

“Advice to a Young Scientist”

Good afternoon everybody and also on my behalf welcome at this extraordinary event. It is a great honour to stand here and I thank professor Myriam Hunink and the Netherlands Institute for Health Sciences NIHES for asking me to do so.

I have been asked to speak a few words of advice to the young scientists who received their degree today, and that's what I plan to do. Advice is a big word though, and who am I anyway to think that you need advice from a retired professor who lives in a past without future. So I will limit myself to a few well-meant hints.

This is a historic moment, in particular for the 70 graduates of today. My congratulations to you, and to your family and friends who may be here also.

Erasmus MC
Netherlands Institute
for Health Sciences


This is a historic moment for:

- 70 graduates:
 - 1/3rd from all over the world
 - 61 MSc / 54 one year prg
 - 39 clinical epi / 15 genetic epi
- NIHES

NIHES Graduation 2017

As you see, one in three of you come from all over the World, from South-East Asia to Latin America. Most of you leave Rotterdam with a Master of Science degree after a one-year programme of intensive study, clinical epidemiology being the most popular specialisation. How many of you will take up practicing medicine again I don't know. But I do know that ***you will be better doctors, even if you don't realise that yet.***

Erasmus MC
Netherlands Institute
for Health Sciences

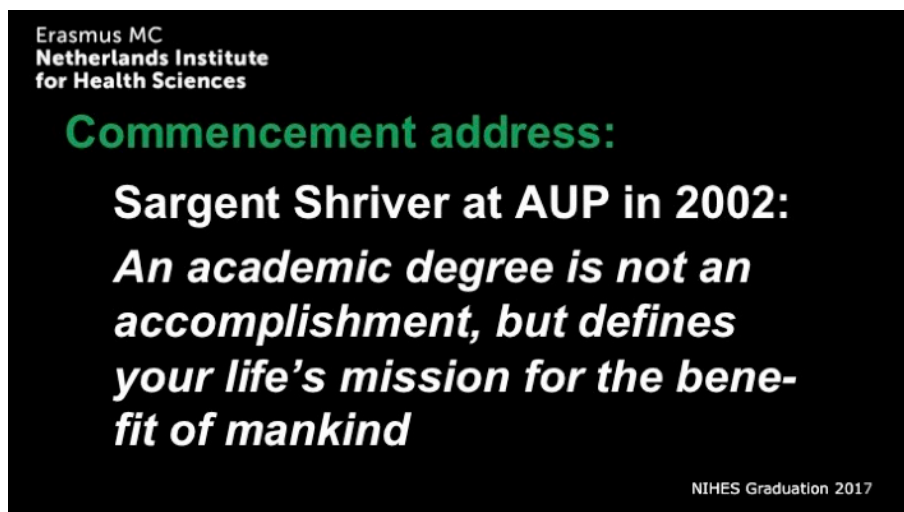


This is a historic setting:
Arminius (1560 - 1609)
Religious tolerance:
science and faith do not conflict

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I can't resist the temptation to point out that this is also a historic setting. This church was named after Arminius, a 16th century Dutch dissenting theologian who preached religious

freedom and peaceful coexistence between science and faith. ***How relevant is this thinking still today, even right here in the Netherlands!***



Back to today, and your future. The grand design of your future is this. Back in 2002 I was present at the graduation ceremony of the American University of Paris. The commencement address was given by ***Sargent Shriver***. With Eunice Kennedy, Sargent Shriver was one of the founders of the American Peace Corps. To me he represented that practical American “Yes we can” idealism that once promised to solve the world’s problems. He did not mince his words and told his audience in forceful terms that getting an academic degree has little value as such. Rather, it defines a task put on your shoulder, the task being to ***use the knowledge and skills you acquired as starting point for serving society’s needs***. This, dear NIHES graduates, defines the mission you are going to take up.

The “yes we can” idealism represented by Sargent Shriver seems lost today. But what he said about the responsibilities towards society that come with an academic degree has never been more true than today, I believe. ***Idealism is based on hope, and if we lose hope, we are lost.***

Now let’s get practical. How do you go about reaching into the future? In my view the basic question you should now ask yourself is this:



Let me pause here a few seconds to allow you to think about this.

Does anybody of you volunteer to answer this question before all of us?

OK, in a moment I will tell you my own answer I gave when I came back from Boston to Rotterdam in September 1975 with a Master of Science degree in Epidemiology in my pocket.



