And the exchange was based purely on information, knowledge, thoughts; not at all on hierarchy.

DR. SISSMAN: Holt's father, of course, was a famous pediatrician.

DR. DANCIS: Holt Sr., I never knew. I read about him. I read about his approach, and it was thoroughly different from Holt Jr., in that he carried his authority effectively, let's say. Yes, he was a very distinguished pediatrician, and it was I guess both a help and a handicap to young Holt. The help was that he was automatically embraced. For example, when he was a medical student, he went down to Hopkins and he worked with [William K.] Howell in the laboratory. And he got bitten by the laboratory. He was supposed to be a clinician, entering possibly I guess his father's practice. But he loved it and continued with that work when he came back to finish his training at Columbia.

DR. SISSMAN: So he had a subspecialty, or he had a special interest?

DR. DANCIS: Holt, yes, very much. A little different from nowadays where there's ultra-specialization, because it would spill over in all ways. But his interest for many, many years was in nutrition, and he did an enormous amount of fundamental work in defining the nutritional

**requirements of infants. He outlined the amino acid requirements, for example, of young infants and vitamin requirements. And those formed the background for the later thrust into parenteral nutrition.**

DR. SISSMAN: In general, how did he do that? Was there such a thing then as a metabolic ward that he had?

**DR. DANCIS: He did. He had a small metabolic ward, and he had selected a young associate, Dr. Selma [E.] Snyderman, who worked with him many years, and a charge nurse, Eileen Hasselmeyer who just retired as Rear Admiral of Public Health Service. So he had good people. But yes, they had metabolic wards and they had metabolic beds, in which they did careful collections of intake and output, an approach that would be difficult to undertake at the present time.**

DR. SISSMAN: These were normal babies?

**DR. DANCIS: Many of them were normal babies, yes. Bellevue was filled with deserted babies, placement problems. And also with abnormal babies. So there were subjects, and it is true, as he pointed out again and again, these children in that unit got better care than they possibly could have gotten physically anywhere else around the hospital or at home. They thrived under the care. It was a major interest of his, but it spilled over into all sorts of strange questions that he would wonder about. Some of them would seem frivolous to you, but they were just questions.**

DR. SISSMAN: And I take it from what you said that he was relatively informal as far as his relationships with his faculty and house staff.

**DR. DANCIS: Formal and informal, you can put the two together. He was not a buddy of the house staff, nor was he a buddy of his faculty.**

DR. SISSMAN: Not an authoritarian figure either.

**DR. DANCIS: Exactly. Emblematic is that as we would go through our wards, every time we came to a door he insisted on being the last one through that door, pushed everybody ahead of him. When we sat down to have a conference, he insisted on sitting somewhere in the middle. He refused absolutely to sit at the head of the table. So he carried that symbolism, and it was real. He did not say, "This is the final statement, I have just spoken."**

DR. SISSMAN: Was he approachable if anyone had a personal problem, or, was he ... ?

**DR. DANCIS: He was tremendously loyal to those that he befriended,**

his staff. He did wonderful things for me. Well, again, I think in terms of actual personal experience. I'll give you two instances. The resident before me was John [R.] Birmingham. One of the reasons I came here was because of John. When I came to Bellevue, he ushered me around the wards, and he was such a warm fellow. He was younger than I, and he looked at me as the old man. He was anxious that I come. And I believed him and I came.

Well, John and I had a very unusual case. Actually, I had the case of something that had been barely described to us. Pitressin-resistant diabetes insipidus, that's what we called it. It was a young, deserted infant on the ward, the infant ward, and I was the new intern. So they handed me this chart, yea thick. And as was the custom, patients that nobody knew what to do with, "Give it to the new intern." And I labored with this, because the case was a puzzle with unknown fever. I won't go into all of the details. It was quite interesting. It was a little girl, Linda. She was about three or four months old at the time, and the charge nurse was John's wife, Penny. And it was really she who tipped it because I was puzzling over this undiagnosed fever that was supposed to be a urinary infection or whatever. And I was standing at the bedside looking at this beautiful little girl, small but charming and friendly, and talking with Penny, trying to find some handle. And Penny gave me the handle. "What was different, did you see anything?" She said, "Yes, I guess the only thing was when they brought around milk." Everything was done on schedule in those days and there was a time when they brought around milk. They brought around milk and she grabbed that bottle and it disappeared within seconds. She just consumed it, and for some reason or other the light went off. This was...

DR. SISSMAN: She was thirsty.

DR. DANCIS: She was water deprived, you see. And from there on it was a matter of documentation, which I worked out with John, the Chief Resident. And the two of us, in the midst of all the other duties, worked on this child for a period of almost two years. Eventually we published the case. But again this is typical of the period where people lived together; our whole lives were in that hospital. So John and I would go to Madison Square Boys Club to go swimming, to work off some energy, and we were in the locker room getting undressed, and John said, "You know, Penny and I have decided to adopt Linda."

DR. SISSMAN: This little patient?

DR. DANCIS: This little patient. Well, I was floored. This will come back to Holt. This is leading up to Holt. The problem was religion. Linda was born illegitimately, had been adopted by Jewish parents, and was

originally in Mt. Sinai [Hospital] when they found this undiagnosed fever which they thought was renal. So the parents released the baby or ran off, whichever way you'd like to look at it, and then she ended up at Bellevue as all those children did. At that time, you couldn't adopt out of faith. And her faith was a little obscure but assumed to be Jewish. And John was, I don't know what, but not Jewish. Holt took it on himself. He fought his way through the red tape, through the bureaucracy, and he got it approved, and John got his baby. That takes a little something extra.

To make it more personal, after I finished my training, I went into practice. Holt had asked me to stay. It was almost like momentum, I knew all along I was going to practice, and where I was going to practice, and so I went into practice. All during that practice period, I couldn't release Bellevue. I spent most of my day here, and the practice got along as well as it could. Then I finally gave up, because my practice grew in spite of myself, and I couldn't handle both. And I came to Holt, told him I'd like to come back full time. I felt I needed more training to be a true academician. I didn't have enough training in basic science. Would he help me? And again, this is Holt. When would I want to leave my practice? And I set a date. I was totally unaware of how things were done. I said, "Well I could wind up everything, get rid of my practice and the office, probably around October or November." Well, Holt set the wheels moving. The National Foundation for Infantile Paralysis believed that the solution to their problem was partially dependent on elevating the entire level of scientific pediatrics with fellowships.

DR. SISSMAN: That's kind of far seeing, yes?

DR. DANCIS: Remarkable. And Holt decided that that would be the right thing for me. Well, they had their interviews at a fixed time, I think it was in June or July. I don't remember, but it was a fixed time, and I was out of step. I didn't even know it. The next thing I knew was that Holt had set up appointments for me at Hopkins, with one member of the committee; somewhere in Rhode Island, with another member of the committee, all around. I traveled. And they all met me as an individual to determine whether I was worth investing in. Holt sort of arranged the whole thing, and put his weight behind what he thought of my future as I learned later. Later on, I became more involved with the National Foundation but at a different level. And they told me then that I was by far the oldest person they had ever given this fellowship, and there was a lot of dispute, "This is a waste; we don't invest in elderly people." I think I was 35. And then they decided that they would go ahead. I have no doubt that Holt helped convince them of that.

DR. SISSMAN: What, just to go back for a minute, what stimulated your interest in pediatrics to begin with? You had a rotating internship after your



medical school, right?

**DR. DANCIS:** I had a rotating internship. One makes big decisions for strange reasons, you know, and fortunately I have been lucky. They were good decisions, but for strange reasons. I had grown up in a boys camp. I had been a counselor, and as counselor I had always taken care of the youngsters, so I had considerable exposure. So it was sort of a natural thing to end up in pediatrics. I didn't want to be just any old doctor. I wanted to be more focused. And I selected pediatrics in a sort of backward way. And I have not regretted it at all. It was a very good decision.

**DR. SISSMAN:** So back to, you were a Fellow for two years or so, at the National...

**DR. DANCIS:** A Fellow for two years; it was again, a somewhat unusual approach. Mind you, this would be in the early '50s, before NIH [National Institutes of Health] really took off. I was married, my wife was pregnant with our first child. And it was not an easy decision, I can tell you. But I made the decision.

**DR. SISSMAN:** Financially, you mean.

**DR. DANCIS:** Financially, and risk. Didn't know success--or not success. I wrestled with the decision quite a bit, and eventually it worked out. But I started to describe to you what research was like in those days, and how people trained for research. Because the route that I took was unusual at that time. The common statement was you take a fellow who's interested in research, you put him in the lab, lock him in and forget about him. They'll either swim or they'll sink, and it's in them. And there was some of that going on, I can testify to it. Gene [Eugene] Kaplan was sent down by Sidney Farber. I don't know if you know Sidney Farber, the name.

**DR. SISSMAN:** I know of him, sure.

**DR. DANCIS:** Illustrious in Boston. And Sidney, I got to know in later years, selected Gene as a promising student, and called up Holt and said, "I'd like you to take him for awhile, as a hematologist." I knew Holt pretty well by that time, and he asked me whether I thought there was any future to pediatric hematology. But of course he accepted Gene, and Gene was given a tiny room and told "Go to work." And Gene spent the first few months learning how to stain a slide. And he developed; he became a good pediatric hematologist, made some nice contributions. That was the approach. Arthur [W.] Chung, who was Holt's first resident, got interested in feeding diarrhea, that was a wonderful story. You'll have to reign me in. I could get lost in all of these stories.

DR. SISSMAN: That was quite an advanced idea.

**DR. DANCIS: Yes, it was. At that time, feeding diarrhea was absolutely revolutionary. And Arthur was a resident with no particular laboratory experience, and he wanted to do some work when he finished his residency on diarrhea. And so Holt gave him a laboratory and Arthur said "Well I don't know how to do these assays." "You'll learn, work it out." And Arthur did just that.**

DR. SISSMAN: Getting a laboratory was a room with some equipment and...

**DR. DANCIS: Very little equipment.**

DR. SISSMAN: A person, a staff?

**DR. DANCIS: No, you yourself. You did everything yourself. And that's the way it was done. That's the way John [Jonathan T.] Lanman became an endocrinologist. Work it out. And so when I came to Holt and told him that I felt that I needed two years of training, this was a real divergence. I said I wanted to learn more about biochemistry, intermediary metabolism, the use of radioactive isotopes to study this; and I'd like two years of training in order to apply this.**

#### PAUSE IN TAPE

DR. SISSMAN: All right, we're resuming now, and you were talking about your two years with...

**DR. DANCIS: Oh yes, I was telling you that this idea of training was unusual.**

DR. SISSMAN: And you said you wanted to learn techniques of using radioactive isotopes and so forth.

**DR. DANCIS: And more about biochemistry. So I spent a year here at NYU with Milton Levy in the department of biochemistry, and then a year at Sloan-Kettering [Institute] where they were working on nucleic acids in the very, very early days of nucleic acids. We didn't know there were different kinds [of nucleic acids] and that sort of thing.**

DR. SISSMAN: Those were two years without any clinical activity.

**DR. DANCIS: No clinical activity. And again, to give you a difference in the atmosphere, Norman, because this speaks so well of so many people.**

**The stipend was \$6,000 a year. I don't know what it would translate into current dollars, but it was pretty small for a wife and a child. And again Holt came, arranged to supplement it. I had become interested in the newborn infant when I was here, but that's another story about Holt, which if you want I'll get back to.**

DR. SISSMAN: Well the neonatal interview is going to be separate. So, that's fine, but I don't think we should go into details about that.

**DR. DANCIS: All right, I'll skip that. At any rate, he arranged to supplement it, and for that I did very little. I visited the unit periodically and had no real responsibility. Word got back to the National Foundation, and they asked me to visit the Committee the next time they were in the city. They were upset. They wanted to make sure that this supplement didn't involve duties that would interfere with my training. Of course, if it did, possibly they could increase my stipend. Now what do you think of that?**

DR. SISSMAN: That was really very generous, I would say.

**DR. DANCIS: Generous.**

DR. SISSMAN: The impulse was generous.

**DR. DANCIS: It's not only generosity. It's an interest and a feeling, a personal feeling that's been lost. It's been lost.**

DR. SISSMAN: Yes, well, I was debating whether we should jump to the present and how people get trained nowadays or not. It's different, certainly now.

**DR. DANCIS: At that time, it was, that was a break. Colin McLeod, O. T. Avery, M. McCarty, I don't know whether you know those names, they're the ones who first showed that the transforming factor of pneumococcus was DNA, and again it was a major step in our understanding of genetics. Colin McLeod was here, chairman of microbiology. And Holt took me to see Colin when I was debating what to do. I had come up with this idea of training, and Colin, of the old school, said, "No, no, give him a project. Let him learn as he does it. Let him find out what the gas is in flatus, what it's got to do with bacteria. And in the process he'll learn all about chemistry and everything else." That was the approach. I rejected it, and Holt, in his way, he didn't impose. That's the way I wanted it, that's the way it was going to be. And I'm glad he did it that way because it stood me in good stead.**

DR. SISSMAN: While we're kind of at that juncture, I want to get your

opinion about starting off as a clinician and going into more basic research. Nowadays, it seems to me that the body of knowledge is so fantastically large that it's much harder to do that, would you agree?

**DR. DANCIS:** It's getting more complicated, in several ways. I'm seeing this at a personal level with my son, who is a physician and is a hematologist and has spent years at NIH. There is the inevitable conflict now that's been exaggerated, between the obligations of the clinician and the extreme time-consuming efforts of the investigator. It was bridged more easily in my day. It's reaching a very exaggerated state now, or it has reached it. It still can be done, and it is being done, but the problem of the MD investigator has been highlighted, as you know, on two fronts. One, is it really disappearing? And numerically that type of individual is disappearing. And number two, is it worth conserving? Or should that type of research be left to investigators, mostly PhD's? This is a discussion, which has advocates both ways.

DR. SISSMAN: Well, I guess every week I read another fantastic genetic discovery, and the question is who's going to apply those findings?

**DR. DANCIS:** Well, I have my opinion about it.

DR. SISSMAN: Well, I'd like to hear that.

**DR. DANCIS:** My opinion is that the physician investigator is a tremendous asset. A PhD is a tremendous asset. And again in reviewing my preparation for you, running through my bibliography, I was struck at how often I've worked very closely with PhD's. Not by intent, I didn't select them, but by the nature of the question. Now working with them was great. They brought a skill and I brought an orientation and a skill. I knew what they were doing. I was intimately aware of what they were doing. And I also had a slant that they don't have, an orientation that they don't have. And the two meshed extremely well.

DR. SISSMAN: Did you have PhD's in your laboratory, or you were just collaborating...?

**DR. DANCIS:** Mostly collaborating, except for the last few years.

END OF TAPE ONE SIDE ONE

DR. SISSMAN: This is the interview with Dr. Joseph Dancis, (he doesn't have a middle initial he tells me) and this is Side Two of Tape One. We were talking about your relations with PhD's.

**DR. DANCIS:** Well, they've been very cordial. Mort [Mortimer]

Levitz, who's still in what I call my lab--though I don't use it as a lab anymore--I worked with him for over 20 years and he's an endocrinologist, steroid chemist, and it's been a wonderful relationship. Earl Balis, who took me on in my second year at Sloan Kettering, we worked together on Lesch-Nyhan disease for years. And it was stimulating. Of course I would spill out with thoughts that originated from clinical questions on this difficult case, and the interaction was very profitable. And again, very cordial. Now this is at the collaborative level, and...

DR. SISSMAN: They were mostly at NYU, or in other places in New York?

DR. DANCIS: Earl Balis was at Sloan Kettering, and Mort Levitz is here at NYU. There have been others along the way, but never as long or as intimately as those two.

DR. SISSMAN: While I'm thinking of it, those with Lesch-Nyhan are the children who have self-mutilation? Does anybody understand that yet?

DR. DANCIS: In Lesch-Nyhan the biochemical anomaly has been well defined, but the link to the behavioral anomalies is still disputable. It seems to be in the dopamine pathway, but it's hard to define it more closely. Actually, Menek Goldstein, another PhD here, has done I think important work in defining the pathological deficit in the brain. And it seems to be as I say in the D2, he thinks D2, dopamine 2 receptor. But that remains to be really established. How that relates to uric acid metabolism is not known yet.

DR. SISSMAN: Back to the general question of research, basic research and clinical correlations. It still, in your opinion, depends on a good collaborative situation between the two, not necessarily one person encompassing both activities.

DR. DANCIS: Well, there are different approaches to this. I don't know that I should be used as the usual example. Most investigators now remain quite highly focused, whether they're MD's or PhD's. They have an area that they're devoted to, which cannot always be kept circumscribed because everything spills out. But they remain pretty close to it.

With the exception of the studies of the placenta, I've had two major areas; genetics, placenta, and maybe immunology. Maybe three. A lot of my approach has been more opportunistic. Things happen to me. They present a question, and I try to find out the answer. It can be either a short term thing or it can carry me for years. And so it's a little different in that respect. The first case of maple syrup urine disease just happened. There it was, and it was a great puzzle. I like to solve puzzles, and that started years, literally years of work. And my colleagues, now in Dallas, are still

**working with maple syrup urine disease, digging deeper and deeper into the actual DNA defects, things that I could only partially visualize at the time that I worked with it. So that's my own habit of work.**

**DR. SISSMAN:** Do you think there's still time to operate that way? I mean, I observe in medical schools, more and more pressure on clinicians to bring in money and help support the department and so forth. I don't know if that's similar at NYU.

**DR. DANCIS:** This is what's changing.

**DR. SISSMAN:** A lot of people don't have really the leisure to think about a question and go off and...

**DR. DANCIS:** The reason I could do it has to do with the timing. I was so fortunate, at the time; I hit it at the right time. The first time I sought a grant to support my research after I finished my training, I submitted a grant request to NIH, that was just getting started, and to the Atomic Energy Commission (AEC). Why? Because I was using radioactivity. I got a phone call from the AEC, asking me will I accept their money? And I said, "Well I've got this offer from NIH too. Which should I do?" He said, "You better take NIH," which I did.

And NIH supported me for 30 years, and there, too, it changed. My original grant had to do with placenta, and then I got involved in metabolic errors. And I would submit progress reports for the two, to great confusion down at NIH. But they were very forgiving. They would give me enough funds for both. You can't get away with that sort of thing now.

**DR. SISSMAN:** Do you think that's detrimental to progress? Or do you think that's just the way it is and it's equally productive?

**DR. DANCIS:** No, it is detrimental. You speak to any of the current investigators, and they're bitter about the amount of time they spend writing grant requests, seeking funds to do what they can do. Getting it from here, there and elsewhere. Most successful investigators have funds from more than one source because of the fear of losing funds. Sure, it's detrimental. It's far more expensive the other way, but we were a smaller group and there was more money, relatively. It's just the way it is.

I write about it in that history, so I was pretty good in forecasting that with the limitations of funds that were beginning to appear in the early '70s. We're in the '90s now. That there were going to be major changes in teaching because we supported teaching with research funds, and the pursuit of research. And this has progressed to where we are today, to where it is a perpetual struggle.

DR. SISSMAN: Are there any ideal solutions?

**DR. DANCIS:** There aren't ideal solutions in this world. You can have a practical solution. Well, things are working now. There's an enormous amount of good research that's going on, and there are wonderful investigators that are producing. Total social decisions are what is new. You can't make decisions, really, in isolation. What will society put up with? And so it's never ideal. You're always compromising along the way.

The closest we came to what you would call ideal for research was immediately post war where we had this burst of enormous energy and belief in the usefulness of research that was generated by World War II. And it carried us forward for another 20 years, and then the awakening that things are not that way. And we've been adjusting ever since and probably will continue adjusting as long as we live.

DR. SISSMAN: Well, let's get back to you, after two years of your fellowship.

**DR. DANCIS:** After two years, I came back here and took up, as my major interest, placental physiology. Again, it was a strange decision for a pediatrician, because I found myself consorting with obstetricians as much as with pediatricians. In fact, in some respects I was more welcome among obstetric circles in the research area. But it's been a tremendously interesting subject. I've just come back from the last meeting on placenta in Canada, and I've been going to those meetings annually. Each of the meetings, again, is symptomatic of research progress. Development of this whole area just sort of moves together. The first meetings on what we call the trophoblast were held in Rochester. In a small room.

DR. SISSMAN: Was this an organization devoted to the placenta, or was it a sort of freestanding...?

**DR. DANCIS:** It was before that. The chairman--no, it wasn't even the chairman--somebody at Rochester decided it would be a good thing to have a meeting focused on placenta, because that was his interest. And somehow he found funds and invited those of us who had begun to publish in the area to meet and discuss the subject. It was exciting. There weren't more than a dozen people, probably less, as I try and visualize that room. And it was just a small room, with movable chairs. But leading lights, really, important figures in both placenta and immunology, which was the subject we were discussing.

DR. SISSMAN: This was early.

**DR. DANCIS:** This was early, and it was called the Rochester Trophoblast Conference.

**DR. SISSMAN:** In the '50s, was it?

**DR. DANCIS:** Yes. And that continued for some years, and then it kept getting larger, and then it was taken over by the [Josiah] Macy [Jr.] Foundation. And they had a series of conferences after that, mostly in Princeton. And again, this interchange was among a small group, who spent days together, ate together. Not quite slept together, but we were together all the time. And it was very productive. We made good friends and developed good ideas, sometimes collaborative friends.

It was at one of those Princeton conferences, I had been trying to develop a perfusion system of the placenta, feeling that we had to reduce the problems to study. And there was a man there named Maurice Panigel, from Paris. And I was using the system that Kermit Krantz had developed and it was not working. It was difficult, it just wasn't working, and I was getting only little answers that I wasn't satisfied with. Maurice said, "Well, I'm doing this." He had a perfusion system, it looked like it was working, and he invited me to visit him. So, I visited him in Paris, spent a couple of months working with him, showed that the system really did work, and could produce answers. Henning Schneider was there, who's now the Chairman of Obstetrics at Berne. He followed me back to the States to work with me for about six, seven years, and then went back to Europe, and that's the way it worked in those days. I saw Maurice, I saw Henning, and discussed current problems in placenta. That was generated out of that type of small, interactive group. Now at the last meeting, there were almost 300 people there, with different sessions, molecular science all the way through.

**DR. SISSMAN:** But after your fellowship you were then a full time member of pediatrics, and Dr. Holt was still here. How long did he ... ?

**DR. DANCIS:** Holt was here. [Saul] Krugman, took over from Holt, and he retired from the Chair, in '74. That's when I took over. Krugman was Chairman for about 15 years. So Holt was still Chairman until about 1960, retired when he was 65, as was customary at the time.

**DR. SISSMAN:** You were very close to Dr. Krugman?

**DR. DANCIS:** Dr. Krugman was really my closest friend, not just professionally, but a very, very close friend.

**DR. SISSMAN:** Was he in training when you were here? Or did he come from another ... ?



**DR. DANCIS:** Well, that's another story. Krugman's a big enough name in pediatrics for me to tell you a little bit about him. Saul Krugman arrived here about six months after I did, as an extern. He had no salary, no place to live, no uniforms, no nothing. He came here, again, because of friendship.

**DR. SISSMAN:** That was after medical school?

**DR. DANCIS:** He had been in the Army, same duration as I. He'd been in the South Pacific as a flight surgeon for years. And he came back after training as a pediatrician but not yet in practice. He was truly older, he had dropped out to earn money to go to school, not an uncommon story in those days. And at that time he had been at Willard Parker [Hospital for Contagious Diseases] and was very interested in infectious disease. I liked the looks of him right away; there was something about his manner. And since I was here, I sort of took him under my wing, strange to say. He outgrew me very quickly. But we became quite close friends, as did our families and everything else. So, he went into his work in the usual way. He started here as head of OPD [Outpatient Department]. There was something about his whole manner and approach that appealed to almost everybody. He was the first cousin of Albert Sabin. The acting Chairman, when Holt was away on one of his many trips, was Robbie [Robert] Ward, who was a fellow of Sabin's.

**DR. SISSMAN:** Ward.

**DR. DANCIS:** Yes, Robert Ward. We all called him Robbie or Bob. He interviewed Saul with a letter from Albert, and [they] found a place for him. There was no longer any room on the staff, so they made him an extern, that's how come he came here. And his future was brilliant, as you probably know. I could talk to you about Saul for hours, literally.

**DR. SISSMAN:** We don't have hours, but I'd like to hear a little bit more. He stayed on, and got into infectious disease.

**DR. DANCIS:** He and Bob Ward became very close friends. And they started sort of groping around as to a major interest. There were two features that brought them closer together. One was the textbook [*Infectious Diseases of Children*], which has become a standard textbook on infectious disease. This was the old textbook that a clinician named Philip Moen Stimson used to have. This was the old, standard textbook.

**DR. SISSMAN:** For pediatrics, or for all infectious diseases?

**DR. DANCIS:** Well, infectious disease was pediatrics. You saw it as

infectious disease, but it was really pediatrics. That's where you saw it.

He [Stimson] gave up the book, I don't remember whether he died or retired, and they looked around for somebody else to take it on. They ended up with Bob Ward, who invited Saul Krugman, or the other way around. I think it was Bob invited Saul Krugman to join him. And it became the classic book for years and years, and it's still the most popular book on infectious disease. And originally it was the two of them who wrote it. Saul was a tremendous clinician in infectious disease. Very, very good. That was one unifying thing, and it also made Saul a name throughout the world because it was an international book widely translated. Wherever he went, it was Dr. Krugman.

The other was Willowbrook [State School]. Now Willowbrook has had a checkered history. Everybody has heard about Willowbrook. The facts are these. I was very close with Saul throughout all of this. Willowbrook at that time (and the time would be the '50s) was overcrowded, faced with I think about 2,000 inmates. They're now called clients. Inmates, largely deserted, understaffed, suffering tremendous outbreaks of disease. Ignored.

DR. SISSMAN: These were mentally retarded people.

DR. DANCIS: All mentally retarded. It was called the Willowbrook School. The head at Willowbrook at that time, whose name I've forgotten [Dr. Jack Hammond], appealed to Dr. Ward to help them out. Do something about these outbreaks that were lethal. They had outbreaks of measles that just killed people. Do something. They did.

DR. SISSMAN: Where is it located?

DR. DANCIS: Staten Island. What they did was quite remarkable. But mind you, they didn't invade the place. They were begged to come.

