



Wir schaffen Wissen – heute für morgen

Paul Scherrer Institute

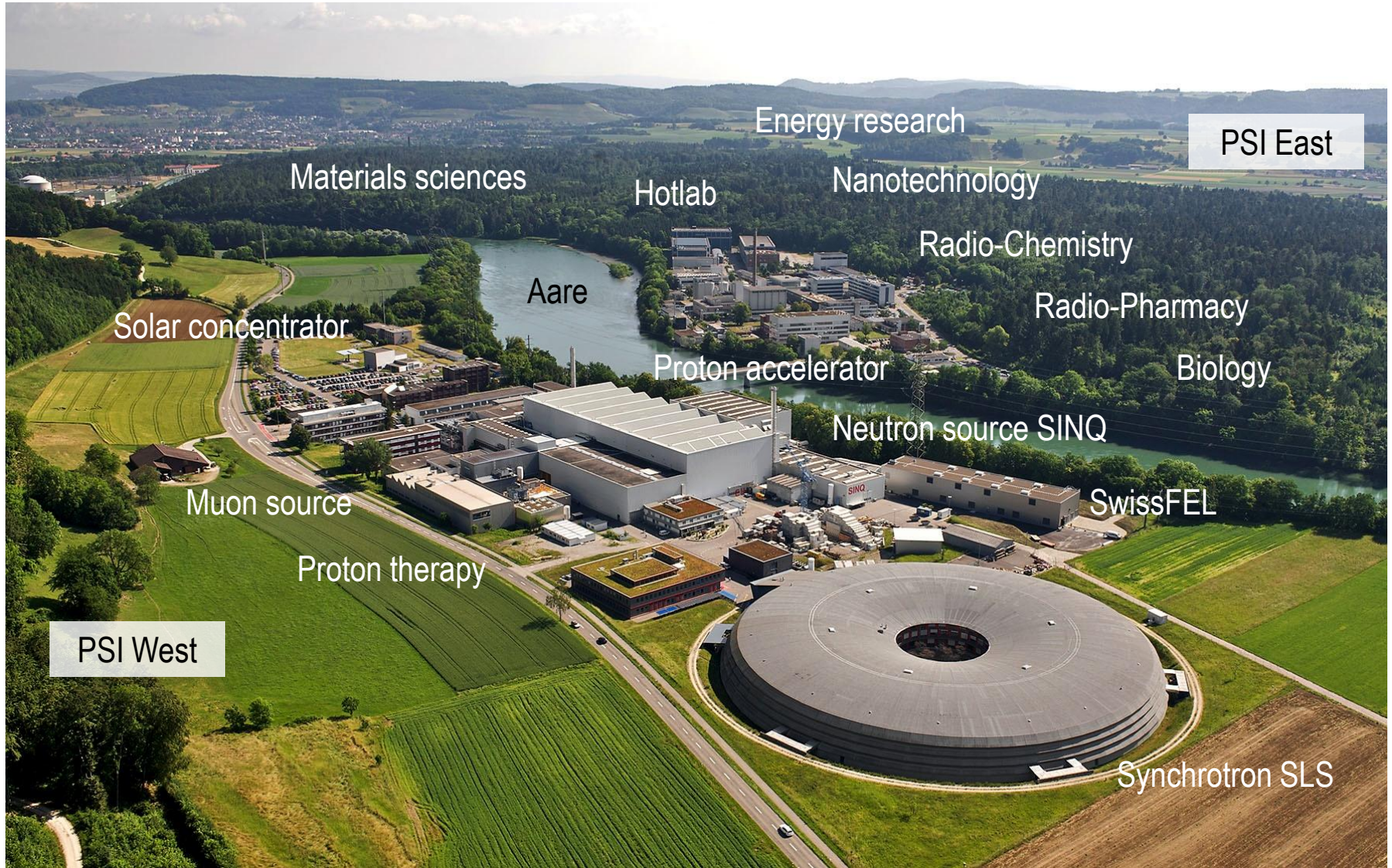
Thierry Strässle

NEW CONCEPTS OF MOBILITY & THEIR ACKNOWLEDGEMENT

Comment 2 – The view of a research institute

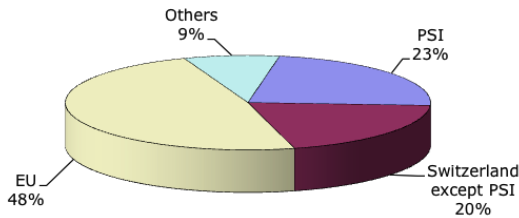
ESF Workshop, 21-23 May 2013, Oslo

Mobility – the view of a national research institute...



