4STEAM Interviews

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1 Alex Gansen

What is your profession?

Im currently a Post Doctoral Researcher at the university of Luxembourg in the field of physics, more specifically in Rheology. A field where we are interested in understanding the flow of matter. On the last project we collaborated with the tyre company Goodyear to investigate the flow of rubber compounds, to improve the manufacturing process.

When and why did you decide for a scientific/technical career?

At the age of 16 I read a popular scientific book about Quantum physics and was hooked by it as it seemed contradictory to what we experience in our everyday life. Therefore, I decided to study physics to understand more of the world we are living in.

Briefly describe your educational and academic curriculum?

After high school I did a Bachelor and Master in physics (main subject) and Mathematics (subsidiary subject) in Fribourg, Switzerland. After my master I wanted to improve my programming skills and to tackle more technical problems. Therefore, I decided to do a PhD in Computational Engineering. After successfully finishing my PhD, were I basically programmed for 4 years

I got a Post Doc position at the university of Luxembourg in experimental physics, where Im working on a project with the tyre manufacturer Goodyear.

What do you do in your daily professional life?

I investigate the flow properties of rubber compounds to help improving the manufacturing process. Therefore, I rely on experimental equipment, so called rheometers which allow to understand the flow of rubber which depends on the material, temperature, pressure I also spent a lot of time in front of the computer to write programs to analyse the data.

Who is your role model in the field of science and technology?

Who is your role model in the field of science and technology? I honestly do not a specific role model

What advice would you give young people who want to pursue a career in science and technology?

If you liked science in high school, just do it. The first 1-2 years at the university are the hardest but then you are used to it and you start to make links between all the different subjects, which feels really rewarding.

2 Enrico Glaab

What is your profession?

Assistant Professor in Bioinformatics

When and why did you decide for a scientific/technical career?

During my last years at high school I did special courses in computer science and biology, and grew excited about the new research field of bioinformatics. I liked in particular that bioinformatics builds on new advances in both experimental and computer technology, and that it can support the development of new therapies and diagnostics for complex diseases. Therefore, I decided to study computational biology at the university and pursue a scientific career in this area.

Briefly describe your educational and academic curriculum?

After high school and the civilian service in Germany, I studied Computational Molecular Biology at Saarland University, where I completed the Bachelor and Master. I then moved to the University of Nottingham as part of a Marie Curie fellowship, and wrote my doctoral thesis on the computational analysis of molecular changes in tumor tissue from breast cancer patients. Next, after a scholarship at the European Molecular Biology Laboratory in Heidelberg, I moved to the Luxembourg Center for Systems Biotechnology (LCSB) with the working group of my former supervisor. At LCSB, I then started to develop bioinformatics methods to study neurodegenerative disorders and built up the research group which I have been leading since then.

What do you do in your daily professional life?

My daily activities vary a lot depending on the time of the year and day of the week, and include scientific, teaching, supervision and administrative activities. The scientific work mainly involves computational analyses of biological data, discussing research with my groups and collaborators, writing research

articles and grant proposals, performing peer review activities, reading published literature articles, and giving scientific talks and presentations. The teaching and supervision involves preparing and holding courses for Master students and doctoral candidates, supervising research practicals and thesis projects, and postdoctoral research projects in my group. Finally, administrative and other tasks mostly cover the co-direction of a Master course, which includes the review of student applications, responding to student and candidate requests, taking part in the course jury and course evaluation, as well as public outreach activities.

Who is your role model in the field of science and technology?

Leonardo da Vinci, because he disregarded the perceived borders between different scientific disciplines, philosophy and art, and followed his curiosity as the only guideline.

What advice would you give young people who want to pursue a career in science and technology?

Talk to a few persons at different career stages who are working in the areas you are interested in to get an impression of their activities, the challenges they face, and their opportunities for professional development.

3 Christos Soukoulis

What is your profession?

Being genuinely curious on the physics of everyday life I decided to pursue a career in chemical engineering as it was combining my passion for chemistry, physics and mathematics. During my MSc studies, my interest in the field of applied research was peaked when I had to be engaged in a new product development project, as part of the RD portfolio of a large food corporate in Greece.

When and why did you decide for a scientific/technical career?

Being genuinely curious on the physics of everyday life I decided to pursue a career in chemical engineering as it was combining my passion for chemistry, physics and mathematics. During my MSc studies, my interest in the field of applied research was peaked when I had to be engaged in a new product development project, as part of the RD portfolio of a large food corporate in Greece.

