

A perfect storm of public-private collaboration and innovation

Science and engineering are traditionally highly valued in Sweden, which helps explain why it's considered Europe's innovation leader. LSH industry and research centers play an important role in this: they contribute to key innovations, provide jobs and are a major export product.

Dynamic culture

LSH research is organized in clusters across the country, the main ones being Stockholm-Uppsala and Malmö-Lund, which in turn forms an international cluster with Copenhagen. A new cluster is now emerging in the Gothenburg region, where AstraZeneca is building a new R&D center. These clusters are private-public funded, creating a dynamic environment where public-funded research meets private investment and business drive.

Sweden has a strong focus on bringing its AI solutions to market

A good example is the private investment in AI research in life sciences by the Knut & Alice Wallenberg Foundation. This has two components: a completely new national investment in computer-driven life sciences of €304 million over 12 years; and a further €58 million investment in current support to the national research infrastructure, SciLifeLab, and the Wallenberg Centres for Molecular Medicine at the Universities of Gothenburg, Lund, Linköping & Umeå. The initiative prioritizes four research areas: cell and molecular biology; evolution and biodiversity; precision medicine and diagnostics; and epidemiology and infection biology.

Creating bigger datasets

Data-driven research requires a lot of data, and as Sweden has a relatively small population it needs to collaborate with life science clusters in other countries.

An example is the work of Kees-Jan Pronk at Lund University. Pronk is researching childhood leukemia, a data-intensive research field where AI plays an important role. To increase his dataset, he works with childhood leukemia centers in Norway, Denmark and Finland, and is in close contact with the Princess Maxima Center in Utrecht.

Getting to market

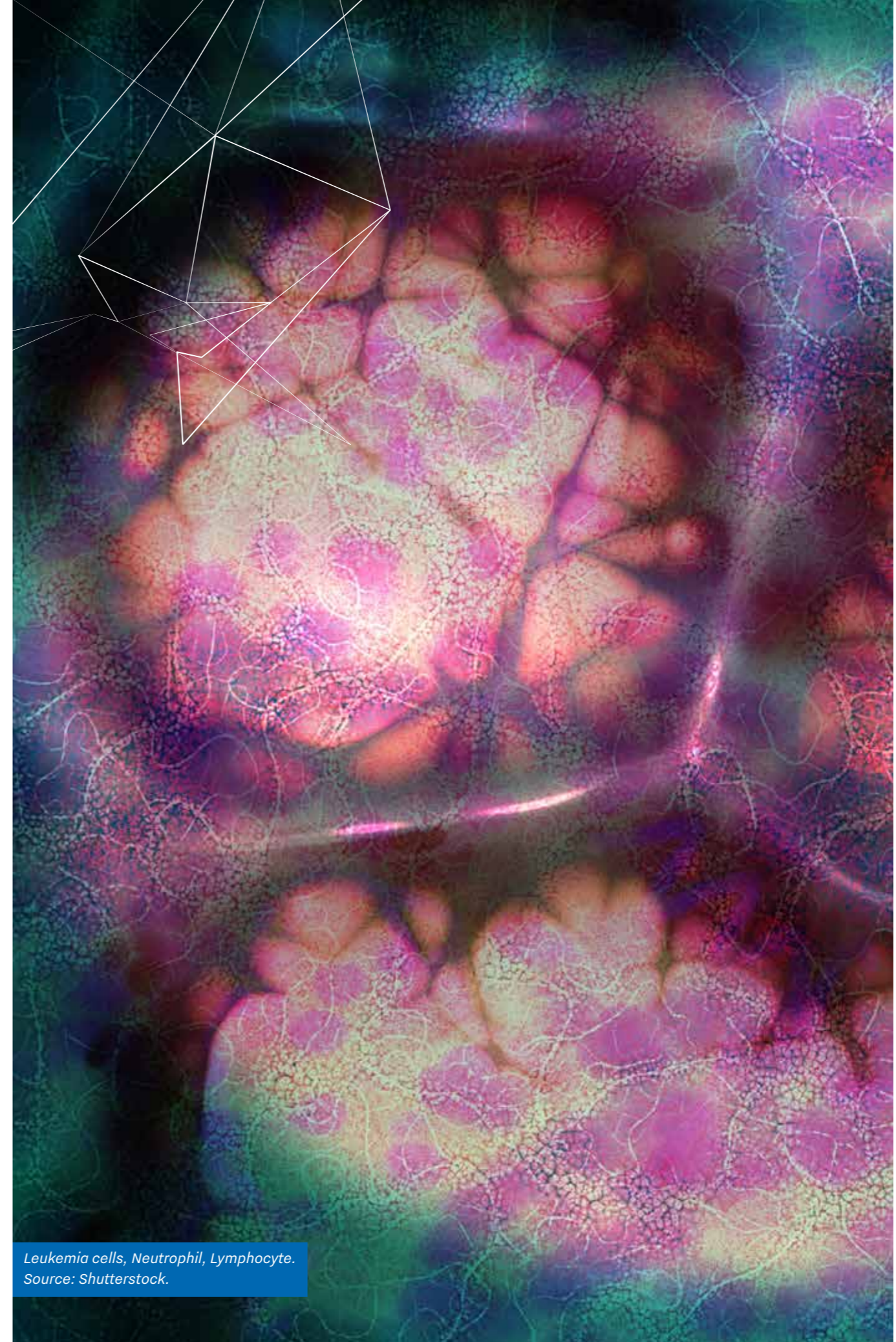
Sweden has a strong focus on bringing its AI solutions to the market. Most AI research by academics and students ends up in academic papers and patents, but some projects also spark business ideas and the University of Lund has therefore set up Innovation Lund which advises academics and students on the business and financial aspects, and coaches them through the startup phase.

From almost 500 potential business ideas in 2019, 21 companies were successfully launched. Many of these startups benefited from the AI and machine learning research done at the university. Examples include:

- Bionamic: software for handling and analyzing data in antibody drug development.
- Cell Invent: developing new human disease models to develop cures for Alzheimer's.
- SB1Pharma: a new approach to identifying and treating cancer tumors that primarily affect children.
- Cellavision: solutions for hematology laboratories to automate and simplify the process of performing blood and body fluid differentials.

The Innovation Attaché for Sweden is in close contact with Innovation Lund to see how we can facilitate collaborations between the Dutch and Swedish life-science startup scenes.

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Leukemia cells, Neutrophil, Lymphocyte.
Source: Shutterstock.

