Global Science Partnerships for the 21st Century (GSP21)

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Global Science Partnerships for the 21st Century (GSP21): Principles

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- **Strengthen** U.S. S&T leadership into the 21st century by fostering environments **outside the U.S.** that **"attract"** outstanding S&T students into competitive careers in their home country, but who remain closely connected to the U.S. educational, research, and innovation system.
- **Establish arenas of S&T excellence** abroad through long-term collaborative education, research, and private sector engagements.
- **Ensure** the U.S. and GSP21 partner countries both benefit.
- **Enhance the international experience** in the graduate education of the next generation of S&T leaders in U.S. and GSP21 countries.
- **Promote S&T** as positive contributions to the formulation and implementation of international policy (i.e., **"science for statecraft"**) while maintaining a commitment to scientific excellence in education, research, and innovation via peer review (i.e., **"science for science"**).

GSP21 Organizational Structure – Phase I

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GSP21 partner country nominates outstanding students for graduate S&T education in U.S. universities

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U.S. universities evaluate GSP21 nominees for admission to S&T graduate programs

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GSP21 students in graduate S&T programs (~4 years); may include an innovation experience (e.g., internships) in U.S. companies to learn about the U.S. innovation system

Each GSP21 country develops its plan to enhance its educational, research, and innovation systems to attract GSP21 graduates into S&T careers at home

↕ Over ~4 years

U.S. professors accepting GSP21 students are available as consultants for GSP21 partner countries as they develop their specific plans for enhanced S&T education, research, and innovation

GSP21 Organizational Structure – Phase II

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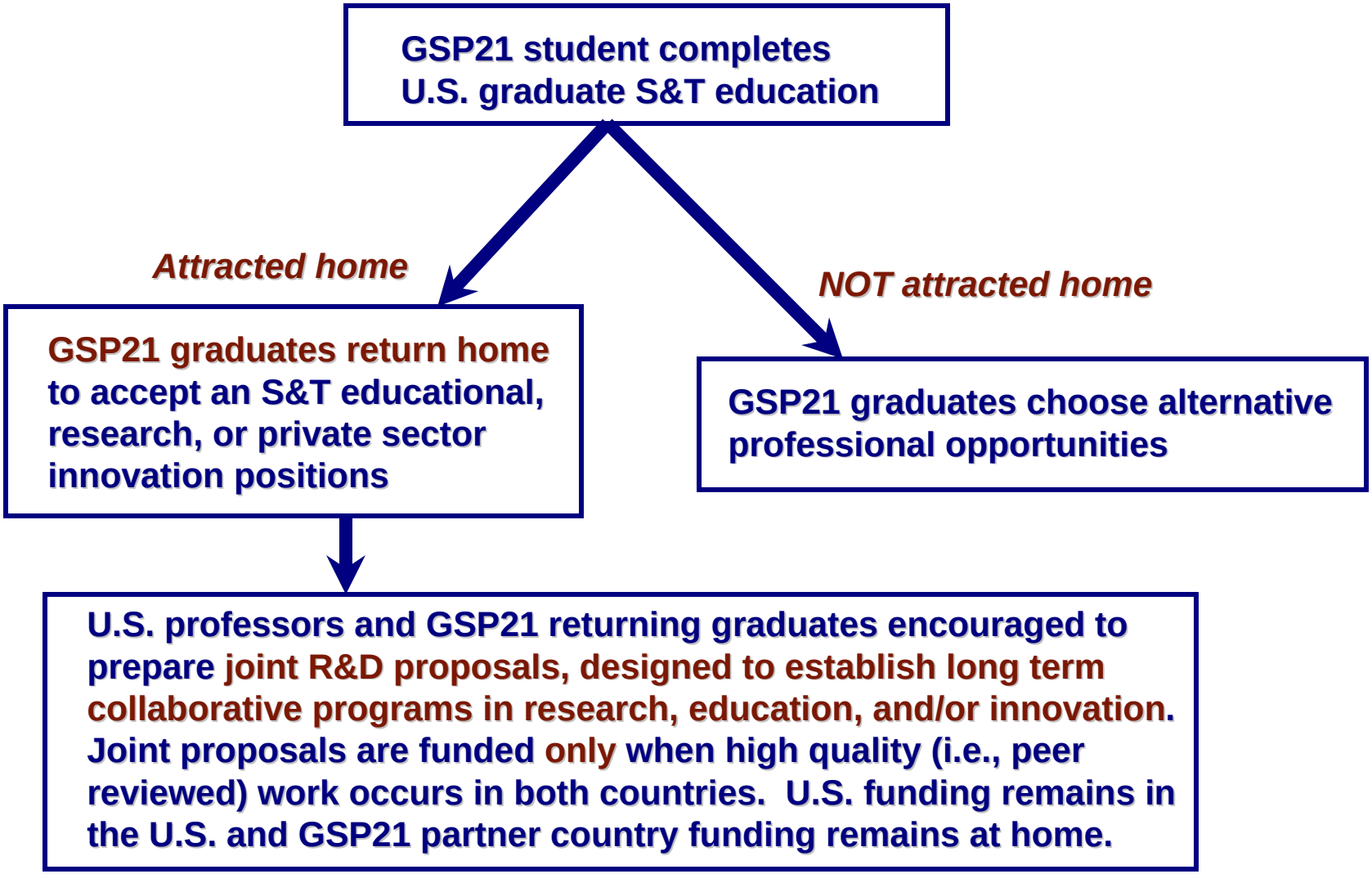