DR. SISSMAN: They were asked as consultants.

DR. DANCIS: Yes. The first thing they did had to do with measles. They brought in the measles vaccine, and in very short time, measles disappeared from Willowbrook. This was early in the development of the measles' vaccine. Why? Again, it has to do with the size of the establishment at that time. They knew the people in Boston, they knew the people in Yale. The infectious disease group was small, cohesive, and they all knew each other and consulted each other regularly. It was a real fraternity, not just the name. And so the vaccine was tested in Willowbrook. It was at that stage of the game, and it was a remarkable success because from the time they moved in the vaccine, there were no

**cases, zero cases, of measles. Enormous success.**

DR. SISSMAN: I guess part of the controversy was who gave permission to do the testing? Is that one of the questions?

**DR. DANCIS:** The controversy really came up with hepatitis. Prior to that, it was fairly smooth sailing with obvious results. With hepatitis, which was also endemic, they could only make progress by segregating individuals. Once they were in the unit, in the school, then things got messed up. They needed new children coming in, who had not been exposed, to be studied. And that's where controversy came in. They were in a most proper way well ahead of their times. These studies were supported by the Army. Of course, the Army was concerned because they had so much of this. Hepatitis was a serious Army disease. They set up a separate unit, but it was done with the permission of the parents. Parents were all for this. How can the parents give permission, you know, it reached that stage.

DR. SISSMAN: Some of these were older individuals, the patients.

**DR. DANCIS:** They were not infants, but they were all children. They were not adults. But it was endemic among the adults in the institution. All of the help had had hepatitis at one time or another, shortly after they got there. There was pretty near a 100% incidence. They set up the unit with good nursing, and they observed. And it was during this first period of observation of the natural history, that they defined what they called MS-1 (type A) and MS-2 (type B). I've forgotten the meaning of it. It's now Hepatitis A and Hepatitis B. They found out for the first time that there were two agents at Willowbrook. Before it had been thought there was one agent. And for the first time they used a biochemical test to monitor the disease, which had been developed by Oscar Bodansky. Oscar Bodansky was one of my mentors; I just thought the world of him. He was a biochemist.

DR. SISSMAN: He wrote a textbook too, right?

**DR. DANCIS:** He and his brother. Yes. And Oscar, who was up at Sloan Kettering, he was the one that decided where I would work at Sloan Kettering. I discussed it with him. Well, Oscar had developed a test for liver function. It was one of the early enzyme tests, I can't remember which one it was. And so they could for the first time make diagnoses of non-icteric hepatitis. They could fill in the gaps of these strange transmissions where somebody didn't have the disease but the other one got the disease, and you found out the intermediary had a non-icteric disease. So they filled in the natural history. They determined that there were two different types of incubation periods, and two different types of

agents. And this was done by clinical exposures. And that's where it ran into trouble.

DR. SISSMAN: Because they allowed these people to get exposed. Is that what critics said?

DR. DANCIS: They did. They allowed them to get exposed. And what they did, first of all, they had a remarkably proper environment for it. If they went out on the wards, they were clearly exposed, and they would clearly be infected within the first six months. Mental retardates with oral fecal transmission were brought into this unit.

They did get exposed to [hepatitis], but they got exposed under superb medical care. Watched day by day and notes taken with excellent nursing. So it was controlled exposure, as compared to uncontrolled exposure. But it bothered people that it was controlled exposure. This was supposed to be an act of God, I suppose. And to do it intentionally wasn't right. Well, it was right. But you have to have a different type of attitude towards things. And it was not difficult to sell.

DR. SISSMAN: What was Krugman's response to that?

DR. DANCIS: He was very upset. It really was a very tough several years because he was under attack by all sorts of people. Senator [Seymour B.] Thaler here, a State Senator, attacked him viciously, verbally, in newspapers, orally, and curiously...

DR. SISSMAN: That was after the fact? That was some time later?

DR. DANCIS: This was while he was still working. While he was working on hepatitis. And typical of Saul, he invited Thaler to dinner at his home (he lived here), to try to persuade Thaler as to the proper attitudes. His propriety in doing this was, of course, Thaler being politically motivated, was totally unimpressed and, interestingly, Thaler came under fire later and he resigned ignominiously. He got into some serious trouble, I think it was money trouble as I remember. But that was Thaler.

But there were a number of radicals at Willowbrook, I say radicals because of their approach, not their thinking. They were rebellious and they were people who moved in and then shook up things and moved out and left everything behind them. That's what I mean by being radical.

Once Saul was invited to get some sort of award in Atlantic City, and the advanced notices were very threatening. I went down to Atlantic City with him. I don't know what I had in mind, whether to protect him or what.

**These were internists, not pediatricians, and I had no interest in it except in Saul. And they did kick up quite a fuss. They came running down the aisle in the midst of the presentation, yelling and waving banners. It was physically threatening. But Saul stuck to it. He felt he was right. He was doing the right thing, it was important to do, and he would not be diverted. But he was terribly troubled. Very, very troubled.**

**As a matter of fact, he once told me (he's dead now, Saul died a couple of years ago), while this was going on he was getting all sorts of honors by that time. He said, "Joe, the thing that's going to be on my epitaph will be "This is the man that did the wrong thing with hepatitis,"" words to that effect. He felt that he'd be remembered more because of this ethical problem than he would be because of the good things that he'd done. As a matter of fact when he died, that was one of my major concerns, that the newspapers would print a totally unbalanced account. Well, we succeeded in preventing that, and it was a balanced account. It didn't eliminate comments, because those remain controversial, and always will be. But at least it was balanced. It wasn't a screaming headline that the ogre Krugman had died.**

**DR. SISSMAN:** And families did know about this, the families of the people that...

**DR. DANCIS:** The families gave Saul a separate award and plaque for what he had done.

**DR. SISSMAN:** When was he appointed head of the department here?

**DR. DANCIS:** 1960.

**DR. SISSMAN:** That was after this had begun?

**DR. DANCIS:** Yes, it was still going on. It was as Chairman that it flared into its major components.

**DR. SISSMAN:** It was courageous of the institution to appoint him during that time.

**DR. DANCIS:** It was, it was. Holt had had problems too, of a similar nature, caused by the metabolic studies, and how to explain it. Retrospective judgment is not a good thing. You have to judge people in their times, and not only that, you have to judge them in a fair way. Ethics by their nature are disputes, emotional disputes. This whole thing in Willowbrook got engaged in that type of dispute.

**Now some of the things that emerged from it were good. Willowbrook was**

**almost emptied out as a result of this movement, doing something about these enormous institutions with deserted children. Some of the emptying out was not very wise, as we know. They were just thrown out and nobody knew where they were going. Some of them are on the streets now, as you know, as part of the homeless. But the general movement was not a bad movement. But the leveling of the accusations against Saul and Bob Ward, it was mostly Saul because Bob had moved out to California before this whole thing blew up; that was wrong. That was incorrect. It is difficult to see the other side. Within my judgment, it was incorrect.**

DR. SISSMAN: You continued your research then. You had your laboratory or two, you said, I think?

**DR. DANCIS: Yes, I used to keep two labs as a matter of fact. One was devoted to the placenta, one was devoted to inborn errors of metabolism, with different staffs for both. And they only occasionally overlapped, because there are some questions like antepartum diagnosis, which had placental and genetic implications. That sort of thing would overlap. For the most part, they were different questions, different approaches.**

DR. SISSMAN: The question, I take it, of why the placenta is not rejected is not solved yet.

**DR. DANCIS: Well, we have too many solutions. And probably they're all valid, Norman. Something as important as that should not be entrusted to a single solution. Evolution doesn't work that way. And there are multiple solutions to this question of rejection. I think it's best to leave it there because it gets complicated from there on, all the way from suppressing immune reactions to inducing tolerance. They all have a place in this, and it's going to evolve even further as we understand immunology further. It's a very complex situation, which has been worked out over the aeons of evolution. And evolutionary solutions are often incremental, one thing on top of another, and so here too you can't expect a sudden breakthrough. It's an incremental thing, with many things going on.**

DR. SISSMAN: You see an obvious future for continuing investigations of the placenta.

**DR. DANCIS: Oh, golly, and that's the history of research. A book just written called *The End of Science* [John Horgan, Helix Books, 1996], has attracted a lot of attention.**

DR. SISSMAN: I've seen some reviews.

**DR. DANCIS: Yes, I just read it to see what this fellow had in mind.**

**And I think one of the things he had in mind with the title was selling the book, because it's the title alone that most people are familiar with without having bothered to read the book. When you read the book, it's not a bad book. He interviewed a lot of very good people, and not all of them are down on that subject, the end of science. Science is going to continue for the foreseeable future. Whether it will run out sometime out yonder, who knows, and frankly who cares. When the sun is going to burn down, you know, entropy will solve all our problems.**

**DR. SISSMAN:** As far as the application of understanding to clinical things, I don't want to go too much into that. But as far as understanding premature labor, which is obviously important, what is the basic question for pediatricians?

**DR. DANCIS:** Well, there are a number of clinical questions. During this last period of my involvement, there are two areas that, in the placenta, that engaged me. One is pharmacology. And that's been triggered by the use of drugs now in pregnancy. For years we did not use them. Because of the thalidomide experience, everybody swore off. Well it's back now, and it's back with AIDS [Acquired Immunodeficiency Syndrome] with a vengeance. And so I spent some time studying the transport and metabolism of AIDS drugs, and trying to draw general principles from it, which I succeeded a little while ago to get all my thoughts together about it.

**And now, more recently, studying the potential effect of pathology of the placenta. And that's taking a very interesting turn, too, which I can no longer pursue. But I was studying the effect of hypoxia on placental function, because pre-eclampsia is still a problem. Pre-eclampsia causes hypoxia. How does the placenta respond to that? How does that affect the welfare of the child? And it's taking on a new, great interest with the possibility that some adult diseases, coronary heart disease...**

**DR. SISSMAN:** Heart disease?

**DR. DANCIS:** Yes, and pulmonary disease, have their origins back in infancy. It is one of the most stimulating developments in recent years, and it certainly stimulated me a lot. It's a question with fragmentary evidence, but it may well be true. I've been thinking quite a lot about that now.

**DR. SISSMAN:** For example, give me one possibility.

**DR. DANCIS:** All right. I'll give you one, Norman; you're wandering way afield from the history of pediatrics.

**DR. SISSMAN:** I know. I feel very relaxed.

**DR. DANCIS:** But I love this, and actually I talked a lot about it up in

Canada, because it intrigues me so. We know that deprivation of the fetus in utero nutritionally, and count oxygen as part of nutrition, has its effect on fetal development.

DR. SISSMAN: Small for gestational age, for example?

DR. DANCIS: Exactly. But small for gestational age can mean lots more, you see. Small is overall size. But when you add to it these factors, size, control of size is largely the result of deprivation in the last two trimesters of pregnancy, because that's when growth is most manifest. The demands on the placenta and the mother are greatest during that period of time. But if you looked into the fetus, you would find that also alveolar sacs increase greatly in number during that period of time. The number of nephrons almost doubles between 30 and 36 weeks. The number of beta cells in the pancreas also increases. So there is a lot of visceral development. So, as you're shrinking size, are you doing something to visceral development that can manifest itself much later? You can get by early, but most pediatricians follow these low birth weight babies for two or three years. It's beginning to appear, by epidemiological evidence, that the low birth weight baby is more commonly affected by hypertension, coronary artery disease, pulmonary disease, and insulin dependent diabetes--just the three organs that I mentioned that go through this major development. So there's an enticing thought and an enticing area of study that I'd love to study, but I'd like to get somebody else to do it. It's very interesting.

DR. SISSMAN: And this group that meets in Canada, how prominent are clinicians in that group? Back to our discussion of clinicians and research.

DR. DANCIS: You ask a good question. Because that's what struck me quite a lot. They're mostly PhD's. There are a sprinkling of MD's, and again, there was the interaction that I describe. We discussed a lot of this concept of late manifesting disease, and I was with a small group of PhD's, about a dozen of us tossing this around. And as I looked around, Bill [William W.] Hay was next to me, who is a pediatrician, and there were a couple of epidemiologists, but just about all the rest were PhD's. Bill, who's got tremendous experience with the premature--he's from Denver--was an important part of that discussion. Important part, and of course the epidemiologists were vital, PhD's, so it is a wonderful area.

#### BRIEF INTERRUPTION

DR. SISSMAN: It's about ten to twelve, so.

#### INTERRUPTION



DR. SISSMAN: A waitress came into the room to set the dining table there, and that is the end of the interview for September 20<sup>th</sup>, 1996. We will continue on another tape.

END OF TAPE ONE, SIDE TWO

DR. SISSMAN: Hello, this is the second tape, side one, of an interview, or discussion, with Dr. Joseph Dancis. We had a talk on September 20<sup>th</sup>, and this is the second one on October 4<sup>th</sup>, 1996. It's taking place in the same room at NYU in Manhattan that we had the first interview in. At this time, it's also sunlit and pleasant, but it's colder outside. Why don't we start?

I was very instructed and pleased to read the pamphlet you gave me that you wrote, the booklet actually, which is a history of pediatrics at Bellevue and NYU, which was written in 1970 and very briefly but colorfully covered the history of pediatrics at Bellevue, from the 19<sup>th</sup> century until then. I was struck among other things with how much it was about people. I mean, you talked about the institution and you talked about the building and about changes in the environment, but it was, I thought, centered on the different people that were here. We have already talked a little bit about Dr. Krugman and Dr. Ward and Dr. Holt. This was just before you became Chairman, and we'll go on to that. Are there any other particular people that stand out in your mind as contributing to pediatrics?

**DR. DANCIS: There are many, and I guess it's a good place to start in trying to describe to you more of the history of pediatrics as I experienced it here at Bellevue. Bellevue is unusual but not unique. It's a major municipal hospital. It has existed for a long, long time. There's a picture on the wall I meant to show you of an iron grill gate before which Washington gave his address and which graced Bellevue for many years. It has that type of history. When I visited Boston City Hospital, I was invited there for a couple of days.**

DR. SISSMAN: Let me just test this.

**DR. DANCIS: And I stood there waiting for an overcrowded elevator, I felt very much at home, so Bellevue is not unique. But it is outstanding. You asked me to talk about people within Bellevue, and I think people make a big difference in history, and of course it's the more interesting part of history. There are movements which influence people, but people influence the movements as well. When I arrived at Bellevue, there was a very small staff. Being full time generally meant, here, that you had an additional income. Just about everybody had such an income, to make it possible to live within the confines of Bellevue and do their work.**

DR. SISSMAN: Additional income from practice, you mean?

**DR. DANCIS:** Sometimes from practice, very often from family or spouses. As a matter of fact, to sort of highlight that, I was in practice as I told you for some years, and I had decided to leave practice. I talked to you a bit about that. I don't think I told you this little story, which will fit with what I'm telling you now. I was very uneasy about it. My first child was practically born. We had an apartment. I had a wife, and I had a practice. I had a way of life. And I was going to give all that up. And I discussed it as I told you, at length. I wore poor Dr. Krugman out, as I reviewed the positives and the negatives.

And then I went up to Columbia and I dropped in to see Dick [Richard L.] Day. Dick was senior to me; he was a Howland awardee. He was to me a major figure in neonatology, and a wonderful individual. I liked him very much. And while I was up there, I stopped down to see Dick, and I told him about my plans. He said, I don't remember the entire conversation, but very quickly, he said, "You do have a supplementary income of some sort, don't you?" I said, "No, it's me and my wife." And he looked a little uneasy. He said, "You know, I always had something additional to give my daughter her harp lesson, she was a harpsichordist," and other things. And that was the tenor of the time.

The Bakwins [Harry and Ruth] were here. The Bakwins were independently wealthy. Ruth Bakwin was part of the Swift family and extremely wealthy, and they lived very well. Which didn't interfere with their devotion to pediatrics. They both made a considerable reputation within pediatrics, as you know. Edith Lincoln; her husband was a well known physician and provided adequate income for the two of them so that she could devote herself quite completely to her work in tuberculosis, which was outstanding. Bob Ward didn't suffer for lack of funds either. And this was the general picture.

Now it changed very rapidly, and I was one of those who provided evidence of change. But that was the picture at that time, small group, quite different from the more--I don't know, I hesitate to say it--but plebeian group that came in afterwards that thronged into the sciences and into pediatrics. So what we had at that time was a group that were doing some research. It was research that was fashioned by the times. It was mostly clinical research. The big support for basic research had not yet arrived. And it was interesting, there were enormously capable clinicians, observers, who understood the child and understood disease. It changed very dramatically, and I think I talked about this a little last time, with the arrival of the NIH, and the whole attitude towards what research meant. And it was during those years...

**DR. SISSMAN:** That was the change? NIH came in the late '50s or '60s?

**DR. DANCIS:** It really grew, it didn't explode, but it grew very rapidly in the '50s and in the '60s it was a major force. And it transformed both teaching and research, because research became the shining light of academia rather than clinical care and teaching. That was the index by which you measured...

**DR. SISSMAN:** Research?

**DR. DANCIS:** Research, that was the index by which you measured individuals and institutions. Were they outstanding research institutions? Was he an outstanding investigator? It became a primary consideration in selecting a chairman, or selecting any division head. And it also provided the funds for teaching and clinical care. A lot of it came through NIH. I think in the States we often do things in peculiar ways. It defies simple accounting and we're paying for that right now when the accountants are taking over and trying to straighten things out.

**DR. SISSMAN:** Well, that has changed a lot in the past ten years, right? And NIH funding is very difficult to get. And it's been replaced, well, how do you see the scene now?

**DR. DANCIS:** Well, again, I did touch on this briefly. This is a very turbulent period, and forecasting is difficult. I have prejudices about forecasting. I think a lot of the good is going to be retained one way or another. The spirit of this country is of that nature, but just how I don't know. The funding for NIH is sharply restricted. It has not dried up by any means. It's still a considerable amount of money. But there's enormous competition for those funds. And there's enormous uncertainty. It's hard to build a life career when you're on the line every three to five years and you don't know what's happening next. It causes enormous anxiety.

Nowadays, when you approach a group of your colleagues talking, if they're clinicians they're talking about HMO's; if they're investigators they're talking about research grants and how difficult they are and what problems they're having. So for one thing, they're different entities now. They're cast asunder in academia. And secondly, there's tremendous anxiety throughout. It's bound to cast a pall on young people. Young people looking at their elders who are so uneasy about their future are not eager to undertake the same. There are still plenty of candidates for research, but I think that the enormous pool that we drew from will dwindle, and that will inevitably reduce the number of outstanding people.

**DR. SISSMAN:** I notice that applications for medical school are still going up.

**DR. DANCIS:** They are. They're going up because people look around and find that the whole world is uncertain, and maybe medicine is not quite as uncertain as others. For those who have been in medicine, it's a very traumatic period. For the new ones coming along who never knew differently, it's not as severe. But in research, it's going to change the character of research. The commercialism of research is going to have its impact; it's already having its impact. Things that were sacrosanct, that we thought were part of public weal, or weal, are now mentioned in terms of patents. It's bound to have an enormous impact on the future. Will it slow the advance? I don't think so. I think it will just keep pressing on; but it won't be the same.

**DR. SISSMAN:** I've observed, do you agree with this or not, that also it's harder for a lone individual to be a researcher? It seems like most papers and investigative groups have six or seven names on them.

**DR. DANCIS:** Yes, well that's partly, again, custom. And it is partly reality. More the latter than the former. When I say partly custom, just about anybody who has contact with that research effort expects his name on the paper. It's unfortunate, because he's often not a real participant. But it is true, it's rare that you see an individual alone on a paper unless it's a review paper.

**DR. SISSMAN:** But not only papers, I meant as far as getting money, Do you think the NIH is going for more established, bigger groups? The research money that is available seems to be going to...

**DR. DANCIS:** Well, that's not entirely true. But a lot of the research labs have become very large and organized almost corporation style. And they're very successful. But still, you know, the small lab makes its essential contribution. I'm convinced of that. They're the ones, you know, they're the off-Broadway contributors. If you're looking for something new, that's where it comes from.

**DR. SISSMAN:** Do you think there's still a place for someone with a good idea?

**DR. DANCIS:** There definitely is, and there are those that are still contributing. It is more difficult. There isn't the backing, but they are.

**DR. SISSMAN:** Just thinking of another aspect of that, and that's the contribution of foreign trained people in pediatrics and house staffs. Do you think there's going to be a shift in that, or a change?

**DR. DANCIS:** Well, first about their contributions, they've been

enormous. An awful lot of the strength of our research in the medical establishment has come from recent arrivals from abroad. I thought of that recently. I was looking over a program for an international meeting that they're having here next month. And again, the serial numbers of names on any one contribution. When they came from abroad, you could identify the country they came from, because there's a uniformity. When they came from this country, it was a total mixture, you didn't know whether they came from China, Japan, Italy. Because they did come from all those places, but they're all American, you see. And it's provided a tremendous strength, it's been a constant revitalization that we've enjoyed. I hope it doesn't stop. It's been true not only in medicine but in all walks of our lives.

DR. SISSMAN: But also foreign trained house staff in smaller hospitals. Does NYU have a network?

DR. DANCIS: Yes, we do. It's a very recent, mixed bag. We have many foreign house staff here, at NYU, at Bellevue.

DR. SISSMAN: In pediatrics as well?

DR. DANCIS: In pediatrics, and many of them are excellent. And they do again bring foreign experience that we enjoy. But yes, there is a down side to it, and that does have to be resolved somehow.

DR. SISSMAN: A downside, in what respect?

DR. DANCIS: A downside in that medicine requires at one level a relationship to the patient. That's essential. And the foreign born, with difficulty with English and different cultural background, have difficulty in making that relation. And that's so basic to pediatrics. It's an immediate down side. And the second is that training is often tremendously uneven. Some of them are not good at all. Whether it's an intellectual difference; I think it's more cultural and training. We train differently.

That's been an aspect and a change that I think you might want to develop over the years. When I've thought about it, I've thought about it under the heading of a democratization of medical practice. When I started (this is the late '30s, '38), there was still a very formal hierarchy in hospitals. There was a chief of staff, there was attending staff, and the house staff, and the nurses. And the nurses stood up as you walked in. Each had their uniforms, which they wore so that they were recognizably different. And this hierarchy was not uncomfortable, but it was obvious. And when I say democratization, you just pick those emblems that I've described, and you recognize how quickly they've all disappeared. There is no such thing as a house staff uniform, there isn't even a nurses' uniform anymore. We used

to tell nurses by their caps where they were trained. That's all gone. Well those are emblems or symbols, and what it symbolizes is the democratization of medicine. And it's happened within the medical group, the doctors and the nurses, but it's also impinged on the support group. The aides, the physiotherapist, the radiologist, it's all flattened out. Without putting a value judgment on it, this is what has happened. It's more characteristic of our country. A lot of the old way is retained abroad as you may or may not know. It's more characteristic of us and that's the way it is.

DR. SISSMAN: Well, without a value judgment, do you think it's good for children who are in the hospital? I mean, are there advantages to [these changes]?

DR. DANCIS: Sure, there are advantages. There are advantages in teaching and training. You know, I mentioned to you that Holt insisted on not being Herr professor. He was to be one of the staff. And it had its obvious beneficial effects. Everybody talked, everybody thought, everybody exchanged thoughts. There was no suppression as there had been in days gone by, when Herr professor talked, others listened. There was none of that. Obviously beneficial, that. You asked how it comes to children. Well, I think it worked well with children, too. Trying to picture in what respect, there was a--I don't know whether I told you this, I've told the story so many times, I'm not sure I told you about it. The wards at Bellevue were wonderfully disorganized.

DR. SISSMAN: You mentioned that in the booklet.

DR. DANCIS: I did.

DR. SISSMAN: Which by the way I'd like to keep and send to Chicago with these tapes, if you don't mind.

DR. DANCIS: I don't mind at all.

DR. SISSMAN: Because I think it's really good insight into what was happening here, in addition to what you're saying.

DR. DANCIS: It, this fraternity among house staff and nurses and even the patients and their parents, we had no visiting hours. People always were wandering in, and wandering out.

DR. SISSMAN: And that was by design.

DR. DANCIS: By lack of design. [laughs] There was no design.

DR. SISSMAN: But I mean, someone, people realized that was happening and didn't change it.

**DR. DANCIS: Well, they didn't change it, yes. But I don't think it was actually designed. It was just part of the disorganization at the time. And there were benefits of this disorganization. It was not neat and tidied up and antiseptic. None of those things, which is supposed to be the hallmark of a good, good hospital existed; but it was great for children.**

DR. SISSMAN: Do you think now that has continued? Well, it's more organized I presume, on the wards here.

**DR. DANCIS: We've maintained a lot of it. Bellevue and there's a spillover into Tisch Hospital. It's the same staff. And I think it's become more general in pediatric wards, this comfort and informality and welcoming the parent instead of looking at the parent as sort of an outside threat. I think that's spread within the pediatric world. It existed at that time but it didn't exist at other places.**

DR. SISSMAN: I think some of the changes, like lack of uniforms for the nurses, was intentionally meant to make children feel more comfortable. I know the nurses at our hospital try to wear clothes that are appealing and have cartoon characters and things. Part of that was designed to be a more friendly place for kids to be in, I think.

**DR. DANCIS: I don't think it really happened that way, Norman. I think that would be after-rationalization. What happened is in the big revolt of the sixties, when everything that was established was suspect, the doctors, the house staff, broke out, "I'm going to dress as I please." And they did. And nobody called them to account, and so it became part of it. And the nurses joined. And then you can rationalize that it makes the hospital more home-like, but I don't think that's how it happened.**

DR. SISSMAN: You talked in the booklet, it seems that Bellevue has been in the forefront in several aspects of the emotional and organic, emotional and physical intertwine. You said that TLC [tender loving care] as an expression was invented here.

**DR. DANCIS: Yes, it was an important feature. But you know I've thought about it some. It seems to have been part of the movement as well. Because at the same time the Bakwins were holding forth about behavioral aspects of children here. I'm talking now of pediatricians who became interested in child behavior and how it interacted with disease, not psychiatrists. The attitudes and the approaches were quite different. At the same time the Bakwins were developing their reputation and wrote their book here, which was quite a pioneering book, [William S.] Langford**

was doing the same sort of thing in Columbia, and [Milton J. E.] Senn was doing the same sort of thing at Cornell. That's right within this city. And I suspect it may have been happening elsewhere. So, once again, there are individuals that are important, but there seemed to be an upwelling of this concern about behavioral impact on disease, and vice versa, disease on behavior in children.