Briefly describe your educational and academic curriculum?

I am a holder of a BSc degree in Chemical Engineering and a MSc in Food Engineering at the Technical University of Athens (GR). In 2009, I successfully defended my PhD thesis on exploring the mechanistic impact of dietary fibres as cryoprotective ingredients enhancing the shelf-life and consumers acceptance of ice cream. In the period 2009 2013, I was appointed as a postdoctoral researcher and research fellow at the Foundation Edmund Mach (IT) and University of Nottingham (UK), respectively. Since 2013, I work as a Research Scientist at the Luxembourg Institute of Science and Technology (LIST) in the domain of Functional Food Product Development and Innovation.

What do you do in your daily professional life?

My daily professional activities do mainly concern research project management activities i.e. project idea conception, preparation of project proposals for receiving public or private funding, design and conduction of experiments, preparation of research dissemination items (e.g. scientific and technical papers, oral or poster presentations for scientific conferences, book chapters) etc. In addition, I am responsible for supervising and mentoring of junior researchers such as MSc students and PhD candidates.

Who is your role model in the field of science and technology?

Nicholas Peppas an internationally leading Chemical Engineer in the domain biomaterials science and engineering.

What advice would you give young people who want to pursue a career in science and technology?

Engaging in research can be remarkably frustrating and challenging but at the same time, it is one of the most creative, self-liberating and rewarding career pathways: Stay bold, curious and open-minded!

4 Alex Gansen

What is your profession?

I am a Chartered Engineer, and have spent almost all my career working with Industrial Robots. My current position is as Chief Engineer of FANUC Europe Corporation.

When and why did you decide for a scientific/technical career?

I have always been fascinated by Engineering since childhood. My grandfather was a draughtsman and engineer and taught me a lot about working with wood and metal. Both my parents are scientists (Physics and Biochemistry) and encouraged me to follow a career in Science or Engineering. I was also lucky to go to a school where the teachers also encouraged both the practical and theoretical sides of education in Science and Technology.

Briefly describe your educational and academic curriculum?

I went to High School in the UK, where I studied Maths, Physics and Chemistry for my main subjects at A level. Then I did a degree in Engineering Science in Oxford University, and a Masters in Manufacturing Technology at Cranfield Institute of Technology.

What do you do in your daily professional life?

For many years I was responsible for Technical Support for FANUC Robot Division for all of Europe, but as part of the company succession plan I have handed over this responsibility to someone I recruited some years ago. Now I concentrate on more strategic issues, such as major new customers and new markets and projects like Education especially our sponsorship of the Worldskills competitions https://worldskills.org/

Who is your role model in the field of science and technology?

Dr Seiuemon Inaba, founder of FANUC

What advice would you give young people who want to pursue a career in science and technology?

Do it - Engineers create wealth other people just move it around :)

5 Lisa Smits

What is your profession?

Science Communicator at the Luxembourg Centre for Systems Biomedicine (LCSB)

When and why did you decide for a scientific/technical career?

Generally, I am always interested in understanding how things work from the ground up. Whether it is the tram construction site or the structure of a human cell, almost everything makes me curious. That is why the scientific subjects at school were often the most fun for me and I liked them a lot. This finally convinced me to study natural sciences and to become a scientist.

Briefly describe your educational and academic curriculum?

After graduating from high school with a focus on natural sciences, I studied Life Science. This Bachelor programme combined the traditional natural sciences and gave me a broad basic knowledge. Afterwards I specialised in Molecular Biomedicine and gained experiences with many different biological model organisms. After this master's degree, I finally earned my doctorate in the field of human neurobiology.

What do you do in your daily professional life?

At my institute, I am not only responsible for bridging the gap between scientists and the (Luxemburgish) public, but also for ensuring that scientists can understand each other. Therefore, I have many meetings with scientist from different fields and I help them to communicate their research in an understandable way. I do this, by creating texts and graphics for webpages, posters or flyers.

Who is your role model in the field of science and technology?

My personal role model is my former supervisor. She taught me not only how to do good science but also found the balance between challenging and supporting me, so that I could constantly improve myself. She was an outstanding mentor and also a good friend during my PhD. I admire her work, her way of thinking and the scientific world would definitely be a better place if everyone had her mind set

What advice would you give young people who want to pursue a career in science and technology?

Follow your passion, learn as much as you can, do good work, and stay curious.

6 Antonella Perucca

What is your profession?

Mathematician

When and why did you decide for a scientific/technical career?

