

Professor Elly Hol began her education in Utrecht, while building up her career in Munich and Amsterdam. She returned to Utrecht as a professor at the Brain Center Rudolf Magnus. Professor Hol specializes in glia, stem cells and brain disease. We got an opportunity to interview her and travel down her path of success and get some tips for the budding researchers in our department.

What did you study for your bachelor's degree?

A strict bachelor's or master did not exist at that time, but was rather called a "propedeuse" and a "doctoraal". So I studied for a year for propedeuse and then four years more, like a master. I had already chosen neurobiology as my field, with some electives in neurobiology and molecular biology fields. During my masters, I did 2 internships. One was at the biology department at the Kruyt building, where I studied catfish in the field of comparative endocrinology. I specifically looked at the dopamine receptors in the pituitary gland. My second internship was actually at the Rudolf Magnus Institute (RMI) which was at that time down town in Utrecht. And that internship was on beta endorphins and we were looking for those peptides expressed in leukocytes. The work involved a lot of biochemistry and radioimmunology assays.

Could you give us a brief overview of your work experience in Amsterdam?

So, after my study, I was still quite unsure of what to do or where to go. There were not many biotechnology or pharmaceutical companies existing at that time. I got an opportunity to work at the neurology department of UMC Utrecht where I worked with Dop Bär. I did my PhD at the same time as Geert Ramakers! I worked on the outgrowth of neurons synthesis, neurotropic peptides and their mechanism of action. My promoter was Willem Hendrik Gispen, who used to be Rector Magnificus of the University and head of the department here. So after my thesis defense in four years' time, I moved to Germany to expand my horizons in science and also as it is usually advised to go abroad to improve your career and contacts in the field. I went to the Max Plank Institute in Munich and I received a Max Plank Fellowship, which enabled me to do my own research and I also got a lot of freedom to learn more in the field of molecular



biology. As a post-doc, you only need to do science and publish papers but there was no pressure of finishing your thesis as a PhD student. I really enjoyed my stay there!

After returning to the Netherlands, I wrote my first grant proposal application, but was rejected. But that is Science! Like success, failures are just a part in your career! Then I got a job offer from Amsterdam from the people who knew I was looking for a job. The project was on Alzheimer's disease in the groups of Fred van Leeuwem in the Brain Institute where Professor Dick Swaab was director. We had a Science paper published within two years and from that time on I could write many grants and I became successful in obtaining the money, which helped me a lot in my career.

I also got a Brain Foundation fellowship and a Human Frontier Science Program Grant which is funded by the G7. This allowed me to have a permanent position to work on molecular processes in brain disease, such as Alzheimer's disease. We worked extensively with human postmortem brain material from the brain bank that Professor Dick Swaab started already 25 years ago. At that time, it was really difficult to publish work based on human tissue since people argued that human tissue from different donors had many genetic differences. Then, as I got my first PhD student, my group grew and I eventually became a group leader. After that I also got a prestigious VICI grant from NWO that ended a month ago, which was more than one million euros!

So, what made you return to Utrecht?

I worked in Amsterdam for 17 years but last year I decided to return to Utrecht because I wanted to work in Translational Neuroscience. The Netherlands Institute for Neuroscience in Amsterdam, is mainly focused on fundamental neuroscience research. The researcher and even medical doctors here are really research oriented, so it was obviously the best place for me to go. Here I will continue with my glia work, stem cells and astrocytes.

What differences do you find between working in Amsterdam and Utrecht?

I am also a professor at the University of Amsterdam (UvA) at the Faculty of Sciences. I will also be a visiting professor at the Netherlands Institute for Neuroscience (NIN) in Amsterdam for the next five years, because I still have a few people over there who are still work-

ing on projects. I know how people work at the UvA, at the NIN and now here in Brain Center Rudolf Magnus. It is different in every place. For instance, the NIN is not a university, so teaching or organizing the courses is not necessary. But I like to teach and I have been doing so for the past 10 years in Utrecht, Wageningen and in Groningen. Also, it is very competitive at the NIN, because you can only survive when you have your own lab which means you are responsible for your own money and without it, you cannot do research. You are constantly applying for grants.

What I like here in UMCU is that there is much more interaction between people, like at the UvA. There are interactions between research groups and also with the medical doctors, e.g. with neurology, neurosurgery and psychiatry. What I noticed in Utrecht is that everyone is really research minded. At the UvA we did collaborate with the Amsterdam Medical Centre, but here in the Brain Centre, everyone is collaborating. All people are research oriented and want to do it together. Working at the NIN was also really nice, because I could focus on my scientific research.

What makes you a successful researcher? For instance, which qualities are important for a good scientist?

There are not defined qualities for a successful researcher but perseverance is extremely essential in the field of research! You need to choose a lab with good funding, be a good networker and a good listener. It is not only your talent that counts but also your hard work! There would be many deadlines to meet but do not lose your momentum! You have to keep your targets in mind. Even in a company, you would also have your targets to reach within the deadline. Another important quality of a good researcher is the ability to write well. You would

need this to write thesis, papers, grants, etc! Above all, you need a certain amount of luck!

Working in science is not just within the four walls of the lab. It involves talking to other people, travelling around, discussing your ideas, presenting and

writing. It is usually very impressive if you have an international experience in a lab abroad. It is good to travel outside your comfort zone to create your own identity. It is also good for your CV! In Munich they said to me, you have to go where the bread is, meaning wherever there is money and opportunity to do the research.

To be a good researcher, you would also need to balance your professional and personal life. Sometimes, you don't know if you would have a project in your lab the next year and where you need to move. You might also need to take some big life-changing decisions if you really want to go down the research path. It's not an easy path, but it's really interesting and fun and you see a lot of the world. You get to meet many different people and share so many ideas! When you start your own lab, it is your work, your idea, your people, your group and you are responsible for them. In the end, it is definitely something to be proud of!

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