DR. SISSMAN: I remember [John] Caffey was defining child abuse cases.

DR. DANCIS: Yes, Caffey was at Columbia. And Harry Bakwin was very much interested in radiology.

DR. SISSMAN: Oh really.

DR. DANCIS: And rickets. He used to hold sessions frequently for us house staff, in which we put up these yellow x-rays, ancient x-rays of rickets and other interesting bone maladies. And during his visits with Caffey, he became aware of the, it wasn't called child abuse...

DR. SISSMAN: Battered child.

DR. DANCIS: Battered child. He became aware of that. And I got introduced to it when I was on the house staff. It was new to me.

DR. SISSMAN: That was in the '30s.

DR. DANCIS: No, when I was on the house staff here at Bellevue.

DR. SISSMAN: Oh, after the war.

DR. DANCIS: Yes, after the war. And I never thought in those terms. Here this child came in, the child was on G8, the child was about a year old. And it had the weirdest x-rays I'd ever seen. I became quite enchanted with this remarkable bone disease that the child had. And then Bakwin wandered in, looked at it, and said, "Those are all multiple fractures. This is a child that's been badly hurt." And that's what it was. And that was my first exposure to it. You jump from there to today, and the house staff is so sophisticated in this area, so sensitized. Why, they would recognize that immediately. I didn't.

DR. SISSMAN: Were you shocked?

DR. DANCIS: Oh, I was absolutely shocked.

DR. SISSMAN: Did you have trouble accepting it?



**DR. DANCIS:** No, I accepted it because, given what Harry knew, I could see. And then I saw additional cases after, but then I knew. The additional cases came in many different varieties. They came, I hope I didn't tell you this, but one of the next cases I saw was in an older child, about three or four years old. And at that time we had a terrible admission procedure. It was cruel, barbaric, in which the child was taken into the admitting room. The doors were closed, no parents--my God--and you drew blood for Wassermans. You did vaginal swabs for GC [gonorrhea]; and from the nose and throat. It was really a rough ordeal, and the children responded appropriately. Here was this three or four year old who'd just lay there, as I drew the blood and went through all of these procedures, without any visible reaction. It was remarkable. And the child had been admitted as a post-encephalitic, which seemed reasonable given his absolutely passive demeanor.

Well, within a couple of weeks, the child was a different child. Again at that time, we didn't worry about DRG's [diagnosis related groups], or anything like that. You admitted a child and you kept them here as long as you wanted to, as long as you thought it was right. This was an abused and neglected child who'd been beaten, fed poorly, showed wasting and showed the emotional trauma of whatever happened at home. And this was a child who actually thrived at Bellevue. And he thrived in this atmosphere that I'm talking about, because part of the approach that we used, stemming I presume from Bakwins drumming it into us, is you adopted the baby. House staff who had that child adopted it, in the sense that wherever they went, they carried the child around. The child pattered after them, and the child just woke up. It was a beautiful thing to see.

**DR. SISSMAN:** You mentioned a couple of other places, Columbia and Cornell, when you were talking about other people interested in psychosocial things. What was the competitive atmosphere between the institutions in New York?

**DR. DANCIS:** It was a mixture of things. We knew each other very well, and there was rivalry, let's put it that way. But Holt was here, [Rustin] McIntosh was up at Columbia, and they wrote [the] Holt-McIntosh text together. So that at that level they knew each other well. Sam [Samuel Z.] Levine was outside of that, at Cornell. For my contacts, I was interested in the newborn by that time, and I certainly knew the people up at Columbia very well and enjoyed visiting with them. At that time there was, well, there was Dorothy Anderson in pathology, Bill [William A.] Silverman in neonatology, Stan [L. Stanley] James, they all developed considerable reputations for good reasons. Dick Day went up there, as I told you, from Cornell. And we were colleagues.

**DR. SISSMAN:** There were mainly three places, then?

**DR. DANCIS:** Those were the three main places, yes.

DR. SISSMAN: In the '40s and '50s.

**DR. DANCIS:** Yes, there was Flower-5<sup>th</sup> Avenue [Hospital], uptown, and there was Brooklyn, SUNY [State University of New York].

DR. SISSMAN: SUNY Downstate?

**DR. DANCIS:** It wasn't that at the time. It was King's County Hospital at the time. And they had such enormous problems then and still do, that they had trouble getting into the academic community.

DR. SISSMAN: Talking about demographics, I read just the other day that house staff in pediatrics is now 61% female. That's the most of any specialty. Has that changed the face of pediatrics?

**DR. DANCIS:** It certainly changes the appearance! [laughs]

DR. SISSMAN: [laughs] Right.

**DR. DANCIS:** Probably for the better. Women at NYU and Bellevue always fared better than they did at our sister institutions, and this was well known. It was told to me very sharply. When I was writing that little booklet, I interviewed Katharine Dodge Brownell, she was a cardiologist. Brownell married a famous lawyer, at that time, who was politically involved, and she was known as "Ducky". Well I talked with her (she trained elsewhere, I've forgotten where) about how she came to Bellevue. She said, "Well, we knew that women had a better chance to advance at Bellevue," and that goes back to Charles Hendee Smith.

Charles Hendee Smith broke ground in a couple of very interesting ways. One was the opportunities he provided for women. Edith Lincoln, when she arrived, stood out like a sore thumb, that was 1915, as one of a couple of women, and she made her way with the support of Hendee Smith. And as I mention in that little booklet, there was this business about a southerner, a black fellow, and whether he could be accommodated in the staff when we had so many southern members on the staff. How would they react. And Hendee wondered what to do about it and then did what we would call the right thing. He gave him the job.

DR. SISSMAN: Who was that?

**DR. DANCIS:** Charles Hendee Smith.

DR. SISSMAN: He gave the job to?

**DR. DANCIS: To a black fellow, I don't remember the name. I wasn't here, it was before my time. It was in the '20s.**

DR. SISSMAN: That was in the '20s?

**DR. DANCIS: Yes.**

DR. SISSMAN: A faculty position, or a...

**DR. DANCIS: House staff. House staff.**

DR. SISSMAN: Was there a lot of opposition to that or reaction to that?

**DR. DANCIS: Not very much. Certainly not obvious; none that's recorded. Remember, I wasn't here. I can only read the record.**

DR. SISSMAN: No one has told you.

**DR. DANCIS: No. No.**

DR. SISSMAN: And that was because Dr. Smith was, that was the kind of person he was?

**DR. DANCIS: That's the kind of person he was. It was one of his strengths.**

DR. SISSMAN: He was a northerner?

**DR. DANCIS: Oh yes, he was. He was an interesting fellow in a different way. He was a practitioner from the very beginning. He was chairman here until just before Holt took over. He was a teacher, had little or no interest in research. He was a dogmatic, didactic teacher whom the students loved. You have to remember what students like. They like to know the right answer, when you get up and are uncertain, they're not happy. He knew the right answers.**

DR. SISSMAN: That's still true.

**DR. DANCIS: [laughs] He knew the right answers, and he told them what the right answers were.**

DR. SISSMAN: Even if they weren't always right.

**DR. DANCIS: [laughs] Well, that's right. And he remained vigorous**

**into his eighties, a vigorous practitioner, never very wealthy. He survived through his practice. But he had a lot of loyalty from his staff, because he thought about them, tried to help them.**

DR. SISSMAN: Well, we can maybe go on to your becoming chairman, that's after the booklet. That was in 1970...

**DR. DANCIS: '74. I'd like some time before I forget, Norman, to come back to what research was like from my standpoint early on.**

DR. SISSMAN: OK, why don't we do that now.

**DR. DANCIS: Now?**

DR. SISSMAN: And I'll remember to go on after that.

**DR. DANCIS: Well, I talked to you a little bit about work on the placenta. And how that evolved and how it continues to be a fascinating subject, and how its importance has grown in recognition. We talked also a little bit about physician scientists, the interaction of physician and science. This other aspect of my research life emphasized physician scientists. I had also always had a rather consuming desire to get answers to questions. It's not very well controlled. And it...**

DR. SISSMAN: Well controlled, did you say?

**DR. DANCIS: Was not well controlled.**

DR. SISSMAN: In what sense?

**DR. DANCIS: If it came, I had to go after it.**

DR. SISSMAN: Oh, I see.

**DR. DANCIS: Like a compulsive appetite, you see, and that's really what governed my work in biochemical genetics. Again, the timing was so important because it was a new field. But let me tell you how it evolved in my life. The first step that I made was during my training at Sloan-Kettering. And there I heard two theories about PKU [phenylketonuria], the Holt-Snyderman theory, and out in the Midwest, [M. D.] Armstrong, and a German, [H.] Bickel. Holt and Snyderman looking at these children said what they lack is tyrosine. And they fed large amounts of tyrosine. Now you know these patients lack pigmentation, noticeable in the hair. They either get blond or reddish, and lo and behold, the hair of the patient they tried this on darkened. In fact, Dr. Snyderman used to carry around a lock of that patient's hair which she called the flag sign; tyrosine, no**

**tyrosine, tyrosine, no tyrosine. It had bands.**

DR. SISSMAN: The colors were in stripes?

**DR. DANCIS: Black bands of stripes, yes. At the same time, Armstrong and Bickel...**

DR. SISSMAN: Where were they?

**DR. DANCIS: Armstrong was in the Midwest, Bickel was in Germany. They lowered the phenylalanine and they said that's the culprit, and lo and behold the hair got dark too. Peculiar puzzle. And I puzzled about it, you see. What could it be, and then of course it clicked and was not very difficult. I had a good friend at the time who was an organic chemist, who worked with a fellow named [C. R.] Dawson in Columbia who made mushroom oxidase, tyrosine hydroxylase and I showed very quickly that phenylalanine inhibited that enzyme which was on the pathway to melanin. So you could either increase the tyrosine or lower the phenylalanine and you change the ratio and you would get return of pigmentation. Well that was intriguing. And again, it just happened. It was a problem that happened. I was pleased to see it revived at a meeting later on, as the children of PKU's. As to possible mechanisms, this thought still exists. It's a real thing, of course, but what its place is has to be resolved.**

DR. SISSMAN: What about the children? I'm not...

**DR. DANCIS: The children of patients with PKU. Now that you can treat them, they grow up and have children, and their child, if their mother is not very, very carefully controlled, is mentally retarded. An infant growing up in that milieu has tremendous defects, you see. And there the question came up as to...**

DR. SISSMAN: Intrauterine.

**DR. DANCIS: Intrauterine. As to how to minimize that and lowering phenylalanine and maybe raising tyrosine, maybe both. That as a mechanism was roundly discussed at this meeting. I enjoyed that. But the next question I tackled, again, was of this nature. I was in the lab working on something to do with the placenta, and I got a phone call from a previous resident, Shelly [Sheldon] Miller, out on the island. He said, "You know, I've got this very strange child here; I bet you'd be interested. He has a funny smell. He smells like maple syrup." Well it didn't take long; I was on my way out there to see the child. The child was in extremis, and well, it's a good story. Let me tell you a little bit more about it.**

DR. SISSMAN: And that was the first recognized...

**DR. DANCIS:** There had been a family that had been described in Boston by John [H.] Menkes. John Menkes was an intern here at the same time. And so there was this link. But he just described the entity, the children died, and there was no indication as to what the problem was. This child as I say was in extremis.

**DR. SISSMAN:** When was that, about?

**DR. DANCIS:** This would be about mid-'50s, maybe '60. And when the child died, two things. We got all sorts of samples from the child. Miller arranged first to get everything.

**DR. SISSMAN:** Pieces of organs, you mean?

**DR. DANCIS:** Organs, blood, urine, everything. And Roland Westall, whom Holt had invited from England. One of the big advances in inborn errors of metabolism was chromatography of amino acids, and the pioneer there was a fellow named [Charles] Dent, D-E-N-T, who was an Englishman. Holt, with his cosmopolitan view of the world, and his interest in nutrition, picked up Dent as a young man, brought him to Bellevue to work here for a couple of years. He had a little lab in an old room that used to be a toilet, and he set up chromatography. And it was very unusual, people didn't understand where it was going, but it was a major event in this area.

Following him was a colleague named Westall, also English of course, and I gave Westall the urine. He called me the next day to say there was a big leucine spot, and that began the unfolding of maple syrup urine disease.

**DR. SISSMAN:** It was very convenient to have him right down the hall as it were.

**DR. DANCIS:** That's the beauty of this interaction, and that's really the story. At that time, the mother was pregnant. And I cautioned her that if there was a problem to please let us know. She moved to the west coast, I think it was Washington, Washington state, and sure enough, a phone call came in from her that the child had just been born, and it looked all right, and what to do. Well, of course, this happened as always, during the weekend.

**END OF TAPE TWO, SIDE ONE**

**DR. SISSMAN:** So, we're talking about the sibling of a child with maple syrup disease who had just been born in the state of Washington.

**DR. DANCIS:** Well, I shipped off by express the next day a formula for the child, made as well as I could figure it out, because it had never been done. And...

DR. SISSMAN: What was that, to show you my ignorance, what was the feature in...

**DR. DANCIS:** Well, these children have excesses in the three branch chain amino acids. And so I sent them off a formula in which this was much reduced. It was a totally artificial, no protein, diet.

DR. SISSMAN: You actually made that up over a weekend?

**DR. DANCIS:** Yes. Yes, it was a long... [laughs]

DR. SISSMAN: You did that?

**DR. DANCIS:** Well I did it.

DR. SISSMAN: You mean you had laboratory amino acids, and you put them in a...

**DR. DANCIS:** We had a batch of amino acids laying around, because of the interest in amino acid nutrition that Holt and Snyderman had, you see. And so I took the liberty. I had the keys, and I knew my way. I just did it, and shipped it out there. And then Holt came in on Monday, and Holt, it's too bad you never knew him because he acted. Within 24 hours he had the child coming to Bellevue. How he did it all, where the money came from, you never knew.

DR. SISSMAN: You don't know yet?

**DR. DANCIS:** No, don't know yet. All I know is that very shortly this child was on its way to Bellevue.

DR. SISSMAN: Do you think that he got some person to donate the funds?

**DR. DANCIS:** I suspect so. In those days, yes.

DR. SISSMAN: That was the usual...

**DR. DANCIS:** Yes.

DR. SISSMAN: He had contacts.

**DR. DANCIS:** Tremendous contacts, he was a famous man.

DR. SISSMAN: In the well-to-do circles of New York?

**DR. DANCIS:** Among the well-to-do and also the proprietary firms that made formulas. Because he designed the formula for premature infants for Mead Johnson at that time. He was very beholden to Holt. And he had no hesitancy in tapping people for this type of thing. And that started a long ordeal in which Holt and Snyderman (I was simply an observer) worked out the diet. But coincidentally, I had the opportunity with this new child to follow up with biochemistry. And that proved, again, a tremendous education to me and it was so early in biochemical genetics that just about everything I did was new.

It was a wonderfully exciting period, studying the white cells or the fibroblasts instead of the patient, which opened up all sorts of doors. New. Bob [Robert] Krooth at Columbia had used, I can't remember whether it was the white cell or the fibroblasts to study something, and it seemed to me just right for this, and so I adopted this approval. And it worked out beautifully, so that we could work out the mechanisms for the disease, and set this place up as a center. So that a rare disease became a common disease at Bellevue. They came flocking from all over. And we could work out many mechanisms.

Enough of maple syrup, but again to pursue this theme of how a physician moves into the scientific field...

DR. SISSMAN: First, what happened to that patient; was that a boy?

**DR. DANCIS:** It was a girl. Cindy Blau. She did very well in some respects. She didn't die; she became an adult. She had big behavioral problems. She was the first. And a very difficult case. But she was saved, yes. And others after her. And now...

DR. SISSMAN: Do you remember, did her mother come with her?

**DR. DANCIS:** Her mother came with her and her father came with her. And they moved back here.

DR. SISSMAN: She stayed here for...

**DR. DANCIS:** They moved back here. The next similar story, let's see, which would be next. Wandering the halls here, actually finishing lunch, Al [Alfred] Smith, an internist interested in catecholamines, stopped me at the elevator and said, "You know, I'm not a pediatrician, but I have this very funny finding about what's called Riley-Day syndrome, and I'm not comfortable. Would you work with me on this?" (It's the same Day, by the



way.) Well I told you this was sort of compulsive. I said, "Well, tell me about it," and the more he told me, the more interested I got. And that started the studies of familial dysautonomia that we worked on for years. And this involved considerable work on the child, as well as in the laboratory. A lot of it was clinical investigation that can only be done by the physician working at the bedside. That's where my role was. It's still a fascinating entity.

DR. SISSMAN: It doesn't seem as common as it used to be, or at least it's not in the literature as much as it used to be.

DR. DANCIS: It's not in the literature as much as it used to be because there's not that much new. There was a period, a very fertile period, when Al and I first attacked the disease, in which publications came rapidly as we worked out the pathophysiology of the disease. It's absolutely fascinating. It has entered a new stage now, the molecular stage, in which they now can make an antepartum diagnosis in many families with a high degree of probability. And NYU still remains the dysautonomia center. Whenever you want to see some patients, come visit us, they're here.

DR. SISSMAN: You mean a genetic abnormality has...?

DR. DANCIS: Yes, it's an autosomal genetic disease.

DR. SISSMAN: It's been localized?

DR. DANCIS: It's localized, and they...

DR. SISSMAN: A chromosome?

DR. DANCIS: Yes, they don't have the gene, which they're hot after. But they do, they have the linkage well enough so that they can make a diagnosis in most families with quite a bit of accuracy. Very important advance for the...

DR. SISSMAN: And you were testing out autonomic function.

DR. DANCIS: We'd test the child for autonomic function, yes. They had so many abnormalities, I could spend an hour talking to you about them, because they are fascinating. But we've managed to define the disease far better. It's sort of a "pot" type of thing. And we could sharpen up the definition to the point where we knew we had an entity that was inherited and was recessive and was, so far, limited to the Ashkenazi Jew.

I tell you another amusing anecdote about hunting down the sensory defects. They have major sensory defects. Al Smith tested the children for

**their histamine reaction, intradermal histamine. And in the first four children, he found a distinctly abnormal reaction in the dysautonomic as compared to the normal. Very sharp, very easy. Anybody could see it, really, who was at all familiar with it.**

**DR. SISSMAN:** Was it less severe, or more severe?

**DR. DANCIS:** Less, less pain. The axon flare was absent. And it had just a thin wheal; it was beautiful. I'll show you a picture if you would want to see it. Then he came to me and he said, "You know, there's one false negative, a normal histamine test in a child. The mother has been the president of the Dysautonomic Society. The child is about two years old." He's very upset. Here was the thing that ruined it from being an absolute test.

**DR. SISSMAN:** You mean the control, as it were, was positive.

**DR. DANCIS:** He, as a dysautonomic, gave a normal test. So he told me more about the case. Well, as he told me more about the case, I became more and more uncertain about the diagnosis. And so I drove out to the home. It was in Queens. I drove out to meet the family and visit the child and look at the child at home. Those things were done in those days. They didn't come in; I went out there.

**DR. SISSMAN:** For the record, I raised my eyebrows when he said he drove out to the house!

**DR. DANCIS:** Yes. I had an interesting couple of hours there, meeting the family, watching the child, watching the child's abilities. And quizzing everybody. And I came to the conclusion that this was not dysautonomia. It was an incorrect diagnosis. And in the course of the discussion, the grandmother was there. Grandmother told me that she had always been concerned that her daughter had married outside the faith, married a gentile. And by the time we finished, she was so happy [laughs] her daughter married a gentile, because clearly it was not a dysautonomic. Both parents are Ashkenazi Jews because the gene is recessive in the dysautonomic and this is, I don't know the exception yet.

**DR. SISSMAN:** What did the child have?

**DR. DANCIS:** It was mentally retarded, unknown cause. Not uncommon. Not a bad child, but not subject to all of the terrible disadvantages of dysautonomia. So that was a second disease and sort of coming from left field.

**The third again happened while I was in the laboratory, and this was a**

phone call again from a previous resident. She was a pediatrician at Haverstraw, and she had a child there with a funny behavioral disease, just biting his fingers. Would I be interested? Of course I was interested. So the child was sent down. The child had Lesch-Nyhan disease, and as you may remember in my training, I had worked with nucleic acids with Earl Balis up at Sloan Kettering and this was just natural substrate for our studies. We spent several years studying Lesch-Nyhan disease, which took me into all sorts of fascinating areas. But again the entrance was through the patient, through the patient's family, through the clinical picture, and the rest followed.

Now in the course of those studies, we learned things about basic biochemistry that the biochemists did not know. And that's not a rare event now, it's been emerging with these things. This was so unusual at that time. It's become common place; it's hardly a story anymore. And many of the PhD basic scientists go looking for the clinical entities now or else they're working in clinical departments, so there's a far closer relation. But the time, for example, when I got interested in maple syrup, Severo Ochoa was the Chairman of Biochemistry here. Ochoa is a Nobel Laureate, or was a Nobel Laureate, interested in this type of pathway. Wonderful man.

DR. SISSMAN: At NYU?

DR. DANCIS: At NYU. I sat and talked with him for about an hour. He was very interested and very polite. And then I walked out. And the answer was that if I wanted to know something, I had to do it. You didn't have a chemist who would come running to do these things for you. I had to learn about them. And that was the general picture. If you had the interest in the patient and the pathology of the patient, it was up to the physician to investigate it. It's been reduced I think, considerably, for the reasons I've described.

Now PhD's that I've worked with and know are often very much as interested in disease as they are in physiology. It was much less so then, and I still am convinced that the physician who understands science has important contributions to make, and it's an important type of person to retain. I could go on with other stories, but I think those give you the idea.

DR. SISSMAN: And do you think those people are still around?

DR. DANCIS: Physician scientists?

DR. SISSMAN: Yes.

DR. DANCIS: Oh yes. Oh yes. [Wade Parks], Chairman of Pediatrics

is a physician scientist. Charlie [Charles J.] Lockwood, chairman of OB-GYN; they're scientists as well as clinicians. Oh yes. They're there, working hard to maintain themselves. It's hard, but they're there.

DR. SISSMAN: If someone wants to go into research, getting an MD, if he or she knows early enough, would you suggest that, or I guess it depends on...

DR. DANCIS: I think it's a wonderful life, you know. It suited me wonderfully. But of course I was lucky. It was the right time. Timing is just so important. It's far more difficult now, but it's still rewarding if you have the personality. And it does require a personality. I used to tell people I had a personality defect because of my interest in this, because it does require a different personality.

DR. SISSMAN: Does the system still encourage that?

DR. DANCIS: The system encourages it even more. There are all sorts of training opportunities now. It's a little lopsided because there are lots of training opportunities and then you have problems after you train. But there are a lot of training opportunities in pediatrics. At the APS (American Pediatric Society) and SPR (Society for Pediatric Research), they've gathered some fund-raisers and have a training program for pediatricians to become scientists. It's a good program.

DR. SISSMAN: They give scholarships and grants?

DR. DANCIS: That's right, yes.

DR. SISSMAN: APS does that?

DR. DANCIS: The American Pediatric Society and the Society of Pediatric Research. I don't think the Academy is a part of this effort, but I'm not sure. They could be, they've become so close in recent years. And there are funds that come from other sources as well. And it's a growing concern. NIH provides some funds for that too. I was on the NIH study section at the time this came up and I was strongly for it.

DR. SISSMAN: When was that?

DR. DANCIS: I was then, hard to place a time.

DR. SISSMAN: Approximately.

DR. DANCIS: Yes, it was about when I was president of the APS, and so I would guess that's about ten to fifteen years ago, ten years ago. I was very much for it, and pressed for it.

DR. SISSMAN: And those are for studying basic science after you...

**DR. DANCIS: Yes. That particular program (there are many different programs) was developed with NIH. A special subsection was set up for that, and I was chairman of the subsection at that time. And the program that was developed and presented us (we didn't develop the program, it was presented to us) was to take a promising pediatrician and give him two years of training in a strong laboratory, frequently at another institution so that he would be completely relieved of other responsibilities.**

DR. SISSMAN: Sounds like what you did, when you came back from the Army.

**DR. DANCIS: It is. That's right, it's very similar. You're quite correct. But now it's supported, then it wasn't. It didn't exist at that time. And then to have a commitment from their institution of a faculty position that would give them another few years to get their feet on the ground. A very important program. The last, I'm sort of out of the circle now, Norman, but the last I saw of it was that both pediatrics and obstetrics were quite proud of what they accomplished. The obstetrics program followed the pediatric program and imitated it, and there was a great question as to whether they could make it work. Larry Longo was in charge of that.**

DR. SISSMAN: That's the Institute of...

**DR. DANCIS: NICHD. National Institute of Child Health and Human Development.**

DR. SISSMAN: They sponsored this for pediatrics.

**DR. DANCIS: And for obstetrics. Yes.**

DR. SISSMAN: How many of them are there?

**DR. DANCIS: I don't know.**

DR. SISSMAN: A dozen? Or, not...

**DR. DANCIS: I couldn't tell you. I couldn't put a number on it, but I was at an obstetrics meeting and Longo was so eager to tell me how wonderful the program had been.**

DR. SISSMAN: You mean following up the candidates. Are they doing well?

**DR. DANCIS:** Yes, many of them presented at this scientific meeting, and they presented well.

**DR. SISSMAN:** And this is outside the subspecialties training. I mean I know, certainly in cardiology, their requirement is to do research in the third year.

**DR. DANCIS:** Yes, but this is entirely outside. This is much more serious. What do I mean by serious? Well you know, since you've been through this, how many times that one year compulsory research is done because it's compulsory and the one who's subjected to it or exposed to it is not particularly interested in the first place, and the mentors are not particularly capable, and it's done and it's finished, and it doesn't go anywhere. This is a very serious program in which there is a persistent follow up. Candidates come back and report periodically as to what they're doing and how they're doing it. It's a very serious attempt to develop accomplished investigators, quite different. The MD/PhD, as you know, appeared with similar ideas in mind, but there the intent was developed by Lewis Thomas. Lew was the Dean here. Are you familiar with the name?

