

**Interviewee:** Small, Parker, M.D.  
**Interviewer:** Karen Thomas  
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**Thomas:** Dr. Small, when did you get to University of Florida and what brought you here?

**Small:** I came in 1966. What brought me here was a series of mishaps. John Cebra, a very fine immunologist, had invited me to the University of Florida. At the time I was at the National Institutes of Health. He invited me to come down and to give a talk about my research, and we agreed on a date. A few weeks later, he called me and apologized for having double scheduled. So we arranged a second date. A few weeks after that, I called him and apologized for having double scheduled. We very carefully picked a third date, and lo and behold, a few weeks later he called me and said, "Oh, we're having a meeting on the Phylogeny of the Immune Response on Sanibel Island at the time that we've scheduled your talk in Florida. Why don't you come a day early, give your talk, and then go to Sanibel Island with us and join our meeting and give your talk down there, too?" Well, I'd never been to Florida; it sounded like a pretty good deal to me. So I rode from Gainesville to Sanibel Island with John Cebra, Manny Suter (who was then chairman of the Department of Immunology and Medical Microbiology), and another colleague. Dr. Suter and I argued about medical education for the entire five to six hour drive down to Sanibel. Within a month or two of that event, the first dean, Dean George Harrell, who had started the medical school – remarkable man – probably the most skilled individual man for starting medical schools in the history of this nation, having started two, the University of Florida and Hershey – resigned to go start Hershey. The very wise search committee selected Dr. Suter to be the second dean of the College of Medicine. Shortly thereafter, Dr. Suter called me and said that if I really believed all those things I'd been saying about medical education, why didn't I come down and take his job as chairman of immunology and med micro. So at age 34, I arrived, I think the youngest guy in the department, as chairman of the department.

**Thomas:** What was that conversation about medical education about, and what were your ideas that you wanted to bring in?

**Small:** Basically, my medical education had been the worst education of my educational career. The best was the research associate program, two years at NIH. High school was next best. Elementary school – we didn't have middle school back then – elementary school was next, and the University of Cincinnati College of Medicine education was, I thought, terrible, probably like most medical schools. And I thought it was terrible because it promoted rote memorization of isolated facts and required much less thinking, especially in the first two years. Fundamentally, I thought that basic science as it was taught was not just a waste of time, but some of our later work has shown that not only does rote memory not help you solve problems, but it can actually inhibit your ability to solve problems. And so I don't remember exactly the

conversation, but I am sure that we dealt with new ways that you could teach basic science, how to relate basic science to clinical practice. If you have no retrieval cues, if you've learned basic science facts with no clinically relevant retrieval cues, you will not be able to recall them in a clinical setting. So I'm sure we discussed the critical need to integrate more clinical medicine into the basic science curriculum. Incidentally, over the next decade or so as we tried to do this, this was not without some concern on the part of other basic scientists that they were losing some of their god-given time to clinical stuff that the students would be learning later. The appreciation of the need for integration was not universal amongst basic science faculty.

**Thomas:** Once you became department chair, were you involved in reforming the curriculum along with Manny Suter, who was then\* doing problem-based learning and trying to \_\_\_\_\_[??]?

**Small:** *\*(I do not believe Suter was doing problem-based learning).* Dr. Suter had been chairman of the curriculum committee prior to becoming dean, and the curriculum committee had created (I was told) a new curriculum, and the faculty had voted it down something like 3 to 1, which meant that the curriculum committee that had spent several years working on this, that work came to naught. With that in mind, Dr. Suter undertook what I thought was one of the most creative strategies for bringing about change. He formed a committee that consisted of the chairman of medicine, Lee Cluff, Associate Dean Richard Schmidt, Paul Elliott, and me.

**Thomas:** Elliott.

**Small:** Paul Elliott, who subsequently went off to FSU. Paul was in charge of programs prior to getting to medical school. I was representing basic science. Dr. Cluff was representing clinical science; Dr. Schmidt was looking at the overall issues with Dr. Suter. This relatively small committee redesigned what eventually became the Phase ABC curriculum, a curriculum that the student champion and Dean of Students Dr. Smiley Hill initially opposed and this opposition significantly increased the amount of effort required to institute this curriculum. At a later point he said that it was by far the best — at a much later point, he said it was by far the best curriculum the institution had ever had. Having devised this overall approach, the next thing that happened was Dr. Suter had us form subcommittees. The basic game plan was Phase A was basic science, Phase B was clinical science, and Phase C was elective time with basic science coming back, being melded into the clinical time. But at that point, if a student wished, they theoretically could even go back and take a history course or an English course. So Phase C was very potentially diverse. We then – I chaired the Phase A committee; Dr. Cluff chaired the Phase B committee, and I do not remember who chaired the Phase C committee. But these committees brought in — for example, the Phase A committee brought in representatives from all of the basic sciences, and we redesigned the total curriculum in addition to involving them in the more detailed planning of the basic science program.