Since I was 5 I knew I loved mathematics, and I enjoyed mathematical competitions in high-school. So I made a degree in mathematics, and then went into research.

Briefly describe your educational and academic curriculum?

After obtaining a degree in mathematics (4 years) and a PhD (4 years), I have been a postdoctoral researcher (3 years), lecturer (5 years), and professor (2 years, ongoing).

What do you do in your daily professional life?

Research and supervision of my PhD students; teaching, and didactical projects; outreach activities; administration.

Who is your role model in the field of science and technology?

Emmy Noether, probably the best female mathematician of all times.

What advice would you give young people who want to pursue a career in science and technology?

Work hard and dont be afraid of difficulties!

7 Snja Sabat Soler

What is your profession?

PhD student in Neurobiology

When and why did you decide for a scientific/technical career?

As a kid, I was always very curious about everything, and I always asked my dad, for example, why the sky was blue. Since I remember, I liked science and I knew I wanted to be a scientist.

Briefly describe your educational and academic curriculum?

I have a Bachelors in Biology and a Masters in Biomedicine. I have worked in 3 different laboratories in Barcelona (about brain, cardiovascular and blood cell diseases). Ive also worked in a lab in the Netherlands (microbiology) and now I am doing a PhD in the Luxembourg center for Systems Biomedicine.

What do you do in your daily professional life?

I arrive to work, I check my e-mails and organize my work for the day. Then I perform the necessary experiments for the day and, often, I meet with my colleagues, supervisor or collaborators about the ongoing projects.

Who is your role model in the field of science and technology?

Stephen Hawking

What advice would you give young people who want to pursue a career in science and technology?

Never listen to people that say you cant do it, because of course you can.

8 Sylvie Delcambre

What is your profession?

I am a laboratory technician in a research center of the University of Luxembourg.

When and why did you decide for a scientific/technical career?

When I was in high school, my biology teachers were highly passionate about biology So passionate that I thought it was the coolest thing on earth! I decided to study biology after my last year in high school without really knowing what you can actually do with a biology diploma (my parents did not agree on the fact that I wanted to become a baker, so I keep the baking for my spare time).

Briefly describe your educational and academic curriculum?

I did a bachelor in Biology at the University of Namur, in Belgium with an Erasmus program in Umea, Sweden for a semester. Then, I moved to Luxembourg for the first year of my master in Integrated Systems Biology and did the second year in Buffalo, New York. Finally, I did my PhD at the Luxembourg Center for Systems Biomedicine in the field of Metabolomics.

What do you do in your daily professional life?

It goes from routine experiments (cell biology, molecular biology, cell culture), to setting up new protocols, helping students, placing orders, keeping the lab neat and tidy, We have projects within our group, but also collaborate with other groups of the institute and other labs abroad, so we always get to do news things I split my work between lab work and office work, which is nice: you have active times and more quiet times

Who is your role model in the field of science and technology?

No one in particular. I admire the passion people put in their work: they have a question, and will turn it in every direction to find an answer.

What advice would you give young people who want to pursue a career in science and technology?

Science is not only about research: check out what it is possible to do with your degree, do as many internships as you can to try to get to know yourself and what you feel like doing for the rest of your life

9 Jean Paul Gilles

What is your profession?

Engineer for Science Center Luxembourg

When and why did you decide for a scientific/technical career?

I decided for a scientific/technical career as soon as I were able to read Daniel Dsentrieb. The reason why I decided this is because all that scientific/technical stuff is resonant in my mind.

Briefly describe your educational and academic curriculum?

As soon as scientific and technical topics came up, my interests in studying grew. At university I then got the Master degree in electronics and communication technologies.

What do you do in your daily professional life?

Finding original and informative concepts of interactive stations for very different thematic subjects. I also develop the technical part of the station. The mediation work gives me feedback from visitors as well allows me to express/extrovert my enthusiasm for science.

Who is your role model in the field of science and technology?

I always enjoyed the work of Jean-Jacques Delcourt. He is an engineer in electronics and doctor in science (University of de Mons Hainaut) as well as a consultant member of the Service de sondage ionosphrique de lInstitut royal mtorologique de Belgique.

What advice would you give young people who want to pursue a career in science and technology?

Do alternate between practical and theoretical approaches as much as possible.

10 Jonathan Turner

What is your profession?

Principal Investigator (Research Group Leader)

When and why did you decide for a scientific/technical career?

