

INTERVIEWER: So I can't resist, right off the top. Get me started here: *MIT for Dummies*. What would you say?

MCGOVERN: [LAUGHTER] I think it might say, I have a worldwide audience, with people actually using the OpenCourseWare availability, getting MIT courses, and it'd be nice to have a simplified guide to how to understand the way these courses are structured and presented. So I think we might have 5 or 6 million possible worldwide book sales of *MIT for Dummies*.

INTERVIEWER: On a more serious note, though, what is the first thing you think people should know about MIT, from your perspective?

MCGOVERN: I think to know it is really, I think, the most competent area where outstanding education is combined with first class research. So the educational experience is extremely effective, because you're not talking about the theory or history; you're talking with leading edge researchers in each of the fields, and getting at the frontier information. And then, you're going to school with the brightest and the best people in science and technology. And so that community experience, of being able to talk about the key problems in the world, and how innovation in science and technology can help solve those, is a very motivating experience for student who's going through MIT.

INTERVIEWER: So for you, the first tangible experience of science, though, began at an old building in Philadelphia called the Franklin Institute, if I'm not mistaken.

MCGOVERN: Well, I would go down, ride my bike down about 20 miles to the Franklin Institute, and go and see their marvelous science demonstrations. And when I was six or seven, I was just amazed with Jacob's Ladder, and sparks going up, and how seemingly clear fluids would turn brilliant purple or green or orange, with a few drops of a catalyst being added there.

INTERVIEWER: Did you walk through the big heart?

MCGOVERN: Yeah, they had the big heart back then, and go and awed by the planetarium. So I said, this is magic, and I've got to find out how these things are being done. The extraordinary things that you don't observe in everyday life, and yet you can see the potential of a major transformation of material things in the world, through the scientific experiments.

INTERVIEWER: As a young boy, what gave you the idea that you could have the experience of science as a hands-on affair, as opposed to wandering through a great museum like the Franklin Institute?

MCGOVERN: Well, my father was in the construction field. So he liked to build things. And it gave me a chance to work with my hands and build different instruments. We would build a lot of cages for hamsters and chickens and rabbits and things. And then we would build some science kits, like build galvanometers and build voltmeters, or build even cloud chambers. So I enjoyed the physical creation process of building science kits. And of course, I had the Gilbert chemistry set; I would anxiously make H<sub>2</sub>S, or hydrogen sulfide, which would smell like rotten eggs and cause a big concern in the neighborhood. So I enjoyed the physical experience of working in scientific experiments.

INTERVIEWER: And I suspect, as hydrogen sulfide taught you, the power of chemistry and science did not go unnoticed from the people in your neighborhood, the people around you.

MCGOVERN: True. That's true. You could take two seemingly inert objects and by mixing them together you could cause a very illuminous reaction, or cause a very distinct fragrance or odor, or cause a big bubbling up of material. So it was like another form of apparent magic, where you could take a couple of white powders and create some very active and high energy transaction.

INTERVIEWER: When did you discover that, in addition to doing the hands-on science, you also had some sort of a knack for explaining it to people, or conveying the information of what was going on to people that didn't have a scientific background and were hungry for knowledge?

MCGOVERN: Well, I always enjoyed writing. I don't know exactly how that occurred, but when I was in second or third grade, they said I was very good writer, what they call compositions or essays. And then I would enter essay contests. And I remember once entering one talking about why the atomic energy would be a transforming event for world economic growth, by having low cost energy that wasn't creating a lot of pollutants in the world, that would be economical and could be made safe, etc. And won a national essay contest from that.

INTERVIEWER: What year?

MCGOVERN: I was about 10 years old then. So in 1947 or so.

So I continued to enjoy writing, and of course I was writing in the high school newspaper, and it was always something that I had a great deal of satisfaction from. And then, when I was in high school, the seniors had to do a science experiment, or science kit. And they knew that I was sort of a home experimenter, so they would come to me and say, I have no time, I'm involved with sports, or I've got a lot of social activities; would you mind building a science kit for me?

So I would be building these scientific experiments or apparatus so they could present that to their science teacher and get by.

INTERVIEWER: Let's be clear: you were creating science projects that they would take to teachers and get graded, but you were doing the science.

MCGOVERN: Yeah, I was the subcontractor for them, so that they could spend their time on other activities. Many of them said, I'm going to be a lawyer, or I'm going to be a doctor. This science kit or science demonstrations aren't part of my career. So you seem to be really enthusiastic about that, why don't you do this for me?"

INTERVIEWER: Now here we see the fusion of science, journalism, sort of demonstration, and entrepreneurship.

MCGOVERN: In a way, yes. Well, I like to create things. And I was very fortunate, in my high school they had a program called Junior Achievement, where a business person would come in, and get a group of a eight or 10 students and actually form a company at the beginning of the year. Issue stock, sell stock to your neighbors. With the money you'd go out and make a product. You produce the product, sell the product, and at the end of the school year, nine months, you then add up all your income, expenses, and pay a dividend back to the shareholders.

So that was a fascinating experience. I was fortunate to be nominated by my teams to be the managing director, CEO, of each of the three companies. And so you sort of get built into your intuition, how to go about finding a market, finding a need to fulfill in that market, getting a team, motivating them, getting things done. I thought that was very valuable to me, to have that experience so early that it was just a natural, intuitive feeling. And I often think everyone else has it. And sometimes I'm amazed, when I ask people to start a new activity, they don't seem to have the logic: oh, I know how to do that, I know how to do the market research, I know how to raise the money and I know how to motivate the team, and etc.

So I think being an entrepreneur, partially through this wonderful program that they had. We were living in a little row house in Philadelphia, so we had a very lower- middle class income, and it was helpful for the family for me to be earning some money by doing these science kits, or delivering local newspapers, or helping paint buildings. Being an active hobbyist and an active part time worker.

INTERVIEWER: Was Benjamin Franklin a model for you, of understanding technology, communicating with lay people, and also being a bit of an entrepreneur?

MCGOVERN: Yeah, I'd say I'm sort of the mirror image. Because he was born in Boston and went to Philadelphia to develop his career, and I was born in Philadelphia and went to Boston. He was interested in information, printing and publishing, and I was as well. And interested in science, of course, he was, at a broad dimension. But I read his autobiography when I was probably 12-years-old, and was very inspired by his practical wisdom. I remember his aphorisms and keep those in mind.

INTERVIEWER: You're probably known as well in China as he was in France, at this point, I'd say.

MCGOVERN: Well, we were fortunate to be the first joint-venture company between the US and China. So we got a lot of visibility in China. When they ask, what are the most well known international companies, of the companies that they mention, three start with I. There's Intel and IBM, and IDG.

INTERVIEWER: Congratulations.

MCGOVERN: It's curious to people that we're much better known in China than we are in the US.

INTERVIEWER: But it is something you share with Ben Franklin: a love of places around the world, and seeing and meeting other people.

MCGOVERN: Yes, a love of travel. And the excitement of going to new countries, and dealing with the new, the political systems that change over there. And different forms of education, different forms of development of science.

INTERVIEWER: You mentioned that you understood as a youngster the implications of nuclear technology in the energy sphere, even as relating to pollution, back in 1947. Did you have a similar inclination about the power of computers, as they would emerge into first industry, then business, and then possibly at the consumer level?

