

Leslie Ungerleider is interviewed by Aina Puce

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SPEAKERS

Leslie Ungerleider, Aina Puce

Aina Puce 00:00

Well welcome everybody to our up close and personal session with Dr. Leslie ungerleider, our glass brain award winner for HB m in 2020. And before I introduce Dr. ungerleider, to you, let me just give you a little bit of a very short synopsis of her career, just to give people who who might know her that well, a chance to appreciate the some of the things that she's achieved in her career. So to start off with, she got her BA in psychology from the State University of New York, and follow that up with a PhD in experimental psychology from New York University. She then cross the country to join Dr. Carl pregnane program at Stanford University, where she began her work on higher order perceptual mechanisms in the cortex of primates, which, of course, she is very well known for. Again, there was another cross country move over to the NIMH in DC, into the lab of Dr. Morton and Michigan, into his into the lab of neuro psychology. And she has stayed at the NIH for all this time. But notably, at that time, she was able to, with Dr. Michigan, outline their theory of the two visual systems, the dorsal and ventral system, which of course, has had a tremendous influence in the field. And, and I was a graduate student when this paper first came out, I remember reading about it, and it certainly influenced my research studies as well. And so, now, Dr. ungerleider is, is a chief of the Laboratory of brain and cognition. And she became an NIH distinguished investigator in 2008. And she's received many, many awards and honors, being like the women in neuroscience, Lifetime Achievement Award in 2001, the William James fellow award in 2010, the Andrew Carnegie prize in mind and brain science in 2013, and, of course, our own lhb in Glasgow brain award this year. She, notably in 2000, was elected to both the National Academy of Sciences and the American Academy of Arts and Sciences. And then the following year in 2001, she was elected into the National Academy of Medicine. So welcome, Dr. ungerleider. It's a pleasure to have you here today. Thank you, thank you for that very kind introduction. It's just great to be here with you, albeit virtually. Yes, well, it's strange, isn't it? We're supposed to be having a fireside chat. And there's no fire. And it's not just the two of us, who knows how many people are going to be listening to this. So it's a bit of a bizarre kind of situation we find ourselves in today. But I'm looking forward to chatting with you over the next the next hour. And I was thinking that I was thinking about how might we start the conversation. And I've kind of it would be nice if we could sort of walk from the past to the present to the future. And just to hear about about your impressions. And so in the past. You of course were one of the initiators of our HB M. And and you attended the meetings that Peter Fox organized in the 1980s and 90s, on on brain human brain mapping. And that's where the the

seed for the human brain mapping babies were generated. So and those workshops seeded the first and second meetings of our HBM. Center. How did you originally see Oh, HP in developing?

Leslie Ungerleider 04:04

Well, initially, I didn't foresee it at all. We were going down to San Antonio each year, every December, people would invite many of us who are worthy in the field of brain human brain mapping. We came from the field. We started with pet Positron Emission Tomography. And we get together each year and share ideas, share our latest findings with our colleagues who are similarly doing pet studies. And so for example, from San Antonio was Peter Fox, Helen neighbor who is with Peter at the time from UCLA, John Mazziotta, Art Toga from NIH myself. Jim Haxby Cheryl Grady from Montreal, Alan Evans, Keith Worsley, from Washu Steve Petersen, Mark Racihe . And of course, the London group Karl Friston, Richard Fracowiak and others, Cathy Price and others. And of course, that was even before the FIL was started at Queen Square. That was a time when they were still at Hammersmith. And so we would all get together and present our findings to each other. And it really became like in a community, a community of brain images. But it was an odd time, because fMRI was suddenly emerging on the field as this new technology. And all the groups were embracing fMRI one embracing this technology. I know at NIH, we heard about these guys, located in a place called the NMR. Center. We're putting people in magnets, and who are collecting all this called bold signals, blood oxygenation level dependent signals. What was that about? And we want those down there one day. And there was Jimmy Levy on was with the Department of Radiology, Bob Turner, and his poster, he just heard, we're in the Heart, Lung and Blood Institute, putting people in magnets and measuring these bold signals. Well, like everyone else, we were quick to jump on this new technology quick to jump on the bandwagon. As I said, emerging from these meetings down in San Antonio, was a sense that there was an emerging community in which we share ideas, and share data with each other. And I believe it was at a society for neuroscience annual meeting in New Orleans, that we all got together and formulated this idea of having an organization and an annual meeting. And that set the stage for the structure of this organization. Who would be the officers? What would constitute the council. Of course, there was no organization, it was just the germ of the idea of having an organization. And then Bernard Matvey, who was at this meeting, volunteered to host our first annual meeting, which was held in Paris. And it was a resounding, resounding success. Nearly 500 people attended that first meeting. I mean, of course, you know, it's grown now, there are typically 3000, or more attending, but still, at that time. 500 was an enormous success. But I do recall, this huge fight that broke out at the business meeting that year. Fox, on the one hand, arguing vehemently that we had to be the Society for human brain mapping, and Richard Cobia, arguing equally vehemently, that no, we had to be the organization for human brain mapping. Well, you know, I never quite didn't understand what was that argument about? What was the big difference? But then Richard, said, Look, if we're society, we had to have an official society journal. And then I knew I understood the issue, because Peter Fox was the editor in chief of one of two imaging journals, human brain mapping, whereas the other imaging journal neuro image was edited by John Masyado To go, and Richard Cobia? And how could we possibly pick one journal over another? And so that was the beginning of the organization for human brain mapping.

