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Interviews of the Margaret MacVicar Memorial AMITA Oral History Project

Kristala Prather– Class of 1994

(interviewed by Shawna Davis)

February 11, 2011

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DAVIS: For a little bit of background information, where were you born?
Family? Childhood?

PRATHER: I was born in Cincinnati, Ohio in 1972. My dad had grown up in Kentucky, so we were living closer to my father's family. But my father passed away in 1974. Then my mother, my sister who is three years older than I am, and I moved to Michigan, which is just a few hours north of Cincinnati. I lived there until I was nine. Then we moved to Texas, which is where my mom's family was. That's where she grew up. I graduated high school in Texas, and I considered Texas to be home. That's certainly what I remember most about it, being a kid, living in Texas. I have just one sister. My mom never remarried. I have a lot of cousins, aunts and uncles, but a small immediate family.

DAVIS: Is there something about your family that you feel is important in your personal history?

PRATHER: Well I think all families are important to your personal history. I think if I look at my—I don't know what noun or adjective to use—but I certainly think that my personality, I'll put it that way, is largely affected from having been raised in a single parent home with all women. I didn't live with a man until I got married (laughs). That was very different. I lived in New House in co-ed dorms, but that's different (laughs). The fights over toilet use and things like that (laughs), that was new. But I think one of the things that was instrumental was having a strong female role model and having a mother who never remarried and was very independent. So that certainly influenced me a lot.

DAVIS: Are there any specific circumstances that influenced your attitude towards education?

PRATHER: It was always considered important in our house when I was growing up. There wasn't ever a lot of pressure to do well, but there was an expectation that you would do the best that you could, and anything less than what was your best capabilities was not acceptable. I always liked school. From kindergarten I liked school. I liked success. I think a lot of people liked success. Because I was good at it I wanted to keep doing it. I had a supportive environment overall, although I certainly

was the first person in my family to get a PhD. My dad was a college graduate. My mom had an associate's degree. She got her bachelor's degree about seven years ago. She went back and finished school later on. My grandmother was a nurse. She had even finished her high school diploma after she had had two kids. After the third child she went to nursing school. There was at least a precedent in my family for achievement in an educational sense and how that would lead to upward mobility, for lack of a better word. I don't know if we even use that phrase anymore (laughs). In the 1980s and 1970s they did!

DAVIS: What made you want to go to college?

PRATHER: College was always an expectation. The idea was that you graduated from high school and you left home. You didn't have to go far, but you were expected to go to college. That was never a question in my mind that I would do anything other than go to college when I graduated high school.

DAVIS: Were your career goals different from what you actually ended up doing?

PRATHER: Not really. I think one of the things that is interesting about choosing engineering as a profession is that there's very little in the way of role models or precedent in most of our communities, for what that means. You can watch TV, you can walk up and down the street, you can go to church and you can find people who are doctors and lawyers, or business people and have some sense of what that means. I think careers in science and engineering are much more abstract when people are younger. I knew I was interested in math or science so I knew I wanted to do something in that area. I was interested in teaching for some time, since I was probably in middle school, somewhere around middle school age. But I think I never really imagined myself teaching at anything other than post-secondary education, so teaching at the college level. So from that perspective, yes, it pretty much is what I intended to do, but I think that happens later in life for most people that they choose science just because early on there's not the environment in order for you to have an understanding for what that career choice actually means.

DAVIS: When did you realize that you wanted to go to MIT? Who suggested it?

PRATHER: So I like telling this story. I had taken the PSAT's sophomore year in high school as prep. Junior year is when you take it for the national merit piece. Junior year, based on how your scores are is when you also start to get tons and tons of information about colleges. I had AP World History right before lunch, and my history teacher was one of

