

What is going on at EPFL (and in Switzerland and Europe)?

Willy Zwaenepoel
EPFL

CRA Snowbird Meeting, June 26, 2006



EPFL



- Public school
- Science and engineering
- 277 professors
- 3500 B.S. students
- 1400 M.S. students
- 1400 Ph.D. students
- Annual budget: 600mCHF

School of Computer and Communication Sciences



- 35 professors
- 500 B.S. students
- 400 M.S. students
- 200 Ph.D. students
- Annual budget: 42mCHF



Opportunities

George W. Bush

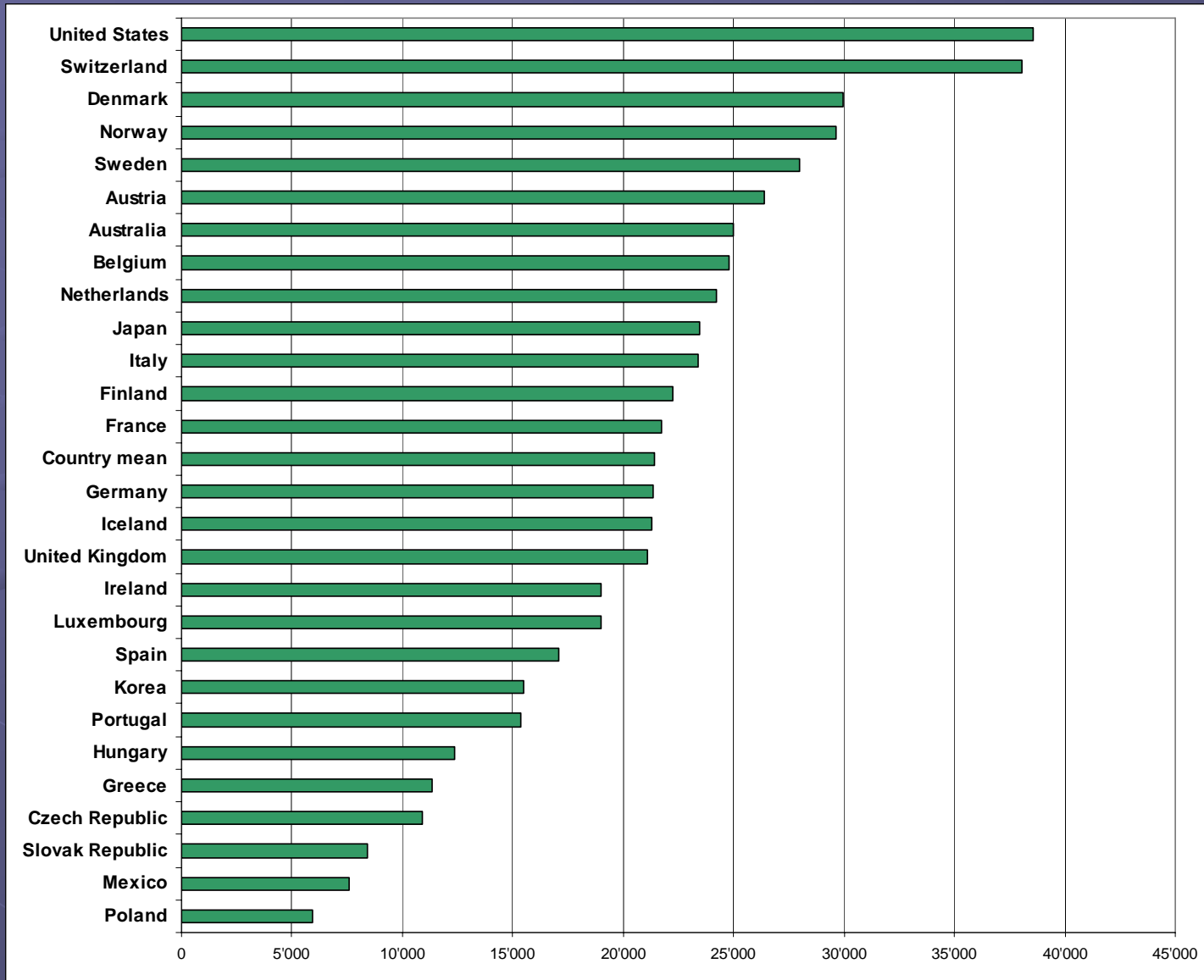


Switzerland is great (1)