Aina Puce 10:16

And, and it's also worthwhile noting, too that, you know, you mentioned data sharing, people think that's a new idea. You guys were thinking about this and and trying to find ways to do it. It didn't take off. But

there was certainly many practice swings. There was no standardization of in 3d of anatomy at that time. So you guys had to confront all of those problems. And one thing that's interesting now, you mentioned about the, the debate about the society in the organization, what I think is really lovely now is that we have both, we call ourselves the organization. We are a society as it as from 2016 onwards, and we now have a publishing platform online called aperture. And so you know, that's come the full circle. So it's, it's just a nice, nice bit of history that you were, of course, an integral part of. So I'm going to, I'm going to go right back to the past, right back to the early days. And I'm going to ask you, as a child, what did you want to be when you grew up?

Leslie Ungerleider 11:27

I was totally clueless. totally clueless. I knew I was very good to science. But I didn't see myself going into science. When I was in high school, for example. And when I arrived at college, in my first year, that was, it became the State University of New York at Binghamton. But at the time, it was a very small liberal arts college called Harper College. And when I arrived there, I had to pick a major. And I didn't know what what should I major when I thought, oh, psychology sounds good. Maybe I'll become a psychologist. I had no idea that Psychology at Harper College meant experimental psychology. And in fact, in my introductory psychology class, we were each given a Skinner box, and a rat. And we learned about schedules of reinforcement. And that was my lead in to experimental psychology. And of course, when I applied to graduate school, I continued in experimental psychology, there was not a field of neuroscience then.

Aina Puce 13:01

You Yeah, that's, that's interesting about the Skinner boxes and coming from Indiana University. Of course, where Skinner was, there was still some old vestiges of the building that had those little cubicles for testing the rats of the boxes. So it's, it's a really interesting piece of history. Just bring you bring you back to high school. Now, before we go further on, did you have any favorite science subjects in high school?

Leslie Ungerleider 13:31

Probably biology, I was always always attracted to biology.

Aina Puce 13:38

Well, that that makes a lot of sense, given the way your career has progressed. And we was your career trajectory of re entering one or a straight one, would you say if you had to characterize it,

Leslie Ungerleider 13:55

it was mostly linear, but with a little bit of a teacher detour on the way. So when I was finishing my PhD at New York University, and my husband at the time, was finishing his internship in New York, in medicine. He then became eligible to be drafted. And that was during the time of the Vietnam War. And he picked a very bad number in the lottery system. And so he thought, Oh, how can I defer being drafted? Is there another course I could take? And so we looked into other opportunities, and found that if he enlisted in the Indian Health Care System And so two years, and that Indian healthcare system that would fulfill his military obligation. And he was offered two different positions. One in South Bluff, North Dakota, and the other in Oklahoma City, nearby an Indian health clinic. And she thought, Oh, I

cannot bring my wife to South love North Dakota, she'll never find a job there. And so off, we went to Oklahoma City. And amazingly, like miraculously someone on the faculty at hope lahoma City University was leaving to take another job. So I interviewed there, I applied for the job. And I was hired. And so I spent the next two years teaching Psychology at Oklahoma City University. Then we go halfway across the country, we had always thought we'd get back to New York. But then we thought, oh, let's continue westward. And so our next stop was Stanford University, where my husband did his residency. And I found myself in the laboratory of concrete them. And that was really an amazing experience. It was a wonderful lab. Carl's who were trained, actually, as a neurosurgeon, a human neurosurgeon, then went off to do science. And the science was looking at high level, perceptual visual mechanisms, and the monkey brain. And so while in graduate school, I had been looking at the war systems in rats, I switch fields, and started doing high level vision in monkeys. And that was the beginning of my system level, visual science career in monkeys.

