

# A life dedicated to science: why? how?

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This slideshow is available at:

<http://www.igh.cnrs.fr/equip/Seitz/YLS2018.pdf>

# What is scientific research?

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What is scientific  
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# What is scientific research?

Understanding the universe

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Understanding the universe

⇒ learning

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⇒ learning

⇒ sharing knowledge

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⇒ learning

⇒ sharing knowledge

A collective effort (past + present generations); intellectual honesty is central.

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- ▶ A good advisor is necessary (learn from the past).

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- ▶ Try to justify every affirmation (show or cite).

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⇒ Current research system: PhD and postdoc advisors; publications and conferences.

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# What science is not

A competition

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# What science is not

## A competition

- ▶ Why would you share your results with competitors?
- ▶ Why would you train your future competitors?

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# What science is not

## A competition

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## An exclusive interest

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- ▶ Why would you share your results with competitors?
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## An exclusive interest

Biology is chemistry; chemistry is physics; physics is mathematics; ...

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Biology is chemistry; chemistry is physics; physics is mathematics; ...

⇒ You cannot be a good biologist without chemistry, physics, maths, ...

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Biology is chemistry; chemistry is physics; physics is mathematics; ...

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(you are good at learning something when you are interested in it)

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Studying living organisms

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Studying living organisms  
≠ medicine

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# What is biological research?

Studying living organisms  
≠ medicine

If you want to save the world, don't be a scientist! Be a nurse, a medical doctor, a pharmacist, ...

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# What is biological research?

Studying living organisms  
≠ medicine

If you want to save the world, don't be a scientist! Be a nurse, a medical doctor, a pharmacist, ...

Ask yourself the question:

- ▶ if it helps me understand but does not help me cure, is it worth it?
- ▶ if it helps me cure but does not help me understand, is it worth it?

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- ▶ if it helps me cure but does not help me understand, is it worth it?

Lying to yourself is not a long-term solution: it only brings frustration in the long run.

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# Why would I dedicate my life to science?

The job is hard (experiments always fail!), getting a position is hard, being successful in research is hard.

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The job is hard (experiments always fail!), getting a position is hard, being successful in research is hard: → this career is only rewarding if it fits your real goals.

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Competition is fun, I like it ...

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Do something else on the side! Sports, board games, video games, ... to dissociate your attraction for competition from your professional activity.

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What if I don't like it?

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Do something else on the side! Sports, board games, video games, ... to dissociate your attraction for competition from your professional activity.

What if I don't like it? Other careers are possible (medicine, education, communication, administration and politics, ...).

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# How can I be happy in science?

It is a team work: choose your co-workers wisely!

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# How can I be happy in science?

It is a team work: choose your co-workers wisely!

- ▶ Always visit the lab and meet people before signing in.

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- ▶ A special colleague: the advisor

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  - ▶ is knowledgeable (do I want to look the same?)
  - ▶ can articulate “you are right” and “I was wrong”

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Intellectual honesty is the founding principle.

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Sometimes dishonesty may be tempting (selecting non-representative results, manipulating experimental results, ...). Don't do it!

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Intellectual honesty is the founding principle.

Sometimes dishonesty may be tempting (selecting non-representative results, manipulating experimental results, ...). Don't do it!

- ▶ it won't make you happy in the long run;
- ▶ people will find out (look at the CIA and the NSA ...).

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Science is hard, but it is rewarding if you like it.

The central question: do I like it?

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Science is hard, but it is rewarding if you like it.

The central question: do I like it?

You are good at it if you are happy doing it.

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# Conclusion

Science is hard, but it is rewarding if you like it.

The central question: do I like it?

You are good at it if you are happy doing it.

Always consider that some omniscient god knows what you do and what you think.

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Science is hard, but it is rewarding if you like it.

The central question: do I like it?

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Always consider that some omniscient god knows what you do and what you think (the omniscient god = your future readers).

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