# NLS DAYS

## nordic life science days

a sweden BIO event

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# Innovation and collaboration: Insights from NLSDays 2024

**For the eleventh consecutive year, the Nordic Life Science Days (NLSDays) took place in Malmö on September 18-19 2024. As the largest Nordic partnering conference dedicated to the life science industry, the event draws professionals and thought leaders from around the world to explore the latest developments in life science.**

Since its inception, NLSDays has grown larger each year and is now attracting more than 1 400 delegates from over 30 countries. The participants do not only make up a diverse crowd from a geographical perspective but also functionally with representatives from the pharmaceutical, biotechnology, medical device, diagnostics, C(D)MO, CRO, digital health, academic, investment and professional services sectors.

Similar to previous years, the two-day conference centered around networking and partnering as well as five super sessions with panel discussions around topics such as "Unveiling the Future: Life Science Industry and Healthcare in the Age of AI", "Pioneering Innovation: Building Biotech Startups From the Ground Up" and "Hunt for the Next Big Thing Within Big Pharma". With an impressive line-up of moderators and panelists, the discussions provided thoughtful perspectives and actionable insights to some of the most imperative challenges which the life sciences industry is facing right now. Although the sessions touched upon many different areas, three overarching themes stood out:

1. How can we utilize the full potential of AI in practice?
2. What does it take to become truly patient centric, and what is holding us back from enabling it?
3. How can we even better foster innovation in the Nordic life science industry, and what can other regions learn from it?

## AI – moving from buzzword to reality

Artificial intelligence, or AI, has been a hot topic in life sciences for a while, yet, there have been relatively few real use case examples – until now. Thanks to more advanced computing infrastructure, more complex AI algorithms and simulations that are essential for modern drug discovery and development can now be run. This is further supported by government initiatives in the Nordic and European regions that are all about making data collection and sharing a lot smoother. These efforts, along with continuous technological advancements, are pushing AI from the "maybe someday" to "happening now."

Many of the current AI use cases in life sciences are centered around improving efficiency and speed along the drug discovery and development value chain in order to bring innovation to patients faster. As discussed in the super session "Unveiling the Future: Life Science Industry and Healthcare in the Age of AI", this can in early stages be done through the use of AI-driven molecule design, high-throughput/image screening, or data modeling and simulations in order to select the most effective compounds from a data library of existing compounds and drugs. In later stages, AI can be used to support data-driven decision-making in clinical trials through enabling in-silico models for additional synthetic evidence generation, or help predict trial outcomes.

Given the vast potential of AI in these settings, the question of "Whether this is the death of the traditional wet lab?" was put forward in the panel discussion. But the answer was a very clear no as traditional assays will still be crucial for validation purposes. What AI is essentially doing is cutting down the number of tests needed to be run and boosting the chances of getting it right the first time.

> ***"It is efficiency at the end of the day, but AI will not replace the human lens"***
>
> *Panelist, Unveiling the Future: Life Science Industry and Healthcare in the Age of AI*

As emphasized across several panel discussions whenever the topic of AI came up, ensuring data quality is one of the current main barriers to bringing AI to scale. This is especially important if the AI tools are intended to support regulatory events. The key to ensuring structure and quality is proper data curation, which in itself is a large challenge. On top of that, the human perspective also needs to be taken into account. To succeed in implementing AI, new or adapted skillsets will be required beyond the current industry know-how and expertise to ensure quality and compliance. Companies also need to enable their people to critically handle AI. With these present challenges, it is natural that there is still skepticism around the lack of control and risks associated with AI. But as highlighted by one of the panelists, AI should be managed in the same way that medicines are managed. If the industry has found a way to handle the risks with novel medicinal products, we should be able to do that with AI.

> ***"We need to balance the risk and benefits of AI in a similar way as we do with medicine"***
>
> *Panelist, Unveiling the Future: Life Science Industry and Healthcare in the Age of AI*

For companies wanting to get started with AI, it is clear that partnering is the way to go, and with their supporting infrastructure and collaborative mindset, Nordic life science companies are well-positioned to take the lead in this continued development.

