

## Z a f r a L e r m a n

**...when you came to Columbia College and what were the circumstances or individual or individuals that brought you here?**

I came to Columbia College in the Fall of 1977, and it was a result of Columbia being committed to a liberal arts college in the '70s. They barely had a course in science or about science. I taught with a part-time teacher—excellent—by the name of Dr. Jukowski, the students called him “Ski”. But Mike Alexandroff was the President, he was a visionary as you know, who envisioned the situation that we need to have more science for Columbia students. So he sent letters around to different people that he’s looking for this magic scientist, magic teacher to come to Columbia and deal with science at Columbia College. And in his letter he looked not for a person that knew the science but to look for a person that was involved in different issues, social issues and cared about society. And my name came up in different places. Then he gave my name to Louis Silverstein that was, by that stage, the Dean of the College. I remember the time I came, everybody was in the 600 Building and I said, “This was the real base.” So, I remember very well getting a call to come for an interview and I came. I lived in Evanston and I was at Northwestern. But Northwestern people rarely go to Chicago; it was easier to go to London because they did it more often. And I got dressed up with a suit and I came down for the interview and I walked in to the second floor and I said, “I’m here to see the dean.” So

they told me, “Sit down.” While I was sitting down, I wasn’t sure where I came, because before that I was at the Wrightford Institute of Science, I was at Cornell University, and by that stage I was at Northwestern. In all my career I’d never seen something like that. So I thought I got somebody playing a trick on me and it’s really not a college but something else. And I was holding my resume and I was just looking at the people that were walking and I wasn’t... that we were suppose... So immediately I brought all the things back and started looking around me to make up my mind where I am. So, not being a religious person, I thought, “I am in a religious place,” because I saw Moses walking through the corridor. He had long white hair, he had a huge white beard and big black eyebrows. And I looked through the window to Michigan Lake because I was sure, where is the lake being divided and so people could cross it? But I saw him walking without doing this act. But I didn’t have any doubt that it’s Moses. But two seconds before him came Jesus. And he was very, very skinny with hair to his bottom, with a goatee; exactly Jesus. And I want you to know that Moses was born in Egypt but it’s not too far from Israel so I know this culture. But Jesus was born in Israel, he was born in Israel so I recognized him. And he was walking and he had the long chain with three hundred keys hanging and therefore he couldn’t walk straight, he was so skinny. You know, Jesus there wasn’t fed a lot. So he was bending over and he followed Moses. So I said, “At least they get along here.” So it was very nice. After forty-five minutes of waiting

I decided to find out where is the dean. So I was told, “He will show up.” So I already made up my mind about this place but I thought, “What will come after that? Mohammed?” So I was waiting for Mohammed but he didn’t show up. And the door opened and a man with long hair, pink glasses, purple embroidered shirt, and a ring on each finger opened the door. And I said, “This could not be Mohammed. Mohammed wouldn’t be dressed like that,” because I know how the Muslims dress. So I looked at him and I said, “Oh,” he said, “Please come in.” And I said, “Oh, no. I’m waiting to see the dean.” And he said, “I’m the dean.” And I said, “Uh? OK.” So I came in and I said, “Yeah.” But I stayed there. And he said to me, “We just came from”—till that minute, I knew that only the church was...The mosques and the synagogues didn’t have retreat, only churches. So I said, “This is a college, a hundred percent. They just came from a retreat.” So he



tells me about this retreat and I listen and he said, "Where's your resume?" And I give him the resume and he said, "I'm the Dean, but I'm stepping down as the Dean and I'm going to be the Chairman of the Department of Life Arts and Liberal Education. And we need somebody to teach science there." And we talked but I already blocked him out long ago by that stage. And after a while I said, "I'm sorry, I have to leave." I got up, took my resume and tried to leave, and he said, "I need your resume." And I said, "No, no, no, no I'm not leaving my resume here. Excuse me, no way." And I left. On September fourth I remember, 1976, I was supposed to go to Switzerland to the... which is the Swiss Technical, one of the best scientific institutions in Europe, to be a visiting scholar there. So, like a few days before that I get a call from this Dr. Louis Silverstein and he says, "We would like to interview you again." And I said, "Yes." And he said, "On September fourteenth. Is that OK?" And I said, "Yes, only if you buy me a round-trip ticket from Zurich to Chicago." And he said, "Why?" And I said, "Because September fourth I'm leaving for Switzerland." And he said, "Ah, I'll call you back." He hung up and then he called me back and he said, "How about September third?" And I said, "September third is the day before I'm leaving. I can see you only if you come to Evanston. I can not come to downtown Chicago." So, "I'll call you back." Then he called me back and he said, "OK, I am the Academic Dean," or something like that, "We'll meet you in some restaurant," I think this restaurant, Gold Coin was the name, on Howard Street. And I said, "Fine, what time?" "Ten o'clock." By that stage I took out my

