PAUL SCHERRER INSTITUT

PSI

Wir schaffen Wissen – heute für morgen

**Paul Scherrer Institut**

Thierry Strässle

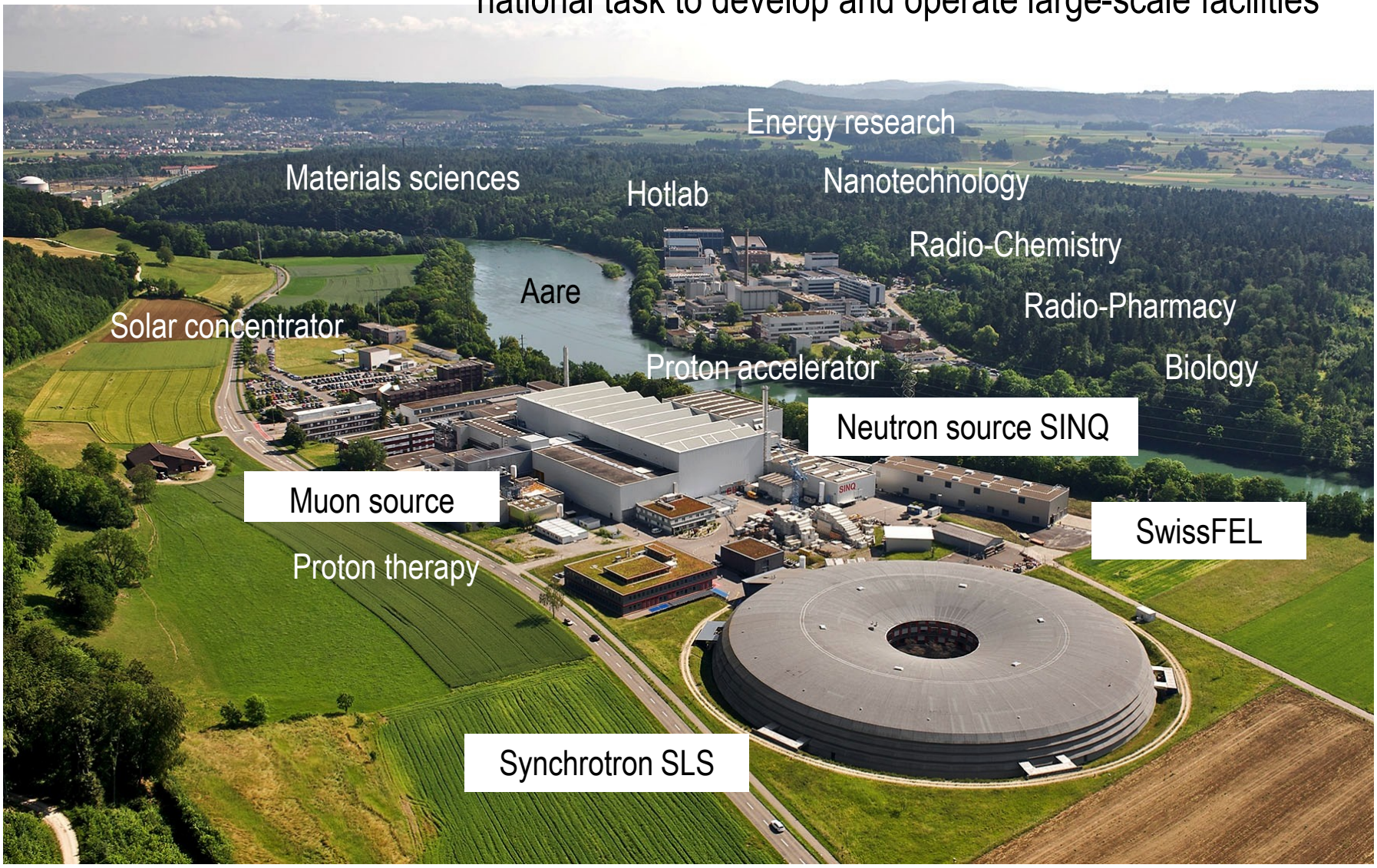
**Parallel II: Social, Educational & Environmental Aspects**