MCGOVERN: Every Saturday, I would jump on my bike and ride about 15 miles down to the main library at the Free Library of Philadelphia. And I would go in and look at the new books that were coming in, and skim them or read some interesting chapters. And one day a new book arrived called Giant Brains, or Machines That Think. It was about the concept that these new computers were going to amplify the power of the human brain. Would expand the memory available to people, would analyze that information very rapidly, and give you insights into data you couldn't otherwise get. And it was going to be a huge way for people to increase their intellectual capacity, increase their communications, increase their productivity.

So I got so excited by that that I took my paper route savings and went to the hardware store, and bought copper wire. And I bought aluminum strips to make relays, and bought plywood boards, and actually built a computer that played an automatic game of tic tac toe, in a way that was unbeatable. Of course, when I tried it with my friends, they were frustrated that they never could win. So I put a little counter on the back, so that every 35th move would be a random one, and occasionally, if they were patient, they could beat the computer from time to time.

INTERVIEWER: Now just for full disclosure, I need to ask this. Now, would your friends be allowed to play the computer for free, or did you actually charge?

MCGOVERN: Honestly, I didn't have a slot to accept any coinage, so this was a free entertainment for them.

INTERVIEWER: But it did occur to you.

MCGOVERN: Oh, I was thinking about it. Maybe in rev two, if I ever got to that, we could have a coin-op system. But that was a little bit beyond my capacity, to find such an operating device.

INTERVIEWER: Probably not too far out of your capacity. But let's think about the moment that you saw that book in the library. The author?

MCGOVERN: It was Edmund C. Berkeley.

INTERVIEWER: Right. And you were already fascinated with brains and machines, and the idea of intelligence. And this book put it all together for you.

MCGOVERN: Yeah, it visualized the empowerment. So we had the telephone to amplify the power of the ear, and you had television to amplify the power of your eye. But this was the first technology that really was amplifying the power of the brain as an intellectual device and analytical device. I thought that was the most important organ of human beings. It's the one organ that separates us from all the living creatures, is the superior intellectual capability that we have. And so I thought the more we can amplify that, the more we're able to give a better quality of life, and standards of living, better productivity for people. So that's where I really got excited about the concept of understanding how the brain works, and understanding from that how to make better and more intelligent computers and information systems.

INTERVIEWER: So I gather that, at a certain point, word of this whiz kid with the bike and the electronic capability and his chemistry experiments, word got out about you, a little bit. And your reputation maybe got beyond your house and neighborhood. Did that happen, and how did MIT learn of you?

MCGOVERN: Well this computer, automatic game playing computer, won a prize at a science fair. And I got contacted by the MIT Alumni Association in Philadelphia, saying we hear about you, obviously you are interested in science, and we'd like to talk to you about MIT, and described the nature of the school and the experience. Because I had already well known about MIT. I was actually delighted, because I was told MIT was the most challenging, difficult school in the world. I'd gone to a boys-only high school which had 1,000 boys in a class. And my teacher there told me, we've had 25,000 graduates from our school, and not single one was ever accepted to MIT, so forget the idea of going to MIT. You'll only disappoint yourself. You should be going to Notre Dame or Villanova. That was a Catholic school, and there was actually an apprehension that going to a Catholic school might be a risk for my future salvation, in a sense.

INTERVIEWER: So you were going to the dark side a little bit.

MCGOVERN: Going outside of the safety envelope of, what does it profit a man if he gains the whole world but loses his soul? So they had that concept. But I was so flattered the MIT Alumni Association actually would take the time to talk with me, because I thought, based on what my high school teachers had told me, there was no chance I could get accepted.

But I did apply, and actually I remember that I took the Greyhound bus up from Philadelphia up to Boston. And I remember sitting in the Boston Common, and I had just bought a book called *One Two Three Infinity*, by George Gamow. And it talked about the Big Bang, how the creation of universe occurred. It talked about three digit genetic codes, and how computers were going to advance the understanding of science. And maybe it was a combination of a spring day in the Boston Common, and walking over to the campus at MIT. I just fell in love with MIT, and fell in love with Boston, and fell in love with all the bright students I saw on campus. I said, "Oh boy, these are the people I could really empathize with and relate to." I'd just love to come here.

And so I did apply to about six or seven schools just to see what happened, and fortunately I was accepted everywhere. But the most exciting moment I can recall, actually, is coming back to my little row house, and on the top of the piano was a letter from MIT. And I couldn't wait to open it up, and it said, "congratulations, you're accepted and we're going to give you a full scholarship to come." So I still can't think of a moment more joyful than when I got that letter. It was just fantastic.

INTERVIEWER: Thank you for reliving it quite vividly for us there. What did your dad think?

MCGOVERN: Well, he was pleased. He knew that getting into MIT was very, very difficult. So he was proud that I was able to get accepted.

INTERVIEWER: So here you are, young Pat McGovern you're already an entrepreneur. You're already a kind of do-it-yourself scientist with a knack for engineering. And you're already kind of a scientific communicator, who explains science and can kind of convey what science is all about. You were coming to an MIT that really didn't have, necessarily, all those qualities. We think today, of all the start-ups you wander down the street here at MIT, that this is a land of geeky entrepreneurs. But back when you started, that really wasn't here. Describe.

MCGOVERN: No, I remember walking the campus after the original orientation, and thinking, this place is exhilarating, the best and brightest people in science and technology are gathered together. And the sense of being able to talk about problems of solving diseases, talking about solving major structural problems, talking about improving transportation, even air-water quality was an emerging concern then. So it was just the sense of community that, wow, rubbing shoulders with the best and brightest people in the field that I'm very, very excited about. And then the teachers sat down with you and gave you a lot of personal attention, gave you good guidance as to what courses you should take.

So I was thrilled. And of course I always enjoyed writing, and fortunately my roommate was one of the editors at *The Tech*, the weekly student newspaper. So he said, oh come on down, and we went down to the basement at Walker Memorial. And of course I was immediately addicted, and became an editor of the paper.

I remember that because I was only a freshman, they said, "We're going to make you the sports editor. You're going to report on all the sporting activities." So I thought, jeez, I'm interested in math, so what I'll do is make a column called *Beaver Predicts*, which was the forecast of all the scores for the coming weekend, of all the games. And I was found over six months to be 95 percent right. Unfortunately because MIT lost most of the games, so I could make a good predictions to the point where the athletic director got very upset at me for having people look at the expectation that, nine out of 10 times, MIT would not be winning the weekend athletic events. So he finally convinced the dean that that was not an appropriate content for *The Tech*.

But then I was assigned as the editor for their 100th anniversary issue of the newspaper, which we actually worked on for about a year and a half. We put that together, that was coming out about 1960. And that was marvelous, because we actually made 10 editions, and each edition would cover a decade. What was thrilling was to learn in detail the history of MIT, how it first got together, and how it evolved over time, by putting 20 page, decade by decade reports together for that. In a way, I'm delighted the 150th anniversary is coming up, and there's a greater chance also to contemplate or remember the history, and help to repeat or present the vision for the future.

INTERVIEWER: And you're part of history now.

MCGOVERN: Well, I feel very humbled by having a chance to have a small voice in the corner.

INTERVIEWER: Why did you gravitate towards biology and neuroscience in your undergraduate studies?

