Thank you Rafael. Good Morning everyone. I'm honored to welcome you today as we commemorate the first half century of computer science at MIT.

Since the founding of Project MAC in 1963, our lab has played a critical role in the advancement of computing due to the passion and work of our faculty, students, and staff. And now, we stand on the verge of an exciting new era with potential to translate the work of the last 50 years into monumental new contributions.

Call me an optimist, but I can picture a world—not too far off—where it's as easy to program a robot to play with your cat or take a driverless car for a spin as it is to use a smartphone today.

Can you imagine if every child was given their own personal robotic assistant to educate and support them in school—one robot per child? And if Immersive environments can be used to create virtualized 1:1 student-teacher ratios in classrooms? Or if BigData about health gave every person access to individualized treatment plans? Or if our smart cities see that we are never stuck in traffic?—and if you live near Cambridge, you can appreciate how nice that would be.

These are just a few examples, but I believe they represent what's possible in a world of continued breakthroughs in computer science.

If we continue to rethink the nature of computing—how to make it different, better, and more powerful—as well as how to use computing to solve humanity's biggest challenges, there's no reason we can't move this future from the realm of science fiction into the world of science and then reality.

This is the kind of challenge we embrace here at CSAIL. For us, no question is too crazy, no future too far off. We take pride in imagining the impossible, and then looking for ways to make it possible.

It's what we've been doing for 50 years. And it's exactly how we'll continue to move computing forward.

I like to think that the work we're doing today is what the founders of Project MAC hoped for when they began this journey. Sure, the specifics of the dreams have changed with new technology and more powerful computers. But at the root, everything we do ties to the vision that computing can play a vital role in assisting humanity with problems big and small.

Today, we've reached a point where personal computing is pervasive and powerful and necessary for many jobs. The Bureau of Labor Statistics projects that 71% of all new jobs in STEM fields during the next decade will be in computer science.

This is why I go as far as to say that digital literacy is vital to success in our society. And today's literacy requires four pillars: reading, writing, arithmetic, and coding, or—more broadly—computational thinking.

Can you imagine? In 50 years, we've moved from dreaming of letting multiple people using computing simultaneously, to a world where computing is virtually indispensible.

And along the way, we've made incredible progress in what computing looks like and what it can accomplish. Just look at the list of CSAIL accomplishments and you'll find not just the birth of the personal computer, but also the roots of artificial intelligence, systems, theory, and many applications.

We can trace modern computing to the first time-sharing system, developed at MIT in 1961, and the first computer network, developed by MIT's Lincoln Labs in the 1950s.

Our researchers developed the first computer to display graphics, the GUI systems that brought graphics into consumer computing, the first computer algebra systems, Macsyma, the mother of object oriented programming, CLU.

But this is only the start. If you've ever connected your laptop using an Ethernet port, logged into your email, shopped online, or gotten a good movie recommendation from Netflix, you have benefited from the work of our researchers on the invention of Ethernet, computer passwords, RSA encryption, and the world wide web.

The spreadsheet, the electronics health records system, distributed computing, the free software movement, sublinear time algorithms, cryptography and computer security, multi-core processors, mobile robotics, boosting, speech understanding, machine vision, the optical mouse, the edX MOOCs … this is just a small sample of the firsts created by members of our laboratory.

I could spend all day reflecting on the work of the amazing individuals who've made up our faculty, staff and students. Thankfully, I can count on our speakers, made up of extraordinary CSAIL faculty and alumni, to cover that.

At CSAIL, our shared values and dreams hold us together. I think you'll find that no matter your area of focus, or which years you spent here, the same things have always held true.

This is the home of extraordinary people and incredible community. It's a place where students and faculty work together to form a union of passions—one that wouldn't be the same without the CSAIL magic sauce that shall remain our secret, but some of its ingredients are: PI lunches, the Vultures free food email list, the Hackers' Heaven undergraduate program, the coke bunny, random pizza events, Gerry Sussman's commitment to his pocket protectors, and especially the wild and crazy ideas that make all the difference.

Over the next two days, I hope you get a chance to talk to some of our current PIs, students, and staff about the passions they're pursuing.

Some of us want to improve computing, for example in wireless, security, or algorithms. Others want to understand and enhance human life. Dave Gifford wants to make any type of cell and understand computationally what happens in the process. John Guttag wants to use video data to measure your health metrics like the heart rate without even touching you. Patrick Winston and Tommy Poggio want to reverse engineer the brain. Tim Berners Lee is on a crusade to create a bill of rights for the Web. Shafi Goldwasser wants us to be able to have private conversations over the Internet again.

And don't even get me started on robotics. Russ Tedrake wants to make robots fly like a bird. I want to make them shape-shift. And Seth Teller wants to create robot technologies that will mean humankind is never again unprepared for a disaster like Fukushima.

I feel so proud to be part of this tradition.

As computing evolves over the next 50 years, our current students will be the force that determines how our work bears fruit. So for the students in the audience, let the past be your example. You are in charge of our future.

A future where I believe widespread digital literacy will allow us to move the newest innovations in computing from the laboratory into the home, business, and every part of life. As a result, I suspect a typical day will look very different a few decades from now.

Imagine getting up and finding that your smart home has already organized and confirmed you schedule to adapt to last-to-minute changes and made you a healthy breakfast. Your commute in your driverless car lets you return calls and catch up on your favorite podcasts. You spend all day working side-by-side with machines that do your repetitive tasks and let you to focus on what you're excited about. And when you leave the office, you do so with full confidence that your own personal Rosie will have the laundry done and dinner organized. As we democratize the use of computing, machines will take on menial tasks and buy us the time we need to self-actualize.

People thought President Kennedy was crazy when he said we were going to the moon; at CSAIL, we've dreamed up dozens of moonshot goals and said "let's make them happen!" And we will continue to do so.

That's what these two days are all about. CSAIL has always been about moonshots and big dreams. We have an incredible line-up of alumni and faculty speakers here to describe turning crazy ideas into reality. So settle in and get ready to reminisce, think big, dream of the possibilities, and above all enjoy each other. Thank you.