The Global Competitiveness Index

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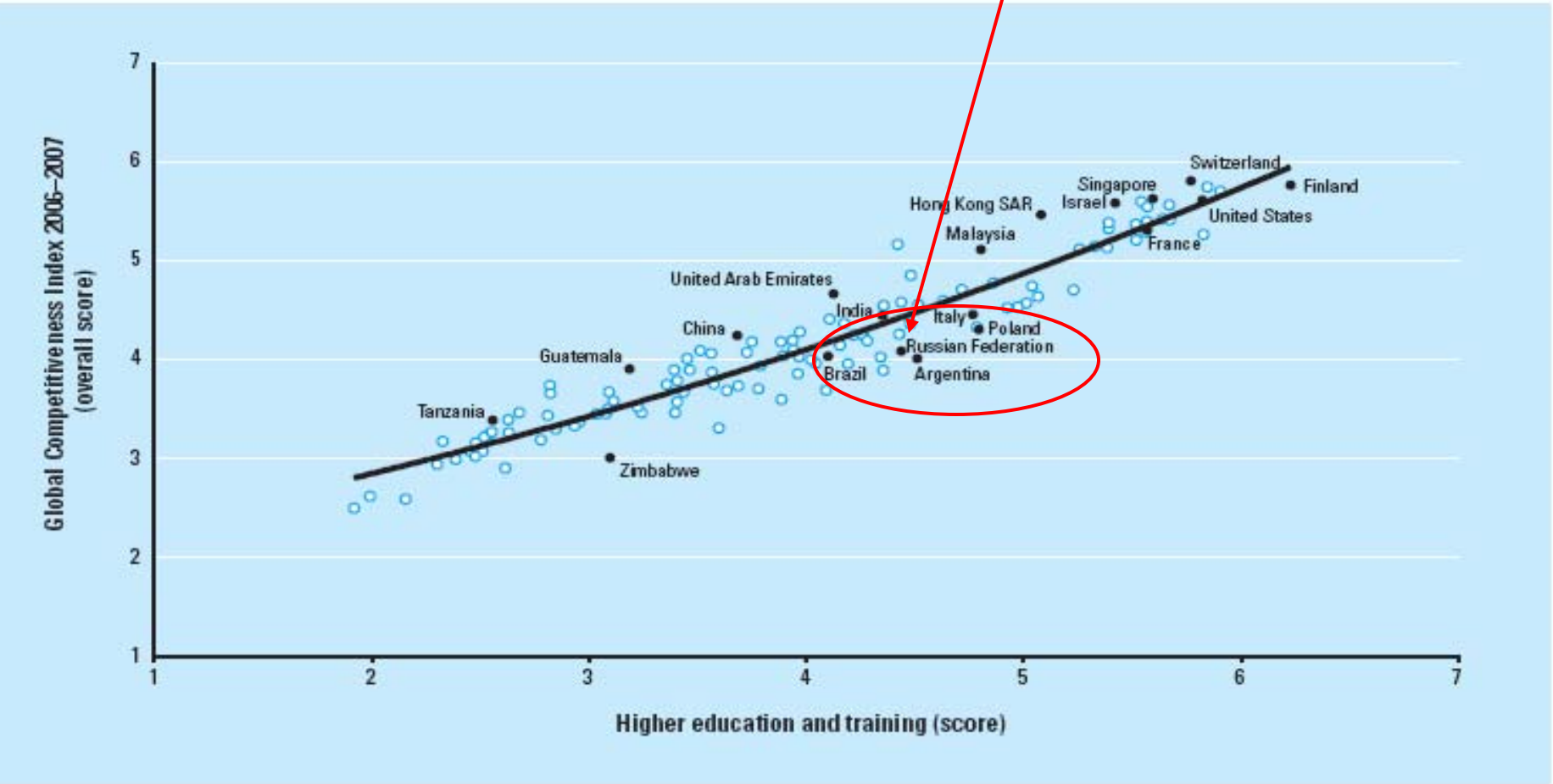
GSP21 Potential Participant Countries

Poland, Hungary, Czech Republic, Turkey
Slovakia, Bulgaria, Ukraine, Italy
Chile, Argentina, Brazil



Presented at the World Economic Forum

Science and Engineering Indicators

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Population cohort age 18-23, *thousands*

Year	Western Europe	Eastern Europe	South America	United States
2005	16,632	29,541	42,028	25,385

Source: National Science Board

Top Host Destinations for Students in Tertiary Education (2004)

