Proceedings of the Eleventh International Conference on Urban Pests 2025
AF-Borgen, Academic Society, Lund, Sweden
William H Robinson, editor

TURNING A SCIENTIFIC INNOVATION INTO A BIOTECH STARTUP – THE STORY AND LESSONS LEARNED FROM NATTARO LABS

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Abstract his paper examines the transition of scientific research into commercial ventures, using Nattaro Labs, a Swedish biotech company, as a case study. Bridging the gap between academia and industry through commercialization allows valuable research to reach broader audiences and address societal needs. While various pathways exist for research impact, startups offer a direct route for widespread application, particularly with the agility of smaller companies. Drawing from the experience of Nattaro Labs, founded on research from Lund University, this analysis highlights key success factors: building multidisciplinary teams, securing intellectual property, and understanding industry culture. It also acknowledges the inherent risks and challenges, including the need for business acumen and navigating technology transfer. Urban pests are not only nuisances but also contribute to significant public health issues by spreading diseases, triggering allergies, and causing economic losses through structural damage. Research can lead to solutions for urban pests and by choosing commercialisation of your innovation with a startup you could make a difference in a globalised future where climate change and travel patterns lead to global challenges in urban pest management.

Key words entrepreneurship, biotech, urban pests

INTRODUCTION

Academia and industry often operate in separate spheres. Commercialisation bridges this gap, ensuring that valuable research reaches the people who can benefit from it. There are multiple pathways to make impact with your research, either as a startup, doing consulting, engaging in social entrepreneurship, joint venture, or by getting involved in the shaping of policy, and finally through licensing out your invention. (Jiew, 2025).

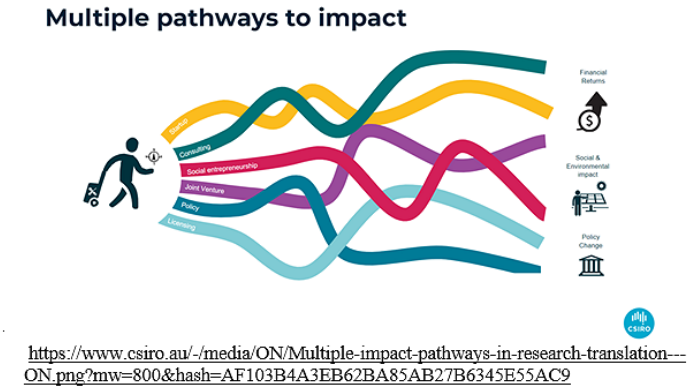

Figure 1. Multiple pathways for researchers to make an impact.

Most research is not tied to the creation of a company, but turning your research into a startup is an exciting and important pathway to making a difference. A company is the most effective way to get a widespread application of your invention/innovation. Startups are often more agile in bringing scientific inventions to market. By commercialising your research your startup can create new jobs, and by introducing new methods, solutions or technology productivity can be boosted and even structural changes in the economy can be created, thus even enabling new industries. These are the world's science and technology hotspots according to the statistics from WIPO. Switzerland tops the ranking and has done so for 13 years in a row.

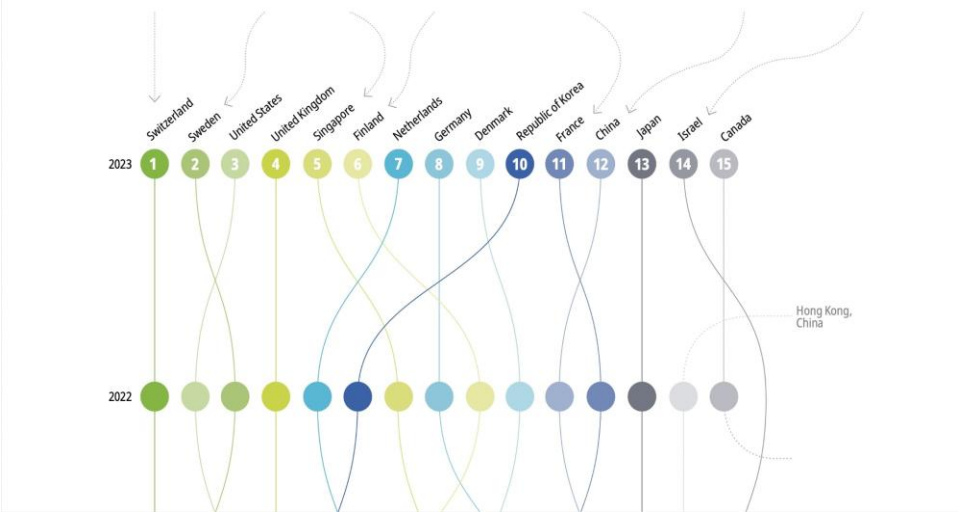

Figure 2. The top 15 countries of the world in science and technology.