> ***[How to get started with AI?] "There are many good partnering opportunities. Do your research, partner and don't be afraid to be an early adopter"***
>
> *Panelist, Unveiling the Future: Life Science Industry and Healthcare in the Age of AI*

## Now is the time for true patient centricity

Patient centricity can be defined in many ways but in essence, it is about "understanding what is in the mind and heart of patients and making this a central element of every step of development; from discovery until the product is on the market and even beyond" as it was aptly put in the super session "Focus on the Patient: Are You Developing a Product That Will Reach the Patient?".

To highlight some practical examples brought up in the discussions, patient centricity is all about:

1. **Developing products that meet the patient's needs and prerequisites:** Creating pharmaceutical products that truly are tailored to the patient is at the core of what patient centricity means, whether that is made through cutting-edge precision treatments like CAR-T with potential to even be curative, or something as straightforward as tweaking the formulation of a dermatology cream to ensure it feels nice on the skin. In the end, it is about finding a treatment that helps the patient
2. **Ensuring wide representation from a patient diversity perspective:** By offering more flexible clinical trial designs, like decentralized or virtual trials, companies can make sure a more diverse set of patients are taken into account
3. **Improving access to treatment:** BioNTech's BioNTainer initiative to build modular manufacturing sites in Africa is an example of how to enable better and more equal access to medicine

> ***"The patient does not really care if the product is innovative or not, as long as they have something that helps them"***
>
> *Panelist, Focus on the Patient: Are You Developing a Product That Will Reach the Patient?*

> ***"Something you have to remember with CAR-T is that these [therapies] are curative. Treatment is fine but if you can cure the patients, that is the next thing"***
>
> *Panelist, Hunt for the Next Big Thing Within Big Pharma*

> ***"Human beings are the same but also different! This needs to be taken into account when designing drugs"***
>
> *Panelist, Unveiling the Future: Life Science Industry and Healthcare in the Age of AI*

Similar to AI, patient centricity is a topic that has been discussed for years but it is clear that we, as an industry, are still not there. For example, according to IQVIA's EFPIA Patients W.A.I.T. indicator analysis 2023[1], the average time between market authorization in the EU and product availability for the patient is 531 days[2] – for orphan as well as oncology drugs, the numbers are even higher. The average time to availability also varies dramatically across different European countries; from 126 days in Germany to 804 days in Malta.

1 EFPIA Patients W.A.I.T. Indicator 2023 Survey, IQVIA, Published June 2024

2 The time to availability is the days between marketing authorisation and the date of availability to patients in European countries (for most this is the point at which products gain access to the reimbursement list). The marketing authorisation date is the date of central EU authorisation in most countries, except for countries shown in italics where local authorisation dates have been used. Data is correct to 5th January 2024.

To truly become patient centric, two barriers need to be overcome on a structural level:

1. **Market access** is key to ensuring the products really reach the patients. With Europe's 27+ countries each having their own regulations, it is a huge challenge for pharma companies trying to navigate the system. Streamlining these processes, possibly through some form of centralization, could be a game changer
2. **Viable business models** need to be developed. The traditional transaction-based healthcare models do not sufficiently support these new types of innovations. Shifting to an outcome-based healthcare model could foster more creativity and better results, and we need to find a way to move into these models. To increase the chances of gaining reimbursement, the panelists advice companies to interact with payors early on to ensure that the product under development meets the requirements from a payor perspective

Getting patient centricity right is not just good for patients; it also offers a competitive edge in the market. There is a clear link between focusing on patient needs and achieving commercial success, and there is all reason for the industry to make the most of this opportunity now. At the same time, it is essential that payors show commitment and willingness to pay for patient-centric innovations.