Switzerland is great (2)

Annual education expenditure per student, including primary, secondary and tertiary education.



Data source:
OECD, Figures 2005
Education expenditure

US Dollars

Bologna Agreement

- Identical degree system in 45 countries
- BS/MS (3/2)
- Key points
 - Mobility between BS and MS
 - Some measure of competition

Capitalizing on the Opportunities

- Faculty recruiting
- Tenure track
- Aggressive recruiting at the MS and PhD

Faculty Recruiting

- Broad searches
 - All areas of computer science
- Small groups of professors in area
 - No hierarchical structure
 - More professors, less resources per professor
- Instead of
 - Targeted replacement hires
 - Highly hierarchical structure

Tenure-track Assistant Professors

- System identical to the US
- Six-year probationary appointment
- Tenured position available
- Promotion
 - Research, teaching and service
- Instead of:
 - 6 years and out

Bologna

- Strong separation between BS and MS
- MS and PhD completely in English
- Aggressive recruiting at MS and PhD
- Instead of:
 - Calling first 3 years BS, last 2 years MS



Results

Faculty Recruiting



G. Candea
Stanford



G. De Micheli
Stanford



M. Henzinger
Google



T. Henzinger
UC Berkeley



J. Huang
Harvard



A. Lenstra
Bell Labs



D. Kostic
Duke



V. Kuncak
MIT

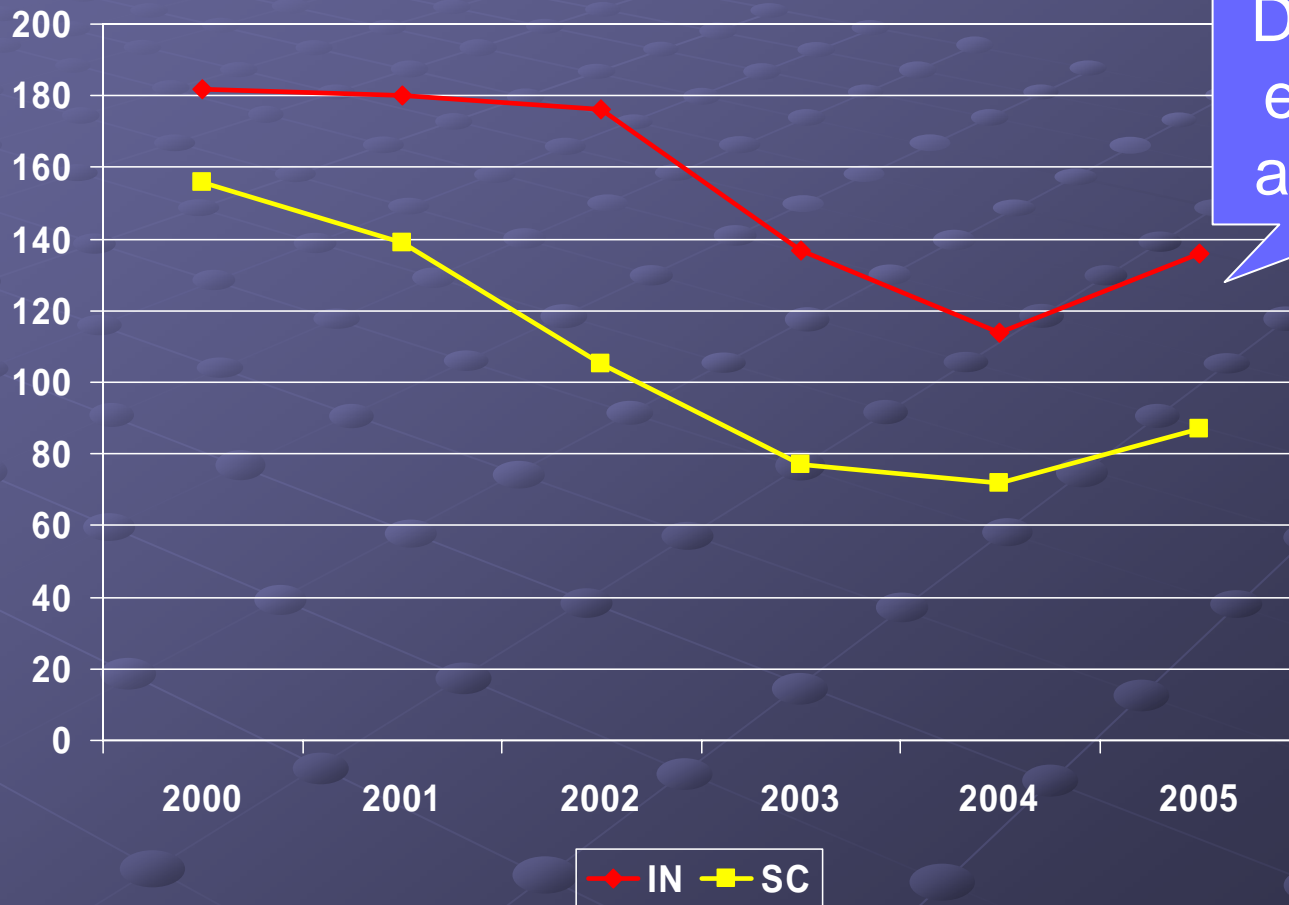


B. Moret
UNM



S. Susstrunk
EPFL/HP

Total New Enrollment



Due to new enrollment at MS level

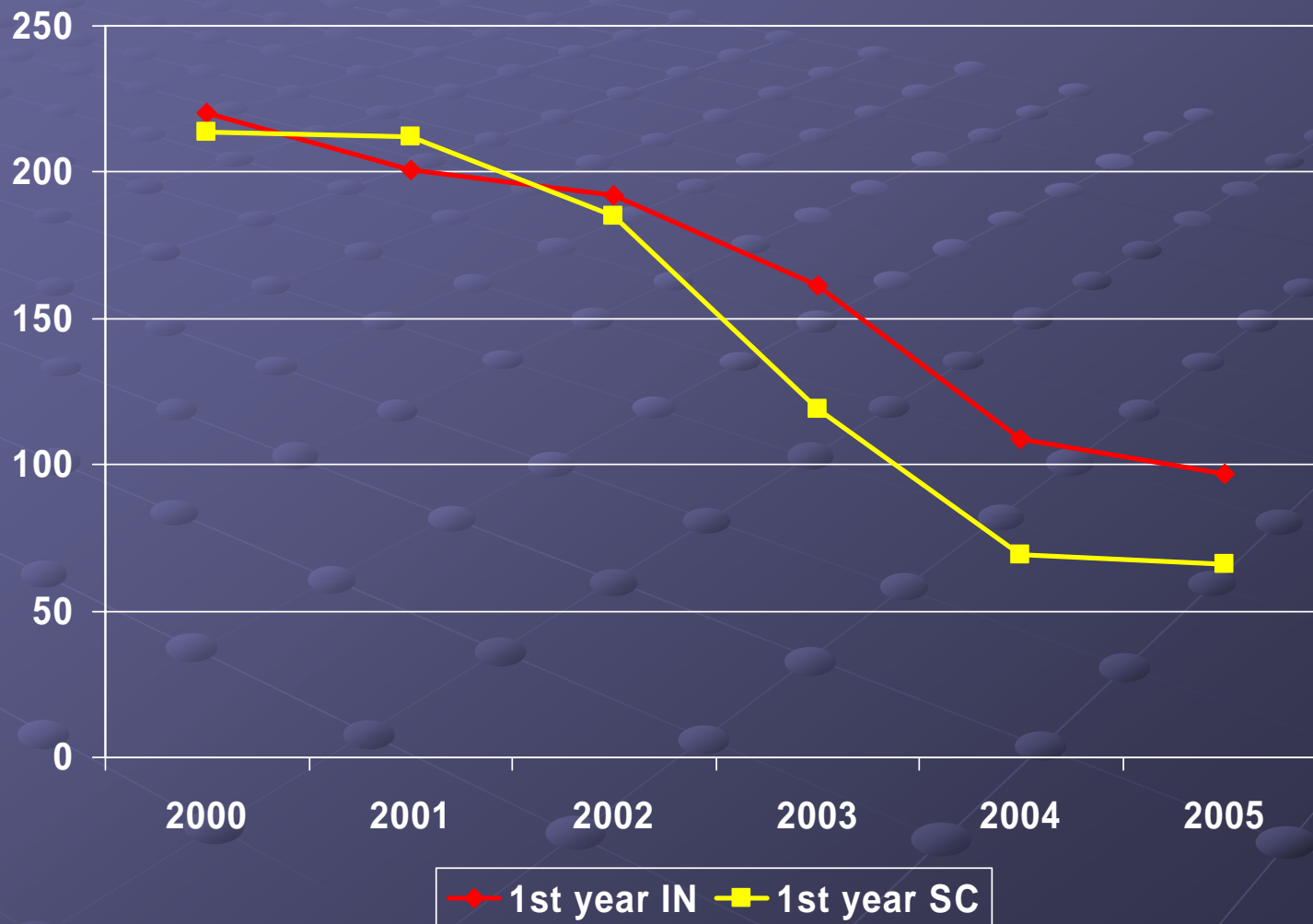


Challenges

Challenges

- Declining enrollments at the BS level
- Weak representation in funding agencies
- Unsuitable evaluation methods