**DR. SISSMAN:** Yes, very much.

**DR. DANCIS:** I differed with him at the time and I think that we both were right. He felt that the only way to get really promising young men or women into this field was to get them while they were students, before they were committed anywhere else. And I thought there would be a lot of wastage there. They didn't know what they were doing. They were too early in their career. A better place to invest would be in a program like this, after they were committed, and then train them. Then you knew they were serious and mature. And I say I think we were both right, because we both seem to have been successful.

**DR. SISSMAN:** Is there anybody from NYU who got money from this program at the Institute?

**DR. DANCIS:** No. No. Nobody from NYU. We have not done that. We have trained people here, obviously, but when I was chairman, I found support from other sources one way or another. And did place people in laboratories, usually in the basic sciences, but I kept them within the institution and that's also worked. There are many ways to run it. That's also worked. It's fully different from the other program.

The other program, I think some of its requirements were not wise. For example, the requirement that they train in a different institution. I didn't

**think that was necessary or wise given the breadth of institutions nowadays. And I just didn't see it. It means uprooting a person and his family for a period of a couple years. It's an extra obstacle. Maybe it's a good selection device, but it's a big obstacle.**

DR. SISSMAN: You mentioned the APS and the AAP, maybe we should talk a little bit about those organizations and what influence they had on the practice of pediatrics...

**DR. DANCIS: Well, I know less about the Academy. The APS and SPR I know quite intimately, I've worked with them so long. I may have mentioned to you that when I was president of the APS, the president of the Academy, I can't get his name, he's a president for the Grant Foundation, do you know whom I'm talking about?**

DR. SISSMAN: Haggerty?

**DR. DANCIS: Haggerty was the president of the Academy at the time.**

DR. SISSMAN: Bob [Robert J.] Haggerty.

**DR. DANCIS: Bob Haggerty. Because he comes from academia.**

DR. SISSMAN: Rochester, I think.

**DR. DANCIS: Rochester is correct. And he, it was natural, and it was at a time when we were anxious about laws that were being passed, about funds that were being provided for many activities, and we actually had--I'm talking of APS and SPR now--had a lobbyist, part time. We couldn't afford...**

DR. SISSMAN: One person for both organizations?

**DR. DANCIS: For APS/SPR. But the Academy, with its much greater funds and membership, had quite a respectable establishment that was working in this area. And it was during that period that we recognized a commonality of interest. You see, there had always been the usual academia-practitioner sort of suspicion. One is interested in money and the other is interested in knowledge and science, never the twain shall meet. Well, this diminished with people like Haggerty and others that followed him.**

DR. SISSMAN: This was in the mid-'80s.

**DR. DANCIS: This would be, that would be my guess.**

DR. SISSMAN: You were president...

**DR. DANCIS: I don't remember when.**

DR. SISSMAN: I think it was '84.

**DR. DANCIS: It would be at that time. And it's not that I maneuvered it, but again, the timing was such and I certainly endorsed it. And it's blossomed so far as I know where now when I call the APS it's out where the Academy is. They must share offices there, too.**

DR. SISSMAN: In Illinois?

**DR. DANCIS: Yes.**

DR. SISSMAN: Yes?

**DR. DANCIS: So this is a welcome thing because pediatricians are interested in children, regardless whether they're in academia or practice, there's a sincere interest in children. So there is a commonality of effort, and it's being exploited now which is very good.**

DR. SISSMAN: So you approve of the way it's gone, what these organizations are doing?

**DR. DANCIS: I think I do. I'm not intimately involved. I don't know intimately how it's being handled; but at that time the interest in joining forces was great and the immediate benefits were quite apparent. And I hope that it will continue.**

DR. SISSMAN: And that was around what was happening in Washington? As a starter at least?

**DR. DANCIS: It started with this question of how were we going to represent children in Washington, and we were trying, "we" being APS/SPR. And we had this man, I think his name was Hall, who gave us a few days a week, he was a good fellow. But certainly he didn't give us all of his attention, and at that time there was a young woman whose name [Jackie Noyes] I don't remember, who represented the Academy, very vibrant, and giving it a lot of attention. And so it worked out that way.**

DR. SISSMAN: That was a pretty smooth association?

**DR. DANCIS: At that time it was. Yes. What's happened since, I think it's continued to be a very mutually supportive approach.**



DR. SISSMAN: Well, I think there's a coverall organization now, I'm not sure.

**DR. DANCIS: I don't know. It makes sense.**

DR. SISSMAN: Did you have any personal experience in Washington? I mean, did you do any testifying?

**DR. DANCIS: No. Not with Congress. With NIH, yes. I spent quite a lot of time with NIH. One of the, Holt's research nurse, Eileen [Grace] Hasselmeyer, went on to get her PhD. She came back here when I was in charge of the neonatal unit, premie unit, to do her thesis, and I provided her with whatever support she needed. She went on from there; she became quite prominent. She went to NIH, and retired only a few years ago as a Rear Admiral, having reached that prominence in the Public Health Service. She was quite significant in many of the policies in NICHD, and this friendship that we had drew me in. There were problems or decisions where she commonly called on me.**

DR. SISSMAN: What was her position? I'm sorry, I missed it.

**DR. DANCIS: Eileen Hasselmeyer, she was a registered nurse.**

DR. SISSMAN: No, I mean at the NIH.

**DR. DANCIS: At the NIH, she was with NICHD, and I don't remember the title, it had something to do with programs. But it was she who set up many of these study sections, and she quite regularly asked me to assist her, so that I spent quite a lot of time in NIH during those years.**

DR. SISSMAN: Do you want to comment on the efficacy of their committees and review systems? Whether it worked well?

**DR. DANCIS: OK. Like everything, there are positives and negatives. First, it made this research establishment of ours possible. And it is the envy of the world, there's no question about it. And for good reason. So there's an enormous positive. Looking into the minutia of how it works, like any big organization, big problems creep in. And they're being reviewed and reviewed constantly. When [Harold] Varmus came in, he's really reviewing everything again, and he's making significant changes. But there are certain built-in problems that are very difficult.**

**The peer review system is a difficult system. Now it involves a table twice this size with about 20 to 30 people sitting around discussing grants. Now, that's not an efficient system. The reason for it is that grants require so many different types of expertise that have to be brought to bear. And then**

attempts are made at decision. Well it's bound to be an irregular process with so many people in it. And the...

DR. SISSMAN: Irregular meaning...

DR. DANCIS: Uneven. Uneven process. So many things go into the decision. There's the primary reviewer, how verbal he is. How well he presents the case can either destroy or resurrect a grant, because the others around will sometimes disagree but they tend to be carried by the person who is the appointed expert. Remember there's somebody on the outside whose future depends on that decision. The whole rating process has become, well it's like getting into medical school. A few points make all the difference in the world, and nobody believes that anybody is that accurate. So there are built-in problems in the peer review system. The eccentricities of all the people around the table, their biases, show in subtle ways. That gets in there. Then the common attitude which is such a big change from days gone by, in which they want obvious results and within relatively quick times.

DR. SISSMAN: Two to three...

DR. DANCIS: Three to five years, they want to see something. And research doesn't work that way. And on top of that, it modifies the type of research effort. People have to go after things that are likely to yield results, unless they're one of these big establishments with multiple grants, so if one fails another one carries it. But the individual investigators are at much greater risk. So those are built-in problems at NIH, but they're all dwarfed by the enormous success of the NIH effort overall.

DR. SISSMAN: Do you have any suggestions? I mean, if you were in a position to tell them how to change it?

DR. DANCIS: No, I don't. I watch with interest how Varmus wrestles with it. He's a tremendously capable fellow, more so than I could ever hope for in somebody with his background. He's very capable, and he's brought in the right people to help him make decisions. You must recognize that here is an institution that handles such enormous sums of money, and nobody's accused it of corruption or rottenness. If you talk of inefficiencies, uncertainties, of course, but you might think there could be lots worse going on. It's only somebody like [Representative John D.] Dingell who unsuccessfully has tried to find things wrong. But it's been above all those things, and that's for many years, and that's quite a record for a government group. It's a tremendous record.

DR. SISSMAN: And you're optimistic about the future?

**DR. DANCIS:** They'll survive. There are going to be changes. Yes, I am optimistic. There will be changes, I think that this government as we have it absorbs changes, and manages to keep an eye on the future. We, the American people in this country, believe in research. We believe in progress. We believe that we can do things, and we will support it. Now, how well...

**DR. SISSMAN:** There are forces working against that.

**DR. DANCIS:** In some way, yes. It's going to be modified because this grandness that started with the NIH has disappeared. The grandness, the feeling that we could accomplish everything, do everything. The Lyndon Johnson syndrome, you could do it all. That's disappeared. And people are looking for boundaries and confines now, and research is inevitably going to be, has been and will be, subject to that type of scrutiny. How much can we afford, and in what way? I won't predict that now it's going to be changed.

**DR. SISSMAN:** So you think the future of pediatrics is a bright one.

**DR. DANCIS:** Oh, yes. The commitment to children is real. It is distorted terribly by the political system, but as far as the people, again, the American people, the commitment is real. We're a child-oriented society. And in the long run, that will show. The current distortions are very painful. There's an awful lot of talk, the year of the child and so on, but it's not yielded really tangible results. But yes, I'm optimistic about the future.

**DR. SISSMAN:** Was there much industry support of research, say when you were chairman?

**DR. DANCIS:** No. That has grown up recently. It was highly suspect in the early days of research. Well, if you go way back, organizations like Mead Johnson supported Holt for many years, as he developed formulas and did his studies. My first grant came from Burroughs-Wellcome, so industry in research has always been present. Its prominence faded rapidly with the NIH. It was one of the major sources at one time other than philanthropy. Then its prominence faded. It's begun to come back now that NIH limitations become obvious and as business has become interested in medicine. Can it be controlled? It can be a good thing. Well, we have examples in which it's worked very well. And I hope that will be the model. Can it hamper progress? No question about it, with its limitation on dispensation of information, the patenting of things that should be public domain. These are limitations that I hope can be minimized.

**DR. SISSMAN:** I heard on the radio the other day about a researcher. Not a

medical researcher, but a chemical researcher at the University of South Florida, who thought he wasn't getting his due recognition. It wasn't really about money, so he took his notebooks and walked out with his idea, and some company that had been supporting the research pursued him. He's now in jail because he won't give his notebooks up. It's kind of an upsetting story, but it's used as an illustration of what industry, what power they can wield sometimes.

**DR. DANCIS: Yes.**

DR. SISSMAN: Well, anything else you want to cover?

**DR. DANCIS: Well, I don't think of anything. We've covered quite a bit of territory.**

DR. SISSMAN: About your current status, I notice you still go to morning report, did you say, on a regular basis?

**DR. DANCIS: Yes, I do. It's been part of my life too long to shed it completely. But it's different, time has moved on, I'm no longer actively involved in research.**

DR. SISSMAN: Your laboratory continues?

**DR. DANCIS: It does not. I closed my laboratory, oh, I think it must be over a year, maybe two years by now. And the last paper, research paper, is in press now, so that aspect of my career is pretty well closed. I enjoy talking to investigators. I still have my office up, surrounded by them. I like seeing cases, I like thinking about them; I like reading about them. But active participation in research, it's been a long time, Norman, that NIH supported me. I think it's time.**

DR. SISSMAN: But I mean, you said you still...

**DR. DANCIS: I'm still active...**

DR. SISSMAN: ...participate in some clinical things.

**DR. DANCIS: Oh, yes. I enjoy the house staff; they're fun. And they're very good to me.**

DR. SISSMAN: They're good to you?

**DR. DANCIS: I think so.**

DR. SISSMAN: What do you mean?

**DR. DANCIS:** Well, I guess figuratively speaking they would get up and give me their seat, that type of thing. And they listen to me. And they want to know what I think about things, and what my experience has been. That's what I mean by being good to me. And I enjoy that.

**DR. SISSMAN:** You do the morning report on a daily basis?

**DR. DANCIS:** I spend three mornings, and I don't do it alone. There are other attendings there. I participate. And there are things that touch my experience very closely, I can actually help them, thinking, and it covers a wide range. You know, after all, I have been around for a long time. And so I listen, they teach me an awful lot. Things have moved quite considerably since I had dropped out of clinical work for many years, and reentering it, there have been changes, but the basics remain the same, as you know. And so that's been fun.

Parks has been very supportive, that's the chairman now. He would like me to continue. The residents, as I say, are very good to me. They like to see me there; they'd like me to continue. For a coming retreat about the curriculum, they've asked me if I'd participate with them. I will; I would like to hear what is going on. And whether this leads to more participation or not, I don't know. But in the meantime, it provides an essential structure and living, which I enjoy, without its being too burdensome.

**DR. SISSMAN:** So you spend about a half a day every day?

**DR. DANCIS:** Oh, a better part of the day.

**DR. SISSMAN:** Are there any extra medical projects you're into?

**DR. DANCIS:** Well, I talked to you a little about the placental work, and where it's going. And then I participated in a workshop at Banff, this past September. And I found it very exciting. It alluded to work that I had done, and that I was very familiar with and I felt that I could participate actively and did. Now how long that will continue I don't know.

**DR. SISSMAN:** It still turns you on, as it were.

**DR. DANCIS:** Oh, God, yes. Yes. And there are people that I've worked with, again, at Banff, like I say they're very kind to me. The same was true at Banff. I sit at breakfast with the young investigators, and it was the same story. You know, glad to see me, hope I'll come back again, they need me. God knows why, but that's what they tell me. It makes you feel good. I enjoyed it.

**DR. SISSMAN:** Out of curiosity, are you, have you become computer

literate?

**DR. DANCIS:** No.

DR. SISSMAN: And enthusiastic or not?

**DR. DANCIS:** No, I have not. I use the computer in literature search, which is the basic elementary use.

DR. SISSMAN: You can't go to the library without doing that.

**DR. DANCIS:** That's right, you can't do that. But beyond that I don't use it. No, it doesn't suit my needs, it doesn't suit my way of thinking at all, so I don't.

DR. SISSMAN: Do you have a reaction to all the diagnostic programs that are being developed in computers, to use as a clinical approach?

**DR. DANCIS:** This is an interesting change, I'm glad you brought it up now. Because it's a change in the practice of medicine, it's almost a...

#### **END OF TAPE TWO, SIDE TWO**

DR. SISSMAN: This is the first side of tape three of my discussion with Dr. Joseph Dancis. We're talking about the practice of pediatrics.

**DR. DANCIS:** Yes. It takes you many different directions, and I'll try to keep the thread. How you practice medicine was largely dictated by your training. And who were the trainers, who were your mentors. They were, in quotes, "experienced doctors." Experience was the key note. They had seen so many cases. If they were surgeons, they had done so many operations. Or they had a practice that was this large and they saw so many children.

DR. SISSMAN: Let me make sure this is recording.

DR. SISSMAN: Practice was influenced by who trained you.

**DR. DANCIS:** And by his so-called experience, as he remembered it. Now whether the experience was good or bad was not part of the equation. It was experience. It was assumed you knew more if you saw more or did more.

Now it was the period of the very beginning of the controlled study. There weren't controlled studies before, and controlled studies of course shook up this idea of experience and knowledge, because so many things that people

knew didn't stand up. And it started a trend, which is continuing now, in different forms. The house staff now is exposed to many sessions on evidence-based medicine, I think it's called. And evidence-based medicine is another term, or euphemism, for something that's been subjected to a controlled study.

Well clearly it's a better substitute for what is called experience. It's got its problems, because evidence-based studies are always based on that particular study in that particular setting by that particular person, and it's frequently not easily translatable to this particular patient. But in pushing aside what you might have called judgment, judgment based on experience, it has replaced it with something that is so powerful and so accepted that it has become even dangerous to run counter to it. Legally dangerous to run counter to it. So it set up a rigidity in medicine that didn't exist before. Now I'm talking in absolutes. None of these are absolute, but you get the drift. Now this...

DR. SISSMAN: You're concerned about that?

DR. DANCIS: Yes, I am. I'm concerned about it. First, I acknowledge the benefit. The benefit is that it replaces loosely defined experiences without judgment with something that is more likely to be accurate and objective. That's a benefit. Irreplaceable. Absolute need in the current scene. When you approach the patient, it can too often dictate treatment when it has to be modified because of a particular circumstance. Now this is an old problem, it goes back really to the mid-19<sup>th</sup> century, it's been discussed that long. In the mid-19<sup>th</sup> century, there was a physician who first advanced, happened to be a Russian émigré, and I don't remember his name. He first advanced the idea that accumulating numbers in order to define practice was the way to do it. It was met with...

DR. SISSMAN: The statistical approach.

DR. DANCIS: Yes. It was met with huge resistance by doctors who said every patient is an individual. I don't care what your 90 did, I'm treating this patient and I will judge this patient on its merits. [Sir William] Osler acknowledged this in one of his many addresses, acknowledged a debt to this Russian émigré, because he saw the obvious merit in that. So why am I questioning it? I'm questioning it in the particulars. As you know, dealing with children, there are so many imposing factors that affect what should be done with a particular child. You should not ignore what has happened in a controlled series, but you should have the privilege of adapting it to this particular patient, you see. And that I think is disappearing, and it's being pushed now by computers and by HMO's, where they're dictating that this is the proper procedure for the care of this patient. Which introduces a sort of a codification or

**rigidity in the practice of medicine, which is undesirable.**

**So what am I saying? I say there's a drift away from a type of medicine that was really not very good. It was colored so much by personal experience, personal preference, and it's often limited to the last case that they saw, if that was good or that was bad. That was bad. It's being replaced, but it's being replaced in an often too rigid way. We all know that any study that's done is limited by the fact that it is a study, and all of the factors that go into the study confine the nature of the results. And it requires an intelligent application to the patient at hand. Not an elimination of that study which is absolutely essential, but the opportunity to apply it in a more flexible way. And I think [that] will happen.**

**DR. SISSMAN:** Will happen.

**DR. DANCIS:** I think that flexibility will be lost as managed care ...

**DR. SISSMAN:** Especially the economics that dictate conformity also.

**DR. DANCIS:** Managed care becomes, "This is the way you do it, there's a protocol. You do it this way. If you don't do it this way, it's at your risk before the courts. It's at your risk with the managed care group." That's unfortunate.

**DR. SISSMAN:** The residents are being brought up in that system?

**DR. DANCIS:** They are, and again it's an interesting thing. In morning report, they'll often turn to me for my experience, what have you seen or done. And I'm very much aware of the limitations of experience, even though I've spent all my life around these hospitals. How many of these rare cases do you see and how clearly do you remember them all and what pertinence does it have? Whereas somebody at the head of the table with a computer, it's right, taps in and he says well there's been a series of x numbers, and this is their results. But those x numbers carry a dogma with it, which I find often is hampering proper care of the child. And so...

**DR. SISSMAN:** This is applied in office practice as well as in the hospital.

**DR. DANCIS:** So I understand. I don't practice in an office, but I think a good practitioner would have a computer availability of the literature for those cases that he has problems with. That would be of enormous help. But you can see the point that I'm making. And it also tends to perpetuate itself, you know, that if this is the way it's done, how can we try other things? You know, because you're at risk if you do anything else. So it's not a pure benefit, and it's again part of this drift away from an individualized approach.



DR. SISSMAN: Do you express that sometimes to the residents?

**DR. DANCIS: This house staff? Oh yes.**

DR. SISSMAN: What's their reaction?

**DR. DANCIS: Oh, they listen. They listen. It doesn't take much questioning of any particular study to recognize the limitations of the information. And, of course, the fact that there are so many studies on the same subject that yield different types of information makes it clear that this is not the absolute. And it's important that the house staff recognize that because it's so easy, as we mentioned before. They like sharp clear answers--yes or no--they like it. Only people don't work that way.**

DR. SISSMAN: I can think of an example, which is how that applies to very premature babies and what to do with them. There are many controversies about that and what the outcome is. Is that a reasonable example of that?

**DR. DANCIS: Well, there are so many soft edges there. The premature infant is a big problem. Pediatrics is a very special specialty, I don't have to tell you about that. And a lot of our conversation in morning report ends up with a discussion of the family, discussion of the siblings, discussion of the family situation. And that's very good. We had a child, this was just yesterday at morning report, a child that was sent in to urology from somewhere abroad, because it has hydronephrosis, and the child is severely retarded.**

DR. SISSMAN: From abroad?

**DR. DANCIS: Yes, we have some programs like that, where we provide surgical assistance for countries that don't have it available. And it came to urology to remove a kidney, but as is the usual custom in our hospital, this is a pediatric patient, and pediatricians are automatically in charge of the child. And so in the discussion, the kidney part took very little discussion altogether. That's obvious, there it is, that's his problem, what to do about it. And then we got into a big discussion as to what was going on with this baby. And at the very end I asked a question to the house staff. "Well, this is all very interesting, but remember we're here to help the mother and the child. Now, what are we going to do for those two; what are you going to tell them? How are you going to help them? That's our job." And it changes it, but that's pediatrics, and it doesn't exist as much in our discussions now.**

DR. SISSMAN: Can I take just one other tack?

**DR. DANCIS:** Sure.

DR. SISSMAN: Has your wife's career been involved with children?

**DR. DANCIS:** Yes, my daughter as well.

DR. SISSMAN: Your wife was a principal in a high school?

**DR. DANCIS:** My wife taught for many years, ended her career as a principal. My daughter is a teacher.

DR. SISSMAN: In public schools?

**DR. DANCIS:** Public schools, New York City. My daughter is now a teacher in a public school. They both love their work; they both are very good at it. And yes, it's pretty much of a child-oriented household.

DR. SISSMAN: Did she have an influence on your work? Any... how shall I put that; that's not the right way to put it. I mean, was her interest, did that affect your approach to things in some ways, or a few ways?

**DR. DANCIS:** It would be hard to say. We're very close obviously, and talking about our problems during the day was a common evening event. So I knew about her problems, and we discussed it. Did I influence her? She has enormous innate abilities, and I don't know how much I brought to that except to listen and to comment. In the same way she knew what I was doing. Generally where so much of your work has to do with dealing with people, it was a great help to talk to her. Science, no, just that she was interested. Usual husband-wife relation. The usual husband wife relation.

DR. SISSMAN: Your daughter is in New York still?

**DR. DANCIS:** My daughter is in New York, she's teaching at a school in Queens, and she loves it. She's one of those teachers who really loves her work. And she's very good.

DR. SISSMAN: Despite the difficulties...

**DR. DANCIS:** Despite everything. And she's had some of those, and she continues to like it. She's been doing it now for about 15 years and still thinks it's great. There's a bit of the child in her and it helps.

DR. SISSMAN: Do you think the life of disadvantaged children in New York is better than it used to be? Or, how should I put that?

**DR. DANCIS:** It's a good question, and in my other life, where I interviewed people, I'm interviewing Donna O'Hare, who has spent her career working with disadvantaged children in this city. And she feels that New York has done better than most communities.

**DR. SISSMAN:** Really, despite its reputation?

**DR. DANCIS:** In spite of its reputation. It's been in the forefront of developing opportunities for them, support for them, and she makes a good case for it, and that it continues to do so, again, in spite of everything. Newspapers always stress the negatives. And in spite of all that, we continue to help them quite considerably.

We had our C and Y project, Children and Youth project, here. We were one of the, if not the first, in the city. It was the year after Saul Krugman became chairman. He became chairman in 1960, I think. And one of the first things we did, we were camp doctors together, we were very close friends. We spent that summer writing up a research grant for the C and Y Project, Children and Youth Project. Which was funded. And...

**DR. SISSMAN:** By?

**DR. DANCIS:** That was funded by the federal government, the Children's Bureau. And it revolutionized outpatient care here at Bellevue. Because for the first time, attempts were made to broaden the services, to get away from what we call crisis care. The child has a cold, you treat the cold, that sort of thing. All sorts of specially capable faculty descended on the clinic, were employed by the clinic. They were employed by the C and Y project, and the caliber of care became excellent. Superb.

**DR. SISSMAN:** You mean preventive?

**DR. DANCIS:** Preventive care as well.

**DR. SISSMAN:** And also social services.

**DR. DANCIS:** And also social services and it was all made possible through this grant. Now the history of that grant is the history of the social policies and politics of the government. Because the federal grant began to dwindle and the state took some up, and the city took up some, and only a few weeks ago I talked to Dr. [Benard P.] Dreyer, who's in charge of the OPD. Who's the last of the line. Saul Krugman was the first one. He's the last of the line, and...

**DR. SISSMAN:** Last of...

**DR. DANCIS:** He's the current head of the OPD. I said, "Well, how are we doing? It all sounds so terrible." He smiled, he said, "We got our money; it's all right." The state's been down, the state has always thought very highly of NYU and the Bellevue OPD, and they're still supporting us in spite of all of the problems.

DR. SISSMAN: What amounts are...

**DR. DANCIS:** I don't know what they are now. At the time that we started, it was 2 million dollars which was an awful lot of money in those days.

DR. SISSMAN: Annually?

**DR. DANCIS:** Yeah. At the time we started, the grant was for that. And I don't know what it is now, I've again lost contact. But it's enough so that Dr. Dreyer can smile comfortably, and he's still continuing with his work. There are doctors who are assigned to patients; they get awfully good care there, and of course they get the technical aspects of care that you don't get in the private practice. All the specialties are so easily available. So that, yes, I think New York City, in spite of its reputation, has and still is at the forefront of this, and I hope it can stay that way. Again, we're entering big changes, but so far we're holding on.

DR. SISSMAN: Is the outpatient department limited geographically? Do you have a catchment area, or can anybody come?

**DR. DANCIS:** No. Both. We have a catchment area and they come from all over. It has a reputation. People will come from elsewhere with their problems.

DR. SISSMAN: Well, I think we've wound down. Is there anything else you want to...?

**DR. DANCIS:** I admire your stamina, Norman, this is [laughs].

DR. SISSMAN: I admire yours. I've really enjoyed it and I think it's been a good discussion. Anything else, any parting words?

**DR. DANCIS:** Thank you. [laughs]

DR. SISSMAN: Well, thank you.

**PAUSE IN TAPE**

DR. SISSMAN: This is the third interview with Dr. Dancis. It's taking

place on November 1<sup>st</sup>, 1996, and this time we're sitting in the dining area of Dr. Dancis' apartment, which is on the corner of 34<sup>th</sup> Street and 2<sup>nd</sup> Avenue in Manhattan. So good morning. You requested more time, more airtime, so I'm very pleased to do that.