Experiences and exchange of best (good) practices from PSI

31. Mai 2012

# all major national large-scale facilities at one location

national task to develop and operate large-scale facilities

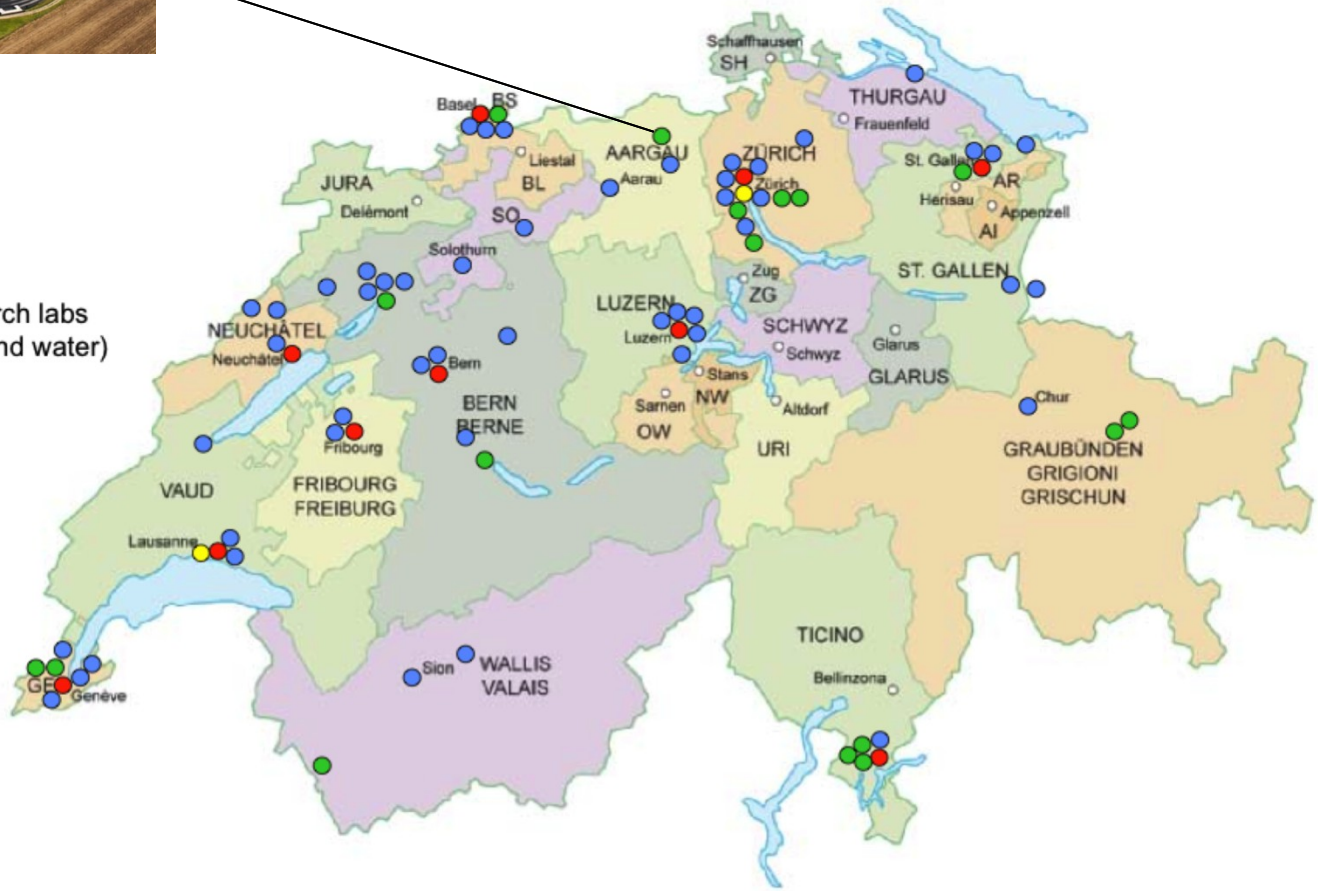


# synoptic view over Switzerland‘s university landscape

| ETHZ | EPFL | PSI | Empa | WSL | Eawag |
|---|---|---|---|---|---|
| Swiss Federal Institute of Technology Zurich | Swiss Federal Institute of Technology Lausanne | Paul Scherrer Institute | Swiss Federal Laboratories for Materials Testing | Swiss Federal Research Institute for Forestry, Snow and Landscape | Swiss Federal Institute for Water Resources and Water Pollution Control |

embedment within ETH domain

- **2 Federal Institutes of Technology**
  (ETH Zurich and Lausanne)
- **17 Federal Research Institutes**
  (among them the four national research labs for energy, materials, natural risks and water)
- **10 Cantonal Universities**
- **50 Universities of Applied Sciences (UAS, Fachhochschulen)**
  organized in 8 regional clusters
  (seven are public, one is a Public-Private Partnership, PPP)