my favorite teachers. I would stay and talk to her from time to time. One day I don't remember what time of year it was, but during junior year I sat with her before lunch. I said, "Ms. Mears"—Diane Mears was her name—I said, "I'm getting all this stuff from colleges so I think I have to start figuring out what I want to do." Where I grew up, well, I grew up in Texas first, and I think for most people growing up in Texas, it's very difficult to get a perspective on anything outside of Texas. The assumption was that if your grades are good you either go to University of Texas or you go to Texas A&M. Sometimes if you were interested in something more specific, one of the other state universities would be considered. If your grades weren't quite as good there were other options. But people frequently didn't go out of Texas for school. So I told her that I had gotten all that stuff and I had to figure out what I was going to do once I graduated from high school. She said, "Well, what do you want to major in?" I said, "I have no idea." She said, "What do you like?" "I like math, but I don't want to just study math because math is too abstract for me." It always has been too. Just the numbers in and of themselves don't have any appeal. She said, "Okay, what else do you like?" I said, "I like science too." She said, "You like math and you like science, you should be an engineer. What kind of science do you like?" I was taking chemistry. I said, "I'm really actually enjoying my chemistry class." She said, "Great, you're going to be a chemical engineer, and you're going to go to MIT!" And I said, "Okay, what is MIT?" So she told me what MIT was. She said it was the best place to go in the country if you wanted to go to school to be an engineer. So I said, "Okay, I'm going to go get lunch now!" And so, I remember running into my chemistry teacher, and he told me to major in electrical engineering and not chemical engineering (laughs). But he also told me I should go to MIT. My calculus teacher said, "Yes! I think you should go to MIT." So I set up on this path to try to figure out what MIT was and where it was and what it was all about. I decided I was going to major in engineering and I was going to go to MIT! I applied to other places. I applied to University of Texas, Texas A&M, and Rice University and a few other places. I got into MIT, I came to visit, and I thought it was kind of cool. That was more than 20 years ago.

DAVIS: Who were your high school mentors? Were they your parents, teachers?

PRATHER: You know it came from a number of different places. So I already mentioned my history teacher who was very important. My calculus teacher, my physics teacher, all my teachers were very supportive. I definitely remember my calculus teacher, Ms. Smith. My physics teacher, Mr. Wylie. I had great English teachers. I had a French teacher, Mr. McCarty, for four years who was very supportive. Part of

the support then came from my community. I was the first black valedictorian of my high school. There's an interesting bit of symmetry in that. My mother was in the first integrated graduating class of that same high school. There was a lot of chatter. This is the south still, this is Texas. Texas was kind of its own state, its own country. Texas was a slave state and Juneteenth is all about people in Texas figuring out that they were free. East Texas doesn't have the best reputation as far as harmonious living among people from diverse backgrounds. So within my community, meaning my church community and the broader black community, there was a lot of anxiety around whether or not I would be "allowed" to be the first black valedictorian of the high school.

DAVIS: Wow.

PRATHER: Yes, it's kind of interesting because it ended up that my dentist, my orthodontist, was on the school board. After the first semester of my freshman year he saw my mom at the Ebony Fashion Fair Show. I don't know if you ever grew up around the Ebony Fashion Fair Show. But he saw my mom at the Ebony Fashion Fair Show. He said, "Oh, congratulations, Kristala is ranked number one in the class!" I had no idea because they didn't tell me this, but apparently the school board met over break and reviewed class rankings. So my mother came home and told me that. I thought, wow that's pretty cool, I think I want to stay there. There was this community support outside of my immediate family. My family was definitely very supportive. Even within the school, my French teacher was the one who came in one day and told us he had heard some teachers in the teachers' lounge asking if it was really true, were they really going to allow a black person to be valedictorian of the high school. He did two things. He shut them down for one thing and then told me about it because he knew I would go tell my mother about it. He knew my mother would go have a meeting with the principal and make sure there were no issues and that everything was okay. So I always felt all of my teachers, the teachers that I had, were very supportive. The other person who ended up being very instrumental, and if I look specifically at what I ended up doing, the other person who ended up being instrumental was a guy in my hometown named, Robert Cargill, who is a PhD alum of the chemistry department here at MIT. He got his doctorate in 1960. He was a chemistry professor for a little while. He was born and raised in Longview. His father had a local business there. When his father had gotten older and ill, he stopped being a professor and moved back to Texas. He was always very much interested in education, so when I was a senior in high school there, I still hadn't quite settled on MIT exactly. Rice was the other place I was looking at. Bob had gotten his undergraduate

