

Emmanuelle Waubant, MD, PhD

UCSF Professor of Neurology

President of ACTRIMS

Interviewed by

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Rosenberg Ach Family Endowed Professorship in Neuroimmunology

Janet Jue, Pediatric Research Coordinator: Today is Wednesday, February 5th and I am Janet Jue, recording an interview with Dr. Emmanuelle Waubant for the Great Women in Neurology series. We'll start off with, when did you start your career at UCSF? and before UCSF, what did you do?

Emmanuelle Waubant: I started as a faculty at UCSF in 2001. But prior to being a faculty, I had two postdoctoral fellowships. One was in 1993 for a year and a half in the lab, and the other one was in 1996 until 1999 to do clinical research. And that's when the MS Clinic actually was started. I was the first fellow at the MS Clinic, which was, you know, at Mount Zion. So it was very different, and before moving to UCSF as a faculty, I was an assistant professor at Pitié Salpêtrière Hospital prior to 2001 when I started in at UCSF.

Janet Jue: That's awesome. What research were you doing? At your lab and from '93 to '96.

Emmanuelle Waubant: So when I was in the wet lab, I looked at the role of enzymes that are involved in migration of lymphocytes through the equivalent of blood brain barriers. So it was mostly matrix metalloproteinases (MMPs) and their natural inhibitors, and how some of the drugs that had just hit the market at that time, which were interferons, were modulating the migration of these lymphocytes because of their effect on the expression of MMPs and natural inhibitors (TIMPs). Then, when I did clinical research, I trained learning clinical trials and also looking at the relationship between the matrix metalloproteinases and their natural inhibitors, that I had studied in the wet lab, and how they related to disease activity in patients with MS who were in a clinical trial. I was also helping doing some neuro testing (EDSS) for some trials as any good old fellows at the MS Center. I even did some MRIs at the VA. I was pushing the gadolinium for patients on Saturday mornings, so it was a range of different things.

Janet Jue: That's so cool. That's awesome. Tell me about your work. What do most people know about you?

Emmanuelle Waubant: In addition to providing care for adult and pediatric patients at the MS Clinics at UCSF, I also lead clinical research with two main directions. First, I run clinical trials in patients with MS, and soon, probably MOG-associated disease. And I have a current trial that is a trial of neuroprotection in progressive MS with an award from the Department of Defense. The second direction of my research is epidemiology focused on environmental risk factors associated with MS. First, you know susceptibility to MS, but also how they may be associated with more active disease course, and also how these environmental risk factors interact with genes to modulate

the risk. And then we have started with Dr Akash Virupakshaiah to develop projects in MOG-associated disease.

Janet Jue: That's great. What is something that you do at work that most people might *not* know about?

Emmanuelle Waubant: That people might not know about? That's an interesting question. I think that... I will say that I've been President of ACTRIMS, which is the North American Committee on Research and treatment in Multiple Sclerosis. And this is just a kind of leadership/organizational work. And as of early March 2025, I have become the first woman president of that association.

Janet Jue: That's awesome! Congratulations. What accomplishment are you most proud of?

Emmanuelle Waubant: This is a tricky question, because initially, I thought, well, research. And then I was like, no, I think maybe there's other things I can bring in, especially with the scope of this discussion, and I have to say that, recognizing the challenges for women and minorities in developing a career, not only in neurology or in the world of multiple sclerosis. I have created an international group in 2018 that we named International Women in MS (iWiMS). That group has gathered women, but men also, from 20 or 30 different countries in the world. I think there's more than 500 members now, and we have devoted the group to advancing diversity and fostering collaborations in the field of MS and related disease. So we have a series of scientific and mentoring activities along with lobbying activities of that include partnering with various scientific entities, such as scientific or funding organizations. So that would include entities like ACTRIMS (the North American Committee on Research and Treatment in Multiple Sclerosis), the European equivalent, or the one in Latin America or in Asia, and funding entities like the National MS Society, to advance the representation of women and minorities in their committees, in their speakers, in their chairs, to change the landscape of what was there prior to 2018. We also promote scientific sessions, with scientific presentations by junior faculty, that gives them an opportunity to have international presentations on their CVs or leadership positions when they're chairing, spearheading one of these scientific subgroups. And then we have also done a fair amount of mentorship within that group to help junior women, but also men, if they're interested, to be able to talk to someone who maybe outside of their country or outside of their institution, to discuss about mostly career development.