**Thomas:** And this is in the late '60s?

**Small:** This was in the late '60s. And what this meant was now at least 30% or 40% of

the faculty were involved in this process and involved in it all the way, from their point of view, from original planning to implementation. This meant that when the curriculum was brought to the faculty for a vote, by then over half of the faculty had been involved in its creation, because once the Phase A committee was formed, we then formed subcommittees for each basic science department, so that in this way, with Manny Suter's very creative leadership, the majority of the faculty had been involved in the planning of this curriculum and they voted it in at least 2 or 3 to 1 in favor instead of 3 to 1 against.

**Thomas:** In talking to Paul Elliott, there were a lot of interesting things going on at UF and nationally in the late '60s in medicine and health care generally. I know that there were definitely attempts to pursue external funding, and the PIMS program resulted from some of that federal money coming in. Can you speak to what the outside influences on the curriculum were, and especially grant funding?

**Small:** The impact of grant funding of the Phase ABC curriculum – I don't think was that great. I think the impact of money to increase class size – because we go through phases. We go through phases historically where the nation, the politicians of the nation, are convinced that we don't have enough docs, and other phases where the politicians are convinced or the medical profession is convinced that we have too many. This cycles, and this is a driving force for the creation of new medical schools. I really believe that the fundamental drive for new medical schools is "parents need a son or daughter, the 'doctor'." That the parents drive the politicians to increase places in the medical school for their children. That's the most fundamental drive. But what happened here was, there was money available for an expansion of class size. Our basic science teaching facilities were limited. So Dr. Suter came up with the very creative idea of forming the PIMS program, wherein especially the first year of medical studies would be done at FSU and those students would then come to the University of Florida for the rest of their education. I do think that federal money played a role in that; I don't think that federal money played a role in the Phase ABC curriculum.

**Thomas:** Were you involved in the AAMC, and if so, how?

**Small:** Yes, I was involved with the AAMC in a number of ways. First of all, I was a site visitor to five or ten other medical schools during the '70s, which was really very worthwhile. I was able to visit places like McMaster and Arizona, and to pick up really important concepts. At Arizona, I became aware of their OSCE exam (Objective Structured Clinical Exam). I also was on the committee to revise Step 1 and Step 2 of the national board exam. And I was involved in revising the basic science exam. I can remember everybody patting themselves on the back and being so pleased at what we'd accomplished, and my response to the group was, "Yes, I think we've done a very good job for about 1/3 of what this exam should be evaluating. This exam does not evaluate the clinical competence of medical students, and that the OSTE exam actually does that." In the OSCE exam, a standardized patient is interviewed by the medical student. The problem is, if you're trying to evaluate how well a medical student takes a history, does a physical exam, and puts it all together, and you're using real patients, if that patient has given the history to five other people (two residents, two faculty members or whatever) and you're the next

to walk in, you may be the best historian around but you're not going to get a very good history. And you can't grade a student on that. So with the OSCE, what you've got is a standardized patient who, incidentally, can mimic a huge number of clinical situations, and who is better able to judge the skill of the examinee than anybody else. For example, a female knows whether in a pelvic exam the doctor's actually palpated her ovaries or missed them. In a male rectal exam, a male knows whether the prostate was palpated or not. In an ophthalmoscopic exam, if the patient shuts his eyes after the exam, they get an after-image of where the light went. And as one standardized patient said to me, "Doc, I don't know whether you're seeing what you're supposed to be seeing, but I sure know whether you looked in the right places." So the introduction of this type of evaluation was one of the things I brought back to the University of Florida. And Margaret Duerson has subsequently developed one of the finest programs, and this is now a key component of our medical education, even in year one. I'm so pleased to say that the Step 2 exam, the national board exam, now has this as a key component so that we are now not just finding out what knowledge base graduates of medical schools have, but we're finding out whether they are able to talk to a patient, get a history, do a physical exam, collect the data, and think rationally with that data. I think it's a major step forward, and it was the sort of thing that came from this opportunity within the AAMC to visit other institutions and bring back ideas.