**DR. DANCIS:** Yes, this is at my request, and yet I'm uncertain as to what is a useful recapitulation of one person's experience. But let me start. I entered medicine, I finished, I graduated medical school, in '38. And started my internship at Queens General Hospital, that was the newest hospital in the municipal system. A very favorite place, beautiful area, spanking new hospital. And this morning I began to think about what medicine was like in this municipal hospital in 1938, before the war. For one thing, it was the custom then to have a rotating internship, two years.

**DR. SISSMAN:** Let me just check...OK, sorry.

**DR. DANCIS:** In the rotating internship, we took our periods in all of the major fields: surgery, medicine, and the sub-specialties. It was useful; it's fallen out of practice now. But it certainly did give you a feeling for the broad field of medicine. Then you entered specialization, and pediatrics was usually an additional two years. In thinking about what it was like then, there were attendings. All of the attendings were in practice. There were no full time attendings. The house staff really ran the hospital, rarely thought of calling an attending for advice. The point was we taught each other, and we learned from experience. Because the missing feature of experience is to differentiate good from bad experience, you learn by doing. Well, there's a fallacy in that, but that's what it was.

Well, for reasons that I'm not sure, as I told you Norman, I began to think about one of the practices during those years, mind you, before the war. And that had to do with hematology, transfusions, erythroblastosis fetalis, now called hemolytic anemia of the newborn. Transfusions in those days were, from our viewpoint, really primitive. We had one of the first blood banks in the city that had been established, and what was done is that you ordered blood from the blood bank, and then it was up to the intern to type and cross match. And we used the four major types, sub-types were not used, most were not known. And so the blood arrived, it was cold, we warmed it up. You had a flask that you took out of what was a sterile packet, hung it up, poured the blood, open, through gauze to filter out any clots that might have accumulated. Filled the flask that way and started the transfusion. Well, not surprisingly, it was assumed that most patients would be a little yellow the next day. Hemolysis and fever were very common occurrences. That was the level of transfusions.

Erythroblastosis, flowing directly from that thinking, had just appeared on the scene. To somebody like myself, an intern, it was rather weird. I

couldn't imagine what Rhesus monkeys had to do with antibodies in the human. That was the Rh factor. I had a patient, newborn patient, that I thought was a patient with erythroblastosis fetalis. Remember, these were not serological diagnoses. It was a clinical diagnosis. Well, I had inquired around, I drew some blood, and I found there was somebody named Peter Vogel at Mount Sinai who was interested, and so I took a sample and went up to see Vogel, and Vogel was delighted to see me because he was collecting these bloods. They were still working on the serology, and that was my introduction to this new entity. To follow that phase through because of its interest, it really would be better told by a hematologist. But I'll tell it to you as an interested pediatrician who lived through that period.

BRIEF PAUSE IN TAPE

**DR. DANCIS:** Regarding transfusions, this was an Army priority. In 1946, as an intern in the infants' ward, I had just listened to Harry Bakwin, the pediatrician that I've mentioned in our previous conversations, describe to me the clinical appearance of kernicterus. The athetoid movements, and so on. And not long after that, I admitted a patient about a year of age onto G8, and it looked like kernicterus to me. Well by this time there had been major advances. Alex Weiner, a brilliant hematologist, worked in Brooklyn but spent a lot of time up here.

**DR. SISSMAN:** At NYU.

**DR. DANCIS:** At NYU, and he made major contributions in this field of iso-immunization. He had worked at Rockefeller [Institute for Medical Research] with one of the pioneers whose name I can't give you right now. But he was here. And so confirming the diagnosis of kernicterus or of the setup for iso-immunization was not difficult. During the physical examination, I looked up and looked at the mother standing next to the examining table, and lo and behold, she was pregnant. Her name was Rosario. So I sat and talked with her at some length, and told her please, to come back and see me at the time of delivery.

Well surprisingly, she did just that. She returned, was delivered at Bellevue, and the diagnosis now was made very quickly. And I called Weiner, who could not come, but he sent his colleague, again, the name I've forgotten, a younger colleague who came from Brooklyn Jewish [Hospital], at the time. And the first exchange transfusion that was done, well certainly at Bellevue, the first exchange transfusion was done there. It was done right in the treatment room. I was floating around trying to be helpful, and it was done with Weiner's technique. You cut the radial artery and let the blood drip into a flask, at the same time infusing new blood into the vein. The idea, of course, being to withdraw the blood that had been sensitized and replace it with new blood.

Well, the procedure went reasonably smoothly, given the assistance that this gentleman had, and the still primitive materials we worked with. But the baby did very well. Well, to jump ahead, just to sort of complete the story, the next step of course had to do with the development of Rhogam which was done right up here at Columbia by another friend who was an obstetrician. He was the one who did the study in prisoners, which is abhorrent today, but somehow has escaped examination and showed that Rhogam would be effective. But to cap it off Lou [Louis] Diamond came to talk to us at our invitation, not long after. Lou Diamond is the very well known hematologist (worked at Boston), who first introduced exchange transfusions.

DR. SISSMAN: That was before you did your case?

DR. DANCIS: No, that was after. This was sort of, rounding out this story, because he talked about the privilege he had had of seeing the recognition of the disease and the solution all within his professional lifetime. It's a wonderful story.

DR. SISSMAN: Did you write up the first case?

DR. DANCIS: No. Well, I may have; we used to keep what was called medical notes. This was short of publication. Holt brought this practice with him from Hopkins. And I used to keep them for him after I became a member of the faculty. It was a nice thing to do. It gave house staff an opportunity to write. It was sort of a history of the department. It's like...

DR. SISSMAN: Those were published?

DR. DANCIS: No.

DR. SISSMAN: They were printed, or, in a notebook?

DR. DANCIS: They were kept on Holt's shelf, and after Holt they were on my shelf, and then I gave them to Wade Parks, and I don't know where they are anymore. They go way back.

DR. SISSMAN: They were mostly case histories?

DR. DANCIS: Well, there was a mixture of things. Remember Holt had a consuming curiosity and breadth of interest. And he would call people and then write down what he learned over the telephone. I'll give you an example of that. Give you some of the excitement of working at Bellevue. Now, we moved to Bellevue. I was talking with Holt, and we're talking about the premature infant again. I'm supposed to avoid the

subject, but let me tell you as an example of how the notes originated. Somehow or other we got on to the question of marsupials, and what you might learn about the practices of feeding marsupials. What was the breast milk of the possum like? This was the sort of conversation we had. There I was, sitting with Holt in his office, and he turned around, picked up the phone, called the Bronx Zoo, got the man in charge of the marsupial house and had a discussion about marsupial feeding, all of which appeared in the medical notes. But let's get back to...

DR. SISSMAN: Before you do that, I'm just curious, these were notebooks that he kept?

DR. DANCIS: Yes.

DR. SISSMAN: Typewritten notes, or handwritten?

DR. DANCIS: Typewritten notes. Yes, they were typewritten notes.

DR. SISSMAN: Gee, that would be a gold mine of information. You don't know where they are?

DR. DANCIS: Oh, it was a fun thing. I liked it and when Holt sort of lapsed in keeping it up, I offered to keep it up, I was at that time a young faculty member. I was still a resident, I was chief resident, and I would assign these things to the house staff. And they took it very seriously, worked hard and wrote good notes. It's, I think, good training for them.

DR. SISSMAN: Did they get very voluminous? I mean, how, it must have had...

DR. DANCIS: No, not really, because after my time, it lapsed almost completely.

DR. SISSMAN: And you had given them to Dr. Parks? The old ones?

DR. DANCIS: Yes, I gave all of them to him. They're gone. There are a lot of interesting, fun things in there. Yes.

Let's jump to Bellevue, this is postwar. Again, in thinking of what might be useful to history, I thought of reviewing what the patient population was like at Bellevue when I arrived just immediately after the war, '45, '46. And for that, let's take a walk through the pediatric department at the time. It was housed in an old building, as you might imagine, the F-G building, which was built in the mid-'20s. It was built according to plans that were about 10 or 12 years old. Customary in this city as you know. And so it was old when it was built.



The top floor housed the infant ward, up to two years of age, on one side. On the other side was what we called the boarders. Those were infants for which we could not find a place. Some of them were normal infants. It was one of the scandals of the time. The city was so slow in finding a place for children that had been abandoned, and they would stay there for unfortunately lengthy periods of time. Some of them were the terrible accidents of birth and infection, hydrocephalics that were grotesque and such. The infant ward was mostly an open ward, with little glass partitions and a couple of small rooms where we put the more seriously ill or infected kids. And the census would vary anywhere from, I think the proper census would have been about 20. But come the seasonal outbreaks of diarrhea or respiratory infection, when no patients were rejected at that time, there was no such thing as being filled. The entire ward would be filled so that you had to sort of pick your way carefully through from bassinet to bassinet and sometimes spill out even into the hallway.

The next floor was the chronic floor. On one side was rheumatic fever. Now rheumatic fever was treated then by bed rest. The rheumatic fever ward was filled with patients with chorea, mostly with what was considered active recurrent rheumatic fever. Congenital heart disease was not of interest because nobody knew what to do with them. They became more interesting about that time because one of Helen Taussig's pupils, Janet Baldwin, came up very much anxious to diagnose congenital heart disease, and so there was some curious interest as to what was the lesion, and that's about it. Choreia: at that time treatment of chorea was either nothing or sedation, but there was sort of a carry-over of years gone by when a previous doctor, Lucy Sutton, would treat chorea with hyperthermia to abbreviate the course of the disease. Do you remember that, Norman?

DR. SISSMAN: Vaguely, yes. Hyperthermia was used for a lot of things.

DR. DANCIS: Oh yes, it was induced many different ways. One was the so-called Kettering Hypertherm, which was a box and you just heated the box and the patient up. That was fairly well controlled. The other was to inject typhoid vaccine. And I did that once with a patient and watched the temperature go up, put blankets on, took them off. But that was quickly disappearing as rheumatic fever itself began to disappear as you know.

The other major event was sub-acute bacterial endocarditis. And there was a great flurry of excitement in those years because penicillin had just been released by the Army, and we had our first cure of sub-acute bacterial endocarditis. And it hit that new box called television. Janet Baldwin appeared on it with a tray filled with I don't know how many vials, a hundred, hundred fifty vials of penicillin with which she had cured this

**child. Great excitement.**

**Then as you went down, you found the older children on the 6<sup>th</sup> floor, and then on the 4<sup>th</sup> floor we had the TB (tuberculosis) wards. There were three of them. One was for infants, one was for infants up to adolescents, and then an adolescent balcony. And these wards were filled. Again the infant ward was a pitiful ward. Of course they were only admitted when they were sick, and too often it was either miliary or meningitis. And we stood by rather helplessly. The children were there for weeks and months, longer. There was a school associated, where they went to school there, developed their own society. But it was a hospital.**

**DR. SISSMAN:** And the treatment in the '40s--was streptomycin around yet?

**DR. DANCIS:** The first case of miliary TB that was cured was, had just happened, and it was cured with promazole. Streptomycin hadn't appeared yet. And this was a chubby black girl when I met her. She had just been cured of miliary. She was the proud object of our attention, and a great deal of excitement. And then streptomycin appeared, and we began to get aggressive about treating patients. And the devoted TB staff was set for this.

**There were a group of mostly ladies who were deeply involved. Edith Lincoln was the chief. In charting the natural history of TB, she had a big project following these children for years until their adulthood, and there was a great deal of humanity, humaneness in the way they approached the family and these children which made them devoted subjects. It was quite unusual. That was the TB ward.**

**And this is what we had. Remember there were 12 interns covering this enormous area. But an awful lot of the patients were inhabitants rather than sort of patients. There was nothing acute going on so it could be handled.**

**DR. SISSMAN:** Did you have a separate polio...

**DR. DANCIS:** I forgot, I was trying to remember what was on the 5<sup>th</sup> floor, and of course that was contagion. F-5 was the contagious unit. Saul Krugman and Bob Ward held forth there. And that too changed complexion rapidly. The old Drinker apparatus was relegated to the basement and the new era started. That was on the 5<sup>th</sup> floor. Then there were the seasonal outbreaks of diarrhea in the summertime, spring and summer, and the treatment again was just evolving. A lot of them were treated by what was called clysis, a hypodermic clysis. It's hard to imagine now what was done. I think you probably remember this Norman: you

**flipped the infant over on its abdomen and took a 50 cc syringe and filled it with saline, and just injected subcutaneously until there were enormous blebs. Or else you ran it into the side of the thighs as an infusion. The techniques for following carefully the electrolytes were just evolving. And so it was all very rough. Very inexpert.**

**The whole story of the development of electrolyte treatment I would say got its energetic push about that time. That's when Allan [M.] Butler was up at Harvard, and Dan [Daniel Cady] Darrow was at Yale. And Holt was here. And [Alexis F.] Hartmann was in St. Louis. And there were solutions after each one of those. There was the Hartmann solution, the Darrow solution, the Butler solution. They all had basic similarities but favored different ideas that these various authors had. Darrow was the only one that was revolutionary, different, by introducing potassium. That's a story about electrolyte therapy. They were all very interesting people.**

**Let me take off from there. I'm wandering, but I hope it makes some sense to you. Accreditation. I told you I was older than others because of the war, and so as Chief Resident I found to my surprise that I was qualified for my pediatric boards, which is quite unusual, and I decided to take them.**

**DR. SISSMAN:** That was in the late '40s?

**DR. DANCIS:** This was in mid-'40s, about '46 or '47 I guess. Let me tell you what they were like then, because you all know what it's like now. First an essay exam was given, four questions. I don't remember what the questions were, I just remember how easy they were. And you wrote the usual blue pamphlet, what you thought about it. You took minutes to finish the whole thing. But then there was an oral exam. For the oral exam I traveled to Boston, and there, some of the names that I had known from the literature were scattered around in different rooms, and you went in to talk to them.

#### **END OF TAPE THREE SIDE ONE**

**DR. SISSMAN:** Side two of tape number three and, unfortunately, neither Dr. Dancis nor I were aware that the tape stopped for awhile. We were talking about taking the boards and how different it was then. So why don't we go on with what you were doing now.

**DR. DANCIS:** Just skip that. OK. We started to talk just now about Dr. Holt's concern after the war about the state of world pediatrics. And he decided it was time to reinstate the International Pediatric Association, the IPA. Many thought it was too soon, that it should not be done so soon, it should take years. But Dr. Holt was very dogged, as I've told you. He

decided, and he set about accomplishing it. And he called on Charlie [Charles C.] Chapple. Chapple is the man who designed the isolette. He came up from Philadelphia, and really set up base here with Holt. And it was a very complex, difficult thing, under the best of circumstances, to run an international conference. Money had to be raised. Holt was determined to bring people from Europe, all of whom were quite broke, to bring them here to see what pediatrics was like.

The conference was to take place at the Waldorf. Again, Holt didn't think small. It did take place at the Waldorf. And people began to flock in from all over. And they all came to Bellevue. In fact any number of them stayed with Dr. Holt, because they had no other place to stay. It was that sort of thing.

It was a great deal of excitement to us, to see these, some of them famous names, like [G.] Fanconi came. Fanconi was a great deal of fun, tall, rather ungainly man. But a giant in Swiss pediatrics. And [S.] Von Creveld came, from Holland. I liked Von Creveld very much. The bitterness in his life was that he first described glycogen storage disease in a Dutch journal, nobody paid it any attention, but Von Gierke described it in an established journal, and so it became known as Von Gierke's disease. But he was a very bright and capable fellow, feeling the wounds of Germany deeply. But what had happened during the course of this war is that the States had become the center of pediatrics. It became quite clear, they were all coming here to learn what we knew. And they sent their students here. Fanconi sent [Andre] Prader, who followed him as the chief in Zurich. And Prader worked here as an intern.

DR. SISSMAN: He came as an intern.

DR. DANCIS: Yes.

DR. SISSMAN: After this conference? I mean, that was the stimulus?

DR. DANCIS: Yes. After this. And he became the dominant figure in Switzerland after Fanconi; he just retired not too many years ago. And, I'll tell you a funny story about Andre. He was visiting once, and I met him for lunch, I think it was, at NYU. And as I came in he said, (he had a heavy Swiss accent but spoke fluent English) "Joe, do you know what I had for breakfast today?" "No, Andre, what did you have for breakfast?" "I had pancakes." "Oh." "Do you know why I had pancakes?" "No." "I had to have it with maple syrup. We don't have maple syrup in Europe, and I had to know what maple syrup urine disease was like." [laughs]

DR. SISSMAN: [laughs]

**DR. DANCIS:** Ferrier came. Ferrier also became the Chairman in Switzerland, at Geneva. So there was a flux of things and it was initiated by this Congress, which Holt...

DR. SISSMAN: Where did he get the money for that? You said it was...

**DR. DANCIS:** He tapped every source that he could.

DR. SISSMAN: Mostly private?

**DR. DANCIS:** Oh yes.

DR. SISSMAN: Were there many foundations then?

**DR. DANCIS:** There were foundations and there were individuals and there were pharmaceutical houses. And he went after every one of them. I don't know where he found it all, but he probably went into debt as well. But he made it happen. See, that was the Congress, and the excitement that came with that.

But maybe just a few words, you remember I went into practice after I finished my residency. And what was practice like, this was in '48. I practiced from '48 to about '52 or '53. I practiced in Queens. Practice at that time, in this area, was not very much different in terms of the types of patients than it is today. Most of them were quite well. They came from middle class families. The really sick child was the unusual child. But the care that they got was quite different. You spent, as a practitioner, depending on how busy you were, you assume that you would spend about half your time in the office, and half the time making house calls. And the house calls would go on until late evening. That was the nature of the day. And the house calls were made regardless of weather or problems. I can remember the skills of going through snow during the winter, to go to make your house calls. Having chains on a car, knowing how to handle the snow, it was all part of it. That disappeared very quickly.

DR. SISSMAN: I'm curious, house calls were for people who didn't want to come out? Or they were, the children were too sick?

**DR. DANCIS:** The definition of "too sick" was quite different. If they had a fever, coughing, how could you bring them out in the cold to an office? There was a reluctance to expose the children in the office to a potential contagious disease. The attitudes were different. And so we went out on house calls for patients that you would not consider very sick at all. But it provided an interesting opportunity to see the family at home.

DR. SISSMAN: Did you do any lab work on house calls?

**DR. DANCIS:** No.

DR. SISSMAN: Such a thing as a CBC [complete blood count]?

**DR. DANCIS:** No.

DR. SISSMAN: Throat culture?

**DR. DANCIS:** No. None. You looked, you saw, you felt, but you did very little else. One case I got concerned about, to do a throat culture. And I couldn't imagine how you'd do it in the home. I had the lab come out and take a swab. It was so difficult I never repeated it. You treated them clinically.

DR. SISSMAN: Were there antibiotics? That was '48, you said?

**DR. DANCIS:** '48. They were there, but just becoming available. Just becoming freely available and used more freely. So that was the nature of practice then. It's changed, of course.

DR. SISSMAN: And your practice was mostly middle class?

**DR. DANCIS:** Mostly middle class. I practiced in Fresh Meadows, which was one of the new communities set up by an insurance company. I lived there, I had my office there. My wife taught school in that area. So the two of us were very prominent individuals in this community. And it was a wonderful feeling, I must tell you. It was a little like a small town in a big city. That's what I gave up when I came back to Bellevue.

DR. SISSMAN: Not because you didn't like it, but you'd rather...

**DR. DANCIS:** It was impossible to do both. It was impossible. I had a rather vivid experience. I would go into Bellevue regularly almost every morning. Meet the house staff; review the studies I was doing. I was very deeply involved. There were so many things I wanted to do, wanted to learn. I was involved in a number of studies that we eventually published. And at the same time my practice was growing, growing so fast, you know. I can remember once racing back late as usual, to my office, driving, trying to eat lunch in the car. And I recognized my hand was shaking. There was a little too much tension, and that's when I decided it was too much. That's when I went back to see Dr. Holt and asked whether I could return to full time. But it was a satisfying type of life.

DR. SISSMAN: Most people paid, did patients have insurance then to pay a doctor?

**DR. DANCIS:** No. No insurance, but the fees were low even correcting for inflation, office visit was \$4 or \$5, and a house call \$6. So the fees were trimmed pretty well, to be accommodated by the patient. Pediatricians did not become wealthy. They lived reasonably, and worked very, very hard. No, there was no insurance that covered it.

**DR. SISSMAN:** And your practice was mostly general pediatrics rather than referrals from other people?

**DR. DANCIS:** It was all general pediatrics. I can only remember being called in by another pediatrician a couple of times. And, a colleague wanted me to see a patient. One of them proved to be very interesting. But that's too much of a digression. Let's see, what else? I was going to mention an individual. Oh no, I tell you, I was going to talk to you a little bit about the practitioner scientist. We've talked about the physician scientist and the scientist. The practitioner scientist is virtually a dead breed now, certainly in pediatrics. No way. But there were vestiges of it when I started.

Now what was the practitioner scientist? There were many such. These were people who made their livings in practice, actually did, and yet had enough curiosity and extra energy to do good science of the times. Jack [M.] Lewis, I met at Bellevue. In fact he got me my first grant to study retrolental fibroplasia. Wonderful clinician, excellent doctor, who kept a small lab. He worked at Beth Israel and at NYU. Holt thought highly of him and gradually pulled him into our sphere. And he kept some rats up there. Studied vitamins, with Oscar Bodansky, who was at Beth Israel at the time. Jack Lewis' mentor was Alfred [Fabian] Hess, does the name mean anything anymore?

**DR. SISSMAN:** No.

**DR. DANCIS:** One of the giants of that time.

**DR. SISSMAN:** Hess.

**DR. DANCIS:** Oh, yes. Hess. Very famous practitioner in this city, famous in the '20s. And...

**DR. SISSMAN:** In pediatrics?

**DR. DANCIS:** Pediatrics. Working with vitamins. I'll give you a story that Jack Lewis told me about Hess. I'm disappointed that you don't know the name, names don't last. People don't last. Hess used to take the trolley car to go to work to his office and back home. And the...

DR. SISSMAN: In Manhattan.

**DR. DANCIS:** The conductor had a terrible cough. And Hess was sure he had TB. Now the custom at that time if you paid your fare and the conductor would wet his thumb and give you a coupon or a transfer. Hess kept taking the coupons home and staining them for TB. [laughs] And sure enough he found it.

DR. SISSMAN: Really. Incredible.

**DR. DANCIS:** But it's an idea.

DR. SISSMAN: And he told the person?

**DR. DANCIS:** I don't know what happened from there on. For me the crux of the story was this man had this driving curiosity and the urge to find the answers from it. And yet he earned his living. Oscar [M.] Schloss saw patients. Do you know the name Schloss?

DR. SISSMAN: No, I don't know that name either.

**DR. DANCIS:** Oh, dear, dear. Schloss was Chairman at Cornell, did a lot of work in immunology/allergy.

DR. SISSMAN: Before Levine?

**DR. DANCIS:** He was Chairman before Levine. He was invited to be Chairman in Boston. He went there for one year. The climate was so intolerant he left after a year.

DR. SISSMAN: You mean the weather? Or the...

**DR. DANCIS:** The professional climate was so intolerant. If you want to read more about that, it became a scandal. Clem [Clement A.] Smith wrote a book about Harvard [*The Children's Hospital of Boston*, Little, Brown, & Co., 1983]. Do you know the name Clem Smith?

DR. SISSMAN: Yeah, Clem Smith I know.

**DR. DANCIS:** Clem wrote a book about Harvard, he devotes a whole chapter to the Schloss affair. It was an awful thing, and again it had to do with anti-Semitism. And he returned to...

DR. SISSMAN: He was Chief at Children's there?



**DR. DANCIS:** Yes, he was invited to be Chief at Children's. And he, too, was a practitioner. What year? I have a little trouble placing it precisely. I didn't know Schloss, I just knew of him, and people who knew Schloss. But he, too, was a practitioner.

Sidney [Q.] Cohan, who was my close friend, to come down to my generation, already the last generation, was Jack Lewis' product. And he tells the story of making rounds with Jack Lewis and being puzzled because after rounds, he would say good-bye, Jack would say good-bye, and disappear upstairs. Once he said, "Where are you going?" And so he brought him upstairs and showed him his little lab with the mice or rats, where he was doing nutrition studies, and they were working on Vitamin A. And Sidney asked to help him, which he did. And the product of that was the first description of hypervitaminosis A.

Jack had been working on Vitamin A deficiency. Sidney as he tells me the story was walking down a flight of stairs, said, "Well what happens if you give them too much?" So he ran back upstairs and put some rats on excess Vitamin A, and as you know the whole story of hypervitaminosis A is still a very important story. And the role of Vitamin A in development, retinoic acid development. It's an ongoing major story. But there it was, Sidney was a very successful practitioner until he retired about eight or nine years ago. But he kept this interest in being scientific. He made other contributions too. They're all based on observation of patients, and reports of those observations. So that was the practitioner scientist which was of that time, which no longer exists. What else can I tell you about it.

I was going to tell you about Leonard [Worthington] Mayo and the Association for the Aid to Crippled Children [AACC]. The reason I'm telling you about it is because I think it was significant in a way, and it's lost in history I'm sure. Leonard Mayo was appointed the head of the Association for Aid to Crippled Children, AACC. He was a high school phys ed [physical education] teacher, but he had what it takes. He had imagination, understanding, knew how to deal with people, and he redirected this very small foundation which had an income of roughly I think it was \$2 million a year.

**DR. SISSMAN:** Mayer, is that his name?

**DR. DANCIS:** M-A-Y-O, Mayo.

**DR. SISSMAN:** Mayo, like the Mayo Clinic.

**DR. DANCIS:** He was very important to me. We...

**DR. SISSMAN:** When did he become...

**DR. DANCIS:** Well this would be in the '50s. Early '50s. The reason I can place it is because he picked me up, so to speak, when I was groping as to how to get anywhere. He directed me into the field of placenta, newborn physiology, development. Not a big field at the time. Now it is a major field, properly so. But not then. And he went about it very cleverly. He had a major conference at Cold Spring Harbor, which he supported and brought shining lights over from Europe, where there had been more interest than in this country. And then he had a smaller conference. He made sure that I attended both.