# synoptic view over Switzerland‘s university landscape

main vectors for
educational/social impact
- users
- non-permanent staff
- staff at PSI
- visitors and public at PSI

this all becomes quite small
on the European scale
(population of D vs CH = 10)

in order to have strong
social/educational impact

1) strong links to **all** academic institutions within CH

1) strong links to
   - **all** potential users in CH
   - strong users abroad

2) broad local acceptance

# teaching activities

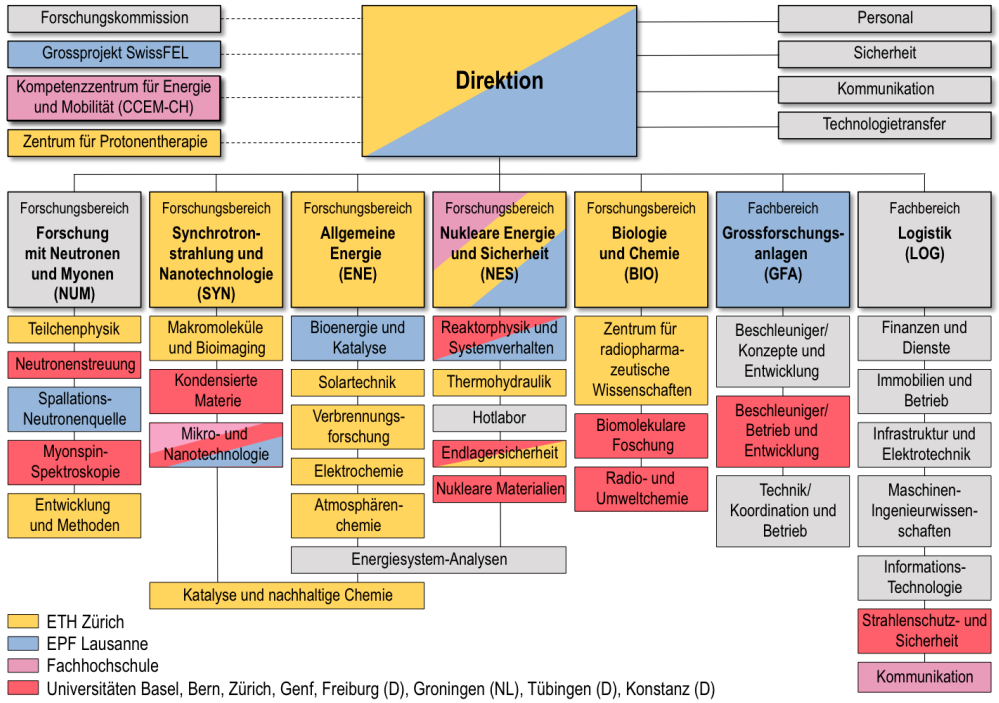
**303 supervised PhD students** (2011)

91 bachelor/master theses (2011)

*PSI cannot grant theses*

**110 postdocs** (2011)

**Prerequisite**:
strong links to (Swiss)
ETH domain,
universities and
UASs

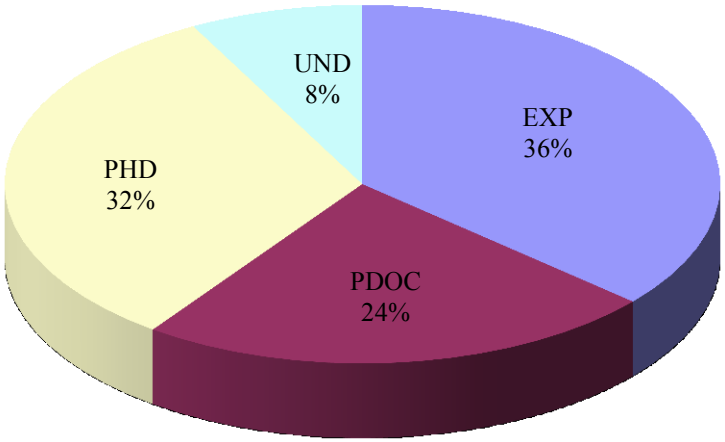



*colors show labs with at least one teaching activity at another academic institution*

- 110 staff members teaching (approx. 5000h / year) [out of about 500 scientists at PSI]
- common research projects (PSI can apply at national science foundation)
- joint professorships