**Thomas:** So you were working with the AAMC during the '70s?

**Small:** Yes.

**Thomas:** And that was the first \_\_\_\_\_[??]?

**Small:** Yes.

**Thomas:** Can you talk about how all of this relates back to PIMS? Were you involved in helping set curriculum for PIMS, for instance?

**Small:** Well, I really wasn't involved heavily. My involvement with PIMS was peripheral. My involvement related in part to working with Dave White, who was in charge on their immunology program, and even doing research on medical education in collaboration with Dave. And this research related to our POPS program. The background on our POPS program is that I was enamored with small group teaching. In fact, my wife and I had gone off to the National Training Lab in Bethel, Maine, for two weeks, thanks to two unbelievably good psychiatrists, Harvey Langee and George Schwartz. They had hooked our university up with the National Training Lab and the agreement was for every two-week session, our medical school would send a clinician and a psychiatrist to care for these 500 people or so. And in return, our mates and we could be involved in the training. It was a remarkable two weeks. I was the clinician and my wife and I learned just a tremendous amount about how small groups really work. I came back and introduced a lot of small group teaching. Suter had then gone off to the AAMC and I was on sabbatical at the time at the AAMC. Six months later, he sent me down to Buenos Aires for a medical education meeting. And in this room full of maybe 300-400 people, I extolled the virtues of small group teaching. At the end of this talk, a faculty member got up in

the back of the room and said how wonderful this small group teaching must be. He asked me how many students we had. At that time, we had about 75. Asked how many faculty we had, and I said, “Oh, 10 to 12, but we use our fourth-year medical students to help us, too.” He said, “Oh, that’s just fantastic. I’d like to use your method. I am **the** faculty member and I have about 1,000 students. How can I use your small group teaching?” Well, as you can imagine, I sat down very quickly and was very quiet. But the next day was a working session where we were supposed to develop instructional materials. Prior to going, I had been involved in writing self-instructional materials. There was a fad for a while where you could write self-instructional materials, and mine were just outstanding. I mean, if your goal was to treat insomnia, I could have somebody asleep in five minutes with my self-instructional materials. But the next day I thought to myself, “Gee, what would happen if you took this self-instructional approach and applied it to a group?” So while in Buenos Aires, I put together the first draft of the Tetanus POPS. And over the next six years, I tried it on classes, and based on their feedback, revised it and added a new POPS each year. The feedback I got on the first Tetanus POPS included one student who wrote in one-inch high letters across his evaluation form, “Stop F-ing around with my medical education! I only have two weeks to learn immunology.” I had never produced that much emotion in anybody in my life, and I thought, “We’ve got something here that’s worth following up on.” And the truth of the matter is that we did follow up on it and developed the POPS system. And at one point, Dave White and I tested whether the POPS system in and of itself could be used to teach immunology to PIMS students. And the data was that the students came away with almost as much knowledge, having just done seven or eight POPS, as our students who had done those POPS and had extensive lectures. On another occasion, with a class — once Dave left, the use of the POPS at FSU decreased and they basically stopped using them at one point. And we did a study — I invited fourth-year medical students to come to my office and discuss — curriculum was the false invitation. And down the hall, we stationed Margaret Duerson, who to them was at that time seen as a nurse. And Margaret stopped them as they were on their way to my office and said, “Gee, my husband just stepped on this rusty nail. What should he do?” The PIMS students had not had the tetanus POPS, and in truth they did not handle that question very well. When the medical students came into my office, they would say, “The strangest thing – Ms. Duerson just asked me about tetanus.” And I would say, “Well, what did you tell them?” And they would review what they had to say. The students who had had the POPS did well, and then I’d say, “Where’d you learn that?” And the students who had the POPS could still tell me from three years earlier even the students in their group who they’d argued with about this. Actually one of the UF students, non-PIMS UF students, had had a tetanus patient; he knew more about tetanus than I did. But the others handled it well. The most remarkable thing about it was that my son was in that medical school class and we always talked about things, and two weeks before I was to do this experiment he came to me and he said, “Dad, you’re screwed. We have just had a lecture on tetanus and they covered everything you want us to know.” The amazing thing was not one of those students, when given the clinical stimulus of “My husband stepped on a rusty nail” remembered having had the lecture. I’m not talking about them remembering what the lecture said; they didn’t remember even having had the lecture. I think it’s further proof of what a waste lectures are. I think they are used primarily because they meet the needs of faculty. Part of that is the “sage on the stage,” and part of that is the ability – the blanket theory of education, namely “to cover a large body of facts in a finite time” with minimal focus