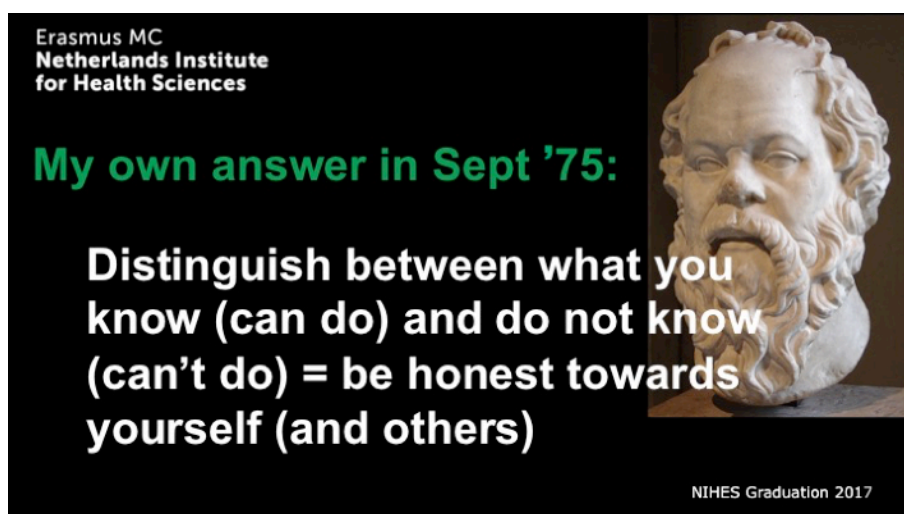
Times were very different then. I came back on the Russian liner Lermontov shown here from New York straight into the port of Rotterdam, with a metric ton of books free of charge in the cargo hold of the ship. That the ship later went to the bottom of the sea on the coast of New Zealand did not hurt my career.



And these are the tools available to a young scientist then. Data was stored on punch cards, and processed on a main frame at the computer centre of your university. I wrote my thesis on a magic ball typewriter like this one. And sure enough I got the very first scientific pocket calculator, the HP 35. Back then it cost almost 400 dollars, an enormous sum! The Russian staff captain of the Lermontov was extremely jealous that one could buy this kind of thing in the West.

Back in Rotterdam I was often politely asked: what is the single most important thing you learnt over there? That made me think. Obviously, it wasn't how to calculate a

p-value for a two-by-two table with continuity correction using an HP 35 pocket calculator. Rather, I came to the conclusion that the most important lesson learnt was this:



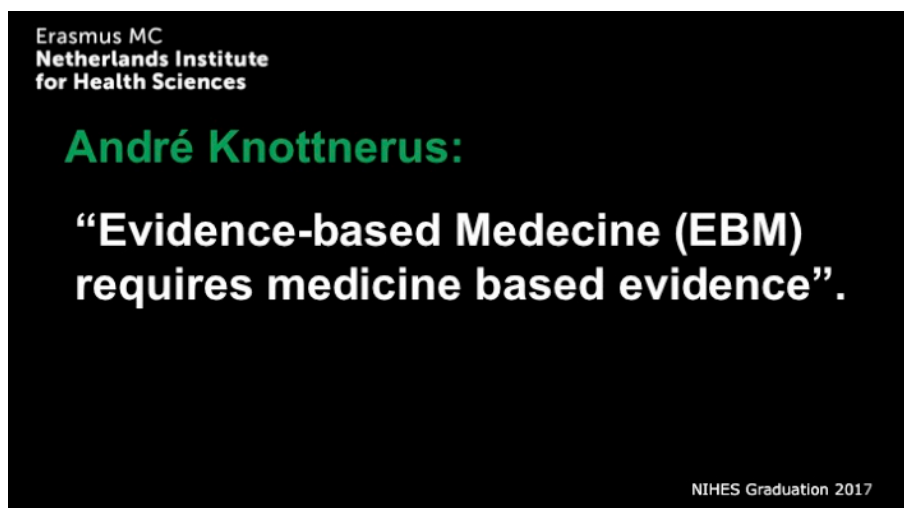
Namely to always distinguish between what you know – or can do –, and what you don't know – or cannot do –, and to be honest about that towards yourself and your colleagues.

The importance of honesty in science cannot be overemphasised. It is the starting point of your research, and the end when you publish your results. Why I learnt that lesson only in Boston and not beforehand isn't that relevant today. Perhaps I should have read Socrates when I was young.

But the upshot for you, dear NIHES graduate, is clear even today, and is the first hint I like to give you today: you will be expected to take the lead within your network in delineating what is known about a certain problem or treatment, and what is NOT known. Once that has been agreed upon, it will then also be your specific expertise to set up and run the research required to find out about what is not known.

All this can be very challenging indeed. Over the years I have seen many trials costing millions of dollars that nonetheless totally missed the point, either because the design did not follow from a clearly defined clinical question, or the clinical question was clearly defined, but the design didn't answer the question no matter what.