MCGOVERN: This really came about because of what I had been excited about, the giant brain. I thought, if we were going to be able to increase human productivity, we had to learn how the brain works. We're going to improve education, communications, we have to learn, how does the brain receive information, how does it analyze it, how does it store it, retrieve it, act on it, and re-communicate it? So I thought also, if you could understand how the brain worked, you could probably make more intelligent systems, computers and control systems, by taking advantage of what nature had evolved and optimized over hundreds of thousands of years.

So I enrolled in Course 7, what was then called Quantitative Biology, which studied living organisms. Because it was called biology, people thought, oh you're dealing with classifications and phylums. And it started at the drosophilus, a little fruit fly, and then went down to a single cell, and then went down to early discovery of DNA and RNA, and all the molecular structures inside the cell. So it was nothing like what people thought a biology program was going to be like, but very much into biophysics and biochemistry.

INTERVIEWER: And do you love the mechanics of these molecules, and seeing what their potential was?

MCGOVERN: Yeah, understanding how memories were being formed, how synapses were being created, which stored things, apparently, and then how they would be searched and retrieved at the right time when you're doing associative thinking. And then looking at some of the misformations in the brain that cause things like schizophrenia, or can cause autism, cause in older people some deterioration of the brain function, like Alzheimer's.

INTERVIEWER: Misformations which both reveal the complexity of the brain and also suggest human needs that could be addressed with enough resources.

MCGOVERN: When you look at an anomaly like a brain injury or a brain disease, and you see what's been affected, then you see how it affects behavior. You get insights into what does that part of the brain actually do? Unfortunately for the people involved, but the various injuries that people have to the brain have been great source of insight into what those portions of the brain do, and the overall process of thinking.

INTERVIEWER: They also set the priorities for research, to treat and to help, and to make human life better.

MCGOVERN: Yeah that was exciting because there's over a billion people in the world who have some form of mental illness or brain disease. And there's trillions of dollars of lost productivity in the world caused by that, plus untold suffering of people who have a member of their family or friends who have different types of mental illness. So it was a longer term dream was being able to understand these and find ways to prevent them from occurring, or hopefully even to cure them.

INTERVIEWER: A dream that began quite a while ago.

MCGOVERN: Of course, it began when I was maybe 14 or 15, with the idea of understanding how to understand the brain, to build greater, more powerful computers, and then understanding how the brain also... with that understanding, improve communications, education, and then cure various anomalies associated with the brain.

INTERVIEWER: Your experience working on *The Tech*, as a sports reporter, taught to you that with power of math, you can have a real impact as a journalist. That science and journalism is a potent combination that had political repercussions for you with the dean and the athletic director. What lesson did that teach you, and how did it make you think about options for you in the future?

MCGOVERN: Well, the first thing I noticed was the amazing power of accessibility that one has as an editor. I could call up Jay Forrester, one of those leading lights here who developed the core memory, and say, I'm an editor and I'd like to talk to you about what you're doing. And, oh fine, how can I help you? So it was just fantastic, the access one had as an editor. I can open sesame, I can learn from the best and the brightest people, by calling them and of course as a legitimate journalist, I could ask them lots of questions.

INTERVIEWER: And let me get this straight: a grad student maybe couldn't get a call back from Jay Forrester, but you could call him up as an editor and boom.

MCGOVERN: Exactly. And then I was fortunate, there was a notice on the bulletin board when I was a junior saying that the first computer magazine had started, actually just out here in Newton, Mass, only about 15 miles away. And so I went out, and found it had been started by this fellow, Edmund C. Berkeley, who wrote *The Giant Brains, Or Machines That Think*. And when he realized that I had read his book thoroughly and built a computer based on it, he said, "You're hired." And so that was terrific, too; now not only could I say I'm an editor at *The Tech*, but I could now say I'm an editor of *Computers and Automation*, which became a well known computer magazine at that time.

So first of all, it was terrific access to the best and brightest people. And then, when I did write stories and get a lot of feedback, I felt, wow my presentation is apparently motivating or stimulating, people get really interested in this and do more about it. So I felt the important responsibility that a good journalist has to accurately report on what he's been told and accurately report on all the relevant facts, and inform people, and that they would express their feedback in appreciation. So I felt gratified by the positive feedback, and even if it was a critical feedback I felt they were interested enough in the content to offer some advice.

INTERVIEWER: So here again, the fusion of scientific understanding, the power of journalism, and an entrepreneurial view of how to combine all of these. How did that lead you to your first start-up?

MCGOVERN: Okay, well I enjoyed that, so during the summer I would work full time with the magazine, *Computers and Automation*. I remember Mr. Berkeley saying, I want you to go around and visit all the computer companies and talk to their chief engineers and talk to their designers, find out what their next technology is going to be like. And I just found out there is a \$99 Travel America ticket on Greyhound Bus. And so for the next 90 days, I want you to travel around and visit all the companies.

So I jumped on the bus and had the greatest tour of the US . The only problem I found was I called IBM and said I want to talk to your chief engineer. And they would say, "Oh great, when's your plane arriving in White Plains airport?" And I say, "well no, I'm coming by bus." "Bus? Well, I'm not sure he's available at the moment." So now I would have to learn to call up and say, "I'm driving down, my driver knows the way, don't worry I'll be there at your office at two o'clock", etc.

INTERVIEWER: It's all true.

MCGOVERN: All true, we're being accurate about it. And it was a wonderful experience, to go out and meet all the original designers and creators of what was happening within the computer field.

INTERVIEWER: You learned their successes, and their cutting-edge technologies. But you also learned that they had a common problem, a lot of these engineers and designers.

MCGOVERN: Yeah, in fact, I think that was really the stimulus that allowed me to be an entrepreneur and start my own company. Because as an editor, I was able to talk to the heads of the company. I remember one day, maybe a year after I graduated, I was talking to the head of UNIVAC, which was the second largest computer company, and I said, what problems do you have?

And he said, "well the big problem we have is our engineers are building things which there's no apparent market." And I asked them, "Why are they building this?" They said, "Well we went to a trade show a few months ago, and we saw one of our competitors had one of these. And we looked and said we could do it better. We can make it faster and cheaper. So we've done it." And he would say, "The only problem is those people never sold any of that. There was no need for it, all we're doing is making a faster and better product with no application." And he said, "What we really need is information about who needs computers and where they are and how they're being used."

I said, "Well I know there are about 10,000 computer sites now. And it's logical they'll be at the bigger companies or banks or hospitals. And I could call them up or send them questionnaires, get a detailed description of what they're using now, what they're planning to use." "Oh," he said, "That would be great. How much would it be to put this together?"

And I said, "About \$40,000 I think." "Oh," he said, "No, no, that would be unacceptable." And I thought, well obviously he's looking for a little discount. I said, "Well I could have all the data we gather coded by high school students -- right near my home is Newton High School, so we can get some low cost labor. Maybe I could charge \$35,000."

And he said, "No, you don't understand, Pat. No one would use information so cheap as you're proposing. No one would trust it; it would sit on the shelf unused. If you charge \$80,000, \$100,000, then we say this is quality stuff; I'm going to analyze it and use it. And I said, you mean the higher the price, the higher the perceived value, the higher the utility?" He said, "Absolutely. Information is an intangible, and people have to respect it. And one aspect of respect is being premium priced."

So I thought wow, what a great business model. And he said, "Not only sell it to us, but sell it to other computer companies so we all benefit from this."

I jumped on the train from New York to Boston after the interview and wrote a proposal to do this census of computer installations. I called Mr. Berkeley and asked him if he wanted to do any market research. He said no, that's not my business. You do it on your own.

