ORAL HISTORY PROJECT

Cheston M. Berlin, Jr., MD

Interviewed by
Ian Paul, MD, MSc

October 21, 2010
Hershey, Pennsylvania

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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 that 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.

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ABOUT THE INTERVIEWER

Ian M. Paul, MD, MSc

Ian Paul, MD, MSc is a Professor of Pediatrics and Public Health Sciences at Penn State University. Dr. Paul is a graduate of Franklin & Marshall College (1994), achieved a doctor of medicine (1998) and masters of science degree (2003) from Penn State, and completed his Pediatric Residency at Duke University Medical Center (2001). Since returning to Penn State as a faculty general pediatrician in 2001, Dr. Paul has focused on two general areas of clinical research: 1) preventive interventions delivered after childbirth to newborns and their mothers and 2) clinical therapeutics for children. Regarding the first area, he was funded as a PI by HRSA/MCHB to study the impact of postnatal/postpartum home visits for breastfeeding newborns in a suburban setting. He now is funded by NIH/NIDDK to study primary prevention of obesity through infancy-based interventions. Additionally, he serves as a co-investigator in the NICHD-funded Community and Child Health Network (CCHN), three NICHD-funded projects studying prenatal, delivery, infant, and/or family factors related to health outcomes, and a cooperative grant from CDC aimed at preventing Shaken Baby Syndrome. For the second research area, clinical therapeutics for children, Dr. Paul has extensive research and clinical experience with over-the-counter medications including cough and cold products and antipyretics. He served on the Executive Committee for the American Academy of Pediatrics (AAP) Section of Clinical Pharmacology and Therapeutics from 2004-2010, and subsequently was appointed a member of the AAP Committee on Drugs in 2010. He is also a co-investigator on two NHLBI-funded asthma research networks, the Childhood Asthma Research and Education (CARE) network, and its successor, AsthmaNet.
DR. PAUL: This is an interview of Dr. Cheston M. Berlin, Jr. being conducted by Dr. Ian Paul in Hershey, Pennsylvania on October 21st, 2010. Dr. Berlin, it’s great to be here with you this morning. I walked across the hall to conduct this interview from my office. And as my mentor, it’s an honor for me to be interviewing you on your long and distinguished career.

Before we get into the details, maybe you can just summarize your current position and how long you’ve been here. And your current responsibilities, and where you’ve come from.

DR. BERLIN: I am currently a University professor of pediatrics and professor of pharmacology in the College of Medicine of the Pennsylvania State University. My clinical responsibilities are through the Penn State [Hershey Children’s Hospital, the new one which just broke ground a couple months ago and still is going up as we speak.

This is my 40th year at Hershey. I came in July of 1971. Currently my major clinical interests are in phenylketonuria (PKU), Tourette syndrome, pediatric pharmacology, drugs in human lactation, and the whole field of breastfeeding.

DR. PAUL: And Dr. Berlin, you were selected for this oral history, which is being supported by the Section on Clinical Pharmacology and Therapeutics from the American Academy of Pediatrics, because of your long and distinguished contributions to the field of pediatric clinical pharmacology. I’m pleased that I was part of the committee that nominated you for this recognition. So having been here for 40 years, and having had such an influence on many aspects of pediatrics, I’m going to start by talking about how you got to the place that you are now.

Tell me a little bit about your family growing up. Was college education or medical education part of your family? Or were you breaking ground already from a young age in your own family?

DR. BERLIN: I was born and raised in Pittsburgh, Pennsylvania. Neither of my parents went to college. In fact I’m the first in my family from either side to go to college, first generation. I have a sister three years younger than myself.

My father worked for an insurance company as a field agent where he serviced the agents in the small towns in western Pennsylvania who were selling fire and casualty insurance. My mother had gone to nursing school. In those days nursing education was through hospitals. She went to the West
Penn [Western Pennsylvania] Hospital and received her RN -- as did her sister, my aunt, Lillian McMillan. So I was exposed to medicine through my mother from a young age.

My family physician was a man from Canada by the name of Ralph Dunlap, of Scottish background, who received his education at the University of Toronto. When I was in high school and told him on one of my visits that I was interested in medicine, I asked him where he thought I should go to college. He told me that the only college I should consider going to was Haverford College, of which I had not heard anything. His wife was a fellow nurse with my mother, one of the longest friendships I’ve known; they knew each other for 65 years. Years later, after he had died, I asked his wife why Dr. Dunlap had suggested Haverford. And she said that she didn’t know. He had no contact with Haverford. They had two boys, neither of which were interested in going to Haverford. She never understood his fascination with that school. But that’s where I ended up, at Haverford.

DR. PAUL: Did your mother or your father encourage or foster your interest in medicine? Or were they ambivalent about your future career choice, and going to college, and things like that?

DR. BERLIN: They never emphasized that I should go into medicine. It was never really discussed. It was made very clear to me that they really thought that I needed to go to college. They were determined that both myself and my sister needed to have a college education, because they didn’t have it and they thought that was important.

DR. PAUL: Were the majority of your friends and people in your high school to college at that point?

DR. BERLIN: Yes. Virtually all of them went to college.

DR. PAUL: Were most of them also first generation college students? Or was it more of a mix?

DR. BERLIN: It was a mix, but I would say a majority of them were also first generation. I graduated from high school in 1954, and so a lot of my classmates’ parents grew up in the Depression, when very few people went to college, at least where I lived.

DR. PAUL: So you decided to cross Pennsylvania, go from Pittsburgh to suburban Philadelphia. Had you traveled much outside of the Pittsburgh area before you went to college?

DR. BERLIN: I’d been out of state once in my entire life. We went to Chicago to visit family friends, in my father’s company car, a 1948 Chevy.
Wonderful car. We drove all the way to Chicago in -- I’m going to say probably 1950. It took forever.

DR. PAUL: Tell me how what you recall from those days; leaving home for the first time and really being away from family for the first time.

DR. BERLIN: It was difficult. I recall very clearly traveling down the Pennsylvania Turnpike to Valley Forge exit. Getting off, and going to Haverford. With my mother and father and this newer Chevy. It probably was a 1952 Chevy that we went in. Again, it was a company car. My father had to get special permission to take me down. We didn’t have a family car.

I think that they were probably as overwhelmed as I was by the experience. But the important point to make here, and the first of many I wanted to make in this, is how everything seems to be connected. The person who met us when I arrived at Haverford was a senior student who was part of what was called the customs committee. The customs committee was put together to introduce freshmen to the college. You were assigned a custom member, and he stayed with you for a good part of the first couple months. He didn’t live with you, but he made sure that you knew what was going on. And this person’s name was Grant Morrow, who became the chairman of pediatrics at Ohio State [University] [Columbus Children’s Hospital, now named Nationwide Children’s Hospital]. He subsequently went to the University of Pennsylvania School of Medicine. I think he did his residency at CHOP [Children’s Hospital of Philadelphia], and then moved to Columbus and became a very major figure in academic pediatrics in the 1960s and 1970s. He currently is still active. He’s in the research foundation [Columbus Children’s Research Institute]. I think he’s president of the research foundation. So this is why I try to emphasize to students and young people in medicine that everything is connected.

DR. PAUL: Right. And these kind of things have happened to you many times, where you’ve had chance encounters that wound up being very influential.

DR. BERLIN: They are very important.

So the first couple months were difficult for me. I even contemplated one time that maybe I should think about transferring to someplace nearer home. But spring came, and spring on the Haverford campus is beautiful. I changed roommates and that was a very positive move. In fact, I just spoke to that roommate about a month ago.

DR. PAUL: The one you switched to.
DR. BERLIN: The one I switched to. Yes. We’ve remained friends for over 55 years now. From then on I really had difficulty even coming home for vacations, because I liked the school so much.

DR. PAUL: And that spring -- did you begin your college track career?

DR. BERLIN: Yes. I did.

DR. PAUL: Being part of team sports usually helps things a lot.

DR. BERLIN: That helped a lot. Yes.

DR. PAUL: And which events were your specialty?

DR. BERLIN: I did the sprints. In those days it was measured in yards. I know what you’re getting at. I got the 100 yard, the 220 yard. My favorite race was the 220-yard low hurdles. I did sprints, hurdles, and the broad jump.

DR. PAUL: And in your college track career, did you compete against anyone of notoriety?

DR. BERLIN: Well, I certainly competed against some very outstanding athletes in the Philadelphia area, many of which are not well known. But I was intrigued to learn during last presidential election, when one of the candidates was a person named Ron Paul.

DR. PAUL: No relation to me.

DR. BERLIN: No relation to you. And that seemed to trigger a memory. But it wasn’t clear, until it was mentioned that he was a physician -- I think he’s an obstetrician/gynecologist -- and that he attended Gettysburg College and ran track. So I went back to the archives.

DR. PAUL: Because you knew he was about the same age as you are.

DR. BERLIN: Yes. He was a year older than I, I think. I went back to my clippings, and I got out some of the track results, and found out that he and I had competed against each other on several occasions in the sprints. He won the 100, but I won the 220. Now I can look back and say that the pinnacle of my track career was defeating Ron Paul in the 220.

DR. PAUL: We could have you challenge him again if he is ready. Having extracurricular events always makes college a more rewarding experience. But you had other rewarding experiences, and you wound up having lifelong friends
from college, many of whom have also gone on to successful academic careers. Do you want to talk about them, and how the group of you chose medicine?

DR. BERLIN: There were 96 persons in my class -- it was an all men’s school then, it isn’t now -- who graduated. I think when I counted, 20 of them had gone into medicine, and many of them have done very well. Not only those who went into medicine, but those who did other things. For example, one of my closest friends there, David Ellis, became president of Lafayette College and president of the Museum of Science, Boston. One of the other persons is a world-famous biochemist, Ron [H. Ronald] Kaback who for many years was at the Roche Institute of Molecular Biology in New Jersey. When that closed he became a Howard Hughes scholar out at UCLA, [University of California, Los Angeles]. He is still active in research; I just spoke with him a couple months ago.

I’ve remained friends with probably 20 members of my class over the years. We’ve kept in touch. Not all of them are in medicine. Jay Mohr, my roommate, has a professorship in neurology at the Neurological Institute [of New York] in New York City. He is an expert on stroke, language and speech in patients who have had bad strokes. So I think our class has produced some very, very good people.

DR. PAUL: You just had a big reunion.

DR. BERLIN: We just had our 50th reunion a couple years ago and all those old-timers showed up. We had a great time.

DR. PAUL: With their spouses.

DR. BERLIN: With their spouses. I have this wonderful picture of myself and three roommates with our original spouses, and I believe it is 186 years of marriage between us.

DR. PAUL: That’s a wonderful achievement. While you were at Haverford, you decided to become a chemistry major.

DR. BERLIN: Yes.

DR. PAUL: Tell me about that choice, and whether that choice had any influence on your future directions. Relationships between chemistry and clinical pharmacology are significant.

DR. BERLIN: I don’t know that I had specific concrete reasons for choosing chemistry except that the field fascinated me. I thought the whole business of molecules was very interesting. I didn’t think I was bright enough to study physics, but I thought that I could manage chemistry.
I think it had influence. I got very interested in some aspects of chemistry which in those days were referred to as natural product chemistry, led really by the great chemist at Harvard, R. [Robert] B. Woodward, who did the structures of things like tetracycline, lysergic acid, cholesterol, and vitamin B12 and on and on. This was just very intriguing. I think that led directly to an interest in pharmacology, because pharmacology depends so much on chemical structures and interaction between compounds. So I did choose that as my major. And I’m glad that I did it.

We had a small group of about seven or eight of us. David Ellis became the president of Lafayette. He went on to MIT [Massachusetts Institute of Technology] in physical chemistry and got his PhD and was on the faculty at the University of New Hampshire before he became president of Lafayette, and maintained an active interest in physical chemistry even when he was in administration.

It was a good department, a solid department. I think it prepared us well for medical school because they did not believe in what many schools then believed, which was the pre-med major where you took a little bit of chemistry and a little bit of physics. They said, “You want to major in chemistry? You’re going to be an ACS [American Chemical Society] major, and you’re going to take the courses that regular chemistry majors will take who are going to graduate school.” So we were all mixed in together. It was a very good experience.

DR. PAUL: Were you sure from the beginning that you were going to use your major in chemistry as a prelude to going to medical school?

DR. BERLIN: No, I don’t think I was. In fact at one time I even contemplated going into chemistry. The connection between that and pharmacology really didn’t come until I did pharmacology in medical school.

DR. PAUL: Are there other things that happened during your time at Haverford that influenced your later direction? The other people that you met that may have had a big influence on your subsequent life?

DR. BERLIN: Well, there were a couple faculty members who influenced me. Not in the direction of where I was going to go, but in my interest in reading and learning and maintaining education. So I think I was immersed in the concept of continuing education before it became the buzzword that it seems to be.

Because I took a course in English literature, I learned Samuel Johnson. I got very interested in all of those figures. And I loved the Haverford library. I spent so much time in there just walking the stacks and browsing and
looking at things. And that’s reflected today in my interest outside of medicine. I try to remain interested in a lot of things, because I think it helps you deal with all of the tensions that are associated with taking care of children, and particularly sick children, and terrible clinical and social situations in pediatrics. I think it helps to have that kind of a background.