By sharing some insights from being co-founder of Nattaro Labs, a Swedish biotech company from Lund, my ambition is to inspire and give an example of how scientific research can be turned into viable business providing smart and sustainable management of an urban pest, in this case the bed bug, *Cimex lectularius*.

MATERIALS AND METHODS

The research and innovation leading up to Nattaro Labs were mainly made at Lund University, the Pheromone Group, by the now deceased researcher Dr Camilla Ryne. Over the years as a researcher, she had been consulted as an expert within her field several times. However, at one point in time she decided it was time to leave the university setting and go and explore other pathways for her insights.She entered an entrepreneurship program in Lund, where she got to know the other co-founders, Carl-Magnus Hansson, Magnus Bäckmark and Christine Dahlman Jacobsen (author of this paper). The other co-founders had executive experience from different industries, and technical and market backgrounds. The team of four decided to start their company together in 2011 with an ambition to create sustainable products to control bed bugs based on science and research in chemical ecology. The first employee outside of this group became Jette Knudsen, who is still with the company as Senior Researcher.

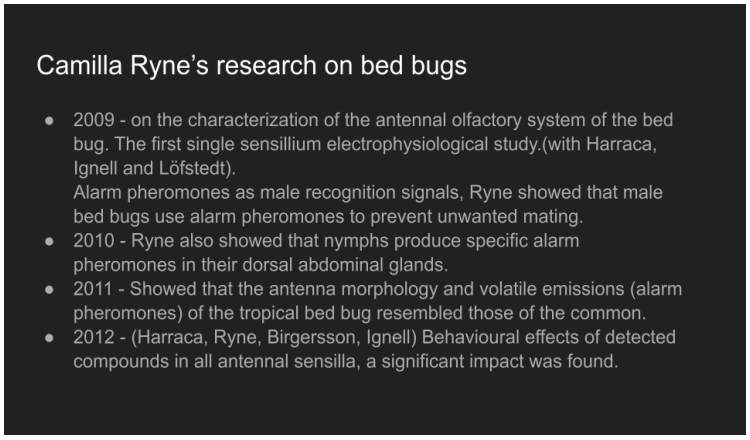

Figure 3. A summary of the research of Camilla Ryne.

Figure 4. The founders of Nattaro Labs.

As soon as the company was started it initiated a close collaboration with a student accommodation company in Lund, soon also the Swedish Migration Board for joint field studies and product pilot, and in addition with professional technicians at Anticimex and Nomor (now Rentokil) leading up to 2 patented and now commercially available inventions.

RESULTS AND DISCUSSION

Some key learnings from the startup journey with Nattaro Labs are:

- Build a multidisciplinary team with expertise in your science, engineering, business, and marketing. Your journey will go faster, have more fun and a greater chance to succeed when you team up with people who has experiences from other areas. It can a good idea to recruit an external CEO when you are ready to move from exploration phase to the exploitation phase, i.e. start to sell your products and solutions
- A company is the most effective way to get a widespread application of your invention/innovation. Smaller companies are often more agile in bringing scientific inventions to market. Startups can provide a direct pathway to apply your scientific research and innovations in real-world settings, potentially solving practical problems and improving lives.
- By starting a company, you as a scientist will have greater control over the development and application of your research. If your venture is successful, it will provide financial rewards, allowing you to further invest in research you are passionate about.

Turning your science into a venture is not without risk, the entrepreneurial journey is a rocky one, and some scientists may be hesitant to take the chance. The cultures of academia and industry can be very different, and scientists may need to adapt to a new way of working. When your research originates from a university, it is important to secure the intellectual property rights from the technology transfer office. Despite these challenges, the potential benefits of scientists becoming entrepreneurs are significant, both for society and for you as scientists. A supportive ecosystem with experienced business coaches that encourages entrepreneurship within academic institutions can also be good to have access to.

CONCLUSIONS

Most research is not tied to company creation, but it is an exciting and important one. By commercializing your findings, you can influence market trends and set new standards within your field and industry. In the case of Nattaro Labs we made a critical analysis of existing approaches and made it our core objective to create a climate friendly operation with better efficacy. Successful entrepreneurs can gain recognition and credibility in both the scientific and business communities. Startups can provide a direct pathway to apply your scientific research and innovations in real-world settings, potentially solving practical problems and improving lives. There are also barriers to moving from academia to a commercial organisation, and many scientists lack the business acumen needed to start and run a company, thus the need for a multidisciplinary team and an insight of why there is a need for this. While these effects are substantial, it's important to note that not all startups succeed, and the process of commercialization can be lengthy and costly, especially in sectors like biotechnology. However, the overall impact of successful research commercialization by startups on society is overwhelmingly positive, driving innovation, economic growth, and addressing critical societal needs. Without the creation of Nattaro Labs perhaps ICUP 2025 would not be arranged in Lund.

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