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Marc Tessier-Lavigne
President, Stanford University

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Webinar

Moderator: Marie-Josée Kravis
Chair Emerita, The Economic Club of New York
Senior Fellow and Vice Chair of the Board of Trustees
The Hudson Institute

Introduction

Good afternoon. Thank you for joining us. This is Barbara Van Allen, President of the Club, and we'll get started in exactly a minute and a half. Thanks.

Chairman John C. Williams

Good afternoon and welcome to the 585th meeting of The Economic Club of New York, and this is our 114th year. I'm John Williams. I'm the Chair of the Club and I'm President and CEO of the Federal Reserve Bank of New York. The Economic Club of New York is the nation's leading nonpartisan forum for discussions on economic, social and political issues, and our mission is as important today as ever as we continue to bring together people, people together as a catalyst for conversation and innovation. And a special welcome to members of the ECNY 2021 Class of Fellows – a select group of rising next-gen business thought leaders – and it appears we'll have our largest class ever this year. And a special welcome as well to the graduate students from Rutgers University and NYU Stern School of Business.

So it's a pleasure for me to welcome our special guest and Club member today, Marc Tessier-Lavigne. Marc is a pioneering neuroscientist, biotechnology entrepreneur and academic leader who became Stanford University's 11th president in 2016 after serving for five years as President of The Rockefeller University in New York.

At Stanford, he has championed a model for a purposeful university that accelerates the application of knowledge to tackle the world's great problems and encourages research and education in ethics and civic responsibility.

Marc earned his undergraduate degrees from McGill University and Oxford University where he was a Rhodes Scholar, and PhD from University College, London. He moved to the U.S. for a postdoctoral research in neuroscience at Columbia University and then held faculty positions at the University of California, San Francisco and at Stanford.

Now, in his laboratory, Marc and his colleagues pioneered our understanding of the mechanisms that direct the wiring up of the brain during embryonic development and have also helped elucidate mechanisms of neuro-degeneration. His discoveries have earned him numerous scientific awards, including the 2020 Gruber Neuroscience Prize. In 2003, Marc moved to biotechnology giant Genentech, where he served as the Chief Scientific Officer, directing 1,400 scientists in disease research and drug discovery and helped oversee the development of eight FDA-approved drugs for cancer and immune disorders.

Now, Marc's been an active spokesperson for societal support of science, through editorials, advocacy and congressional testimony. He's also co-founded two startup companies – one focused on neurological disease and the other on neurodegenerative

disease.

Marc's been elected to several learned societies, including the National Academy of Sciences, the National Academy of Medicine, the National Academy of Inventors, the American Academy of Arts and Sciences, and the American Philosophical Society. In 2019, he was named a Great Immigrant by the Carnegie Corporation in New York. In 2020, he was appointed an Officer of the Order of Canada, one of that nation's highest honors. I would be remiss not to mention that he was also on the board of directors of the Federal Reserve Bank of New York.

Now the format today will be a conversation in which we're fortunate to welcome back Chair Emerita to the Club, Marie-Josée Kravis, to do the honors. Marie-Josée is a Senior Fellow at The Hudson Institute as well as the Vice Chair of the Board of Trustees. Now, as a reminder, this conversation is on the record and we do have media on the line. So, with that, I'll turn it over to you, Marie-Josée.

Conversation with Marc Tessier-Lavigne

CHAIR EMERITA MARIE-JOSÉE KRAVIS: Thank you John. And to Marc Tessier-Lavigne, welcome back to New York. And even though it's virtual this time, I hope you'll have the opportunity to visit us soon in person. We'd love to have you at the Economic

Club in person.

Marc, you've had an outstanding career as John mentioned, both in the for-profit and the not-for-profit world. And as John said, you did so much work in the neurosciences, especially on how the brain develops and regenerates, how it gets wired. And I wonder if you'd share with us some part of your journey and what you think are key discoveries or directions in neuroscience today.

MARC TESSIER-LAVIGNE: Well, thank you Marie-Josée, and I just wanted to start by thanking The Economic Club of New York for inviting me – John and Barbara, and John, for that very kind introduction. And Marie-Josée, it's so wonderful to see you again even if it's virtual, so thank you for that.

