



STATE UNIVERSITY – HIGHER SCHOOL OF ECONOMICS

Institute for Statistical Studies and Economics of Knowledge

Human Resources for Science and Technology: challenges for co-operation

Prof. Leonid Gokhberg

22 February 2007
Moscow

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Human Resources – major asset of Russian S&T factor of economic growth

Stocks of human resources in S&T (qualified and / or employed; thousands)

<i>EU-25</i>	<i>87794.1</i>
Germany	19386.9
France	12098.7
UK	11944.2
Italy	8318.0
<i>Russia</i>	<i>48781.2</i>

Source: EU (2004) – Eurostat; Russia (2005) – HSE.

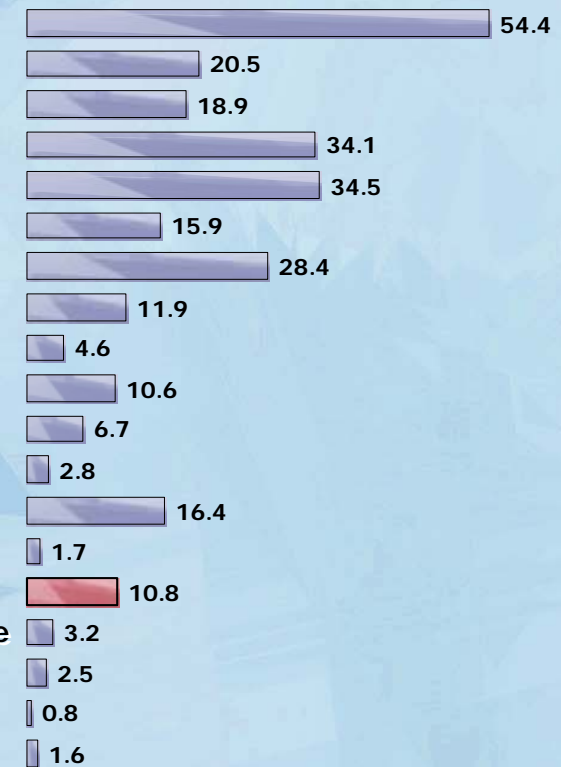
World R&D Indicators by Regions

(per cent)