trans-national outreach

2100 users / year
SLS: 48% from EU
average overbooking >2



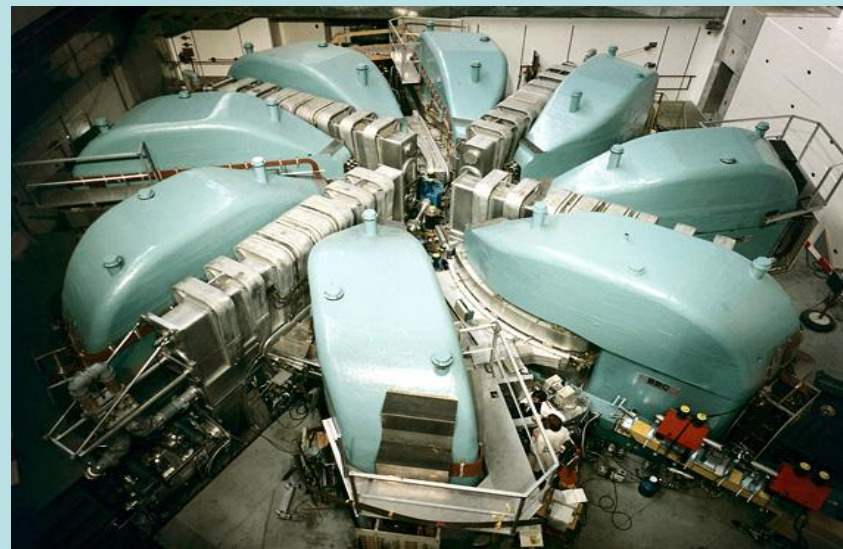
impact in innovation

SLS: **10 %** industrial
proprietary use
(other synchrotrons
on average 5%)

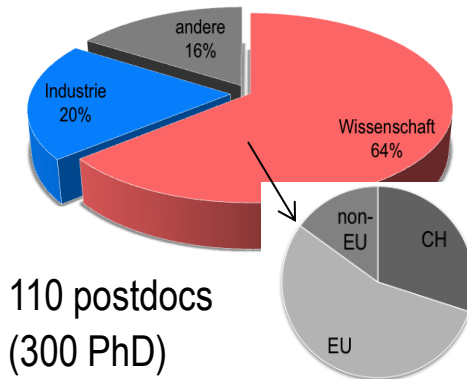
Swiss Synchrotron Light Source (SLS), Swiss Neutron Source SINQ, Swiss Muon Source $\text{S}\mu\text{S}$
at the Paul Scherrer Institut

scientific excellence

>**600** publications per year
109 publications with
impact factor >7.1 (PRL)