Host Country	Poland	Hungary	Czech Republic	Turkey
Germany	15,417	3,097	2,483	27,582
U.S.	2,913	997	1,052	11,398
France	3,270	536	662	2,273
Austria	1,357	1,344	500	2,018
United Kingdom	----	371	359	1,960

Source: International Institute of Education

Science and Engineering Indicators

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Population cohort age 18-23, *thousands*

Year	Western Europe	Eastern Europe	South America	United States
2005	16,632	29,541	42,028	25,385

Source: National Science Board

Top Host Destinations for Students in Tertiary Education (2004)

Host Country	Argentina	Brazil	Chile	Peru
U.S.	3644	7799	1612	3771
France	838	1759	512	498
Germany	519	1801	624	902
U.K.	434	1110	-----	-----
Spain	802	-----	427	-----
Portugal	-----	1842	-----	-----

Source: International Institute of Education

Foreign Graduate Students in the U.S.

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Foreign recipients of U.S. S&E doctorates, by country/economy of origin: 1983–2003

Country/economy	Number	Percent
All foreign recipients	176,019	100.0
Top 10 total	111,959	63.6
China	35,321	20.1
Taiwan	19,711	11.2
India	17,515	10.0
South Korea	17,112	9.7
Canada	5,832	3.3
Iran	3,807	2.2
Turkey	3,413	1.9
Thailand	3,102	1.8
Japan	3,100	1.8
Mexico	3,046	1.7
All others	64,060	36.4

51% of recipients of U.S. S&E doctorates came from China, Taiwan, India, and South Korea.

Little representation from Eastern Europe or Latin America.

Source:

National Science Board, *Science and Engineering Indicators 2006*

Science and Engineering Indicators

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U.S. institutions awarding S&E degrees (2002)

Degree	Total Institutions	Physical/ biological/ agricultural sciences	Mathematics/ computer sciences	Engineering
Bachelor's	1,886	1,344	1,329	424
Master's	1,424	490	465	286
Doctorate	413	283	180	193

Source: National Science Board

Responsibilities of U.S. Universities for GSP21 Programs

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1. Each U.S. university **evaluates** GSP21 nominees and determines those admitted to its graduate programs.
2. U.S. universities accepting a GSP21 student would **support** that student using existing funding sources (e.g., research fellowships, teaching assistantships, etc.).
3. Faculty members accepting GSP21 students into their research programs are encouraged to be available to the student's home country as **consultants** on science, technology, and innovation.
4. During their graduate education, GSP21 students encouraged to participate in **"innovation experience"** (*e.g.*, SME internship)
5. U.S. faculty encouraged to join their GSP21 graduate in preparing proposals for peer-reviewed joint research to be conducted in both U.S. and partner GSP21 countries.*

***Funding for successful joint proposals would remain in the U.S. for U.S. faculty and in the home country for returning GSP21 graduates**.

Responsibilities of GSP21 Partner Countries

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Establish an equitable, transparent selection process to identify globally competitive students who qualify as GSP21 nominees for S&T graduate education in U.S. universities.

Efficiently transmit the nomination information to the GSP21 NGO operating in the U.S.

Develop their own, country-specific plans to enhance their educational, research, and innovation systems **, in consultation with U.S. interlocutors (e.g., U.S. professors accepting GSP21 students), in order to attract GSP21 graduates into S&T careers at home.

** For example, identify funding mechanisms to support successful, peer-reviewed collaborative proposals made by U.S. participants and those GSP21 graduates who return home.

GSP21 Application Process

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GSP21 Partner Country

Create a transparent, merit-based process to select GSP21 nominees

Administrative Coordination (by U.S. NGO)

1. **Develop standardized nomination form and procedure**
2. **Receive nomination from all GSP21 partner countries**
3. **Distribute nominations to all interested U.S. graduate S&E programs**
4. **Receive all notifications of acceptance from U.S. graduate programs by scheduled deadline**
5. **Transmit acceptance from U.S. graduate programs to all GSP21 nominees in their respective countries**

U.S. Graduate Programs

1. **Evaluate GSP21 nominations**
2. **Send acceptance notices to GSP21 administrative coordinator**
3. **Correspond with accepted GSP21 nominees**

Responsibilities of GSP21 Administrative Coordination (U.S. NGO)

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Promote and facilitate the GSP21 program among ALL U.S. academic institutions with graduate programs in STEM (e.g., seek to identify a common application form and procedures for GSP21 nominees)

- Function as the facilitator between interested U.S. academic institutions and GSP21 partner countries to answer specific questions and to identify points of contact (e.g., establish a schedule for nominations to be received).

- Receive nominations from each GSP21 partner country and distribute nominating information to ALL participating U.S. academic institutions with graduate STEM programs.

- Communicate all acceptances issued by U.S. academic institutions to individual nominees in the home country (or through a prearranged central location) **

** *GSP21 nominees accepted into specific U.S. universities would correspond directly with U.S. graduate programs concerning financial commitments, schedules, and student acceptances.*