DR. PAUL: Maybe we can digress just a minute. I know you have strong opinions about libraries in general. You mentioned walking the stacks in the library and reading books and holding books. I know that that influenced you quite a bit and that you have strong opinions on it. So do you want to talk about the importance of books or your feelings about books and libraries?

DR. BERLIN: Well, I think that really the most important part of learning and society is being able to read. The problem with electronic reading, aka Kindle, is that you really can’t browse, and you’re restricted in what you can look at. And who knows? It’s like life. When you go into the library, you don’t know what’s going to come up, what you’re going to find, what you’re going to look at. That’s the way I felt when I went to the Haverford library. I never knew what I was looking for. Maybe that’s a comment on all of us in life. We don’t know what we’re looking for. We have to be open and receptive. And I think that when you put written material on computers, I think a lot of that openness and that opportunity is lost.

DR. PAUL: Very well stated. A couple other things I want to ask you about Haverford. So did your college education cost $200,000 for four years like it would cost today to go to Haverford?

DR. BERLIN: Well, of course the money numbers were different. When I went to Haverford, my father I would say was lower-white-collar-class in terms of what he did. He wasn’t blue-collar, because he didn’t do labor. But he didn’t make a lot of money. In fact, I think his salary when I went to Haverford was about between $6,000 and $7,000 a year. And the Haverford tuition was $675 my first year. So it roughly was 10% of my father’s salary. Today, my father’s salary would have to be somewhere in the area of $420,000 to have that ratio. So I think that’s an important ratio to think about.

I worry about all of the private colleges -- even public colleges. Your college, first tier, Franklin & Marshall [College], has almost the identical tuition that Haverford does. So that if your two children want to go to Franklin and Marshall, you’re going to have to make -- to get that ratio -- somewhere between $500,000 and $750,000 a year salary.

DR. PAUL: By the time they go to school I may need more. Thank you for advocating for that.
DR. BERLIN: One of the consequences of this has really been to make it very difficult for middle-class people to go to these colleges, because of the cost.

DR. PAUL: It’s going to be an increasingly difficult problem.

DR. BERLIN: Yes. I don’t have a solution for it.

DR. PAUL: So your parents didn’t have a college education and were lower-middle-class, as you said. You were the first one to go to college. And then you tell them you want to go to medical school. Tell me what you recall about that time and applying to medical school. What your family’s reaction was. That not only did you want to get a college degree, but now you want more education.

DR. BERLIN: They were very supportive. They didn’t say that it couldn’t be done. They didn’t say, “Don’t do it.” They said, “Do it. And we’ll find a way.”

I found out later that -- this was about 1958 -- they moved from the house I grew up in to another house, and one of the reasons that they did that was to have a bit more money, not only for myself but also for my sister’s education. They were able to make enough money so that they could save a little bit for our future education. By that time my sister was in college, and she had planned to become a nurse. She went to Muskingum College for two years, and about the same time that I was thinking of going to medical school, she transferred to the University of Pittsburgh for their degree program in nursing. So my parents made some plans to have a bit more money in case we needed it for medical school.

DR. PAUL: Sacrifice.

DR. BERLIN: Yes.

DR. PAUL: So did you consider multiple medical schools? Or was there only one that you considered?

DR. BERLIN: Well, I did consider multiple schools. But I did something that was not very good, not very smart. I only applied to two medical schools. And I don’t know why I did that. I can’t think back why. I guess I must have been –

DR. PAUL: You were confident.
DR. BERLIN: I am not sure that I was; I don’t remember being confident. I think it’s just that I only applied to two colleges, so I only applied to two medical schools. And I fortunately was accepted at both of them. And I decided to go to Harvard [Medical School].

DR. PAUL: Now was it before you left for Boston that you had a first date with a young lady named Anne Risher?

DR. BERLIN: Yes. I did have that. Again, due to connections. This is the second time I bring up the importance of connections. My very close friend and classmate at Haverford, who became a distinguished professor of rheumatology at the University of Pittsburgh, Thomas Medsger, was engaged to a former high school friend of mine from Mount Lebanon High School. He was from the Pittsburgh area. He was from what’s called the Allegheny River side. He was actually from Sewickley. And she was from Mount Lebanon (my home town). And they were engaged.

They thought that Anne and I might make a good couple. So they arranged for me to meet her at a picnic at her family’s home in Sewickley where there were actually three generations in attendance. It was not a small group. This was Anne’s first social outing with her father after her mother died. Her mother died of brain cancer in June of 1958, and this was in August of 1958 that we had this picnic, which is where I met her.

DR. PAUL: So this was right after you graduated from Haverford. And she made quite an impression on you on that first encounter.

DR. BERLIN: Yes. I proposed to her on a blind date.

DR. PAUL: It occurred shortly after this picnic? Or that was the blind date?

DR. BERLIN: That was. I told her then that I really had made a decision. And that maybe this wasn’t the time for me to tell her. But I think that she had a pretty good idea what it was. I actually asked her the next week, when we had a more regular date so to speak, without a big group of people.

But I did take her home that night from the picnic. I told her then that I really thought I’d made an important decision. And I went home. I don’t remember this. My mother told me years later. I went home that night and told my mother, with whom I never discussed things like this. But I told her that I’d met the girl that I was going to marry.

DR. PAUL: Right then you were probably heading up to Boston.
DR. BERLIN: Yes.

DR. PAUL: So Boston and Pittsburgh are a fair distance apart. You were going to be busy as a medical student I presume. So tell me a little bit about how you made that Boston-to-Pittsburgh relationship work.

DR. BERLIN: Well, I had her come up. She took a plane ride, one of those old TWA planes. She came up in the fall. There still is a custom at Harvard Medical School that in October or November the second year class puts on a show. It’s called the second year show. I brought her up for that, totally unprepared for the content of the second year show. It was really as only medical students can do. I was really squirming in my seat thinking, ‘What does she think about all this? Am I going to really blow this whole thing?’ But she was quite unfazed by it and we had a nice weekend. And then I came home for Thanksgiving. And then I came home for Christmas. So we continued to see each other, and by then, of course, we had had it pretty firmly established. We got married in the summer following my second year.

DR. PAUL: And you just celebrated another anniversary.

DR. BERLIN: We just had our 50th anniversary.

DR. PAUL: Now we’ll move to when you showed up at Harvard, because so many important things happened in such a short period of time that had such a long influence. So you met your wife just before you enrolled at Harvard.

DR. BERLIN: One month.

DR. PAUL: One month before. And then you met another person when you showed up at Harvard who has continued to now, 50 years later, have an influence on you.

DR. BERLIN: My parents again received permission from the company to drive one of these old Chevys from Pittsburgh to Boston, which took us two days. We stopped halfway through. We arrived at the dormitory, which was called Vanderbilt Hall and walked up to my room. I was carrying two suitcases. We opened the door. My parents, I think, were quite overwhelmed by this whole business of their son going first to college, now to medical school, and they were in Boston, out of the state of Pennsylvania. This really was pretty heavy stuff for them. Before I set the suitcases down there was a knock on the open doorframe of my room. And this young man came in and said, “Welcome. I’m Elliot Vesell.” He was living right across the hall from me. He was a fourth year student. And he proceeded to put my parents -- especially my mother -- quite at ease about this whole thing. They remained very close friends until she died. They were very, very close
friends. Elliot always said that my mother reminded him of his mother. So this was the beginning of a friendship that has continued to this day, which is now 52 years.

DR. PAUL: And as we’ll go on, Dr. Vesell will have more chances to rear his head at important moments for you. And we’ll get more into him.

Medical school is different now than it was then. Tell me some of your memories of beginning medical school at Harvard. First things. Gross anatomy. How much longer you spent in anatomy than students do now.

DR. BERLIN: I’m remembering 450 hours or something. But it was the major course in the fall of the first year. The subsequent two courses were histology and embryology. We seemed to be in the lab forever. But we could not go in on nights and weekends; so there was a lot of tension to get everything done during the time that you were in the lab. And we would spend eight hours a day in the laboratory.

I wasn’t very happy with anatomy. But I viewed that it was important. And I think it was an important way to get to know members of the class. I think that was maybe the most important thing, learning to work together. We ate lunch together and everything. The whole dining room smelled of formaldehyde every time we would go in. So in future years you would know when the anatomy classes were in session, because the dining room at the dormitory always smelled of the embalming fluid.

DR. PAUL: Do you recall those initial basic science years and starting medical school being difficult? Challenging? Overwhelming? Or stressful? Or was it more fun?

DR. BERLIN: I wouldn’t use the word stressful. I think we had fun. I think I was well prepared academically for medical school. There were some things, though, that in retrospect I realized I didn’t pay enough attention to. One was nomenclature. I was really quite befuddled by the use of a lot of abbreviations and a lot of terms that I was not familiar with. Autonomic. Sympathetic. Parasympathetic. Things that we take for granted now. But for somebody coming in with a chemistry background who really had very little biology, I didn’t know what these terms meant. Initially embryology was a bit off-putting for me, because I had trouble with the nomenclature. But once we got into biochemistry and physiology, it was pretty straight sailing.

DR. PAUL: I’ve heard you talk many times about your experiences at Harvard during those years. Even in the basic science years you got to listen to lectures and work with some legends in medicine.
DR. BERLIN: That was the important thing for me. I was, I think, alert enough to know that these were very, very important people, and so I didn’t miss lectures. I don’t recall ever missing a lecture in medical school. I know students don’t go to lecture now, and I think that’s their choice. But I went to every lecture and listened to everybody. Some incredible people come to mind, for example, John Enders. John Enders was a very unassuming individual who had just recently been awarded the Nobel Prize because he and his two colleagues Thomas Weller and Frederick Robbins had successfully grown the poliomyelitis virus in tissue culture, which led directly to the development of first the Salk and subsequently the Sabin vaccine. The other person that was so impressive to me was Albert Coons who was the one who developed the whole business of the fluorescent antibody technique and the binding and so forth. Very unassuming people, but wonderful lecturers. They just laid it out and it was very clear. And you knew when you were listening to them that this was a very special situation.

DR. PAUL: Was your medical school set up similarly to how most medical schools are now? Two years of basic science followed by two clinical years?

DR. BERLIN: Yes. We didn’t have the case-based learning that they have now. But in the second year they tried to do that, because they had organ system blocks, which was a precursor to the case-based learning.

DR. PAUL: Was it early in your medical school career that you had an affinity for pediatrics? Or was it something that you figured out once you started getting into the more clinical work?

DR. BERLIN: No, it was late. I was initially going to be a neurosurgeon. I was fascinated by neuroanatomy; I just loved that course. In those days the Warren Anatomical Museum was up on the third floor of one of the buildings in the quadrangle of Harvard Medical School. And they had both coronal and sagittal cross sections of the brain every five millimeters, stained alternately for cells and for tracts, on glass three-inch-by-four-inch slides mounted on X-ray view boxes up there. And we could go up in the evening and look at that. Of course all the lights were off except the lights behind these sections of brain. I was just entranced by the sections of the brain and the nuclei and the structures. And I just thought that neurosurgery was going to be a good thing.

In retrospect, there was a hint that I might have been interested in pediatrics, because my adviser assigned to me in the first year was a pediatrician by the name of Harry Schwachman. Harry Schwachman was one of the precursors of what now is recognized as pediatric gastroenterology, which didn’t really exist then. His specialty at the Children’s Hospital Boston was cystic fibrosis. And we would meet with Dr. Schwachman; myself and three classmates. We would meet every Friday at 4:00. He always had Cokes for us, which was
really exciting; Coca-Colas. We would talk about different things. He would
take us to the autopsy suite and show us things. He would take us to the
floor, show us patients. This was pretty regular for most of the first two
years. But even then I still was interested in neurosurgery. Until my fourth
year.

DR. PAUL: And what happened?

DR. BERLIN: The curriculum at Harvard in those days was the third
year was not the clinical clerkships that we recognize today as being in the
third year. Instead, they were rather intense outpatient experiences in the
different specialties. So, for example, in pediatrics we would go to the
Children’s Hospital and we’d be assigned one patient. There would be three
of us and we would be assigned one patient each. We’d go in, take a history,
and examine the patient. Then we would come out, and three of us would get
together with our professor. We would go over each of the patients. That
would take all morning. And we would do this for all the specialties.

At the conclusion of the third year, you were asked what you wanted to do
for your residency. They would make sure that that was your first clerkship
in the summer between year three and year four. So I said, “I want
surgery.” So they assigned me to surgery at the Boston City Hospital in June
and July of 1961. I loved it. I had a great time. We just did everything.
Those are the days before there was this need for attendings to always be
around. We saw attendings once, twice, maybe three times a week. The
teaching and the care was done by senior and chief residents. And I had my
adviser for internship picked out. I met with him on several occasions. His
name was Dr. Charles Lund. Dr. Lund was very famous because he was the
surgeon that took care of a lot of the burn patients of the very famous 1942
Cocoanut Grove fire in Boston where there were hundreds of patients
trapped in this nightclub; they were severely burned. This was the beginning
of plasma therapy, fluid therapy, and everything. And Dr. Lund had done a
lot of that work and had published it. He was a very, very kind man. And I
had even visited the office of two other surgeons to get letters of
recommendation for my residency. I remember visiting with them.