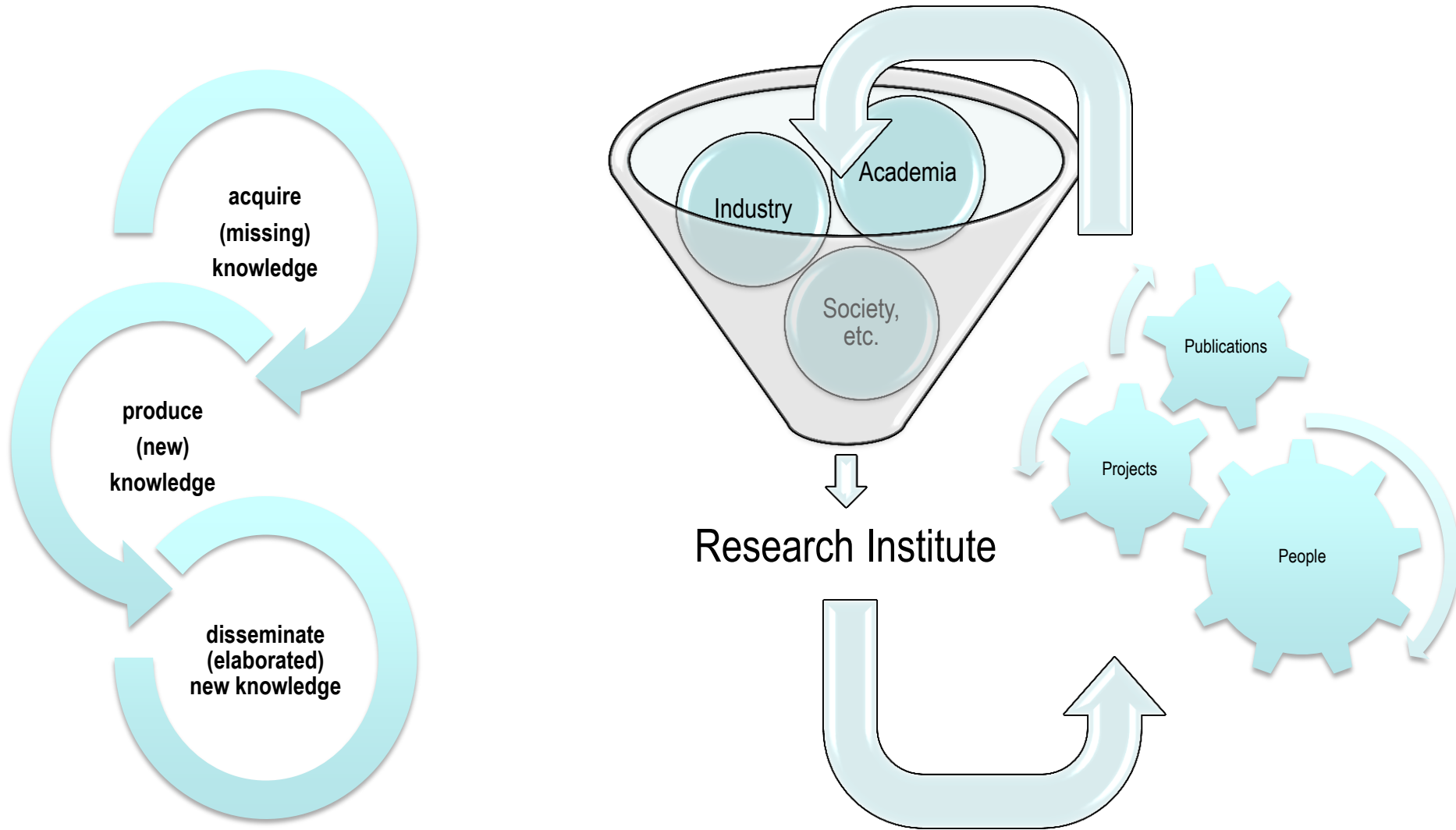


knowledge dissemination



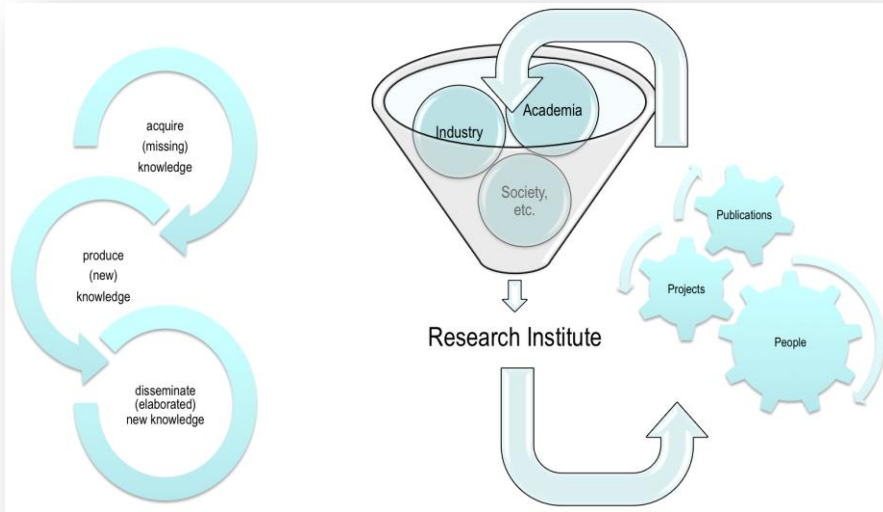
110 postdocs
(300 PhD)
64% stay in science
great majority in EU

Primary mission of research institutes and role of mobility



arrows = mobility (international, intersectoral, interdisciplinary, virtual)
motors of mobility: incentives (require metrics)

Mobility = goal for all participants involved in the mission



Goal:
make best use of existing knowledge
in efficiently elaborating new knowledge

This primary goal is an inherent interest of

- sponsor – governments, ERA, society
- enabler – research institutes
- producer – individual researcher

however:

The awareness for the global scope is decreasing the more detailed knowledge involved.
(which is probably good so: “*Schuster bleib bei deinen Leisten!*” [“*Cobbler stick to your trade!*”])

hence:

“How to measure and acknowledge individual researcher’s achievements in mobility ?”

“How to make mobility more attractive ?”

allow for more flexible forms of physical mobility, e.g., by:

- means of short-term stays or split stays over a certain time period;
sabbaticals have a long tradition, who pays?, who fills the gap?, often based on bilateral initiatives, must be win-win for both sides, global schemes difficult to implement
- offering combined/part-time positions on time bank terms;
joint-affiliations crossing borders are difficult
general chances/challenges of such positions (see below)
- acknowledging physical mobility based on documented stays abroad or signs of collaboration and participation.
very much **the case** (at least in natural sciences)
we (at PSI) ask our PhD students to leave PSI, continuation as postdoc not allowed;
large institutional and national differences on policies; requires tracking the researchers carrier to get her/him back (by supervisor)
- integrating international mobility in national grants;
existing and very attractive in Switzerland / wish for better combining national schemes

Mobility fellowships

The mobility fellowships from the Swiss National Science Foundation (SNSF) enable young researchers to conduct a research stay abroad in order to acquire more in-depth scientific knowledge and enhance their scientific profile. The ultimate goal is to support young scientists and academics for their future career in Switzerland. The mobility fellowships comprise three instruments:

- ▶ **Doc.Mobility:** Fellowships for doctoral students who wish to conduct part of their doctoral studies abroad. On 1 January 2013, the Doc.Mobility fellowships replace the "candoc" fellowships for prospective researchers.
- ▶ **Early Postdoc.Mobility:** Fellowships for postdocs starting their career who have either obtained their doctorate recently or are about to do so soon. On 1 January 2013, the Early Postdoc.Mobility fellowships replace the "postdoc" fellowships for prospective researchers.
- ▶ **Advanced Postdoc.Mobility:** Fellowships for advanced postdocs (with postdoctoral experience) who are aiming for an academic career in Switzerland. On 1 January 2013, the Advanced Postdoc.Mobility fellowships replace the fellowships for advanced researchers.

great program
of Swiss National Science
Foundation

case XY:

postdoc stay of **2 years** in Paris – excellent since able to bring own project with own money

- 12 months paid by "Early Postdoc.Mobility"

- **remaining 12 months paid by whom?** (idea: host institute)

in reality early postdoc starts right from the beginning writing grants to extend his stay (instead of becoming productive)

(in this case 1 CNRS, 1 SNF, 1 Incoming-Marie-Curie, ...)

what is missing: matching of national programs

Useroffice

PSI Home » Useroffice » Your stay at PSI

Proposal deadlines

User meetings - JUM@P

Conference calendar

Accelerator status

EU support programmes

Your stay at PSI

Work permits

Before arrival

On arrival

PSI Guesthouse

Safety at PSI

Users association

Contacts

Stay at PSI

We try to make the stay of our external users at PSI as comfortable as possible and to keep the formalities on a very low level such that the visiting scientists can concentrate fully on their scientific experiments and activities. Nevertheless a few formal procedures must be followed. Please find the relevant information here.

Work Permits

As soon as anybody's professional activity in Switzerland exceeds 8 days per calendar year (arrival and departure dates do count!) a Swiss working permit is required. This is also valid for the external foreign users of our facilities. To ease the procedure the Paul Scherrer Institut takes over the formalities and applies for the respective permit (although in principle that would be the task of the user's employer, e.g. the foreign university or the respective home institution). All you need to do is to apply in time for badge and dosimeter via the [PSI DUO system](#). [More information.](#)

Before Arrival

If your proposal has been approved for beamtime at one of the PSI user facilities the main proposer will be contacted by the respective instrument scientist to arrange a date for the experiment. As soon as possible after that you should apply for your badge via the [PSI DUO system](#). Within that procedure you can also order a room in the PSI guesthouse. [More information.](#)

On Arrival

How to get my key for the guest house? Where to go for the PSI safety training? Can I rent a bicycle for my stay on the PSI campus? Please find helpful instructions [here](#).



national and sometimes regional working permit regulations hinder international mobility (although formalities very simple for EU users, but...)

- researchers in industry should also publish (importance on publications in peer review)
- clear transfer agreements and contractual regulations in joint projects (industry/academia)
- stronger emphasis on non-scientific achievements too

need for full symmetry (about equal mobility to/from industry) ?

probably not: but I am looking forward to get a new CIO and strategic controller from industry...

generally too much emphasis on publication records

in addition: publication record often reduced to simple metrics (HI factor, ...)

many ideas, such as the “San Francisco Declaration on Research Assessment” (<http://am.ascb.org/dora/>)

A number of themes run through these recommendations:

- the need to eliminate use of journal-based metrics, such as impact factors, in funding, appointment and promotion considerations.
- the need to assess research on its own merits rather than on the basis of the journal in which the research is published, and
- the need to capitalize on the opportunities provided by online publication (such as relaxing unnecessary limits on the number of words, figures, and references in articles, and exploring new indicators of significance and impact)

However: how do you tell me in 5 min. about the past scientific achievements of Thierry Strässle without using Web-of-Science or a similar product?

Fact: In practice we use this metric to measure ourselves and to get measured by others

Challenge: How to measure impact of science *per se*? for society? for economics? for the big challenges?

- interdisciplinary journals welcomed / adjustments to bibliometric approaches
Science, Nature, Physical Review Letters are highly interdisciplinary
editor: “We regret but your study is not of sufficient general interest...”

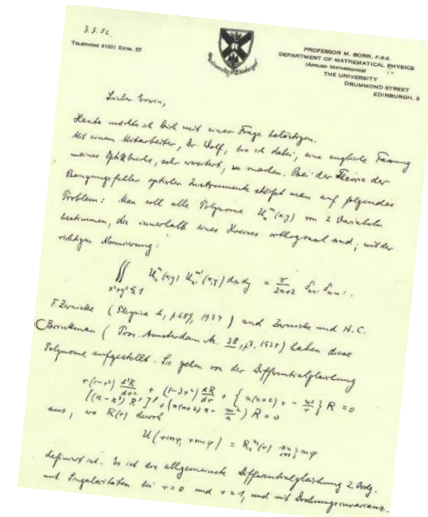
counter-argument:

shouldn't an early career researcher learn first physics and chemistry before solving the sustainable energy problem that our society needs to solve?