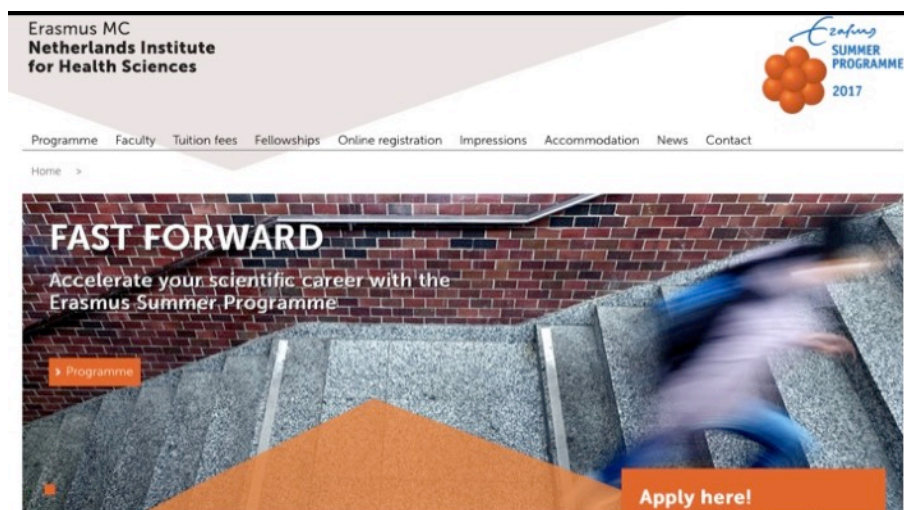
André Kottnerus has put it very well when he said:



If you haven't done so already, you will soon find out how true this is. If you work together with clinicians in a task force that has set out to determine how treatment A affects outcome B in subjects with C, you will learn that clinicians may be very good in administering A, but may not have much idea about which outcome will be affected, or about which patient will benefit most. To define the objective of a study in one succinct sentence that can be put on the first page of that grant proposal can take an inordinate amount of time and effort. Every minute spent on this will be well spent, though...

This is not the place to develop this topic further. Suffice it to say that even today it is not well understood how to translate a by itself simple clinical question, such as what is the best first drug choice in treating elevated blood pressure, into a trial design that will unequivocally answer that question.

I now turn to the second hint that I would like you to take home. Remember I talked about Sargent Shriver, who imposed on graduates that an academic degree is the starting point of a life-long mission that should serve the needs of society. Today this sounds perhaps over the top. We live in an uncertain world, with conflicts all over and a leadership that doesn't always seem to care. It seems that there is not a lot we can personally do about this. Not so, **yes, we can as long as we keep our ideals and remain optimistic.**



Well, you may have learnt a lot during the NIHES courses. But I suggest that otherwise this is not a metaphor for how you should take up the challenge. If you run into the future up the stairs like this you will **stumble and fall down**.

Rather,

2nd hint: define your mission...

Context? *(Academic) hospital, family medicine, university, government, NGO*

Emphasis? *Save lives as a MD, (clinical) research, both, policy maker*

Priorities?

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I impose on you the need to define your personal mission carefully and explicitly. It is not a bad idea for the morning after you got your degree to write down for yourself in which context you see yourself functioning, where your emphasis will be, and what your priorities are. Note that as shown on the slide your options are wide, and range from primarily being a now better doctor to sitting in a government office.

At the same time, there are two warnings I would like to leave you with.



***In der Beschränkung
zeigt sich der Meister***

Less is More

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First of all, ***be careful not to overload your plate.*** Nobody told me that when I came back from Boston. Before I knew it I spent far too much time and energy on all sorts of committees, interviews with the Dutch Ladies Home Journal on the risks of the pill, etcetera.

We all know the difference between God and the boss of the department we work for: *God is everywhere; the boss is everywhere too, except at our department.* ***Don't become god yourself.***



- Assure scientific integrity of research you participate in

- Stand up against fake news, bigotry, pseudo-science...

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The 2nd warning is this. I have been aware from the very beginning that not every contributor to a research study takes the quality of data seriously. But I have appreciated only recently how big the problem of outright and intentional fraud in biomedical research is. Don't think that this doesn't occur in your university or institution; it does. So be aware of this all the time, and **do whatever you can to prevent it.**

By the same token, stand up to fake scientific news, bigotry, pseudo-science, etcetera. You don't become a serious researcher by appearing on television, being on FaceBook or on Twitter.

For a more down-to-earth piece of advice, I show you this list:

ADM. WILLIAM MCRAVEN
UNIV. OF TEXAS AT AUSTIN
COMMENCEMENT SPEECH 2014

1. MAKE YOUR BED EVERY MORNING. 
2. FIND SOMEONE TO HELP YOU PADDLE. 
3. MEASURE A PERSON BY THE SIZE OF THEIR  NOT THE SIZE OF THEIR FLIPPERS.
4. KEEP MOVING FORWARD KNOW THAT LIFE IS NOT FAIR.
5. YOU WILL LIKELY FAIL OFTEN. IT IS PART OF LIFE.
6. SLIDE THE OBSTACLE HEAD FIRST. 
7.  DON'T BACK DOWN FROM THE BULLIES.
8. STEP UP WHEN TIMES ARE TOUGHEST. 
9.  START SINGING WHEN YOU ARE UP TO YOUR NECK IN MUD.
10. NEVER, EVER GIVE UP!

