

# Life Sciences in the Ticino: Two Scientists – Two Stories

Interview partners: Luca Varani, Marco Brini

Interviewed by: Susanne Lauber Fürst\*, Inartis Network

**Abstract:** Luca Varani, PhD, a group leader in Structural Biology at the Institute for Research in Biomedicine, Bellinzona, and Marco Brini, founder and CEO of EnvEve SA, in the Tecnopolo in Manno, describe their life sciences background, their careers and why they perceive their ideal situation being a basic scientist who wants to remain in science, or being an entrepreneur respectively.

**Keywords:** EnvEve SA · Institute for Research in Biomedicine Bellinzona · Life Sciences · Ticino



Luca Varani, PhD; Institute for Research in Biomedicine, Bellinzona (+41 91 820 03 21; luca.varani@irb.usi.ch; www.irb.usi.ch). The Institute for Research in Biomedicine (IRB) is a part of the Università della Svizzera Italiana, founded in 2000 with the clear and ambitious goal of advancing the study of human immunology, with particular emphasis on the mechanisms of host defence.



Marco Brini, CEO EnvEve SA, 6934 Manno (Tecnopolo) (+41 76 346 14 20; info@enveve.com; www.enveve.com). EnvEve SA is a high tech company specialised in the Internet of Things, with a unique Internet of Nature framework for outdoor applications. Robust and reliable devices enable sophisticated analytics to support decisions in agriculture and in forestry.

## **Luca and Marco – What is your background?**

**Luca:** I graduated as a chemist from University of Milan with a thesis in structural biology. I then obtained a PhD degree at University of Cambridge, UK, in 2000. Then I moved to Stanford University for a postdoc and was awarded a ‘long term EMBO Fellowship’ in 2003. In October 2007, I joined the Institute for Research in Biomedicine, Bellinzona, as a group leader in Structural Biology.

**Marco:** I did a Maths degree at University of Torino and an MBA in International Business. I financed my studies by working as a social worker, mainly dealing with troubled families and drug addicts. I had work experience in Italy, US and India before definitively moving to Switzerland, where I founded my company EnvEve SA in 2008.

## **What are you passionate about?**

**Marco:** I believe in working in an innovative and passionate way to make my contribution to a better world. My true passion is creating the ‘Internet of Nature’ from the Internet of Things vision. With my company EnvEve, we offer cutting-edge solutions to efficiently predict forest fires and improve sustainable intensification in agriculture. We do this by laying out a capillary network of robust sensors in forest, fields or greenhouses, collect data with advanced wireless sensor technology and analyse them in cloud analytics for reliable decision support. I firmly believe that science and technology with ethical standards will help mankind to evolve towards a better future.

**Luca:** I tend to do what I like to do! I think my brain is wired for chemistry: for me, logical thinking is a passion which also allows me to experiment in a fun way with molecules. My contribution to innovation is in my basic research. It’s fascinating how I can contribute with my knowhow in structural biology going into challenges such as dengue fever, diphtheria, leukaemia, dementia, or design receptors for the detection of organic pollutants. However, I am aware that being in basic research is a different way of thinking compared to applied research – this is a different ball game!

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**Why Life Sciences?**

**Luca:** I think like a chemist and I chose Life Sciences because it brings together all elements that I am passionate about. In Life Sciences we need to combine all scientific disciplines to learn from and complement each other. This is particularly true for the complex challenges in biomedicine. In our institute, biophysicists, bioinformaticians, medical doctors, immunologists, *etc.* work together on a daily basis. Honestly, I am too flamboyant to be an engineer, but together as a team we can create a better understanding for future scientific breakthroughs. For example, in the case of medicine for humans, we research the design of molecules to advance the fight against cancer without invasive diagnostics. Another example is an ongoing CTI-project, where we study molecules as bio-recognition sensors for virus detection.

**Marco:** I didn't start working in Life Sciences, I just ended up here following my heart, out of curiosity and desire to learn. Nature gave birth to the most advanced 'technology': we can only try to copy and get inspiration from this. Just observing the marvellous way nature has shaped the different life forms creates spontaneous wonder and a sense of admiration in me. It's a never-ending learning experience.

**What else would you like to be if you were not doing what you're doing now?**

**Marco:** For me the ideal situation is being an entrepreneur. If I were not now managing my own company, I'd like to be a scientist. A university career would be the only contender for my professional heart.

**Luca:** I am a basic scientist and I want to remain in science, but I also took entrepreneur classes and work closely with start-ups. However, I have several lives: in

another life I am a freelance motor racing photographer, and have published pictures in magazines. I like it, it's not a career, it's just a different way of looking at things which interest me and to be part of it in a different way.

**What best tip would you give to young people in the Ticino?**

**Marco:** I came here from Italy, leaving my country to find a place where I could express my creativity and passion through work. Switzerland was my choice and Ticino was easier for language and proximity. To a young Ticinese I would say: "You're lucky to live in a country which is doing its best to empower people who believe in innovation and entrepreneurship. Move along with the changes and embrace a future where creativity and knowledge are more valuable than anything else."

**Luca:** Ticino is a great place to live. In science, we are really advancing and I hope that in five years, the Ticino will be a hot spot for Life Sciences. Today we still have fewer choices and fewer job opportunities than Zurich, for instance. But, the atmosphere for Life Science start-ups is getting more and more attractive. We have very advanced technology and machinery and our expertise is great. There is a clear trend to improve. Cantonal organisations, such as AGIRE, but also private initiatives provide great support.

As a personal tip I tell my students: "If you want to be involved in start-up companies, you don't have to leave – there are more and more people helping Ticino's science and economic development to grow." But I would like to add a word of caution: Young people think they should go into very specialised fields for graduation. Short term, this might be good to

find a job, but for me it is better to go into a general degree to learn the thinking process and understand the foundation, develop the ability to think, not to learn a technique. Learn how to choose the right technique, solve problems with all available tools and also develop new tools for new problems. Young people need to be trained to think for themselves in order to create true innovation. For this, it might be better to study the basics such as physics, chemistry or biology.

**A final question to Luca: Would you study chemistry again?**

Yes! (with a big smile)

**A final question to Marco: Where do you see the next big innovation in your field?**

Internet of Things is certainly happening. It will change forever the way we interact with our environment, with our 'things' like it changed the way we communicate with each other. Global and immediate communication will translate into ubiquitous and real-time connection with the inanimate world of things. I'd like to contribute to this tremendous change ahead of us, by providing a technology enabling people to connect with nature. With EnvEve, we develop tiny and autonomous devices allowing forests, orchards and crops communicate over the internet. We already have proof of great advantages such as forest fires reduction damage and increased agricultural efficiency and productivity. This is true innovation.

**Marco and Luca, thank you very much for sharing your thoughts with us!**

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