research estonia

research and development in estonia

research and innovation

Estonia has a **broad, innovative and diverse** research landscape. Research is primarily carried out by universities and other public and private sector education and research institutions.

8.3 researchers
per thousand employed (2023)[1]

Excellent conditions
for carrying out research projects

Highly qualified
staff at the research institutes

3.4 times growth
in the number of international researchers employed in Estonia since 2010 (compared to 2021)[2]

Did you know?

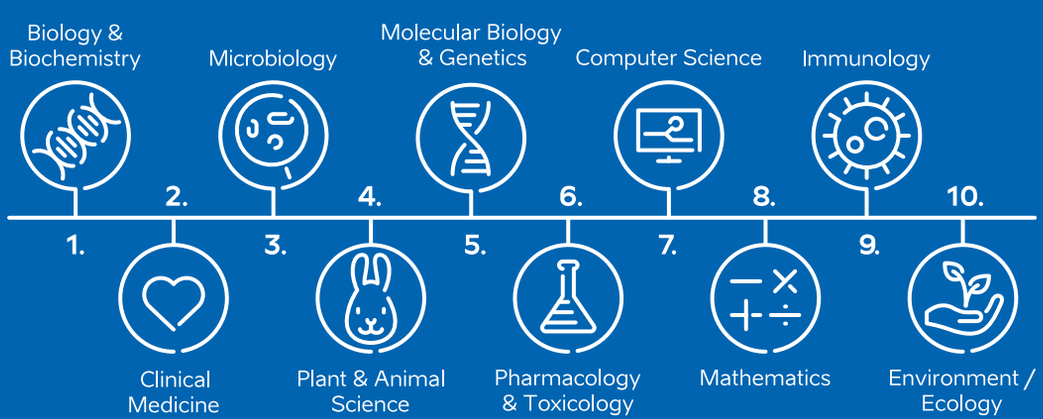
- Estonian company **Crystalspace** has been selected by **Maxar Technologies**, a trusted partner and innovator in **Earth Intelligence** and **Space Infrastructure**, to build two cameras that will act as a stereo pair to monitor the operations of a robotic arm that will collect regolith samples from the **Moon**.
- **Starship Technologies**, in cooperation with **Tallinn University of Technology**, developed a **package delivery robot**, which has been tested in over a hundred cities worldwide.

1 OECD. Main Science and Technology Indicators Database. www.oedc.org/sti/msti.htm (11.05.2023).
2 Statistics Estonia. www.stat.ee (17.05.2023).

scientific publications and citations

The high quality of Estonian research and researchers is also visible in **research output**.

The 10 most cited fields according to WoS (InCites) in 2013–2023:
(compared to global average of the field) were:



For the Publications published in
2013–2023
by Estonian authors

15.5%
reached the
10% of the world's most cited publications

this places Estonia
#9
in EU*

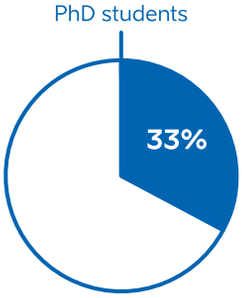
*according to InCites 2023

education

According to OECD PISA test results, in 2018 Estonian students performed the best out of all European countries in science, reading and mathematics. In the world, Estonia's students rank 5th in reading, 8 in mathematics and 4th in science.[3]

3 Minisitry of Education and Research. PISA. https://www.hm.ee/en/activities/statistics-and-analysis/pisa (09.10.2021)

International PhD students



PhD students in Estonia in 2022/23

international cooperation

77% of the publications by Estonian researchers have been published in collaboration with foreign colleagues (InCites).

Being a highly valued partner in international cooperation projects, in 2021, Estonia became an Associated member of the **European Organization for Nuclear Research (CERN)**. Additionally, Estonia actively participates in other international projects such as **European Space Agency, European Social Survey, European Spallation Source** and other various science and R&D projects.