jewelry from the Middle East to fit the situation and I went to this meeting. So in addition to Louis Silverstein—sitting at a table—there was a woman that had her hair up. And she stared at me with such an angry look. She was there with a blue suit that I thought didn't think at all with the atmosphere of the place I'd seen. I said, "What is she doing there with a blue suit, this look..." And Lou Silverstein introduced her and said, "This is Dr. Lya Rosenblum and we came to interview you." Before long, though, I had an argument on my hand that this Lya Rosenblum tells me that she knows about Israel more than I know because she did her Ph.D. in Israel and I only was born and raised there. So she knows more and I said, "What? It's getting crazier than it was." I said, "These people are really crazy." I realized that there was no point of getting into an argument and I continued to talk to Lou Silverstein. And when the interview was over, Lou and I went on a walk. And I thought, from the two of them, "Maybe the situation is not so bad." I go to Switzerland. Many months pass by and I don't hear anything from this school—not that I'm worried because by that stage I had offers from Chemistry departments both in the States and from the Norken University in Israel. I accepted the offer from Norken University in Israel and decided to go back to Israel... So I met... and I thought, "God, this place sounds really... that it might be such a challenge to teach." And by that stage, my son was sixteen years old and we lived all over the world and if we had gone back to Israel, I would have made for him the decision to go to the military. But I grew up in Israel and I knew that between high school and

college there is... We grew up around the world. We did not have the same attitude and I have a one son and I thought, "It's a dangerous decision." In addition, it would be so interesting to work with actors and dancers and artists and musicians instead of just with chemists.

#### **And Moses and Jesus?**

And Moses and Jesus, you know? One from Egypt, one from Israel, they are all from the Middle East, it will be so interesting. Still, I remember this woman, I remember this children's movie, the one that I don't want to say (*laughs*). So, I said, "Fine." And I turned down the offer in Israel and I accepted this job. And I was supposed to come back, only, to get a letter, and I should have expected that, two weeks before I was leaving, and at the university the position was eliminated. And I said, "Oh, it's this one, it's this one that I said." But I said, "I'm not going to give her the pleasure, no, no, no. She's going to have to face a real Israeli." And I wrote back to Mike Alexandroff—that was the President—and I said, "Look, I turned down the position, I turned down other positions. I am packed and ready to go. I have all that, you can count to me..." Then I promised myself that I'm going there only for one year and then I'm going to go back to the world of chemistry where ethics and values... So, I came to the place...

#### **Did you get a response from him?**

Yes, yes. Mike Alexandroff responded, sure, Mike was a tremendous person. And I get to appreciate him every day more and more since he's not here, since I can see what the person did and the vision he had. So I came there and registration starts, so first the faculty—registration was, I have to describe it to you: It was one big

room where all the faculty were sitting there. And there was a desk where this dean Lya Rosenblum was sitting and staring at everyone. So I come to this registration, here I have a Ph.D. in physical chemistry, my name is in textbooks, and the faculty looks at me—science? They thought I came from outer space, I swear that they thought I am the example of a UFO, this is how they looked at me. And I was offering, I remember the class, Chemistry in Daily Life. And it was good that he had Chemistry in Daily Life on the registration form. They came back and said, the faculty, “You don’t need it. I never had chemistry. You don’t need it.” And they erased it. And I said, “Uh-uh, I’m going to class.” So I took a group of students to the Congress Hotel across the street. See, I believe that a lot of changes, and real good changes, were made by breaking laws; not obeying laws... So I took a group of students and... so I told them they could buy anything they want. So they were buying Screwdrivers, Bloody Marys, and I said to myself, “My God, I thought that I knew everything. I for sure don’t understand what they are talking.” So I said, “What was all that about?” So they said to me, “Oh, this is orange juice and alcohol, tomato juice and alcohol.” So their enlightening came and I said, “So all of you have something in common?” And they said, “Oh yes, alcohol.” So I said, “What’s alcohol?” And they said, “It makes you high.” So I thought I’d explain to them about alcohol. And to make a long story short, after a short while, everybody had their little napkins...and they really enjoyed to participate in that. By that stage someone realized that the whole bar is there listening to my explanation. So I was drunk with success, not with alcohol, so I