So I sent out a proposal to do this, thinking probably it was only a just a random conversation, I might never hear anything about it. And to my amazement I got nine companies sending me 50 percent advance payment, \$40,000 nine times, as a pre-payment for the research. So all of a sudden I had \$360,000 of capital.

INTERVIEWER: How old were you?

MCGOVERN: Oh I was about 23 then.

INTERVIEWER: And you're living in Newton.

MCGOVERN: Living in a little house in Newton. And of course, I rushed to the local bank with my personal account, and I said I need to cash these.

INTERVIEWER: What was your balance when you...?

MCGOVERN: Oh, I think I had probably... I was earning \$1.65 an hour, so I think I had about \$6000 in my bank account, life savings. And they said, oh these are made out to a company. Because I just made up the name of a company, International Data Corporation, thinking it was so general that I could do anything with it.

And they said, you have to actually form a company, and have its board of directors authorize a bank account. So I thought, maybe somebody has taken this name and I have checks for a company that I don't have entitlement to. But fortunately the name was available, got it registered, got the checks deposited. And all of a sudden I was in business.

But then they said these are only advance payments, this is not capital. So I sold my car to get \$5000. That was actually the only capital that I put into the company. It's still there; I haven't touched it since then.

INTERVIEWER: So unlike a lot of businesses, your revenue at startup exceeded your capital by a factor of, I'm calculating, 300?

MCGOVERN: Yeah, about 75 times or so. And of course, I didn't have to deal with investors coming by, and stock shareholder meetings or anything. So I would say that the best way to raise money for a company is to find customers for whom your product or service is an important need. And they will say, we will give you support to do it by giving you some advance payments. Then you're guaranteed that there's a market.

And people who give you a deposit for something become an advocate for you, because they want you to succeed. They want that thing that they've provided some advanced money for. So they will call their friends and say, this is an interesting chap, he's doing this research, I think it's going to be great, you should consider getting it yourself. So we doubled our customer base through our first customers calling their friends and saying you'd better come over and buy this research.

So I was very fortunate. At that time, there really wasn't any venture capital process around. So if I had been trying to raise money and then try to do something, I probably couldn't have gotten off the ground.

INTERVIEWER: So now you're a writer, editor, and publisher.

MCGOVERN: I'm head of a market research company. We started out calling International Data Corporation, IDC, which is now the largest market research company in the technology and communications field.

INTERVIEWER: When did the mission go beyond market research to actually serving customers, information users, on the consumer end?

MCGOVERN: After the third year of our doing the research, one of the clients said, we want to know how best to communicate to the heads of the computer centers. So he said, would you go out and talk to the managers of computer centers and find out where they get their information and what they would like to know more of.

So we went out and interviewed about 200 of these people. And they all said the same thing: "I'm overloaded with information from the manufacturers. They send me all their brochures and reports, and they're coming in with their presentation. So I know everything I need to know about what the industry's doing. But what I really want to know is what my colleagues are doing. I want lateral vision. What are they doing at other sites like mine? What are their problems? How do they solve their problems? How do they deal with their boards of directors and their chief financial officers and things?"

And we said, would you be willing to pay for something like this? Oh yes, of course. And we'd like to be frequent enough that we're really up to date, so we'd like something every week. And so we thought, that sounds like a need, an unfulfilled need. And I remember we sat down at the end of the day at a restaurant in Wall Street after we'd just completed a round of interviews with the financial community. And we said, "Maybe we should do something about this." And not knowing too much about the mechanics of launching a new newspaper, we said, "Well there's a computer exposition and conference in Boston in two weeks; why don't we launch it there?"

So we just went down to a printer on the South Shore. We wrote the stories at his office. I remember, I wanted to call it the Computer World News, because there was a famous medical publication called Medical World News. And the typographer came at the last minute and said, "I'm sorry, I can't get all those letters across the top of the masthead or the top of the publication. I can't even get a space between 'computer' and 'world.' We'll just have to have one word, *Computerworld*." We had our brochures, or our little data sheets all done with *Computerworld* News. We tore those up and rushed to the convention with our little 16- page issue of *Computerworld*.

And it was such an instant hit. "Wow, these guys are really telling it like it is! Look at that, they said there's head crashes by the NCR drive, and there's bad printers at the IBM installation. This is what we always believed, but we've never been able to know." So we got 30,000 paid subscriptions in the course of the first six weeks, which was actually all the capital that paid for the publication.

Because the industry hated us. They said, "You're criticizing our products to our customers! We'll never advertise with you." For nine months we got no advertising. But then their salespeople kept coming back to their company saying, "listen, every time I go to a customer they have this *Computerworld* on their desk. And they say, this is the publication I read and trust, why aren't you supporting it? Where's your ad?" And they'd say, "We've got to advertise there, because our customers demand it." So all of a sudden people would call us up and say, "I hate to do this, but I have to buy an ad in your publication." Then we started to grow like 10 percent a month, and sales became the biggest technical publication in about three years from that point.

So the message I always got out of that is, everything is all about listening to the customer, finding out what people really want, fulfilling their needs. If you make other people successful, they'll share their success with you and then you'll be prosperous. And so our philosophy has always been, find a need and fill it. Don't create something and see if there's some requirement out there later.

INTERVIEWER: That's such a great story.

MCGOVERN: It's wonderful you give me a chance, John, to recall it. It was a fun experience.

Because everyone thought we were crazy. The other publishers came to us and said, "How much money do you have available to launch a weekly newspaper?" And we said, "\$50,000 which we had saved from our research." They said, "It takes \$1,000,000 to launch a weekly newspaper, you'll be out of business. But if the idea catches, we'll jump in and make a real, professional one and you'll be wiped out anyway." So they said, "We're going to wait to see how you do in two or three months." And fortunately, we got so much subscriber money that we were able to pay our bills and go and develop.

INTERVIEWER: And blew them away from the outside.

What of your experience at MIT convinced you, or helped you to have the insight that this field of technology, broadly an information science, that you had a slice of with *Computerworld*, was actually the leading edge of an enormous future horizon for the entire world?

MCGOVERN: Well I could see that computers, which were just coming onto campus -- at that stage we still had vacuum tube computers, and when I was there they brought in the new IBM 7090, which was a hybrid circuit computer, much faster -- but I could see how much the huge queues of users were winding up to submit their data cards to get run. Obviously, they all see this as extremely useful in understanding the significance of the data that their measuring instruments or their analysis had provided. And again, with the concept that we were amplifying the same type of reasoning and analytical powers that we had in the brain, this was going to be enormous help to human productivity. So that's really what kept stimulating me to learn more about information technology, and at the same time learn as much as I could about the insights about how the brain worked to help each other, help each of these, advance.

INTERVIEWER: But your intuition about the power of science really was born wandering the streets of this campus, and seeing all those great ideas, and rubbing shoulders with the best minds. And in some sense, you really took that love to another level, in seeing the future, in a sense.

MCGOVERN: Oh, very, very definitely. Having so much lab work here, where you can go in and be able to see the marvelous reactions in the chemistry lab, and being able to work in the biological labs, seeing what was happening with gene crossing, and building new organisms from matching different eggs and sperm together. The work you would do in the electrical engineering lab, and artificial intelligence laboratory. That would be a big insight.