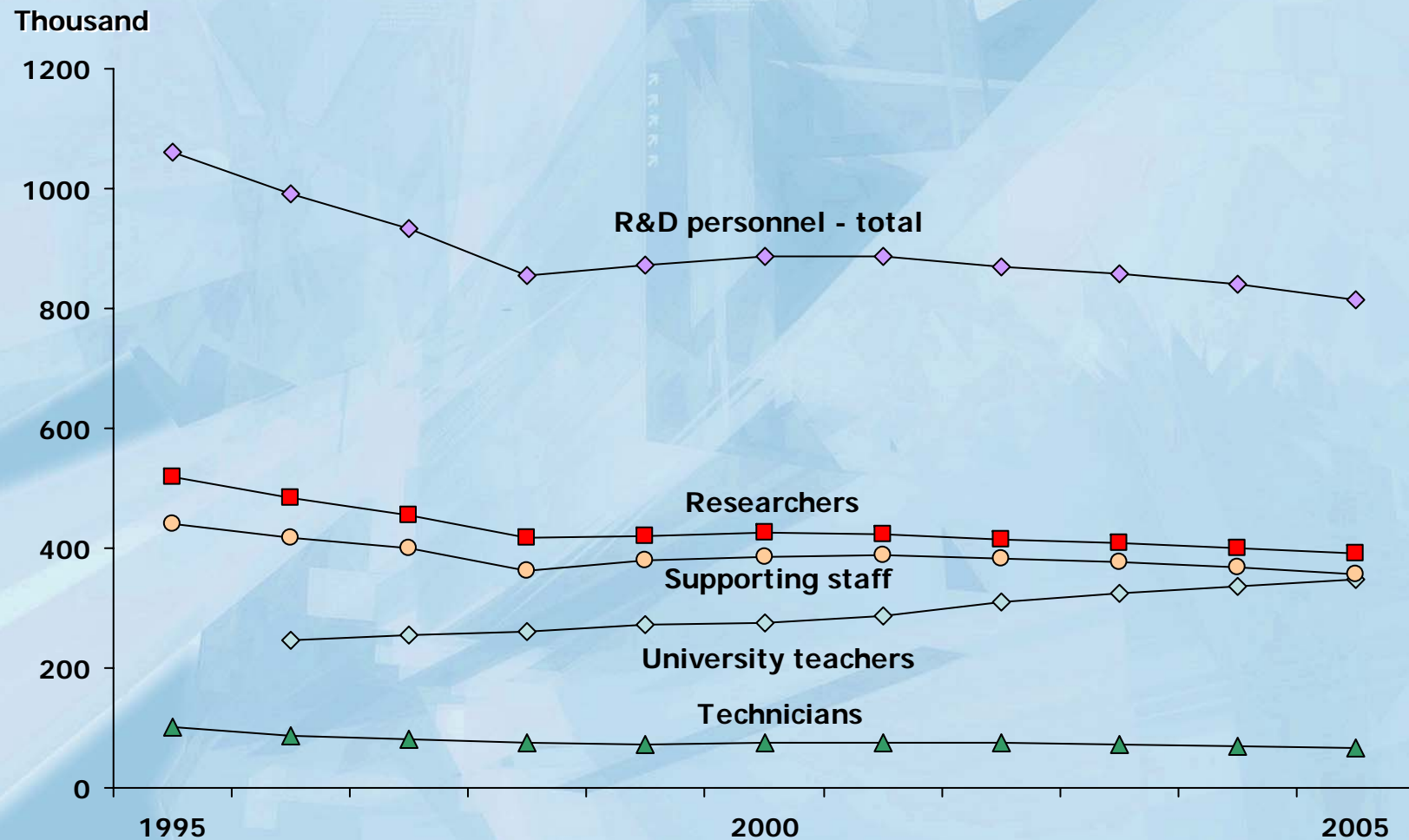
Expenditure on R&D



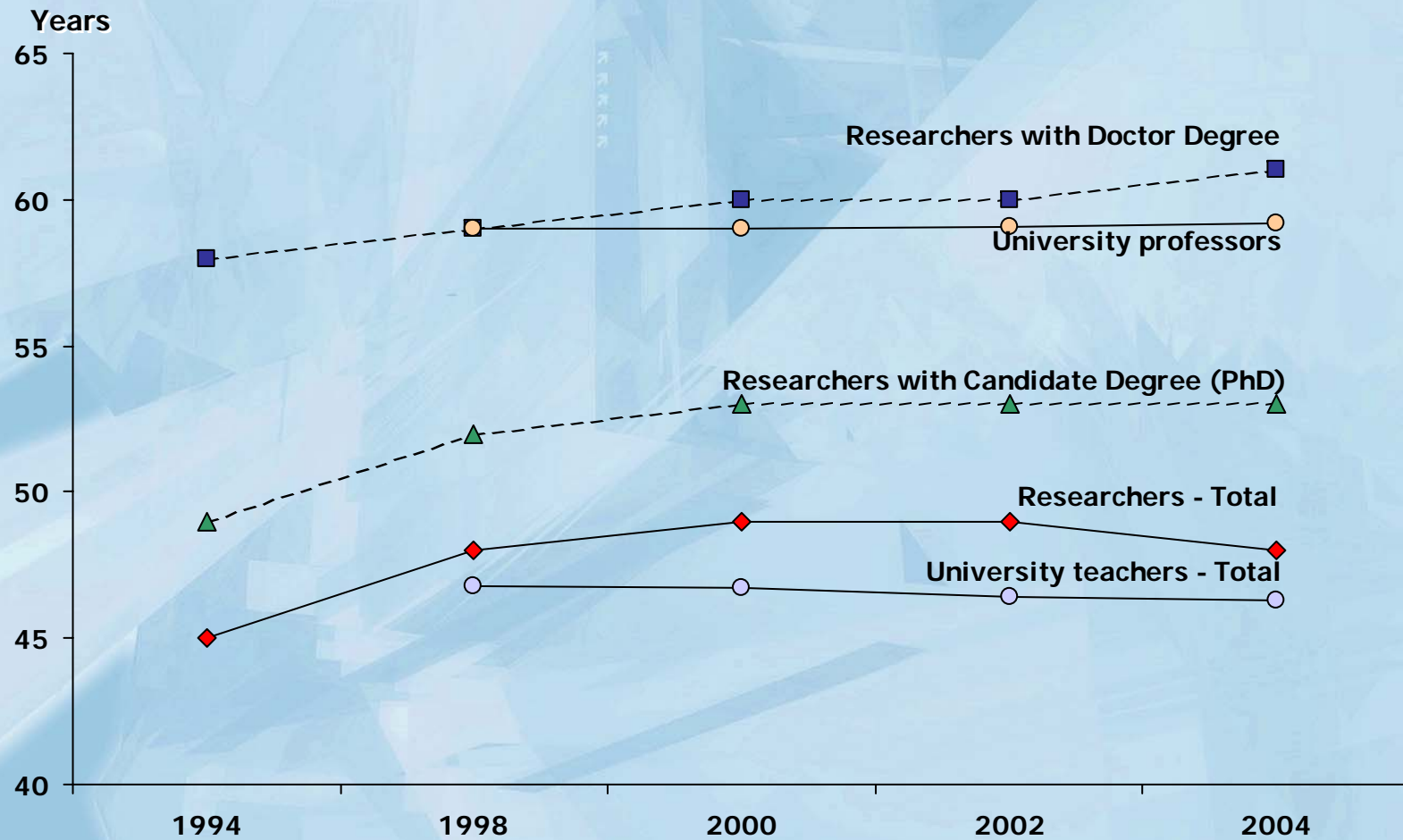
Researchers



R&D and Higher Education Personnel



Average Ages



Prestige of Scientific Occupations *(per cent of respondents)*

Do you want your son / daughter to become a researcher?