This is a very exciting time in neuroscience. My own work over the years in that part of my life has focused on how the brain gets wired up during embryonic and fetal development and also what goes wrong at end of life in neurodegenerative disease, in Alzheimer's disease, in Parkinson's disease, in Lou Gehrig's disease.

In terms of brain wiring, some of the work that we did was to really understand the molecular code that directs the formation of connections among nerve cells. Nerve cells have to make connections from neural circuits, these extensions called axons that many

of you have heard about that will connect to other cells, and they have to make just the right connections. That's directed by a molecular code. We and others were able to crack that code and identify some of the molecules involved which also provides tools to try to re-wire the brain after injury and stroke for example or in spinal cord injury where nerve cells get disconnected.

In terms of neurodegeneration, why do nerve cells die late in life and in some cases earlier? How do they die? What are the mechanisms that trigger the degeneration? Those are areas, insights there can provide targets for developing therapies. It's a time of great ferment in neuroscience. I'd be happy to talk about it more but suffice it to say that over the past decade, especially in neurodegeneration, we've seen an explosion of research findings enabled by advances in human genetics and deep sequencing that have revealed many risk factors for neurodegenerative disease that are showing us some of the bad actors, that's giving us an understanding of what goes wrong providing avenues for therapeutic intervention. So I think we're seeing a lot of therapies going into clinical trials right now to tackle those diseases and none too soon of course. This is a huge burden on society.

In terms of my own career, I was very fortunate. I started in academia but I became very interested in the application of science. I was fortunate to have the opportunity to move to Genentech, as John said, and learn from the best of the best about how to take

science and apply it to unmet medical needs, and I continue to be involved in that work as well, but I also got a taste of executive leadership. It was an extraordinary place with extraordinary leaders and mentors. And I guess that's what set me on my path to becoming a university president, first at Rockefeller and then at Stanford.

You know, at heart I'm driven to advance science and knowledge in general and apply them to tackle the world's great problems, and I have a deep reverence for great universities and great companies that advance science and that support the advancement of knowledge and its application. So I feel very fortunate to have had these opportunities.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: Well, regarding the state of neuroscience, or – as you say – the ferment in neuroscience, you and I have talked about this before, but that in a sense the knowledge of cancer broke open with genetic sequencing and now single cell analysis. Do you think that neuroscience is close behind or following in a similar path?

MARC TESSIER-LAVIGNE: That's a very, a great way of asking the question, in fact, Marie-Josée, because the great advances in cancer starting in the 90s and the 2000s and now with immunotherapy in the 2010s really were based on understanding what went wrong, what the bad actors were in cancer cells. Tumor oncogenes and tumor

suppressors were discovered in the late 80s and 90s and beyond and that knowledge fueled the development of therapeutics. It took longer in neurodegeneration. Some were identified. Some of the bad actors were identified in the 90s but most of them required, because their effects are small actually, required much more powerful tools that only became available a little over ten years ago. And that is what has fueled this knowledge. So in my view neurodegeneration is very much today where cancer was in the 1990s, that we have now a much greater understanding. That's enabled the development of therapies. So I think we're going to see a wave of transformational advances making their way through clinical trials in the next years, in the next decades.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: Well, speaking of transformational advances, the experience that we've lived through this year with Covid-19 and research surrounding the vaccine and also therapies has seen really an explosion of activity characterized, I think, by two main elements – speed and disruption. And I wonder if you see that as a new paradigm, you know, these platforms such as mRNA and so on, which are really disruptors in the traditional approach to science and viruses. Do you see that as the new paradigm? Are speed and disruption going to be the name of the game going forward?

MARC TESSIER-LAVIGNE: Well, I think there are a few different factors at play, Marie-Josée. On the one hand, you know, these RNA vaccines are an overnight success story

that are 20 years in the making. You know it required deep investments in science and a lot of risk taking, first in academia but then, of course, in the private sector. We all know about Moderna today. When the company started, you know, people thought, wow, this is really out there. Is this really going to work?