And I think that's what I'm really proud about, to rally many people around the world around that project. We have been able to address lots of the issues that we were encountering, and I think we have been able to change substantially the landscape related to visibility and leadership at scientific meetings, and in review committees of funding organizations. And it was an interesting process, because there were two sorts of reactions. There were people, when approached to discuss these topics, and I remember the CEO of the national MS society, who was very receptive and was kind of, "Oh, my God, that's right!" And I brought up the issues, such as women who have an MS fellowship award, who were pregnant, their fellowship stopped during the time of pregnancy. So these were some of the specific issues we had identified. There was an NMSS committee that had one woman on the grant review panel for 15 men, which we found was quite imbalanced, and the CEO was extremely receptive to the discussion. And within a year she drastically changed lots of the organization in response to these suggestions we had had.

There were also some interesting statements from senior male colleagues who felt that we were recreating discrimination, sexual discrimination – but the other way. And it took a fair amount of time to say, “No, no, no, that's not our goal. Our goal is to make everybody work together. Just ensure there's more diversity in the field.” I think that when I started iWiMS, there was really a concern from some people that it was again going to lead to some discrimination, which has never been the case.

Janet Jue: That's great. Yeah. I was going to ask how you handled, or how you and other women handled possible discrimination, and from other males in different positions that you know we were recognizing that there was disparity in.

Emmanuelle Waubant: Yeah. And I mean, really, there are entities like ACTRIMS and ECTRIMS who have been, I would say, role models in how seriously they took our suggestions in terms of having a program that was more balanced, not only in terms of gender representation, but also age representation and geographic representation. And so it's been very nice to witness that, and see how some young women who have been very engaged from the get-go, wanted to play some role in leading some of parts of that iWiMS program.

Janet Jue: That's great. Yeah, from my personal – being able to work with you for so many years, knowing how championed you are for women and younger women as well. It's just so great to hear that you're doing the same thing on an international scale as well. It's not just your immediate community here, but the larger community as well. So that's really awesome.

Let's talk about the people who have influenced your life. Which mentors or teachers stand out in your in your mind? You can also highlight any personal story of how they influenced you.

Emmanuelle Waubant: Okay. I will try to address both the teaching and the mentoring. First, the teaching. When I was in med school in France – so med school is shaped a little differently from the US, and it's an integrated medical school. So you are in a 1st year, and if you pass, well, if you are well-ranked, you get in the subsequent years of med school, and if you don't, you don't stay in med school. And starting in the second year, we had a lot of teaching about physiology, of different organs, including neurology, and I was fascinated by neurology. And then starting in third year we could start studying semiology of different specialties. And one of the first classes I wanted to take was neurology, because I was so fascinated by neurophysiology. At that time in Lille, which is one of, I think, the largest med school in France, and it's based in the north of France. All the neurology professors who were teaching were men, except one woman who was quite a character, and it's easy to understand why. I think she had to probably thicken her skin through all the different interactions she had developing her career.

And she was just an amazing teacher. She was like acting on stage in front of a big amphitheater of students, the different diseases that one encounters in neurology. So she would mimic, you know, the gait of a Parkinsonian patient. She would mimic the gait or the coordination of someone with cerebellar involvement. So it was like being in a movie theater or in real theater and seeing the acting of basically the patients we would encounter in clinic, which was just completely overwhelming! And that made me engage even further on the track of neurology. And definitely, I knew I wanted to be a neurology resident. So that was for the teaching.

For the mentors, this is a very challenging question, because in my case, role models or supervisors did not always check all the boxes that I think are important to check for recognition of a true mentor. For me, a true mentor is someone who's going to help a junior individual understand where they want to be 5 to 10 years from now and help them to get there with their skills or improve their skill sets, but doesn't have an agenda of what they want to be accomplished for them as mentors. And this includes scientific mentorship, of course, but there's also a big part of career development mentorship. And I want to give an example that has resonated with me very strongly, and the more I age, I often rethink about that specific experience in my life. I had shared a very complex patient with a woman who was a professor of internal medicine at UCSF. And after many months of working together to figure out the diagnosis of that patient and the treatment, she invited me for lunch. She probably figured out I was completely naive. At that time, I was an assistant professor, and to me the American system was very different from the system I was coming from in France. She probably realized I was very naive in my understanding of career development. So she invited me for lunch, and she completely opened my eyes on how one should, at an institution like UCSF, meet different milestones to get promotion and a fair salary. And it was the first time that someone really took the time to guide me through that process. I can say I will be eternally grateful for her career mentoring, because I did not expect to have a mentor show up from completely the left field, because I did not ask for that. And she volunteered all this information and this mentoring which I really appreciated. So these experiences have shaped my own passion for mentoring.