degree at Rice, and so my mother mentioned to a friend of hers who mentioned to him that there was this person who was going to be valedictorian of the high school—we e only had one high school by the way—the valedictorian of the high school is looking at these two schools. He said, “She’s got to come and see me.” By the way, we met him at the Cargill Towers. His name was carved in a movie theater when we were little kids, “Cargill Theater.” I went to see him. It was my senior year now, and he gave me two books from the American Chemical Society that were publications designed to introduce lay people, is the best way to describe it, people with some background in science but not scientists, different aspects of chemistry. He gave me one on biotechnology and one on polymer science. I was in high school around the time when the AIDS epidemic was really capturing the forefront of national attention both in terms of what it meant in public health but also what it meant in terms of the capabilities of science and what science could really do. Protease inhibitors had just been discovered and things like that had a lot of excitement around the potentials of biotechnology. At the same time there were lots of new materials that were being developed, so I read these two publications and said, “Great, I’m going to go study chemical engineering, and I’m either going to biotech or polymer science.” Then when I came to MIT I took a polymer science lab and a couple of bio classes to supplement my course 10 training. I liked the bio stuff better than the polymer science stuff, so I ended up going more of a biotech way. I’m still very much close friends with Dr. Cargill (laughs).

DAVIS: Was it unusual for a person from your neighborhood to take a step away and go to college that wasn’t a commuting distance?

PRATHER: Yes it was. In my high school the last person who had gone to MIT had graduated six years before I did. It wasn’t unheard of but it definitely wasn’t very common. What I would say was is not that it was uncommon for people to go farther than commuting distance away. It was uncommon for people to leave the state of Texas. Texas is big enough that you figured you got everything you needed there. That was more unusual. Most people certainly didn’t go east. If you left Texas you went to Oklahoma or Arkansas, maybe Louisiana.

DAVIS: Moving on to questions about college, where did you live on campus? Was there segregation by gender or race?

PRATHER: I lived in New House, Ballard House, New House 2. 472 Memorial Drive: I remember the address on campus. It was a co-ed dorm. I went to New House around the time that the demographics were changing as far as race was concerned. My freshman class, entering New House

was probably the last, of the four years that I was there, it was the only class where we had non-African Americans come in my year. The numbers had been changing. We were right next door to Chocolate City, which was all black. Actually, I should say all-minority. It was predominantly black, a couple of Hispanic guys were there as well. That was starting to change then, and then all the classes after me, by the time I was a senior, all the freshmen who came in my senior year were all African American. There was no gender segregation, no. It was definitely co-ed by floor, not by room (laughs). The floors were all mixed. There weren't male floors and female floors. The rest of New House had started to—by the time I graduated, it was still largely Chocolate City and House 2 that were overwhelmingly African-American. Then there were a couple people who lived in Houses 3 and 5, but for the most part it wasn't—the demographics were different from where they are today, or at least five, six years ago when I came back to MIT.

DAVIS: What were the percentage of women at MIT when you were there or percentage of black women there?

PRATHER: It's a good question. My class was 1994. I think women entering MIT were somewhere between 35% and 40% at that time. I'm sure we could find the statistics. It certainly wasn't 50%, but it wasn't 20%, so it was somewhere in that range. Then for black women, so my class had 69 African Americans. I think about a third of us were women. I have to sit down and count. I could probably do that (laughs). I could probably figure it out. About a quarter to a third of us were women.

DAVIS: Did you feel like your high school education prepared you for MIT? Were the faculty welcoming?

PRATHER: I did not feel like my high school had prepared me for MIT. In general I didn't have a problem with the faculty, but I wouldn't have called them welcoming. Let me say a little bit more about that. I came from a large public high school that had very few AP classes and no one—I can't remember anyone in my high school year who took any AP exams. Our calculus was not AP calculus although there's an option there if you had the time you could stay after school and the teacher would sort of give you the extra AP tutoring if you will. My physics class was not AP physics. My chemistry class was not AP chemistry. I call it an AP history, but it was honors world history. I don't think it was AP world history; it was honors. So I came in terrified. I was really legitimately terrified when I came to visit. There was a woman who's not here anymore, Bonnie Walters. Bonnie used to work in the undergraduate education office. Bonnie tells a story every time she sees me although she's retired from MIT now. She remembers