But one of the things that happened with Covid is it's enabled a huge acceleration as the need was there and people focused – the regulators, society in general was supportive of moving faster. And so now in less than a year, we've gone from, you know, the disease emerging, to having vaccines that are being administered to millions of people. It's really unprecedented. But I think you have to have that constant investment, the long-term investment that leads to these technologies.

But what I think we've learned this year is that we can do a better job of accelerating the application of those technologies, bringing them into, you know, application to tackle, in this case serious diseases. I hope that's one of the big lessons we learn from Covid, that we can go faster but it requires us to work together.

Collaborations have been forged more easily. Universities have collaborated with the private sector. We've seen this at Stanford. Barriers, traditional barriers to collaboration have fallen to the wayside. There were regulators that worked hand in glove. Not that everything's been perfect. Not that there aren't opportunities for doing things even

better, but this model of acceleration through focus and collaboration and private-public partnerships is one that I hope we can build on, something actually that we've been focused on at Stanford even before Covid, but I think we see the merits of this. And I believe that this will, is a transformative event so I think we have to consolidate that approach. It's important for us not to go back to the old ways of doing things after the pandemic subsides.

CHAIR EMERITA MARIE-JOSÉ KRAVIS: Well, I find it interesting that you use the word accelerate or accelerating so enthusiastically. And, in fact, you did present, before Covid, an accelerator model for Stanford, and I wonder if you might expand on that and what you mean by accelerating knowledge, accelerating collaboration and how in natural practice that happens at Stanford.

MARC TESSIER-LAVIGNE: Well, maybe I can step back just a little bit, Marie-José, if it's okay with you, and talk about the journey that we've been through since I arrived at Stanford. John actually introduced this. In my inaugural address at Stanford, I challenged our faculty that Stanford needs to be a purposeful university, that, yes, as a university we are focused on advancing knowledge and on educating students, but in addition – so that's necessary, but in my view not sufficient – in addition, we need to intentionally focus on how those activities will best benefit humanity. And we spent a few years with the faculty who embraced this vision thinking about how that would work

in practice and really we settled on two components. One is on this concept of accelerating impact and the other is on centering values in all that we do. So maybe I can say a few words about each.

Accelerating impact, which was your question, is that beyond supporting the generation of knowledge, supporting fundamental inquiry – basic research if you will – we think that the university has the opportunity and I would say a responsibility to make sure that those discoveries are brought to fruition and to application to help tackle the world's great problems – diseases like Covid, but also others, societal problems, inequality, problems with climate change, problems with deficits in our educational system.

So many of our faculty are very keen to take their research, the knowledge they generate and apply it, but there are many obstacles to that. Often we don't have the infrastructure or the resources or the existing partnerships that could facilitate that. So the model that we've adopted is that the university should build the infrastructure, provide the resources and the connections to facilitate, for those faculty members who want it, perhaps a third to half of our faculty members, the application of their discoveries.

Just one example, in medicine, which is my own wheelhouse, we've created what we call the Innovative Medicines Accelerator. What does that do? Well, our faculty are very

skilled at deriving new knowledge about cancer, about asthma, about Alzheimer's disease and they'll publish a paper in a high-profile journal that says here's a pathway which, if we could modify it with a drug substance, we think would make the disease better. At that point, that research finding might lie fallow unless it's picked up by, you know, a startup company or a pharmaceutical or biotech partner.

There's a random walk between knowledge being generated and it being taken up by the private sector – I know, I was in the private sector for eight years. I was on the other side of the table. We knew how to take research findings and turn them into drugs but we didn't know which ones to focus on. The academics know which ones to focus on but don't know how to take that next step, and the next step is to make a drug prototype.

In engineering, you have an idea about, you know, you're an aeronautic engineer, you have an idea about how to make a better wing, you'd make a prototype. In the case of drugs, making prototypes is something that every company knows how to do and does, but academia doesn't. What we've done at Stanford is to put in the infrastructure to enable our faculty on a competitive basis to go from theory to drug prototype. Why? Because at that point the private sector can assess the opportunity much better than if it's just a theory.

So we think we can sort of help with the valley of death. That's the first step in the valley of death – going from idea to prototype to actual drug substance. And it's not done effectively by having the academics pitch ideas and the private sector hearing them. Drug prototypes are a great step to grease the wheels – if you will – of the translational enterprise. And you can apply that concept to all these different fields, not just medicine. That's the accelerator model so we're very keen on that.