Russia



How would you react if your son / daughter wanted to become a scientist?

United States



International Mobility of Russian Researchers

✧ Temporary professional mobility (> 3 months)

	R&D personnel working abroad		R&D institutions involved	Share, %	
	thousand	% to total number of R&D personnel		Doctors and candidates of science	Researchers below 40 years of age
1996	4.1	2.6	280	70.2	44.3
2002	2.9	3.3	324	73.8	40.4
Average for the Russian R&D sector:				24.8%	27.3%

EU:

45%

Russia's Participation in FP6 Marie Curie Programme (2003-2006)

- ✧ Intensive participation
- ✧ Low success rates

Marie Curie Schemes	Proposals		Funded projects		Success rate (%)
	Total (65 countries)	With Russia's particip.	Total	With Russia's particip.	
Research Training Networks (RTN)	1249	106	190	6	5.7
Transfer of Knowledge (TOK)	1258		309	2	
Incoming International Fellowships (IIF)	1506	314	500	47	15

Outgoing International Fellowships (OIF) – No grants with Russia's participation

Impact of Research Mobility on Organisations

**Positive
68%**

**Negative
26%**

Due to

- ✧ New experiences
- ✧ Resolving financial problems
- ✧ Maintaining R&D personnel
- ✧ Alternative to brain drain
- ✧ Significant scale
- ✧ Diverting staff from principal activity
- ✧ The first step into permanent emigration

Source: Sample survey of research institutes.

Challenges for National S&T Policy

- ✧ **Institutional change**
 - **Centres of excellence: national research labs, research universities (= incoming mobility centres)**
 - **Integration of science and education**
 - **Evaluation**
- ✧ **IPR**
- ✧ **Involvement and adaptation of talents**
 - **Public prestige of scientific occupations**
 - **Incentives for university graduates**
- ✧ **Career opportunities**
 - **Important target: age group 30-39**
 - **Replacement of inefficient scholars**
- ✧ **Social security & pensions**
- ✧ **Active role in international co-operation**

Federal Goal-Oriented Programme “S&T and Education Manpower for Innovating Russia” for 2008-2012 (emerging)

- ✧ **Objective** – Modernisation of manpower for science, education and high-tech sectors, e.g. by training, involvement and adaptation of young scholars

- ✧ **Support to:**
 - leading research & education centres
 - research by leading professors and PhD students
 - internal mobility in Russia
 - participation in conferences
 - research by young Russian scientists employed abroad as guest scholars
 - invitations to foreign researchers as guest professors in modern S&T areas
 - scientific projects at secondary schools
 - investment in guest houses

- ✧ **Funding:** 57.7 billion roubles

Common Space for Research and Education: a human dimension

- ✧ Career development of researchers – a basis for competitive economy and knowledge-base society
- ✧ Brain circulation vs. brain drain → co-ordination of efforts
 - EU: availability of statistics procedures
 - RF: incentives to return
- ✧ Two-way flows
- ✧ President's Council for S&T and Education: to involve highly-qualified foreign professionals in R&D and training (October 2006)
 - RF: better information (mobility portal)
incentives to European researchers
attractiveness of Russian labs and universities
social conditions and security
 - Both sides: visa procedures

Tools for co-ordination

- ✧ An emerging RF programme “S&T and Education Manpower...” – a basis for EU-RF co-ordination (similarly to FP7-FCNTP pattern)
- ✧ Implementation:
 - To establish a new working group (similarly to working groups for priority areas of S&T)
 - Regional calls
 - Integration of Russian mobility NCP into FP7 Mobility NCP Net
 - Promotion of a national information network
 - Higher School of Economics (Moscow)
 - St. Petersburg State University
 - Tomsk State University
 - Southern Federal University (Roston-on-Don)
 - + 21 regional research centres, universities
 - National Mobility Portal

National network of information centres for international research mobility



Initial sponsors:

RF Ministry of Education & Science
Federal Agency for Science & Innovation
INTAS

The background is a complex, abstract composition of overlapping, semi-transparent blue geometric shapes, primarily triangles and polygons, creating a sense of depth and movement. The colors range from light, airy blues to deeper, more saturated tones. In the center, there is a white rectangular area containing the text.

Thank you!

Igokhberg@hse.ru