thought in the Congress Hotel there is now Columbia II. But anyhow, so I order salt with oil and vinegar and I said to them, “Do you know what’s vinegar?” “It’s a dress[ing], I guess, but what else?” So I start explaining to them it’s acetic acid, and as I said the whole bar is attending, and we have on the napkin the structure of acetic acid. And shortly after that I said, “But you know, acetic acid and antonyl react with each other to give an ester that can be used—nail polish remover.” And they’re all shocked... and I started to calm them down and I said, “No, no, no you need a catalyst for that.” By that stage it was three hours so I said, “Everybody in this room that will take my Chemistry in Daily Life class, instead of fifteen weeks you have only fifteen weeks because you’ve already had your first chemistry class.” And this is how I got my first class. And I will never forget, before Thanksgiving, I get a call from Mike Alexandroff that said he wants to have lunch with me. And we went for lunch to the restaurant on the corner that is now The Charming Wok. And he said to me, “I wanted to meet the person that so many students tell me that it’s the greatest class that they’ve ever had.” And Mike and I, from that moment, realized that we are on a journey together: Give those students the best they can and form them. Mike and Bert Gall were the greatest supporters to develop the best program in science...

#### **Moses and Jesus...**

Moses and Jesus, right. Bert and Mike; Mike and Bert, so supportive that immediately when I came to class I knew that I had to teach, everything I taught for chemistry majors, science majors, engineering

majors, and pre-med., I have to forget. My students showed me how to teach them. They’d come here from dances, they’d show me beautiful things and I was a good student. I learned from them how to teach. And I learned how to incorporate art, music, dance, drama, learning, teaching, and science. At that stage, nobody ever thought about that. When I came and I gave a lecture somewhere, and I said, “I’m teaching from the concrete to the abstract, from the relevant to the non-relevant...” Oh, they thought that I am going to take the science and water it down and make a mess out of it. Slowly, slowly, after a lot of lecture, it started hitting that if we want to make science available for all, this is the way to go. And, this became the way to teach. And our students became famous because they were the ones who were doing these projects. And in 1979, the National Science Foundation gave me the first grant to develop three courses: Chemistry in Daily Life, Physics, Light, Sound, Electricity, and Biology in the World Around us. By using all these new techniques, because I already had a lot of material of what students need.. These three courses are still being taught in the Science and Math Department. That’s another story because you have to change—what was good in ‘78 or ‘77 could not be good in ‘98. Science courses should change and they will change. But I already got this money then; Mike and Bert gave money for equipment. And then, Jukowski and I decided that because we have so many inner-city students...

**Was that another faculty, sorry...**  
He was part-time.

#### **Part-time, OK.**

...we should take the students camping. So we took the students

with private cars and we took them camping in Kentucky. And the students voted, it was ten students. Suddenly I get a call from Mike Alexandroff and he said, "I heard about this experience that the students had; it's outstanding. I want you, next time, to rent a bus. And I will pay for that and take as many students as you can fill up a bus." So this became a tradition, to take the students to Kentucky every year for two days, three days and two nights. We camped, we cooked, we danced.. and my biggest pleasure was that every time we came close to the park we have three guards calling, "A busload of college people arrived" And then, they had organized square dancing there in the park. It was Memorial Day weekend. And they had the dance where partners were changed and every time these people had to dance with my students you could see, so we felt, we are educating them too. So we were really doing a lot of things that were educating society. In addition, I was very involved in the nuclear arms control/disarmament, all my students showing with me on everything I did. They ran with petitions, they did everything. I was amazed... and my students were all over the city. And Mike supported and Bert, everything. It became a center. Lawyers came to visit, people from all over the world. It was such a great experience that you could see the changes that were made in these students, you know, that suddenly these students who majored in television and radio were taking science classes and getting jobs very easily because they have the good science background and they could already show science. And all the media covered it, it was a tremendous experience with tremendous support. And Mike had me talk to the Board of Columbia College.