The other part of being a purposeful university is centering values. That's putting ethics at the heart of our research, ethics at the center of our teaching. And we've instituted reforms just this last summer to put civic, liberal and global education to the curriculum for all of our students at Stanford and also through a focus on diversity, equity and inclusion in all that we do.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: We'll get back maybe to the diversity and inclusion, but as you speak of your accelerator model, would you have any advice for the incoming administration as to how they might reduce barriers to innovation or accelerate the impact of R&D?

MARC TESSIER-LAVIGNE: Excellent question also. I will confess, I am concerned about our competitiveness as a country. You know the U.S. has been the major, the leader in research and innovation. Universities historically have been one of the primary

drivers of that innovation. We are still the largest investor in R&D but others are catching up. China, of course, is making huge investments there as well and we are being surpassed. We know that the economic might of our country is based on our preeminence in research and development and quite honestly we've under-invested while others are making bigger investments.

I think this is well recognized. This is not a surprise to anyone who is on this call. The American Academy of Arts and Sciences last September issued a very thoughtful and important report, "The Perils of Complacency." I think the title says it all. And there are several elements that I think everybody recognizes. We have to first reinvigorate federal investment in R&D. Currently, it's about 2.7% of GDP. The Academy called for a 10% increase over the next five years and a 10% increase beyond that.

In doing that, we have to be strategic. Of course, investing in breakthrough areas like quantum computing, artificial intelligence, advanced manufacturing are key. My own view also is that we need an overhaul of our research infrastructure. Much of it is not up to the demands of today's world-class research in areas of computation, instrumentation, imaging, fabrication, characterization of materials, synthesis and the like. And there's a little bit too much distribution.

One of the great things about universities is we're a great place to bring in individuals so

they can develop their best ideas, but often that doesn't generate the economies of scale that you need to really make deep progress. And one way to, one possibility is to leverage the national lab system currently run by the Department of Energy. It's a superb system.

At Stanford, we have one of the national labs, the Stanford Linear Accelerator. And those, I mean, can be, are already but could be made into even more powerful hubs that could make available to our researchers all of those technologies in a more systematic way with the economies of scale that are necessary so that they can access those tools without each individual or each university having to reinvent the wheel every time. So I think a focus on increasing investment in key areas but also in research infrastructure.

We can't neglect basic research. We all know that it's unpredictable where the greatest advances will come from. We have to continue to advance knowledge across a broad front. And, as has been said, in a predictable way applications will occur, but it's unpredictable where they will occur.

The best example of that in recent years, of course, is CRISPR. I assume everybody on this call knows about this. There was a scientist investigating the immune system of bacteria, of all things, who discovered this system and realized that it could be applied

to human medicine. It's one of the most powerful tools being deployed today in human medicine and it's made its way into the private sector of course and just galloping at this point, tackling poorly treated diseases. So the Academy actually calls for increasing basic research funding from .2% of GDP to .3% over a 10-year period. I believe that those are appropriate steps as well. So there's a very well-characterized path. I hope the administration will listen to that.

There are other barriers. There are policies and practices, some at the federal level, some at the level of universities that we really have to tackle. Intellectual property protections are important, but it's important that they and how they're deployed don't get in the way of university-industry partnerships. We have to keep the U.S. an attractive place for top talent, which also is a big issue and where there's much work to do. And, of course, beyond the university system and the private sector partners, the K-12 education system needs deep attention. Measures to prepare our students better and to attract more of them into STEM fields are going to be important.

All of those, so there's no one lever to pull. There's no magic bullet. You have to work across the front and we, as a university, want to do our part to help with access and opportunity for students to help in both, helping with fundamental research but also accelerating its application as well. And we look forward to working with government agencies to help advance that agenda.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: I wonder if you might expand on the talent question because it's not only attracting but it's also retaining talent and you probably are advocating some relaxation of some immigration measures.

