



# Welcome to SciLifeLab

Eva Molin, PhD, MEd

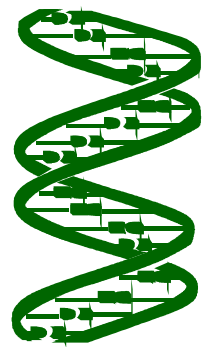
Project coordinator

# Science for Life Laboratory

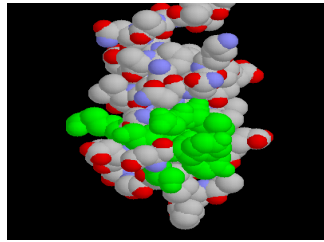
Develops, offers and applies  
advanced technologies for molecular biosciences with a focus on  
health and environment



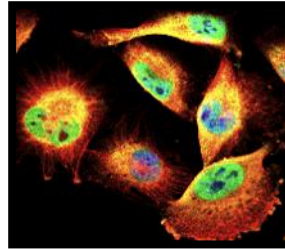
- **Joint Uppsala – Stockholm center with two nodes**
- **Hosted by four universities**
- **Official start, 1 July 2013**
- **Approximately 1500 researchers by mid 2014**
- **Infrastructure for molecular bioscience**



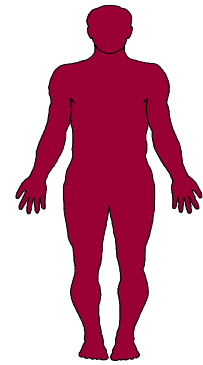
DNA/RNA



Proteins



Cells



Organism

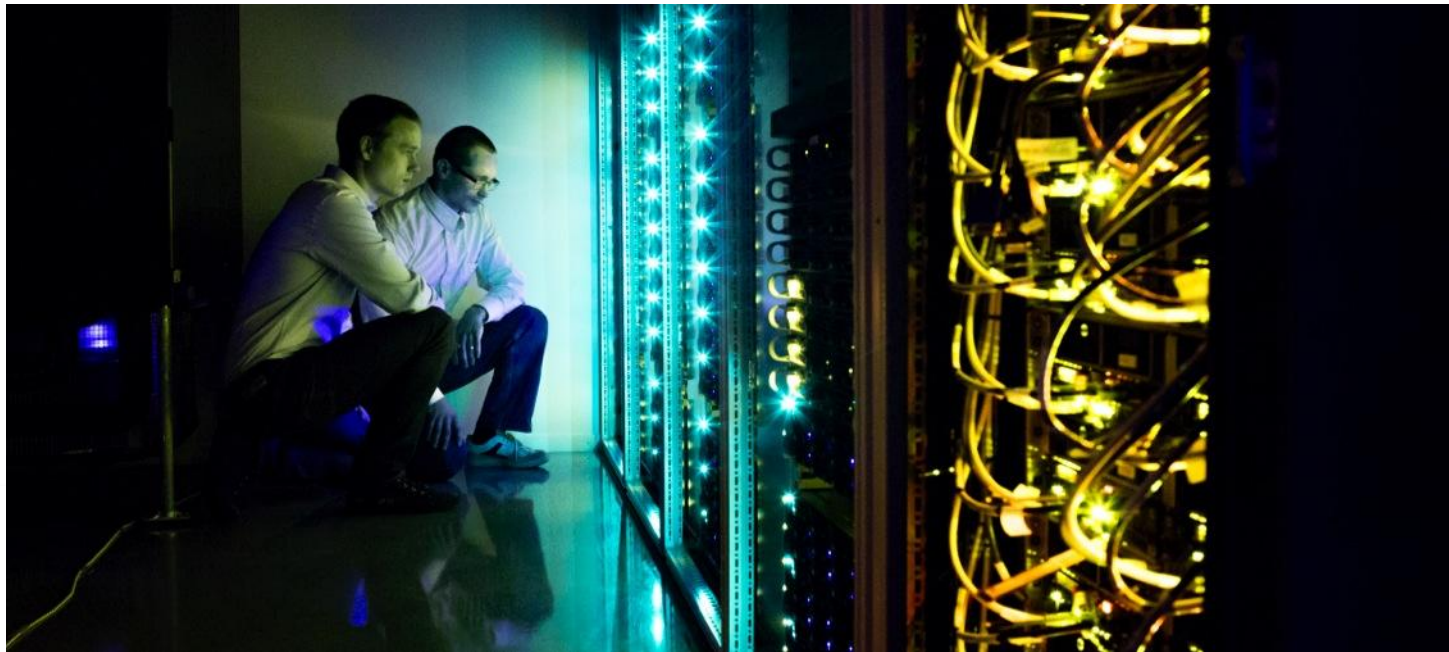
Health

SciLifeLab

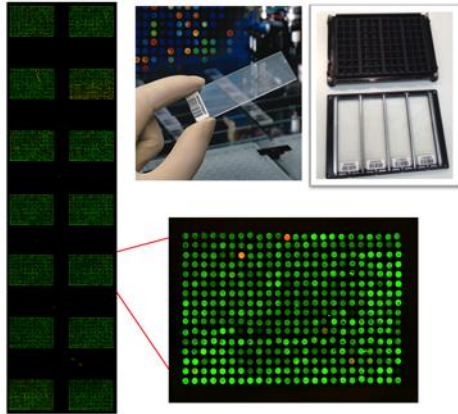
Environment

# Today's science needs interdisciplinary competence

- The amount of data is increasing exponentially
- Swedish scientists need to be able to produce and analyze large data-sets
- Interdisciplinary projects require many competences
- Large-scale technology and analysis methods need to be at the cutting edge
- Collaboration with industry and health care is important