Janet Jue: Thank you for sharing both of those experiences. That's wonderful to hear. If you could delve into a little bit more about your mentor from the internal medicine, what do you think? Do you think that she had a role model herself, and she was able to receive that from someone and saw you, and was able to transfer it, or she just kind of had the will in her to share that as a fellow woman at UCSF?

Emmanuelle Waubant: That's a good question, and I'm not sure I can really answer that. Because I never asked her what was her situation when she got started. I couldn't imagine that, at that time, to put things in perspective. When I was an assistant professor in the MS Division. I was the only woman of all the faculty, and I think that she, being based in internal medicine [which] was probably a little more diverse in terms of gender balance in that department. And considering her age, she probably had to encounter some of her own struggles, or even, you know, bigger challenges than I faced.

Janet Jue: Yeah.

Emmanuelle Waubant: I'm not sure I answered your question. But next time I see her I should ask her. I will think about asking.

Janet Jue: No, I guess we won't know unless we ask her.

Emmanuelle Waubant: Exactly.

Janet Jue: Yeah. How did you feel when the next woman came into the department, when, after you had been the only one?

Emmanuelle Waubant: I was very excited – It was not the department. It was the division.

Janet Jue: Oh, sorry!

Emmanuelle Waubant: There were other women in the department. Yeah.

Janet Jue: But in your division, it was nice to have.

Emmanuelle Waubant: Yeah. And I think the second woman who became a faculty in the division was Lisa Barcellos, who then moved to UC Berkeley to lead her own group of genetics and epidemiology.

Janet Jue: Great. The next question is, what is your vision for the future? Another way to phrase it is, what are you most looking forward to in the future.

Emmanuelle Waubant: So my vision for the future – I will not talk about research. I will just talk about the field as a whole in terms of having more diversity. I really, strongly believe that the more diverse people in the fields, the more diverse ideas will be generated and investigated, and there will be a more diverse approach that ultimately will help our patients. So I'm looking forward to continuing to foster the career of diverse junior individuals. So they become future stars in our field, or outside of the field. I've mentored people who became psychiatrists. I'm mentoring someone now, who is going to be an internal medicine resident. But one thing that I'm over the moon with is witnessing the achievements of some of my prior trainees, who are now associates or full professors at superb universities, and have successfully developed their independent careers and personal lives. In turn, I think they have become incredible mentors in addition to leading top-notch research. And this is very fulfilling, because, you know, it's like a nice positive feedback. And I believe we have to embrace the changes in our society, to make the future bright and fair.

Janet Jue: What advice would you have given yourself at the start of your career? And, any advice to women just starting their career in neurology?

Emmanuelle Waubant: As I said, for many years I was quite naive about how you develop your career, and I just thought that whoever was your boss or your supervisor would be the person who would necessarily help you develop your career. And it took me several years to realize it was not necessarily true according to different environments I was exposed to. And when I started to hear the word “mentor,” which was to me something completely new in my vocabulary, and realized what it meant. I think that if I could rewind my career, I would start my career as trying to find the right mentors who would be my true scientific and/or career advocates, and have only my aspirations in mind in terms of helping me to achieve that. What I would tell to women just starting their careers in neurology is, “Try to imagine where you want to be 5 to 10 years from now, you know? Dream big or dream small. It's a big world. We all have different expectations or different ways to perceive how we want to develop our careers, and there is plenty of space for all types of aspirations, and the sky is the limit. So find yourself the right mentors!” It's always good to have different scientific and career mentors. They can be within your group. They can be outside of your group or outside of your department. And these are the people who are going to help you analyze where you want to go, really, and how you get there.

Janet Jue: It's great. Those were the questions.... Is it okay if we do a little more?

Emmanuelle Waubant: Sure.