Science has its own inherent interest to remain inter- / multidisciplinary
top-down pressure is probably not required

- interdisciplinary / international panel reviewing rather than individual written reviews
YES! for both: peer review of individual researchers and projects
to large extend already the case
(but how do you pre-select?
in every pre-selection one should allow for 20% “unconventional” applications)

- standardized CVs
useful, however: how do other professional sectors face this problem?
- recognizing non-academic achievements in peer review
to large extends hopefully the case
(allow for 20% “unconventional applications”)
- normalizing a researcher’s achievement by time spent in research
(HI-index, ...)
to large extends hopefully the case



Letter (1952) of Planck to Schrödinger

virtual mobility is probably/hopefully not a recent trend emphasized by modern ways of communication (internet, emails, video-conferencing,...)

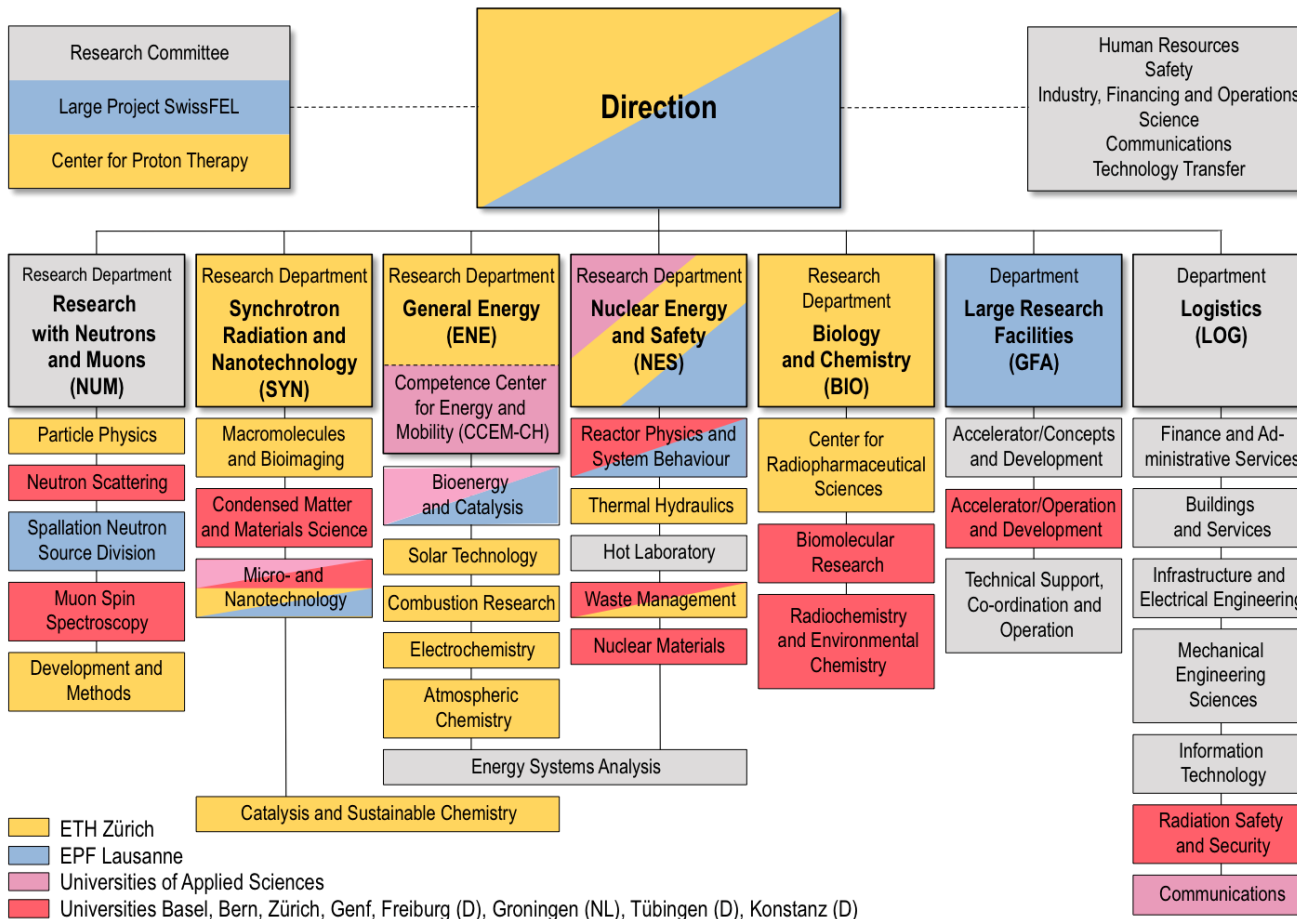
it must remain the privilege and duty of researchers to

- globally compete
- globally collaborate
- globally exchange information
(even if the internet collapsed)



From left to right: [W. Nernst](#), [A. Einstein](#), [M. Planck](#), [R.A. Millikan](#) and [von Laue](#) at a dinner given by von Laue in Berlin on 11 November 1931

- combined/part-time researcher positions
- case at PSI – Links to ETH Zürich, EPF Lausanne and other universities through joint-affiliations and teaching activities



Benefits

- attractiveness for staff
- PhD students
- common projects
- external users
- support/awareness of our national tasks
- diversification of funding

all this is mobility!