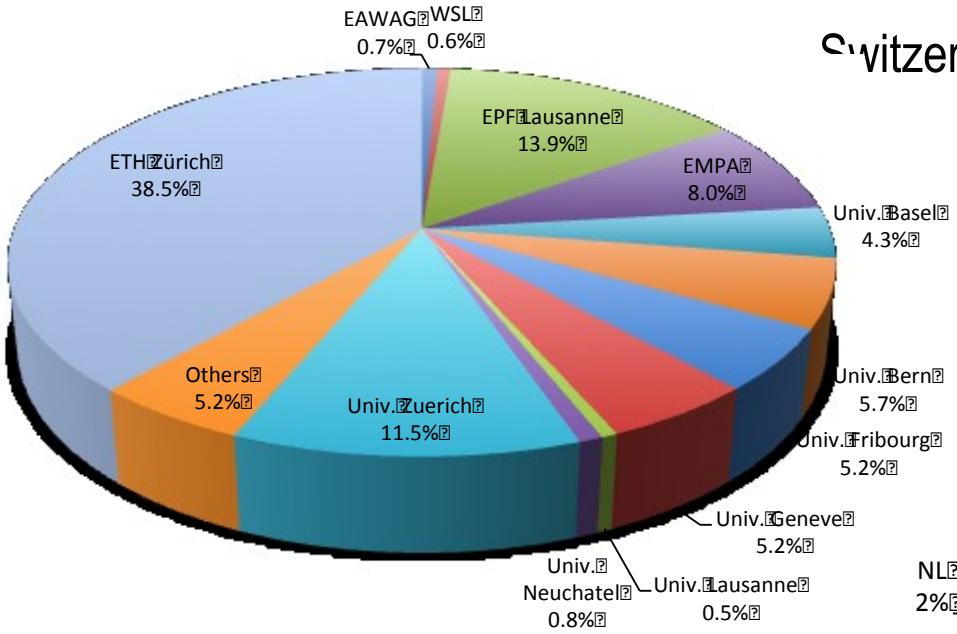
# research infrastructures – impact on teaching and education

position of SINQ/SLS/SμS users

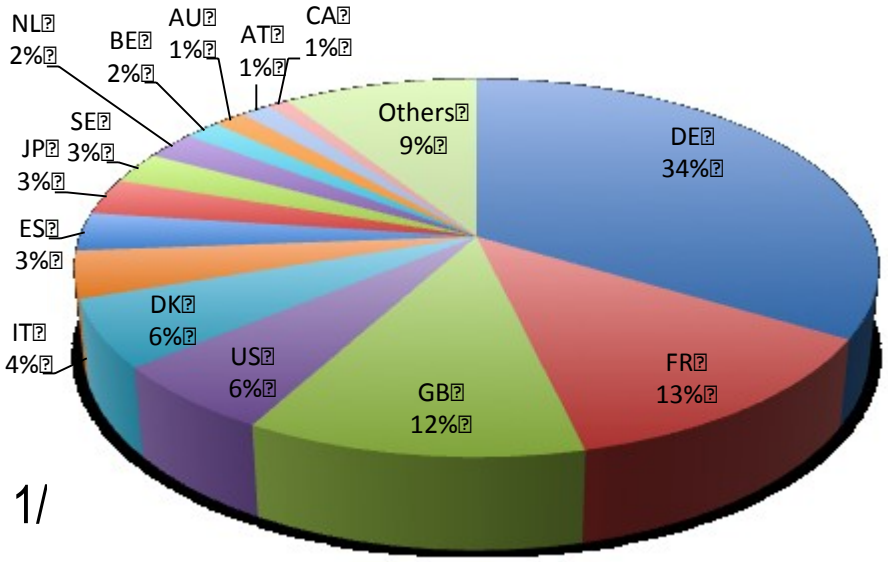



- **719** external PhD students use PSI large-scale facilities (**1411** visits at PSI in 2011)
- PSI supervises 300 PhD students most of them using large-scale facilities at PSI
- CH has high success rate to get beam time at ESRF, ILL and other large-scale facilities

# academic users (w/o PSI)




Switzerland 1/2




external users:

**2100 head counts / year**

**5000 visits / year**

international 1/

(EU: 86%)

# exchange between RIs

More than 30'000 unique users at photon / neutron facilities in Europe
Increasing trend to perform experiments at several facilities (supported by FP7)

- **30-45 %** **γ (n)-users use also another γ (n)-facility**
- **20-30 %** **n-users use also γ-facility**
- **~10 %** **γ-users use also n-facility**

