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The Swedish Foundation for International
Cooperation in Research and Higher Education

STINT@China

Erik Forsberg, STINT Representative in China

erik.forsberg@stint.se





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My background

- PhD Photonics 2003 from Royal Institute of Technology, Sweden
- Visiting scientist Hokkaido University, Japan
- Founding Vice Director Sino-Swedish Joint Research Center of Photonics, from 2003
- Post-doc & Associate Prof (Photonics) @ Zhejiang University 2004 - 2008
- Associate Graduate Dean Higher Colleges of Technology, United Arab Emirates 2009 - 2012
- Back in China 2012
 - Associate Prof (Photonics) @ Zhejiang University (part time)
 - Work at Insigma Group (Chinese corporate) 2012 - 2016
 - Co-founder 2 start-ups
 - Work on development of science & innovation parks, co-working spaces
 - Zhejiang Province '1000-talent' program scholar



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What has happened?



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Brief history

- first half 1970's - China's universities start reopen
- 1977 - entrance exams reintroduced
- 1978 - 改革开放
- Fast growth of:
 - funding
 - NSFCs budget increased 370x 1982-2017
 - total R&D spending: 245 billion RMB 2005 → 1422 billion RMB 2015
 - outgoing students (~600,000 2017)
 - quality (e.g. 6 universities in the global top 100 according to QS)
 - incoming students (~400,000 2017, #3 in the world)
- 1995 - 211-program
 - raising the research standards of high-level universities
- 1998 - 985-program
 - raise selected universities to world class level
 - initially 9 universities, later 39 in the program
- Situation today:
 - the world's second largest producer of scientific articles
 - at the international forefront in an increasing number of fields;
 - China invests more money than the EU (in absolute numbers and as a percentage of BNP) on R&D
 - one of the world's leading science nations



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What's happening?



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New initiatives

- **Double First Class**

- announced 2017
- to comprehensively develop a group of elite Chinese universities and individual university departments into world class universities and disciplines by the end of 2050
- 42 universities & 95 discipline universities
- initial 40 billion RMB
- focus on universities in 2nd tier cities
- focus on natural sciences
- clear timeline as opposed to previous 211 & 985 projects

- **Mega science projects**

- announced 2018
- 3-5 new by 2020
- additional 6-10 by 2035
- e.g. human genome, international thermonuclear experimental reactors, international ocean discovery, Earth observations and the square kilometer array



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West Lake University 西湖大学

- China's first private research university
- Officially recognized as a university in April 2018; global elite university the target
- Well funded primarily by private donations - offers internationally competitive salaries
- Focus on research, only Ph.D. students initially





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Hupan University 湖畔大学

- “Why does China have so many good entrepreneurs but no good management education?”
- Hupan University Jack Ma’s solution
- Founded 2015





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- One (of many) projects aimed to create a world class university in Guangdong
- Founded 2009
- Nr 62 in *Nature's* ranking of the world's 100 institutions with the most significant growth of high quality publications
- 3:rd fastest growing institution in the world
- an experimental platform for reform of higher education in China
- administered by City of Shenzhen (i.e. not directly by MoE)



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Zhejiang University International Campus

浙江大学国际校区

- New concept for international collaboration; joint schools
 - Biomedical Sciences: ZJU-University of Edinburgh (UK)
 - Engineering: - ZJU-UIUC (USA)
 - Business School: tbc
 - Liberal Arts: tbc
 - Joint Lab for Applied Data Science: ZJU - Imperial College
- First student cohort fall 2016, AY 2017-18 about 500 (ca 40% from outside China), steady-state plan of 3000 students
- Campus finished fall 2017





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**Scientific collaboration with
China is of strategic
importance for Sweden as a
knowledge based economy**



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Meaningful collaboration requires knowledge

- Large country in rapid transformation
- Cultural differences, language barriers, different political system
- Knowledge with both breadth and depth needed
- Regional developments need to be monitored
- **Knowledge needs to be acquired 'at the scene'**



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Recommendations from “En strategisk agenda för internationalisering” (Agneta Bladh, SOU 2018:3)