However:

- loyalty ("two-hats")
- time, priorities
- definitely no part-time job

Top-down ordered mobility (well-intentioned but not carefully thought to the end)

institute level, example

“ For our new large-scale facility SwissFEL (a free-electron X-Ray laser) we need to reallocate internal resources. Hence scientist A / technician B should work for SwissFEL from tomorrow on. “

The carrier and reputation of scientist A is based on his in-depth knowledge on topic XY. Topic XY has nothing to do with SwissFEL / scientific community is well-aware of this.

national level, example

“ instead of subsidizing new renewable energy technologies we spend the money in research”

Are there enough excellent researchers available to get the job done worth 300 M€ / year ?

Fixed-term appointments vs permanent positions

Scientific tradition =

early carrier → fixed-term (if lucky with tenure-track option)

only at later stage → permanent position

reason: scientific excellence, selection of the best needs time

Questions:

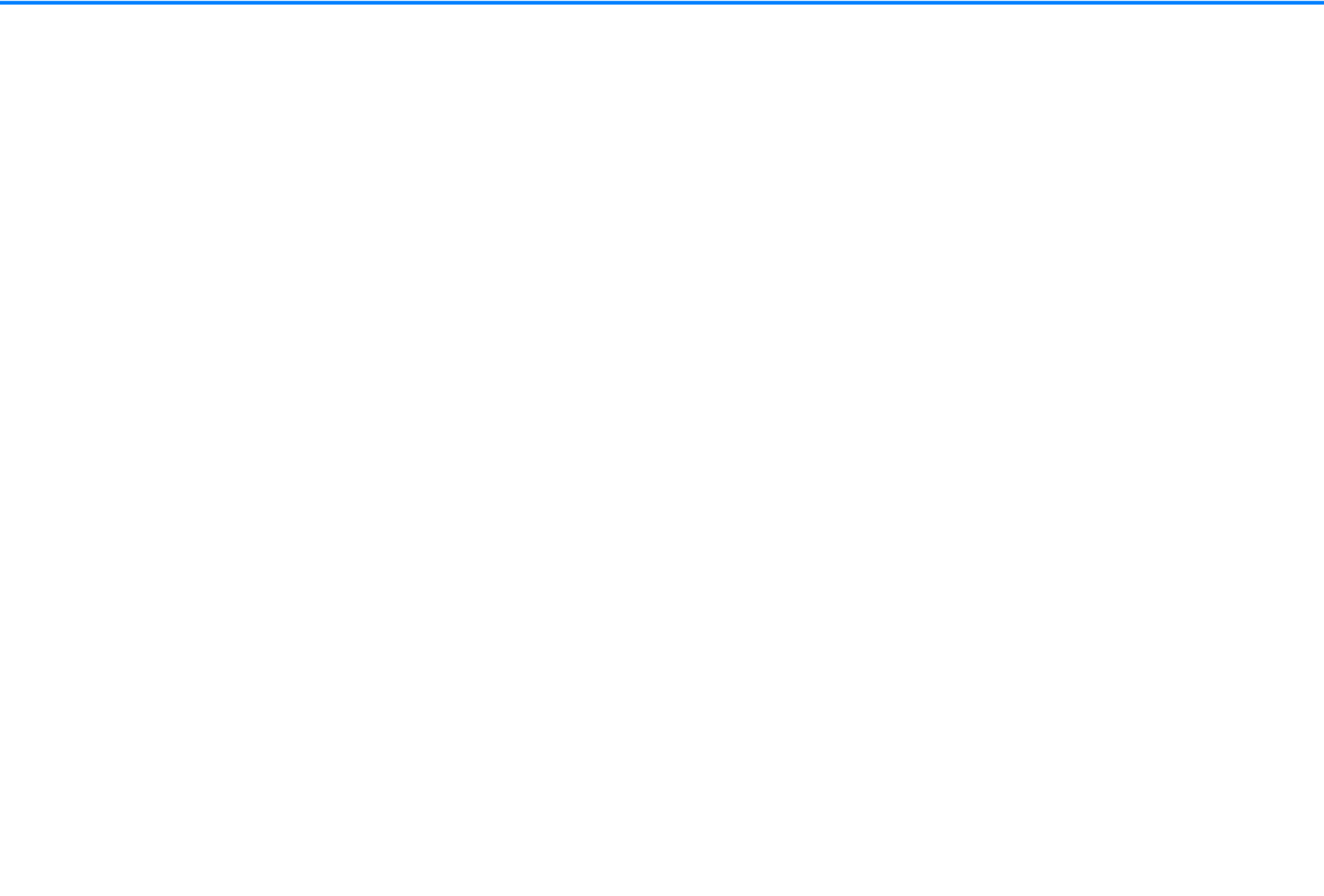


Thus is the private sector

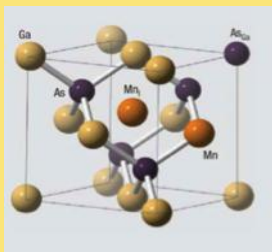
- not seeking for excellence?
- not selecting the best?