DR. PAUL: Sorry to interject, and I could be wrong, but we can delete it
out if I am. Is this the nightclub fire that led to the safety feature that doors have
to exit outwards instead of in?

DR. BERLIN: I don’t know that.

DR. PAUL: Maybe we’ll look that up.

DR. BERLIN: We’ll have to look that up. Let me know.
DR. PAUL: Yes. Because it was a nightclub fire that led to that.

DR. BERLIN: Yes. Well, this was a very famous one. Cocoanut Grove. There were hundreds, literally hundreds of patients at the hospital. Flooded the hospital. So I hadn’t cared what my subsequent rotations were. At the conclusion, at the end of July, I was assigned to pediatrics at the Boston Children’s Hospital. At the end of the first week, I came home and told my wife that this was what I wanted to do. Why the sudden change? Well, a number of things happened in those seven days. One is I really liked the little babies. They were a lot of fun.

DR. PAUL: You still do!

DR. BERLIN: Secondly, I really thought they had very interesting diseases. Thirdly, they all got better; almost all of them. No matter how sick they were. It was astonishing how quickly they got better, particularly the ones who had surgery. Fourthly, I liked talking to parents. I thought that was a lot of fun. And I guess last and most important connection is the people that I came into contact with. I was so impressed with their dedication first to pediatrics and secondly to medicine. And they weren’t necessarily all famous physicians.

I remember very clearly some of the nurses that were so kind to the patients and so kind to us as students. Chris Pakatar in the emergency room and Joyce McKenna on the tumor therapy floor. I remember them clearly to this day. It just made such an important impression upon me. And my attending when I was a student there that week and during the subsequent three weeks of my rotation was Dr. Nicholas Nelson, who was also one of my attendings in my first year of residency, my second year of residency, and my third year of residency. For four years strictly by chance I had him as an attending.

DR. PAUL: And he made an impression. You both made an impression on each other clearly, as we’ll get to. So that was the first time you met Dr. Nelson.

DR. BERLIN: Yes.

DR. PAUL: One side note I want to ask you. You told me you wanted to be a neurosurgeon. And you just told me that right before you met your wife her mother died of brain cancer. Was there any relationship between those two? Did your wife encourage you at all or discourage you for neurosurgery as a result of her experiences? And what was her impression when you decided that pediatrics was what you wanted to do?

DR. BERLIN: That’s the first I’ve heard of that connection. No. That was not an issue at all.
DR. PAUL: It didn’t play a part? It didn’t play a role? It never came up?

DR. BERLIN: No. She was very happy that I decided to go into pediatrics. I never even made that connection. Very interesting. I’ll have to ask her about that.

DR. PAUL: I know we all have different influences on what we choose. And probably if I ask your wife this question she may have different recollections of how this played out.

DR. BERLIN: Different. That’s right.

DR. PAUL: As a result of your experience with Dr. Nelson, you decided to go into pediatrics. Were there other pediatricians during medical school that you worked with who were influential?

DR. BERLIN: Well, of course during my time there I reacquainted myself with Dr. Schwachman, my adviser. And the chief of service there was Charles Janeway, who spent time with students. And the other person to mention of course is Dr. Louis Diamond, Louis K. Diamond. He was really the father of pediatric hematology and oncology, and was also very kind to young people going into medicine. He was very kind to their wives as well. I say wives because most of us then were male. But he paid special attention to the wives I think.

DR. PAUL: It is pretty amazing that in such a short period of time you worked with people who were the fathers of pediatric gastroenterology, hematology, oncology, and neonatology. All in such a short period. Those are pretty tremendous experiences. So just out of curiosity. You went right from neurosurgery to pediatrics, but you mentioned that you were impressed with how quickly children recovered from surgery. Did you entertain pediatric surgery at all?

DR. BERLIN: No. No.

DR. PAUL: Right to pediatrics. So where did you consider going for your pediatric residency?

DR. BERLIN: I applied to, I think, 5 places. I applied to Boston Children’s. I applied to University of Rochester. I applied to the Children’s Hospital of Pittsburgh. I applied to Case Western Reserve [University] in Cleveland. And also to the University of Minnesota, which at that time was one of the very, very prestigious programs in the country. Those are the five places. No, 6 places. I applied to Johns Hopkins [University] too. .

DR. PAUL: Was there a match system back then?
DR. BERLIN: Yes. There was. The match actually started in 1955. The reason for the match was to try to avoid the really extreme pressure being put on students to make a decision, particularly by their home base. For example, if you were a Harvard student and they wanted you to come because they thought you were very good, they would say, “Look, we really would like you to come here.” Some places would go further. They would say, “Well, we want you to come here so much that if you decide to go elsewhere I’m not sure we can write you a letter of recommendation.” It was not always that overt, but that was the subliminal message that many students were getting. So they put the match in to try to do away with all of this stuff and to allow students to have a full range without any kind of pressure to make the decision. So those were my programs. I visited all but Minnesota. I couldn’t afford to visit Minnesota. I couldn’t afford the plane fare and I didn’t visit it.

DR. PAUL: So you wound up matching.

DR. BERLIN: At Children’s.

DR. PAUL: At Children’s Hospital in Boston. And so you were a resident there.

DR. BERLIN: Yes.

DR. PAUL: Tell me why they use the term resident to describe what you were -- where did you live?

DR. BERLIN: Well, I used intern. I was an intern. I don’t know the reason for intern. But the reason for resident was because you lived in the hospital. And my group of interns, 5 of us, were the first ones to be paid a salary by the Children’s Hospital in Boston. We were paid $1,000 a year, which was $83.33 a month after taxes. We were given a room that I shared with a fellow intern and free meals. We could eat all our meals there free, three meals a day. And I would take advantage of that. When I was on call, I’d have my wife -- and subsequently my wife and my daughter -- come over and eat dinner with me. So at least I would see them. Because in those days we had a bit of a different call system than you have today.

DR. PAUL: So where was your wife living while you were living in the hospital?

DR. BERLIN: Well, I wasn’t living in the hospital. I was married then. We had an apartment. We lived on the second floor of a house in two rooms. We had a living room, dining room with one of these galley kitchens. And then we had a bedroom and a bathroom.
DR. PAUL: So tell me about the workweek and work hour limitations.

DR. BERLIN: Work hour limitations?

DR. PAUL: In 1962 when you were an intern at Boston Children’s.

DR. BERLIN: Our call for the first year was every other night and every other weekend. But it was the following. You were on Monday, Wednesday, Saturday and Sunday of one week. And then the next week Tuesday, Thursday and Friday. So you would have every other weekend off. Every other. For example when you were on Friday night, you would go home after rounds on Saturday morning, and then you’d have all day Saturday and Sunday off. And then you would be on Monday night.

DR. PAUL: Now I guess it was good planning on your part that maybe fourth year medical school wasn’t quite as busy. Because in December of 1962 during your intern year you had something else added to your plate.

DR. BERLIN: Yes. Jean [Berlin] was born in December of my internship year. And I remember how upset my wife was one night when she was in the hospital that I slept through visiting hours because I was so tired.

The wives developed a very nice system. We had a number of friends who also had babies about the same time and the husbands arranged the call schedules so we would all be on call together. And then the wives would spend those nights together. And they would go to one place and they would stay all night. They would go and they would have dinner and they would nurse their babies and they would talk. I don’t think they watched television. Nobody had television sets in those days. They would sleep and they would get up and then go back to their regular houses. So it made it much better for the wives with this really heavy call schedule.

I don’t think any of us thinks that that was the best way to do it. That’s just the way it was done. Nobody wants to go back to those days. I don’t look back and recall that it was terribly, terribly onerous. Although you were in the hospital an awful lot.

DR. PAUL: But you learned a great deal, and you learned from some of the additional legends of pediatrics.

DR. BERLIN: Oh yes. We had Dr. Schwachman, we had Dr. Nelson, Dr. Diamond, Dr. Janeway. Dr. Alexander Nadas who is really the founder of pediatric cardiology. And Dr. [John F.] Crigler [Jr], one of the very early major figures in pediatric endocrinology. And we had a person who was trying to do something a bit different. He was trying to influence us to start
thinking about development, not just organ systems and exotic esoteric diseases but development of the child. And he would come by once or twice a week and do rounds with us. I guess we called them developmental rounds. His name was T. Berry Brazelton, who then was a relatively unknown figure. Now of course he is extremely well known.

DR. PAUL: America’s pediatrician.

DR. BERLIN: America’s pediatrician. And he’s got a column in the newspaper. He’s still active. He’s 92 years old I believe. And what’s very interesting is Dr. Brazelton -- another connection -- I just found out this week Dr. Brazelton was the adviser for Dr. Elliot Vesell when he was a medical student.

DR. PAUL: Wow.

DR. BERLIN: He remembers him clearly. Told me many anecdotes about Dr. Brazelton. Yes, he was his adviser in 1959, 1960.

DR. PAUL: When he was junior faculty.

DR. BERLIN: Senior year. Junior faculty probably, yes.

DR. PAUL: Amazing. Tremendous experiences. Now most of us today would go through three straight years of our pediatric training. You didn’t. And how did that work?

DR. BERLIN: Lost in the mists of antiquity, for people currently in residency; we had a crisis in 1960 in this country called the Berlin Crisis. The Soviet Union blockaded all land access to the city of Berlin because their territories encompassed all around Berlin. So they couldn’t get food and coal and things like that. So this big airlift was started where they would bring all the necessities of life into the city for the people in Berlin. There was a lot of tension in Europe about the Cold War heating up into the hot war. So there was a big call-up of troops. And the draft was still in existence in this country. So a person associated with what’s called Selective Service by the name of General Frank Berry, B-E-R-R-Y, came up with a plan for physicians in training. In order to avoid being drafted out of your residency for the troop call-up to be a general medical officer for this big increase in the Army and Navy and supporting services, if you were willing to sign up for two years to go into some branch of the service, they would agree not to draft you out of your residency. You could complete your residency. This would be favorable to them, because then they would get somebody trained in a discipline such as pediatrics, surgery, internal medicine; rather than somebody who’s had six months of a residency and maybe couldn’t do very
much. So I had no problem with that. Because I always thought people ought to give time to the country. So I signed up for the Berry Plan.

I was about set to sign the papers for the Air Force when I was contacted by the US Public Health Service via the NIH [US National Institutes of Health] because that is really the medical corps of the Coast Guard. The United States Public Health Service. “Would you be interested in doing your two years at the CDC [US Centers for Disease Control] or at the NIH? Because we have positions both places.” I don’t recall now how I was contacted, but I was contacted.

I was very fortunate that I was able to get an assignment that would satisfy the Berry Plan to the NIH. But I had to go right away after the conclusion of my first year. They didn’t care, because they weren’t using my clinical skills. So at the conclusion of my internship year we went to Bethesda and I spent two years. What was then called the Laboratory of Biochemical Pharmacology in the National Institute of Arthritis and Metabolic Disease and has changed its name to the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). So that’s the laboratory I went to.

DR. PAUL: In which building?

DR. BERLIN: Building 4. Room 106 I think. And my immediate supervisor that I worked with was Dr. Robert Schimke. The Laboratory of Biochemical Pharmacology was headed and still is headed by Dr. Herbert Tabor, who has been at the NIH I believe since 1943, which is 67 years.

DR. PAUL: Longer than Joe Paterno has been at Penn State.

DR. BERLIN: Longer than Joe Paterno has been at Penn State. He’s one of the great figures in American biochemical research of course. And for nearly 40 years he’s been the editor of the Journal of Biological Chemistry, which I think everybody would agree is the most prestigious of the biomedical journals. The JBC.

So I spent two years working with Bob Schimke on aspects of protein synthesis and alteration. There was some pharmacology involved because we were using some drugs to induce enzymes and some drugs to stabilize enzymes. And it was a great experience being at the NIH and being able to go to talks by very, very famous people. I heard many Nobel laureates speak there.

DR. PAUL: Did you have any friends that were there at the same time?
DR. BERLIN: Yes. Dr. Elliot Vesell showed up there. Again a connection. He was in the laboratory with Dr. Julius Axelrod, Nobel laureate. He was doing a lot of work on pharmacogenetics. Dr. Vesell is considered to be one of the fathers of pharmacogenetics. He had a very famous study done comparing drug metabolism between identical twins and fraternal twins which really established the fact that genes are important in drug metabolism. So he was at the NIH. He actually was there longer than I was; I believe he spent three years there rather than two years.

DR. PAUL: And you had your first publications. Is that right? That came out of your work there.

DR. BERLIN: Well, my first publication actually came out of work I did at Harvard Medical School. I worked in the Department of Pharmacology as a research student there. It was not part of the regular curriculum; I just wanted to do some work there. I worked with Dr. John Blinks. He was interested in the pharmacology of heart muscle and we had used a number of different compounds to show a relationship between the frequency of contraction and the force of contraction. This was using isolated myocardial segments. We looked at how that might be influenced by the drug that is used. So my first few publications came from there. But the other major group of course came from my work at the NIH.

DR. PAUL: Did these research experiences make you want to continue in that? Have that as part of your career?