Then the need for science was very dramatized by the occurrence of 1957, Sputnik jumped up. And all of a sudden it was, wow the US is behind in such a key area like satellites. Actually, just coincidentally, I was a reporter for *The Tech*, so President Eisenhower appointed James Killian, the president of MIT, as a science adviser. And so they said there was going to be a press conference in which President Killian would describe his goals for the first science advisor to the president.

So I rushed over there with my little Minox camera. And when Jim Killian saw me, he said, oh, Pat come on over. And I was standing right next to him. And the next day, the next Sunday in the New York Times Magazine, there was the whole cover was a picture of Jim Killian and myself, standing together with some reporters in the background. I remember getting hundreds of messages from friends and neighbors, wow, you've made it big, the cover of the New York Times.

But that really was a shock. All of a sudden science was important. We were going to be threatened, scientific discoveries would be done by what we regarded as the evil empire. So that put another stimulus on, we've got to invest in advancing science and engineering research, and keep up with the threat that was perceived to occur if someone had superior scientific knowledge.

INTERVIEWER: What's been the guiding principle as you've launched new publications in new places around the world -- Europe, Asia, all the places you've been successful?

MCGOVERN: Well, first people told us that publishing is a national business, so culturally specific. So if you do one publication on, say, computers, the next one you might do is on trucking, the next one is on medicine, so stick to your own country. But we thought, the human genetic lottery, geniuses occur all over the world, and we should go out and find the most exciting advances, wherever they happen to be in the world, and bring all that knowledge to each of the readers of our publication. So we had the idea of being a global publisher, at a time when it was unheard of to do that.

So then we would decide when to enter a country by how large the GNP was and how big the computer industry was in that country. So we started in Japan in 1971. Then we went to Germany and England and France. And Brazil, actually, in '75, mostly because someone called me the day after Christmas and with a snowstorm in Boston and said, "Hi, I'm here in Rio de Janeiro and we want to start a computer publication. We understand you do more of this than anyone else." I asked, "What's the weather like down there?" And they said, "Oh, it's 95 degrees and string bikinis are walking the beach at Copacabana." So I said, "I'll catch the plane tonight, I'll see you tomorrow morning." So I went down there and we actually made the plan in three days and launched *Computerworld* Brazil, way out of order, five years early. But it still became the largest computer magazine, technical magazine in Brazil in about three or four years.

And then I looked at China and said, although it's far behind in technology, it's 22 percent of the world population. And I'd observed at MIT the Chinese faces that were hard working, very academic, very studious, knew technology. And it said, well you have 1.3 billion people with that type of genetic propensity to admire education and be good at science. So we went over.

Fortunately, we were able to make the first joint venture of any kind between the US and China. Launched a weekly newspaper there, which people told us would take years. They were supposed to be the old China hands. In fact, we did it in only two months. They built a special office building for us in downtown Beijing and announced it on national television. "New China Arrives: First international open door policy publication occurs." And we had 40,000 subscribers in the first week or so. It became the thickest and biggest computer publication in the world. We invested about a quarter of a million dollars and earned over \$60 million dollars in dividends and royalties. We said, we can make a little money in China as well as helping inform people about the benefits of technology.

INTERVIEWER: What principle of dealing with these far-flung different cultures allows you to be successful where so many people describe doing business in China as coming up against all kinds of intransigence, and opaque cultural mores, and rituals that work against being successful? How are you able to make it work?

MCGOVERN: Well we realize we cannot dictate what people need to do to satisfy the needs of the people in their own country. But we do have a culture of market research and reader research. So what we do is, we never send people over to be an expatriate in other people's countries. But we do send people over to train the people that we're hiring in that country as to what the best business and practices are, best ways to gather and present information. And then we survey the target audience and find out exactly what they want and how they want it. And then we allow the local team to decide how to put things together.

INTERVIEWER: That's a scaled-up version of your original Greyhound bus trip.

MCGOVERN: Yes, exactly. People said, "Well this is terrible, because you have no control. You're depending on local people." But we found in fact they're absolutely the best people to decide how to serve their own particular needs. And we do have very active know-how sharing. We have worldwide meetings where all the managers get together and present their biggest success stories and best practices, and we have world meetings of editors and people who're doing marketing, people who are doing advertising, etc.

So we emphasize best practices, but always on a voluntary basis. We'll inform you, we'll tell you all the things that seem to be working the best. It's like a big buffet table, but you go by and pick up the things that you find will be most useful in your own country. And that's really been why we've been able to succeed, where so many foreign publishers go over and say, we know how to do it, we want you to follow our formula, and try to impose a too-rigid formula that only reflects their own culture, not the one in the target country.

INTERVIEWER: Is this the philosophy you call "acting locally?"

MCGOVERN: Yes. Very much focused on letting people create the product that is most appropriate. Because it is very culturally sensitive, the content of a publication, and so what people are interested in reading in each country could be somewhat different. Also they're very interested in reading things specific to their own country. They want to know how to people use computers in my country, how telecommunications work in my country, what's the government policy in my country, what's the educational process? So we have 70 percent of our content is typically locally written for that particular market, and about 30 percent may be coming from the best stories from around the world.

And that's the mistake that a lot of global publishers make. They want to mostly translate their publication and sell it in the local market. And of course people see immediately it has a different cultural orientation. It's not really a publication of theirs, it's more a translation of, interpretation of foreign activities.

INTERVIEWER: Is there something about your experience as a student at MIT that allows you to see that speaking in the language of computer users, when you did your original market research, and being able to speak in the language of computer makers, when you did your original magazines, would provide the same sorts of insights of dealing with countries as well? That learning that specific language is immediately scalable to a global publishing business. That seems like a kind of an MIT sort of insight that traditional publishers don't have.

MCGOVERN: Well I think what MIT taught me is the research methodology. Like I say, always discover the truth through facts. Don't take people's expert opinion or judgment, but go and find the facts out directly. So that's why we've always been very research-oriented, going out and finding exactly what people need, and how they want to fulfill those needs, and follow the guidance of the marketplace. And not say, "well we know what you need, so we're going to offer you the product we think you should have." We create the product that people say, "this is what I need to do my professional work, or I need to fulfill my interest in education or entertainment."

INTERVIEWER: A lot of business leaders who do business around the world and have been successful at it often describe their many, many banquets and meals and lunches, and meetings that they've had with various people where they've eaten all kinds of food. It's a bit of an obligatory exercise that they must submit to as a sort of quid pro quo of being successful. In the amount of information I've read about your experiences, you seem quite different -- that it's driven by your own curiosity. And you're just as much a kid in a candy store sitting down at a banquet in China as you were a riding your bike in Philadelphia, looking at the science opportunities in your own neighborhood. Is that a fair characterization?

MCGOVERN: Well, I think I'm always curious to learn, what are people interested in? What are their desires, motivations, what would they like us to do to help them make economic progress, or progress in education or culture, etc.? So I'm probably someone who's always asking a lot of questions of people. I try to do it in ways that are not offensive or intrusive. But I learn a lot by asking. And then I think they have the impression I'm rather interested in what they're doing, and their culture and their needs.

So I've had, in China, and in any place where the government is a very key influence, it's very good to have close relationships with government officials on a personal basis. I've probably had over 300 banquets with government officials throughout China over time. And they get to know you and your family, and so they trust you and makes it very easy to go ahead and do new things. Because they say, we know him. He's a trusted long-term partner of ours, so we'll just give him all green lights for whatever he wants to do.