Should employment contracts and dismissal contracts approach those of the private sector?

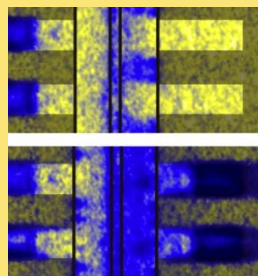
... and what if ? (side-effects on mobility)



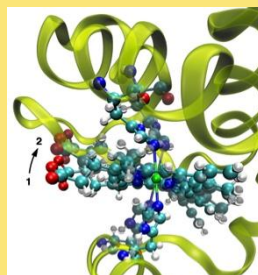
science of matter and materials



energy and environment



life sciences



development
construction
operation



large scale
research facilities



national and international users
academia and industry

more than 2700 external users / year (39 beamlines)

knowledge & expertise

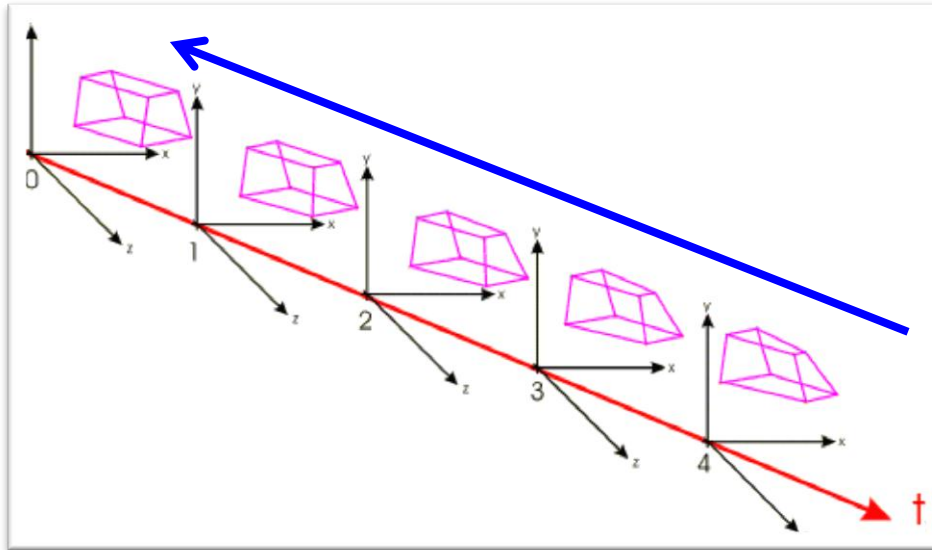


education



technology transfer





Wikipedia “Zeitpfeil”

Der [psychologische](#) Zeitpfeil beschreibt unsere [subjektive](#) Unterscheidung zwischen vergangenen und zukünftigen Ereignissen. Wir können uns an die Vergangenheit erinnern, aber nicht an die Zukunft. Die gängige Sichtweise des Zeitpfeiles betrachtet die Zukunft vorne (also in Sichtung). Siehe dazu auch: [Philosophie der Zeit](#).

Die zeitliche Dimension ist wesentliche Grundvoraussetzung für unser Gewissen (“Schnur der Identität”)

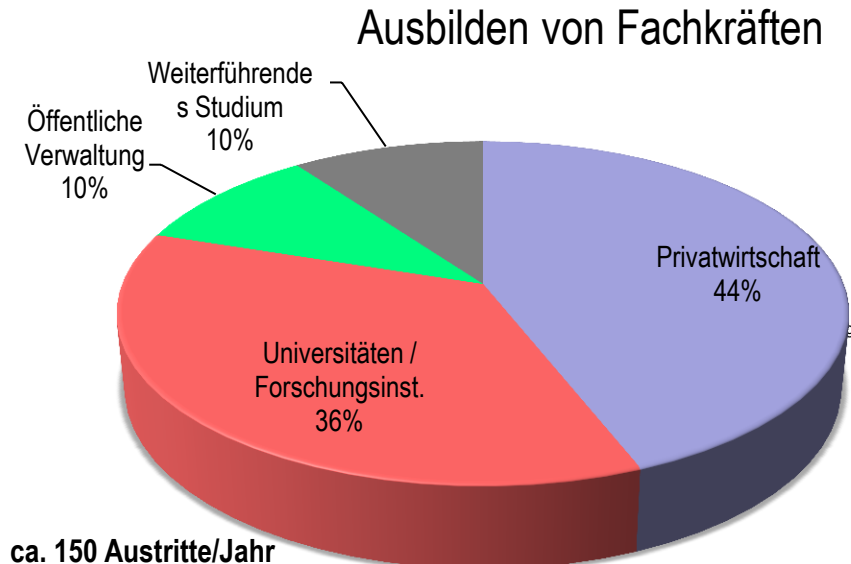
- Praktikanten
- Doktoranden
- Postdoktoranden
- Wissenschaftliche Mitarbeiter
- Professoren
- Techniker
- 14 Lehrberufe
- Administrative Mitarbeiter
- Gastwissenschaftler
- externe Handwerker
- ...
- ..
- .