meeting me as a pre-frosh. The first question I asked her was if there was tutoring available at MIT. What I will say is that certainly if I compare myself to—I had friends who went to elite public schools and to elite private schools and just in terms of the background, I was nowhere near as prepared as they were. But I knew that coming in, and I wasn't afraid to work hard, and I wasn't afraid to ask for help. And so, I used the fear as a motivating factor rather than letting it paralyze me. I did fine! I did well. I did better than fine. I did well when I was here, but for example, I had had physics in high school, but I had it without any concept of calculus. Physics to me doesn't make sense without calculus. I struggled, and everybody struggled, and the physics teacher gave us this exam that was just—I remember taking this exam when I was in high school and just being mortified. Then everybody got our grades back, and everybody had failed the exam. It was clear that we just weren't being taught what we needed to know. 8.01 only made sense to me because I had had calculus. I had taken calculus in high school. I did interphase, and I placed out of 18.01. Then once it was presented from the perspective of this is derivatives and you have to have calculus, it made more sense to me. As far as professors being welcoming, I don't find MIT to be a fuzzy place. I tell people if you want to get a top notch education and you want to be in a rigorous environment where you have access to absolutely everything you need to be successful, be here. If you want a hug, go someplace else. Now, having said that, what I did find with all of my professors when I was a student, and I find that to be true of the people who I now consider to be colleagues, is that there is a respect for achievement. There's also a respect for effort. If you put in the time and if you are willing, then I don't know if I would call it welcoming, but there certainly is a place for you and there's a relationship that faculty will develop with you if you put in the time and effort on your part.

DAVIS: Did you ever encounter prejudice based on race and gender?

PRATHER: I don't think I did as an individual. I had an experience in my senior year, was it senior year or junior? My senior year I was an associate advisor for a group of freshmen. I worked with another person, Dr. Clarence Williams, as the advisor. We had a freshman advising seminar, and I saw the fifth week flags, I saw their grades, and I remember a student who was a freshman that year when I was a senior, who was not doing well in biology, and the instructor for that class sent the advisor a note that said, "This kid doesn't need to do science at all and needs to find a different line of work. There's no way he's going to succeed." I thought that was a little bit harsh for freshman year. Not only did he do fine, he had a little bit of trouble of biology, but he got through biology, and he went to medical school.

He's a practicing physician, he went to a great medical school, and he's doing great. I thought it was really bizarre that this person, this professor, would have this reaction with a very limited data set. It was way too soon to make judgments about people with not that much information. It turned out at the same time, I don't know how often you guys talked about the old days, but there was something that we would always refer to as the "PBE incident" (laughs). So the PBE incident happened my junior year. My senior year we produced, a group of us, this documentary called, "It's Intuitively Obvious." It was about the experiences of different groups. We produced one specifically on African American students on campus. There were ones presented from the perspective of Hispanic students and lots of different demographics. So we produced this video. The Campus Committee on Race Relations had just been formed. There was a real effort to understand what was going on, on campus. I remember going with the person who was then director of the OME to the faculty policy committee to talk about issues around race relations, as they had to do with students. The OME director was proposing conversations for lack of better word, where one idea was to have small groups of faculty come in to the living groups and to have dinner with students and talk about what stereotypes the students might feel were being placed on them, what stereotypes faculty might feel they're placing on students, etc. I remember saying something to the effect of there's a certain amount of distrust, I used that word, that results from people not wanting to pick you as a lab partner. Or from certain looks that you might get from faculty, that just make you feel like you're not welcomed. The whole point was to talk about these things and get them out of the way and clear up misconceptions. One of the professors who was there said, "Well what if it's true?" I said, "What if what's true?" "What if it's true that other students really don't want to work with you because you're black? What if it's true that faculty do have lower expectations of you because you're black?" My response was, "Well then we know we're not paranoid, and there's value in that." It wasn't until a couple days later that I realized that the person who said that comment was the same person who had declared this young black male a failure, just a few weeks into the semester. It couldn't have been coincidence. I have a hard time believing that it was coincidence. I also think—so I said two things. I say that to say during the time that I was here, I definitely saw that there were issues on campus. I don't think it was institutional, and what I mean by that is that I don't think there were systemic efforts to 'keep the brother down' or anything like that. But the actions of individuals have consequences. I think there were still and probably to this day remain a significant number of narrow-minded people who would pass judgment on students far too early, or at a stage far too early to make those types of judgments. I don't remember ever really

being held back or discouraged in anyway. I did, and this is probably natural, pick all my lab partners and all my project partners to be people who were friends of mine. It wasn't like people were going out of their way not to have me as their lab partner even though they realized senior year that I was the top student in the class. They weren't asking to be in a study group with me. I don't necessarily assign that to any bias. I think people hang out and study with the people they're friends with. I made these friends at Interphase and started course 10 with them. One friend was from Interphase, and one friend lived in my dorm. I think that was more natural to have that as a study group. But, was there racism on campus? Absolutely. Did individual people suffer from it? Absolutely.

DAVIS: What was your social life like at MIT?