INTERVIEWER: And you also feel less like a tourist, if you really get into the country the way the locals see it.

MCGOVERN: Yes. And they appreciate that everyone who's employed in our company in that country are local nationals. We're not bringing anyone over. They're always worried about foreign intervention in the media, we're going to bring over foreign people, we're going to twist the information to benefit American interests or promote some other interests. We say, all of the content, we give all the resources to people here, we give them the training, but still, they're all local people who are actually creating the information products.

INTERVIEWER: Do you think it's fair to say that you're probably the only MIT graduate who has tasted snake blood?

MCGOVERN: Well, I wouldn't have the lateral vision to know if there had been others. But it's, again, it's a bonding relationship. On one of my first trips, we went to Shenzhen and they have a certain culture there, we call it the Guangdong Mafia, where you take a little bit of snake blood from a freshly desanguinated snake, and you have a toast and then you're part of the inner circle, in their view. So the fact I was willing to do that made me feel like a trusted colleague. And I've had scorpions, live scorpions, that had about two seconds of dipping in the boiling oil, and camel hump, and monkey brain, and all sorts of things I was interested to try once.

INTERVIEWER: Them's a good eating.

MCGOVERN: It's interesting, I always learned, try it first and enjoy it, and then ask what it is. So I'll be eating something and, oh this is lamb? Oh no, that's collie dog. Oh, I didn't realize that. So it's often better not to know what you're eating until after you've had the experience.

INTERVIEWER: Wisdom comes in many forms.

Your approach to being very aggressive about inter-disciplinary sharing of best practices and sharing of information among your various publications and divisions within your company. It seems to me that, on some level, thinking about MIT, you're a model for the kind of inter-disciplinary changes that have taken place at MIT, really over the last 10, 15, 20 years. This was not a place known for interdisciplinary sharing of information, but now it really is. I'm wondering if that's tracked your success, and your mission give back to MIT.

MCGOVERN: Well even when I was here in the mid- and late '50s, people were excited about problems, and they wanted to solve the problem that was primary. I was doing some research on amphibian brains, and how they went through metamorphosis, and then I could talk to people in the electrical engineering department about how to measure the muscle reactions and speeds, and I could talk to people in the math department about some of the measurements of the dynamics going on, and of course people in the biology department about measuring the brain behavior during the amphibian went through metamorphosis.

So I've always felt that they were excited about problems, and it didn't matter what domain they were in, what department they were in, they were working on it. I think that is enormously evolved, and it makes MIT really the leader in being problem-centric. That people will get together and get all excited about a problem, and whether they're in mechanical engineering or nuclear engineering, or electrical engineering, or neuroscience, they'll all get together and collaborate, and take a great joy in having solved a significant problem, and don't worry about what profession or discipline is going to get the principal credit for having done it.

INTERVIEWER: And that's a central principle of this Institute. Wouldn't you say?

MCGOVERN: Yeah. I think that came to me in the most vivid way when we, my wife and I, we were always interested in how the brain works. But at the time when I was at MIT, it had 100 billion neurons and 100 trillion connections, and that was beyond the analytical capacity of any instrumentation available. But by the 1990s, we felt the tools were now available -- large scale computers, supercomputers that could analyze neural networks, and single neuron recording techniques, and fMRI scanning techniques that would measure blood flow, which would tell the neural activity in very specific areas of the brain. So now, we had tools where we could really make some advances. And we thought, well should we make a center of neuroscience?

And we formed an advisory committee of six Nobel laureates in the biological sciences, and they all agreed, yes, this is the right time to take a quantum leap ahead. And they said we shouldn't be in an isolated center, working independent of a university, but should be part of the research university, because it's very important that our researchers work with graduate students and work with Postdocs, and have teaching responsibilities so they're keeping intellectually engaged in the field in a very active way. And they told us, "Well, you should look at UCSD in San Diego, you should look at Caltech, you should look at Stanford, you should look at UC Berkeley, you should look at UC San Francisco, you should look at Columbia, and you should look at MIT. These are the places that are research universities at a high enough level that they could be good partners with you, and they have a good program in neuroscience."

So we went around to each of those and talked about what we wanted to do, and they made proposals. But many of them said, what you're doing is going to be part of our biology department. And the head of the biology department will be the key person determining who is going to be working at the center, and etc. And we talked about, we just want to solve this problem. So can't we bring in people from the med school, and can't we bring in people from the Chemical Department? And we need some nuclear engineers to work the magnets and the brain scanners. Oh no, no, no, no. It's departmental specific, so only people who qualified for the faculty of our department are going to be able to work at your center.

So MIT was really the one place that said, if you decide to make a McGovern Institute here, you can have people who are interested, who want to work on the problem, from any department are free to join and maintain their department affiliation, but bring to you their particular skills. And so that's exactly what we need, and that's why we chose MIT as the one place that was really problem-centric, multi-disciplinary, and were all willing to work together, regardless of which department they happen to be affiliated with as their primary department for academic activity.

And I think that's why we've made such great advances at the McGovern Institute is that form of collaboration. We have people from mechanical engineering doing neural tubes to insert in the brain for stimulating Parkinson's tremors and trying to suppress them. We have people from nuclear engineering doing the magnet modification. We have people from EE, electrical engineering, doing the neural network analysis. We, of course, have people from biology, doing a lot of the work on the individual neurons and how they interconnect together. And we have people from brain and cognitive sciences doing cognitive and systems neuroscience, what's happening in the whole brain during thought and cognitive processes. So we're just thrilled that MIT is unique in being excited about solving major problems, and not partitioned into little stovepipes.

INTERVIEWER: How did you and your wife come to an understanding of the scale that what you imagined would be this center to be? I mean, you can start a center for not a whole lot of money and get your name on the front of a building. But this goes well beyond that, it seems.

MCGOVERN: Well, this was the advice we received from our advisory committee. They said, you have to have just the right size to build a strong community, where people can really help each other. If it's too small, it doesn't have the resources to tackle the problems of neuroscience. If it's too large, it will become impersonal and bureaucratic. So they suggested something like 16 to 18 laboratories, about 400 people overall. A size where there was enough diversity of expertise and work going on that everything was interesting, but people would feel part of the community, feel connected to it, like this is our team, our community together.

This was interesting. They said that normally if you ask people about what they want in their building, they'll say, "well I want as much space as possible, I want the big corner office." And our advisers said the key is going to be the connectivity of people. So you should make sure that if they're leaving their lab, they walk through another lab. And that there are frequent tea rooms, and they have lots of white boards and juice bars, and marking pens so they can do brainstorming spontaneously, get five or six people to get excited about a problem and talk about it in the spur of the moment.

So keep the spaces adequate but small. Don't give them extra space, because then they get into a sort of cellular isolation, and you don't get the intercommunication and the collaboration, which is a key. And they said, make one open area where everyone has a chance to see each other and work together.

Well, we're very happy the way the building came out. That we have a large open atrium, which people can see each other as they walk on any of the floors, and a large open space where we have some food service and coffee, and have little brainstorming sessions. And lots of smaller labs, where there's a lot of people having to connect or pass by other people during the course of daily activity.

INTERVIEWER: You described how you learned a very important lesson about the power of information from that fellow at UNIVAC, who said the higher the price, on some level, the respect that you gain in terms of your information endeavor goes up. Did that at all inform your decision to make this the largest, at the time, bequest to a university in history?