And every year when we had a counselor meetings, to the counselor to show all these great method of teaching science and the counselor was going back. And it was a chain reaction of success. In 1989 The National Science Foundation started giving us a lot of money and said, "Look, people, you are so successful of teaching your own students who are not science majors, why don't you start going out to the Chicago Public Schools and start working with their teachers to adapt all the methods so the children of Chicago will benefit from all that." So, since '89 we started working with the teachers of Chicago and everything was wonderful. Now... So Bert and Mike Alexandroff were so excited because it was always Columbia's mission, that suddenly The National Science Foundation is funding Columbia College to go into the Chicago Public Schools and change the situation there by developing all these programs. And Mike felt that this is the way that science should go. And he was right, this is the way science is going now at Princeton University, Columbia University, all over and all over the world. This is something that Mike could see immediately. So we were very happy to start working with the Chicago Public Schools. But another interesting thing that happened at the same period was that we got a grant to give Princeton University and Indiana University from The National Science Foundation to develop the same course that—this spectrum gives all the spectrum of the U.S. Columbia College, an arts school, urban, high-percentage minorities; Indiana in the middle, big state school, and Princeton, at the top, was an Ivy League school. And we can show that all those

students will take the same class and be in the same place that subsequently can be adopted all over the US. So in order to prove that Columbia students can be as good as Indiana and Princeton, Mike funded—every year—a bus to take Columbia students to Indiana to be together with a class in Indiana, and we stayed overnight and they hosted us for dinner together and then we had... that Columbia students were second to none. And then, from the grant, and then with Mike and Bert too, fourteen students each year, from the class, flew to Princeton and who went there? Minorities, unwed mothers, and we'd come to Princeton University. And in the first dinner, the Princeton told my students that their great grandfather went to Princeton. And my kids, all of them are first generation college, few of them not only don't know who's their father, they don't know who's the father of their children. The next day, we go to the class and they do their projects and they are second to none. Well, then Mike says to me, "You can take them to Princeton only under one condition." The symposium was always Monday mornings so he said, "From Sunday afternoon you'll take them to a Broadway matinee and I will pay for them." So every year, the class went and Sunday afternoon we went to a Broadway matinee. And I'll never forget that one class went to see *Five Guys Named Moe*. And it was the last performance and they didn't want to get off stage. So then they said, "Is there, in the audience, somebody who wants to perform with us?" My kids are on stage and they performed for half an hour, for half an hour. And I'm telling everybody that I'm getting every national award you can get. I'm getting one in Dallas, Texas in the National

American Chemical Society meeting this March for encouraging students into science. But I said, "It's really Mike's vision, Mike's trusting me, Mike's seeing all that..." I mean, through them I did all of that but without them I couldn't have done it, because I can see exactly when Mike gets tired. But Mike keeps on coming, but it's trouble to do everything and everything not new is pulling teeth. And we have so many success stories that you can't believe. I placed the first black student in a job in Palo Alto and they're communication; a television student, that was a revolution there. Since dance, since then he is on a company and produces videos on environmental issues. One of the students who was in the *Five Guys Named Moe*, when she came, I barely could see her. She got so much self-confidence and self-esteem that she just came back from performing in Europe for a whole year, all over Europe. Another one, grandmother, she unwed, her daughter unwed, that was all her life a drug addict and was a drug dealer and was caught with gun possession and drugs and was in prison when she took my class and went to Princeton. I didn't know even to whom I'm sending permission to let her go. She went to Princeton. Her class went to see *Guys and Dolls*. As a result of her success combining music and science, the prison sent her to teach her experience all over and she was released. She's now in... Those are all stories of every kind, and I can go on with hundreds of them. Every one of them, for Mike it was tremendous. In those days—those were the days, my friend. And a lot of these kind of stories. We had AIDS Awareness Week every year during Mike's time here. So it was, we had panels,