on what the students truly take away. Now, the faculty kid themselves by later giving a multiple choice exam which the students cram for and always do well on. But very few faculty test the student's knowledge a year later. We did that with the POPS system, and we gave them questions that over 90% of the class had gotten right in the first year subject matter. And what we found was that rarely – that less than half of the class would get them right a year later. The only exception, again, was material covered in the POPS.

**Thomas:** Can you explain more how POPS worked?

**Small:** The basic idea was to give each of — to put a class of whatever size – if you had 100, to put them in 25 simultaneous groups of four. If you had 400, as we now do for our PIPSA (Partners In Prevention of Substance Abuse) program, you could put them in 100 simultaneous groups of four each. The beauty is, you do not need, in fact, you do not want faculty supervising each group, so that you can do this teaching with a much reduced faculty. The role of faculty is no longer to be a source of factual information; it's to be a facilitator of learning. And each of these four students gets a booklet that has 1/4 of the information that they need to solve the problem. The group is given a problem and they have to work together, teach each other, in order to solve it. Our research also showed that if you measure how effective students were at helping each other, it was by far the best predictor of – four years later – who was judged to be the best doc by their peers.

**Thomas:** I have several follow-up questions. You say that as you were developing POPS, you and David White did implement it in the PIMS program —

**Small:** Yes.

**Thomas:** But after White left, it was dropped.

**Small:** Yes.

**Thomas:** Do you know why? Because it sounds wonderful.

**Small:** Well, I'm not sure why. I think there is a tremendous problem when it comes to dissemination of innovation. I think that the "not invented here" syndrome is very real. And in truth, when you look at dissemination, it's very much like the experiment that was observed in monkeys, the potato washing experiment, in Japan. Japan had scientists that liked to watch monkey behavior, and they observed a low-level female who accidentally dropped her potato in a stream of water, when she pulled it out, it was obviously not gritty and much easier and nicer to eat. That behavior spread slowly to her children and her girlfriends, and never any higher. They introduced potato washing to a chief honcho monkey in another tribe, and watched it spread throughout the tribe. There is this phenomena that if you're trying to introduce an innovation, if you can introduce it into the perceived leaders, you will have it flow down much more readily. If it is initiated at a low level, it doesn't get disseminated nearly as well. Florida is not perceived as one of the five leading medical schools in the nation. Incidentally, I think the quality of the

education should put it there, but the judgment of medical schools is based primarily on their research. There is no adequate accurate evaluation of the quality of medical education. It's one of our major problems. So an alternate strategy is to get a consortium, and that's what we did with POPS. Thanks to the National Library of Medicine, we got a consortium of about eight schools that reviewed POPS and revised them slightly. From an immunologic point of view, I look at the fact that the "not invented here" syndrome is "rejection of foreign material." A consortium allows each institution to build self into those materials and therefore prevents the immune rejection of these instructional materials from a foreign source. And again, if something is coming from a consortium, it can replace the dissemination from an august institution, or at least an institution that is viewed as being august.

**Thomas:** What's interesting to me about POPS is that it sounds so similar to PIMS emphasis on early clinical experience. And where did that emphasis come from if not from POPS?

**Small:** I think that was the driving force of the ABC curriculum. For example, in the ABC curriculum, the very first month of medical school was an integrated program. The best instance of this was when it was an integrated infectious disease program run by Dr. Cluff, the internal medicine chair and national authority on infectious disease, Dr. Dick Smith, the chairman at that time of pediatrics, and again a nationally known immunologist, infectious disease person, and me. And it was, from the point of view of the students, a clinical course. So I think the emphasis at FSU on early clinical experience derived from Dr. Suter and the rest of us on the original committee that first said the basic principle under which we will revise this curriculum is to introduce early clinical experience. And incidentally, conversely, re-introduce basic science in the fourth year.

