1. Introduction:
   • Excellence
2. Challenges for Science in Switzerland
   • Maintain excellence
3. SNF Today
   • Growth,
   • Basic versus programmatic research
4. FRI 2013-2016
   • Continuity rather than stop-and-go
5. Europe
   • Horizon 2020
6. The world
   • The law of large numbers
7. Conclusions
1. Introduction: Excellence....

"If You Got to Ask, You Ain't Got It!"

Fats Waller (1939)

"But I know it when I see it..."

—Justice Potter Stewart (1964)
2. A Bit of History

- The university is a European invention
  - Open and free
  - Best "educated" continent
- The US has become the key player
  - Post WWII
  - Historical and structural reasons
  - Large variance
- A few key principles
  - Graduate school
  - International recruitment
  - Academic career path
- Unclear who will be the next key player...
  - Challenge for Europe
Excellence is about quality, not quantity!

- **Quality of students**
  - Attract the best to science and research

- **Quality of the university and professors**
  - Attract best teachers and researchers
  - Keep them intellectually engaged
  - “The university is the professors” (I. Rabi)

- **Quality of the output**
  - Beware of bean counting
  - “If you ain’t to count, you ain’t got it!”
  - Attractive careers

- **Note:**
  - Money is necessary... but not sufficient!
  - Money has different “quality”
2. Challenges for Science in Switzerland

• **Situation is good...**
  – Rankings, publications, patents etc
  – Careful: when you are at the top, you can only go down!

• **Stay competitive**
  – CH as a magnet for top talent
  – Balance various stakeholders
  – Quality over quantity

• **Promote young talent “Nachwuchsförderung”**
  – Maintain key programs
  – Explore news avenues

• **Promote the entire spectrum of basic/applied/oriented research**
  – Delicate balance
  – Risk/illusion of “directed research”
  – Fundamental versus societal
2. Challenges for Science and SNSF

- Keep support from politics and society
  - Political stakeholders: Explain, network
  - Society: Show “value”
- Stay competitive
  - CH as a magnet for top researchers
  - Balance various stakeholders
  - Quality over quantity
- Keep independence
  - Foundation
- Promote young talent “Nachwuchsförderung”
  - Maintain key programs
  - Explore news avenues
- Promote the entire spectrum of basic/applied/oriented research
  - Delicate balance (e.g. HES)
  - Risk/illusion of “directed research”
  - Fundamental versus societal
3. SNSF Today

- 60 Years and strong!
  - A gem in a high quality landscape
  - Handle with care
- A model in Europe
  - ERC looks like a (large) SNSF grant
  - Synergia -> Synergy
- Efficient administration
  - Low overhead, e.g. www.mysnf.ch
- Good funding levels
  - We are quite lucky!
- Nachwuchsförderung
  - Several instruments
- Younger colleagues ...
  - Need help, sometimes...
  - Eligibility, independence
3. SNSF Today

- SNF is the best investment for the future!
  - Guarantee continued/increased support from the taxpayer
- Increased demands
  - Constant increase in number and amounts requested
  - Needs adequate budget increase
- Pressure to do “program research”
  - Basic is from where the rest follows
  - It does not mean irrelevant!
- Transition to new department
  - Smooth the ride
- Interface SNSF-KTI
  - Build bridges, interface basic/applied
- International networking
  - EU and big programs
On Research versus Applications

If we knew what it was we were doing, it would not be called research, would it?
A. Einstein

All sorts of research...

- Applied research
- Research oriented towards applications
- Oriented research
- Networked research
- Interdisciplinary research

Do not forget

- Basic research
- Single investigator grant

Probably only two types of research...

Use ->
New Paradigms

- **Money follows (best) people**
  - Fellowships
- **Open access**
  - Science is for all
- **Reproducible**
  - Better quality
- **Collaborative**
  - News ways to work
SNSF: The Way Ahead

• Nachwuchsförderung
  – NSF fellowships (a successful US model)

• Advisory board
  – Informal sounding board

• Building bridges with research labs
  – Recalling that the majority of research funding is spent in industry

• NSF alumni
  – Powerful network

• New research paradigms
  – Open access and reproducible
  – Collaborative research
4. FRI 2013-2016

- Stop the “stop-and-go”!
  - Students do not “stop-and-go”
  - Planning
  - Continuity
- Transfer is mostly through people
  - Jobs follow people
- Overheads
  - Stay the course
  - Follow what Europe is doing (ERC)
- Merger of BBT and SER
  - Challenge and opportunity
  - No more basic against applied research
5. Europe

• Switzerland as a role model
  – Play the part

• Horizon 2020
  – Key program
  – Switzerland has to be part of it

• Euratom
  – No cherry picking

• Science Europe
  – Organization of all European funding agencies
  – Switzerland as a key player
  – Interaction of DFG, ANR, UK etc
5. Europe

Build a true European academic market

• For students
  – Choose your graduate school (not necessarily in the US!)

• For professors
  – Tenure track, career paths
  – Transparency

• For grants
  – A competitive market
  – Few strings attached

• For universities
  – There will not be a hundred top 10 universities!
  – There will be different roles
6. The World

• Traditional partners
  – US, Canada
  – Important and ongoing

• The law of large numbers
  – China
  – India

• BRICS are key
  – Not always simple

• Reputation of Switzerland is excellent
  – Keep it up!
7. Conclusions

Excellence: Look at the future, elsewhere

• At the US
  – What to do, or not to do
  – Innovation, immigration

• At Japan
  – Challenges

• At BRICS
  – Growth

• At the world
  – Sustainability....
7. Conclusions

• **SNSF is the gem in the Swiss research landscape**
  – Keep it strong and independent
• **It is an example**
  – Interact with the European research landscape
• **These are challenging times**
  – Consolidation
  – Competition for funding
  – Pressure to be “relevant”
• **Still stay the course**
  – And communicate with the key stakeholders
• **And innovate**
  – Science and research are a moving target!
Thank you for your attention!