five panels a week: research on AIDS, anything you want, we performed dances on AIDS, we performed drama on AIDS we had competition on AIDS, through print media, electronic media, visual art, performing art. We brought in the inner-city schools and performed to them. It was a whole event. We had fiestas... in the city of Chicago, it was really... Foundation gave every year a Peace Prize in Washington. Bert Gall went with me every year supporting me on my effort. He didn't miss one of this event. He went with me when I became the Human Rights Chairman, Bert and Mike were a big supporter of every event I did. When [Feng Li Jee], the Chinese father of the, the astrophysicist that was hiding in the American Embassy during Tianamen Square? He was there and all of that. The first lecture that he gave was at Columbia College, that we all hosted him. Mike had a huge event and his first address to China was from my office through the Voice of America. All that was going on here when Mike was President. It was just a different world. We were the role model of something that is developing with the time. What Mike did with this College is practically the best evidence for Darwin's theory of survival of the fittest: and fittest are the ones who know how to adapt. Mike adapted to the time every day. We were changing, we were developing. Always, when I went to a conference and I gave a lecture of what we are doing, we were ten years ahead of everybody else. It was, let me tell you, it was the role model of the college of the 21st century. Today, we teach multiculturalism; then, we were multicultural. This is the difference. Today we teach and preach; during the times when

we were the '70s, the '80s, we did everything. We didn't preach, we did. And it was a tremendous experience. I would never come to Columbia now but I would—for sure—never give back the experience I had during these years.

**You've talked about the importance of Mike Alexandroff and his collaboration with you. I mean, you certainly, it turns out that he made it possible. But another thing you said right at the beginning, in the discussions, before they approached you for the position, you said your name came up. Why would your name, in the early '70s, have come up? What were you doing?**

Because I worked at Cornell with a person by the name of Frank Long, and he was a physical chemist but in addition to that, he was the first Director of the Agency of Arms Control in this... He was the person that negotiated, in '63, the testing... Russia. He was the Scientific Advisor Committee to President Kennedy and President Johnson. He was on the Board of the Peace Prize Foundation. I came to do research in physical chemistry but immediately got involved in all these activities that he was involved. He established the institute... SDS in the '60s before anyone was dreaming about that. You know, at Columbia there are a lot of people that suddenly think that they discovered something. There is one main person who calls it his name, the Inquiry Method. The Inquiry Method was invented by Socrates, but it doesn't matter (*laughs*). So this person started all these things and I was very involved with him. Through this involvement, I was involved with a lot of the people in MIT and at

Harvard and with *The Bulletin of Atomic Scientists*, where the editor of the *Bulletin* was one of the people that Mike knew very well and contacted her; and she knew Dr. Long very well, so I was already very involved—by that stage—in a lot of these issues.

**So your activism too is definitely part of Columbia's history or birth...**

Yes, the history of Columbia from the time I came, from '77 to '90, was a very, very active feel. It was part of what we were. You see, we didn't just, we made the students aware of social issues not by lecturing, but by really modeling what you do. We modeled, each of us really was a role model for change and the students followed that. The rest of Chicago, Northwestern, was complaining, they can not get their students to an American Chemical Society Chicago section meeting that is once a month on Friday night with... I was bringing fifty of my students. They were going, they were raising questions, they were involved, they were meeting Nobel Laureates, they were involved with them. It was a college in action. Nothing was passive here, everything was active here. The part-timers were teaching here because all the part-timers, for example in science, they were all scientists, all University of Chicago, all University of Illinois, all Northwestern, all of the medical school, but they were activists that wanted something else and they came to teach. They didn't come to teach for the money, they came to teach because we were activists. And we didn't care, the '70s, you know, by that stage we were thinking: How do we make the lives of other students better and how do we make a change in the life of the students? You know, it was a tremendous experience.