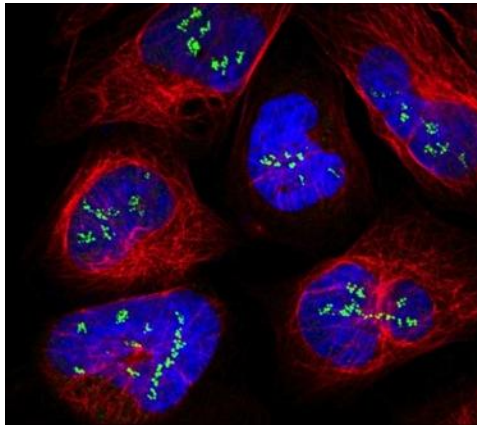


# SciLifeLab mission



Technology platforms for national use

- Service
- Technology Development
- Analytical support
- Courses and workshops

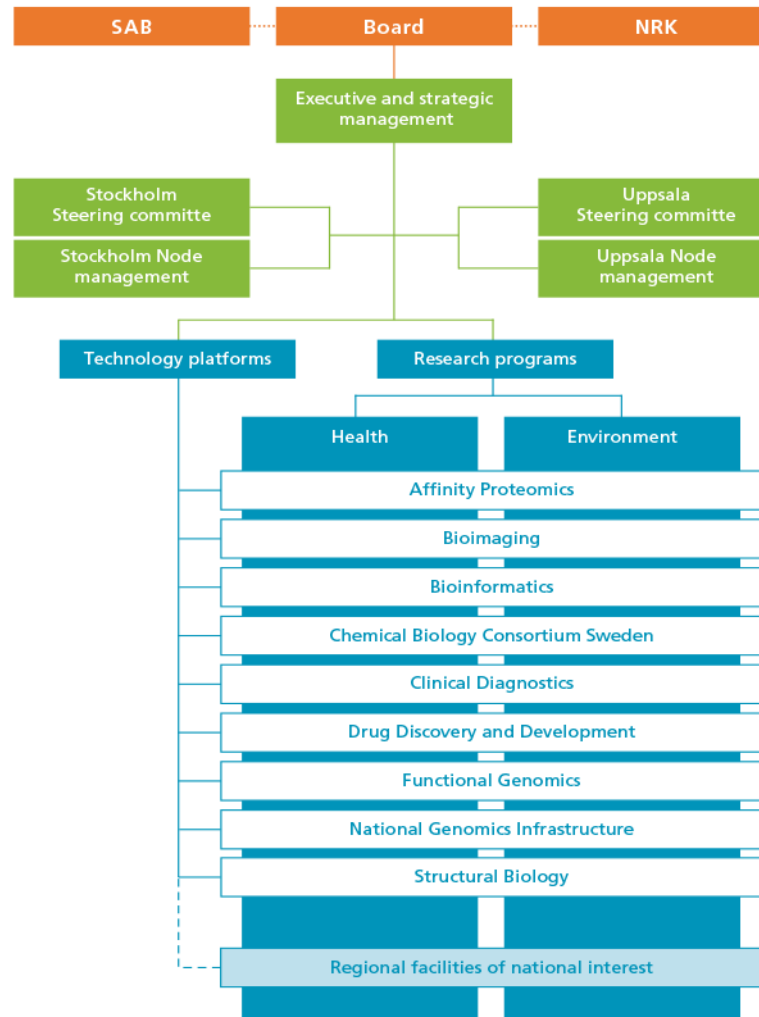


Generate a strong research environment

- Affiliated faculty
- SciLifeLab Fellows Program
- National projects
- International collaborations

# National infrastructure

# SciLifeLab national infrastructure

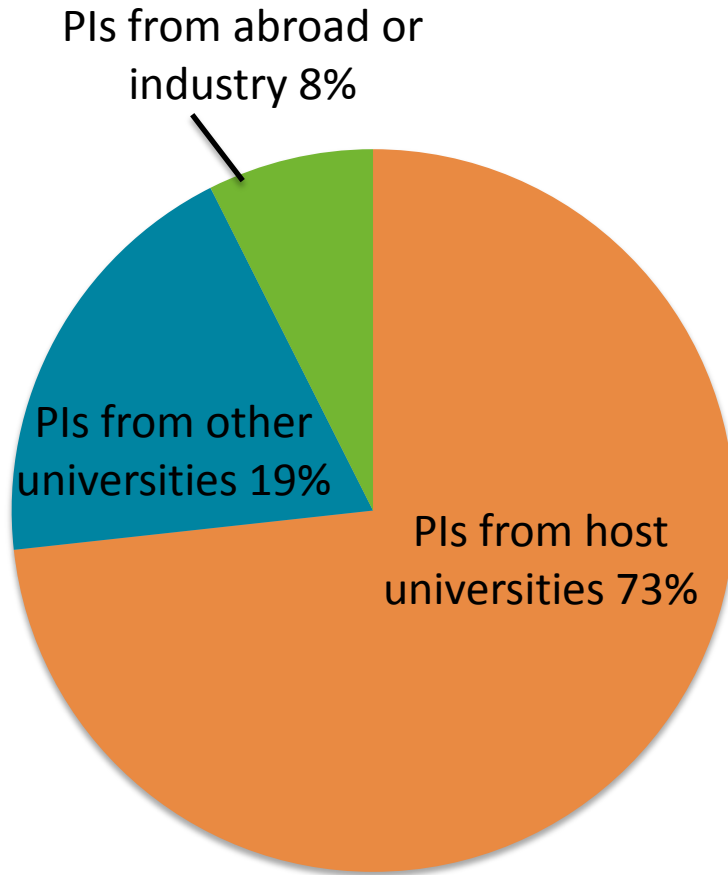


# Nine technical platforms (national)

<b>Platform</b>	<b>Description</b>
<b>Affinity Proteomics</b>	<b>Analysis of tissues, cells and body fluids</b>
<b>Bioimaging</b>	<b>Advanced bioimaging (super resolution)</b>
<b>Bioinformatics</b>	<b>Advanced bioinformatics support &amp; compute and storage</b>
<b>Chemical Biology</b>	<b>High-throughput screening using chemical libraries</b>
<b>Clinical Diagnostics</b>	<b>Analysis of patients with short turn-around times</b>
<b>Drug Discovery &amp; Development</b>	<b>Chemical and biological therapeutics</b>
<b>Functional Genomics</b>	<b>High-throughput analysis (genetic variations)</b>
<b>Genomics</b>	<b>Sequencing and genotyping with advanced bioinformatics support</b>
<b>Structural Biology</b>	<b>Protein expression for structural determination</b>