Aina Puce 17:29

Well, this is a, it's nice to hear a story like this, because many people these days are struggling with dual career problems. And, and clearly you did as well at the time. And it's just about, it's beautiful to hear that in your case, it was a very fortunate ending to that. And you you had access to a wonderful opportunity that that's it set up your career in a very special way. And so that makes me feel warm and fuzzy. And I hope that those people out there who are in the process now of of going for jobs and getting training and have partners who are probably scientists, as many of us do, I hope that gives them some encouragement. It's really, really lovely. So I'm going to talk a little ask you a little bit about

18:23

your,

Aina Puce 18:25

if you had your time again, would you do anything different?

Leslie Ungerleider 18:31

You know, I look back on my career as sort of one accident after another in which at each choice point, I sort of made the right decision. So after I was finishing my postdoc, with called pre-boom at Stanford, I started thinking about going on the job market. And there were absolutely no, I would have loved to stay in California. I mean, I loved everything about it. I loved the climate, I love the culture. It was just it was, you know, a great mix of work and life. And I would have done really anything to stay there. But there was nothing no job offered there. And I really had no idea where I would wind up. But then, in 1974, I was at the Society for neuroscience, I think it was the third annual meeting in St. Louis. And I was presenting data results that I had a change in premium slab and then after the session at the end of the session, a gentle Men approached me, introduced himself as more Michigan and said, You know, we're getting very different results from yours. Why don't you join my lab and sort this out together? And I thought, oh, wow, that would be so great. So I applied for an NIH nrsa fellowship, which I got, which I was awarded. And the next year, I moved to mark Miskin slab. And I've been at the NIH, ever since it's just been really research heaven. I've just taken my science in multiple different directions, starting out doing behavioral work in monkeys with lesions, going on to do anatomy, tracing connections in the brain, doing neurophysiology recording single unit activity, and then jumping into the

field of neuro imaging. And being at NIH, one can actually do that one just doesn't have to justify reinventing oneself over and over again.

Aina Puce 21:37

That's what's so nice about the NIH, I really look to the work that you guys do at the NIH because you can take risks, and do science, high risk science that that we can't do in the extramural world. So I'm always I've always got my eyes focused on what what you're all up to at the NIH. The interesting thing that you mentioned about, you know, how you got to the NIH, it underscores how important networking is, and then you were Edison at your poster, and look what happened. And, and so many of us have been, you know, Edison, and we've ended up, you know, getting jobs out of that. And so that just underscores how important it is to attend scientific meetings. And of course, we're now we're doing this virtually. So it's going to be interesting to see how we go with looking for posters and looking at posters and integrating network interactions. It's going to be a test this year, but we can't underscore how important that is. So just um, you mentioned you have you, you've mentioned, you've done so many, so many interesting and thought provoking, and groundbreaking studies using so many methods. Do you want to talk about which one you personally found the hardest to work with?

Leslie Ungerleider 23:08

So I think doing behavioral work, doing anatomy, doing physiology, what could do on one's own, you don't need, it's not a group effort. But imaging is a group, it's a team effort. So it's not good enough just to be a cognitive neuroscientist. One needs to work with physicists. When needs to work with statisticians, computer scientists, to really move the field forward and make discoveries and get the job done. So I think in many ways, neuro imaging is the greatest challenge of all.

Aina Puce 24:06

Well, it's good to hear that because I know many of us struggle with trying to process the information and trying to understand the problems we look at and it makes me feel a bit happier if you see that you're struggling with that as well. But But I want to switch gears a little bit now and talk about role models. And and you know your role model for many people, including myself, you've been a role model, and you've helped me my career which I appreciate tremendously. Can you talk a little bit about how it was for you when you first started in science and how you went through your career with with how many women were there?