**When, or do you think that idealism started to wane, started to disappear, passivity... Mike's retirement.**

**With his retirement? So, I mean you really are identifying so strongly Columbia College and its mission with his vision.**

I think Columbia College followed, very strongly, Mike Alexandroff's vision, commitment to making it a better place for the ones that will fall between the cracks without Columbia College. We were the niche, today there are a lot of people at Columbia that came... ten years ago and they said, "We are unique." We are not unique at all today. Now, John Duff, that spent all of his life until the age of sixty in very conventional public universities, and he brought this convention with him, I think it's two things: it's the departure of Mike and the arrival of John.

**Why do you think someone—for better or for worse—of John Duff's background or experience was brought? The contrast is so huge and, again, for better or for worse, is it because there's no other Mike Alexandroff?**

I don't know if there's no other Mike Alexandroff, but what I understand is that when they had the search they didn't get the best pool of applications and John Duff's resume stuck out. He had a lot of experience: he was a President, he was Chancellor, he was a Provost, he was a professor, he has a Ph.D. from Columbia University. He has all the credentials to be an academic, but Columbia College was a genetic engineer college. It was not the college that was everywhere else in the U.S. It was something that was genetically engineered. So, it wasn't

something that you could get experience somewhere else how to deal with that. Now, how do you deal with its pieces that are very strange? There are few, since now, these pieces—from my point of view—is really the vision and now there is a lot of discussion. I was invited to the Renaissance Weekend this year with President Clinton and the Secretary of Education for the New Year's Renaissance Weekend. Is an academic institution, the way they are today for the last [emph] year, fit for the 21st century? And the answer is: no. And a lot of places, especially the good little education colleges that are small and can move with change are changing now. They are not continuing with their condition, they're changing. They're changing into the condition that we were. We went backward, we became traditional. In addition, I think what happened is the number of full-time faculty, part-time faculty, and students—too fast. When you have a body, take a body, a human body, an animal body, a like body, the cells can ascent in the rate of growing. They have their time; they divided. But when you suddenly have a cell that duplicates and grows too fast, do you know what this cell is called in the medical professions?

**Mutations?**

Cancer, it's a mutation, it's called cancer. This is what the cancer cell does, suddenly grows. And what does it do to the body? It kills it. So, I'm not saying that it will kill Columbia, but it was so unique that in order to get the uniqueness, why would anybody—and you have thousands of part-time teachers that come here, why would they even be able to pick up on this uniqueness immediately? It takes time to involve them. And we got good people at Columbia and we

got not so good people at Columbia. What I say to my students, "Take a bushel of apples. All of them are beautiful red apples but you have one rotten. Come back in a month, what will you find? Do you think a hundred beautiful apples will make this rotten apple beautiful? No, what will happen is all the hundred apples will be rotten." OK? So you don't need people that don't fit, that have different agendas, to affect the whole atmosphere. And this started already, really, Mike's last two years. And I can say I'm to be blamed too, because science did wonderful with the part-timers, because there were always scientists that came here to teach because they wanted. But the minute you have to hire full-time it was a different story. If you take them directly after a Ph.D., it was, they never wanted to be a scientist, it's a bad end for the scientist. So, the point is, what could you get? If you really want to be a scientist and you're very good at it, first you go to the Ivy Leagues, then you go to the Big Ten, then you go to the third level which is the next big state school, then you go to the liberal arts colleges that are extremely good, then you go to community colleges that are still very good and have very good science. If all of them don't hire you, then you go to a place that is a dead-end. You see, I had my career before I came, I published, I did my research, I did my textbooks. But the minute you started getting—it was something that all of those people started thinking about, that, in the field of science—for example—or mathematics. When you get to hire people that did their career and all that they wanted was to pay back society by teaching, by doing research, but if you didn't get these

people then they couldn't be the greatest people. And the minute you don't get the greatest people, something's changed.