DR. BERLIN: Yes. But I very early decided that I wasn’t going to exclusively do research. When I was working with Dr. John Blinks in the pharmacology department, I did go and speak with Dr. Otto Krayer. Dr. Krayer was the chairman of pharmacology, a very well respected figure who left Nazi Germany because he was asked to become the chairman of a pharmacology department which was already headed by a Jewish individual. Dr. Krayer was not Jewish and he did not think that this was the right thing to do. So rather than succumb to this he said, “I’m leaving. I cannot live in a country that treats people like this.” So he came to America via the American University of Beirut and became a faculty member at Harvard. He subsequently became the chairman. He was very, very active in cardiovascular pharmacology.

I went to see him about my future and we had a very nice talk. Although he didn’t tell me one way or the other, I came away with the feeling that I wasn’t sure I wanted to do this full-time in terms of having no clinical activity. That’s why I did my internship, and after my NIH experience I came back and finished my residency. Because I thought that it was important to have this. I tell young people that you should get as much preparation as you can, because you never know what direction you’re going
to go. And getting this extra experience sometimes determines what direction you’re going to go.

DR. PAUL: Right. And the in-depth experiences that you have. Not just a superficial knowledge base. So you came back to Boston for two more years.

DR. BERLIN: Yes.

DR. PAUL: And at that point were people choosing specialties? Or were most people trained as generalists?

DR. BERLIN: I’ve reflected on that. I don’t recall a lot of discussion that we had about what we were going to do. I think we were just really wrapped up with the activity of the residency. I was aware of what some of my colleagues wanted to do. But really not until toward the end of my last year of my third year of residency did it become clear where my friends were going to go and what they were going to do. And some people didn’t decide till then. They just didn’t know. I would say it was about half and half. About half of my colleagues went into general pediatric practice somewhere, and about half went on to fellowships.

DR. PAUL: How many people were in your graduating residency class?

DR. BERLIN: There were probably 12 of us, 14 of us.

DR. PAUL: And did people go into private practice? Or did most people from Children’s go into academics?

DR. BERLIN: Oh. I think about half of them went into private practice. And about half of them went into academics. By academics I mean further subspecialty.

DR. PAUL: And you decided to stay in academics.

DR. BERLIN: Yes.

DR. PAUL: Tell me about that decision and your big move from Boston.

DR. BERLIN: Yes. I decided to do academics, and the first position that was offered to me was at the University of Alabama. And there were again personal reasons for that. I had presented some of my research from the NIH at a number of national conferences, including one at Oak Ridge. One of the attendees was the chairman of biochemistry at Alabama. His name was [K.] Lemone Yielding and he was very interested in getting me to come there. I went down and visited; I really liked the department. It was a young medical school that was just getting started. They had a lot of federal money
being directed there. They had a children’s hospital there headed by one of the very early figures in pediatric pharmacology. Dr. Harry Shirkey was the head of the children’s hospital.

A number of things happened during the year that I was there. Number one, there was a lot of tension between the children’s hospital and the pediatric unit at the university. Not so much these days, but there was a time when there was a lot of tension between freestanding children’s hospitals which were administratively separate from the colleges of medicine and the home base pediatric department or the chairman of pediatrics. That was certainly true at Alabama and when I went to George Washington [University] it was true there as well. And what happened was that the chairman that recruited me ended up leaving, and Dr. Shirkey ended up leaving. Both left almost simultaneously. Shirkey went to Hawaii. And the chairman of pediatrics went into private practice of hematology in Mobile, Alabama. The second thing that happened is my father became extremely ill and I really felt that I needed to be a bit closer to home. So I was able to secure a position at the Children’s Hospital of the District of Columbia [now Children’s National Medical Center]. And we moved there after my one year at the University of Alabama.

DR. PAUL: But while you were in Alabama you had another major life event.

DR. BERLIN: Oh yes. My first son [Douglas Berlin] was born. And I was also visited by Dr. Elliot Vesell, who was a very good friend of Dr. Lemone Yielding. He was presenting seminars. He told me at that time that he was getting married; I remember that very clearly. And so I took my young baby and my now six-year-old daughter. We went back to the Washington, DC area.

DR. PAUL: Just curious. And I just hadn’t thought of asking you this until just now. Do you have any recollection of practicing pediatrics in Alabama in the 1960s? Which was a highly charged time in the South. Was the hospital segregated?

DR. BERLIN: No.

DR. PAUL: It wasn’t.

DR. BERLIN: The hospital was unsegregated relatively early. And I had a curious experience there. I remember taking care of a child with a Wilms’ tumor. I was the pediatrician admitting her and sending her to surgery. This child was from north Alabama. It was an integrated ward. There were three or four patients, and one or two of them were black. I remember the mother saying to me that this was an unusual situation for them, because
although they were from Alabama they weren’t used to seeing black people. They were from a part of Alabama where there weren’t very many black people. I don’t know if that’s true or not. But they were from the hills and they were just unaccustomed to seeing black people. But they weren’t upset about it.

The hospital was integrated when I was there. But there was considerable social tension in the city I think. I think [Theophilus Eugene] “Bull” Connor was still around in those days and the beginning of civil rights was just starting down there. But I don’t know whether the boycott was before that or after that. The Rosa Parks thing. I can’t remember.

DR. PAUL: I think it was before that.

DR. BERLIN: I think it was. Things were quieting down.

DR. PAUL: I hadn’t thought of that till just now.

DR. BERLIN: It didn’t influence the practice.

DR. PAUL: So you moved to Children’s National. Was it called Children’s National Medical Center at that point? Or just Children’s Hospital?

DR. BERLIN: No, it was called Children’s Hospital of the District of Columbia.

DR. PAUL: And so you got hired there as assistant professor and spent three years there. Tell me about your experiences and recollections of being in Washington; what your responsibilities were there.

DR. BERLIN: We were very happy there. I liked the position very much. I was given a fairly free rein of things to do.

Initially I was hired by George Washington University to establish a small unit at the university hospital. But that quickly became unfeasible because the Children’s Hospital was their major teaching hospital, and everybody agreed that this wasn’t going to make sense to admit general pediatric patients to the university hospital. So Dr. Robert Parrott, who was head of the hospital, asked me to come over there.

I came over there in general pediatrics. I worked with Dr. Andrew Margileth who is still very active in pediatrics. He is the father of pediatric dermatology, although I think he’s not board-certified in that. But he loved skin diseases. He had a long career in the Army and then subsequently came to DC Children’s as a general pediatrician. He did a lot of the general pediatrics work there. One thing that I did there was I started the first
pediatric ICU [intensive care unit] in the United States in that hospital. I was not aware of that until Dr. Neal Thomas told me here.

DR. PAUL: You wrote a publication on it.

DR. BERLIN: I wrote a publication on it in the *Medical Annals of the District of Columbia*. With pictures of where the beds were and everything. I remember that. And I did not know at the time that this was something that was --

DR. PAUL: There was a review in *Pediatric Research* in 2005 talking about the history of pediatric critical care medicine that referred to your publication as being the first description of a pediatric ICU in the United States.

DR. BERLIN: That’s correct.

DR. PAUL: Amazing. And you learned that, I guess, 37 years after you did it.

DR. BERLIN: I had no idea.

DR. PAUL: So was most of your time inpatient work there?

DR. BERLIN: Yes, it was mostly inpatient. I had just a few outpatient visits.

DR. PAUL: And teaching medical students. How much of a research responsibility did you have at that point?

DR. BERLIN: I didn’t have very much because I was so busy taking care of patients. I didn’t have a lot of research.

DR. PAUL: And you were also busy at home.

DR. BERLIN: Our third child [Alexander Berlin] was born at George Washington University Hospital. We then finally thought we were in a position to buy a house. So we bought a house.

DR. PAUL: But you didn’t want to spend much time in that house.

DR. BERLIN: We didn’t. I bought the house in June I believe. In August I got a telephone call from my former attending in Boston, Dr. Nicholas Nelson, who in his usual characteristically “get to the point” manner started off the conversation by saying, “I want you to come to Hershey.” I thought he was referring to a visit. He said, “No. I want you to come and work here.”
Now some months before -- actually the summer before -- I was on vacation in New Hampshire. I remember this. And I got a letter forwarded to me from Dr. George Harrell, who was founding this medical school at Penn State. He was writing to me asking if I was interested in becoming chairman of pediatrics at this new medical school. I have that letter somewhere. When I read it I said, “I don’t think this is something I can do.” I was really quite perplexed by this. So I wrote back to him and said no. I said, “Dr. Harrell, I appreciate your asking, but I think that I’m far too early in my career to consider taking on the responsibilities of heading a department, especially in a new medical center.” That was the last I heard of it.

Dr. Harrell went and got Dr. Nelson to become chairman. I learned after I came here that this was Dr. Harrell’s pattern, to deliberately look for chairmen among very young people who didn’t have any experience. This was what he wanted to do. Most of the founding 17 chairmen in this medical center were by anybody’s standards rather junior people in their hierarchy, wherever they came from. I get the phone call from Dr. Nelson saying that he wanted me to come. This was in August.

DR. PAUL: And you told him you’d just bought a house.

DR. BERLIN: I said, “I just bought a house.” And he said, “Oh. Sell it.” I said, “Nick, I can’t sell it, I just bought it.” So I came up to visit. And I came up a couple of times.

DR. PAUL: Was there a chair of pharmacology here?

DR. BERLIN: Yes. There was a chair of pharmacology. I think that was the other reason I came to visit, because he also asked me to come up. His name was Dr. Elliot Vesell. So again we have this tie-in, a young person relatively early in their career becoming chairman at a new medical school.

DR. PAUL: Had they conspired together to contact you?

DR. BERLIN: I suspect that they did, yes. I suspect that they did. They knew each other and Elliot had actually taken a pediatric internship in Boston during which my daughter was born. He was the intern on call for the nursery at the Boston Lying-in Hospital in which my daughter Jean was born. He was actually there taking care of her.

DR. PAUL: Was he the first physician to examine your daughter?

DR. BERLIN: Probably. Yes I think so.

DR. PAUL: Amazing.
DR. BERLIN: Yes. So I came up to visit. And I was really quite perplexed about what to do. I really liked being at DC Children’s because there were a couple of other new things that were developing. I really was intrigued by this opportunity. I remember standing in Dr. Vesell’s office with him looking out his window. This was in front of the crescent at that magnificent view out there. I said to him, “Elliot, I don’t know what to do about this.” And he said, “I think you should come. I think you should give it a try.” So I went home and I thought about it, and I decided to come.

I decided for the following reasons. Firstly, I wanted to work with Dr. Vesell and Dr. Nelson because I really admired these two individuals. I thought they really had the energy and the enthusiasm and the foresight to see this through. Secondly, I really liked the idea of coming to a new medical school. This was back in 1970 and I didn’t think there would be very many new medical schools. And I was right, for about 15 or 20 years. Now there are a lot of new medical schools, but they’re not new in the sense that this was new. This was a new academically-oriented medical school, not a new medical school with the target of turning out practicing physicians. This was going to be the real deal. So I thought that was interesting.

Next, I was interested in the idea that everything was under one roof in those days. We aren’t anymore. But everything was there. Most of us in pediatrics trained at separate programs from the university, and here I could come, and everything was together. I was really intrigued about that idea. And finally I thought Hershey was an interesting place to be. I’d never been to Hershey till I came here to interview. Never even drove through it.

DR. PAUL: Drove by it on the turnpike.

DR. BERLIN: On the turnpike from Pittsburgh to Philadelphia, at a distance. That was the closest I ever came to Hershey. And I thought that this was going to be interesting.

Getting back to everything in one place, it turns out that I’ve been able to publish with people from eight different departments in this institution, because of the opportunity for interaction. I don’t think I could have done that at another place. In those days we were small enough that you knew everybody that was here.

DR. PAUL: How many faculty members in pediatrics were there when you showed up here at Hershey?

DR. BERLIN: I was number 2. Dr. Nelson was number 1. He had a part-time person that came and then left before I came; she was just here part-
time. And then Dr. Frederic Garner came. And then I came. So I would have been the second full-time person that was recruited here.

DR. PAUL: And this was in 1971.


DR. PAUL: What was the job description that you were given?

DR. BERLIN: Well, the letter was a one-page letter as I recall. And it just said, “I want you to come and help me develop the department of pediatrics.” Not further defined.

DR. PAUL: Did you view this as an academic adventure? Did you believe that you were going to be seeing patients mostly? Where did you envision your career going? It sounds like you had pretty defined responsibilities in DC. Do you remember what you expected to be doing for the next 5 to 10 years when you came?

DR. BERLIN: I expected that I would be doing a lot of clinical care. I was going to try to get involved in some of Dr. Vesell’s clinical research projects. I hoped that I was going to teach medical students, and hopefully residents. None of which we had, by the way. We had medical students but we didn’t have any residents.

DR. PAUL: So you were on call.

DR. BERLIN: We were on call a lot. Maximum call, I would say, was once every third night between being on call for the nursery and being on call for the inpatient service. We would take one month as attending. Later on we acquired the responsibility for care at the Milton Hershey School and we were on call for the Milton Hershey School. So there were three call panels that you would be on in general pediatrics.

DR. PAUL: We skipped over one thing that I wanted to discuss, which was that you received some support to develop an academic career while you were in Washington.

DR. BERLIN: I was very fortunate in receiving, in 1969, a [John and Mary R.] Markle Foundation fellowship [Markle Scholars in Academic Medicine]. The Markle Foundation was established by John Markle and his wife who were anthracite coal owners from Pennsylvania. They had no children. And they established this foundation.