**Thomas:** Can you help me understand something that seems like a paradox? I have heard that PIMS students were known for, when they came of UF in the second year, having better patient skills than their UF peers, perhaps. But I've also heard that the PIMS students themselves complained about lack of clinical relevance in their basic science courses.

**Small:** Well, I think what you're at that time comparing is people who I would say had maybe 5% of the clinical skills that they should have at that stage of their career. The UF students maybe had 5%, the PIMS students maybe had 10%. But both — I mean, the experiences at both institutions were inadequate clinical exposure. Since that time, the amount of clinical exposure in our program has increased immensely. We now have students learning how to do histories and physicals in the first few months of their tenure at the University of Florida College of Medicine. A significant part of that year is devoted to groups of seven or eight students sitting with two faculty, reviewing a tape of the history or of the physical exam they did. I think the issue was, the FSU PIMS students, the PIMS students were better off than the UF students, but neither of them were in very good shape.

**Thomas:** Can you tell me more about David White, since unfortunately he passed away recently and we can't interview him? What was he like?

**Small:** A fun guy, a creative guy. One sensed sort of the father figure for the medical students. An MD, something that the PIMS program was sort of at that time, who genuinely cared about these students and whose primary, secondary, and tertiary goal was to help them become the best possible docs they could be. He would teach physical exam, and the students would learn how to do a rectal exam on him. So I think virtually every early graduate of the PIMS program had his finger in David's rectum [laughs].

**Thomas:** That's dedication [laughs]!

**Small:** Creative; very secure. Some basic scientists can be threatened by curricular change, by the introduction of clinical material that they perceive to be taking time away from what they, appropriately, deem to be their very important subject. What they don't understand is, again, as I've said over and over, the need for their knowledge to be transmitted in a way that the students can retrieve it in a clinical situation. So that David had none of that. David was secure, willing to try anything, and always had the trust and confidence of the students. So he could try things, and if they didn't work, his relationship with students was such that it wasn't a crisis.

**Thomas:** Can you think of anything he tried that didn't work?

**Small:** I didn't follow the events in Tallahassee close enough to be able to answer that.

**Thomas:** You were on the UF College of Medicine admissions committee, correct?

**Small:** Later, much later.

**Thomas:** Like the '80s?

**Small:** '90s.

**Thomas:** In the '90s. Did you have a role at all in admission of PIMS students, or —

**Small:** I had no role in the admission process for PIMS students. I was sufficiently involved in originally running a department and then medical education, flu research, and clinical teaching. Incidentally, one reason I started the POPS program was I began seeing third-year medical students in the pediatric immunology clinic. And what I discovered is that they didn't remember a thing from all that my colleagues and I had poured our hearts out trying to teach them. You know, I knew that from prior experience medical students didn't remember a thing about other basic science information, but it was an absolute shock to discover that they didn't remember a thing about the stuff I had taught them. And that was the driving force for saying that we've got to find a better way for teaching. My unfilled desire is to have everybody who teaches in the basic science years go back and interface with students in their clinical years. I think it would be the single most powerful driving force for major curricular reform in the basic sciences that you could bring about.

**Thomas:** You talked about David White and you talked a little bit about Manny Suter. How well did you know Paul Elliott and what can you tell me about him?

**Small:** I knew Paul less well. My primary interactions with Paul were around the original very small committee that Manny had formed to lay down the basic principles for a new curriculum. My recollection is that he had tremendous interpersonal skills and a fundamental understanding of educational principles. But beyond that, my memory is vague.

**Thomas:** I'd like to ask you about something that was very important to Paul Elliott that he brought into the PIMS program, which was minority recruitment.

**Small:** Yes.

**Thomas:** Were you at all involved in that at UF and can you speak to that in relation to PIMS?

**Small:** Both Paul and Manny Suter were totally devoted to minority recruitment. I can't speak to it at PIMS, but I can speak to it at Florida. One year we did recruit one black student, and he did not make it. And Manny recognized that to bring a single minority into a program was unfair to that student.

**Thomas:** Was that student not also female?

**Small:** I don't remember. But what I do know is that from that point on, Manny said, "Look, we need more than one." We brought in two, I think the next year, and I can remember one of them and his story about going to the local laundry with his shirts and putting them on the counter and the laundryman saying, "I don't do colored shirts." Whereupon he pulled out the pink and the blue. And the guy looked at him and said, "I don't do niggers' shirts." And that was the environment at that time.

