

DISCUSSION WITH VR and Big Science Sweden

Challenges for Swedish
Particle and Astroparticle
Physics

Eight questions for discussion

Exciting times: Physics is the most popular topic to study in Sweden

Sweden (BI, HT2026, urval 2):

#1 KTH Engineering Physics

— 22.40

#2 Lund Physics — 22.29

(joint)

Our master programs at Lund University are so popular we have to reject local students.

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Se de 16 uddannelser, der kræver det højeste karaktergennemsnit for at blive optaget via kvote 1, her:

- Designer på Designskolen i Kolding – 11,4.
- Computer Science på Aarhus Universitet – 11,4.
- Data Science på Aarhus Universitet – 11,2.
- Jordemoder på Københavns Professionshøjskole – 11,2.
- Molekylær biomedicin på Københavns Universitet – 11,1.
- International Business på Handelshøjskolen CBS – 11,1.
- Psykologi på Københavns Universitet – 11,0.
- Psykologi på Aarhus Universitet – 11,0.
- Designer på Det Kongelige Akademi – 10,9.
- Jordemoder med vinterstart på Københavns Professionshøjskole – 10,9.
- Jordemoder på Professionshøjskolen University College Nordjylland – 10,9.

<https://nyheder.tv2.dk/2026-07-28-disse-uddannelser-kraever-det-hoejeste-snit>

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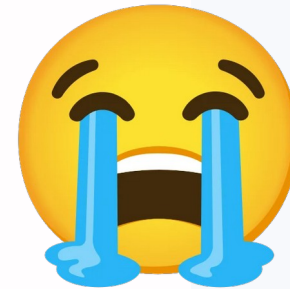
Our master programs at Lund University are so popular we have to reject local students.



Utbildningarna med högst meritvärde i UHR:s topplista

- Läkarprogrammet, Lunds universitet: 22,29
- Läkarprogrammet, Karolinska institutet: 22,29
- Läkarprogrammet, Uppsala universitet: 22,19
- Läkarprogrammet, Göteborgs universitet: 21,98
- Juristprogrammet, Lunds universitet: 21,93
- Juristprogrammet, Uppsala universitet: 21,77
- Läkarprogrammet, Linköpings universitet: 21,77
- Läkarprogrammet, Örebro universitet: 21,67
- Läkarprogrammet, Umeå universitet: 21,56
- Ekonomie kandidatprogram, Lunds universitet: 21,44

Siffrorna gäller programmen på UHR:s topplista över flest behöriga sökande, första urvalet till höstterminen 2026.



Individual excellence vs. large, long-term experiments

How the funding model often looks

Project grants naturally emphasize identifiable individual ideas, leadership and relatively short funding cycles. This works well for many forms of research.

INDIVIDUAL

How large experiments work

Particle and astroparticle physics often involve decades-long facilities, large collaborations and group achievements. Several strong researchers may be needed locally even when only one receives a project grant.
This is similarly true for the theory and phenomenology needed to support them.

TEAM + LONG HORIZON

QUESTION

How can assessment and funding structures avoid systematically disadvantaging excellent research whose scientific output is inherently collective and long-term?

Aligning infrastructure investment and project funding

Sweden makes major investments through VR in large-scale research infrastructures.



Tension to manage: targeted support can improve return on infrastructure investment, but project grants are designed around open, excellence-based competition.

QUESTION

What is the current VR and BSS thinking on directed or coordinated project funding for research that depends heavily on RFI-funded infrastructures?

Basic research in a funding landscape shaped by strategic priorities

The concern

- Basic research sustains long-term research and education environments.
- Particle and astroparticle physics have historically generated technologies and methods that later find broader applications.
- Strategic areas such as quantum technologies, biophysics and AI can also attract substantial private and targeted public investment.
- There is a concern that established funding concentration can become self-reinforcing: well-funded groups are better positioned to win further grants.



QUESTION

How should Sweden balance investigator-driven basic research against strategic areas that already attract substantial targeted and private investment?

Representation and outcomes in the NT-L review panel

Observed concern

Approval rates are lower for subatomic physics than for astronomy, especially for projects using large-scale subatomic infrastructures. The number of approved grants is similar, but subatomic physics has more applications.

Panel composition

Swedish astronomy and astroparticle physics are represented in NT-L, but there is currently no Sweden-based representative from experimental accelerator-based particle or nuclear physics.