Janet Jue: Okay, I wanted to circle back. I think you were giving this answer. It kind of weaved in and out through some of your responses. But how do you think women contribute to science and neurology in a different way from men?

Emmanuelle Waubant: I think women contribute a different way... I think they contribute to neurology and science in many different ways. I think that their perception of the world may be different from a typical male colleague for different reasons. Mostly, you know, societal or cultural, or sometimes religious reasons. And I think these are, you know, very important different aspects of life. And ultimately, when we care for patients, when you look at the diversity of patients we take care of, the diversity of – the different flavors of all the diseases we take care of. There's really a lot of aspects that we have to understand in advance. So I don't like to say, "You know, women are more empathetic blah blah," because I think it's a little cliché, and I don't want to fall in a cliché. I think you know not all women are empathetic. There are men who are *super* empathetic. I think that we all have the way we've been raised, where we're coming from, influence tremendously who we are and how we deliver care and how we do research. I think that's just increasing the richness of the field.

Janet Jue: What are, what is an experience, or it can be general, not a specific experience too – when you felt that being a woman had helped you succeed in your career.

Emmanuelle Waubant: So I'm going to joke here, but only half. When I was in the wet lab as a postdoc. The fact that I was a woman, and I was blonde, in different settings when people were just, you know, not paying attention or saying something that was a little dismissive, I would say, "I'm blonde!" because sometimes I think it was a way to make them realize, oops! Maybe you should not talk to me like that.

Janet Jue: Exactly. Let's see, and then I did like Dr. Bove's questions. Maybe I can pick one or two, if we have more time.

Emmanuelle Waubant: Sure.

Janet Jue: Okay, what are some areas that you would like to continue to see, evolve and improve at UCSF in neurology, and more broadly.

Emmanuelle Waubant: What I could see evolve is maybe trying to make sure to try to involve and reach out to all the different faculty who are in the department very often. What we see are people who are, you know, well known or in leadership positions. But there's a kind of a silent majority that is not often involved in discussions, or talking at retreats, for example.

Janet Jue: That's great. For context, please paint a picture of you as a teen or young adult thinking about your career. What was your scientific outlook? Where were you? What did you dream of doing in your future? And maybe bouncing off of what you've already mentioned, in your second year of medical school in France, you knew that you loved or were interested in neurology. Was there anything external from being in school that made you be super interested in it?

Emmanuelle Waubant: In neurology? So when I was a teenager, I was one or two years early in class. So I was mostly hanging out with older people because I was the youngest one in the class. And I was not necessarily super mature, but it was probably good for me to be exposed to people who were more mature because they were just older. I loved literature, and I loved languages, and I loved science. And I was on a track in school, a scientific track, and that included lots of maths, physics, and sciences. And the challenge was that I was going to be starting university at age 17 because I was early, which was a big deal at that time. Because I was going to be like an hour and a half drive away from where my parents lived, and I was the first kid of my parents. So, you know, being a woman of 17, I was going to go to university, and they were a little concerned about how I would be safe.

When I was thinking about what I wanted to do in university, there were three things I wanted to do: I wanted to be a theater actress, I wanted to be an interpreter, and I wanted to be a physician. So how do you reconcile all that? So first, I knew that being a theater actress, I think my parents would have both had a heart attack. It would absolutely have been a no-no. So I was kind of okay, so I can still do theater later on, as kind of a hobby, or you know, reading plays or going to plays as someone in the audience. And then I was like, well, translator! Yeah, this is a short set of studies. So maybe I'll start with MD first, because it's going to take longer to get there, and then I'll include language in what I'm going to do. And when I told my parents I wanted to do med school, both of them were against it and my dad was like, "No, no, no! I mean you're intelligent. You should get in mathematics or physics." And I was like, well, no, I have good grades, but I don't see myself being in physics or being in mathematics. It's like, I don't find that satisfactory, intellectually enough, or rich enough for me to be engaged for the rest of my life.

And my mom said, "Oh, no, you don't want to be a physician. You're going to marry, have kids. The hours are so terrible!" And then I was like no, that's what I want to do. So they went with it! And I think that ultimately they were very happy with that, but I had to push a little bit at that time.

Janet Jue: That's great. It's so wonderful to hear about the three different paths or interests that you had as a teen and younger adult, and how that led you to where you are now. Are you able to do any acting?