Leslie Ungerleider 24:51

Well, at the beginning of my career, there were none. I never met a woman scientists Until I entered graduate school. And even then, there were no senior women scientists. I mean, people were beginning to have an awareness to hire women into their faculty. So all the women that I met Ben, or Junu, women, untenured women. And even when I got to Stanford, the only senior women scientists I met were people in, for example, developmental psychology, or social psychology, women were simply not entering the field of neuroscience. And it was only when I arrived at the NIH, that I finally met a woman, nurse scientist, and she was packed gold mineral kids. In fact, she was at Goldman then that was before she married Pasco with cute, and she had the office right next to mine. And she really became my role model. I'm, like me, that was very small, petite woman, in a field with large towering men, like me, terribly shy. In fact, we're both kind of introverted. But what I saw in Pat was something

truly remarkable. She never turned down an invitation to speak at a meeting, to attend a workshop to be part of a symposium, whenever she could, she put herself out there, even though like me, I knew she was terrified to do it. And so what I learned from her, and what I need to convey, actually, to the young women out there is that to succeed in this business, even if it goes against the grain, put yourself out there, tell everyone what you're doing, what new discoveries you're making, tell the world about your science, share it with anyone you can.

Aina Puce 27:40

Well, that's, that's very inspiring to know. I think also the world of pet golden occasion. I remember when I was at Yale, the first time when I got there to work, I remember going to a seminar and an extremely well dressed and well qualified woman, with a beautiful set of pearls got up and asked in the most polite way, one of the most profound questions you could possibly ask of a seminar speaker. And and immediately, I thought, Oh, my goodness, who's that? And then I realized who that was. And so what what an amazing role model for you. But I think the other thing that you mentioned there, that I think should resonate, and will certainly resonates with me, and I think is a very, very critical thing for people who are doing their training to know is that, yes, we all feel uncomfortable about doing this. You and I feel uncomfortable about doing this interview, I'm happy to admit it. But in that discomfort, we have to get used to that it's almost like you have to be you have to get comfortable with being uncomfortable, isn't it?

Leslie Ungerleider 28:52

Right, right. I mean, I still get to this day, I get terrified before every lecture I give. But then sort of once it gets going.

Aina Puce 29:08

All of that anxiety and fear just washes away. That's Well, that's good to hear. That is good to hear. So let me just switch gears a little bit and about the highlights of your career because we've talked about some of the specifics. But what about the highlights? What do you find the most, that's the most precious of meaningful to you when you look back.

Leslie Ungerleider 29:36

So one major highlight was being invited to give the grass foundation lecture. It was at a meeting in Miami. I think it was in the Gleason auditorium, Jackie Gleason auditorium. And it was a long time ago. It was Actually, before PowerPoint, and I had to go down there with five duplicate sets of slides, which were loaded in to five different carousel projectors, throughout the auditorium. And then the slides were projected on to five different screens throughout the auditorium, so that everyone could see the slides, there was a terrifying talk. In fact, I rehearsed that talk several times in my hotel room, I got a carousel projector from the hotel to do that. But it was one of the greatest highlights of my career. And I think probably the most important highlight was being elected to the National Academy of Sciences. That was really special, because at the induction, my parents who are still alive, flew down from New York, and were able to join me there. And that was really, really special. I knew how proud that I had made them.

Aina Puce 31:21

Well, that's, that underscores how important our families are in our lives, and despite spending a lot of time in the lab. But I have to say, let's see, I remember that lecture that he gave, and it was impressive. And if you were scared, none of us knew it. It was an amazing lecture it is in and of course, there were 1000s of people back then as well. But the slide business, yes, that was an added degree of extra difficulty to anybody. So anyone's done mine. But just to turn to I mentioned family just now. After you come back from the labor after day, you know, you've been busy, it's hectic. What do you do? How do you unwind? And and what advice do you have for people for maintaining work life balance?

Leslie Ungerleider 32:14

I am absolutely the wrong person. I have no work life balance in my life. I really work all the time. I am sorry to say, I do I work almost most weekends, as well as during the week. So, you know, when I first arrived at NIH, Mort Mishkin said, you know, Leslie, I encourage a balance for everyone else. And I think you can have a better balance than I do. The one thing I do devote myself to is my grandson, who's now 16. And he usually visits one weekend every four to six weeks. And we spend the weekend together. And we play chess, we go out for sushi. We go swimming in the swimming pool. In my building. We go to the mall together, watch movies with movies. And so he goes skateboarding in the neighborhood here. And so I really tried to spend as much time with him as I possibly can.