**Thomas:** And this was the mid-'60s or so?

**Small:** Late; late '60s. I mean, when we came, there were black and white restrooms in this community. There were even black and white drinking fountains in some establishments, and it was mind-boggling. I might say that I think one of this community's most magnificent accomplishments in my 40 years of observation was the flawless integration of our public school system. And the reason it happened was the leadership on the school board of a local dentist, Ben Samuels, and our chairman of orthopedics, Bill Enneking. They led that five-person committee and they arranged for us to integrate. And it was without any demonstration or problem, at least known to me. I do remember that when our younger son was due to be bused from instead of Littlewood, the school which is about a quarter of a mile from our house and to which he walked, to a school on the other side of town. My wife was sure that he was doomed to intellectual mediocrity for having to go to that place way across town. In truth, it was one of the most fun times of his life. He loved the bus ride with all of his buddies. And when he got to that

school, the teachers were superb.

**Thomas:** Do you remember the school and where it's located?

**Small:** Yeah, Williams Elementary School. It's in the southeast quadrant of Gainesville. So he was bused from the northwest quadrant to the southeast quadrant in that grade.

**Thomas:** We've talked about minority recruitment. Another one of the big social forces at that time was PIMS emphasized primary care and getting care to underserved populations which are very rural. Do you have any experiences with that yourself?

**Small:** Yes. Currently I am going to north Florida communities like Mayo and Live Oak and trying to help them prepare for an influenza pandemic, so that I'm quite involved with them and have been very supportive and impressed by AHEC. And I might say that when PIMS became a medical school instead of just a limited program, their recruitment of Ocie Harris as their dean for clinical affairs was, I thought, the most creative recruitment of the most appropriate individual I had seen.

**Thomas:** Tell me about Ocie Harris then.

**Small:** Ocie Harris had been a pulmonologist, an outstanding pulmonologist, on our faculty. He and I worked together on the curriculum committee as well as other places, but he was also a head of AHEC, which meant that he knew more about rural Florida, and as a superb pulmonologist, cared about people. So that the recruitment — here he was, excellent clinician, knew about medical curriculum, cared about medical education, and knew about Florida and its needs. So he was the absolute ideal person for that job and I think an outstanding dean. You know, I might say that he and I also worked — because of his pulmonology, he worked with us on our PIPSA program. This is our Partners in Prevention of Substance Abuse. It's a program wherein we take all of our first year med, first year dent, fourth year nursing, fifth year pharmacy students — about 500 now — and in one afternoon teach them about tobacco and its harm. And then send them out to teach middle school students in the surrounding counties. They teach 15,000 to 20,000 middle school students each year. The value of this is multi-fold. The first issue is health promotion/disease prevention in medical education is under-taught and under-appreciated. One of the problems with it is the concepts are very simple, so that if you lecture on them, everybody sits there and says, "Yeah, yeah, yeah." And if you then try and give an exam on them, you either have to ask tricky questions to get some discrimination, in which case the students hate you for your tricky questions, or everybody's going to get them all right. And the most important aspect is, if you lecture on them, you'll change nobody's behavior. Whereas when you send the professional students out to teach the middle school students, now they're learning it in order to teach it. And it does change their behavior. We've had students come back to us and say, "I felt like a scumbag, telling these middle school kids how bad tobacco was, knowing that I smoked. So I just want you to know, I came home and quit." And a follow-up a year later showed that that student was still quit. So that it does change their behavior, but I think it begins right off pointing out how important health promotion/disease prevention is.

Professional students – medical, nursing, dental, pharmacy, are more trustworthy when talking about these kinds of subjects than older folk. So that I think they have a special benefit there.

Now, you can't send professional students out to teach – to lecture to middle school students. If you do, they just stand up front and twist in the wind. Middle school kids are the toughest group to teach of all. So we send them out with a video tape with five or six 60-second vignettes which set up specific discussion points and with gimmicks. Like one of our gimmicks are our tobacco death dice, which have a skull and crossbones on two of the six sides. And we tell the students, "Roll them. See if you're a smoker you'd be lucky and live or whether you might roll skull and crossbones and die." What it does is it drives home — because when you talk to them, they all have an Uncle Harry who lived to 103, smoking like a furnace. And what we can say is, "Yeah, no question about it. You've only got about one chance in three, maybe one chance in two, dying with this product. Certainly not 100%. Now what do you want to try?" Now this program was sufficiently successful that it's been adopted by Nova Southeastern and they've been doing a wonderful job. University of South Florida. Miami, to a certain extent. And when Ocie went up to PIMS its first year as a full medical school, the very first week of classes Ocie invited me up to run an afternoon of learning for the PIMS program. And within the next few weeks, Ocie had those students going out to teach middle school kids in the Tallahassee area about the evils of smoking. So I'm very proud of the fact that one of the very first activities of medical students at PIMS, when it became a full four-medical school, was to do the PIPSA program, and that Ocie and I were able to put that together.