**What do you think is on the horizon for Columbia or its future, I mean, what changes would you put in place if you came and waved your, what would you do?**

I would get rid of a lot of conventional courses that don't belong in the 21st century. I would have much more integrated, interdisciplinary college for our students, like we could do fifteen years ago before you had fifty people in a Curriculum Committee that vote if the course is good in science or not. So, I was told that this was one thing, when Mike was President we maybe had three or four committees in the College. Now we have probably ninety, I don't know how to count them. So the minute, listen, Washington... we really are doing now what everybody did eight years ago, we bring in bureaucracy, we even brought... that is wonderful for a lot of the people that now will have a life-time security—a hundred and fifty of them. If all these hundred and fifty should have it, I'm not sure. It means before, before you knew that if you were a bird you had security, you did not need to earn tenure. What tenure does is to protect the ones that they're not sure if they should be. So there are a lot of things that the rest of the academic world is starting to move away that we are just starting to—what we are becoming is conventional. If I would have my choice now, for the future of Columbia, I would go back to having much more interdisciplinary in the way that is really integrated and not just saying—in Columbia College there are a lot of buzzwords that you hear

that don't have anything to do with the ideas, because there's nothing that forces people, really, to go out there and participate in a conference where they convince themselves. There are a lot of people now that go to conferences for high school teachers if they're experts because they feel better, as an expert, they go to a conference in their own field where they should learn because what makes a person, what is science to them if they sit at Columbia, they don't interact with researcher, and when they go to the conferences and they go to a lot of them, they go to history and the philosophy of science, they go to the high school science teacher; how do they advance their own knowledge? And there is no insistence of that. And the minute there is no insistence of quality, then we've got a big problem.

**Has open admissions, has the meaning of that—and that's another buzzword that we use a lot at Columbia—has the meaning of that changed for you or for your department at all since you came here, or for the institute itself?**

Look, I believe very strongly in open admissions because I believe that there are a lot of people out there who did not do well in high school and they are very talented and can be very productive with a college education. Therefore, I believe very strongly, I don't believe in standardized tests at all. I think standardized tests depends on, for me, a lot of the standardized tests is if you memorize. I see my own students come to me that have a science class with someone else, the minute I ask them a question that they have to think- for example, I give them a phenomenon and I said to them, "Look, the Canal in 1986, in France, did different

experiments in their lab and found out that the photographic plate was exposed. What could have done it?" They say to me, "Radioactivity." I said, "The Canal didn't know about radioactivity because he has to discover, so he cannot, I want you to think like the Canal think, stop showing me back what somebody told you." And you see that it's all memorization without understanding, without, you know, I cannot get them to think about the phenomenon. It takes a long time to make them think. This is what education is. To memorize facts, all it shows is that two years after the test you don't remember one thing that you learned. So I think it's very important, I come to my classes, I tell my students, "You're going to learn four things: Number one, ethics; number two, values; number three, manners; and number four, science." I said, "You know why? Because if you only know the science but if you don't have ethics and values and manners, it's worth nothing. So this is the order that you are going to learn." I would like to see Columbia College not teaching a course on ethics, I want the course to model ethics. So, a faculty member will not come up with ideas that hundreds of people already published. This is unethical and this is what bothers me about Columbia, is that there is a lot of unethical behavior and nobody has to be accountable for their unethical behavior. To whom can you even go and say and who will do something? Before we'd go to Mike, today you don't know to who to go.

**Now, in your class when you're incorporating that, would you use that as a case study, perhaps?** Oh, I use this guy as a case study since the [Strinksceltz] case. He is my case study, yes, for a long time. But the question is, why is a person

like that teaching here? You see, we complain about the young generation, "They don't have ethics, they don't have values, they don't care." We should give them role models, we should model it for them so they will care. I look now, it was sent for me from all over, the reason the magazine, the biology teacher. And it's sent to me from all over because three people from Columbia published a paper there that somebody offered the editor two pages of scientific mistakes. And the person sent it to me and said, "You're trying to change the world. You have so many millions of dollars to change, you don't even know what is under your nose." If these people can publish a paper with two pages of mistakes, what do they teach to the students?

**And if the faculty or administration isn't ethical, how can the students?**

Correct, correct. To me, in Hebrew we have a saying: The fish stinks from the head. And you have to give everything a role model. And if you don't give a role model, the schools don't give a role model. Look at the kid, let's say, that doesn't get ethics and values and manners at home and don't get it, and then they come to college and don't get it, and then they become citizens and we complain about it, how we are deteriorating, how we don't have ethics anymore in our society. We complain but we don't practice it.