Aina Puce 34:21

It's funny, I laughed when you I asked you that question about work life balance because you knowing you as well as I do. I know how passionate you are about science and so for the way I see it, when you say you work all the time, that's your passion. You know, and that's something science is something you've always adored every time you talk about, what what you're what people in your lab are doing. That's always the thing that strikes me. You have a passion for that. And so I understand why you're working all the time because you're helping them with their careers and then getting them sorted out. And that's, that's just amazing. It's amazing to see, I think,

Leslie Ungerleider 35:06

I think the greatest gift, really in life is if one can work at something want truly loves. And I think for most of us as scientists, we've been given that gift. That's what we do.

Aina Puce 35:25

Yeah. And that's great. We are fortunate to be that way. But there are, of course, there's the negative side of science as well. And so, let me let me dwell on that just for a little bit about some, you know, if you can give us a piece of advice for dealing with difficult colleagues or people in the lab based on your own experience, because that, you know, these things happen.

Leslie Ungerleider 35:51

I have to say that I have worked with some of the most wonderful, amazing colleagues at NIH, for example, there are three p eyes who had the other sections in my lab, Alex Martin, Chris Baker, Peter Bandettini. And they're all simply wonderful. I've collaborated and publish with each of them. And it's just been the most wonderful, really experience. My collaborators on the site have been equally wonderful. Julian viome, here in Montreal. I'm Marlene burrman. at Carnegie Mellon, and my long standing collaborator, Ricardo guitars, from the Federal University of Rio de Janeiro, who have

collaborated with more for more than 35 years, and they've each been just fantastic. And all of the postdocs coming through my lab, many of whom have gone on to successful careers of their own. How can he Garan Luis pessoa Sabina kassner her own now senior scientist, but I did have a single troublesome postdoc years ago who abused one of the trainees in my lab. The way I run my lab is I typically pair up a post stack doc with a post back, this post baccalaureate students have finished college and come to the lab for two years before going on to graduate school or medical school. And this postdoc, who will remain nameless, verbally abused his post back and he was he was a very entitled individual. And what I had to do was separate him from the postback and have an intermediate postdoc, so that if you wanted to communicate with the postback, it had to be through this intermediate individual. And then, of course, I couldn't tolerate the sort of behavior in the lab. And I had to ask him to leave.

Aina Puce 38:48

Well, thank you for sharing that story. I mean, you know, these these things happen, I mean, we have to work together there are good times and but there are also bad times in the lab, there are failures and things and people people take that and respond to that in different ways. And so there will be situations in labs where things don't always work out all the time. But I think it also speaks to the AED investigators ability to select people that they will be able to work comfortably with and be compatible with because we all have we have to work together on this so it's at that's kind of good to hear that you've been able to to sail through reasonably smooth waters in that regard. Okay, so let's turn towards some the future and back to the brain which I know you love. So, today when you read the literature, is there any part of the brain that you when you see being discussed you think about this looks like a still a mystery here then what what what should be What should be the work going forward?

Leslie Ungerleider 40:04

So it's always been a puzzle to me why there are certain categories selective areas, but not others. I mean, we really didn't know about category slipping areas, till neuro imaging. So for example, we knew there were face cells in the brain. But we didn't know there were face selective areas. And that came about through neural imaging. So why are certain areas represented in categories select why certain categories represented in these categories, selected areas, and not others. So for example, we can understand why there are face selective areas. I mean, faces are critical for social communication. We're very social animals. We can understand why there's a word form area. Well, there we spent protracted years learning to read and recognizing words. But why is there a body selective area? Why is there a scene selective area? I just can't figure that one out. And why aren't there other selective areas? Food, food, such an important category? There's no food selective area. So I think, for me, that is a major puzzle. I, you know, I think these areas evolve early in childhood. And, you know, maybe, if we could put a video cam, like, on the forehead of infants, and see how they see the world, we can begin to figure that one out.

Aina Puce 42:25

Yeah, that's it. That's an interesting, interesting way to tackle the problem. And I happen to have a colleague at Indiana University, almost also an academy member, Linda Smith, who actually has done exactly that. And it's amazing. The first they've put a head cam on the infant's and also on the parents as well and look to see what what are the image statistics of the scene as the infant develops? And it's,

it's astounding, the first, first six months of life, it's pretty much faces, and people moving, as you'd expect. And then the next six months, it's hands. And it's as they start to manipulate objects. And as other people do. It's amazing. So that that could be that could play a role with that, perhaps.

