Excellentie, Rector, ladies and gentleman. But first and foremost, dear students of the Eindhoven University.

Today’s theme is “Dream, Dare, Do” and the rector has asked me to speak on this theme from my personal perspective.

I was born here in Eindhoven, and I grew up in nearby Son. As a small kid, I always played in the woods and developed a great interest into everything that lives. Op de kleuterschool –kindergarten-, I already dreamed of being a biologist. My primary school was in Son and no longer exists. For high school we cycled each day over the hand-operated, rotating bridge to het Van der Putt lyceum in Woensel. The bridge and the van der Putt Lyceum also no longer exist.

In 1975, over 40 years ago, I took up biology at Utrecht University (which, by the way, still exists). Biology was disappointing. DNA technology was being invented in the UK and the US, but had not yet reached the Netherlands. Without DNA technology, biology was merely a descriptive science, giving Latin names to plants. I decided to combine biology with medical school, and I spent my biology laboratory rotations away from Utrecht; in Nairobi and in Washington DC.

After finishing biology, I did my medical rotations. I really liked clinical work. It is very social. Every day you solve a handful of problems.

Lab work is not very social. One works for years in the same office and lab, with the same small group of colleagues. Some you like. Others may play the wrong music, don’t clean up behind themselves, or use up the last bit of something that you also need. (Jiskefet could do a good sketch about this.)

And then there is the daily frustration of the experimental work. Most experiments fail: Either the experiment drops on the floor. Or you’ll find out that your hypothesis was wrong and you have to start all over again.

For all these reasons, I was lured to the clinic, leaving my science dream behind. In preparation of a training position in pediatrics, I set up my own line of research. I was funded by a somewhat obscure foundation, called de Drie Lichten. I published four papers, and defended my thesis at the end of that year. I then realized that at heart I was a scientist. It was maybe true that an average day in the lab is boring and frustrating, but in the course of that year, I had seen and done a few things that no one had ever seen or done before.

To really learn science and the emerging DNA technology, I then moved for four years to Harvard University in Boston. The American system was very attractive to me. After a good postdoc, one looks for an independent position as Principle Investigator, in short PI. A PI writes his or her own grants and decides entirely what kind of research to pursue. When I wanted to return to the Netherlands, I found out that such positions did not exist here. I would have to work on existing research subjects, often defined by the head of department decades earlier. That was not my dream.

My American fellowship ran for another 2,5 years. This allowed me to negotiate an independent position for myself, with one PhD student and one technician funded by the Utrecht University Hospital. I was lucky on the subject I picked, and after a couple of years we started publishing in OK journals.
A decade later, I felt that the hospital could no longer provide the research environment that we needed. I moved my 30 people-lab across the street to the Hubrecht Institute. The first thing that my co-director Ronald Plasterk and I did, was to introduce a flat, transparent PI system to replace the existing hierarchical department structure. Full scientific independence, objective career decisions and equal financial support for every PI, independent of age, or of a loud mouth. Almost immediately, the Hubrecht picked up scientific speed.

The current Dutch Veni-Vidi-Vici and the European ERC systems provide exactly what I had seen in the US during my postdoc. Scientific independence at an early age, when energy and creativity are at their maximum. As a young researcher, you can follow your own scientific dream. The stakes are high, so you should not shy away from competition and risk. If the proposed research fails, you can only blame yourself. But if the plans are a success, nobody can question who did it. Dream, dare, do.

I do not believe that it matters much if the subject of research is basic or applied, or if it regards science or engineering. It only matters that you work on a subject that you have chosen and that deserves your passion.

Dutch science has meanwhile become unusually successful. I do notice one big threat: Our national research budget that has steadily been shrinking over the past years.

It is often said that publication pressure has become too high, leading to burnouts, or scientific fraud. I don’t believe that this is true for our more senior researchers. We are all employed on tenure positions. Our colleagues in the US at –say- Harvard or Stanford don’t receive any funding from their university. Up to the last dollar of their salary is paid out of their own grants. And when the grants stop, they are kindly asked to leave. Established scientists in Holland do not live in such a state of constant insecurity.

In stark contrast, our young researchers live in a world that is as competitive as that of our American colleagues. Our PhD students and postdocs are all on temporary contracts, but -more importantly- on temporary grant funding. No discovery, no paper. No paper, no funding. And no funding, no job. Success rates in the grant competition are now sometimes below 10%. The outcome then tends to become a tombola. The only remedy for this, is restoring our research funding to internationally accepted levels. In my years at the Royal Academy, I have experienced that the ministry of Economic Affairs (rather than our own ministry, OCW) has been the major driver for trying to find new research funding.

Walt Disney, champion of dreams, has said: “If you can dream it, you can do it”. This of course comes with a good amount of ‘dare’. We, the science establishment and the politicians, should take care that we do not ask too much ‘dare’ from our young future colleagues.

Thank you for your attention