PRATHER: I had a ball (laughs)! I think it's the same sort of people who say you could sleep, work, or party, and you could do only two out of the three at a time. You can sleep and work but then you can't party. You can party and work, but then you can't sleep. You can sleep, work but then you can't party. I've never been a party animal. I had, to begin—this was 20 years ago—one of the only VCR's in my room for a couple of years. It was not uncommon for me to have a few people in my room watching movies, and I would fall asleep by 10:30pm. They would finish watching the movie and they knew to turn off the lights and lock the door on their way out. It wasn't like I was all over the place, but I had a community. Some of my very, very closest friends were people I met here. People that I'm still in close contact with. I have two daughters. The godmother for my oldest daughter is one of my cousins whom I've known my entire life. The godmother for my younger daughter is my best friend from MIT. I think we had community. I think we built it. This was the early 1990s, and I think things are different now than they were then, but we built a community. We had Easter dinners. We had Thanksgiving dinners. We went to see movies. We went to parties! We share an experience that most other people, especially our friends that we had kind of left back at home, didn't really understand. There is something that comes from suffering together, right (laughs). Being at MIT is not easy. Achieving at MIT gives you a sense of accomplishment that I think is almost unparalleled. So I had a great time. I really did. I had great friends and friends I still have until this day.

DAVIS: What activities were you involved with on campus?

PRATHER: Mostly social activities. I didn't do sports. I have a twisted ankle which is an indication I'm not much of an athlete. In high school I had done music. I had been in a band, but I had stopped doing that. I was very

active in NSBE, National Society of Black Engineers. I was active in BSU, Black Students' Union. BWA didn't exist when I was an undergraduate so I wasn't in that. Just with NSBE it was also not just on a campus-level. I was chapter president so then I got involved with regional and zone activities. I had a whole bunch of stuff going on with that. Not necessarily fun type stuff, but within MIT as well I was a student representative on the Committee on Academic Performance, my senior year. I did one other committee though I'm drawing a blank on what it was right now. I could probably pull up an old resume and figure it out. So I had social activities, but I would say I limited them. We had a NOBCCHE Student Chapter that was revived while I was here, and I was involved with that. But I mostly tried to study and make sure I got my work done. I wasn't trying to build up a resume based on extracurricular activities, I'll put it that way (laughs).

DAVIS: What skills did you acquire through your MIT years, including educational problem-solving, sociopolitical...

PRATHER: Definitely I have a strong foundation in chemical engineering, no question about that. I think the most valuable thing I learned from being at MIT was how to work. What I mean by that was that by the time I graduated here, I had a sense that anything I really wanted to do, I was capable of doing it. At worst it would take a lot of hard work, and I knew how to work really hard. I've learned something about social interactions, but I would say I refined those skills probably more in graduate school just because the environment in graduate school is a little bit more work-like than school-like. But certainly, I honed my skills as a mediator, in certain instances. My nickname when I was an undergrad was "mom." One friend of mine who's only a year younger than I still calls me, "Mom Jones." I think what I got out of being at MIT was growing up. I came here when I was 17 years old. In spite of what most 17 year olds think, that's not adulthood. There's all the technical stuff that you learn, but it's something just to really live on your own and take care of yourself and be independent and to plan. And to budget (laughs). All these things are what you do when you leave home for the first time. I learned all those at MIT. I won't say that all of them are exclusive to experiences I could have gotten at MIT. It was certainly that they were formative years and since they happened at MIT they get attributed to things that I learned while I was at MIT.

DAVIS: Would you make the same choice of the university if you were doing it today.

PRATHER: Yes, I have no regrets about coming to MIT. I don't think it's for everybody. I think some people, it can make them really, really

miserable. I think 19 and 20 years old is too young to be miserable. You've got your whole life to be miserable—plenty of time to be miserable. But I was really interested in science engineering. I like to read. I'm not a big—I have to write for my job, but I'm not very literary in the sense that I like to write a lot. I'm not artistic at all. Science and engineering are what I really like to do. So to be in an environment where that was supported was very good for me. I think MIT is a place again where you have to have a good deal of independence. I had that. So I was able to be successful here and to be comfortable here. So I would do exactly the same thing. I met my husband here (laughs).

DAVIS: After college, what did you do? Can I have a brief timeline?

PRATHER: So I left here and went to Berkeley for graduate school. I was there from August 1994 until December 1999. I took three months off, and April of 2000 I started working full-time in BioProcess Research and Development at Merck Research Labs in Rahway, New Jersey. I stayed there until July 2004. In August 2004, we moved here to Massachusetts and I started full-time as faculty in September 2004.