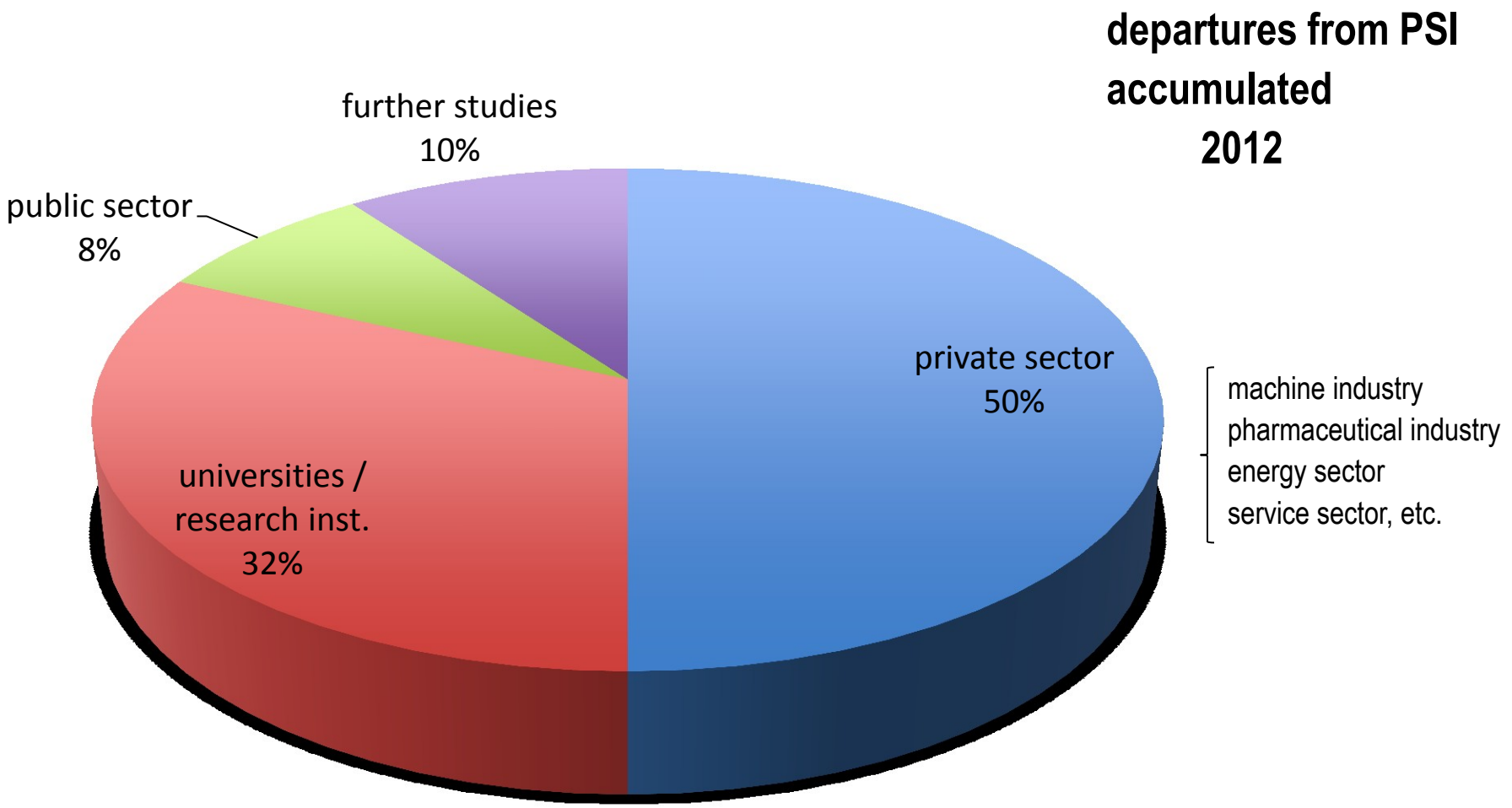
Main reasons

- **Enhance quality of experimental result by applying several techniques** (e.g. high-Tc superconductivity)
- **Increase access time to beamlines** (e.g. structural biology: overbooking)

Source:
PaN-data Europe (Policy Framework for User Data)
based on anonymous user data of ESRF, DESY, ELETTRA, SLS, SOLEIL, ANKA, ISIS, SINQ

slide courtesy of Heinz Josef Weyer (PSI)