**DR. SISSMAN:** The conferences were on development?

**DR. DANCIS:** They were on, some of it was on placental function and physiology and development, yes.

**DR. SISSMAN:** And you had a grant from them?

**DR. DANCIS:** How did they help me financially, they did. I'll jump to the end because I...

**DR. SISSMAN:** Sorry to interrupt you.

**DR. DANCIS:** I can't remember details but it will show how an individual can affect both the field and individuals. He invited Johnny Lind over, I mentioned Johnny to you, and arranged for me to visit Sweden at their expense, to do some work there. At that time they were doing abortions, elective abortions, and at that time it was criminal here. And I went over there to do some studies on placental transfer, and placental function and liver function, all in abortions, and worked closely with Johnny. And that continued after that. Pediatrics in Sweden was quite different than pediatrics in this country.

This may be of some interest. When I was there, the Chair in Stockholm was open. That's the [Karolinska Institute]. And there were three who were being interviewed for the Chair. That was done in continental style. The three announced their candidacy. They are quizzed by a group. They give a series of formal lectures, and it goes on for months. It's a harrowing procedure, and everybody knows about it. Johnny was one of the candidates.

**DR. SISSMAN:** No secret applicants.

**DR. DANCIS:** No secret. In fact, Johnny once confessed to me, you know, that he was a magnet for Americans. People loved him--I did--and would go over to work with him. And he once told me I much prefer to

**work with Americans than with Swedes, because there it's so competitive, you can't trust anybody. With Americans it's easier.**

DR. SISSMAN: Those were the good old days in America, right?

**DR. DANCIS: [laughs] Yes. Well we're bigger. There are more opportunities. We didn't worry in the same way.**

DR. SISSMAN: So Lind made, became the Chief.

**DR. DANCIS: He made it, yes. Yes he did, after that, some years after that. But Mayo cultivated this association, you see. I know he was worried about me at one phase in my career. I had points as you know, of major crisis, which was not uncommon.**

DR. SISSMAN: Had what?

**DR. DANCIS: Major crisis. Financially, didn't know where I was going or what. And I can remember his having a meeting with Gordon [Watkins] Douglas, who was the Chairman of OB, and me, and someone else, up at a hotel to discuss my future. [laughs] Wasn't that something?**

DR. SISSMAN: What year was that?

**DR. DANCIS: I think it must have been the mid-'60s. And to make sure that I could continue to work. He had a real impact on this field with very little money, because of his vision and his innate abilities. And where he got them from, they were innate, I don't know. But, what has a high school phys ed teacher got to do with this? Remarkable man.**

DR. SISSMAN: So did they help you solve your crisis?

**DR. DANCIS: Oh, they did. Yes, by that time I was pretty well set. I didn't have to worry beyond that.**

DR. SISSMAN: That organization still exists, right? Has a different name.

**DR. DANCIS: It may. I don't know. Because after he retired, a well qualified individual was appointed who did not have what Leonard had, and it quickly slid into second place. And now I don't know what it does anymore. I don't. It's a little like the, again, in my experience, the Markle Foundation. John and Mary [R.] Markle Foundation. Do you know about that?**

DR. SISSMAN: Well, I know about it, but not much.

**DR. DANCIS:** I don't know what all this has to do with the history of pediatrics.

**DR. SISSMAN:** Well, they influenced research.

**DR. DANCIS:** It has to do with my history. It's my history. I was at that point again where nobody knew how to support me except Holt, who didn't talk to anybody. As a matter of fact, I lived in Fresh Meadows with my wife. The baby was born at that time. I commuted into Manhattan, and I remember coming home, it was a warm day, and walking towards my apartment, which was on the second floor in one of these garden apartments. My wife flew open the window, leaned out, called to me. She said, "There's been a call from NYU." As I came closer, she was obviously a little disturbed. The call had come from some officer in the finance department, who wanted to know how I was being paid, because they couldn't find out. Well, by that time I felt so comfortable with Dr. Holt, I said, "I don't know how I'm being paid, but I'm sure he does." And I never heard about it again. [laughs] And, but that's how Markle came into my life, John and Mary Markle. John Markle was a coal operator, made his millions there.

**DR. SISSMAN:** He was what?

**DR. DANCIS:** A coal operator. And set up his foundation with a broad mission. And there was a man, a very colorful fellow who (I wish I was better at names, Norman, because he too meant a lot), who took it on himself to set up a scholarship program. John and Mary Markle scholars [Markle Scholars-in-Medicine], and the selection of scholars was fashioned on one in Britain which was a famous program, whatever it was called. And the procedure was that each school could submit one name.

**DR. SISSMAN:** Sort of like the Rhodes?

**DR. DANCIS:** Yes. Similar to the Rhodes. Each school could submit one name. And then they would...

**DR. SISSMAN:** Of a faculty person.

**DR. DANCIS:** Faculty. A young faculty, who they felt had a future, and would benefit from a scholarship, which would relieve them from other duties and give them a certain amount of stability. And there again, I was at another point in which one had finished, and I didn't know where the next would come from, as far as my salary. And so my name was submitted from NYU. The next step in the procedure was to meet with a group of scholars in this geographical area, in this instance at the Arden House. The Arden House is the old Harriman Estate, upstate. A big

mansion type of thing. And you met there with a committee, and the committee was composed of outstanding, non-medical, non-scientific people. People who were selected by this individual, whose name eludes me, who knew how to evaluate people as people. And you spent a few days with them and their wives. And you ate with them, and you were interviewed individually by them. You drank with them, and they judged you.

DR. SISSMAN: Were there other candidates there?

DR. DANCIS: There were about a dozen of us there at the time, some of whom became good friends afterwards. There were good people, my goodness. Frank Spencer was one.

DR. SISSMAN: Who?

DR. DANCIS: Frank Spencer, a cardiac surgeon. He was one of them, Nick [Nicholas P.] Christy was another. Ernie Knobil, these were all famous names in their field. Ernie Knobil was an endocrinologist. Dave Kipness became chairman of medicine in Washington, St. Louis and then the dean. They were all there. And then they made their selection, and of course we were evaluating them. It was not exactly a relaxed situation for most. Once again, I was older than most. And I found it an interesting situation, I was much more relaxed than the rest because I didn't expect anything. John Fischer was there, who was the editor of *Harper's [Magazine]*. He stood out as a remarkable man. And he befriended me, again for reasons I don't know. But before I left they told me I'd been appointed a Markle scholar.

DR. SISSMAN: And that was for a period of years?

DR. DANCIS: Five years. For five years, I think it was six thousand a year, seven thousand, something like that, totally inadequate.

DR. SISSMAN: Non-directed, right. I mean, that was salary to do what you wanted. They just supported individuals.

DR. DANCIS: To support me, and it was directed really to salary, and it was inadequate. But the designation was, meant easily as much as the money. And it lifted me out of concern for a number of years. I was a Markle man.

DR. SISSMAN: I'm interested that the medical school didn't pay a salary. I mean, you were dependent on outside sources completely?

DR. DANCIS: I was dependent on Holt. What Holt was dependent on,

I don't know. Well, I can tell you how it progressed from there. Lew [Lewis] Thomas talked the city into what was called the Health Research Council [HRC]. And the city set aside some millions of dollars for health research, and a lot of it was to support investigators. After the Markle, I was appointed a health research investigator, which covered me for some years. And then NIH got into the game, and they had NIH investigators, junior investigators, and senior investigators. I think those were the terms. But after HRC, as a matter of fact, while I still had an HRC grant, I was able to get an NIH investigatorship, and that was a lifetime grant. And it was adequate. I've forgotten what the sum of money was, but it was scaled to meet what the school gave me. And that I held, I only gave it up when I became chairman, since I couldn't fulfill what they expected of me anymore. But I could have maintained that indefinitely as far as the rules were.

DR. SISSMAN: But were most people in that kind of a flexible financial...?

DR. DANCIS: Yes.

DR. SISSMAN: Was there such a thing as tenure then? In medical school?

DR. DANCIS: There was tenure. I mentioned to you before that finances in this country is such a peculiar topsy type of development, one thing growing on top of the other, that it would bewilder any accountant. And one of the major things that's taking place now is that accountants are trying to straighten it out, and they've got a terrible job. And it causes enormous burdens for people who are used to the old ways.

How did you run the department, which is what you're asking me. And I got to know it very intimately in my later years, of course when I ran the department. Now I can only talk about how we did it here at NYU. I think that similar things happened elsewhere, but I don't know how close. Here we had very few salaries from the school. Pediatrics was not a departmental favorite in the school, never had been. Still isn't. And the chairman got his salary, but very little else.

Our close association with the city, for whom we did a lot of work, gave us through the affiliation contract a number of other salaries. Many other salaries, and that came in as I told you last time, through the C and Y Project, and the affiliations. That gave a number of other salaries. Then research, with NIH expansion, brought in a number of other salaries. For example, I didn't cost the department any money at all for most of my tenure. After those first very rocky years, I was free. NIH tried to get a handle on it at times, they had asked me, "Look, we're paying you to do research and here you're so involved in the department and teaching. What's this about?" I say, "It's about what it's about. This is part of the

**whole game, you're paying me and I'm going to do all of these things." And they never brought up the issue again.**

**So it was a mixture, I was being supported by what was intended as research funds, but I was carrying on departmental activities, and the school was not particularly supportive of it at all. Yet we made do.**

DR. SISSMAN: Did you get money from practice? Or did other people? Some of the specialists?

**DR. DANCIS: We had no practice plan. We had no practice plan, and we still have no practice plan. NYU is very reactionary in that respect, still has no practice plan. There are departments that have something like it. When I was chairman I introduced a little bit of it with HIP [Health Insurance Plan], but it was financially insignificant. There was no school interest in it at all. So it was very much of a makeshift thing. And yet we did have tenure, and tenure was treated very seriously. But it's, I guess it's like running a bank, you never have enough money on hand for your responsibilities. You just hope it doesn't all happen.**

DR. SISSMAN: This is a small detail, but I'm curious. Janet Baldwin, for example, if she saw a patient or did a catheterization, did she charge?

**DR. DANCIS: Most of that was done on city patients. We didn't even have a private hospital at the time she was here. And so I don't know how she was paid. I wasn't part of the hierarchy.**

DR. SISSMAN: Well I'm just talking about the generality of the sub-specialists who had a practice.

**DR. DANCIS: Now it has changed a lot because we have our own university hospital, and cardiology's undoubtedly bringing in funds, and using it for cardiology. Not departmentally, at the time that I was chairman, but an overall departmental arrangement did not exist. It was contrary to tradition here. And the school arrangement still does not exist. The best thing you can say for it is it worked. And the worst thing that you can say for it is that it's a mess now. [laughs] Trying to straighten it out is going to take a lot of dislocation.**

DR. SISSMAN: It sounds pretty tough and competitive. I mean, I imagine some people fell by the wayside who couldn't get some money.

**DR. DANCIS: There were. Oh yes. And that process is accelerating, as you know, in recent years. Yes, there were some that couldn't make a go of it, didn't want to after a while, because it was a competitive life and it was not easy. You worked very hard. And the rewards, financial rewards,**

outside were much greater. The quality of life from that standpoint was much more attractive, certainly, but for many of us the quality of life in academia was far, far more attractive. It still is.

DR. SISSMAN: Do you have any other specific things?

DR. DANCIS: I think that's, I'm rather run out of things. I don't know, Norman, that...

DR. SISSMAN: I don't know if I asked you to prognosticate about the future.

DR. DANCIS: Let's take a break, and I'll give you some...

#### PAUSE IN TAPE

DR. SISSMAN: I was struck by your description of the Markle process. I don't think anything like that happens anymore. This emphasis on what a person's like, evaluated by non-experts in the field. I think we live in a different world.

DR. DANCIS: It was an interesting idea, I don't know how effective it was. On one occasion, one of our meetings, this gentleman whose name will come to me long after you're gone [John Russell], presented the results of the first many years of the scholarship program.

DR. SISSMAN: Did you have to submit reports to them?

DR. DANCIS: No. Never had to submit a report but we had annual meetings. And the meetings were thrilling things in themselves, and you had a guest speaker, people like [Frederick Chapman] Robbins and Sidney Hook, luminaries. And we'd spend days with them. It was a wonderful experience. You know, one of the things I was going to mention to you is, and I did mention it I guess, when we talked about what I call democratization. And that is the change in the attitudes towards the doctor from the time I started to where we are now. Then the doctor was the king of the hill, no question about it, and he was respected as such by the patients, the patients' parents, and everybody in the medical field. And, although there's some of that left, the publicity is to the contrary, and reality is somewhat to the contrary. I got sensitized to it some years ago. I used to like to ski, take the family off on skiing trips. And in the evening as you know, you sit around the fire and you meet all sorts of people. You get to talk, and somehow or other they'd find out I was a doctor. And that was very uncomfortable. Because they would unload their animosities on me, to the point where I...



DR. SISSMAN: This was in a resort in the west somewhere?

DR. DANCIS: Yes, anywhere. And, why did that happen? And how real is it? Well, there were a lot of processes that took place, some of them they were essential processes. Specialization, which has a bad name now, is an absolute essential in our progress to better care. Specialists have somehow lost their status much more than we as pediatricians have. And the reason is quite clear, because they never develop that crucial relation with the patient. They're called in, they do a technical thing, and they're gone. Frequently don't know the patient any better than that, and the patients resent it. So it's part of the process that has removed us from this intimate contact with the patient. It's unfortunate, and it's a generalization, but most of the pediatricians that I know at this point maintain that cordial relation with their patients. Has that been your experience?

DR. SISSMAN: Yes. Pediatricians in general are nicer people, whether they were pre-selected, or whether it's a result of dealing with children.

DR. DANCIS: I think it's all of that, and it's also the relation with the parent, you know. You get to know them better. Not as well as I knew them when I was in practice. I knew them far better than you have an opportunity to know them now. Now, is that going to be lost when you go into capitation? This is one of the fears, and my hope is no. But the fear is that with capitation, when you only count the heads of patients instead of looking at their faces, that that will be lost too. It would be a great loss.

Here at Bellevue, morning report, we spend so much time discussing non-medical aspects of the patient. People would not believe it. The public would not believe it. These are the underprivileged. When the house staff presents, they present how they live, who they live with, how they developed, and we spend hours as to what is the best way to handle that patient, medically as well as non-medically.

DR. SISSMAN: So that's being preserved at Bellevue?

DR. DANCIS: It is.

**END OF TAPE**

## INDEX

### A

Alpha Omega Alpha, 3  
American Academy of Pediatrics, 1, 6, 46, 49, 50  
American Pediatric Society, 46, 49, 50  
Anderson, Dorothy, 35  
antibiotics, 72  
Anti-Semitism, 3, 74  
Arden House, 78  
Armstrong, M. D., 38, 39  
arthrogryposis, 6  
Association for the Aid to Crippled Children, 75  
Atomic Energy Commission, 16  
Avery, O. T., 13

### B

Bakwin, Harry, 28, 34, 35, 64  
Bakwin, Harry and Ruth, 28, 33, 35  
Bakwin, Ruth, 28  
Baldwin, Janet, 67, 81  
Balis, Earl, 15, 45  
battered child, 34  
Bellevue Hospital, 6, 8, 9, 10, 27, 31, 32, 33, 34, 35, 36, 40, 41, 42, 61, 62, 64, 65, 66, 70, 72, 73, 83  
Beth Israel Medical Center, 73  
Bickel, H., 38, 39  
Birmingham, John R., 9, 10  
Birmingham, Penny, 9  
Blau, Cindy, 42  
Bodansky, Oscar, 21, 73  
Bronx Zoo, 66  
Bronx, New York, 1  
Brooklyn Jewish Hospital, 64  
Brooklyn, New York, 1, 64  
Brownell, Katharine Dodge, 36  
Burroughs-Wellcome, 53  
Butler, Allan M., 69

### C

Caffey, John, 34  
certification (board), 69  
Chapple, Charles C., 70  
Children and Youth Project, 61, 80  
Children's Bureau, 61  
chorea, 67  
Christy, Nicholas P., 79  
Chung, Arthur W., 11, 12  
clysis, 68  
Cohlan, Sidney Q., 75  
Columbia University, 1, 2, 3, 7, 28, 34, 35, 39, 42, 65  
congenital heart disease, 67  
Cooper Union, 2

Cornell University Medical College, 5, 34, 35, 74

### D

Darrow, Daniel Cady, 69  
Dawson, C. R., 39  
Day, Richard L., 28, 35, 42  
Dent, Charles, 40  
Diamond, Louis, 65  
diarrhea, 68  
diarrhea, feeding, 11, 12  
Dingell, Representative John D., 52  
Douglas, Gordon Watkins, 77  
Dreyer, Benard P., 61, 62  
Dysautonomic Society, 44

### E

electrolyte treatment, 69  
endocarditis, sub-acute bacterial, 67  
erythroblastosis fetalis, 63  
evidence-based medicine, 57  
exchange transfusion, 64

### F

familial dysautonomia, 43  
Fanconi, G., 70  
Farber, Sidney, 11  
Farwell, 3  
Ferrier, 71  
Fischer, John, 79  
Fresh Meadows, New York, 72, 78

### G

genetics, 13, 15, 38, 42  
Goldstein, Menek, 15

### H

Haggerty, Robert J., 49  
Hall, 50  
Hammond, Jack, 20  
*Harper's Magazine*, 79  
Hartmann, Alexis F., 69  
Hasselmeyer, Eileen, 8, 51  
Haverstraw, 45  
Hawaii, 4  
Hay, William W., 26  
Health Insurance Plan, 81  
Health Research Council, 80  
hepatitis, 21, 22, 23  
Herndon, Colonel, 4  
Hess, Alfred Fabian, 73, 74

**Holt Jr., L. Emmett**, 5, 6, 7, 9, 10, 11, 12, 13,  
18, 19, 23, 27, 32, 35, 37, 38, 40, 41, 42, 51,  
53, 65, 66, 69, 70, 71, 72, 73, 78, 79  
**Holt Sr., L. Emmett**, 7  
**Hook, Sidney**, 82  
house calls, 71  
**Howell, William K.**, 7  
hypervitaminosis A, 75

## I

**International Pediatric Association**, 69  
internship, 5, 10, 11, 63

## J

**James, L. Stanley**, 35  
Jews, treatment of, 2, 3, 4, 5  
**John and Mary R. Markle Foundation**, 77  
**Johns Hopkins Hospital**, 5, 7, 10, 65  
**Josiah Macy, Jr., Foundation**, 18

## K

**Kaplan, Eugene**, 11  
**Karolinska Institute**, 76  
kernicterus, 64  
**Kettering Hypertherm**, 67  
**Kipness, Dave**, 79  
**Klausner, Gustave**, 2, 3  
**Knobil, Ernie**, 79  
**Krantz, Kermit**, 18  
**Krooth, Robert**, 42  
**Krugman, Saul**, 18, 19, 20, 22, 23, 24, 27, 28,  
61, 68

## L

**Langford, William S.**, 33  
**Lanman, Jonathan T.**, 12  
**Lesch-Nyhan disease**, 15, 45  
**Levine, Sam**, 5, 35, 74  
**Levitz, Mortimer**, 15  
**Levy, Milton**, 12  
**Lewis, Jack M.**, 73, 75  
**Lincoln, Edith**, 28, 36, 68  
**Lind, Johnny**, 76, 77  
**Lockwood, Charles J.**, 46  
**Longo, Larry**, 47

## M

managed care, 58  
**Manhattan, New York**, 1, 2, 74, 78  
maple syrup urine disease, 15, 40, 70  
**Markle Scholars-in-Medicine**, 78,79,82  
**Markle, John**, 77, 78  
**Mayo, Leonard Worthington**, 75, 77  
**McCarty, M.**, 13  
**McIntosh, Rustin**, 35  
**McLeod, Colin**, 13

**Mead Johnson**, 42, 53  
measles, 20  
**Menkes, John H.**, 40  
metabolic ward, 8  
**Miller, Sheldon**, 39, 40

## N

**National Foundation for Infantile Paralysis**,  
10, 13  
**National Institute of Child Health and Human  
Development**, 47, 51  
**National Institutes of Health**, 11, 14, 16, 28, 29,  
30, 46, 47, 51, 52, 53, 54, 80  
**New York University**, 5, 12, 15, 16, 27, 31, 36,  
43, 45, 48, 62, 64, 70, 73, 78, 80, 81  
**NIH investigatorship**, 80  
**Noyes, Jackie**, 50  
nucleic acids, 12, 45  
nutrition, 7, 26, 40, 41, 75

## O

**O'Hare, Donna**, 61  
**Ochoa, Severo**, 45

## P

**Panigel, Maurice**, 18  
**Park, Edwards A.**, 7  
**Parks, Wade**, 45, 55, 65  
peer review, 51, 52  
penicillin, 67  
phenylketonuria, 38, 39  
physician scientist, 38,45,46, 73  
pitressin-resistant diabetes insipidus, 9  
placenta, 15, 16, 17, 18, 24, 25, 26, 38, 39, 76  
placental physiology, 17  
practice, pediatric, 4, 7, 10, 27, 28, 31, 38, 56,  
57, 58, 62, 63, 65, 71, 72, 73, 81, 83  
practitioner scientist, 73, 75  
**Prader, Andre**, 70  
**Princeton, New Jersey**, 18  
promazole, 68

## Q

**Queens General Hospital**, 4, 5, 6, 63

## R

research, 11, 14, 15, 16, 17, 24, 26, 28, 29, 30,  
31, 38, 46, 48, 51, 52, 53, 54, 61, 78, 80, 81  
Rh factor, 64  
rheumatic fever, 67  
rhogam, 65  
**Riley- Day syndrome**, 42  
**Robbins, Frederick Chapman**, 82  
**Rochester Trophoblast Conference**, 18  
**Rochester, New York**, 17, 49  
**Rockefeller Institute for Medical Research**, 64

**Russell, John**, 82  
**Russia**, 2

## **S**

**Sabin, Albert**, 19  
**Schloss, Oscar M.**, 74, 75  
**Schneider, Henning**, 18  
**Schwitalla, Father**, 3  
**Senn, Milton J. E.**, 34  
**Silverman, William A.**, 35  
**Sloan Kettering Institute**, 12, 15, 21, 38, 45  
**Smith, Alfred**, 42, 43  
**Smith, Charles Hendee**, 36, 37  
**Smith, Clement A.**, 74  
**Snyderman, Selma E.**, 8, 38, 41, 42  
**Society for Pediatric Research**, 46, 49, 50  
**specialists**, 81, 83  
**Spencer, Frank**, 79  
**St. Louis University**, 2, 3  
**Stimson, Philip Moen**, 19  
**streptomycin**, 68  
**Sutton, Lucy**, 67

## **T**

**Taussig, Helen**, 67  
**Thaler, Senator Seymour B.**, 22  
**Thomas, Lewis**, 48, 80  
**Tisch Hospital**, 33  
**transfusions**, 63  
**trophoblast**, 17  
**tuberculosis**, 68, 74

## **U**

**U. S. Army**, 4, 5, 19, 21, 64, 67  
**U. S. Congress**, 51  
**U. S. Public Health Service**, 8, 51

## **V**

**V-12**, 5  
**Varmus, Harold**, 51, 52  
**vitamins**, 73  
**Vogel, Peter**, 64  
**Von Creveld, S.**, 70  
**Von Gierke**, 70

## **W**

**Ward, Robert**, 19, 20, 24, 27, 28, 68  
**Washington (state)**, 40  
**Washington, DC**, 27, 50, 51  
**Weiner, Alex**, 64  
**Westall, Roland**, 40  
**Willard Parker Hospital for Contagious Diseases**, 19  
**Willowbrook State School**, 20, 21, 22, 23  
**women (physicians)**, 36  
**World War II**, 17

## **Z**

**Zionism**, 2, 3

## CURRICULUM VITAE

### Joseph Dancis

#### Personal Data:

Address: New York University Medical Center  
560 First Avenue, New York, N.Y. 10016

Date of Birth: March 19, 1916

Marital:           Wife:           Bernice (Principal, NYC Public School)  
                      Children:       Andrew Dancis (Physician)  
  Dale Dancis (Teacher, NYC Public School)

Service: US Army 1941-1946

Private Practice: 1947-1951

#### Education:

##### Undergraduate

Columbia College                   A.B.   1931-34  
St. Louis U School of Med.   M.D.   1934-38

##### Postgraduate

Queens General Hospital, NYC-Rotating Internship                   1938-40  
  Residency, Pediatrics                   1940-41  
Bellevue Hospital NYC – Residency, Pediatrics                   1946-47  
Fellowship, National Foundation for Infantile Paralysis  
                  Protein Chemistry (NYU, Dr. Levy)                   1951-52  
                  Nucleic acid chemistry (Sloan-Kettering,  
                  Dr. Brown)                   1952-53

#### Awards and Honors

AOA, St Louis University School of Medicine                   1938  
Lowell Palmer Senior Research Fellow                   1954-56  
Jewish Guild For the Blind For studies on retrolental fibroplasia   1954  
John and Mary Markle Scholar in Medical Sciences                   1956-61  
New York City Health Research Council Career Investigator           1961-62  
Career Investigator, National Institutes of Health (Senior Award)   1962-74  
Borden Award, for studies in nutrition                   1966  
Distinguished Service Award, Dysautonomia Foundation           1973

**Awards and Honors continued:**

American Pediatric Society	
Member of the Council	1973-80
President	1983-84
Honorary Member, Society for Gynecological Investigation	1983-
Bellevue Obstetrical & Gynecological Society Award	1986
Howland Award	1988

**Hospital Appointments:**

Attending Physician, Bellevue Hospital  
Attending Physician, University Hospital

**School Appointments: (New York University School of Medicine)**

Professor of Pediatrics	1960-
Director, Clinical Research Center (Pediatric Section)	1962-74
University Senate	1962-65
Chairman of Pediatrics	1974-89
Steering Committee, NYU Medical Center	1974-89

**Professional Societies:**

Society for Pediatric Research  
American Pediatric Society  
American Academy of Pediatrics  
New York Academy of Sciences  
Harvey Society  
Perinatal Research Society (Past Member)  
American Society for Human Genetics (Past Member)  
Society for Gynecological Investigation (Honorary)

**Professional Activities:**

Committee to Report on the Problems on Neonatal Mortality, New York Academy of Medicine	1952
Chairman and Member, Research and Training Committee, Perinatal Biology & Infant Mortality Branch, National Institutes of Health	1967-71
Scientific editor, Proceedings of Conference on Pediatric Pharmacology	1967
Pediatric Advisory Committee, New York City Department of Health	1970-73

### **Professional Activities continued:**

Medical Advisory Board, Dysautonomia Foundation	
Member	1970-89
Chairman	1983-89
Consultant, National Institute of Child Health and Human development, NIH	1971-78
Scientific editor and contributor: Research Planning Workshops on the Sudden Infant Death Syndrome (under the auspices of NIH)	1972
Chairman and Scientific Editor, Perinatal Pharmacology, Problems and Priorities (National Institute of Child Health & Human Development)	1974
Scientific editor and contributor to <u>Idiopathic</u> <u>Distress Syndrome</u> : Proceedings of Conferences held under the auspices of the NIH	1976
Editorial Board, Pediatric Research	1978-82
Chairman and Scientific Editor, Consensus Conference on Predictors of Fetal Maturation (NICHD)	1979
Editor Board, Placenta	1979-89
Medical and Scientific Advisory Committee, National Center for the Prevention of SIDS	1980-
Chairman and Editor (with Henning Schneider) of the International Workshop on In Vitro Perfusion of Human Placental Tissue, Zurich	1984
Editorial Advisory Board, Trophoblast Research	1984-

### **Major Research Interests:**

Biochemical Genetics (Inborn Errors of Metabolism)  
Placental Physiology

### **Bibliography**

1. Dancis J., Birmingham JR, Leslie SH: Congenital diabetes insipidus resistant to treatment with pitressin. *Am J Dis Child* 75:316, 1948.
2. Dancis J, Nunemakes JC: Coccidioidal meningitis. *Rocky Mountain Medical Journal*, July 1946.
3. Cohen JJ, Dancis J: The squeezogram: an objective method for recording the course of chorea. *J Pediatr* 33:564, 1948.
4. Dancis J, O'Connell JE, Holt LE Jr: A grid for recording the weight of premature infants. *J Pediatr* 33:570, 1948.