Horizon 2020

725 projects

Examples

274,3M EUR

SmartEnCity — Towards Smart Zero CO_2 Cities across Europe, participated by City of Tartu, Estonia.

SilentBorder — aims to develop new muon scanners using natural radiation for border controls, developed by the University of Tartu, GScan.

The GDHRNet — systematically explores the theoretical and practical challenges posed by the online context to the protection of human rights, coordinated by Tallinn University.

Horizon Europe

226 projects

Examples

101,5M EUR

DIGIBIO — focus on digitalisation of processes in industrial biotechnology, coordinated by the University of Tartu and partnered with Tallinn University of Technology.

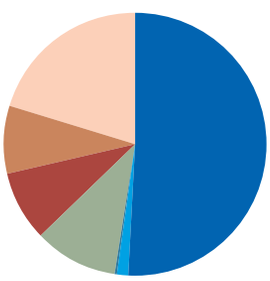
TeamPerMed — to create a personalised medicine research and development centre of excellence, coordinated by the University of Tartu, partnered with Tartu University Hospital, and supported by several public sector organisations.

HERC accelerating industrial co2 neutrality — reducing natural gas needs and carbon emissions in industrial usage and transforming the industry towards hydrogen with HERC, a novel plasma-assisted combustion (PAC) technology, coordinated by Efenco, an Estonian technology company.

funding

Private and public sector funds play an important role in funding research in Estonia. **Foreign funds** also count a remarkable share in Estonian research funding (primarily EU Framework Program for Research and Innovation, **Horizon Europe**). Estonian Research Council (ETAG) is the main body responsible for organising competitions for national research grants, **supporting researchers' mobility and international cooperation.**

Expenditure on R&D by source of funds 2021 (mln EUR)

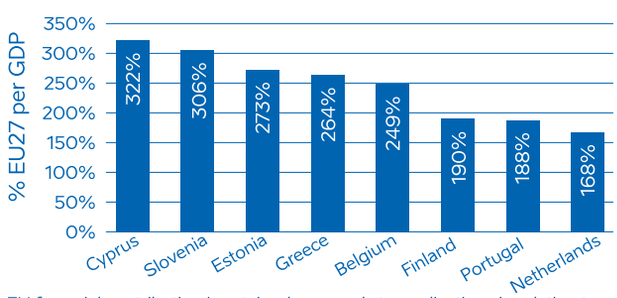


- business enterprise sector 280,9 — **51,0%**
- higher education sector 7,5 — **1,4%**
- private non-profit sector 1,0 — **0,2%**
- funds from abroad 57,9 — **10,5%**

Government funding — 37,0%

- research grants 46,3 — **8,4%**
- baseline funding 46,3 — **8,4%**
- other government funding 111,1 — **20,2%**

EU financial contribution for participants from a country in relation to GDP (EU27=100%)



EU financial contribution in retained proposals to applications in relation to GDP compared to EU27 average (by the end of 2022)

smart specialisation

Smart specialization is focused on the following areas, which are also the national focus areas for R&D, innovation and business until the year 2035:

Digital solutions

- digital solutions are created, delivered and used in every area of life
- data economy is used to create new business opportunities;
- secure cyberspace.

Valuing local resources

- expoliting local resources in a sustainable, biodiversity-friendly and highly resource-efficient manner;
- enhancing the bio- and circular economy;
- focusing on both primary and secondary raw materials.

Health tech & services

- more effective and accessible health services;
- developing and implementing patient-centred and evidence-based treatment and prevention services;
- export potential of the healthcare system is expanded.

Smart & sustainable energy solutions

- climate-neutral energy production;
- energy use in Estonia is improved and made more resource efficient;
- contribution is made to ensuring energy security.

more information

Estonian Research Council
www.etag.ee/en

Research in Estonia
www.researchinestonia.eu

EURAXESS Estonia
www.euraxess.ee

ETAG

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