MARC TESSIER-LAVIGNE: Yes. No, that's a, thank you for that, as a foreign national who came to this country. After I finished my PhD for postdoctoral work and then stayed and now I'm a U.S. citizen, I feel very passionate about this issue. The U.S. has benefitted so much from attracting the world's best and brightest to take part, both in our fundamental research enterprise and of course in the application of that. You know, you know just to remind us, in 2019, of the eight Americans who were awarded the Nobel Prize, half of them were foreign-born. We all know the statistics that half of private companies valued at over a billion dollars in the U.S. have an immigrant founder. Forty-five percent of Fortune 500 companies were founded by immigrants or their children. It's essential that we continue to be a beacon for those who want to come here and contribute to our research enterprise.

There have been, of course, concerns expressed, some of them especially have almost a fever pitch in recent years – concerns about national security, about intellectual property protection and the possible theft of intellectual property. Those are real legitimate concerns. There are documented cases of abuses. We have to take them very seriously. What we have to do, though, when we tackle them is not kill the goose

that laid the golden egg.

We believe and we've interfaced with federal authorities on this. You know the best approach for us to do is to really reinforce our policies on disclosure, disclosure of activities, disclosure of financial arrangements. We have to be clear in our country on what policies should be that will balance appropriately openness and research that's necessary for the vibrancy of the research enterprise, while attending to those concerns. We don't have a consensus in our country right now.

We have to avoid vilifying people based on their country of origin or their heritage, some of which we've seen especially in recent years. Some policies that were put in place in the last few years, I believe, have been misguided around visas, certain types of restrictions. I think we have to get to a much more balanced place. Again, we have to take the issue seriously, but we have to make sure that we preserve the openness and competitiveness of the U.S. system.

Remember that all research that's done in universities is destined to be, well, certainly at our university, is destined to be published. We don't do any classified research. A lot of the classified research is, in fact, done in national labs and the like. And so it's not a question of whether the research will become public, it's just a question of when. That doesn't mean we should neglect the importance of intellectual property protections and

other types of protections, but we have to do it in a thoughtful way.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: So you mentioned collaboration and tying into this international or more global perspective, how does Stanford collaborate with universities, centers, research institutes and so on around the world? You have an extensive network, and I wonder if you might elaborate on these new forms of collaboration that have emerged in recent years.

MARC TESSIER-LAVIGNE: Yes, so much science today is collaborative. There are many, most scientific problems, and I'm talking about science broadly read of course, the natural sciences and engineering but also the social sciences and other, require insights from multiple fields coming together. It's rarer and rarer for a problem, whether it's in biology or in physics or in engineering or even in economics, that a single individual has all of the know-how to tackle it.

So collaboration is a way of life in general and some of the best collaborators are abroad. Some of the best science is being done abroad. Some tools are only available abroad. You know, our physicists go to CERN to do some of their experiments. So there is, maintaining those global interactions, well, collaborative interactions both in our country, but also with the experts abroad, are an important part of advancing knowledge and making knowledge available to tackle the world's problems and for economic

benefit.

We engage systematically with others. We facilitate for our faculty members the interactions they wish to have. As we were discussing a minute ago, we have to do it with all the appropriate protections – disclosures and protections – to make sure that the research is done in appropriate ways and that we not create problems and issues as we go along.

We don't, actually Stanford does not, some universities have campuses abroad, we don't have that. We do have some outposts in various countries that are primarily for educational purposes. Our students can have exposure to an experience abroad, living in Europe or Asia or Africa for a period of time. But most of our collaborations are done at the level of individual faculty members, sometimes at the level of research centers in a bilateral way or multilateral way with deep engagement of our Dean of Research to really, again, facilitate the interaction and make sure that we button-down all of the considerations around intellectual property, security and others.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: You mentioned the social sciences and Stanford is often thought of in terms of science or startups. You, yourself, when you went to Oxford and studied philosophy, and you said that that had a huge impact on your thinking as a scientist. Talk to us about the liberal arts program at Stanford and

why you think liberal arts is so important as an academic field for scientists as well as for social scientists.

MARC TESSIER-LAVIGNE: So we're very devoted to the liberal arts. And I will say that it's a time in our country where we're seeing more and more institutions take a vocational bent, actually de-prioritizing a broad liberal education, focusing in a narrow technical way. And we actually believe that this is misguided at the undergraduate level and here's the reason.