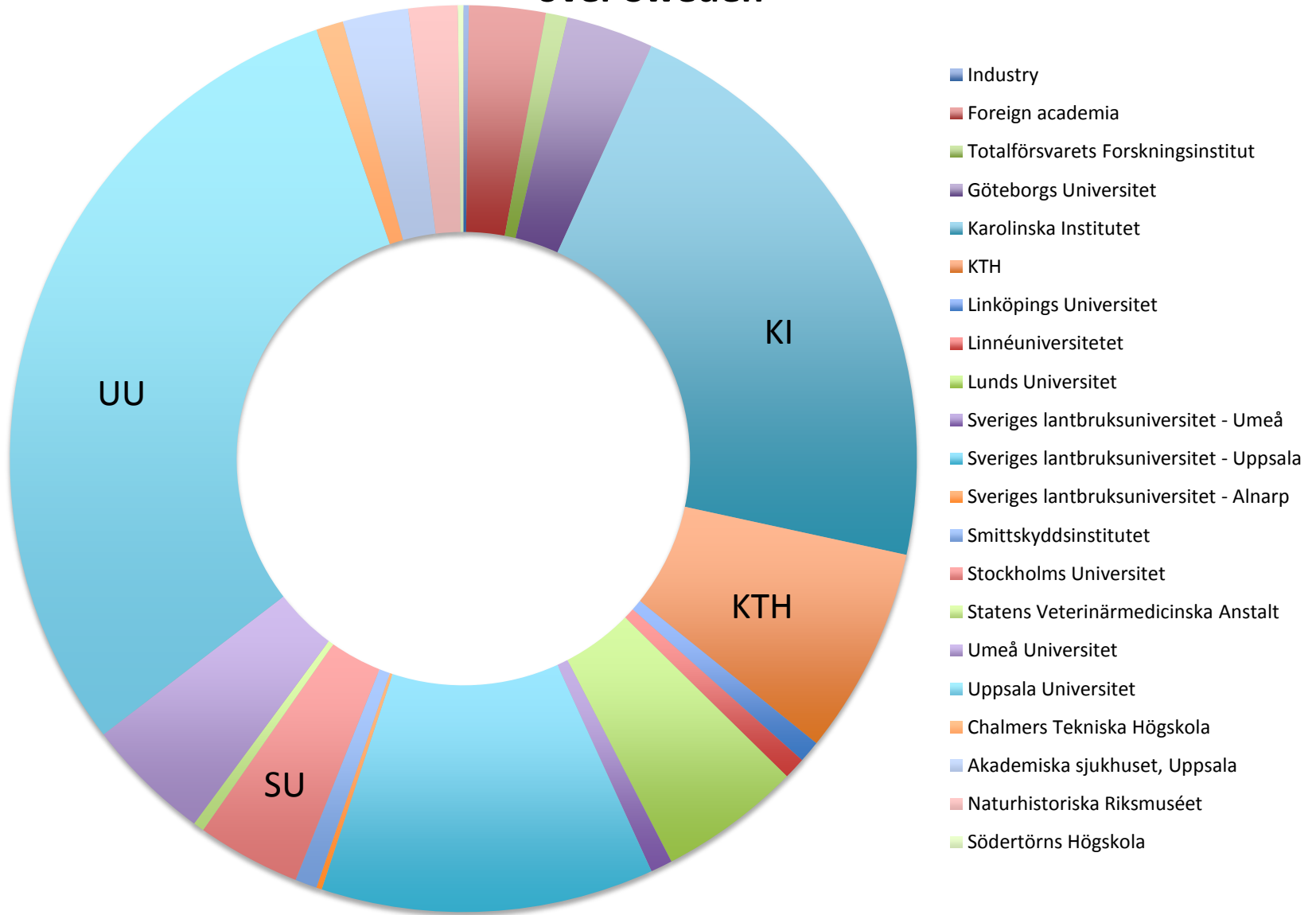


# 2,235 projects during 2013



Projects	Number
PI from host universities	1637
PI from other universities	432
PI from abroad or industry	166
Total	2235