Why representation matters

Given the larger number of subatomic applications, would direct representation from the Swedish accelerator and large-collaboration community strengthen the panel's ability to assess these projects?

QUESTION FOR VR Would the assessment of accelerator- and large-infrastructure-based projects benefit from direct representation of this research community on NT-L?

Feedback and transparency for project proposals

Current concern

Proposal writing requires substantial effort, yet only about half of applicants receive substantive written feedback beyond the grades.

Legal basis

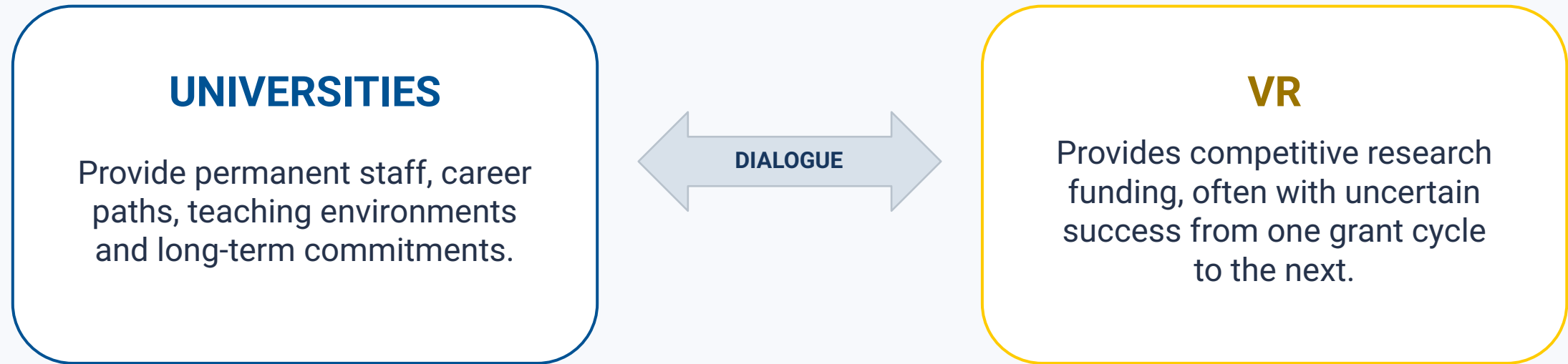
Förvaltningslagen §32 requires decisions by public authorities to contain a clear motivation. In 2019, JO specifically criticised VR for insufficient motivation of a research-grant rejection.

A lightweight alternative

- Before the meeting: each reviewer records a short rationale for the assigned grade.
- During/after the meeting: add a brief summary of the panel discussion and final rationale.
- Return this concise feedback to the applicant for transparency and future improvement.
- This might even improve the discussions in the board

QUESTION FOR VR How does the current practice of providing only grades for some rejected applications meet the requirement for a motivated decision? Could every applicant receive a short written rationale?

Long-term dialogue between universities and VR



Potential mismatch: universities may hesitate to create positions when the external funding needed to sustain the research programme is highly uncertain.

QUESTION FOR VR What structured dialogue exists between VR and universities on long-term research areas, staffing needs and sustainable research environments?

Are standard project grants keeping pace with real costs?

A growing feasibility gap

- Salary and travel costs have risen substantially.
- A standard project grant may no longer cover one researcher for the full project duration.
- For many experimental projects, continuous staffing is not optional: below a funding threshold, the planned project cannot be executed.
- Partial funding can therefore change feasibility, not merely scale.

GRANT $\neq$ **FULL PROJECT COST**

Below a threshold, “partially funded” may mean “not feasible as planned.”

QUESTION FOR VR How does VR view the growing minimum-cost threshold for experimental projects, and is this reflected in grant size or funding strategy?

Swedish representation in international committees

The situation

Researchers represent Sweden in bodies such as ECFA and IPPOG. These roles benefit the national community and Sweden's international engagement.

The problem

Travel and participation costs may fall on the individual researcher's project grant – if they have one at all. The burden is therefore uneven and can compete with research funding.

Possible principle

National representation could be treated as a small shared infrastructure/service cost rather than an expense attached to an individual research project.

QUESTION FOR VR Could VR provide a small annual mechanism to support researchers serving as Swedish representatives in international scientific committees?