If we want to prepare our students to be successful in life after they leave Stanford, yes it is important for them to acquire a skill and deep domain knowledge. But what's even more important actually is that they be prepared for a lifetime of change. We know – our statistics show it – that for most of our graduates, the vast majority, their first job will not be their first job for long. Over a period of ten years, they will change jobs multiple times, on average over three or four times. And in addition to them sampling things, the field is constantly changing. New fields emerge, new types of industries, new types of opportunities and opportunities for partnerships.

So we think it's as important, perhaps even more important, for our students to be prepared for a lifetime of change and the best way to do that is actually to give them a broad exposure to a variety of fields. We also believe that we have a responsibility to

prepare them to be, not just good technically – if you will – or domain experts in one field, but that they be prepared to be engaged citizens.

And so that's why our faculty just this past summer, in fact, voted to create a new requirement in civic, liberal and global education for all first-year undergraduates. They also – I might add – voted to put a cap on the number of units that can be required in any major to prevent, you know, departments with their majors have a lot of autonomy in setting the limits and some of them would just fill them up with more and more advanced courses in the area, and we think that's a detriment to our students' education. We need to leave space for them to explore. That exploration will pay back many dividends in subsequent years when they think about changing fields, when they learn of new opportunities.

So we actually believe that in the 21st century with such a fluid and dynamic job market and the creation of new industries and opportunities and the demise of others, that the liberal is actually the vocational, that a liberal education in many ways is the best education if you are thinking of it from a vocational point of view.

So, just one last point there, people will say, well, gosh, if you're doing that, how do you know that they'll have enough technical expertise if they want to go into a field of engineering or something like that? First of all, the students will still get, you know, deep

domain expertise. Secondly, what we've seen among the younger generation is that most of them stay on for additional training. So 30% of our students will do what we call a coterminous, a master's degree in one year, 40% in engineering. There's no need to load them up in their undergraduate years with all of those advanced courses. Most of them who want to go into a technical field will either do one of those coterminous or go off to do a PhD or some other advanced degree as well. So we think it's essential to provide the opportunity for a liberal education and the two curricula reforms we've just enacted over the past year really aim at that.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: That exploration is certainly enriched by the more diverse faculty and more diverse student body, and you referred to that a little earlier. What have you done most recently to increase diversity, racial diversity, gender diversity, thought diversity on campus?

MARC TESSIER-LAVIGNE: That's a great question, Marie-Josée. It's been something that we and my predecessors have been very focused on and so let me give you a snapshot. We had a big focus over the past 15 years in increasing diversity, first of our undergraduate population, let me say a few words about that. We've been very intentional about reaching out, trying to get people to apply to Stanford. We've focused very hard on access and affordability to make Stanford available.

Currently, if your family earns less than \$150,000 a year, tuition is free at Stanford. If it earns less than \$70,000 a year, they have free tuition fees and room and board. So that for low and middle-income families, the net price after financial aid, all in, is \$4,000, which it turns out makes us the least expensive four-year college experience for domestic students in the U.S., less than any state university for example.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: Would that represent a large share of your student body or a very tiny share?

MARC TESSIER-LAVIGNE: So let me get to that. So one of the things that we've done with this is we've, over the past decade we've been able to increase racial and ethnic diversity so actually the makeup of our undergraduate body very much reflects that of our country as a whole. We've had less success so far in socioeconomic diversity. That's really the next step for us where we have people from higher income brackets are over-represented and those from lower income brackets are under-represented.

We've been focused on this. We've been analyzing it. There are several issues. Students from poor backgrounds don't know about us. If they know about us, they don't know, they think, well, I couldn't make it into Stanford. They're wrong. They think, well, if I could make it in, I can't afford it. They're wrong, because of our financial aid. We have to help them know about us and know about that.

We also find many students from those backgrounds actually have family constraints that make them not want to leave, go very far from where they live. They might be helping to support their parents or their families for example. That's not something that we can easily address but certainly the first three are areas where we're making a big push right now. We see the next step for us to really make a difference in terms of the socioeconomic makeup of our undergraduate student body, including, you know, kids from rural areas who are under-represented as well at the university.