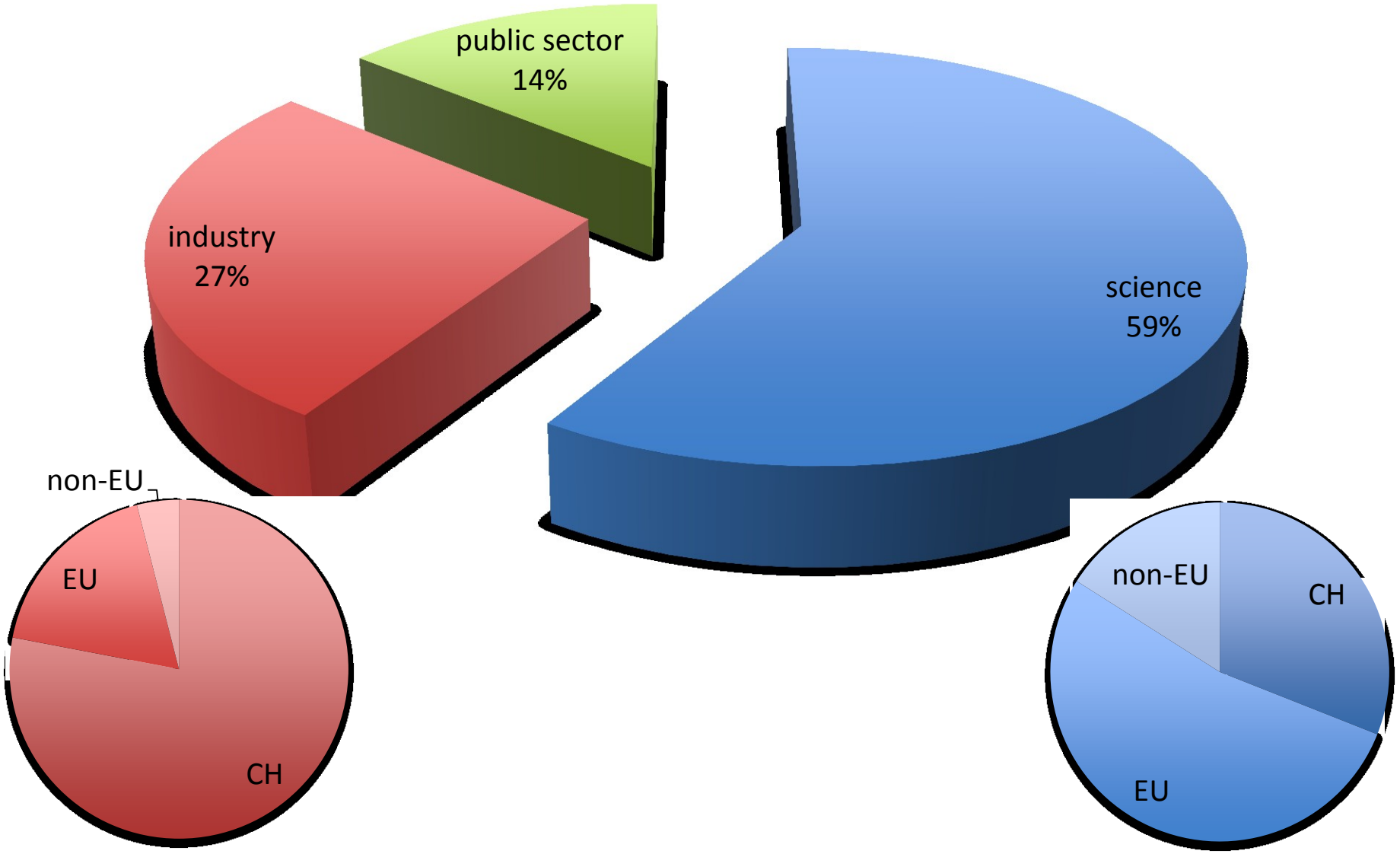
# employment after PSI – indirect social / economical impact




about 160 departures per year with subsequent employment in Switzerland, EU or abroad (without PhD students)