> ***"There should be more of these value-based models where the company gets paid for keeping their patients healthy"***
>
> *Panelist, Focus on the Patient: Are You Developing a Product That Will Reach the Patient?*


> ***"Patient centricity is a way of using innovation wisely to improve health living. Society at large needs to benefit and it needs to be sustainable financially"***
>
> *Panelist, Focus on the Patient: Are You Developing a Product That Will Reach the Patient?*

## From scientific breakthrough to innovation in the Nordics – collaboration as a key success factor

The Nordics, and especially Sweden, have a strong track record of creating unicorns. According to Business Sweden's Tech Review 2023[3], Sweden has to date produced 41 unicorn startups with a valuation of more than 1 billion USD and also ranks as third in Europe in terms of total deep tech VC investment, with the life sciences industry constituting a significant share. But what has been the success behind this, what can other regions learn from it and how can the Nordics continue foster an innovative environment going forward?

There is consensus around one of the key factors behind the historic and future potential success being collaboration. On a higher level referring to collaboration between academia, industry, and healthcare, but also between smaller biotechs and big pharma companies as well as cross the different Nordic countries.

Many of the scientific breakthroughs that eventually become innovations originate from an academic research setting. To ensure these inventions make it to the market, they need

3 Sweden tech - 2023 review, Business Sweden, Swedish Institute, Swedish Agency for Economic and Regional Development, Swedish Incubators and Science Parks and Vinnova, Published January 2024

to successfully be brought out of academia and into the industry, which is one of the most important but also challenging gaps to bridge. The phrase "innovation equals invention times commercialization" was coined by MIT professor Bill Aulet and highlights one of the most common pitfalls at this stage, namely, not putting enough emphasis on commercialization.

> ***"Innovation does not stop at the bench, it continues through the whole development. It is not until it is on the market that you cross the line for innovation"***
>
> *Panelist, Hunt for the Next Big Thing Within Big Pharma*

> ***"Going from science to business in academia is a model which is difficult to scale"***
>
> *Panelist, Pioneering Innovation: Building Biotech Startups From the Ground Up*

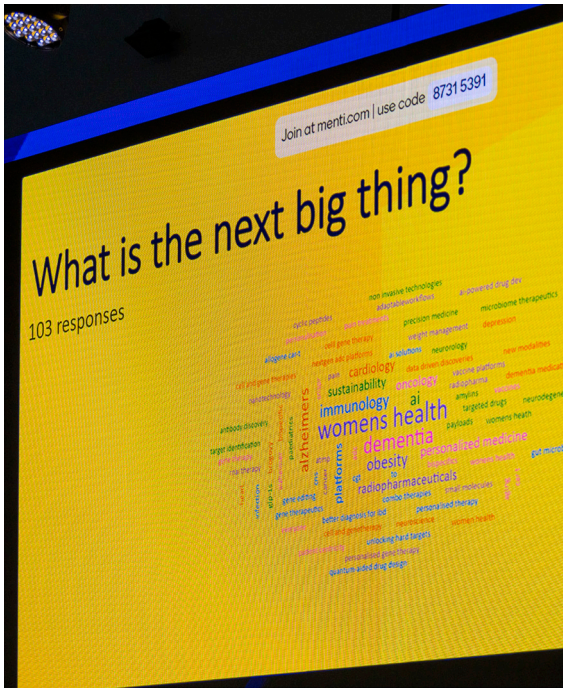
To manage these challenges as a small biotech company, three practical tips were brought up in the super session "Pioneering innovation: Building biotech startup from the ground up":

1. **Build the right team:** A combination of scientific and commercial capabilities is required early on
2. **Carefully think about the timing of bringing in investments:** There are many questions to consider such as when and how to bring in capital; should the company go for an IPO? Should the company bring in Nordic and/or international investors? Regardless of what investment companies are seeking, a well-prepared and thought through pitch/investment memorandum is important
3. **Build and nurture relationships:** One of the company's initial priorities should be to find investors who are willing to support the company long-term, through the different stages of development