DAVIS: Do you feel the workforce has changed to accommodate women?

PRATHER: Some very practical things have changed. So just one concrete example: I'm pre-tenure at MIT. Tenure has a certain number of years associated with it. There's now an official policy in place where if you have a child during your pre-tenure period you get an automatic one year extension on your tenure clock. If you have a second child, you can have a second year upon request. So you have to ask for your second year, but it's basically never denied. That's different. That's a policy that's been in place for less than 10 years. It was put in place shortly before I came here. It's important to be able to feel like you can have a family. Since until men birth babies, it really is something that women have to deal with. I think the other thing is that there is just an awareness of the challenges of being a woman, especially when it comes to family issues in a professional environment whether or not that's academia or other things. When I was thinking about an academic job I had this woman who found that the people who are most sympathetic to her struggles with balancing family and work were actually older men. What she said was that she decided that these were men who had two things happening to them. One is that they were having grandchildren and realizing once their grandchildren came around how much they had missed in their own kids' lives because of their singular focus on work, and that they felt a sense of regret or nostalgia. I don't know what the right word is. The second part which is really important was that those were people who

now had daughters. When they thought about what they wanted for their daughters, they wanted their daughters to have the opportunities to be successful in the professional sense and also give them grandchildren (laughs). So I think that there's a general awareness of the challenges of being a woman that just didn't exist certainly 30 years ago and to a certain extent didn't really exist even 10 years ago.

DAVIS: Have you had conflicts between your career and life choices such as marriage and children?

PRATHER: I wouldn't call it conflicts. It's a challenge. The reality is that there's a fixed number of hours in a day, and a fixed number of days in a week, and we still are not capable of being at two places at one time. So, that means there are choices that have to be made. There are things that I missed as far as home was concerned, that if I didn't have this job I wouldn't have to miss. Now, if I had other jobs I may have those same conflicts as well. But, it's a reality. I think it's not quite fair to think of it as a conflict. It's more appropriate to think of it as a challenge and as a challenge that has to be met and as a balancing act that has to be achieved at some level. But I think it's working out okay in spite of the fact that my daughter drew a family picture without me in it. That's dad and that's her and that's my younger daughter (laughs). They're at the beach, but I'm not really a beach person anyways, maybe that's what she was trying to say (laughs).

DAVIS: If you were giving advice to young women graduating what would you say?

PRATHER: Just in general?

DAVIS: Yes.

PRATHER: So the first thing I would say is think about what you want to do as a professional. Think about it outside of the context of any family constraints. Then think about what you'd want family-wise. Think about that outside of the context of any professional constraints. Then you have to have some reconciliation and try to figure out. First of all, we need to realize we don't live in a perfect world. So you think about what you would have in an ideal situation for both of those then you try to figure out how to match those two images. Come up with something that's workable. That's kind of vague. So let me give some practical advice. First think, especially for women who are interested in having academic careers or any other careers which is very time-consuming and high stress. I think if you're also interested in having a family, the single most important thing is your choice of a spouse or

mate because if I look at the job I do, before the kids were born and before I started this job, I cooked a lot. I like to cook. I really like to cook. My husband likes to eat. So I cooked a lot, and I went through a stir-fry phase where I would buy all these fresh vegetables and go to the Asian supermarkets and just have a ball. I don't do that anymore. There had to be an understanding that I wouldn't be able to do that anymore and that would be okay. So my husband doesn't expect me to be home at five o'clock every night, and I'm not home every night at five o'clock. Sunday I have to get on a plane and go to San Diego. The first is to have a spouse or partner, who is supportive of what you want to do and who understands that the 1950s traditional marriage with the wife doing all these household chores is not in your future. Then the second part of that is to then decide as you mesh these images together, to establish a list of priorities. Decide what are you willing to give up and what are you not willing to give up. Sometimes I can be very precise, for example, a precise thing I had is that I have a lot of travel in my life. But I have a rule that I don't travel on birthdays. I don't travel on my kids' birthdays unless they're with me. I took my daughter to Spain for her birthday. I thought that was pretty cool. I think we were actually in Portugal for her birthday. I don't travel on the kids' birthdays, or my birthday or my husband's. The kids like to celebrate my birthday. If I travel on my anniversary I at least make sure I'm coming home before my anniversary is over. That's something very practical. Then there are other things like I'm not willing to risk the overall mental health of my children for a job. That's much more vague because you don't necessarily know what things you're doing that have the potential to risk mental health. Part of that for me is that if I made a commitment to my daughters—I actually have a commitment to be at my daughter's school on March 9th, and I was invited to participate in something at five o'clock pm in Houston on March 8th. I told my husband this morning, "I can't do it because my daughter's been asking me about which day I'm coming to her school for the past two months." If I suddenly don't show up, that sends the message to her that she's much less important. I decided before I had these children that in spite of the fact that I'm going to have a very stressful and demanding job, that my children always had to be a priority. So, as these things arise the question is, if I look back at my initial set of priorities, am I violating that hierarchy by saying yes to something or by saying no to something. It's hard to do it out of context but before going in, if you have a clear sense as to what your goals both personally and professionally are and what you are and are not willing to sacrifice then that gives you a foundation against which you can ask the questions as individual events arise about do you say yes or do you say no.