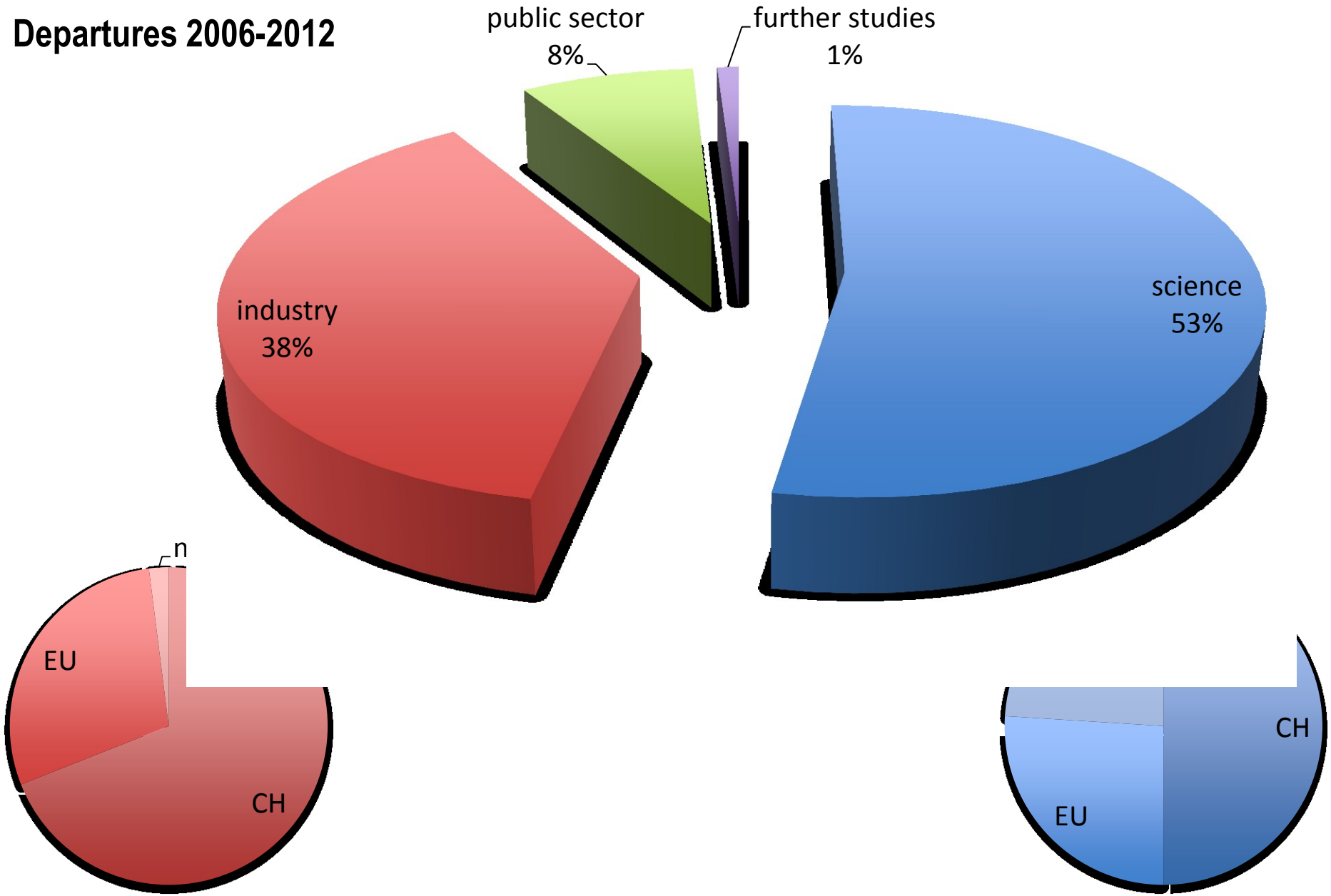
# „Life after PSI“ – Postdocs

## Departures 2006-2012



# „Life after PSI“ – PhD Students

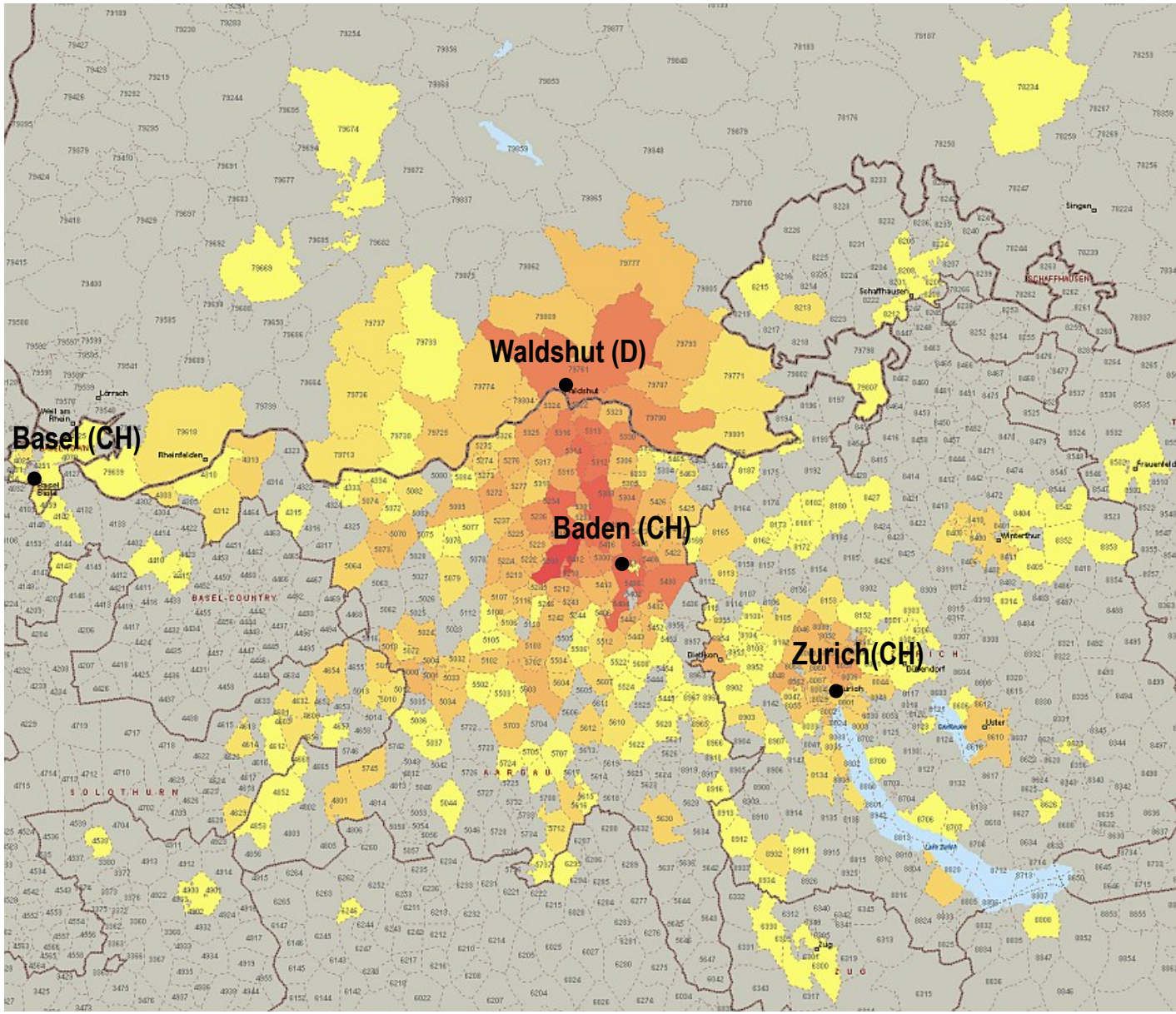
## Departures 2006-2012



# trusted employer of good standing

places of residence
of PSI staff
(1500 FTE)

58 different
nations



# public recognition

## psi forum – Visitors center

15’000 visitors / year

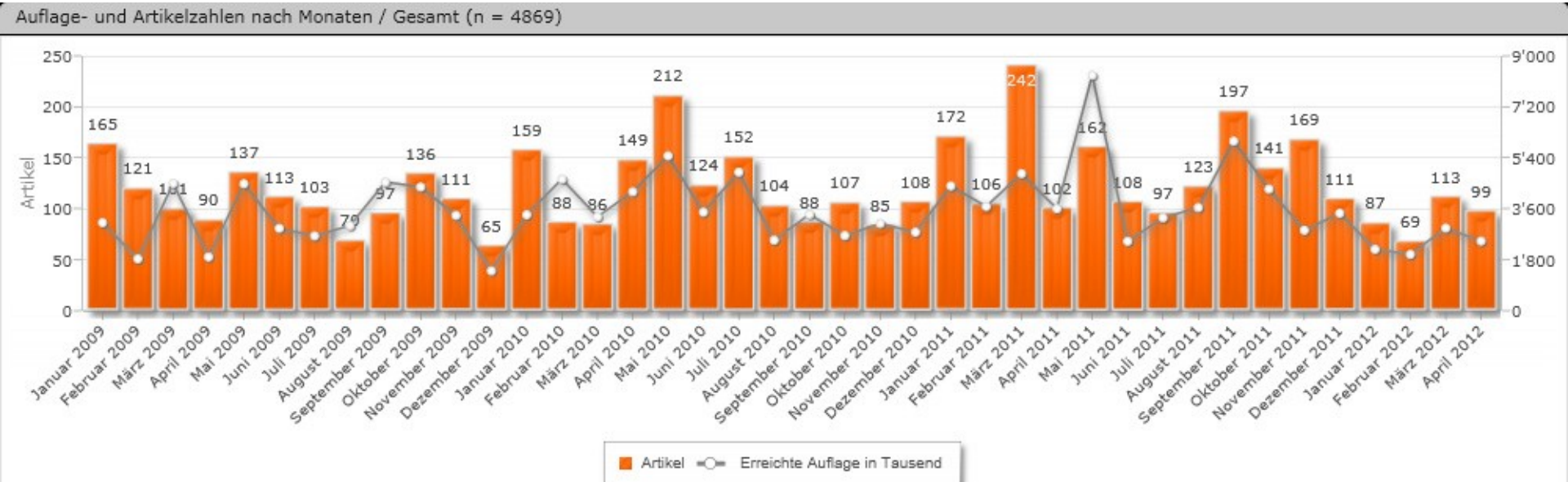
## iLab –„Schülerlabor“

Opening 4. April 2008:
about 9400 kids (12-15)
(551 classes) until end 2011

## Open day for public


October 2011
with > 10’000 visitor in 1 day

## presence in printed media



# key elements for educational / social impact

"It is all about people." – **educational impact**

- strong links to universities: joint-faculty and teaching activities
- young users trained during measurements/experiments
  - disseminating skills / techniques
  - access to large pool of talents
- PSI staff leaving for industry or science in Switzerland or abroad

"Acting globally, serving locally." **– social aspects**

Scientific collaboration more global than ever –

– shaping the success and development of a research center remains over all a local challenge

- excellent relation to public, political, academic stakeholders are key
- participation in public discussions are a must (e.g., political debate on energy, etc.)
- attitude of all staff counts in the long run

*basis for:*

fast recovery from "small disasters"

support for new challenging projects (e.g., SwissFEL)