5. Dancis J, Osborn JJ, Schwartz R, Ward RS, Whittemore J: Dehydration in infantile diarrhea. Its pathogenesis and treatment. *Med Clin North Am* May 1949.
6. Madey S, Dancis J: Proteolytic enzymes of the premature infant with special reference to his ability to digest unsplit protein food. *Pediatrics* August 1949.
7. Greenberg M, Yankauer A Jr, Krugman S, Osborn JJ, Ward RS, Dancis J: The effect of smallpox vaccination during pregnancy on the incidence of congenital malformations. *Pediatrics* April 1949.
8. Contributor to Holt's *Diseases of Infancy and Childhood*, 12<sup>th</sup> edition, Chapter on premature infants, 1949.
9. Hirsch DR, Dancis J, Ward RS: Myotonia congenita. *J Pediatr* 35:760, 1949.
10. Osborn JJ, Dancis J, Julia J: Some quantitative aspects of infant immunology. *Am J Dis Child* 80:505, 1950.
11. Dancis J, Cardullo H: Incubator care of the premature infant: Discussion of optimal conditions. *Pediatrics* 6:432, 1950.
12. Dancis J, Lewis JM, Guy LP: Retrolental fibroplasia, *N Engl J Med* 245:402, 1951.
13. Lanman JT, Guy LP, Dancis J: Adrenocorticotrophic hormone in the therapy of retrolental fibroplasia. *Pediatrics* 9:27, 1952.
14. Osborn JJ, Dancis J, Julia JF: Studies of the immunology of the newborn infant. I. Age and antibody production. *Pediatrics* 9:736, 1952.
15. Osborn JJ, Dancis J, Rosenberg BV: Studies of the immunology of the newborn infant. III. Permeability of the placenta to maternal antibody during fetal life. *Pediatrics* 10:450, 1952.
16. Osborn JJ, Dancis J, Julia JF: Studies of immunology of the newborn infant. II. Interference with active immunization by passive transplacental circulating antibody. *Pediatrics* 10:328, 1952.
17. Guy LP, Dancis J, Lanman JT: Retrolental fibroplasia. *Am J Ophthalmol* 36:85, 1953.



18. Dancis J, Osborn JJ, Kunz HW: Studies of the immunology of the newborn infant. Part IV. *Pediatrics* 12:395, 1953.
19. Dancis J, Osborn JJ, Julia JF: Studies of the immunology of the newborn infant. Part V. *Pediatrics* 12:395, 1953.
20. Guy LP, Dancis J, Lanman JT: Retrolental fibroplasia. *N Y State J Med* 53:2999, 1953.
21. Dancis J, Kunz HW: Studies of the immunology of the newborn infant. *Pediatrics* 13:332, 1954.
22. Lanman JT, Guy LP, Dancis J: Retrolental fibroplasia and oxygen therapy. *JAMA* 155:223, 1954.
23. Dancis J, Spitz R: *Your Premature Baby*. U.S. Dept Health, Education and Welfare, Children's Bureau, folder #40, 1954.
24. Dancis J, Balis ME: Reutilization of nucleic acid catabolites. *J Biol Chem* 207:367, 1954.
25. Balis ME, Levin DH, Dancis J: Response of leukemic spleen breis to alpha methopterin. *Proc Cancer Res* 1:2, 1954.
26. Dancis J, Levitz M, Condon G: Conversion of acetate-1C14 to estradiol in perfused human placenta. *Federation Proceedings* 14:792, 1955.
27. Dancis J, Balis ME: A possible mechanism for disturbance in tyrosine metabolism in phenylpyruvic oligophrenia. *Pediatrics* 15:63-6, 1955.
28. Balis ME, Dancis J: Effects of A-methopterin on nucleic acid synthesis in leukemic spleen breis. *Cancer Research* 15:603, 1955.
29. Guy LP, Lanman JE, Dancis J: The possibility of total elimination of retrolental fibroplasia by oxygen restriction. *Pediatrics* 17:247, 1956.
30. Levitz M, Condon GP, Dancis J: The interconversion of estrone and estradiol in the perfused human placenta. *Endocrinol* 58:376, 1956.
31. Dancis J, Braverman N, Lind J: Plasma protein synthesis in the human fetus and placenta. *J Clin Invest* 36:398, 1957.
32. Dancis J, Grobow E, Boyer A: The chloride concentration of saliva and sweat in infancy. *J Pediatr* 50:459-62, 1957

33. Dancis J, Worth M Jr, Schneidau PB: Effect of electrolyte disturbances in the pregnant rabbit on the fetus. *Am J Physiol* 188:535, 1957.
34. Dancis J: Care of the premature infant. *Postgraduate Medicine* 22:3, September 1957.
35. Westall RG, Dancis J, Miller S: Maple sugar urine disease (The Soc Ped Res No. 137, June 1957). *Am J Dis Child* 94:571, 1957.
36. Dancis J, Olsen G, Folkart G: Transfer of histidine and xylose across the placenta and into the red blood cell and amniotic fluids. *Am J Physiol* 194:44, 1958.
37. Dancis J, Shafran M: The origin of plasma proteins in the guinea pig fetus. *J Clin Invest* 37:8, 1958.
38. Dancis J, Money WL, Condon CP, Levitz M: The relative transfer of estrogens and their glucuronides across the placenta in the guinea pig. *J Clin Invest* 37:1373, 1958.
39. Dancis J, Levitz M, Miller S, Westall R: Maple syrup urine disease. *Br Med J* 1:91, 1959.
40. Dancis J, Danoff S, Zabriskie J, Balis ME: Hemoglobin metabolism in the premature infant. *J Pediatr* 54:748, 1959.
41. Dancis J: The placenta. *J Pediatr* 55:85, 1959.
42. Dancis J: Phenylketonuria and maple sugar disease. *Bull N Y Acad Med* 35:427, 1959.
43. Dancis J: Aspects of bilirubin metabolism before and after birth. *Pediatrics* December 1959.
44. Holt LE Jr, Snyderman S, Dancis J: The treatment of a case of maple syrup urine disease. *Fed Proc* 19:1, 1960.
45. Money WL, Dancis J: Technique for the in situ study of placental transport using the pregnant guinea pig. *Am J Obstet Gynecol* 80:209, 1960.
46. Dancis J, Money WL: Transfer of sodium and iodo-antipyrine across guinea pig placenta using an in situ perfusion technique. *Am J Obstet Gynecol* 80:215, 1960.

47. Folkart GP, Dancis J, Money WL: Transfer of carbohydrates across Guinea pig placenta. *Am J Obstet Gynecol* 80:221, 1960.
48. Dancis J, Hutzler J, Levitz M: Metabolism of the white blood cells in maple syrup urine disease. *Biochim Biophys Acta* 43:343, 1960.
49. Uhr JW, Dancis J, Newmann CG: Delayed-type hypersensitivity in premature neonatal humans. *Nature* 187:1130, 1960.
50. Dancis J, Levitz M, Westall RG: Maple syrup urine disease – Branched-chain ketoaciduria. *Pediatrics* 25:72, 1960.
51. Levitz M, Condon GP, Money WL, Dancis J: The relative transport of estrogens and their sulfates across the guinea pig placenta; sulfurylation of estrogens by the placenta. *J Biol Chem* 235:973, 1960.
52. Dancis J: Placental function and fetal nutrition. In *The Placenta and Fetal Membranes*, Ed. C.A. Villee, 1960
53. Dancis J. Placental transfer and the baby. *Clin Proc Childrens Hospital Washington D.C.* 17:123, 1961.
54. Dancis J, Lind J, Oratiz M, Smolens J, Vara —: Placental transfer of proteins in human gestation. *Am J Obstet Gynecol* 82:167, 1961.
55. Dancis J, Levitz M: Maple syrup urine disease. Ch. 15, *Metabolic Basis of Inherited Disease*, Ed. Stanbury, Wyngaarden and Fredrickson 1960.
56. Dancis J, Hutzler J, Levitz M: Tissue distribution of branched chain keto acid decarboxylase. *Biochim Biophys Acta* 52:60, 1961.
57. Levitz M, Condon GP, Dancis J: Sulfurylation of estrogens by the human fetus. *Endocrinology* 68:825, 1961.
58. Silverman J, Dancis J, Feigin I: Neuropathological observations in maple syrup urine disease. *Arch Neurol* 5:351, 1961.
59. Dancis J, Samuels BD, Douglas GW: Immunological competence of placenta. *Science* 136:382, 1962.
60. Uhr JW, Dancis J, Franklin EC, Finkelstein MS, Lewis EW: The antibody response to bacteriophage OX 174 in newborn premature infants. *J Clin Invest* 41:7, 1962.

61. Snyderman SE, Holt LE Jr, Dancis J, Roitman E, Boyer A, Balis ME: "Unessential" nitrogen: a limiting factor for human growth. *J Nutrition* 78:1, 1960.
62. Levitz M, Emerman S, Dancis J: Sterol synthesis in perfused human placenta. *Excerpta Medica, Int. Cong. Series #51*, 1962.
63. Dancis J, Brenner M, Money WL: Some factors affecting the permeability of guinea pig placenta. *Am J Obstet Gynecol* 48:570, 1962.
64. Douglas GW, Samuels B, Dancis J: Immunological competence of mouse placenta cells. *Am J Obstet Gynecol* 81:1126, 1962.
65. Dancis J: The placenta in fetal nutrition and excretion. *Am J Obstet Gynecol* 84:1749, 1962.
66. Dancis J: The placental barrier. *N Y State J Med* 62:2816, 1962.
67. Dancis J: Premature infants, chapter V, *Pediatrics*, Ed. Holt, McIntosh & Barnett, 13<sup>th</sup> Edition, 1962.
68. Uhr JW, Dancis J, Finkelstein MS: Passage of bacteriophage OX174 across the placenta in guinea pigs. *Proc Soc Exp Biol Med* 113:391, 1963.
69. Diczfalusy E, Tillinger KF, Wiquist N, Levitz M, Condon GP, Dancis J: Disposition of intra-amniotically administered estrio-16-c14 and estrone-16-C14 sulfate by women. *J Clin Endocrinol Metab* 23:503, 1963.
70. Levitz M, Dancis J: Transfer of steroids between mother and fetus. *Clin Obstet Gynecol* 6:1, 1963.
71. Dancis J, Hutzler J, Levitz M: Thin-layer chromatography and spectrophotometry of alpha ketoacid hydrazones. *Biochim Biophys Acta* 78:85, 1963.
72. Dancis J, Hutzler J, Levitz M: The exchange of C1402 with the branched chain keto acids by guinea pig liver. *Biochim Biophys Acta* 78:90, 1963.
73. Dancis J, Levitz M: The diagnosis of maple syrup urine disease by the in vitro study of the peripheral leukocyte. *Pediatrics* 32:234, 1963.
74. Dancis J, Jansen V, Hutzler J, Levitz M: The metabolism of leucine in tissue culture of skin fibroblasts of maple syrup urine disease. *Biochim Biophys Acta* 77:523, 1963.

75. Dancis J, Levitz M: Maple syrup urine disease. In Metabolic Basis of Inherited Disease, ed. Stanbury, 16<sup>th</sup> Edition.
76. Smith AA, Dancis J: Response to intradermal histamine in familial dysautonomia – a diagnostic test. *J Pediatr* 63:889, 1963.
77. Dancis J: Maple syrup urine disease. *Clin Pediatr* 3:365, 1964.
78. Smith AA, Dancis J: Taste discrimination in familial dysautonomia. *Pediatrics* 33:441, 1964.
79. Smith AA, Dancis J: Exaggerated response to infused norepinephrine in familial dysautonomia. *N Engl J Med* 270:704, 1964.
80. Levitz M, Money WL, Katz J, Dancis J: Relative transfer and binding of estradiol-6,7-3H and estriol-16-14C by the guinea pig placenta. *Endocrinol* 74:949, 1964.
81. Dancis J: The perfusion of guinea pig placenta in situ. *Fed Proc* 23:781, 1964.
82. Smith AA, Dancis J: Familial pheochromocytoma presenting as familial dysautonomia. *J Pediatr* 65:463, 1964.
83. Smith AA, Dancis J, Greenberg H: Neurological and psychological deficits in familial dysautonomia. *Int. Copenhagen Congress* 1964.
84. Filler J, Smith AA, Stone S, Dancis J: Respiratory control in familial dysautonomia. *J Pediatr* 66:509, 1965.
85. Dancis J, Hutzler J, Levitz M: Detection of the heterozygote in maple syrup urine disease. *J Pediatr* 66:595, 1965.
86. Smith AA, Farbman A, Dancis J: Absence of taste-bud papillae in familial dysautonomia. *Science* 147:1040, 1965.
87. Katz SR, Dancis J, Levitz M: Relative transfer of estriol and its conjugates across the fetal membranes in vitro. *Endocrinol* 76:722, 1965.
88. Smith AA, Farbman A, Dancis J: The tongue in familial dysautonomia – a diagnostic sign. *Am J Dis Child* 110:152, 1965.
89. Smith AA, Dancis J, Breinin G: Ocular responses to autonomic drugs in familial dysautonomia. *Invest Ophthalmol* 4:358, 1965.

90. Dancis J: The role of the placenta in fetal survival. *Pediatr Clin North Am* 12:477, 1965.
91. Emerman S, Dancis J, Levitz M, Wiqvist N, Diczfalusy E: Metabolism of estrone-6, 7-3H sulfate-35S in the perfused human fetus. *J Clin Endocr* 25:639, 1965.
92. Smith AA, Hirsch JI, Dancis J: Response to infused methacholine in familial dysautonomia. *Pediatrics* 36:225, 1965.
93. Dancis J, Smith AA: Familial dysautonomia. *N Engl J Med* 274:207-9, 1966.
94. Dancis J, Douglas GW, Fierer J: Immunologic competence of mouse placental cells in irradiated hosts. *Am J Obstet Gynecol* 94:50-6, 1966.
95. Dancis J: The placenta. A multicategorical, interdisciplinary phenomenon (Borden Award Address). *Pediatrics* 38:167-72, 1966.
96. Goebelsmann U, Wiqvist N, Diczfalusy E, Levitz M, Condon GP, Dancis J: Fate of intra-amniotically administered oestriol-15-3H-3-sulphate and oestriol-16-14C-16-glucosiduronate in pregnant women at midterm. *Acta Endocrinol* 52:550-64, 1966.
97. Woody NC, Hutzler J, Dancis J: Further studies of hyperlysinemia. *Am J Dis Child* 112:577-80, 1966.
98. Dancis J, Hutzler J, Rokkones T: Intermittent branched-chain ketonuria. Variant of maple-syrup-urine disease. *N Engl J Med* 276:84-9, 1967.
99. Balis ME, Krakoff IH, Berman PH, Dancis J: Urinary metabolites in congenital hyperuricosuria. *Science* 156:1122-3, 1967.
100. Smith AA, Dancis J: Catecholamine release in familial dysautonomia. *New Engl J Med* 277:61-4, 1967.
101. Dancis J, Hutzler J, Tada K, Wada Y, Morikawa T, Arkawa T: Hypervalinemia. A defect in valine transamination. *Pediatrics* 39:813-7, 1967.
102. Levitz M, Dancis J, Goebelsmann U, Diczfalusy E: The metabolism and disposition of estriol and estriol conjugates of the fetal-placental unit in the second trimester. *Excerpta Medica Internatl Congress Series No. 132, Proceedings of Second Internatl Congress on Hormonal Steroids*, pp. 646-652, 1966.

103. Hutzler J, Odievre M, Dancis J: Analysis for lysine, arginine, histidine, and tryosine in biological fluids. *Anal Biochem* 19:529-41, 1967.
104. Sak HG, Smith AA, Dancis J: Psychometric evaluation of children with familial dysautonomia. *Am J Psychiatry* 124:682-7, 1967.
105. Dancis J: Intermittent branched-chain ketonuria. In *Amino Acid Metabolism and Genetic Variation*, ed. W.L. Nyhan, McGraw Hill Book Co. 1967.
106. Levitz M, Condon GP, Dancis J, Goebelsmann U, Eriksson G, Diczfalusy E: Transfer of estriol and estriol conjugates across the human placenta perfused in situ at midpregnancy. *J Clin Endocrinol Metab* 27:1723-9, 1967.
107. Dancis J: commentary "The term Heterozygote".
108. Dancis J: Commentary.
109. Berman PH, Balis ME, Krakoff IH, Dancis J: Hyperuricosuria and central nervous system dysfunction. *Trans Am Neurol Assoc* 92:138-142, 1967.
110. Dancis J: The antepartum diagnosis of genetic diseases. *J Pediatr* 72:301-2, 1968.
111. Berman PH, Balis ME, Dancis J: Diagnostic test for congenital hyperuricemia with central nervous system dysfunction. *J Lab Clin Med* 71:247-53, 1968.
112. Hutzler J, Dancis J: Conversion of lysine to saccharopine by human tissues. *Biochim Biophys Acta* 158:62-9, 1968.
113. Dancis J, Jansen V, Gorstein F, Douglas GW: Hematopoietic cells in mouse placenta. *Am J Obstet Gynecol* 100:1110-21, 1968.
114. Dancis J, Berman PH, Jansen V, Balis ME: Absence of mosaicism in the lymphocyte in X-linked congenital hyperuricosuria. *Life Sci* 7:587-91, 1968.
115. Dancis J, Money WL, Springer D, Levitz M: Transport of amino acids by placenta. *Am J Obstet Gynecol* 101:820-9, 1968.
116. Dancis J: Altered drug response in familial dysautonomia. *Ann NY Acad Sci*, 151:876-9, 1968.

117. Adamsons K, Winick M, Barnes AC, Dancis J, James S: Symposium on "Homeostasis of the intrauterine patient." Bulletin of the Sloane Hosp for Women 14:103, 1968. (Transactions of the annual meeting.)
118. Berman PH, Balis ME, Dancis J: Congenital hyperuricemia. An inborn error of purine metabolism associated with psychomotor retardation, athetosis, and self-mutilation. Arch Neurol 20:44-53, 1969.
119. Dancis J, Hutzler J, Lynfield J, Cox RP: Absence of acid maltase in glycogenesis type 2 (Pompe's disease) in tissue culture. Am J Dis Child 117:108-11, 1969.
120. Dancis J, Hutzler J, Cox RP: Enzyme defect in skin fibroblasts in intermittent branched-chain ketonuria and in maple syrup urine disease. Biochem Med 2:407, 1969.
121. Dancis J: The prenatal detection of heredity defects. Obstet Gynecol Surv 24:1351-3, 1969
122. Dancis J, Hutzler J, Cox RP, Woody NC: Familial hyperlysinemia with lysine-ketoglutarate reductase insufficiency. J Clin Invest 48:1447-52, 1969.
123. Kayden HJ, Dancis J, Money WL: Transfer of lipids across the guinea pig placenta. Am J Obstet Gynecol 104:564-72, 1969.
124. Berman PH, Balis ME, Dancis J: A method for the prenatal diagnosis of congenital hyperuricemia. J Pediatr 75:488-91, 1969.
125. Dancis J, Jansen V, Berman PH, Balis ME: Inosinate pyrophosphorylase activity in immature blood cells in X-linked congenital hyperuricosuria. Biochem Genet 3:311-6, 1969.
126. Scientific editor and contributor to Idiopathic Distress Syndrome: Proceedings of Conferences held under auspices of NIH. November 15, 1967, March 13 and April 30, 1968.
127. Berman PH, Balis ME, Dancis J: A method for the prenatal diagnosis of the Lesch-Nyhan syndrome using fresh amniotic cells. Trans Am Neurol Assoc 94:222-4, 1969.
128. Dancis J: Homeostatic factors in fetal protein metabolism. In Fetal Homeostasis, Vol. IV. Ed. By Ralph Wynn, 1969.



127. Rubin CS, Balis ME, Piomelli S, Berman PH, Dancis J: Elevated AMP pyrophosphorylase activity in congenital IMP pyrophosphorylase deficiency (Lesch-Nyhan disease). *J Lab Clin Med* 74:732-41, 1969.
128. Dancis J, Cox RP, Berman PH, Jansen V, Balis ME: Cell population density and phenotypic expression of tissue culture fibroblasts from heterozygotes of Lesch-Nyhan's disease (inosinate pyrophosphorylase deficiency). *Biochem Genet* 3:609-15, 1969.
129. Hutzler J, Dancis J: Saccharopine cleavage by a dehydrogenase of human liver. *Biochim Biophys Acta*, 206:205-14, 1970.
131. Dancis J: Proceedings, Conference on Pediatric Pharmacology, Report of Workshop III, Dept. HEW, February 19-21, 1967.
132. Cox RP, Douglas G, Hutzler J, Lynfield J, Dancis J: In-utero detection of Pompe's disease. *Lancet* 1:893, 1970.
133. Payne MR, Dancis J, Berman PH, Balis ME: Inosine kinase in leucocytes in Lesch-Nyhan patients. *Exp Cell Res* 59:489-90, 1970.
134. Dancis J, Smith AA: Familial dysautonomia. "What is in a name?" *J Pediatr* 77:174, 1970.
135. Dancis J, Springer D: Fetal homeostasis in maternal malnutrition: potassium and sodium deficiency. *Pediatr Res* 4:345-51, 1970.
136. Dancis J, Springer D, Cohlan SQ: Fetal homeostasis in maternal malnutrition. II. Magnesium deprivation. *Pediatr Res* 5:131, 1971.
137. Cohlan SQ, Jansen V, Dancis J, Piomelli S: Microcytic anemia with erythroblastosis in offspring of magnesium-deprived rats. *Blood* 36:500-6, 1970.
138. Hutzler J, Dancis J: Preparative synthesis of saccharopine. *Biochim Biophys Acta* 222:225-8, 1970.
139. Dancis J: Nutritional management of hereditary disorders. *Med Clin North Am* 54:1431-48, 1970.
140. Dancis J, Jansen V: Placental transport of iron in X-linked anaemia of mice. *Br J Haematol* 19:573-8, 1970.
141. Dancis J: Processes of placental transfer. In *Fetal Growth and Development*, Ed. By Waisman & Kerr, McGraw Hill Book Company, New York, 1970.

142. Cox RP, Krauss MR, Balis ME, Dancis J: Evidence for transfer of enzyme product as the basis of metabolic cooperation between tissue culture fibroblasts of Lesch-Nyhan disease and normal cells. *Proc Natl Acad Sci USA* 67:1573-9, 1970.
143. Dancis J: Testing new drugs for safety. Problems, challenges, responsibilities. *Clin Pediatr (Phila)* 19:64-5, 1971.
144. Dancis J: Remarks of moderator. *Birth Defects Orig Artic Ser* 6:6, 1970.
145. Rubin CS, Dancis J, Yip LC, Nowinski RC, Balis ME: Purification of IMP: pyrophosphate phosphoribosyltransferases, catalytically incompetent enzymes in Lesch-Nyhan disease. *Proc Natl Acad Sci USA* 68:1461-4, 1971.
146. Dancis J, Levitz M: Abnormalities of branched-chain amino acid metabolism. *In* *Metabolic Basis of Inherited Diseases, 3<sup>rd</sup>*, Fredrickson, McGraw Hill, Inc., New York, 1972.
147. Dancis J: Transport of substances across perfused organs. *Acta Endocrinol Suppl (Copenh)* 158:347-75, 1972.
148. Dancis J: Maple syrup urine disease, and Congenital hyperuricemia. *In* *Antenatal Diagnosis*, Ed. A. Dorfman. The University of Chicago Press, Chicago Illinois, 1972.
149. Silvers DN, Cox RP, Balis ME, Dancis J: Detection of heterozygote in Lesch-Nyhan disease by hair-root analysis. *N Engl J Med* 286:390-5, 1972.
150. Yu TF, Balis ME, Krenitsky TA, Dancis J, Silvers DN, Elion GB, Gutman AB: Rarity of X-linked partial hypoxanthine-guanine phosphoribosyltransferase deficiency in a large gouty population. *Ann Intern Med* 76:255-64, 1972.
151. Freedman LS, Ohuchi T, Goldstein M, Axelrod FB, Fish I, Dancis J: Changes in human serum dopamine-B-hydroxylase with age. *Nature* 236:310-1, 1972.
152. Freedman LS, Roffman M, Goldstein M, Axelrod FB, Dancis J: Effect of bethaneco (urecholine) on serum dopamine-B-hydroxylase levels in familial dysautonomia and on rat adrenal DBH. *Fed Proc* 31:544, 1972.