MCGOVERN: No, that really wasn't related. Because we weren't trying to sell anything to anyone else. We've found repeatedly, if you look at the demand for information, there's sort of a bell curve. That if your price is too low, no one thinks it's worth reading. They're wasting their time and it won't sell.

INTERVIEWER: But the other message there is, if you're going to do it, do it right. Get it in a big way.

MCGOVERN: Well that's why we said, what size should we be? And they didn't say, well how much can you afford? You should build as big a place as you can afford. It's just the opposite; they said there's a certain size, a human size, where people will feel part of a community, part of a team, and relate to each other. And that will work well. And if you're too small, you're under-resourced, and if you're too large, you're bureaucratic -- people get lost. So they told us don't spend as much as you can possibly afford -- spend the amount that's needed to build a facility of 16, 18 labs and about 400 people, and 140,000 square feet.

INTERVIEWER: If you were student at MIT now, would this be a place that excited you?

MCGOVERN: Oh yes, very definitely. Because that was my field of study. I was in biology, but really taking neurophysiology courses and neurology courses. So this would be exactly the area that I was most interested in. How does the brain work? I'd be hoping to be able to do some work with the professors over there, and contribute to some of their experiments.

INTERVIEWER: Are you in touch with any of your classmates from 50 years ago?

MCGOVERN: Oh yeah, sure. Even more so now, because this is our 50th reunion coming up. So lots of communication among the members of the class in anticipation of this.

INTERVIEWER: What do you think they think of your success, and how do you view their successes in their very different fields? If you can think of members of your class, even without name.

INTERVIEWER: Well, I think I see many of them doing what they wanted to do, what they talked about doing, and having a very fulfilled, not only having a professional success in the field they're enthusiastic about. Having a fine family, and being very proud of their children in college now or recently, entering their professional careers. Happy with the stability of their marriages that often they made while they were still seniors, or just beginning to be in graduate school. So I think their life experiences seem to be very positive. Of course, I don't have any idea about how they view my activities.

INTERVIEWER: Do any of them kid you about being the guy who started the *For Dummies* series?

MCGOVERN: Yeah, I get a lot of that. We have 300 publications, we have 450 websites, we do 1500 conferences, but if I'm sitting next to somebody in an airplane and they say, what company are you with? And I say IDG -- oh, the Dummy guy! Your the *Dummies!* It's amazing how, of the thousands of things that we do, that's one project that everyone seems to be well aware of.

In a way that sort of transformed the whole book business. Most books are always sold by title and author, and the publisher's irrelevant. But we started this because we found people would go in and try to get a manual that they could understand about using computers, or first books about computers. In fact our *DOS for Dummies* book sold over 5 million copies, and the average book in America sells 5000 copies. Bill Gates called me up and said, "We found that people are taking our manual out of the DOS software package and tossing it away, and then buying your manual because they can understand it. So what we should do is we'll put our code inside your book, and then we'll sell the whole package." Which we did. It worked out very well for us, it got us into the software stores, but for him it got software into the bookstores. So it was an extra expansion of the market.

The transformation was that people go into the bookstore now and ask for a publisher's brand -- do you have *Dummies* books on weddings, *Dummies* books on child rearing.

INTERVIEWER: Iraq. There's one on Iraq.

MCGOVERN: Exactly. So people buy the publisher brand and the subject, and often the author's just considered to be secondary.

INTERVIEWER: Describe the circumstances where you decided to choose really not an obvious choice to be the founding director of the McGovern Center.

MCGOVERN: Well this was our discussion with MIT about the right founding director. And one of the characteristics that we wanted was somebody who could create something new within an established institution. And we felt the you didn't want to bring someone in from the outside, who had no status, links, friends, network of colleagues. And when they proposed Phil Sharp -- because I'd known Phil for a long time, been the trustee at MIT for about 25 years, so we'd met on many occasions -- I thought it was perfect choice. Because he was an Institute Professor, and had helped many, many parts of MIT, a Nobel Laureate in biological sciences, so he had outstanding credentials. And he had such a thoughtful, and warm, and engaging personality, that people just loved to talk with him.

So I thought there couldn't be a better person to be the founding director. Because one of the things the founding director had to do was choose the initial group of scientists from within MIT. The first six scientists, principal investigators, were going to be from MIT, the rest were going to be recruited from outside. And so you've got a starting group of six outstanding researchers to join from MIT. And then, he was terrifically effective in recruiting, because people would come and talk to him; he was so inspiring. His integrity, and his intelligence, his understanding of biological sciences, we were able to get outstanding people. And then, he knew exactly what the physical requirements were to do biological research. And so he was a key part in the design of the building, so we got exactly the right laboratory sizes, spaces.

So we couldn't have been happier that Phil Sharp's unique qualifications were available to be acting as the founding director. And it was always the concept he would, essentially be for the first five years getting everything established, and pass the baton to a neuroscientist, a dedicated neuroscientist to carry on the second phase of the development of the Institute.

INTERVIEWER: Well it's certainly an exciting place with an exciting mission. How do you think MIT has changed in the half century since you came here as a student?

MCGOVERN: Well, I think it's become even more interdisciplinary. It's amazing how many people are taking programs, they may say I'm in the electrical engineering department, but they're taking management courses, they're taking biological courses, they're taking some nuclear engineering courses. So there's a great diversity of experiences.

Of course, information gathering has dramatically changed now. Everyone gets the information they want instantaneously on their computer system or their mobile internet access device. And so the empowerment that people have to learn from the best information available has enormously increased. And then their ability to communicate with each other, through the Facebooks and the Myspaces, and other social media and the MIT-based communication system. So that's been one part of the empowerment of student, to learn much more quickly and communicate with their colleagues electronically as well as in person has helped.

And then when I came to MIT my freshman year, the practice was that you were invited to join a fraternity. And then you would go and start to live in the fraternity house, which was almost always off campus, over in Back Bay in Boston, before you even went to your first day of school and had any idea about what life was going to be like at MIT, or what the dormitories were going to be like. And now I think, very wisely, they require every entering student to spend the first year on campus. So all of a sudden it creates a much better community association; you get to have meals and sporting events and education, entertainment events, with your whole classmates. It's not as fragmented as it was when I was here. And I think that helps build a sense of community, a tighter sense of interpersonal relationships among the first year students.

INTERVIEWER: Looking back that same half century or so since you became a student at MIT, what hasn't changed, between the cellphone and laptop carrying, techied student body we understand of today at MIT; versus the students who would stand in line with their boxes of cards, waiting to get into the computer to do what needed to be done?

MCGOVERN: What has not changed is people's passion and love of science and technology, and their desire to tackle really big and important problems. And their ability to get teams together and do that in a collaborative way. MIT's commitment to excellence in education is, if anything, even stronger, more passionate than ever before. And the sophistication and the level of research being done, original research being done on campus has always been increasingly advanced.

On the subject of what has changed is that, when I went to school, almost felt like you were somehow an individual, and you were going to get individual grades, and there was a normal competition for best grade performance that you carried on through secondary and primary school. Now there's much more emphasis on learning as a team. That you're given a problem set, and you have a team of four or six people which you work together on. And that's an enormous benefit to the various students, because they learn about effective interpersonal communications and group leadership.