**Thomas:** When did you and Ocie Harris start PIPSA? Do you remember?

**Small:** About 10 or 11 years ago. Yeah.

**Thomas:** Did you have a lot of PIMS students as a teacher at UF, once they came to Gainesville?

**Small:** Yeah. Obviously, I didn't teach them immunology because they were getting that at PIMS. And my involvement in the clinical education was in the immunology clinic. My involvement there was much less than my involvement in most other things. I did not get to know the students well enough to know which were PIMS and which were first year at UF.

**Thomas:** So by the time they came to you as what? Third or fourth year students?

**Small:** Third.

**Thomas:** Third year students —

**Small:** Or possibly elective in the fourth year.

**Thomas:** — you weren't aware of any real differences between the PIMS and non-PIMS students?

**Small:** No, certainly not. My other involvement with PIMS was Manny Suter and I got very involved with something called “concept mapping.” This is where you drive home the relationship between ideas, and it’s a very important educational tool. Joe Novak developed it, and it’s an educational tool that helps students link their new facts to their previously existing facts, which I happen to think is the primary function of a teacher. I don’t think it’s laying a larger number of facts on students – facts, concepts, whatever. I think the primary function of a real teacher is to help a student integrate those new concepts into their existing set of concepts, and that the more linkages they have, the more apt they are to be able to recall it and use it later on. And concept mapping is one of the best, if not the best, tool for doing this that I know. So Dr. Suter and I tried to introduce that into the University of Florida program without a lot of success. And we came up a couple of times to try and introduce it into the PIMS program. And I must say, I don’t know, I have a feeling that it was without a lot of success up there, too. I think the program basically died when we stopped coming up to do that.

**Thomas:** We talked about curriculum, your contributions with PIPSA and POPS. What can you tell me about admissions, since you served on the admissions committee? Did you have any involvement with PIMS or did PIMS seem to affect admissions at UF?

**Small:** I don’t think PIMS had an impact on admissions at UF. I think UF, with Smiley Hill’s participation in the admissions committee at PIMS, had much more impact. But I never observed that process, so that’s just my supposition. The admission process at the University of Florida and at every other medical school in this nation is a craps shoot. We have the choice of an unbelievably bright, capable group of people. One of the things I’m proud of at the University of Florida is that we do not rely heavily on grade point average and standardized test scores. Once a student has a high enough GPA and a high enough test score to assure us that he or she would be able to successfully complete our program, we attempt to select from that sub-set the students who are most dedicated and who we think will make the best physicians. The problem is, that process is flawed. It is done largely by interview, and a student who hits an interviewer that shares a common interest is in much better shape than a student who hits an interviewer where they share no common interest. When the athletically-oriented student runs into the interviewer who is interested in theater and dance, it’s a bad break for the jock. Just as one example – McMaster is doing a very interesting at the present: they have their multiple-committee interview in a kind of OSCE format. The student will have ten eight-minute interviews with a standardized approach. One standard approach is, at one station he is asked – or she is asked – “Why do you want to be a doctor?” That’s the standard kind of stuff. At another station, they are told that they are an employee who’s been assigned to fly to a meeting on behalf of the company with another employee, and he’s supposed to pick that employee up on the way to the airport. What he discovers is that the other employee is petrified, ever since 9/11 has been deathly afraid of flying. And his task is to help that employee. Another task is, in the garage you’ve just bumped in and broken the headlight of somebody else’s car. You are now about to go into the office of the owner of that vehicle. So that they have these ten different station: one is an ethical issue station, and thus far their experience is that the performance on this multiple mini-interview is the best predictor they have of subsequent performance of these students in an OSCE, *i.e.* a simulated clinical setting. And what they point out is that the multiple

stations wipe out or decrease the luck of hitting the interviewer right. They also point out that the variance in station-to-station scoring is larger than the variance in student-to-student scoring, pointing out again how the interview system for the admissions process is flawed. But it is carried out by very hard-working, very well-meaning people at every institution. My own preference would be to have a series of small group settings where students had to work together prior to admissions. I mean, I would very much like to see a POPS-like system introduced into key pre-med programs. And I would then like at the end of the students' interaction with multiple peers to have them identify the student who most helped them learn. My dream would be for undergraduate pre-med course, instead of having on the transcript one box, they have two boxes – one box for their standard grade and one box for their helping score. And I would like to admit to medical school the students that not only can get good grades, but the students who are also superb at helping their peers get good grades.