- **“Forskningsfinansiärer ser över möjligheterna att stärka stödet för utresande mobilitet och internationella samarbeten för forskande personal, även till länder och regioner med stor forskningspotential men där samarbetet ännu inte är så omfattande.”**
- **“Former skapas för mer strukturerad konsultation med lärosäten och forskningsfinansiärer för att fånga upp svenska behov och intressanta samarbetsområden när bilaterala avtal inom högre utbildning och forskning förhandlas mellan Sverige och andra länder.”**
- **“Omvärldsbevakning och omvärldsanalys i internationella frågor i fråga om såväl högre utbildning som forskning och innovation samordnas och stärks.”**



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What does other countries do?

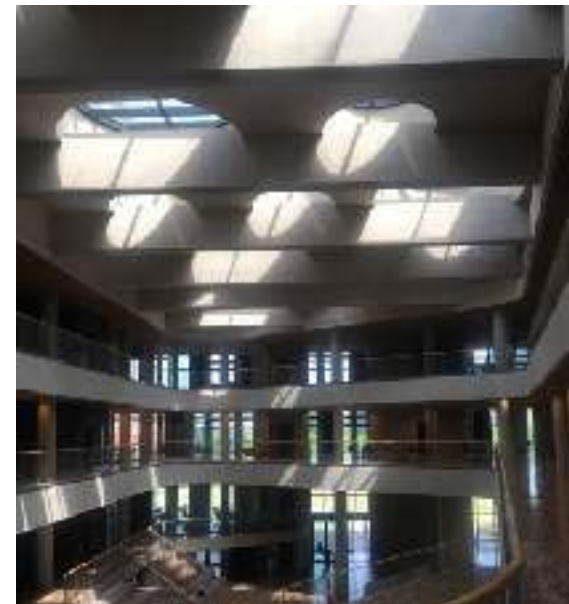


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Denmark

- **Innovation Centre Denmark**
 - Established and managed by the foreign and education ministries together
 - Supports innovation actors, universities and individual scientists
 - 12 staff + student interns at the Shanghai office
- **Sino Danish Center**
 - Joint center including all Danish universities
 - Currently offers 7 master programs in Beijing
 - Supports research collaboration, research visits etc
 - A part of the University of Chinese Academy of Sciences
 - New building sponsored by Industriens Fond just opened





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Switzerland - swissnex China

- Switzerland's science consulate
- Supports collaboration in science, education, art & innovation
- 20 staff at Shanghai office
- Supported by State Secretariat for Education, Research and Innovation in collaboration with the foreign ministry



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What is Sweden doing?



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What is STINT doing?



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Report series

- A special China report series with analyses on various matters related to S&T, higher education, and innovation in China.
- In collaboration with experts, researchers and policy analysts (3-4 reports/year)
- Report 1: *Academic Collaboration Sweden-China* (Pohl, 2018)



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Seminars/workshops/symposiums

- Research workshop (Lund), August
- STINT seminar (Shanghai), November
 - International branch campuses in China
- Research workshop (Shanghai), November
- Research workshop (Stockholm), January
- Policy Summit (with NSFC) (Beijing), April/May
 - Research evaluation
- Research workshop (Beijing), April/May



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Network in China

- NSFC
- CSC
- CASTED
- FDDI
- (CASS)
- The universities
- Foreign academic centers in China
- Office of Science & Innovation at the Embassy
- Other countries innovation & science offices, e.g. swissnex, Innovation Centre Denmark, Shanghai S&T Diplomatic Circle
- Provincial equivalents to MOST, e.g.
 - Zhejiang Province Science & Technology Department
 - Shanghai Science & Technology Commission
- Alumni and alumni organisations



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Office in China

- China Representative
- Office located in the Consulate General of Sweden
- Why Shanghai?
 - It's not Beijing - complement the Office of Science & Innovation at the Embassy
 - Large part of Swedish science collaboration is focused on the Yangtze River Delta region (Zhejiang, Jiangsu & Shanghai)
 - Important region for Swedish industry