In 1947 they began to give awards to about 20 or 25 young academic medical faculty people. The purpose was to try to keep bright young people in
medicine, because there was not the NIH funding in those days. The Markle Foundation at that time was the biggest supporter of academic faculty people in the country, because they would put 25 of these people out per year. You were given a stipend; in my case it was $6,000 a year for 5 years. There was no restriction on what you could do; it was strict salary support. It was given to your institution to pay your salary.

Now in 1947 it was a fair amount of money. In 1969 it wasn’t too much money but it was quite an honor to be a Markle scholar. Many of the people on that list went on to become quite well established individuals in American medicine. And, fortunately, it was movable. So in 1971 when I came here I was able to move it up here.

DR. PAUL: Terrific. So you came to Hershey. It was a developing town as well as a developing medical school. And immediately you were put into some pretty important positions in the medical school. Is that right?

DR. BERLIN: Yes. In the summer of 1972 I was on vacation. This is the year after I came here. We had stopped in Alabama to see our old friends from when we lived there. I remember I was on Ralph Tiller’s deck and his wife comes out carrying a telephone and said, “This telephone call is for you.” So I got on the phone, and it’s Dr. John Waldhausen. Dr. Waldhausen was chairman of surgery here. Earlier that year, in 1972, the founding dean George Harrell had stepped down from being dean, and Dr. Waldhausen was made the acting dean. So one of the early things that he asked his secretary was, “Look, this is summertime, and the students are applying for their residency. Who is going to write their dean’s letter for them?” To his astonishment she said, “You are.” “What do you mean I am?” “Dr. Harrell always wrote all the dean’s letters for the students.” These are classes of 30 to 40 students. Well, Dr. Waldhausen was really taken aback by that. He said, “I don’t know that I can do that.” So he gets on the phone and he calls me. And he says, “How would you like to be the dean of students?” The title then was the interim assistant dean of student affairs. And being interested in students, I said, “Sure, I’ll do it for you.” So I did it for the rest of that year.

In 1973, Dr. Harry Prystowsky came as the permanent dean succeeding Dr. Waldhausen, acting dean. Dr. Prystowsky asked me to stay on and to remove the word interim from my title, so I said that I would do this. I was dean of students for about 15 years, from 1972 to 1987 actually. And I really enjoyed it for two reasons. I really enjoyed working with the students, and I really enjoyed working with Dr. Prystowsky, because he was a larger-than-life figure in many ways. He was always exciting to be around. He was always a lot of fun. I enjoyed watching some of his activities at a distance, knowing that I was not going to be involved. And I think he did an awful lot
to stabilize this medical center both from a fiscal standpoint as well as from a personnel standpoint. So I was happy to do that.

I stepped down in 1987 because we got a new dean, Dr. C. McCollister Evarts. Dr. Evarts really wanted from my position a lot more activity than I could give, and wanted things that I didn’t feel I was qualified to do. That primarily involved redoing some of the medical education issues; changing the curriculum and so forth. An area where I not only lacked talent, I really wasn’t very interested in doing that. So I said, “Fifteen years is long enough.”

DR. PAUL: Maybe if he would have called you by your middle name.

DR. BERLIN: Like Dr. Prystowsky. He called me Milton.

DR. PAUL: Then you might have stayed. Going back to when you came, you mentioned that you were going to start working with Dr. Vesell in his clinical pharmacology research. Tell me how that developed. What were the first several projects you started working on that then subsequently really were career-changers for you?

DR. BERLIN: When our daughter was born in 1962, she was delivered at the Boston Lying-In Hospital and my wife was in a ward with six other newly delivered women. The head nurse of the ward had previously worked for the Frontier Nursing Service in Appalachia and she was determined that all 6 of these new mothers would breastfeed their babies. Now this was a time when breastfeeding was at its nadir in this country; probably 20% or fewer were being breastfed. So all these women got together and were breastfeeding their babies.

I didn’t know anything about breastfeeding; nothing. I subsequently, over the years, became interested in breastfeeding and when I came here it occurred to me that we didn’t know very much about the excretion of drugs in milk. This would be a nice tie-in for two of my interests: pharmacology and lactation. And it represents an organ system that really had never been studied. So we started embarking on a series of studies using that. One of the things he did very early, because Dr. Vesell really had pioneered the use of this, was the use of antipyrine as a measure of drug metabolism. But this is an interesting compound, because it’s rather immediately distributed to total body water. We were astonished to find out if you gave antipyrine to mothers who were lactating that you could find antipyrine in their milk within ten to 15 minutes of taking an oral dose of antipyrine. So it was distributed that quickly and excreted that quickly.

So we started looking at this and learning a number of things. Namely the rapidity at which things appear in milk, but also how quickly they disappear.
We could do half-lives and we could quantify how much comes across as a fraction of maternal dose. So that was the beginning of a long series of studies that we did here on excretion of drugs and chemicals in milk including a very interesting study with chocolate.

DR. PAUL: I’ll ask you about that. But I want you to help me a little bit more with this. So was there a lightbulb that said, “We need to study drugs in breast milk?”

DR. BERLIN: I seem to remember being at home sitting at this little maple table and looking at *Lancet*, and saying to myself, “Why couldn’t we see what happens with antipyrine in lactation?” I do remember doing that.

DR. PAUL: Was there any concern in that time about toxicology or the adverse effects of women taking drugs and their breast milk? Was that on the radar screen at that point?

DR. BERLIN: I don’t think I was particularly concerned about that. I was just concerned about basic issues of pharmacology. After we got involved with the planning of the antipyrine I began to be interested because we could calculate fraction that was excreted and maybe this could help us in determining whether enough of any drug was excreted to influence the baby either in a toxic way or maybe even in a therapeutic way. That latter one, by the way, still has to be explored, whether you can get enough drug in the milk to be therapeutic to the infant. And there’s some evidence, for example, for methadone that maybe you can use this route to smooth over the withdrawal. That came later.

DR. PAUL: So tell me. So in 2010 I can imagine the Institutional Review Board [IRB] headaches of giving medications to lactating women and having them still nursing their infants with uncertain effects of those drugs. Tell me what that was like in the early, mid 1970s.

DR. BERLIN: Well, I think we would still get approval to do these. Because for the antipyrine one we used mothers who were no longer actually feeding their babies. They were still lactating. So there would not be any exposure to the infant. The other ones, we took advantage of the fact that the mother was taking the drug for herself. The one that comes to mind is the work we did with INH [isoniazid]. This was a mother who had converted a tuberculosis test, was taking INH, got pregnant, had a baby, and agreed to just collect milk samples. So we did not give any drug to a mother which was either the mother wasn’t already taking or wasn’t indicated.

Now there were 2 exceptions to that. One was the chocolate study. We gave them a chocolate bar at 9:00 in the morning. I don’t think we would have got that through the IRB.
DR. PAUL: You didn’t have any recruitment problems.

DR. BERLIN: We didn’t have any recruitment problems at all. The second study involved acetaminophen or Tylenol. The rationale for giving that to nursing mothers is that the amount that came across would be far smaller than the baby would get if the baby was being treated for fever. So that did not become an issue.

DR. PAUL: So forgive me while I look and track these down in your bibliography. So these studies started coming out in which year? 1980?


DR. PAUL: So your work in this really started picking up in the late 1970s.

DR. BERLIN: Late 1970s, early 1980s, yes.

DR. PAUL: And you didn’t have formal clinical pharmacology training like many would have now. There wasn’t a fellowship for that at that point.

DR. BERLIN: No, there were no fellowships for that. You would go work in somebody’s laboratory in lieu of a fellowship. I suppose you could include my work at the NIH as an example of that.

DR. PAUL: Sure. But your interest in this topic was developing, and you wanted to get more experience. And so you wound up taking a sabbatical in 1979.

DR. BERLIN: Yes.

DR. PAUL: Tell me how that happened.

DR. BERLIN: Well, of course I knew of Dr. Sumner [J.] Yaffe because of his really groundbreaking work in pediatric clinical pharmacology. He had relatively recently gone to the Children’s Hospital of Philadelphia and established a laboratory there. In those days those of us who were on the faculty here were also full-time faculty members, full-time employees at Pennsylvania State University. So we were eligible for a sabbatical and I applied for a sabbatical to go to his laboratory. I worked there four days a week; I took the train. And then on the fifth day I stayed home and worked in the office here or at home just to get caught up on things.

We did a number of studies there. That’s where we did the acetaminophen study. That’s where I did part of the antipyrine study. That’s where I did
the caffeine study. That’s where I did the Azulfidine [Sulfasalazine] study, taking advantage of a mother taking Azulfidine. That’s where I did the INH study. So we did a number of studies there in a year that turned out to expand our knowledge about the excretion of drugs in milk.

DR. PAUL: How did it feel having such a wide open field where you were the first ones publishing papers in this area?

DR. BERLIN: I wouldn’t say we were the first ones publishing papers. A lot of the previous papers were single case reports. We may have been the first group to start putting together series of n greater than one in doing this.

DR. PAUL: So I can imagine with the way media pick up on research studies and drugs being in breast milk what the media would do with something like that today. Tell me about academic pediatrics, and if there was a public response to this sort of knowledge.

DR. BERLIN: I don’t recall any public response to this knowledge at all. The professional response or the pediatric response really is reflected in the very well-received statement from the Committee on Drugs of the American Academy of Pediatrics on the transfer of drugs and chemicals in human milk, which the first one came out in 1983 [American Academy of Pediatrics, Committee on Drugs. The transfer of drugs and other chemicals into human breast milk. Pediatrics. 1983; 72:375-383]. And we’ve had several subsequent revisions.

DR. PAUL: Did you author the first?

DR. BERLIN: I did not author the first one. I authored the other ones. But at one time, that was the most requested of all of the statements that the Academy put out, because it was a very useful thing for practicing pediatricians to have when the mother tells them that she is taking a drug. I think that during those years the knowledge of the excretion of many, many compounds was really significantly expanded.

DR. PAUL: We’ll get to a little bit about your service in the Committee on Drugs and being chair on the committee. But you’ve had such an impact on practicing physicians and hopefully supporting breastfeeding. How does it feel now, looking in 2010 on the evolution of that? You went from being one of the first to start publishing studies on it to now where we have a publicly funded online database of information. How does it feel to look at that now? If you took a bird’s-eye view of that and look at what’s happened.

DR. BERLIN: Well, the online database is what’s called LactMed from the [US] National Library of Medicine. I think this has been a wonderful database that people can access. Not just practicing pediatricians, but
anybody can access this to gain very comprehensive information on excretion of drugs. Much more information than was in the transfer statements that we wrote. This LactMed database is run by Philip Anderson, and he has asked several of us to be reviewers with him. So it’s peer-reviewed. But he has all the pharmacology and the numbers for every drug that has really been described in the literature. When you compare that with the first database that we did in 1983, the difference is astonishing. It really is astonishing. And it just really reflects how far we’ve come in this.

DR. PAUL: It must be satisfying to see the evolution. And do you have a sense how much misinformation is circulated? For myself as a practicing pediatrician I know that mothers will have perceptions that they can’t breastfeed because they’re taking a drug. Or a physician will tell a mother she can’t breastfeed because she’s taking something.

DR. BERLIN: Oh. I think it is. I think the perception of that is an important point that you make. It’s perception of not only the parents but the pediatricians and obstetricians. And surgeons, if you’re going to have surgery. And radiologists, if you’re going to have a scan. They may believe that you can’t breastfeed. For example we have a wonderful statement from the American College of Radiology saying that yes they can breastfeed if they take contrast materials. And here is the data. I suggested to one of our young anesthesia faculty here, Dr. Priti Dalal, that she should write a review on breastfeeding after anesthesia. There’s very little that is current in the literature about this. But I think we really have made it a lot easier to give advice to mothers. And we now know that there really are very few circumstances where a mother takes something that she should not breastfeed. Very, very few circumstances.

DR. PAUL: And so we went from pretty much the dark ages, 30 years ago, to being really enlightened now. So was this work that you did with drugs in breast milk how you really got involved with the Academy in the Section on Clinical Pharmacology and Therapeutics?

DR. BERLIN: Yes. I remember going to a Committee on Drugs meeting. I was not a member. Robert Roberts was the chair, and it was in Alexandria, Virginia. I was there as the liaison from the Section on Clinical Pharmacology to the Committee on Drugs. I remember he said that the 1983 statement needed to be revised, would anybody here be interested in doing it. I put up my hand; I was the only one that put up my hand. And he said, “Fine, you got it.” So that began my involvement with the Committee on Drugs, when I volunteered to do the revision of the transfer statement.

DR. PAUL: So what year did you start on the committee?
DR. BERLIN: I thought I wrote that down. But let me see. COD [Committee on Drugs], 1984. As liaison. I was a member from 1986 to 1997. And chair from 1993 to 1997.

DR. PAUL: That’s a long time serving on the committee. I hear them joke that it’s like the Hotel California, you can check out any time you like but you can never leave. Once you’re on you’re stuck. So tell me about the other things that you worked on in your time with Committee on Drugs and some of the people that you worked with.

