

Thank you.

I am honoured and delighted to be invited back here - 52 years on - since I last attended speech day – in a different capacity.

So very good to be again celebrating the school's achievements and those of its students.

In some ways little has changed (little needed to) but in some important ways it has.

It's great to see the girls here – able to benefit from that quality education.

The school was (and on today's evidence is) a great place - the teaching skilful and efficiently organized. But more than that I remember some less obviously measurable things that were important to myself and I'll try to capture these.

First, I want to say something to you, the students, about achievement.

And well - I always aim to be popular – so I'm also going to say something very nice about the teachers.

First achievement. Some of you have won prizes today and some of you haven't, but you should all take heart because you can ALL achieve.

It doesn't matter if you feel you are not totally brilliant in the usual sense.

The point is that very VERY few types of achievement require extreme and rare qualities.

If you want to be an Olympic Sprinter or a Prima Ballerina you need to have a special type of body and special locomotor skills.

Any one of you can look at me and think... its not going to work with him!

In fact, that's blind prejudice – as none of you has ever seen me run – or dance Swan Lake.

Nevertheless, on this occasion you are of course correct.

But for nearly everything else, including winning the Nobel Prize, these extreme qualities are not essential. For physiology and medicine, it isn't necessary to be very clever and in fact that may be a hindrance. I'll come to that.

But the point is your achievement in life will almost certainly be due to a mix of qualities and for any one an optimal point on a scale.

Accept everything, do as you're told all the time – well you will likely add nothing to the world

Accept nothing, challenge everything you will likely end up in the police station – or the headmaster's study.

Success will be between the two. And the happy point about this – is that this is much easier to learn and adapt as you go forward, both in yourself and in the ventures with your partners in work and life.

So, for much the best is in the middle - open your eyes it's all to play for.

And I think that was one of the nebulous, unmeasurable things I learnt here, at this school, to challenge at a certain level, to be just a little bit careful about perceived wisdom.

Now a bit about that summons to Stockholm and the school's role in that.

What we discovered was an oxygen sensing process – oxygen must be delivered in precisely the right amounts to the body's 40 trillion cells, and what we defined was something akin to a thermostat that measures oxygen (not temperature) but feeds back in a similar way to regulate oxygen delivery and use. The sensor is an oxygen using enzyme – not too surprisingly.

As Thomas Perlmann (secretary to the Nobel foundation) put it – its obvious. He was joking, but it's true.

At least in biology most of the things that can be discovered are actually rather simple. Not so say there aren't complicated things – but the ones you can actually find out are generally simple.

So, in medical and biological discovery and much of the rest of life it is necessary to look for simple things. And so, it might be a hindrance to be too clever.

It's no good trying to discover things where everyone else thinks they are – you must be different, unfashionable, but you must look for simplicity

And that's another of those all-important nebulous things I think I learned at this school. If an apparently complex equation all cancelled out and the answer was two (or three) then likely you were correct.

Now as I said I want to say something for the teachers.

October 2019 was a good month for me.

First the call from Stockholm – quite crazy really.

They always make the announcement on the first Monday in October. Some people keep their phone by the bedside – just in case.

I didn't – in fact I'd forgotten. My secretary hadn't. She answered the call and pulled me excitedly out of the lab meeting to take the call.

There was indeed someone calling with a Scandinavian accent.

Rather like announcing a beauty competition result, he took a very long time to get to the point. This is Thomas Perlmann, I am calling you from Stockholm, in Sweden (of course I knew that). I am speaking from the Nobel Assembly, which awards the Nobel Prizes including the Nobel Prize in Medicine or Physiology... and all the time I'm listening for that trace of a North English accent that gives away one of your old friends have a bit of a laugh.

Seriously though if a call like this ever happens to you it is important not to draw conclusions too quickly. A common one is the caller announces themselves as the Chair of the Prize Jury, makes a long drawn out speech about the importance, prestige and value of the prize, a million whatever. Then just as you're beginning warm to the idea of being the winner and spending the money, they ask you serve on the jury and make a day trip to Tokyo or somewhere to adjudicate the award – not receive it.

But on this occasion, it was very nice – there followed about 3000 notes of congratulation to answer, about 700 speaking invitations on almost anything on the planet.

Infinite wisdom was conferred overnight – even my children though I might have something sensible to say – for a day or two.

But what has this got to do about your teachers.

Well, the month was very special in another way - as a week later my daughter rang – she had had a little girl.

Now I know there are more grandfathers in the world than Nobel Laureates BUT...

The little girl (Beth) is so sweet, but, you know, she knew absolutely NOTHING, nothing about mass balance, oxygen metabolism... no molecular biological science WHATSOEVER and still at the age of 4 essentially NOTHING.

People are not seeing the enormity of this – the human mind doesn't come pre-programmed. Everything must be loaded up from scratch.

It's obvious - but people don't always see it.

All future human progress and the maintenance of all human progress to date depends absolutely on education.

I can just about understand how I personally - as an INDIVIDUAL - would pay a doctor (which I am) or a lawyer more than a teacher. I have had my education (courtesy of this school) - thank you! and now I need someone to look after my health and money.

But I cannot for the life of me see why the STATE should do so.

Education is king, and ever more so as human knowledge extends.

So, it's good to be here to celebrate with you the students, your achievements and well at the same time those of your teachers.

Enjoy!