China: A Rising Scientific (Super-)Power & a Node Embedded in the Global Scientific Network

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• China as a Rising Scientific (Super-)Power
  – Strong political commitment
  – Increasing investment in R&D
  – A large talent pool
  – Significant expansion of higher education
  – Modern and sophisticated facilities
  – Extensive R&D system: the role of FDI
  – Mobilization of the entire nation (举国体制)
The Global Scientific Network (145 nations, 2004)
The Global Scientific Network (25 nations, 2004)
China as a Node Embedded in the Global Scientific Network (1)

- Super-node: United States
- Second-tier nodes: Germany, England, France
- Third-tier nodes: Italy, Canada, Japan
- Fourth-tier nodes: The Netherlands, Spain, Switzerland, China
- Fifth-tier nodes: Australia, Belgium, Russia, Sweden
• China as a Node Embedded in the Global Scientific Network (2)
  – International collaboration has contributed significantly to China’s scientific publications

Source: http://www.scimagojr.com/countrysearch.php?country=CN
• With Whom Chinese Scientists Have Collaborated (1)
• With Whom Chinese Scientists Have Collaborated (2)

Nanotechnology 1996
Japan and USA

Nanotechnology 2005
USA
• Collaboration with China
  – Public goods with global challenges and significance: climate change, infectious diseases, energy, and food securities
    • Engaging the government (top-down)
  – Basic research
    • Scientists take initiative (bottom-up)
  – High technology
    • Companies in the lead (bottom-up)
  – Toward a post-nationalist science?