DR. BERLIN: A number of statements come to mind as being a combination of contentious and important and exhausting and very critical to the future. I think by far the most important one that we worked on were the ethics of the use of children in pediatric pharmacology testing. That revision took us a long time and an awful lot of work. Secondly, the most difficult one, was the statement on the use of recombinant growth hormone in children. It took seven years to get it through. Now when you look at the statement you say, “Why was this so contentious?”

Readers of this interview may not realize that any statement from a committee has to be approved by a number of other groups in the Academy. They may be other committees. Finally, they ultimately go to the Board of Directors where there can be an awful lot of discussion. Like the US Congress, they can refer it back to committee for revision, and on and on. It took seven years to do that. We also wrote very extensive guidelines for the clinical evaluation of drugs in pediatric patients. This is different from the ethics statement. This has to do with the nuts and bolts of doing studies. We sent this to the FDA [US Food and Drug Administration]. We wanted to publish it, but they didn’t give us clearance on it. So it remains in limbo; but I note that many of the things we said in that statement now have come to pass in terms of what the FDA expects. So I think it was of use.

With regard to your own interest, Dr. Paul, the other statement we wrote was the use of codeine- and dextromethorphan-containing cough remedies in children. It wasn’t too difficult to write and get through, but it received an awful lot of letters to the editor about how could they write this when these drugs are so important in our practice. We now know that they don’t work, and in fact they may be quite toxic in certain situations. So we’ve completely rethought that whole area.

DR. PAUL: I want to really touch on the ethics one. But these policy statements are so influential. That last policy statement, the one for codeine and dextromethorphan, came out while I was a fourth year medical student and was highly influential to someone in training. I then went to my residency just having read that guideline and it was hotly debated within my residency. As someone that has authored guidelines for the Academy, did you ever consider how much
the developing mind of a student or trainee is influenced when they read these statements?

DR. BERLIN: No, I don’t think we thought about that. It’s an interesting thing that you bring up.

DR. PAUL: It did. Part of it was because I came from here and I knew it was authored by someone that was from my medical school, so maybe I paid more attention to it. It certainly had an influence. Before we have to stop, I want to ask about the issue of testing drugs in children. You had mentioned Dr. Shirkey. Forty years ago, Dr. Shirkey called pediatric patients therapeutic orphans.

DR. BERLIN: 1986 editorial in the *Journal of Pediatrics*.

DR. PAUL: We’ve come a long way in those 42 years. You had the policy statement. Can you reflect on the difference in philosophy from 1968 when Dr. Shirkey coined that to 2010? Who were the stakeholders in making those changes?

DR. BERLIN: I think the shortest thing to say is that the use of drugs labeled for adult use in children, and they were widely used in children, was probably the largest unethical study done in this country. We had no science to back up the use of a drug developed for adult asthma in pediatric asthma patients. So starting with the fact that we wanted to have an ethical basis for the safe and effective use of drugs in children, I think the Committee on Drugs really led the way to convincing industry and the FDA, the United States Pharmacopeia was helpful in this, and the US Congress to make the necessary legislative changes that have facilitated the evaluation of drugs in the pediatric population. It started with the FDAMA [Food and Drug Administration Modernization] Act, which gave a six-month patent extension. That was 1997, with the extension in 2003.

And then, what I think is a very important rule was the Pediatric Research Equity Act, which said to the companies, “Thou shalt test drugs in children if thou wants approval for the adult population, if the drug has a conceivable use in the pediatric population.” We’ve now extended labeling in hundreds of drugs as a result of those activities. I think it all started with the Committee on Drugs putting together a solid reasoning of when it is acceptable to use children as pediatric subjects in these drug trials. Especially when you’re giving them a drug that they will need, that might be helpful to them. Not just pick out a drug and say, “Well, let’s see what happens in children.” I don’t think any IRB would approve that. But when you’re using compounds already in the pediatric population that have no pediatric indications or approval yet, I think this is a perfectly reasonable thing to do. And everybody has now accepted this. Especially industry,
which I think was the one that we were most concerned about them accepting this.

DR. PAUL: And this change, the recent Academy anniversary of its initiation, was one of the ten biggest achievements in the history of the American Academy of Pediatrics. Which change was cited as one of the top ten?

DR. BERLIN: I don’t know.

DR. PAUL: I’ll look it up.

DR. BERLIN: Look that up, let me know. I’m not familiar with that.

DR. PAUL: Yes, it was cited as one of the top ten achievements in the history of the American Academy of Pediatrics. But I’ll clarify that.

DR. BERLIN: OK, let’s stop.

DR. PAUL: OK. We’re resuming the interview, still on October 21st. When we left off, we were finishing up our conversation on the changes in the ethics of doing research with kids. The change in philosophy.

DR. BERLIN: Yes. And the renewed effort by a number of organizations to get the studies done to expand labeling for children.

DR. PAUL: Yes. Was there anything else you want to say about that?

DR. BERLIN: I don’t think so. I think we covered that.

DR. PAUL: So we went through most of the 1970s. And like what happens to most youngest children, we neglected to mention that you did have a fourth child [Gordon Berlin] born in Hershey.

DR. BERLIN: He was born in Hershey. Gordon, our youngest, was born at the medical center, delivered by a fourth year medical student, Devee Boyd, who is one of the legends of the early years. He was a young man who literally could do everything. When he was a fourth year student he went to Liberia on a fourth year elective. And when he arrived there the doctor in charge of the hospital thanked him for coming and said, “I’m going on vacation for two weeks. Everything is yours.” He ended up doing cesarean sections and hernias and --

DR. PAUL: As a fourth year medical student.

DR. BERLIN: As a fourth year medical student.
DR. PAUL: Wow. Incredible.

DR. BERLIN: Yes. Then he came back after he graduated and spent June in our NICU [neonatal intensive care unit]. That’s back in the days when you could do that. Probably you couldn’t do that now. I remember our pediatric surgeon at the time came and said, “Who is this fellow?” I said, “That’s Devee Boyd. He’s a fourth year student.” “I thought he was a senior resident.” So he delivered Gordon. And that was the last of our group of children.

About that time also we were beginning to grow as a department. I mention that only because we started adding subspecialists. Many of us who came early had to take care of some of these patients because we did not have a pediatric cardiologist and we did not have a pediatric hematologist. These were two big areas that were missing early on. Some of us got experience in the treatment of some of these children by at least monitoring under the guidance of somebody with the real credentials at another institution. I depended on Sandy [Sanford] Leikin for hem/onc [hematology/oncology] questions. He was at DC Children’s, so I knew him before I came up here. And David Leaman, who is an adult cardiologist here, formerly chief of cardiology. He did a lot of our pediatric cardiology work, including catheterizations on little babies.

DR. PAUL: This is just 35 years ago. It is so much different from what we have now.

DR. BERLIN: Yes.

DR. PAUL: So when did you feel that the [Penn State Hershey] Children’s Hospital here at Penn State became a full-service children’s hospital?

DR. BERLIN: I would say I felt comfortable calling it a full-service children’s hospital by the year 2000 and perhaps even by 1995.

DR. PAUL: So it took a while.

DR. BERLIN: Yes, it took a while.

DR. PAUL: Twenty-five years.

DR. BERLIN: Yes, it took a while. Not so much filling all the niches, but filling them all comfortably so that people could be dependent on it. We did have some initial turnover in cardiology for example. We had about three chiefs in about 12 years or so. And we finally got to the point when Dr. [Stephen] Cyran was here that not only was he staying, but he also really
expanded that a lot. And I think by the year 2000, we could say we really were well established.

DR. PAUL: OK. You established several things. One was the Division of General Pediatrics.

DR. BERLIN: Yes, in 1979, I think.

DR. PAUL: You were the first chief. How was that decision made?

DR. BERLIN: That decision was made mostly at the request of one or two people in the now growing department who felt that we needed more of a say in what was going on. Our founding chairman Dr. Nelson was not, I think, a big fan of departmental organization. That is how I’d put it. He just wanted to build the department, and didn’t really care how to do it.

Early on when we were small we didn’t worry very much about who should make what decision for what thing. Then by 1979 we had enough people that we really had to start organizing outpatient, inpatient, nursery service. We were beginning to think about some peripheral sites as well. For example we took over the Milton Hershey School in 1983, which also required some administrative input. So that’s why we decided to have our own division so that we could make our own decision about call schedules and about recruiting and about academic appointments and about teaching.

DR. PAUL: OK. And in your spare time, in addition to being chief of general pediatrics, dean of students, and doing groundbreaking research; you began seeing patients with Tourette syndrome and PKU [phenylketonuria].

DR. BERLIN: I saw my first Tourette syndrome patient 1972. I remember it clearly. In fact I just spoke with him a couple months ago. He’s now married and has a child. He’s concerned that the child has Tourette. He was a local young man who was in special education. He had all the classic symptoms of Tourette syndrome. Motor tics, vocal tics. He also had coprolalia, which is the utterance of obscene words, which is relatively unusual. Probably fewer than 5% of patients have had it. The parents, being very religious strict people, were just mortified by him shouting out the F word and the S word in the middle of Weis Supermarket. So they came to see me. And I made the diagnosis of Tourette syndrome, and remembered that this was a condition that might be helped by the use of haloperidol, which at that time was one of the pretty well established neuroleptic drugs. Some people use antipsychotics. I don’t like that term because it refers --

DR. PAUL: Implies they’re psychotic.
DR. BERLIN: Yes. It refers to a diagnosis that may not exist. So I gave him what I felt was a reasonable dose. It was clearly too much of a dose. Because the next day his special education teacher called me and said, “Kevin has twisted his neck looking over his shoulder all the time and is extending his opposite arms.” I said, “Send him over.” So he comes over with the usual extrapyramidal symptoms.

DR. PAUL: Wasn’t cursing though.

DR. BERLIN: He was not cursing. I gave him intravenous diphenhydramine and immediately broke it. And then as I watched him over the next 40 to 60 minutes, it came back. So I had to treat him again. I left him a couple days without the dose. Then I started to give him a much smaller dose. He responded very well to it. The coprolalia actually disappeared, which frequently does not happen with medication. The tics disappeared. And he is to this day married, gainfully employed, hasn’t taken medication in probably two decades.

DR. PAUL: So it was that patient what sparked your interest?

DR. BERLIN: Yes. I got interested in that. And then in late 1970s, I have misplaced it, but one of the editions of Parade magazine in the Sunday supplement had a cover story was about Tourette syndrome. And somehow my name got out. I started getting one or two calls a week from people in the area and that’s when I started seeing more patients. I got very interested in treating them and using medications and using behavioral therapies and referring to psychologists and teaching in schools. And I got active in the Tourette Syndrome Association; I’m on the Medical Advisory Board.

It’s been a very fulfilling career. I point out to the young people this is an example of something you can do in general pediatrics to establish yourself in an area of interest without necessarily being a subspecialist. Because quite frankly some of the subspecialists aren’t as good in treating this as somebody who’s got some interest, some background, and does some reading about it, and pays attention to the entire patient. Dr. Laura Duda is helping me in this. We see some people who have been seen by other subspecialists and have been placed on a flock of medications, and none of them are working, and it’s very difficult to get this straightened out.

DR. PAUL: You have people driving over two hours, passing some major centers, to come here.

DR. BERLIN: I have one family that comes from New Jersey. Passes --

DR. PAUL: My hometown.
DR. BERLIN: Yes, that’s right. Cherry Hill. Passes CHOP [Children’s Hospital of Philadelphia]. I had a family from Delaware that came. And I had families from upstate Pennsylvania that come. So we do see a lot of patients.

DR. PAUL: How about PKU?

DR. BERLIN: That was interesting. I was taking care of one of my primary care patients. And the mother said to me one day – the child had phenylketonuria. I can see her now. Her name is Katherine, blond hair, blue eyes. And mother said to me, “Why do we have to go to Philadelphia to Saint Christopher’s Hospital [for Children] to get care for PKU? Couldn’t we do it here?” And I said, “Well, I think you could. But that clinic is one of two clinics that operate under a state contract, and they’re the ones that have established that this is a PKU center.”

She must have called somebody, because within a relatively short period of time I got a call from a physician in the [Pennsylvania] Department of Health in Harrisburg asking if they could come out and talk to me about establishing a PKU clinic. I said, “Yes, certainly.” So they came out and we saw our first patient in August of 1983. Incidentally just about the same time we expanded our activity to the Milton Hershey School.

So we have had a functioning clinic for 27 years. We’ve seen probably in the neighborhood of 400 patients. We have about 206 patients on diet. A special part of the care of PKU is taking care of pregnant women who have PKU, because their pregnancies have to be very tightly monitored. We now have 69 offspring of women with PKU, all of whom are, I think, indistinguishable from normal if the mother stayed on the strict diet. We have five children from two sisters who were not on a strict diet, and those are all mentally retarded. We have a sixth baby whose mother -- this was her second of three pregnancies -- she was not very compliant. And that baby had congenital heart disease, which occurs with a sevenfold increase in frequency in poorly treated pregnancies PKU. So that’s been very gratifying that we’re able to have these women have a good outcome.

DR. PAUL: The clinic is still going strong today.

DR. BERLIN: Yes.