1st Year Enrollment



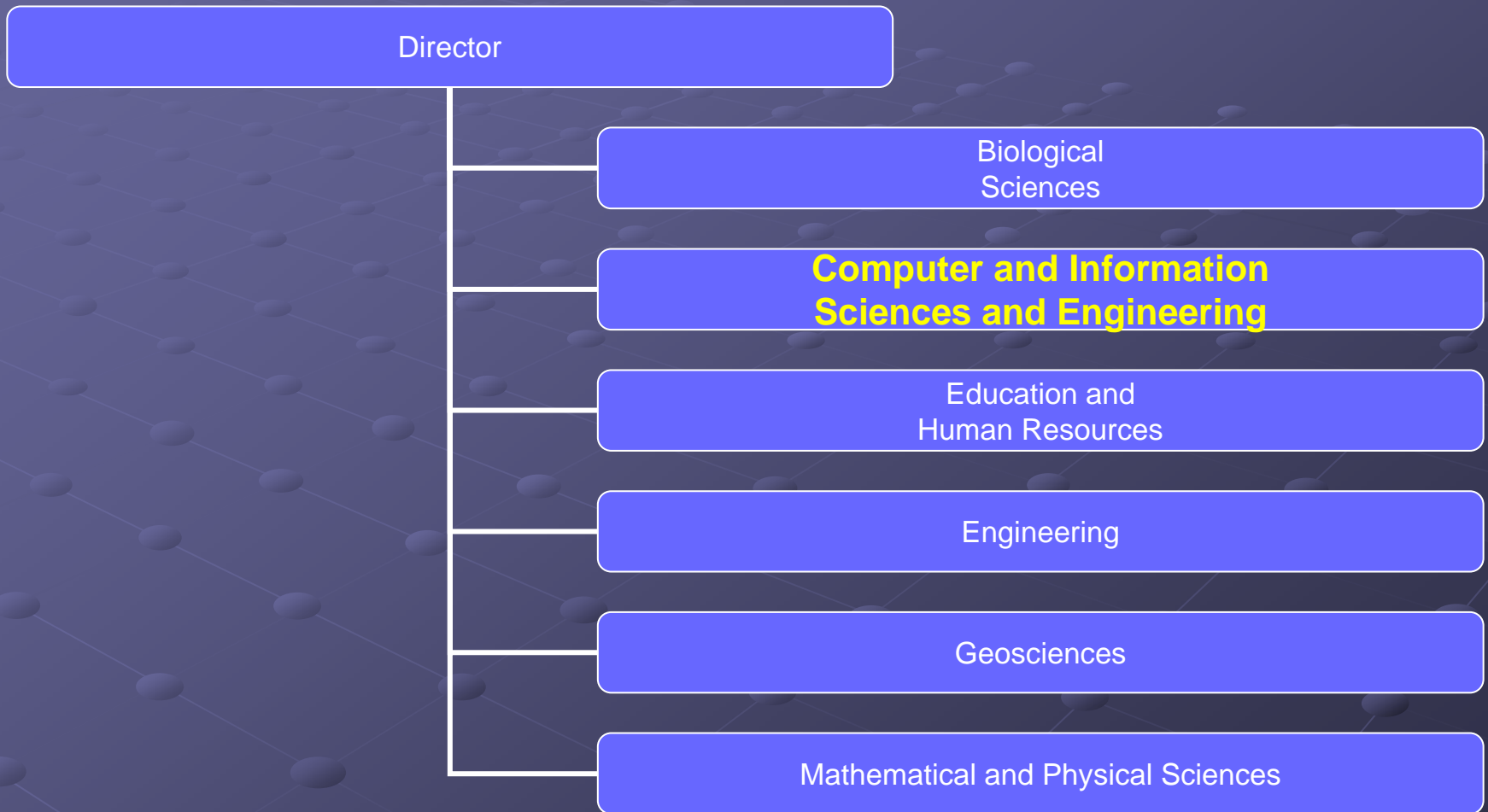
What to do about it?

- Trying to take the high road
 - “Computer science = physics of the 21st century”
 - Avoid “computer-science-lite”

Swiss NSF



US NSF



Swiss NSF

Director

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graph TD; Director[Director] --- HSS[Humanities and Social Sciences]; Director --- MPES[Mathematics, Physical and Engineering Sciences]; Director --- BM[Biology and Medicine]; Director --- TR[Targeted Research];
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Humanities and
Social Sciences

Mathematics, Physical
and Engineering Sciences

Biology and Medicine

Targeted Research

Similar Problems in Europe

● At the European Science Foundation

- Number of CS EurYI : 1 CS award out of 50
- US equivalent (Sloan, Packard) : ~ 20%

● At the European Research Council

- Number of CS board members : 1 out of 22

Evaluation not suited to CS

- Journal vs. conference
- Impact factors
- Web of Science vs. scholar.google.com
- Beancounting is in

What to do about it?

- European equivalent of CRA
- Annual department head meeting
 - First one held in October 2005
 - Second one to be held in October 2006
- Organization is being created

The background features a 3D perspective grid of dots. The dots are arranged in a diamond-shaped lattice that recedes into the distance, creating a strong sense of depth. The dots themselves are small, dark blue spheres with a slight highlight, giving them a three-dimensional appearance. The lines connecting the dots are thin and light blue. The overall color palette is a range of blues, from a deep navy to a lighter, almost white blue at the top of the frame.

Perspective

Perspective

- Opportunities and challenges
- I am pretty optimistic
- Have to work on
 - Being recognized as a science
 - Function as departments, not individuals