DAVIS: Last question, what do you see as your next step?

PRATHER: Tenure (laughs). I now have the title of associate professor without tenure. So my next step is tenure. Then after tenure is sabbatical. I can't really think beyond that at the moment (laughs).

DAVIS: Do you have anything else that you want to add?

PRATHER: No, nothing that comes to mind.

DAVIS: Thank you!

PRATHER: You're very welcome!

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In the News

Kristala Prather Granted Tenure

Kristala Jones Prather, the Theodore T. Miller Associate Professor of Chemical Engineering at MIT, has been awarded permanent tenure.

"Kristala is an innovative researcher and dedicated teacher. She continually strives to bring out the best in those around her, be they students, researchers, or fellow faculty members," said Klavs F. Jensen, Warren K. Lewis Professor of Chemical Engineering and head of the MIT Chemical Engineering Department, "Kristala is an important part of our Department's future."



Prather is an investigator in the multi-institutional Synthetic Biology Engineering Research Center (SynBERC) funded by the National Science Foundation (USA).

She received an SB degree from MIT in 1994 and PhD from the University of California, Berkeley (1999), and worked four years in BioProcess Research and Development at the Merck Research Labs (Rahway, N.J.). She is the recipient of a Camille and Henry Dreyfus Foundation New Faculty Award (2004), an Office of Naval Research Young Investigator Award (2005), a Technology Review "TR35" Young Innovator Award (2007), a National Science Foundation CAREER Award (2010), and the Biochemical Engineering Journal Young Investigator Award (2011). Additional honors include selection as the Van Ness Lecturer at Rensselaer Polytechnic Institute (2012) and a Young Scientist of the World Economic Forum Annual Meeting of the New Champions (2012). Prather has been recognized for excellence in teaching with the C. Michael Mohr Outstanding Faculty Award for Undergraduate Teaching in the Dept. of Chemical Engineering (2006) and the MIT School of Engineering Junior Bose Award for Excellence in Teaching (2010).

Prather is an important asset to organizations across the campus. For example, she has been a long-time collaborator of the MIT Portugal Program (MPP) – an international collaboration between MIT, the Portuguese government and industry. Prather is a faculty member of the MPP's Bioengineering focus area, and under this program, she participates in research projects in collaboration with Portuguese Faculty at Instituto Superior Técnico (Lisboa, Portugal) in the development and test of *E. coli* strains specifically adapted to meet the upstream and downstream processing challenges associated with large scale production of plasmid vectors. She is also a supervisor of several PhD Bioengineering MPP PhD candidates that have been developing part of their research project at her MIT laboratory.

Prather has also served as a member of the MIT Office of Engineering Outreach Programs' advisory board since November 2009. Through a SynBERC grant, she secured the funding to establish the SEED Academy Synthetic Biology course, for which she serves as the faculty advisor. About 120 high school students from Boston, Cambridge and Lawrence have been exposed to synthetic biology because of this course.

Prather's research interests are centered on the design and assembly of recombinant microorganisms for the production of small molecules, with additional efforts in novel bioprocess design approaches. Research combines the traditions of metabolic engineering with the practices of biocatalysis to expand and optimize the biosynthetic capacity of microbial systems. More simply, the Prather Lab is harnessing the synthetic power of biology to build microbial chemical factories. A particular focus is the elucidation of design principles for the production of unnatural organic compounds with engineered control of metabolic flux within the framework of the burgeoning field of synthetic biology.

[More about Professor Prather >>](#)



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