DR. PAUL: As you were developing all these things and the medical center was changing, the largest nuclear disaster in United States history [Three Mile Island accident] occurred less than ten miles from Hershey Medical Center. You were in Alabama in the late 1960s, and you were in central Pennsylvania during that. Tell me a little about this major world event.
DR. BERLIN: As I recall, that occurred on my birthday in 1979, and I was on sabbatical at the Children’s Hospital of Philadelphia. I heard about it coming back on the train.

DR. PAUL: So you were coming back while everyone else was escaping.

DR. BERLIN: Yes. There was a real sense of panic. People suddenly, abruptly left. We had a neighbor up the street who left, and left the dog tied out in the backyard. We had a faculty member that panicked. She had small children and she got in the car and took her kids to her parents’ house, which was off the Hudson River. When she got to the parents’ house, she looked out the driveway from her parents’ house and saw the nuclear reactors of one of the sites in New York State. So she went right into the backyard of another nuclear reactor.

We are about six air miles from TMI [Three Mile Island]. And Kenneth Miller from our radiology department continuously monitored radioactivity from the roof of the medical center and other sites on our property. It never got above background. Never got above background. But there was a sense of urgency. I would hold a meeting every morning on the floor with the nurses and the house staff and the residents to let them know what was going on and what the latest was. The neonatologists thought it was prudent to transfer the really sick newborns. So those were transferred I believe to CHOP by ambulance one after the other. The other patients were all short term admissions, and we sort of got rid of them. But within about a week or so, things had calmed down considerably and we were able to resume normal activities, including admissions to the NICU.

DR. PAUL: Did you keep your family in Hershey?

DR. BERLIN: They all stayed here. We had a contingency plan. We were going to go to Lafayette College where my college friend that I mentioned, David Ellis, was president. They offered to house us if necessary; but it never came to that.

DR. PAUL: Just interesting to live through.

DR. BERLIN: Yes.

DR. PAUL: Yes. Scary but interesting now.

Let’s just move to something a little bit more current. You’ve been a grandfather for almost 20 years now, right?

DR. BERLIN: 18 years.
DR. PAUL: 18 years. And you have two beautiful granddaughters. For me, it’s interesting being a pediatrician and a father at the same time. What’s it like being a pediatrician and a grandfather? And watching your children parent?

DR. BERLIN: It’s a lot more fun, and a lot more distant. Of course, geographically they’re distant as well. But I don’t think it would make any difference. My wife and I have never really felt it necessary to intrude. My daughter is a very good mother. She really raised these two bright young things very well. They’re just nice young ladies.

DR. PAUL: I have met them, and they’re very entertaining.

You were dean of students, and I’ve benefited quite a bit from your mentorship. I heard you talking about replication, I think that was the word you used. Tell me about some of your mentorship experiences and relationships with students, residents, junior faculty, and some memories of those.

DR. BERLIN: With the advent of the Internet, I don’t get much regular mail anymore. But I do get a number of continuing education brochures that come through the mail. And it’s very exciting. Almost on a weekly basis I will pick one of these up and look at who is giving talks at these meetings. There’s almost always a Hershey person in there; former student, a former resident, a former faculty member, a current faculty member. I’ve had some contact with many of them during their early years. It’s very exciting to see that they have done extremely well. We’re very, very proud of the fact that our students have done so well where they’ve gone. Ian, you’re a very good example of this. And the quote I like to use is, “The brilliant student will outshine his teacher.”

DR. PAUL: I’ve heard you mention so many different people that you’ve mentored and had relationships over the years.

DR. BERLIN: Well, Devee Boyd of course comes to mind, because he didn’t go into academic medicine, but this is a man with a tremendous strength of personality. He left here after his family practice residency. He went to Zimbabwe where he was a medical missionary for 6 or 7 years, took students on electives over there, and came back because he felt he needed to raise his children within the United States.

Following him was Johannes Veldhuis, who I think without question is the most brilliant student who ever graduated from here in terms of academic productivity. This is an individual who now has almost 700 publications, plus 700 abstracts, plus 15 R01 grants, 6 of which he had at one time. I don’t know of anybody else in American medicine who has done that.

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So it really is a remarkable series of people that we’ve had here that stand out. I’m thinking my last formal advisee, Emily Kowalik, from Grove City College, who got honors in almost every course in the medical center. She’s a med-peds resident in University of Pittsburgh. Just a wonderful student, and just having so much fun being in medicine. I think that’s something that we enjoy, how much fun that they have. This morning at our pediatrics meeting, Sinisa Dovat was introduced. Sinisa Dovat was a medical student from former Yugoslavia, Serbia, who I first met in 1984 when he came here for a one-month elective. He liked Hershey so much that he came back to do some postgraduate work at Cornell in molecular biology and then did a pediatric residency here. And then he went on to do a hem/onc fellowship at UCLA [University of California, Los Angeles], became a faculty member at University of Wisconsin, and now has been appointed an associate professor in hem/oncology here at [Penn State] Hershey Medical Center. So in 26 years he’s gone from a medical student in Serbia to a professor of hem/onc at the Hershey Medical Center.

There are lots of stories like that. It’s hard to individualize, pick things out. I can’t neglect to mention you, who come here as a bright young thing from Duke [University]. You have done not only the cough and cold stuff but all the other work, the NITTANY [Nurses for Infants Through Teaching and Assessment after the NurserY] study on home visitations, and the asthma work that you’ve done.

DR. PAUL: Well, it’s just as you found. The environment here has allowed you to do the things you want to do, which is really nice.

Dr. Berlin, we have a few more things I would like to cover with you today. The first is we’ve talked about the changes in pediatrics, pediatric education, clinical pharmacology in the last 50 years really. What are the biggest things that you think have changed in pediatrics in the last 50 years? And to follow that, what do you think the changes in pediatrics will be over the next 50 years?

DR. BERLIN: The big changes that I’ve seen in my lifetime are firstly the proliferation of immunizations and the eradication of many of the illnesses that I saw as a medical student and house officer which we don’t see anymore, particularly meningitis. And of course polio had disappeared by the time I was a medical student. It’s very, very encouraging to see that we do not have the scourge of those diseases anymore.

The second area that I have to comment on is the remarkable advances in the treatment of newborn infants. When I came to Hershey in 1971 we got very excited about a good outcome for a 1,500-gram baby. And we have seen over the years that weight and/or gestational age of then 33, 34 weeks go down to now 24, 25 weeks and 400 or 500 grams. That’s not without consequences, because we worry about the outcome of those babies in the long term. But
the remarkable advances in newborn nutrition and antibiotics, respiratory care, and the development of a compound like surfactant has made a tremendous difference in this.

The next area to comment on is the use of psychotropic agents in the pediatric population, which nobody used when I first started out in pediatrics. So many of them were, of course, not available. And of the available ones I don’t think we had a very good idea how to use them. I still am concerned about how we use these drugs. I think that in the next 10 or 20 years the proper use of these medications is going to be really clarified. I think all these medications -- and I don’t care which ones you talk about, whether it be anticonvulsants or antianxiety drugs or antipsychotic drugs or antidepressants -- these all work for rearranging central nervous system transmitters. We have to get a better way of dealing with measuring central nervous transmitters and how they function. Maybe some of the new imaging like PET scanning will help us with that. But that, as I look down the road, is an area that we really need a lot of help with.

Another concern is attention deficit disorder, which we think maybe 6% of the pediatric population may have. Many of those children are on medication as well. Maybe it’s inappropriate; maybe it’s appropriate. I think we need a better way to try to define that.

There are some illnesses where we have not been very successful in developing new therapies. Until recently seizure disorders was one. We went for almost two decades without any new anticonvulsant drugs. But there’s been a plethora of those in recent years. I don’t think there’s been a new drug in the treatment of lupus erythematosus developed in 40 years. I don’t think there’s been a new antituberculosis drug that’s developed. And in terms of global pediatrics this is a disease that probably kills more than 1 million children a year. It kills 3 million humans a year, and about a third of them are probably children, or even higher in some of these underdeveloped countries. We do not have any really new adequate therapies for that.

The development of some of these mega-resistant organisms in the hospital is truly frightening. Some of these gram-negative organisms are sensitive to nothing known to man. Apparently we’re using some of the compounds that I used as an intern and I thought were completely gone and off the market, but they’ve resurrected them because that’s the only thing that some of these compounds are sensitive to.

I think those are the big areas. Now there’s also an area of technical advancement that I probably ought to talk about, such as treatment of congenital heart disease. When I started in pediatrics there was only a small number of lesions that were amenable to surgical correction. ASD [atrial septal defect], maybe VSD [ventricular septal defect], pulmonary stenosis,
patent ductus, coarctation, some of them with a very high mortality rate; even in excellent medical centers.

DR. PAUL: Same thing for childhood cancers.

DR. BERLIN: That’s right.

DR. PAUL: Just in the ten years I’ve been practicing, Stage IV neuroblastoma has gone from 10% to maybe 50% treatable. So malignancies have changed completely in your career for treatment.

DR. BERLIN: I remember sitting with a family. I was an intern, and I had to give them the news about their child having leukemia. And I said to them, and I don’t know how well I believed it, but I said that one day we’re going to make this a much more treatable, curable disease. In those days it wasn’t. And that’s what we’ve done because of targeted chemotherapy. I think one of the great advances in pediatric therapeutics, using the word drug in the broadest sense, would be the development of compounds specifically targeted for molecular lesions. For molecular sites. Rather than just a current anticonvulsant where you hope globally you’re going to change membranes that are firing in the neurons, you want to get something that’s going to really target things. The old-fashioned Paul Ehrlich’s magic bullet. That’s why so many of the new exciting compounds are large molecular entities, because they’re really like monoclonal antibodies. They’re really targeting specific sites.

I think we’re going to see more and more of that. Will we be living in an age where we can predict therapeutic response because of the genome of the patient? I don’t know that. That’s been a hot area of pharmacology research. I’m not confident that we’re going to get to the point where everybody is going to be able to have a prescription written on their DNA. And that Ian Paul gets a different dose of an antiasthmatic compound than Cheston Berlin because he’s got a different genotype. I’m not sure we’re going to get there. The codeine story with nursing infants is a very vivid illustration of how in a very tiny, small number of mothers who are rapid metabolizers secrete a larger amount of morphine in their milk so you can have a very serious, adverse consequences to the infant. We probably need to identify some people who are at risk for adverse things because of their genotype. But as a global thing I’m not so sure it’s going to work in the near future.

DR. PAUL: Be exciting to find out though.

Just a couple of last questions. Do you have an achievement you’re most proud of in your career?
DR. BERLIN: Well, can I mention two?

DR. PAUL: Sure.

DR. BERLIN: The first one was being the recipient of the Sumner [J.] Yaffe [Lifetime Achievement] Award in the year 2006. Dr. Yaffe is really the father of pediatric pharmacology. Dr. Shirkey alerted us to the fact. But Dr. Yaffe is the one that did something about it, particularly with the establishment of pediatric pharmacology research units, one of which I had the honor and privilege to lead for about eight years. It was very meaningful because I took my entire family to the award. And Dr. Yaffe was there in San Francisco.

The second thing that was totally unexpected, but really made me feel good because of my attachment to the students and the residents here, was being made an honorary alumnus of the Pennsylvania State University in 2008. It indicated that all the years that I had worked for students, somebody was paying attention to it. I think that’s a very gratifying situation to be in.

Related to the last one, I have to mention other awards which I did not receive but that my students received. Dr. Evan Trost received the Distinguished Young Alumnus Award, and Dr. Ian Paul received the same award two years later. That was finalized by the Distinguished Alumni Award given to Johannes Veldhuis this year so that I was successful in getting the trifecta for my former students.

DR. PAUL: Well, before we finish I want to comment on your graciousness to your students. As someone who has been mentored by you, when I show up at meetings I always am greeted affectionately because they know that I’m coming from the place where you’re from, and that I’m working with you.

DR. BERLIN: And what do you not bring with you?

DR. PAUL: So now when I go to Committee on Drugs meetings I will bring the Hershey’s chocolate golden bars; I have them at home for the Committee on Drugs meeting next month. But the way you treat people has made it easier for those that you’re associated with. I don’t have to make a good first impression because you’ve already made it for me. And I know there are many other people that benefit from the same way.

Last thing. You’ve mentioned so many of the influential people in your life. Your parents, your wife, Elliot Vesell, Nick Nelson.

DR. BERLIN: And my children.

DR. BERLIN: Grandchildren.

DR. PAUL: I know you could probably list dozens of people. It’s like an award acceptance speech. That you always feel like you’re going to leave somebody out. You’ve mentioned many of your students and colleagues. Anything else you want to mention? Anyone else?

DR. BERLIN: No, I think I’ve mentioned all the people that had a big impact. And I also, in closing, want to emphasize that I think it’s been a great privilege to be able to work with students and residents and young people. That’s really the legacy that we leave. You mentioned the word replication earlier. I deliberately use that word because that’s what is up to us to do while we’re here, to replicate the good things that we have. And have somebody else carry it on.

DR. PAUL: Is it easier to do that when you stay at one place for nearly 40 years?

DR. BERLIN: I think it is. I’ve thought about that a lot and I think it is. Because I think you develop a style for dealing with people. And they know that you are committed to the institution and there’s a reason why you’re committed to the institution. The pattern of staying in one place is atypical, but I think it’s brought me great dividends; not only in young people like yourself and the other ones that I’ve been associated with, but also with the patients who’ve grown up and gone off. And it’s very moving when you find out that they still remember you and --

DR. PAUL: Invite you to their weddings and --

DR. BERLIN: Weddings. And I’m quite struck when I see somebody I haven’t seen in 20 years or so. They start telling me stories of things that I told them which I have no memory of telling them. But fortunately they were good things that I told them, though I don’t remember saying that.