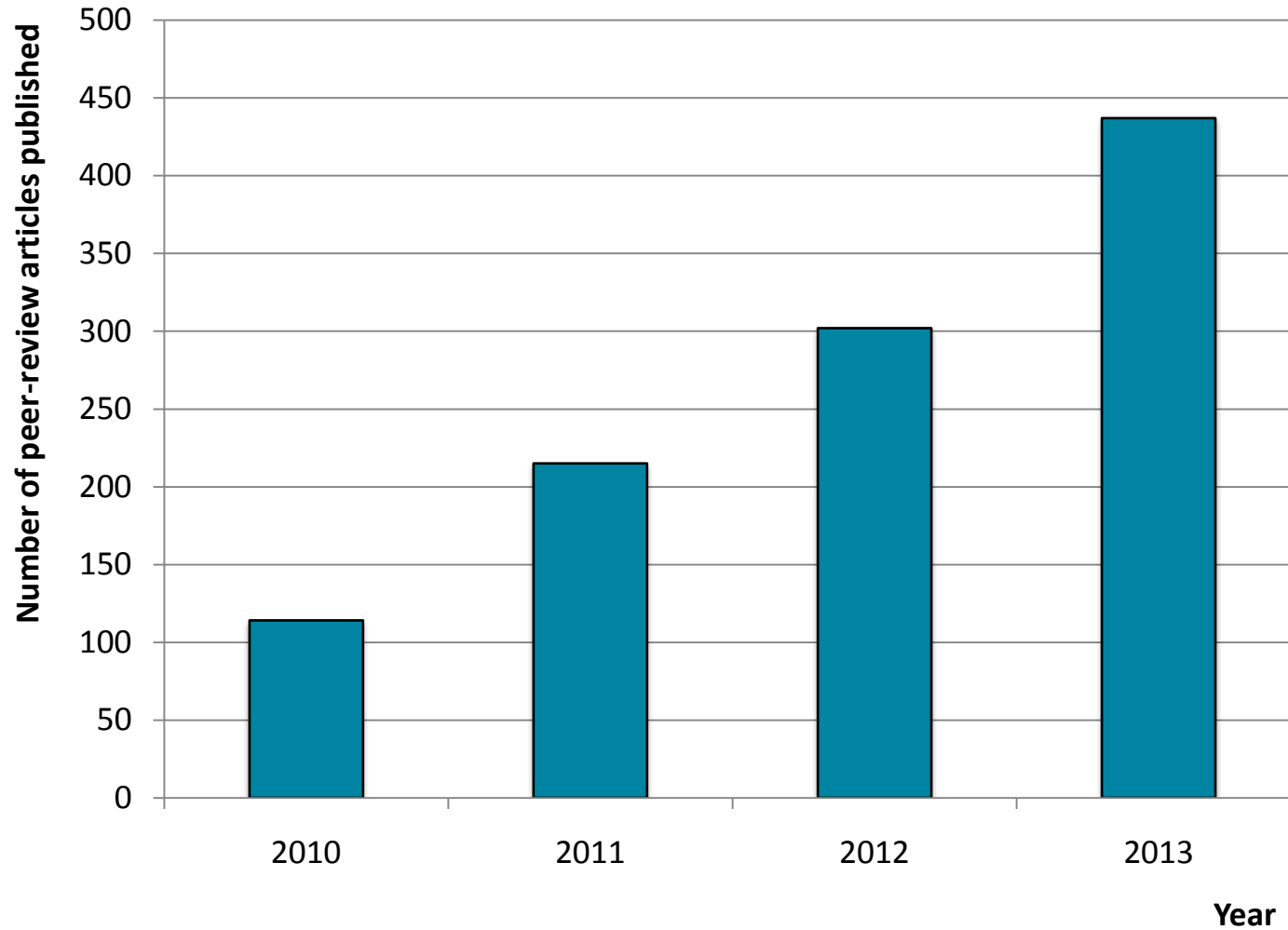
# The National Genomics Infrastructure (NGI) is handling projects from all over Sweden



# Publications and in the media

# Number of published articles (peer-reviewed)

- more publications each year -



# SciLifeLab – in the media

Science 328,805 (14 May 2010)