I remember as a trustee, we looked at the admissions program, and looked at the life success of people who had been and graduated. And we found that there wasn't much of a correlation between the people who got the top scores on all the college boards, and got the top grades throughout their schooling at MIT, and their life success. Often they would be an outstanding individual researcher, but after seven or eight years, they never could progress. They didn't get promoted. Because they lacked the interpersonal skills to have developed group leadership.

And the ones who happened to come, who were the leaders on their campus, or captains of their sports teams or things, often became much more successful, even though they didn't get the top grades. So I think MIT, recognizing that, put an emphasis upon teaching the students how to develop very good interpersonal communication and collaboration skills. And I think the subsequent success of the graduates will be enhanced, in terms of the number of people making the top ranks of management in the companies, the number of people being an entrepreneur and leading a company to big success. Or even becoming a teacher and moving up into being president of their university, etc. That was a very effective change that MIT made, to go from the individual competitive student to the team.

INTERVIEWER: And a change that you were part of.

MCGOVERN: Well, part of in the sense of helping to do the research that noticed the relationship between life success and the admission characteristics.

INTERVIEWER: Exactly. What do you think Ben Franklin would think if he wandered around here?

MCGOVERN: I think he would be very impressed by the curiosity and the love of science and discovery that he would find here. He was a great individual scientist himself, and he had great curiosity and started the Philosophical Society and other research-centric organizations in Philadelphia. So he would say, this is marvelous; these people are discovering the secrets of nature, and they're doing it with a great deal of passion and drive. They've got great teachers and great instruments, great tools to help them carry on their research.

INTERVIEWER: Do you remember the day this place was dedicated and opened?

MCGOVERN: Oh yes, the opening of the McGovern Institute for Brain Research. Yes that was a day that I'll never forget. It was so satisfying to welcome a lot of our friends and associates, and a lot of leading neuroscientists came, and senators from Congress were here. It was very, very gratifying.

INTERVIEWER: You described with some emotional twinge, a moment ago, the joy you felt being on campus on the spring day, and seeing the potential of MIT. Thinking back to the beginnings of this place, is there anything you're more proud of?

MCGOVERN: Well, I'm proud of the marvelous progress that we're making in the key areas of doing what we call translational research. I mean, doing basic research that can be applied to solving human ills -- brain disease and mental illness. We have programs focused on finding the cure for Alzheimer's, we have another one on bipolar, affective mood disorders, we have another one on autism.

People who have autistic qualities often have savant qualities at the same time. They can read 10 books and remember every page and every word on every page of all the books. They can multiply two 10 digit numbers together in their head in a few seconds, they can listen to a piano concerto for the first time and repeat it exactly. So fantastic human retentive capabilities, great memories and great analytical capability. And they're using the same grey matter that we all are. So it's fascinating to find out, is there a way that we can have normal human beings have these same skills, without giving up some of the interpersonal empathy and understanding that people with autism often lack? So that's an interesting area.

And we're working on schizophrenia. That's another key area. It's marvelous to be at MIT because of how we collaborate. Like on schizophrenia, we're working with the Broad Institute, and they discovered the genes associated with schizophrenia, and we identified the role that those genes are playing in neuron formation and interconnection. And we work with Mass General Hospital and the Peter Bent Brigham and the other Harvard hospitals to collaborate together in dealing with the basic science, that we're finding out how that translates into human illness and behavior.

INTERVIEWER: What do you think the biggest problem is that this Institute, and the people that you've put in motion to solve problems, is capable of solving? The biggest problem, the biggest mission.

MCGOVERN: What is the most challenging?

INTERVIEWER: Or in the end, looking back 100, 200 years from now, would be seen as truly transformational, even aside from the ones that you've already mentioned. There are some real big ideas that have been tossed around here.

MCGOVERN: Sure. Well, I think one of the aspects, there are bright, capable people all over the world who, because of economic circumstance or other restrictions the government may impose, don't have access to come to MIT and get this experience. But they might have been qualified to do so if given the economic resources and given the permissions to do. So I think Chuck Vest made an amazingly insightful initiative when he created the OpenCourseWare programs, where 1,800, virtually all the courses at MIT, can be available to people around the world. And they can view the instructor's notes, they can see videos of instructors.

And as the power of communications improve, they'll be able to do video conferencing, and find other people taking the same course at the same time, be able to have group discussions. Which often is key to education. Education is really intelligent conversation with people interested in the same subject, because you convert those ideas into association patterns, and you remember them, and you can use them. Just sitting and reading a textbook will not give you anything like the benefit of the education you get through working with your fellow students and working with your instructors.

So I think the exciting thing is that we could be serving hundreds of thousands or millions of the brightest and best minds in the world through having global access to MIT research resources and people and course materials.

INTERVIEWER: So education on an absolutely global scale, delivered through distribution channels that technology enables. That's one amazing mission. But you and your wife have also talked about getting to the root of things like misunderstanding and conflict, and social processes that we view as inevitable in our human world, that maybe because of your approach to the brain, cause you to think they're not so inevitable.

MCGOVERN: Yeah, I think as we understand the brain, we can see why there are certain misperceptions in the way people analyze information. The way the brain is structured, we apparently receive the information and we compare it to our expectations, which are stored in our memory. And if it contradicts that, we often ignore it or don't pay attention to it. So if you have an expectation that certain people are going to be untrustworthy or are dangerous, you tend to observe only things that reinforce your own expectation. You don't, you know, open up and really see the full information that's there.

So we hope to analyze the way the brain works, and let people know that there are these prejudicial filtering systems that occur. And just as they can understand an optical illusion, they can look at a flat sheet of paper and see two bouncing three dimensional cubes and they know that that's not real, but their brain is telling them it is. So they'd be able to be aware of the way that the brain may have evolved to reduce threat by not trusting people, by not being willing to be friendly and social to strangers. And that leads to a lot of social tension and conflict in the world. So if people understand this is a residual factor of being a tribal society, where you're always dealing with rival tribes and limited resources, and killing first and saying, who was that by the way afterwards. We can let people realize that they should be more open minded and get the facts, and make decisions on real facts, not on expectations that may be embedded in the structure of their brain because of the evolutionary experiences that humans have gone through.

INTERVIEWER: So from a hardware store homemade tic tac toe machine to world peace. Is that an appropriate trajectory for one lifetime? MCGOVERN: Well, just the fact that the more we understand our brain, the more we're able to communicate. And the more we have a sense of respect for other people, cooperation with other people, we'll have world peace and stability. And so help our great- great- great- grandchildren, we'll say we've survived in the human race by the fact that the tensions that used to exist, and distrust and hatreds between people in different geographic areas, or speaking different languages, different skin tones, were washed away by the the fact that we understood how facts were being distorted by our early evolutionary evolution of the brain. And we understood that and we can correct it, and now we see things in a much more objective way, and eliminate prejudicial behaviors that are driven not by facts but by presumptions of situations that don't have an actual factual basis.

INTERVIEWER: And people may say, who helped make that happen? Pat McGovern, the little guy on the bike in Philadelphia.

MCGOVERN: Maybe one small little line in the 1000- page textbook about how humans survived the 21st century.

INTERVIEWER: That's plenty.

MCGOVERN: We would be happy with that, yes. Just a little footnote there. So our great- great- great- grandchildren will say, hey, one of our ancestors made a contribution to solving, the improvement of world peace, and communication, education, prosperity, and the quality of life for people.

INTERVIEWER: All right. That's terrific.