**Has it gotten any harder for you, personally in your classroom, when you come in and say, "These are the four things: ethics, values, manners, science." Has it become harder, are the challenges different?** The challenge is different that they have a stage of shock. In the begin-

ning they would have heard these terms in many classes, many classes. Now, they look very shocked when somebody mention things like that or that I will start with questions about thinking and they will give me different things and I will say, "It's important." So, yes, the challenge is much tougher now, because you have to undo a lot to really get to any result. And you get discouraged a lot of times because, I don't know how many times...

**I was asking about in your own classroom...**

...everything is tough; I'll tell you why. Before, ten years ago, science, for example, all the classes were on the same level. All of them were challenging and all of them were taught by scientists, by scientists that did the research. Any scientist that is not involved in research is a teacher, not a scientist, because only doing research really teaches you the scientific method. So, it didn't matter from where students came, they were in some level. I've had students come and said, "Oh, this is challenging, this is tough. I just took a science class where I did nothing and got an A." And, yes, the challenge is much, much tougher and it's very discouraging, and I don't know how many times I've said this in the last few years, "I'm not Don Quixote fighting the windmill, but I'm not Joan of Arc, either." In one stage, the Award for Human Rights, I'm getting a really big award this year for Disadvantaged Students in the Sciences. These are out there, people that appreciate what I'm doing. And I know, when Mike Alexandroff was here, everybody here appreciated what I'm doing. But, since Mike left, I have obstacles to start doing because nobody wants you here. If you want to equalize, you can equalize by a few

years, to take the bag and to rise it to the height of the peak, and everybody's equal at the height of the peak, it's much easier to cut the peak. So, yes, you can see a lot of the differences, and it's very discouraging.

**So, has the atmosphere changed from one of encouraging and support and, you know, "Everybody go for it," to one of belittling or someone who wants to excel...**

I have a lot of obstacles.

**Do you see yourself trying to bring Columbia back to...**

Let me tell you, I have a tremendous debate because with all the fame that I have, I could just say, "To hell." From that point I'm an Israeli. All of us could say many times, "To hell," and go somewhere else but we thought—and this is the tradition of the Israeli. Six hundred thousand Israeli defeated a hundred million in 1948. It's the Israeli in me that keeps on fighting for making the place better.

Whereas other people say to me, "Even if you made a change in the life of twenty students at Columbia a year, you've still made a tremendous change." And these people are going on television, on radio, on film, on something, these people will change the life of many more people. So, if before you could have changed the life of many more, when the school was smaller, you could change many more numbers; still, there is this numbers that you can make a change. And I am sure, from the Israeli state, that I would have left long ago the place that depreciates standards, that depreciates ethics, values, that is supposed to raise the level. But, yes, it's the fighting in me that doesn't let me leave. For example, Mike Alexandroff, in the late '80s, came

to the idea that all these methods have to be transferred to teachers. So, he decided to develop an energy of arts and teaching from three subjects: art, English, and science. And we developed tremendous courses and we got accredited for that. The minute Mike Alexandroff retired, Lya Rosenblum—that is the Dean of the Graduate School and one of the biggest obstacles to good education that I have ever seen in the history of education all over—and, what did she do? She wrote a letter to the Illinois Board of Education to remove our accreditation of training teachers for high school in science. Do you know the need for that? The Chicago Public Schools by themselves just gave us a million dollars just for one year to train their teachers, which she sent a letter to remove because she cannot take the success of The Science Institute. So what does the administration want? Do they remove the obstacle? No, they support the obstacle. Why? Because if they don't support the obstacle, she will make their life miserable. So they don't remove this woman. She took away—we were teaching the students for elementary school. She made the person that wrote this article with all these mistakes, he is teaching now because she doesn't care for quality. She cannot have power over The Science Institute. And if she cannot have power over, she doesn't want to have to listen. No good people... and a control. So, by definition, she cannot work with good people.

**And that kind of situation though, in the era of Mike Alexandroff...**

Mike Alexandroff controlled all these things. Mike Alexandroff looked what is important for educa-

tion and what is important for the students. It could not have happened during Mike Alexandroff. She tried, unsuccessful. You see, those are the huge differences that I don't see the administration stopping, any obstacle, any mediocrity, any unethical behavior. And I can go on and on. I have piles on my desk. Because I plan, the day I leave here, to publish, and I will publish with photocopies these letters and all that so it will not look like a...