## Sweden Sets on New Lab to Spruce Up Its Bioscience Future

The new faces of a neighborhood... Sweden sets on New Lab to Spruce Up Its Bioscience Future

NEWS OF THE WEEK

For now, the Swedes appear to enter the next stage. The center has had its general

Swedish bioscience Sweden's government said on 3 April that the Science for Life Laboratory (SciLifeLab), an existing bioscience collaboration between four universities, will in 2013 expand into a national research institute for molecular biosciences and bioinformatics in Stockholm. It will eventually employ 1,000 scientists. The centre — which currently employs 300 scientists in Stockholm and Uppsala — is to receive 220 million Swedish kronor (US\$32.9 million) from the private Knut and Alice Wallenberg Foundation in Stockholm, and between \$25 million and \$50 million from pharmaceutical firm AstraZeneca. The government's contribution will be announced this autumn.



Nature 484, 171 (12 April, 2012)

Science 336, 136 (13 April, 2012)

Sweden, also building represents the next step in a research program. It is the first major building project in the history of the Swedish research community and will create a new research hub in Stockholm. The new building will be a landmark in the city's skyline. It will be a symbol of Sweden's commitment to science and innovation. The building will be a hub for research and education. It will be a place where scientists from different disciplines can work together. It will be a place where the future of science is being built.

EUROPE

## Swedish success story

Institutions shake off rivalries to build scientific collaborations and hire world-class talent.

BY PAUL SMAGLIK

Since the global financial crisis, Sweden has lived in an alternative universe of science funding. While austerity policies have kept research funding levels flat in much of Europe since 2008, Sweden's public science budget has increased by 5 billion Swedish kronor (US\$786 million) over the past 5 years with a rise of another 4 billion kronor to come over the next 5 years. And, as seemingly endless government budget battles have slowed US infrastructure investment, Sweden has seen a building boom. The country has constructed a national high-throughput life-sciences laboratory; begun building new clinical-research laboratories and a hospital; and broken ground on a powerful synchrotron light source and a neutron source.

Now Sweden is increasing international recruitment, backed by public and private money, to fill its facilities and fulfil ambitious research agendas. The Knut and Alice Wallenberg Foundation in Stockholm has been the biggest non-government player in infrastructure investment and international science hiring. Last year, the foundation introduced the Wallenberg Academy Fellows programme to recruit and fund 300 young scientists over 10 years, aiming for 30–50% of the fellows to come from outside Sweden. The region, however, is adjusting to big changes at pharmaceutical giant AstraZeneca, a long-time presence in Sweden. Since 2010, the company has cut close to 2,000 jobs as it seeks to consolidate all its Swedish research into one facility in Mölndal. But that has provided an incentive for other institutions to take up the

mantle of clinical studies. Former AstraZeneca researchers have translational skills, and Sweden has good databases of individual health records with ample data that are useful in clinical medicine. AstraZeneca's restructuring "gave us an important signal", says Stefan Hansson, vice-dean for medicine at Lund University. "We now maybe need to work more on clinical research. How do we integrate that with our hospitals? How will clinicians add research?"

**BOUNCING BACK** Sweden had its own financial struggles in the 1990s, which stymied big growth until the late 2000s. The country must attract world-class scientists from beyond its borders to remain globally competitive, says Göran Sandberg, executive director of the Wallenberg foundation. "We don't have enough bright people ▶



### Stockholm 2 Life Science Lab Gets Fresh Funding

A groundbreaking Swedish life science research initiative will add lab space and nearly triple its ranks to 1000 investigators, thanks to newly announced infusions of funds. The private Knut and Alice Wallenberg Foundation will donate \$33.4 million, and pharmaceutical company AstraZeneca will add between \$5 million and \$10 million annually over the next 5 years, to Sweden's Science for Life Laboratory (SciLifeLab). The Swedish government later this year will also inject more money into the 2-year-old collaboration between four of the country's universities, according to Jan Björklund, Sweden's minister for education. In a strategic bid to create a national life sciences powerhouse, Sweden committed \$73 million in 2010 to create SciLifeLab, whose campuses in Stockholm and Uppsala focus on proteomics studies, biotraging, and projects such as sequencing the genomes of the Norway spruce and microbes living in the Baltic Sea (Science, 14 May 2010, p. 805). "We have high ambitions," Björklund said at a 3 April press conference in Stockholm. The new funds will enable SciLifeLab "to gather the sharpest brains and lay the foundation for new and major breakthroughs." <http://scim.ag/sciLife>