Emmanuelle Waubant: No, no, I did not, but I have a funny story. When I was in third year of med school, I actually took an exam at an acting school to do that on the side. But it was very funny. It was super funny, because the interviews were different from med school, and ultimately I realized I didn't have the bandwidth. Because there's so much hours of studying and classes and clinical rotation in med school. I did it because I was with another friend who also wanted to do it, and we did it together. So it was an interesting experience.

Janet Jue: That sounds fun. And then, maybe, in closing, one quick question is, what tip do you have that you think might help other women in their career if they're faced with any prejudice or any difficulty for being a woman, or feeling like they might have experienced setbacks because of it.

Emmanuelle Waubant: I think it's very important to know who you can speak with. And I think that, you know, I have experienced some hardships, being a woman in the field, and even as a faculty. I've been the inpatient or consult service attending, getting in rooms of patients on the

surgery wards. And the fellow shows up and basically asks us to leave. And I'm with a female resident, I'm the female attending, and they basically kick us out of the room. So this is UCSF, 15 years ago, right? Not one million years ago! I think that when these kind of things happen you need to *not* stuff it. You need to be able to find people who will help you digest the experience and transform it into something positive and transform it into, "What do I do the next time this happens."

Janet Jue: That's important. Yeah, that's a great. That's a great message. Thank you so much Dr. Waubant.

Emmanuelle Waubant: Thank you, Janet. Riley, do you have anything you want to ask or change?

Riley Bove, MD: Nothing to change whatsoever. This is wonderful. I feel like this was a really thorough and interesting background. Actually, I think the one question that for me, you know, I I'm really interested in and kind of curious about your perspective here, and you alluded to it a little bit is, we always want to be advancing things, and through hard work and success, making life easier for others. And you mentioned how incredibly gratifying that can feel for you to see these advances in the field. An analogy might be with the work hours: before the work hour restrictions, people worked really hard. And then there were work hours, and then you hear trainees who've benefited from the work hours complaining about fatigue. Maybe one bit is to say, "Well, you don't know how easy you have it." Right?

You're actually someone who has made things so much easier and so much better for other people. So how do younger generations honor you, and also carry your torch forward? I think that's something that I would really hope to hear from you, because I'd like to see our department be really good at that.

Emmanuelle Waubant: I think that carrying the torch forward is something that often people forget about. Sometimes I'm in meetings talking about a specific research topic, for example, and the only people who are cited who are key to that research are people who published in the past five years. When ten years prior, there was actually a woman in the field. And I'll take the example of Dr. Joan Goverman, who is, you know, professor of immunology at the University of Washington if I'm not mistaken. And she actually published a key paper involving microbiome and the role of – sorry, I'm blanking on the term – of an environment that was either completely sterile or exposed to different germs. Right? And I was a fellow when in the wet lab at that time, so I had read her paper, and I found it completely fabulous and incredibly novel.

And then, you know, the world of exposure to non-sterile environments in animal models kind of died. And then, fifteen years later, there's people who dig it out, "Oh, microbiome, sterile environment." *Her name is never cited!* So, when I have had myself some microbiome work, I have made sure I give her all the credit for getting the field started in 1993. So I think that as a junior person, I think you should not just look at people who are just a few years ahead of you. I think it's important to recognize that we need to keep a long-term memory of what has happened, because otherwise we don't give credit to people who have done incredible things, or we forget how hard it may have been for people to pave the field. And so, I think, keeping in mind that we should look more broadly in terms of the history to keep some of this history of how things were 20 or 30 years ago, and that will help us understand the positive changes. But also sometimes,

depending on the political environment, things could go backwards. And so I think that keeping in mind the people who have contributed to advance – whether it's the research field, or people who have contributed to advance the equity in work field – is very important.

Riley Bove, MD: Wonderful. Yeah, just having a sense of history could be so useful right now. Right?

Emmanuelle Waubant: And I don't cite many kinds of philosopher too often, because I have a tough time remembering all what they say. But there was Goethe's statement. "People who have forgotten about their past are condemned to re-live it".

Riley Bove, MD: Yes, yeah, wonderful. Thank you so much. Janet, thank you for the wonderful interview with Dr. Waubant.

Emmanuelle Waubant: It was fun!

Janet Jue: Thank you.