Leslie Ungerleider 43:25

Actually, that's so interesting, because Charlie gross at Princeton, before he discovered face cells, had cells. Mm hmm.

Aina Puce 43:39

And the and I remember him telling me and true Allison the story at a neuroscience meeting, about the fact that he was ridiculed for reporting those results or the face work. And I don't know if you were president at that neuroscience meeting, where he was some, you know, ridiculed for that. And of course, it can't possibly be true. For years

Leslie Ungerleider 44:03

after people try to say, no, it's all low level stuff. There are no face cells. And then in the end, is that Oh, yeah, well, I guess they self

Aina Puce 44:17

Yeah, cuz he was very happy when we found them in him. And so I remember that he came up to us. And it's funny that you know, you're funny, you're talking about faces and emotion and, and emotions and things and identity and things like that. Because it's honestly, this conversation. Where as enjoyable as it is, is totally bizarre, because I can't look at you properly because if I look at my camera, as I'm doing now, I'm not seeing you. I'm not seeing your responses. And yet when I look at you, the people who are viewing us can't see your cat Look at me. So it's it's kind of an ironic situation that we find ourselves in today. I get okay.

Leslie Ungerleider 45:00

Go ahead is exhausting. At the end of every zoom meeting. From the way we need to interact, communicate with each other. Yeah,

Aina Puce 45:12

yeah. And that's why I watch BM, this virtual HBM is going online for two weeks. And we've kind of keeping things to the half day because it is so exhausting. And even after two weeks, we'll probably be exhausted. But it is what it is. All right. Well, let me ask you a couple of things about the future. Now. What do you see as the big game changer in systems in cognitive neuroscience over the next 10 years,

Leslie Ungerleider 45:44

I think it's going to be the technology that moves us forward. When I in my first fMRI study, which I did with my postdoc Avi Karni, together with Bob Turner and Pete Jezzard we collected, of course, it was a block design. And we collected for sagittal slices through the motor cortex, as subjects were performing finger to thumb opposition movements, for sagittal slices. There was a workshop shortly thereafter. And I remember, it was a small workshop. And I remember over lunch, Alan Evans saying, you know, by the end of the year, we're gonna have whole brain imaging. I was just incredulous that that would happen.

Well, in four or five months, there, we were, whole brain imaging. And then of course, there was event related fMRI, functional connectivity, resting state connectivity. Who would have thought five years ago, there would be anything like laminar specific fMRI. But with greater field strength, high resolution, here we are now, it's the hardest thing. We can actually look at images. And know whether it's a feedback, or a feed forward, projection activation. So I don't know what the new technology will be. But it will be technology that moves this field forward.

Aina Puce 47:57

Yeah, and that certainly, I agree with that, too. And thinking about in the neurophysiology field on that part of neuro imaging with with room temperature imaging. Now, that is absolutely amazing.

Leslie Ungerleider 48:12

That's

Aina Puce 48:14

that's something that hasn't existed before. And that's going to be brief. It's going to be made that make everything more accessible to people as well. And that's one of the other important things about doing science, of course, for sure, for sure. So, about doing science in the future. What what, let's talk about the ideal human brain matter what kind of skill set do they need.

Leslie Ungerleider 48:42

There won't be an ideal skill set. Like now, it will always be a team effort. It will always be a team of cognitive scientists, neuro scientists, computer scientists, physicists, statisticians, one can do human imaging. Without all those people in place. You need a neuron anatomist in place, you cannot have expertise. In all of those things. It will have to be a team of experts who come together to do collaborative science. That's where the field is going.

Aina Puce 49:41

And that also poses challenges doesn't it because one has to be able to work with others. One needs to be able to understand the position of other people. There are cultural differences. We all collaborate with people all around the world and and just Making sense of what that individual means. And that's a very, very important component of this. And that's why I'm making mention this virtual interaction that we're having, because that's kind of a impoverished means of communication in a way. And I'm not there to, but when I'm on on these zoom meetings, I'm exaggerating my facial reaction. So people hopefully get some sort of amplification of what I'm thinking. And that's, I think it's going to be hard, isn't it in the future, if we keep doing this online stuff? I think

Leslie Ungerleider 50:39

this whole pandemic thing has been really a disaster. I think, especially for the junior people, the postdocs in the lab, and even graduate students who have had data collection interrupted, I have a graduate student in my own lab, who spaces work was interrupted and collect data anymore. No, we're not scanning subjects. And everyone, I mean, one postdoc said, you know, there are just so many ways, you can re analyze the same dataset. People have really been sent back. But I mean, the one saving grace is that it's affected everyone. Everyone's been in the same boat.

