

STEPHEN

One of our challenges over the next couple of days is we have people who've come here from all over the world.

MILES:

Thank you very much for being here with all the snow and weather that has beset us here at the last minute. Actually, Jun Mirai from Japan was caught in a snowstorm at Narita airport in Japan and so won't be able to join us until later today. And I'm sure that there will be people trickling in as well.

We wanted to keep this convocation as small and focused as possible to see if we could actually make some headway and to remind you of the objectives that were set forth by the conference committee. We talked about wanting to identify opportunities for collaborative research, to determine what the core research components of some of these opportunities might be, and use these sessions that we have today to begin a technology road-mapping process that we hope to follow on with subsequent events leading out of here, which we'll share with you more on tomorrow.

But so first, I'd like to welcome you on behalf of MIT and the AUTO-ID Labs here at MIT, who's the host for this event. My name is Steve Miles. I'm a research engineer here at the lab. And I'm the conference committee chair for this gathering. I'd like to just give you an overview of what's happening over the next couple of days so you can visualize the agenda and then also thank some of the people who are here with us today, without whom this event couldn't have happened.

So I guess, first to start with the thank you's, there's a conference committee that was very much created ad hoc, people who knew people who were leading researchers in this area. And out of that conference committee, there are half a dozen key contributors who are here who I'd like to acknowledge and maybe ask you to stand as I say your name so that people can see who you are, because, again, these are good collaborators. These are people with whom we've established and begun to think of ways that we can work together.

So Dr. Bill Hargrave from the University of Arkansas, Bill, are you here? And Dr. Gisele Bennett from Georgia Tech-- stay standing, because I'm going to ask everybody to applaud when--

[LAUGHTER]

--Jean Pierre [INAUDIBLE], right? Jean Pierre?

AUDIENCE:

Yeah, here.

STEPHEN

OK. Dr. Rob Clarke from MSU, Dr. Dimitrios Kyritsis from EPFL in Switzerland, and, actually a nonacademic but who was the person who gets the credit for the idea of this convocation, Mark Roberti from RFID Journal-- so this group of people has been very instrumental in putting together the speakers. Please acknowledge them.

MILES:

[APPLAUSE]

And then there's a second group that's really the core group of academic collaborators who had an equal share in putting this event together and who you will hear from today. Those of you who don't know them, again, we'd like to recognize them as a group, so Dr. Elgar Fleisch from the University of St. Gallen and Duncan McFarlane from Cambridge University, who's represented by Alan Thorne today-- is Alan here?

AUDIENCE:

[INAUDIBLE]

**STEPHEN
MILES:**

Dr. Jun Mirai of Keio, who is in a snowstorm but is represented by Shigeaki Suzuki, Dr. Hao Min of Fudan University, Dr. Peter Cole from the University of Adelaide, and Dr. Sang Gug Lee of the Information and Communications University in Korea, the latest addition to the AUTO-ID Labs family, together with John Williams as the director of the AUTO-ID Labs here at MIT-- so a hand for--

[APPLAUSE]

So this group has been working together now for several years, looking at ways to collaborate to meet some of the opportunities that come from the adoption of RFID. And then finally, we have graduate students here at MIT, who have been instrumental in putting this event together. Is [INAUDIBLE] here? [INAUDIBLE] may be out front. But she gets the credit for the logo, for the posters out front, and has organized a series of fun demonstrations of RFID technology at the MIT Museum tonight for the reception. And [INAUDIBLE], on AV, doctoral candidate in the program here, together with [INAUDIBLE], whose last name I won't try to pronounce-- and he's been the volunteer coordinator. So thank you very much to that group.

[APPLAUSE]

So just briefly the outline for the day, John Williams will introduce our keynote speaker. Following a break, we will then go into, this morning, the horizontal technology sessions, so a session on the network technology related to RFID, a session on the tag technology, and a session on the RF and the utilization of RF as we look out in the 10 years to come. And then in the afternoon, we move right into industry applications for RFID, focused around research areas that have been brought to the various labs around the world, so starting with anti-counterfeiting that is led by Dr. Elgar Fleisch, which is the flagship project for the AUTO-ID Labs collaboration.

But then an initiative led by Alan at the University of Cambridge in aeronautics-- for those of you who may not be familiar with this opportunity. Boeing and Airbus have decided to redesign their entire supply chain more the model of the automotive industry, where they'll be able to exchange subassemblies. And there's a requirement for an active tag to go on those subassemblies so that a Boeing shop might exchange a subassembly with an Airbus customer. And for that to occur, we'll clearly involve university research and aircraft parts manufacturers throughout the world and will require a response from the academic community that's far more coordinated than what we've done in the past.

And from aeronautics, we go into automotive. And then we're very privileged to have the vice president of Johnson & Johnson, who's put together with the EPCglobal health care life sciences coordinator program a session on health care to conclude the day. And then at 5 o'clock, we will move up to the MIT Museum for a reception and a time to meet one another. And also, please, take a chance to see the half a dozen demos, which are there showing different applications for RFID, I believe, one of which is an espresso machine, which recognizes your taste in coffee by your cup, as I understand it.

And then tomorrow, we have a very extensive session in supply chain and in packaging. And after a light box lunch, we'll reconvene for applications for RFID beyond the supply chain and then a concluding panel with some of the executives who are here. And part of the format of each of these sessions is to give academics no more, academics, no more than 10 minutes to talk about really what's key in our research and then to get some feedback in each of the sessions, both from industry panelists and from the audience as to the applicability, utility, and possible direction for that research.

So are there any questions about the logistics? There was one question. Bathrooms are located--

AUDIENCE: That way.

STEPHEN That way.

MILES:

AUDIENCE: [INAUDIBLE].

STEPHEN For lunch, we are going to walk to the other side of Mass Ave to the student center. And so we might try to do this
MILES: through the buildings to stay dry. We'll see how the weather holds up. But if there are no questions about logistics at this time, I'd like to hand the convocation over to Professor John Williams, who's the director of the AUTO-ID Labs here to MIT.

[APPLAUSE]

JOHN Thanks very much. I want to welcome you all here to MIT on this typical Boston day. I often wondered why MIT
WILLIAMS: got so much research done until I moved here. And then I began to understand that, in the winter, you're basically locked in. There's nothing to do except research. So that's the explanation why MIT is pretty innovative.

I'd like to thank Steve Miles, especially for putting this on. Really, it's been his effort along with the organizing committee. But he's done a tremendous amount, so I'd like to give a--

[APPLAUSE]

Before I welcome our first speaker, I'd like to just remind you, I think, how important this is that. In the AUTO-ID Labs, this consortium of seven labs, we got together as a consortium with the goal of architecting the internet of things. And when you talk about the internet of things, it's really an infrastructure that's going to have to last a hundred years. If you think about the railway system, the power system, our water supply systems, these are infrastructures that support society and are going to have to last. I worry about this infrastructure, that we need to think seriously about it, that it's not just fast-moving consumer goods. It's going to be knowing what something is, where it is, when it's there, and why it's there. And this is going to be tremendously important that we future proof this architecture.

And I think that's the goal of this convocation, is for us to identify the research that's necessary so that this infrastructure will survive. So I think it's tremendously important that we think about that, that it's a global infrastructure. It's cross-countries, cross-boundaries. It's going to be incredibly difficult to do that.

So we're very fortunate today to have one of the founders of RFID, Professor Sanjay Sharma here, who's going to tell us about research in RFID. So I'd like to welcome him and welcome you all to MIT.