**Thomas:** Myra Hurt is the person who identified you as someone that needed to be interviewed, and she came in in the late '80s and became the third and final director of PIMS in the '90s. Can you talk to me about your interaction with her and PIMS under her directorship?

**Small:** Yeah. It's Myra that would get Manny and me to come up and do the concept mapping stuff. And Myra's son went through our medical school. So you know, I obviously interacted with him. And Myra had a view of my teaching through the best eyes that you can get, namely the eyes of students. And we would periodically talk about things together. But I don't think that we had — I don't think that I had any significant impact — during that time period.

**Thomas:** I think this should be my last question. Looking back at your time at University of Florida from 1967 on, what have been the most significant changes in medical education?

**Small:** Well, the most significant changes [chuckles] have been the unbelievable change in the physical plant. Where I used to play touch football with graduate students and medical students is now covered by the library. The most important overall change was the coming of the vet school, which meant that we had access to unbelievably capable, knowledgeable veterinarians, and if we were doing research, for example, on influenza vaccine in horses or pigs, we could double count it. For me it was an animal model; for them, it was the be all and end all. So that it was the advent of the vet school that was the largest, most important change. In terms of medical education *per se*, I think we have gone from a system that was better than — significantly better than what I was exposed to as a medical student, to —

**Thomas:** That's the Phase ABC?

**Small:** Yes. And subsequent curricula. The other thing that I picked up and brought back was debriefing. And I don't know whether I got this at McMaster or where, but after students take a course, they sit down — they identify a subset of the class who are charged to sit down with the faculty and tell the faculty what aspects of that course were well taught, what were poorly taught, what should be done differently, and essentially to critique the entire course. Now there may be other people that think they introduced that, but I think I brought it back. And that

has been a stimulus for continuous improvement, because the faculty do listen to the students. And it is not an adversarial meeting; it is rather a genuine exchange. And that has led to improvement in the instruction in every single course. But overall, the biggest change has been the early introduction of clinical medicine, learning how to take a history and do a physical exam in the first few months at school, and then the building of more and more clinically relevant retrieval clues into basic science education by introducing clinical problems and the relationship between the basic science and those clinical problems in the basic science years. The thing that killed Phase ABC was the fact that faculty were not rewarded for teaching in the curriculum, or at least were — I mean, there's always the reward of the student interaction, but they were not rewarded in terms of promotion and tenure. They were not adequately rewarded in terms of salary, promotion, and tenure type of events. And this eventually led to a backlash of wanting departments to control their discipline again. Under the Phase ABC curriculum, a basic science department did not have control. That was another major – and I should have mentioned that earlier – major issue. The departments regained control after ABC was voted out. And that was, I think, a loss, but it was a loss for political reasons. So I think one of the most important things that's happened in the last couple of decades is the accounting system that Bob Watson has introduced, a program-based management wherein if you teach medical students, your department gets credit for the number of hours you spend teaching them, and part of the state funding for the medical school, maybe most of the state funding of the medical school, is distributed in proportion to how much teaching individual faculty do in individual departments. I think if we had had that in place during the ABC curriculum, the ABC curriculum might still be the foundation of our medical program. So I think Bob Watson's accounting system, his program-based management, has been a major contribution..

**Thomas:** What replaced Phase ABC?

**Small:** A good curriculum, but one that again had basic science faculty in control of basic science materials. So there was a difference in different departments as to how much clinical relevance got built in.

**Thomas:** And when did that transition occur from Phase ABC to what replaced it?

**Small:** When Suter left.

**Thomas:** And that was in —?

**Small:** Oh, mid-'70s – early to mid-'70s.

**Thomas:** That's all my questions —

**Small:** Good!

**Thomas:** Do you have anything else you want to —

**Small:** [phone rings] Talk about timing.

End