At the graduate level, it's more complicated. We've had less success so far in diversifying. And part of that is, I think everybody knows about the pipeline issues. You have to get people into, first, you have to attract them to graduate school. You have to get them through graduate school and support them to go beyond that and we see that at the level of the professoriate.

We've had tremendous success – I would say – not fast enough, but very encouraging in gender diversity at the faculty level. Fifty percent of our faculty hires currently are women. It takes a long time to turn over a professoriate, you know, 30 years or so. So currently, 20% to 30% of the faculty are women, but if you look over the past many years, it's been 50% in terms of hiring. Less success again with under-represented minorities. It's an area of focus. And we're doing our part also in trying to attract them to graduate school and having programs to support them through graduate school and

encourage them, for those who want to, to consider going into academia.

All of those programs have been in place for some years now. That's part of our strategic planning. We've had a very strong focus on diversity, equity and inclusion at the university, not just in terms of the diversity of our student body, our faculty, our staff, but also in making sure the university is an inclusive and equitable place.

The events over the last year, the tragic killings, the many acts of racial injustice that have triggered this call for a reckoning with racial injustice, for advancing racial justice in our country of course, have marked us as well as the rest of the country, so it's added additional urgency to programs that were already in place and have pushed us to create a number of additional programs, a faculty cluster hire for ten scholars who are leaders in the study of race in America, for example, on the academic side.

We have a community board that we put together of faculty and staff and students working together with our Department of Public Safety on policing practices on campus. We've created a Black Community Council to advise us on our racial justice initiatives and to hold us accountable for them and monitor progress, and, of course, training and education programs for faculty, students and staff.

Some of those things were present, I'd say, in embryonic stages, a year ago. I think the

events of the last year have just kicked us into high gear as it has, I think, everybody around the country. We have to seize this moment to make changes that we know are necessary and so that's what we've been trying to do.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: What about diversity of thought? I mean we all hear about the cancel culture and the turmoil on campus with different speakers. And you, yourself, have written on the whole issue of freedom of speech and inclusion. So I wonder what you would, how you might comment on this tension within the cancel culture and the freedom of inquiry, freedom of speech and how you're handling that at Stanford.

MARC TESSIER-LAVIGNE: It's a very important issue and one, as you say, that's been very much in the news. I'd start by saying that freedom of inquiry and free expression of ideas are really central to the academic life of a university. In research, they support our scholars in their search for the truth. Often searching for the truth requires you to consider alternative views, sometimes views that might seem suspect or a little crazy or objectionable in some ways. We all know that there's many examples.

In education, I talked about what's essential for our students to prosper in life and one of the things is that all of our students have to be prepared for a society in which active citizenship and meaningful work require engaging with a broad diversity of individuals,

of ideas and arguments. And so, that's why freedom of speech is so important at the university. It's enshrined in our statement on academic freedom that encourages the widest range of viewpoints on campus and the phrase that's used in that statement is that they should be free from institutional orthodoxy and from internal or external coercion. So we think that's essential for our functioning as a university.

At the same time, we are committed to fostering an inclusive campus culture in which all community members feel they belong. I think our strength as a university depends on that diversity and discussion should benefit from the entire range of perspectives on campus. The tension arises – you talked about a tension, Marie-Josée – when people say, well, your expression of your ideas offends me or makes me feel unsafe.

We actually believe that rather than being in opposition, that free expression and inclusion are actually essential parts of the same whole, that you can't truly be inclusive unless you are inclusive of the viewpoints of others. So how do you square the circle? How do you put those two together? One thing we can't do is mandate respectful speech and dialogue. The First Amendment governs people's expressions and in California there's a law called the Leonard Law that means that we can't discipline students for expressing views that are protected by the First Amendment.