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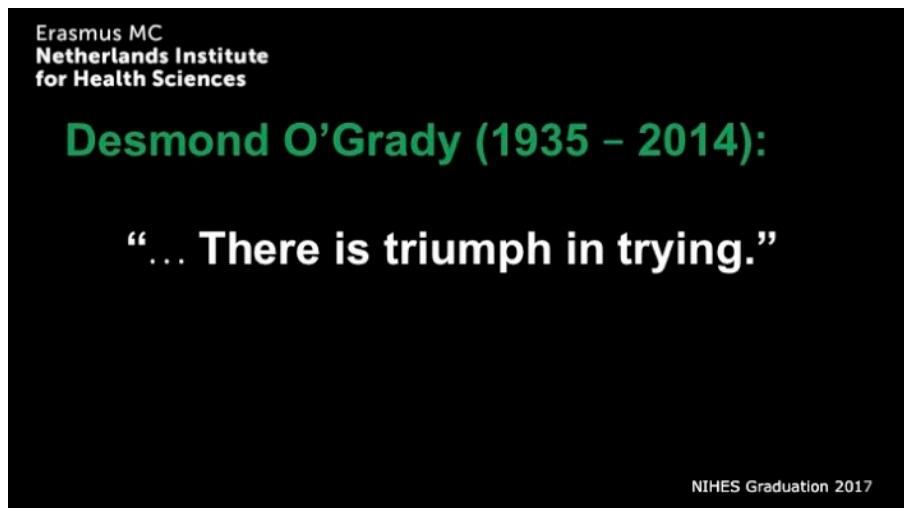
of does and don'ts made up by the American Navy admiral who masterminded the arrest of Osama Bin Laden in his hideout in the Hindu Kush.

That you make up your bed in the morning is nothing more than a metaphor for being organised for the rest of the day. Laptops and smartphones have wonderful apps to help you staying organised.

I won't go through the list in detail but ask your particular attention for number 7: ***don't back down from the bullies***. Don't think that there are no bullies in your world. There are. I have seen remarkable examples of bullies in biomedical research groups who never seem to rest or sleep, and publish one paper every month in a high impact journal based on bullying junior members of their group into cutting corners.

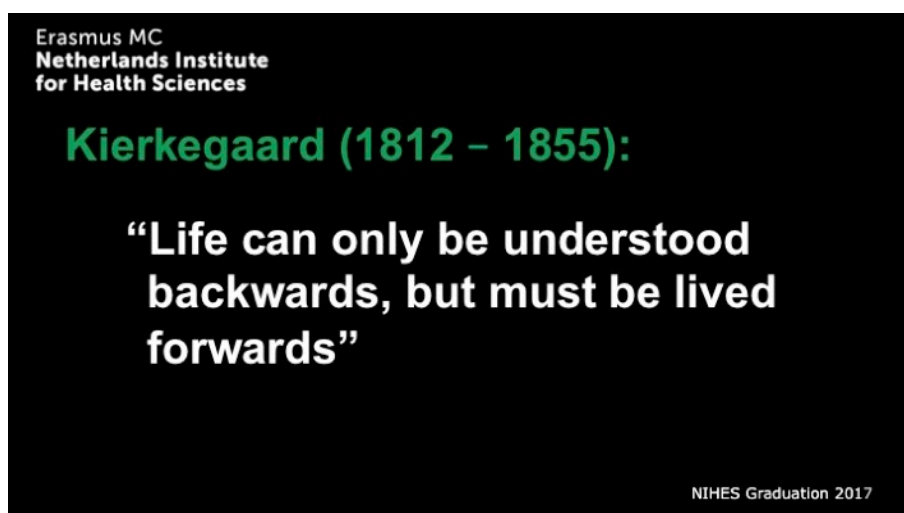
Let me finish by stressing the 10th point of the admiral, which by the way he borrowed from Winston Churchill: ***Never, ever give up!***

And...



Always remember: ***There is triumph in trying***.

This, dear NIHES graduates, concludes my advice to you. I now send you off with these words from Kierkegaard:



Live your life as a researcher forwards. I do hope that when you reach my age you have finally understood what you have been doing, and ***are proud of it***.

Thank you,

Prof. Dr. J. Lubsen, MD, PhD. Emeritus professor of clinical epidemiology, Erasmus Medical Centre, Rotterdam, NL