> ***"It is a relationship business. We need to work together, we need to talk to each other and we need to increase the visibility to each other"***
>
> *Panelist, Pioneering Innovation: Building Biotech Startups From the Ground Up*

Continued investments from business angels, VC funds and private equity firms as well as support from incubators and other players in the start-up ecosystem are crucial to ensure future success. Other regions can learn from the Nordic countries in the way the supporting infrastructure functions and take note of the collaborative environment. But the continued success as a life science innovation hub is also dependent on a continued strong flow of capital being re-invested also after potential exits. As expressed by one of the panelists of the super session "Money, Money, Money. How to Attract More International Investors to the Nordics?": "In the Nordics, we are good at bringing up our junior football players but not entering them into the senior league – we have the talents, the ecosystem and the success cases but if we don't have the capital, all of this will go away". To successfully do this, cross-industry collaboration within the Nordics as well as beyond is key.

**To summarize,** this year's conference emphasized the integration of AI in life sciences, patient-centric approaches in healthcare, and the fostering of innovation within the Nordic region, among many other interesting topics. The discussions highlighted the practical applications of AI in drug development, the imperative of truly understanding and integrating patient needs, and the collaborative spirit that is driving the Nordic region's success in producing life science innovations. These themes do not only reflect the current landscape but also set the trajectory for future advancements in the life science industry.



# Getting to know the NLSDays 2024 award winners

The Nordic Star 2024 Pitch Competition and NLS Days Innovation Poster awards went to Dr. Alina Castell, CEO of MyCural Therapeutics and Giacomo Roman, PhD student at the Faculty of Medicine (University of Oslo), Institute of Clinical Medicine, Research Institute of Internal Medicine, Dept. of Hematology, respectively.


*Winner of the Nordic Star 2024 Pitch Competition:*
**DR. ALINA CASTELL**

**How did it feel when you heard your name being called as the winner?**

I was surprised because I didn't think our project had come far enough to attract this kind of interest yet. We know that we have something very important coming, but it is still quite far away. That being said, I have now practiced pitching for two years and have developed in that aspect so maybe that was also something that the jury noticed.

**What do you think were the distinguishing factors of your pitch that made you win?**

As highlighted by the jury's motivation, we were able to clearly describe the problem and show that there is an obvious unmet need in this field to which we have a clear solution and way forward to solve. Maybe they were also impressed by the fact that I managed to do the pitch in only three and a half minutes instead of four!

Founded by cancer researchers from Karolinska Institutet, Linköping University and Uppsala University, MyCural Therapeutics focuses on bringing forward a new treatment targeting the MYC oncoprotein for patients with aggressive high-risk tumors.

At Oslo University Hospital, and as part of the "SPARK Norway" innovation in life science program, Giacomo Roman's research group is developing an autologous cell-based therapy for coagulation factor deficiency.


*Winner of the NLS Days Innovation Poster 2024:*
**GIACOMO ROMAN**

**How did it feel when you heard your name being called as the winner?**

Fantastic, I am very honored. Joining this year's NLS Days conference has been a huge opportunity for me – it is my first time – and I am very grateful.

**What do you think were the distinguishing factors of your poster that made you win?**

Coagulation factor deficiencies are hereditary, monogenic disorders affecting the blood coagulation system, resulting in pathological bleeding or thrombosis and the main treatment for these patients still relies on replacement therapy with frequent, required for life, expensive injections. By correcting the disease in the patients' own pluripotent stem cells, we are able to produce therapeutic, tridimensional liver organoids recapitulating mature liver functions and cellular complexity, including the secretion of all the previously compromised blood coagulation factors. We are set to demonstrate that a single infusion might provide lifelong treatment with no eligibility, toxicity, or immune-associated restrictions. I think the novelty of the approach and the tremendous therapeutic potential of the three-dimensional liver organoids presented with a colorful, beautiful photo on the poster were the key things that attracted the participants' attention.