Aina Puce 51:34

And, of course, we also have a lot of shared data resources. Now the Human Connectome Project ABCD study, UK Biobank, there's a mega m, Eg artifacts, database, excuse me. So that is, gives people hope, at least, that they've got some data that they can learn and do new things with. So that's at least that's one positive thing that we can be doing. So let me let me ask you a question about these challenges that, you know, we have in the future, what about female scientists? And, and and what sort of challenges do you see for them? Right now that didn't exist when you trained for instance?

Leslie Ungerleider 52:24

I think things are much better. For our junior scientists much better. I think. There's the recognition in universities to hire equal proportions of women as men. I think there's a recognition in universities, certainly here at NIH, that if your tenure track and a woman and you become pregnant, the clock stops ticking, you can take a year off to have a child. And so I think there's more of an opportunity for women to move up into leadership positions. At NIMH, our scientific director, is a woman Susan Amara, we just hired a new scientific director at ni NDS, another woman, Lorna role, and so I think they're more and more opportunities for women. The one thing that disappoints me is when Junior women come to me and say, and this has happened in my lab, I say, I don't think I can do what you do. I don't think I can run a lab. I just have to say, you can. You can, you can do it. But many of them out to become support staff, and other people flubs and others simply drop out, go off with their husbands who get academic positions, and then stay home. The women stay home to raise families because they think they can't do it all. And I keep telling them, you can do it all. It is possible to do it all.

Aina Puce 54:53

So there are a lot of a lot of challenges still in universities. Certainly When you look at the ratios of when we're talking about specifically men and women, there, they still are, there's a lot of work still to do. So we can't take our foot off the gas pedal, we've got to keep, keep helping people to be able to realize their full career potential. I think that's really what you're talking about here. You're You're, you're trying to get people to realize their full career potential. And that's how,

Leslie Ungerleider 55:31

and even at NIH today, there are just a handful of women lab cheese. And just a handful of women tenure track investigators. xo. Yeah, we're not there yet. For sure.

Aina Puce 55:50

Okay. Okay. Well, that's, that's good to hear that you think that way. But let's, let's turn back to the O h. VM, we started with the history of the O h VM. And let's talk about the future of the H VM. And what what some recommendations do you have for the future growth and success of a witch be in the society that we have now?

Leslie Ungerleider 56:20

Well, one thing that I like, is that we haven't grown too big, it is so nice to simply to still go to a meeting, where one can meet colleagues interact with friends, and so it's manageable enough. So it still feels

like a small meeting. I mean, even though it's grown enormously. So which has become completely unmanageable. So I do like the idea that we've managed to stay sort of intimate and small.

Aina Puce 57:17

Yeah, it's interesting to hear that perspective, I share that perspective. And but people who come to hpm the first time it's over with so but but you know, the meeting lots of new people, it's a very interactive environment. And you know, there are many, many things are changing now. And we hope that this is the society will be prospered, Live long and prosper. And it's, it has a publishing platform now and, and the Open Science arm of it is flourishing and growing. I personally, as some people have seen me tweet on social media, love, the brain art exhibit that we have every year, that's my personal highlight. I love walking around the artworks and seeing those. So there's a lot of growth and there are a lot of good people on our committees, the committee structure now, Leslie, since you're on Council, is really it's it's a monster, because people are involved in so many activities, and there are chapters elsewhere around the world. And it's it's a, it's an amazing thing to be part of that. And I'm just really happy to be part of it, and happy to help out with it. And I'm even happier that we're able to chat today. It's been an absolute pleasure. And it's nice to see you again, all be virtually. So thank you, thank you, thank you for sharing, you know, aspects of your life with us. And people will really, really appreciate that and like to hear how you've made it to where you are today. So thank you again, for your time today.

Leslie Ungerleider 59:04

Thank you so much. It's been a great pleasure chatting with you. And I wish everyone out there. Fantastic meeting.

Aina Puce 59:15

Thank you, Leslie.

Leslie Ungerleider 59:16

Maybe in person.

Aina Puce 59:19

Let's hope so. Let's hope so let's hope next year we can all be in Seoul and in South Korea. All right, then. Thank you.

Leslie Ungerleider 59:27

Bye now. Bye bye.