So we can't mandate respectful engagement, but we can model it. As a university, we

can try to establish a norm where respectful speech is encouraged. We can work to ensure that a diversity of views is not just a possibility but a reality on campus. At Stanford, we're fortunate to have faculty with a broad range of views, both in our academic departments and also in our various institutes. You can see in the background here, the tower of the Hoover Institute that is on one end of the political spectrum, and we have other institutes that are in other places on the political spectrum. Encouraging respectful dialogue, teaching our students that you can disagree without being disagreeable, we think, is very important. We've tried to take a number of steps to encouraging that. We found that doing it from the top down, for example organizing debates where people with different views come to disagree without being disagreeable is not as effective as when the students do it themselves. The students know better what they are interested in so I've been very heartened by groups like Stanford in Government and others on our campus that have been organizing debates where they try to bring people together with different views to model respectful discourse. Often hard-hitting, often pointed, and the students learn a huge amount from those kinds of interactions.

In one of our top-down efforts, we did have one big success – I'll just mention it – a debate that we organized between Peter Thiel and Reid Hoffman, both successful entrepreneurs, very different political views, good friends from their undergraduate days at Stanford. And I'd say an important moment for our students during the Q&A period

was when one of the students said, well, you two have such different views, how can you be friends? And the answer, they both gave the same answer, I believe Peter started, or maybe Reid, and said essentially, well, I met this person when I was an undergraduate and I thought this is a really smart person who has very different views, I want to understand why. And in that moment, I think our students probably learned more than they did in probably any other class or interaction they'd had in their four years on campus.

So I think modeling that kind of respectful disagreement is very important for our campus. I will say, though, that, you know, there are two additional things. One, we support the rights of our members to protest peacefully against opinions with which they disagree, and also the concern that people feel about the speech of others is often very real. We have to acknowledge that. We have to support those who are negatively affected by speech, but we can't do that by suppressing speech. We do it by supporting them.

CHAIR EMERITA MARIE-JOSÉE KRAVIS: Well, Marc, we've learned a great deal from you today, and I thank you for taking the time. And we could go on and on but unfortunately we've run out of time and I have to turn the microphone to John Williams. But thank you so much for being so candid and so insightful and so inspiring. And good luck with your accelerator. Thank you.

MARC TESSIER-LAVIGNE: Thank you, Marie-Josée, and thank you again for the opportunity to be here today.

CHAIRMAN JOHN C. WILLIAMS: Well, let me add my thanks to both Marc and Marie-Josée. This has been a fascinating, insightful discussion on a lot of really important issues. And I do appreciate looking back, at the backdrop, Marc, of Stanford. It does remind me of my time at Stanford. And, yes, the grass is greener and the sky is bluer there, as I remember. And I also appreciate the connections that you both drew between education, R&D innovation, and the economic growth and prosperity and the close connections between, you know, the high importance of education in an innovative society in terms of drivers of economic growth. I think those were really important points. And also the value of a liberal arts education, which again I agree, is very important for us.

So let me, we have to turn to the final part of this program which is talking about all the speakers we have lined up. As always, we've got quite a few of them. So first of all, tomorrow we're going to have a Member Only Conversation on the 2020 Racial Equity Report. Then we're going to kind of virtually fly back to the West Coast. On March 2, we've got Mary Daly, the President and CEO of the San Francisco Fed. Then on March 11, we have a really special event. We've got Citi CEO Jane Fraser and GM CEO Mary Barra as well as the Managing Director of the Women's Forum for the Economy and

Society, Chiara Corazza and more joining us as part of the Women in Business Conference. Then on March 23, we have Ken Langone of Home Depot. We have, back to the Fed, on March 25, we have Raphael Bostic, the President and CEO of the Federal Reserve Bank of Atlanta. On March 30, we have Caryn Seidman-Becker of CLEAR. And then on April 7, looking ahead into April, into spring, where hopefully we'll have better weather by then, we'll have Tal Zaks, the Chief Medical Officer of Moderna. And then on April 8, we have Neel Kashkari, the President and CEO of the Federal Reserve Bank of Minneapolis.

And as I say at every one of these meetings, we've got a lot more things scheduled for coming months. So please look at the website and watch your emails and look forward to those. Finally, I'd like to take a moment to recognize those of our 324 members of the Centennial Society joining us today as their contributions continue to be the financial backbone of support for the Club and help enable us to offer our wonderful, diverse programming both now and in the future. So thank you again. Please stay healthy and safe.