DR. PAUL: Well, the pediatrician’s influence or the mentor’s influence is strong.

DR. BERLIN: Yes.

DR. PAUL: Help me with this. I hope you can tell that I’ve listened to you for the last nine years that I’ve been here with all the questions that I’ve asked you. I think we’ve covered a lot. Anything else? Any other closing remarks?

DR. BERLIN: I don’t think so.
DR. PAUL: All right. It’s been terrific.

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DEPARTMENT OF PEDIATRICS

Penn State Children’s Hospital
Milton S. Hershey Medical Center
Pennsylvania State University

Faculty Curriculum Vitae

Name: Cheston Milton Berlin, Jr., M.D.

Title: University Professor of Pediatrics
        Professor of Pharmacology

Personal Data:

Date of Birth: March 28, 1936
Place of Birth: Pittsburgh, Pennsylvania
Citizenship Status: United States Citizen
Marital Status: Married, Anne Risher
Children: Jean, December 13, 1962
          Douglas, October 21, 1967
          Alexander, December 18, 1970
          Gordon, August 15, 1973

Education:

9/1950-6/1954  Mt. Lebanon High School
              Pittsburgh, Pennsylvania

              Haverford College
              Haverford, Pennsylvania
              Major: Chemistry
              Special Interests: Synthetic organic chemistry and
                              physical chemistry
Education (Cont'd):

Harvard Medical School
Boston, Massachusetts
Special Interests:
(1) Electrophysiology
(2) Pharmacology of methoxamine
(3) Force-frequency relationship (staircase) of myocardial
muscle;
   effect of acetylcholine on this relationship. (Research
conducted during medical school at the Department of
Pharmacology, Harvard Medical School. Work supported by
HMS student fellowship.)
(4) Inborn errors of metabolism.

Postgraduate Education:

7/1962-6/1963  Pediatric Internship
Children's Hospital Medical Center
Boston, Massachusetts

Laboratory of Biochemical Pharmacology
National Institute of Arthritis and Metabolic Disease
National Institutes of Health
Bethesda, Maryland

7/1965-6/1967  Pediatric Residency
Children's Hospital Medical Center
Boston, Massachusetts

Academic Appointments:

7/1986-Present  University Professor of Pediatrics
The Pennsylvania State University College of Medicine
Hershey, Pennsylvania

8/1983-Present  Director, PKU Clinic
The Milton S. Hershey Medical Center
The Pennsylvania State University College of Medicine
Hershey, Pennsylvania

7/1978-Present  Member, Division of Clinical Pharmacology
Department of Medicine
The Pennsylvania State University College of Medicine
Hershey, Pennsylvania
Academic Appointments (Cont'd):

7/1984-6/2000  Chief, Division of General Pediatrics  
The Pennsylvania State University College of Medicine  
Hershey, Pennsylvania  

7/1975-Present  Professor of Pharmacology  
The Pennsylvania State University College of Medicine  
Hershey, Pennsylvania  

7/1975-6/1986  Professor of Pediatrics  
The Pennsylvania State University College of Medicine  
Hershey, Pennsylvania  

7/1971-6/1980  Director, Pediatric Intensive Care Unit  
The Milton S. Hershey Medical Center  
The Pennsylvania State University  
Hershey, Pennsylvania  

7/1971-6/1999  Director, Pediatric Inpatient Service  
The Milton S. Hershey Medical Center  
The Pennsylvania State University  
Hershey, Pennsylvania  

7/1971-6/1975  Associate Professor of Pediatrics  
Associate Professor of Pharmacology  
The Pennsylvania State University College of Medicine  
Hershey, Pennsylvania  

7/1971-6/1984  Special Lecturer in Child Health and Development  
George Washington University School of Medicine  
Washington, DC  

7/1969-6/1971  Director, Intensive Care Unit  
Children's Hospital of District of Columbia  

7/1968-6/1971  Assistant Professor of Pediatrics  
George Washington University School of Medicine  
Washington, DC  

7/1967-6/1968  Assistant Professor of Pediatrics  
University of Alabama Medical Center  
Birmingham, Alabama
Certification:

1963  National Board of Medical Examiners
1968  American Board of Pediatrics
1982  American Board of Pediatrics - Recertified
2003  CPR/PALS
2003  BLS/PALS Recertification

Licensure:

(Active)  Pennsylvania

(Inactive)  Massachusetts
           Alabama
           District of Columbia
           Maryland

Professional Societies and Affiliations:

1968-Present  American Academy of Pediatrics, Fellow (1968-Present)
              Committee on Drugs, Member (1986-1997)
              Committee on Drugs, Chairperson (1993-1997)
              Section on Clinical Pharmacology and Therapeutics,
               Member (1978-Present)
              Section on Clinical Pharmacology and Therapeutics,
               Chairperson (1986-1990)
              Section on Breastfeeding, Member (2001-Present)

1969-1974  Southern Society of Pediatric Research

1968-1971  Medical Society of the District of Columbia

1971-1989  Dauphin County Medical Society

1971-1989  Pennsylvania Medical Society


1973-1975  United States Pharmacopoeia Convention, Member

1971-Present  American Society for Pharmacology and Experimental
              Therapeutics

1978-Present  American Society for Clinical Pharmacology and Therapeutics

1979-1986  Pediatric Pharmacology, Editorial Board
1981-1982  Environmental Protection Agency, Pediatric Panel
Professional Societies and Affiliations (Cont'd):

1982-Present  American Pediatric Society
1984-1994  *Topics in Early Childhood Special Education*, Editorial Board
1985- Present  *Journal of Human Lactation*, Editorial Review Board
1986-Present  *Clinical Pediatrics*, Editorial Board
1987-Present  Center for Drugs and Biologics, Food & Drug Administration, Consultant
1988-Present  International Society for Research in Human Milk and Lactation
1988-Present  Medical Research Council of Canada, Grant Reviewer
1991-2005  American Society for Nutritional Sciences (formerly American Institute of Nutrition)
1987-1994  *Developmental Pharmacology and Therapeutics*, Editorial Advisory Board
1994-Present  International Lactation Consultant Association
1990-1995  United States Pharmacopoeia Convention (Representing the Penn State University College of Medicine), Member
1995-2000  *Biology of Neonate*, Editorial Advisory Board
1995-Present  Central Pennsylvania Chapter, Lupus Foundation of America, Branch Council
1995-Present  Tourette Syndrome Association, Medical Advisory Board
1995-Present  Academy of Breastfeeding Medicine
1995-2001  International Board of Lactation Consultant Examiners,
Board of Directors
Professional Societies and Affiliations (Cont'd):

2006- Present  *Breastfeeding Medicine*, Editorial Board

2010 –Present  *Clinical Pharmacology & Therapeutics*, Editorial Board

1996-Present  Rite Aid Corporation, Pharmacy and Therapeutics Committee (Committee inactive)

1998-Present  La Leche League International, Professional Advisory Board, Health Advisory Council

1999-2007  Pediatric Pharmacology Research Units, Nat’l Inst. of Child Health and Development, NIH – Chair, Network Steering Committee

2000-2005  United States Pharmacopeia
            Chair, Immunizing Agents Expert Committee, Council of Experts
            Information Division Executive Committee

2001-Present  *Journal of Pediatric Pharmacology and Therapeutics*, Editorial Advisory Board

2002-2004  National Academy of Sciences, Institute of Medicine Committee on Evaluation of the Addition of Ingredients New to Infant Formula

2002-2010  Pennsylvania Chapter, Tourette Syndrome Association, Chairman, Medical Advisory Board

2004-Present  Tourette Syndrome Association, Medical Editor, National Office Website

2004-Present  National Library of Medicine, Review Panel on Drugs and Lactation

2005-2010  United States Pharmacopeia
            Information-Immunology Expert Committee

Administrative Functions:

1972-1973  Assistant Dean for Student Affairs (Interim)
The Milton S. Hershey Medical Center, Hershey, Pennsylvania

1972-1975;  Chairman, Medical Selection Committee
1985-1986  PA State Univ College of Medicine, Hershey, Pennsylvania
Administrative Functions (Cont’d):

1973-1987  Assistant Dean for Student Affairs  
PA State Univ College of Medicine, Hershey, Pennsylvania

1974-1977  Associate Member of the Graduate School Faculty  
The Pennsylvania State University

1977-Present  Senior Member of the Graduate School Faculty  
The Pennsylvania State University

1979-1980  University Faculty Senate, Senator  
The Pennsylvania State University

May-Sept 1984; Jan-Nov 1989  Department of Pediatrics, Acting Chairman  
The Pennsylvania State University College of Medicine

1986  University Search Committee for Senior Vice-President for Health Affairs and Dean  
The Pennsylvania State University College of Medicine

1987  College of Medicine Search Committee for Chairman of Department of Radiology, Chairman  
The Pennsylvania State University College of Medicine

1987  College of Medicine Search Committee for Chairman of Department of Medicine  
The Pennsylvania State University College of Medicine

1990-Present  Graduate Program in Nutrition, Faculty Member  
The Pennsylvania State University

2000-2002  College of Medicine Promotion and Tenure Committee  
The Pennsylvania State University

2002-Present  Promotion and Tenure Committee, Chair  
Department of Pediatrics  
The Pennsylvania State University College of Medicine

2004-2005  College of Medicine Search Committee for Chairman of Department of Health Sciences and Evaluation, Chairman  
The Pennsylvania State University College of Medicine
Honors:

1958  Phi Beta Kappa
      Haverford College

1961  Boylston Society
      Harvard Medical School

1969-1974  Markle Scholar in Academic Medicine

1970  Alpha Omega Alpha, Faculty Member
      George Washington University, Washington, DC

1970  Cum Laude Society, Honorary Alumni Member
      Mt. Lebanon High School, Pittsburgh, Pennsylvania

1976  Alpha Epsilon Delta, Honorary Member
      Seton Hall University, S. Orange, New Jersey

1986  Community Service Award
      Women in Crisis, Harrisburg, Pennsylvania

1987  Establishment of and Recipient of First Award
      The Cheston M. Berlin Alumni Service Award

1989  Central Pennsylvania Lupus Foundation Chapter Award

May 19, 1992  Dean's Lecturer
             "The Dean's Lecture Series"
             The Pennsylvania State University College of Medicine

1995  Pediatrics Miracle Maker Award
      Children's Miracle Network Telethon

1997  Teaching Award
      Presented by the Class of 1997
      The Pennsylvania State University College of Medicine

1998  Clinical Teaching Award for Pediatrics
      Presented by the Class of 1998
      The Pennsylvania State University College of Medicine

1998  Ballantine Award for Clinical Teaching Excellence
      Presented by the Class of 1998
      The Pennsylvania State University College of Medicine
Honors (Cont’d):

1999  Award for Excellence in Clinical Teaching for Pediatrics
       Presented by the Class of 1999
       The Pennsylvania State University College of Medicine

2004  American Academy of Pediatrics, Pennsylvania Chapter
       Pediatrician of the Year

2004  Departmental Educator Award
       Presented by the Department of Pediatrics
       The Pennsylvania State University College of Medicine

2004  Mentoring Academy, The Pennsylvania State University College
       of Medicine

2005  Most Compassionate Professor
       Presented by the Class of 2008
       The Pennsylvania State University College of Medicine

2005  Best Professor of PPS
       (1st and 2nd Year Medical Student Class: Patients, Physicians and Society)
       Presented by the Class of 2008
       The Pennsylvania State University College of Medicine

2006  Sumner J. Yaffe Lifetime Achievement Award in Pediatric
       Pharmacology and Therapeutics

2008  Penn State Alumni Association Honorary Alumni Award

2008  Student Pediatric Society Berlin Leadership and Service Award
       Annual award established in 2008 by the Student Pediatric Society at Penn State University Milton S. Hershey Medical Center to honor a student who has shown leadership and service in the field of pediatrics

2008  Penn State Children’s Hospital Library to be named
       The Cheston M. Berlin, Jr. Library

2010  Baccalaureate Faculty Speaker, Class of 2010
       The Pennsylvania State University College of Medicine

10/2010 American Academy of Pediatrics, Pediatric History Center, Oral History Program, Selected Participant (Interviewee)
Current Grant Awards:

07/01/09 – 06/30/11  PKU Treatment Center
Commonwealth of Pennsylvania (ME02039)
Principal Investigator
$170,000.00
35% Effort
Articles:


**Articles (Cont'd):**


Articles (Cont'd):


**Articles (Cont’d):**


Articles (Cont'd):


Articles (Cont'd):


**Articles (Cont’d):**


**Articles (Cont’d):**


**Articles (Cont’d):**


Articles (Cont'd):


Articles (Cont'd):


Statements Published by the Committee on Drugs of the American Academy of Pediatrics During Tenure as Chairperson:


Abstracts:


**Abstracts (Cont'd):**


Abstracts (Cont’d):


Editorials/Letters:


Editorials/Letters (Cont’d):


Editorials/Letters (Cont’d):