153. Axelrod F, Danics J: Familial dysautonomia. *In* Pulmonary Disorders in Children. Vol. 11, Ed., E.L. Kendig. W.B. Saunders Company, Philadelphia, 1972.
154. Dancis J, Hutzler J, Snyderman SE, Cox RP: Enzyme activity in classical and variant forms of maple syrup urine disease. *J Pediatr* 81:312-20, 1972.
155. Axelrod FB, Branom N, Becker M, Nachtigall R, Dancis J: Treatment of familial dysautonomia with bethanecol (urecholine). *J Pediatr* 81:573-8, 1972.
156. Cox RP, Krauss MR, Balis ME, Dancis J: Communication between normal and enzyme deficient cells in tissue culture. *Exp Cell Res* 74:251-68, 1972.
157. Schneider H, Panigel M, Dancis J: Transfer across the perfused human placenta of antipyrine, sodium and leucine. *Am J Obstet Gynecol* 114:822-8, 1972.
158. Cox RP, Krauss MR, Silvers DN, Dancis J: Letter: Skin-biopsy site and success of fibroblast culture. *The Lancet* 1373, 1972.
159. Axelrod FB, Danis J: Intrauterine growth retardation in familial dysautonomia. *Am J Dis Child* 125:379-80, 1973.
160. Yip LC, Dancis J, Balis ME: Immunochemical studies of AMP: pyrophosphate phosphoribosyltransferase from normal and Lesch-Nyhan subjects. *Biochim Biophys Acta* 293:359-69, 1973.
161. Piomelli S, Jansen V, Dancis J: The hemolytic anemia of magnesium deficiency in adult rats. *Blood* 41:451-9, 1973.
162. Dancis J, Jansen V, Kayden HJ, Schneider H, Levitz M: Transfer across perfused human placenta. II. Free fatty acids. *Pediatr Res* 7:192-7, 1973.
163. Dancis J, Hutzler J, Cox RP: Evaluation of amino acid metabolism in maple syrup urine disease. *In* Tissue Culture: Methods and Applications. P.F. Kruse and M.K. Patterson, editors. Academic Press, New York, 1973.
164. Lyons LB, Cox RP, Dancis J: Complementation analysis of maple syrup urine disease in heterokaryons derived from cultured human fibroblasts. *Nature* 243:533-5, 1973.
165. Dancis J, Yip LC, Cox RP, Piomelli S, Balis ME: Disparate enzyme activity in erythrocytes and leukocytes: a variant of hypoxanthine

- phosphoribosyl-transferase deficiency with an unstable enzyme. *J Clin Invest* 52:2068-74, 1973.
166. Dancis J: The prenatal detection of hereditary defects. *In* *Medical Genetics*. V. McKusick, ed., Hospital Practice, New York 1973.
  167. Zaleski LA, Dancis J, Cox RP, Hutzler J, Zaleski WA, Hill A: Variant maple syrup urine disease in mother and daughter. *Can Med Assoc J* 109:299-300 passim, 1973.
  168. Dancis J: Scientific editor and contributor: Research Planning Workshops on The Sudden Infant Death Syndrome. *Developmental Aspects of Infection and Immunity*. Held under auspices of NICHD May, 1972.
  169. Schenkein I, Bueker ED, Helson L, Axelrod F, Dancis J: Increased nerve-growth-stimulating activity in disseminated neurofibromatosis. *N Engl J Med* 290:613-4, 1974.
  170. Pearson J, Axelrod F, Dancis J: Trophic functions of the neuron. V. Familial Dysautonomia. Current concepts of dysautonomia: neuropathological defects. *Ann NY Acad Sci*, 228:288-300, 1974.
  171. Balis ME, Yip LC, Yu TF, Gutman AB, Cox R, Dancis J: Unstable HPRTase in subjects with abnormal urinary oxypurine excretion. *Adv Exp Med Biol* 41:195-202, 1973.
  172. Cox RP, Krauss MR, Balis ME, Dancis J: Mouse fibroblasts A9 are deficient in HPRT and APRT. *Am J Hum Genet* 26:272-3, 1974.
  173. Levine MR, Dancis J, Pavan M, Cox RP: Cell fusion induced by pederine. *Pediatr Res* 8:606-8, 1974.
  174. Dancis J: Placental transfer studied in a perfusion system. *In* *Perinatal Pharmacology and Priorities*. J. Dancis and J.C. Hwang, eds. Raven Press, New York, 1974.
  175. Yip LC, Dancis J, Mathieson B, Balis ME: Age-induced changes in adenosine monophosphate: pyrophosphate phosphoribosyltransferase and inosine monophosphate: pyrophosphate phosphoribosyltransferase from normal and Lesch-Nyhan erythrocytes. *Biochemistry* 13:255-61, 1974.
  176. Dancis J, Jansen V, Kayden HJ, Bjornson L, Levitz M: Transfer across perfused human placenta. 3. Effect of chain length on transfer of free fatty acids. *Pediatr Res* 8:796-9, 1974.

177. Cox RP, Krauss MR, Balis ME, Dancis J: Metabolic cooperation in cell culture: studies of the mechanisms of cell interaction. *J Cell Physiol* 84:237-52, 1974.
178. Cox RP, Krauss MR, Balis ME, Dancis J: Metabolic cooperation in cell culture: a model for cell-to-cell communication. In *Cell Communication*. R.P..Cox, ed. Wiley Interscience Press, New York, 1974.
179. Dancis J: Variants of maple syrup urine disease. In *Heritable Disorders of Amino Acid Metabolism*. W.L. Nyhan, ed. John Wiley & Sons, Inc., New York, 1974.
180. Schneider H, Dancis J: Amino acid transport in human placental slices. *Am J Obstet Gynecol* 120:1092-8, 1974.
181. Axelrod FB, Nachtigal R, Dancis J: Familial dysautonomia: diagnosis, pathogenesis and management. *Adv Pediatr* 21:75-96, 1974.
182. Cox RP, Krauss MR, Balis ME, Yip LC, Jansen V, Dancis J: Incorporation of hypoxanthine by PHA-stimulated HPRT-deficient lymphocytes. *Exp Cell Res* 88:289-94, 1974.
183. Hutzler J, Dancis J. Lysine-ketoglutarate reductase in human tissues. *Biochim Biophys Acta* 377:42-51, 1975.
184. Freedman LS, Ebstein RP, Goldstein M, Axelrod FB, Dancis J: Serum dopamine-beta-hydroxylase in familial dysautonomia. *J Lab Clin Med* 85:1008-12, 1975.
185. Dancis J: Feto-maternal interaction. In *Neonatology*, G.W. Avery, ed. J.B. Lippincott Company, Philadelphia, 1975.
186. Dancis J, Schneider H: Physiology: transfer and barrier function. In *The Placenta and the Maternal Supply Line of the Fetus*. P. Gruenwald, ed. Medical & Technical Publishing Company, England, 1975.
187. Schneider H, Dancis J: Abnormalities of composition of maternal blood. In *The Placenta and the Maternal Supply Line of the Fetus*. P. Gruenwald, ed. Medical & Technical Publishing Company, England, 1975.
188. Dancis J: Prenatal diagnosis: A promise fulfilled. *Hosp Practice* 10:11, 1975.
189. Pearson J, Dancis J, Axelrod F, Grover N: The sural nerve in familial dysautonomia. *J Neuropathol Exp Neurol* 34:413-24,1975.

190. Dancis J: The transfer of free fatty acids across human placenta. *In* Early Diabetes in Early Life. Pp. 233-236, Academic Press, New York, 1975.
191. Dancis J, Jansen V, Levitz M: Transfer across perfused human placenta. IV. Effect of protein-binding of free fatty acids. *Pediatr Res* 10:5-10, 1976.
192. Holland MJ, DiLorenzo AM, Dancis J, Balis ME, Yu TF, Cox RP: Hypoxanthine phosphoribosyltransferase activity in intact fibroblasts from patients with X-linked hyperuricemia. *J Clin Invest* 57:1600-5, 1976.
193. Francke U, Felsenstein J, Gartler SM, Migeon BR, Dancis J, Seegmiller JE, Bakay F, Nyhan WL: The occurrence of new mutants in the X-linked recessive Lesch-Nyhan Disease. *Am J Hum Genet* 28:123-37, 1976.
194. Dancis J, Hutzler J, Woody NC, Cox RP: Multiple enzyme defects in familial hyperlysinemia. *Pediatr Res* 19:686-91, 1976.
195. Challier JC, Schneider H, Dancis J: La consommation en oxygene de lobules placentaires humains maintenus en survie par perfusion d'une solution saline. *J Physiologie* 71:328, 1975.
196. Challier JC, Schneider H, Dancis J: In vitro perfusion of human placenta. V. Oxygen consumption. *Am J Obstet Gynecol* 126:261-5, 1976.
197. Holland MJ, Klein NC, Cox RP, Dancis J: Purine excretion by cultured skin fibroblasts from patients with abnormal purine metabolism. *Res Commun Chem Pathol Pharmacol* 14:331-42, 1976.
198. Cox RP, Krauss MR, Balis ME, Dancis J: Studies on cell communication with enucleated human fibroblasts. *J Cell Biol* 71:693-703, 1976.
199. Cox RP, Krauss MR, Balis ME, Dancis J: Absence of metabolic cooperation in PHA-stimulated human lymphocyte cultures. *Exp Cell Res* 101:411-4, 1976.
200. Anderson LT, Herrmann L, Dancis J: The effect of L-5-hydroxytryptophan on self-mutilation in Lesch-Nyhan disease: a negative report. *Neuropadiatrie*, 7:439-42, 1976.
201. Anderson LT, Dancis J, Albert M, Herrmann L: Punishment learning and self-mutilation in Lesch-Nyhan disease. *Nature* 265:461-3, 1977.
202. Dancis J, Hutzler J, Cox RP: Maple syrup urine disease: branched-chain keto acid decarboxylation in fibroblasts as measured with amino acids and keto acids. *Am J Hum Genet* 29:272-9, 1977.

203. Axelrod FB, Dancis J: Familial dysautonomia. *In* Disorders of the Respiratory Tract in Children. E.L. Kendig & V. Chernick, eds. 3<sup>rd</sup> ed., W.B. Saunders Co., Philadelphia, 1977.
204. Dancis J, Jansen V, Brown GF, Gorstein F, Balis ME: Treatment of hypoplastic anemia in mice with placental transplants. *Blood* 50:663-70, 1977.
205. Pearson J, Pytel BA, Grover-Johnson N, Axelrod F, Dancis J: Quantitative studies of dorsal root ganglia and neuropathologic observations on spinal cords in familial dysautonomia. *J Neurol Sci* 35:77-92, 1978.
206. Sullivan SG, Dancis J, Cox RP: Transient and long-term differential modulations of branched-chain alpha-keto acid decarboxylase activity in hypophysectomized rats. *Biochim Biophys Acta* 539:135-41, 1978.
207. Dancis J, Jansen V, Levitz M, Rosner W: Effect of protein binding on transfer and metabolism of cortisol in perfused human placenta. *J Clin Endocrinol Metabol* 46:863-8, 1978.
208. Cox RP, Hutzler J, Dancis J: Antenatal diagnosis of maple-syrup-urine disease. *Lancet* 2:212, 1978.
209. Dancis J: The Placenta: An Overview in Perinatal Physiology, Edited by U. Stave, Plenum Publishing Co., New York, p.19, 1978.
210. Sullivan SG, Dancis J, Cox RP: Modulation of branched-chain alpha-keto acid decarboxylase activity in rat liver mitochondria by hypophysectomy. *Arch Biochem Biophys* 176:225-34, 1976.
211. Anderson L, Dancis J, Alpert M: Behavioral contingencies and self-mutilation in Lesch-Nyhan disease. *J Consult Clin Psychol* 46:529-36, 1978.
212. Dancis J, Schneider H: Physiology of the placenta. *In* Human Growth, vol. 1, F. Falkner, J.M. Tanner, eds. Plenum Pub-Psychol 46:529, 1978.
213. Levitz M, Jansen V, Dancis J: The transfer and metabolism of corticosteroids in the perfused human placenta. *Am J Obstet Gynecol* 132:363-6, 1978.
214. Dancis J: Presentation of the Academy Medal to Saul Krugman, M.D. *Bull NY Acad Med* 54:910-4, 1978.

215. Anderson LT, David R, Bonnet K, Dancis J: Passive avoidance learning in Lesch-Nyhan disease: effect of 1-desamino-8-arginine-vasopressin. *Life Sci* 24:905-10, 1979.
216. Schneider H, Mohlen KH, Dancis J: Transfer of amino acids across in vitro perfused human placenta. *Pediat Res*, 13:236, 1979.
217. Schneider H, Mohlen KH, Challier JC, Dancis J: Transfer of glutamic acid across the human placenta perfused in vitro. *Br J Obstet Gynaecol* 86:299-306, 1979.
218. Dancis J, Ghosh NK, Jansen V, Schneider H, Fallon RJ, Cox RP: Secretory proteins in the perfused human placenta. *Biol Neonate* 35:188-93, 1979.
219. Cederbaum SD, Shaw KN, Dancis J, Hutzler J, Blaskovics JC: Hyperlysinemia with saccharopinuria due to combined lysine-ketoglutarate reductase and saccharopine dehydrogenase deficiencies presenting as cystinuria. *J Pediatr* 95:234-8, 1979.
219. Dancis J, Hutzler J, Cox RP: Familial hyperlysinemia: enzyme studies, diagnostic methods, comments on terminology. *Am J Hum Genet*, 31:290-9, 1979.
220. Dancis J: Chairman, Task Force on Predictors of Fetal Maturation. In *Antenatal Diagnosis*. National Institutes of Health (Publication #79-1973), 1979.
221. Dancis J, Jansen V, Levitz M: Placental transfer of steroids: effect of binding to serum albumin and to placenta. *Am J Physiol* 238:208-213, 1980.
222. Dancis J: Prenatal diagnosis of metabolic. *Prog Clin Biol Res* 44:27-46, 1980.
223. Dancis J, Hutzler J: The metabolism of D- and L-pipecolic acid in the rabbit and rat. *Biochim Biophys Acta* 675:411-5, 1981.
224. Dancis J, Silvers DN, Balis ME, Cox RP, Schwartz MS: Evidence for the derivation of individual hair roots from three progenitor cells. *Hum Genet* 58:414-6, 1981.
225. Dancis J: Placental transport of amino acids, fats and minerals. *Mead Johnson Symp Perinat Dev Med* (18):25-31, 1981.



226. Schneider H, Challier J-C, Dancis J: Transfer and metabolism of glucose and lactate in the human placenta studied by a perfusion system in vitro. *Placenta* (suppl 2) 129, 1981.
227. Dancis J, Kammerman S, Jansen V, Schneider H, Levitz M: Transfer of urea, sodium and chloride across the perfused human placenta. *Am J Obstet Gynecol* 141:677-81, 1981.
228. Dancis J: Presentation of the Howland Award to Dr. Saul Krugman. *Pediatr Res* 15:1323-7, 1981.
229. Dancis J, Hutzler J: Comparative rates of metabolism of pipercolic acid in several animal species. *Comp Biochem Physiol* 73B:1011-1012, 1982.
230. Dancis J: Familial dysautonomia. *In* *Autonomic Failure*, ed. By R.Bannister, Oxford University Press, 1983.
231. Hutzler J, Dancis J: The determination of pipercolic acid: methods and results of hospital survey. *Clin Chim Acta* 128:75-82, 1983.
232. Dancis J, Hutzler J, Ampola MG, Shih VE, van Gelderen HH, Kirby LT, Woody NC: The prognosis of hyperlysinemia: an interim report. *Am J Hum Genet* 35:438-42, 1983.
233. Dancis J, Kammerman S, Jansen V, Levitz M: The effect of ouabain on placental transport of <sup>86</sup>Rb. *Placenta* 4:351-9, 1983.
234. Dancis J, Jansen V, Hutzler J: Hair root analysis in X-linked ichthyosis. *J Inherit Metab Dis* 6:173-7, 1983.
235. Ron M, Levitz M, Chuba J, Dancis J: Transfer of 25-hydroxyvitamin D<sub>3</sub> and 1,25-dihydroxyvitamin D<sub>3</sub> across the perfused human placenta. *Am J Obstet Gynecol* 148:370-4, 1984.
236. Dancis J: One hundred minus five and other reflections: presidential address, American Pediatric Society, 1984. *Pediatr Res* 18:1202-4, 1984.
237. Schneider H, Dancis J: Modified double-circuit in vitro perfusion of placenta. *Am J Obstet Gynecol* 148:836, 1984.
238. Dancis J: Why perfuse the human placenta. *Contr Gynecol Obstet* 13:1-4, 1985.
239. Dancis J, Snyderman SE: Maple syrup urine disease. *In* *Current Therapy in Neonatal-Perinatal Medicine 1985-1986*. N Nelson, ed. BC Decker Inc. Philadelphia, 1985.

240. Dancis J, Cox RP, Balis ME: Lesch-Nyhan disease. In Congenital Metabolic Diseases, RA Wapnir, ed. Marcel Decker, Inc., New York, 1985.
241. Dancis J, Schneider H, Challier JC: Nutrition of the placenta and the fetus. *Curr Concepts Nutr* 14:59-72, 1985.
242. Goldstein M, Anderson LT, Reuben R, Dancis J: Self-mutilation in Lesch-Nyhan disease is caused by dopaminergic denervation. *Lancet* I:338-9, 1985.
243. Dancis J, Lehanka J, Levitz, M: Transfer of riboflavin by the perfused human placenta. *Pediatr Res* 19:1143-6, 1985.
244. Lazarow PB, Black V, Shio H, Fujiki Y, Hajra AK, Datta NS, Bangaru BS, Dancis J: Zellweger syndrome: biochemical and morphological studies on two patients treated with clofibrate. *Pediatr Res* 19:1356-64, 1985.
245. Snyderman SE, Dancis J: Maple syrup urine disease. In Birth Defects Compendium, 3<sup>rd</sup> ed, The National Foundation March of Dimes, 1985.
246. Dancis J: Isovalericacidemia. In Birth Defects Compendium, 3<sup>rd</sup> ed., The National Foundation March of Dimes, 1985.
247. Dancis J: Hypervalinemia. In Birth Defects Compendium, 3<sup>rd</sup> ed., The National Foundation March of Dimes, 1985.
248. Dancis J, Schneider H: Physiology of the placenta. In Human Growth, vol 1, F Falkner, JM Tanner, eds. Plenum Publ Corp, New York, 1986.
249. Goldstein M, Kuga S, Kusano N, Meller E, Dancis J, Schwarcz R: Dopamine agonist induced self- mutilative biting behavior in monkeys with unilateral ventromedial tegmental lesions of the brainstem: possible pharmacological model for Lesch-Nyhan syndrome. *Brain Res* 367:114-20, 1986.
250. Dancis J, Hutzler J: The significance of hyperpipecolatemia in Zellweger syndrome. *Am J Hum Genet* 38:707-11, 1986.
251. Lam S, Hutzler J, Dancis J: L-pipecolaturia in Zellweger syndrome. *Biochim Biophys Acta* 882:254-7, 1986.

252. Dancis J, Lehanka J, Levitz M, Schneider H: Establishment of gradients of riboflavin, L-lysine and alpha-aminoisobutyric acid across the perfused human placenta. *J Reprod Med* 31:293-6, 1986.
253. Schneider H, Dancis J: In vitro perfusion of human placenta. In *Trophoblast Research*, vol. 2. Cellular Biology and Pharmacology of the Placenta. RK Miller, HA Thiede, eds. Plenum Medical Book Company, New York, 1987.
254. Schneider H, Proegler M, Sodha R, Dancis J: Asymmetrical transfer of alpha-aminoisobutyric acid (AIB) leucine, and lysine across the in vitro perfused human placenta. *Placenta* 8:141-51, 1987.
255. Dancis J: Placental physiology. In *Prenatal and Perinatal Biology and Medicine*, Vol 1, T Quilligan, J Johnson, N Kretchmer, eds. Gordon Breach Science Publishers, New York, 1987.
256. Kirshenbaum NW, Dancis J, Levitz M, Lehanka J, Young BK: Riboflavin concentration in maternal and cord blood in human pregnancy. *Am J Obstet Gynecol* 157:748-52, 1987.
257. Dancis J, Lehanka J, Levitz M: Placental transport of riboflavin: differential rates of uptake at the maternal and fetal surfaces of the perfused human placenta. *Am J Obstet Gynecol* 158:204-10, 1988.
258. Black VH, Dancis J: Peroxisomes in amniotic fluid cells. *Ann NY Acad Sci* 494:192, 1987.
259. Lazarow PB, Small GM, Santos M, Shio H, Moser A, Moser H, Esterman A, Black V, Dancis J: Zellweger syndrome amniocytes: morphological appearance and a simple sedimentation method for prenatal diagnosis. *Pediatr Res* 24:63-7, 1988.
260. Dancis J: Acceptance of the Howland Award. *Pediatr Res* 24:514, 1988.
261. Dancis J, Wilson D, Hoskins IA, Levitz M: Placental transfer of thiamine in the human subject: in vitro perfusion studies and maternal-cord plasma concentrations. *Am J Obstet Gynecol* 159:1435-9, 1988.
262. Dancis J, Cox RP: Errors of lysine metabolism. In *The Metabolic Basis of Inherited Disease*. 6<sup>th</sup> ed, CR Scriver, AL Beaudet, WS Sly, D Vale, eds. McGraw Hill Book Company, New York, VI, p665, 1989.
263. Spatling L, Fallenstein F, Schneider H, Dancis, J: Bolus tocolysis: treatment of preterm labor with pulsatile administration of a B-adrenergic agonist. *Am J Obstet Gynecol* 160:713-7, 1989.

264. Jonathan Lanman: In memoriam.
265. Commencement Address: Miami Childrens' Hospital, 1989.
266. Dancis J: The transfer of nutrients across the perfused human placenta. *Adv Nutr Res* 8:1-10, 1990.
267. Cohen MI, Dancis J, Finberg L, Hirschhorn K, Katz M, Wasserman E: Patient care, resident stress, and government regulation. *Am J Dis Child* 143:181-2, 1989
268. Liebes L, Mendoza S, Wilson D, Dancis, J: Transfer of zidovudine (AZT) by human placenta. *J Infect Dis* 161:203-7, 1990.
269. Rindler MJ, Traber MG, Esterman AL, Bersinger NA, Dancis J: Synthesis and secretion of apolipoprotein E by human placenta and choriocarcinoma cell lines. *Placenta* 12:615-24, 1991.
270. Dancis J: Conference report: International Conference on Placenta, Tokyo, 1-3 October 1990. *Placenta* 12:79-81, 1991.
271. Dancis J: Placenta as a model and source eds. D. Genbasen et al. Book review. *Placenta* 11, 1990.
272. Dancis J, Levitz, M, Katz J, Wilson D, Blaner WS, Piantedosi R, Goodman DS: Transfer and metabolism of retinol by the perfused human placenta. *Pediatr Res* 32:195-9, 1992.
273. Dancis J, Lee JD, Mendoza S, Liebes L: Transfer and metabolism of dideoxyinosine by the perfused human placenta. *J Acquir Immune Defic Syndr* 6:2-6, 1993.
274. Dancis J, Lee J, Mendoza S, Liebes L: Nucleoside transport by perfused human placenta. *Placenta* 14:547-54, 1993.
275. Liebes L, Mendoza S, Lee JD, Dancis J: Further observations on zidovudine transfer and metabolism by human placenta. *AIDS* 7:590-2, 1993.
276. Cox R, Dancis J: Errors of lysine metabolism. In *Metabolic Basis of Inherited Disease* ed. C Scriver.
277. Dancis J: Bolus administration of ZDV during pregnancy. In *Bulustokolyse in Theorie und Praxis*. L Spatling and F Fallenstein, ed., 1993, Steinkopff Verlag Darunstadt page 49.

278. Dancis J: Profiles in Pediatrics: L Emmett Holt, Jr. *J Pediatr* 122:830-1, 1993.
279. Krishna RB, Levitz M, Dancis J: Transfer of cocaine by the perfused human placenta: the effect of binding to serum proteins. *Am J Obstet Gynecol* 169:1418-1423, 1993.
280. Dancis J: Classics revisited: The Josiah Macy, Jr. Conference on Gestation. *Placenta* 15: 339-340, 1994.
281. Esterman AL, Rosenberg C, Brown T, Dancis J: The effect of zidovudine and 2'3' -dideoxyinosine on human trophoblast in culture. *Pharmacol Toxicol* 76:89-92, 1995.
282. Esterman AL, Finlay TH, Lee JD, Dancis J: Uptake of human immunodeficiency virus envelope protein gp120 by human trophoblast in culture. *Am J Obstet Gynecol* 174:49-54, 1996.
283. Esterman AL, Dancis J, Lee JD, Rindler ML: Two mechanisms for IgG uptake in cultured human trophoblast: evidence for a novel high affinity Fc receptor. *Pediatr Res* 38: 1-6, 1995.
284. Krishna RB, Levitz M, Dancis J: Lack of effect of cocaine on lysine and alanine uptake in human placental villi or transfer in perfused human placenta. *Reprod Fertil Dev* 7:1495-97, 1995
285. Krishna RB, Dancis J, Levitz M: Influence of organic cations on basic amino-acid uptake by human placental villi. *Reprod Fertil Dev* 7:1491-94, 1995.
286. Dancis J, Liebes L: Drug delivery during pregnancy: evaluation in vitro of new drugs. *Reprod Fertil Dev* 7:1485-89, 1995.
287. Esterman A, Finlay TH, Dancis J: The effect of hypoxia on term trophoblast: Hormone synthesis and release. *Placenta* 17:217-22, 1996.
288. Esterman A, Greco MA, Mitani Y, Finaly TH, Ismail-Beigi F, Dancis J: The effect of hypoxia on human trophoblast in culture: morphology and glucose transport and metabolism. *Placenta* 18:129-36, 1997.
289. Seligman SP, Nishiwaki T, Kadner SS, Dancis J, Finlay TH: Hypoxia stimulates ecNOS mRNA expression by differentiated human trophoblasts. *Ann NY Acad Sci* 828:180-7, 1997.