

## EURAXESS Members in Focus: Sweden – Inventing Tomorrow’s World

**EURAXESS – Researchers in Motion** is an initiative of the European Research Area (ERA) that addresses barriers to the mobility of researchers and seeks to enhance their career development. This pan-European effort is currently supported by 40 countries, of which we will profile one in our monthly EURAXESS Links ASEAN e-newsletter. Here we focus on Sweden.



Simon Paulin/imagebank.sweden.se



Photo:  
Ola Ericson imagebank.sweden.se

The Nobel Prizes were a bequest from the Swedish scientist, inventor, entrepreneur and pacifist Alfred Nobel, to honour those who “have conferred the greatest benefit on mankind”.

Many of the world’s important inventions originate in Sweden, and the rapid pace of innovation shows no sign of slowing down. The Swedish government continues to invest more than ever in research and innovation. Sweden’s history

of recognising and rewarding achievement in research, excellence and innovation is reflected in its status as the home of the Nobel Prize: Sweden itself has produced twenty-nine Nobel Laureates since establishing the prize in 1895.

Sweden’s science infrastructure is world-class and the synergies generated by the close connection between Swedish universities, research institutes and the private sector further leverage the R&D output. Not only is Sweden home to the largest number of multinational companies per capita, but it also serves as a base for tomorrow’s emerging industries. The Global Innovation Index 2014 (GII) ranks Sweden as the 3rd most innovative country in world.



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The cardiac pacemaker has been implanted in more than 3.5 million people. The first clinical implantation into a human of a fully implantable pacemaker was in 1958 at the Karolinska Institute in Solna, Sweden.

- The historic tradition of inventors, a commitment to gender equality, and a strong belief in the individual are key factors for Sweden maintaining its place as one of the world leaders in research and innovation
- Close collaboration between research institutes and the private and public sectors provides a foundation for global Swedish companies and investing in the companies of tomorrow
- Swedish R&D –expenditure totals about 3.5% of GDP on average, keeping Sweden topped ranked among the OECD countries. Medicine and bioscience, technology, and climate are examples of areas where Sweden has made strategic investments to build up the cutting edge research of today
- Sweden offers over fifty universities and university-colleges
- A Swedish national innovation strategy launched in 2012 to further enhance the Swedish innovation climate and innovation capacity, with year 2020 in sight

### 7 Reasons to choose Sweden for your research experience

1. An innovative and competitive economy
2. Sweden has a long and proud history of academic excellence, with outstanding universities dating back to the 15th century
3. Excellent research infrastructure with continuous investments in cutting edge facilities, including Science for Life Laboratory (SciLifeLab) and the MAX IV Laboratory
4. Higher education and research quality is among the best in the world
5. Open and international climate where influences and competences come together, creating new ideas and solutions
6. Swedish society is known for its inclusiveness and egalitarianism
7. Close cooperation between industry and academia facilitates innovation, a home of trendsetters and early adopters, encouraging new ideas and critical thinking

## Research-funding in Sweden

Government investment and other public investment in research and development totaled about SEK 40 billion (43 billion EUR) in 2014.

Central government is the largest financier of research at higher education institutions. The most important central government financiers outside the direct state contributions for research and postgraduate education to higher education institutions are the research councils, the Swedish Agency for Innovation Systems and other research-funding agencies. Funding for research also comes from research foundations, the EU, municipalities and county councils. Industry invests more three times as much as central government in research and development. However, almost all of the R&D investment that comes from industry remains within the business sector.



### **Research-funding agencies**

There are four major research-funding agencies. The largest is the Swedish Research Council, which in 2014 shared out about SEK 5,5 billion to basic research in natural sciences, technology, medicine, the humanities and social sciences.

The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas) supports basic and needs-driven research in the fields of environment, land-based industries and spatial planning. In 2014 Formas distributing about SEK 1,12 billion.

Swedish Research Council for Health, Working Life and Welfare (Forte) distributing SEK 512 million in 2014 and supports and initiates basic and needs-driven research in the fields of the labour market, work organisation, work and health, public health, welfare, the social services and social relations.

The Swedish Governmental Agency for Innovation Systems (VINNOVA) distributing about SEK 2,4 billion in 2014, primarily to needs-driven research in the fields of technology, transport, communications and working life.

In addition to the agencies mentioned above, several other agencies finance research funding in various areas. In these cases, it is common for a lesser amount of the agency's appropriation to go to research funding.

### **Research foundations**

A number of foundations that fund research were established in the mid-1990s using capital from the former wage earner investment funds. These foundations are the Swedish Foundation for Strategic Research (SSF), the Foundation for Strategic Environmental Research (MISTRA), the Knowledge Foundation (KK), the Foundation for Baltic and East European Studies, the Swedish Foundation for Health Care Sciences and Allergy Research (Vårdal) and the Swedish Foundation for International Cooperation in Research and Higher Education (STINT).

Support from public research foundations is an important addition to central government investments in research. It is estimated that these foundations will have invested some SEK 1.1 billion in research in 2014.

The Bank of Sweden Tercentenary Foundation (RJ) is yet another foundation which was created with public funding and which supports research in Humanities and Social Sciences.

### **Private research funders**

Many private financiers also give significant amounts to research. These include the Knut and Alice Wallenberg Foundation, which in 2013 distributed SEK 1,4 billion. Over the last five years, almost SEK 4 billion has been awarded to scientific research and education at higher education institutions and academies. In addition, the Swedish Cancer Society distributed SEK 392 million in 2013 for research in its field.



### **Income received by higher education institutions for research and postgraduate studies**

The revenue received by other higher education institutions for research and postgraduate education totaled almost SEK 29,7 billion in 2011. This is an increase of around SEK 2,3 billion, or 8,5 per cent, in fixed prices compared with Statistics Sweden's (SCB) analysis of the revenues of 2009. Revenues have never previously increased by so much. Both direct government appropriations and higher education institution revenues from external financiers have increased. Public funding accounted for over 80 per cent of these revenues.

Just under half of the total funds come from direct appropriations for research and postgraduate studies at higher education institutions. Remaining funds come from external financiers, both public and private.

#### **For more information and enquiries**

EURAXESS Sweden: <http://www.euraxess.se/>

The Swedish Research Council: [www.vr.se](http://www.vr.se)

Vinnova: [www.vinnova.se](http://www.vinnova.se)

Formas: [www.formas.se](http://www.formas.se)

Forte: [www.forte.se](http://www.forte.se)

Sweden.se - The official gateway to Sweden: [www.sweden.se/eng/](http://www.sweden.se/eng/)

Nationwide Swedish research website: [www.forskning.se](http://www.forskning.se)

The Swedish Foundation for Strategic Research: [www.stratresearch.se/en/](http://www.stratresearch.se/en/)

The Swedish Agency for Economic and Regional Growth:  
[www.growthanalysis.se/en/](http://www.growthanalysis.se/en/)

Official website of the Nobel Foundation: [www.nobelprize.org/](http://www.nobelprize.org/)

The Swedish Space Corporation: [www.ssc.se](http://www.ssc.se)