I grew up in a scientific family. My father was a professor of Electrical Engineering, my mother a Biology teacher, and my grandfather was a senior Aeronautical Engineer at the heart of the British aircraft industry through the 50,s 60s, 70s until his retirement in the 80s. I grew up being encouraged to investigate how things worked and how things are made. It was never really a choice, but rather a logical progression.

Briefly describe your educational and academic curriculum?

The best careers advice I got was from my father who was adamant that the name of the University was more important than the actual subject as long as it was a serious subject. I started with a Bachelor degree in chemistry at Imperial College in London, a PhD in pharmaceutical formulation from Birmingham, UK. Afterwards, I moved to France for my Post-Doctoral studies, and then moved to Luxembourg in 2003.

What do you do in your daily professional life?

My daily routine is varied. I have a number of responsibilities within the Institution that mean a large number of administrative meetings, but the rest of the time, I am free to organise myself. On average, I have at least one trip abroad each month to meet collaborators or to attend conferences. The rest of my time is spent doing science, reading literature, guiding and teaching my research students, writing manuscripts or as one of the editors of journal Clinical Epigenetics

Who is your role model in the field of science and technology?

David Barker He was an English medical doctor and epidemiologist and originator of the Barker Hypothesis that foetal and early infant conditions have a permanent conditioning effect on the body's metabolism and chronic disease later in life. Over the last 30 years his original hypothesis has slowly been extended to almost every major public health problem.

What advice would you give young people who want to pursue a career in science and technology?

Find something that you love doing, that enthuses you, and that you will always want to know more about.

11 Max Wolter

What is your profession?

PhD in Physics

When and why did you decide for a scientific/technical career?

During my studies, I came into contact with research and some aspects fascinated me so much that I decided, after graduating, to continue my career as a researcher. What I appreciate as a researcher is my topic (photovoltaics) as well as the constant new challenges that I have to face. These challenges vary all the time and help me grow as a researcher and as a person.

Briefly describe your educational and academic curriculum?

I did my Bachelor studies at the University of Luxembourg and at the Saarland University in Saarbrcken. I then completed my Masters degree at the University of Heidelberg in Germany. After graduating, I came back to Luxembourg to the young but ambitious University of Luxembourg where I do research about a topic that I love and where I can contribute to the intellectual value of my home country.

What do you do in your daily professional life?

I do research on thin-film solar cells. These solar cells are up to 100 times thinner than the solar cells that one typically sees on buildings. While the thin-film solar cells I work with are net yet as efficient as standard solar cells, they are cheaper and thus have a larger potential. In the laboratory, I work with photoluminescence spectroscopy, which is a tool to identify defects that reduce the efficiency in the crystalline structure of the solar cells, with the ultimate goal to improve the efficiency of the thin-film solar cells.

Who is your role model in the field of science and technology?

My role model are all the people that put all their passion and energy into their work and make the impossible possible.

What advice would you give young people who want to pursue a career in science and technology?

Be open-minded, be communicative and be critical.

12 Naoufal Bahlawane

What is your profession?

Lead Research and Technology associate in materials science

When and why did you decide for a scientific/technical career?

My fascination was by far directed towards the complexity of life (biology, psychology, social behaviors). Then realized that the physico-chemistry of materials is governed by less complex rules, which the understanding is a pre-requisite to rise the technology robustness, reliability and sustainability. The, since high school, ever increasing dream of becoming a materials designer is a significant driving force.

Briefly describe your educational and academic curriculum?

Graduated as a chemist from Morocco, I moved to France for a DEA in Analytics Chemistry and a PhD in materials science. After three years as a material scientist in Japan, I continued my academic curriculum with a habilitation and Venia Legendi in Physical chemistry in Germany before establishing in Luxembourg.

What do you do in your daily professional life?

It is exciting when you understand an application challenge and when you succeed at decomposing it into technological milestones. Proposing a scientifically sound approach to attain these milestones is then necessary for the acquisition of competitive funding. The last provides the resources to implement the planned research, and enables a training opportunity for the next generation of researchers. Furthermore, protecting intellectual property, publishing innovative scientific results, communicating in conferences, establishing academic/industrial collaborations and staying at the forefront of research development are all facets of the daily professional life.

Who is your role model in the field of science and technology?

Scientific research owes a lot to the public money, while it plays a major role for high education and offers support to industries. Adding to this dimension the ability of driving basic ideas to the point of creating an economic impact is what forces my admiration.

What advice would you give young people who want to pursue a career in science and technology?

Do not neglect soft skills.