# Education and Outreach

# Education

- SciLifeLab offered 40 advanced courses in 2013
- 25 courses related to bioinformatics, programming and statistics, and sequence analysis
- Courses were also offered as undergraduate and doctoral level courses in for example; bioimaging, bioinformatics, biomarkers, cancer genetics and tumor biology, genomics, infection biology, microbiology, nanotechnology.



# Science for Schools

- SciLifeLab participates in different events to encourage school children to become interested in science.
- Examples:
  - Science festival SciFest in Uppsala
  - Teacher education in collaboration with Royal Science Academy (KVA)
  - Visits to SciLifeLab facilities and research groups for high school classes and other groups, e.g. Unga Forskare





# Science & SciLifeLab Prize for Young Scientists



- Annual prize starting in 2013
- Four areas in life science
- Prize winners selected by Science editorial board
- Winners essay published in Science

Want to win a rather special prize in Stockholm, Sweden this December?

Winner's paper published in the journal *Science*  
\$25,000 dollars grand prize  
Awards held in Stockholm in December

This December a rather special prize will be awarded in Stockholm, Sweden. The journal *Science* and SciLifeLab have come together to recognize and celebrate excellence in PhD research. The *Science* and SciLifeLab Prize has been established to support young scientists at the start of their career.

*"Science has never been more exciting and, as leaders in science, we need to support and encourage young researchers today and tomorrow. This prize is a way of doing just that."*  
Professor Markus Ohlin, Director SciLifeLab

The grand prize winner of this major global award will have their paper published in the journal *Science* and receive \$25,000. Three runners up will receive a combined total of an additional \$10,000 in prize money. The prizes will be presented in Stockholm, Sweden in the middle of December 2013.

**To enter**  
You must be a recent Ph.D. graduate (awarded between January 1, 2011 and December 31, 2012). Submissions must be in the form of a 1000 word essay in English, on your thesis, highlighting the significance of its contribution and overall implications in the field. The four submission areas for this prize are (1) Genomics / Proteomics / Systems Biology (2) Developmental Biology (3) Molecular and Cellular Biology (4) Environmental Life Science.

The deadline for submissions is August 2, 2013. The overall winning essay will be published in *Science*. For further details and to enter, please go to: [www.biorxiv.org/SciLifeLabPrize](http://www.biorxiv.org/SciLifeLabPrize)

For over 130 years the journal *Science* has been the world's leading journal of original research, global news and commentary.

SciLifeLab is a collaboration between five universities in Stockholm and Uppsala, Sweden, and is a pioneering center for large-scale biosciences with a focus on health and environmental research.

With the kind support of the Peter and Alice Wallenberg Foundation.

# Collaboration with industry

- SciLifeLab participates and hosts different activities to promote collaboration between academia and industry.
- Examples:
  - AIMdays (Academia Industry Meeting days) on the topics Biomarkers, Diagnostics, CNS Disorders, Cancer, Bioimaging (more than 90 participants from 27 companies and 250 scientists).
  - Workshops in collaboration with ProNova VINN Excellence Centre for Protein Technology (participants from 10 companies).
  - Pilot project SciLife Innovation was established in 2013 to facilitate academic/industry collaboration by providing a model for mutually beneficial collaboration.
  - AstraZeneca is funding ten large-scale projects with SciLifeLab principal investigators

# Collaboration with health care

- The Clinical Diagnostics platform (start 2013) includes three facilities, Clinical Biomarkers, Clinical Genomics and Clinical Sequencing that work closely together with Uppsala University Hospital, Uppsala Clinical Research Center and Karolinska University Hospital.
- Aim to develop and translate genomic and proteomic methods into diagnostics and the treatment of patients.

[www.scilifelab.se](http://www.scilifelab.se)