- schweizerisch
- deutsch
- italienisch
- französisch
- russisch
- chinesisch
- österreichisch
- britisch
- indisch
- niederländisch
- amerikanisch
- polnisch
- spanisch
- finnisch
- belgisch
- schwedisch
- canadisch
- japanisch
- ungarisch
- griechisch
- rumänisch
- slowakisch
- bulgarisch
- serbisch
- tschechisch
- koranisch
- australisch
- brasilianisch
- georgisch
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- portugiesisch
- serbisch
- algerisch
- estnisch
- iranisch
- lettisch
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- türkisch
- taiwanesisch
- ukrainisch
- bangladesch
- chilenisch
- kolumbianisch
- dänisch
- ägyptisch
- guatemalteisch
- indonesisch
- litauisch
- luxemburgisch
- mauritisch
- slowenisch
- thailändisch
- venezolanisch
- lichtensteinisch
- norwegisch
- vietnamesisch

- 1500 Mitarbeiter
- 700 Wissenschaftler
- 300 Doktoranden
- 110 Postdoktoranden
- 87 Lernende

- breite Diversität in
- Altersstruktur
 - Nationalitäten (58)
 - Funktionen



Mobilität

wissenschaftliche Karriere setzt Bereitschaft zur Mobilität voraus
wir schicken unsere Doktoranden für ihren Postdoc-Aufenthalt ins Ausland
globaler Wettbewerb um die Besten
befristete Stellen, Tenure-Track System

→ Herausforderungen an den Generationenvertrag

- gesellschaftliche Verpflichtung der Familienbetreuung
- in der Regel kein Mehrgenerationenhaushalt mehr
- soziale Sicherheit / Pensionskassenbeiträge
- Gesundheitswesen
- unterschiedliche kulturelle Auffassungen zum Generationenvertrag
- **sich ändernde Arbeitswelt...**

... ins oder vom Ausland
für nur wenige Jahre je
berufliche Station



„globale Cloud
bester Talente“

VS

„nationaler
Generationenvertrag“

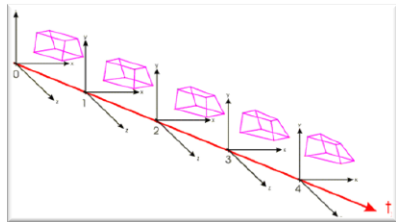
schweizerisch
deutsch
italienisch
französisch
russisch
chinesisch
österreichisch
britisch
indisch
niederländisch
amerikanisch
polnisch
spanisch
finnisch
belgisch
schwedisch
canadisch
japanisch
ungarisch
griechisch
rumänisch
slowakisch
bulgarisch
serbisch
tschechisch
koranisch
australisch
brasilianisch
georgisch
libanesisch
kroatisch
portugiesisch
serbisch
algerisch
estnisch
iranisch
lettisch
mexikanisch
philippinisch
türkisch
taiwanesisch
ukrainisch
bangladesch
chilenisch
kolumbianisch
dänisch
ägyptisch
guatemalteckisch
indonesisch
litauisch
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lichtensteinisch
norwegisch
vietnamesisch

Teasers für den Open Space „Generationenvertrag“

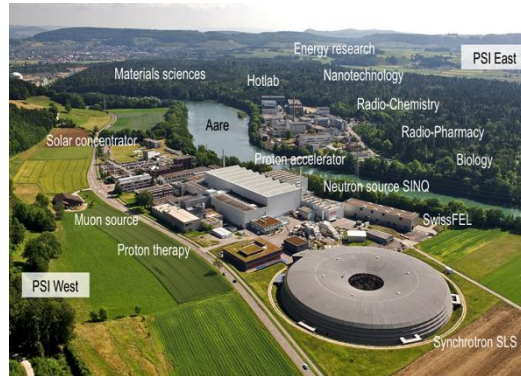
„Generationenvertrag“

oder

„Gesellschaftsvertrag“?



Forschung : Beispiel eines Generationenvertrags?



Unsere **Arbeitswelt** wird globaler und mobiler im Wettbewerb bester Talente.

Stossen wir an die Grenzen eines nationalen Generationenvertrags?



Generationen verändern sich Rasch. Wie gehen wir damit um?

