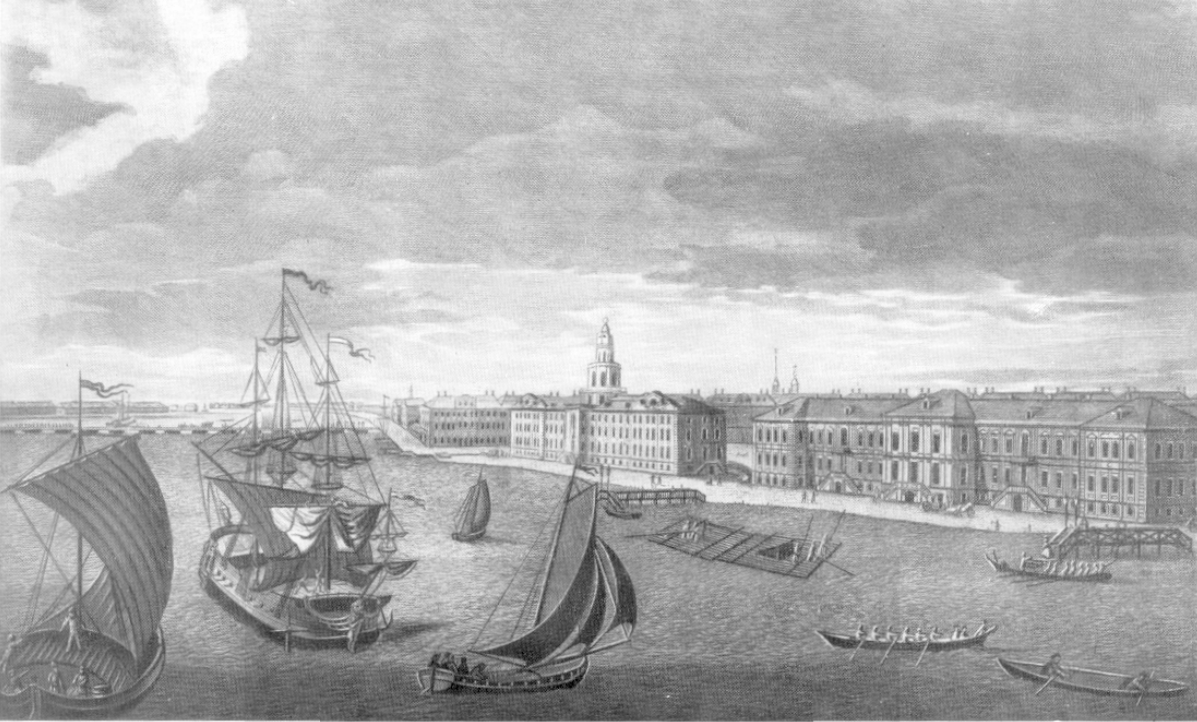


Russian, Soviet, and Post-Soviet Scientific Migration: History and Patterns

APS Meeting

Dallas, TX, March 2011

A stylized, layered mountain range graphic in shades of teal and blue, located in the bottom right corner of the slide.



Вид с Невы на здания Академии наук и Кунсткамеры.
Гравюра по рисунку М. И. Махаева.



The Imperial Academy of Sciences,
St. Petersburg, 1725

Leonhard Euler
1707-1783

The founding of modern science in Russia, early 18th century:
mostly by migrants, primarily from German countries



Franz Ulrich Theodore
Aepinus (1724-1802)
"Treatise of Electricity
and Magnetism" 1759

Russian-Germans:
Georg Wilhelm Richmann
(1711-1753)
First casualty of electrical
experiments

Mid- 19th century:
university system
established,
approximately half of
the scientists - of
"German" origin

Dorpat University as the
intermediary

1859: Natalia Corsini started auditing lectures by in law at St. Petersburg University

1860: Nadezhda Suslova started auditing lectures at the Medico-Surgical Academy in St. Petersburg



The Ministry of Enlightenment considers a University reform, including opening the university education to women

The latter plan dropped after the 1861 student protests, which the officials blamed partly on women auditors: "*révolutionnaires in crinoline*"



1864: Maria Kniazhnina applied to study
Medicine at the University of Zürich
1866: Nadezhda Suslova officially
accepted as the first female student there

The first doctoral degrees:

1867: Suslova (medicine, Zurich)

1873: Anna Evreinova (law, Leipzig)

1874: Sophia Kovalevskaya (mathematics, Göttingen)

1874: Yulia Lermontova (chemistry, Göttingen)



The first feminist movement:
women's higher education an established,
if not yet legally recognized fact by the end of the 19th c.

Sofia Vasilievna Kovalevskaya (1850, Moscow - 1891, Stockholm)

1883 - professorship of mathematics at Stockholm högskola

Maria Skłodowska (Curie) (1867, Warsaw - 1934, Paris)

Licentiate in mathematics at the Sorbonne, 1894; DSc, 1903

Nobel Prize in Physics, 1903 and in Chemistry, 1911

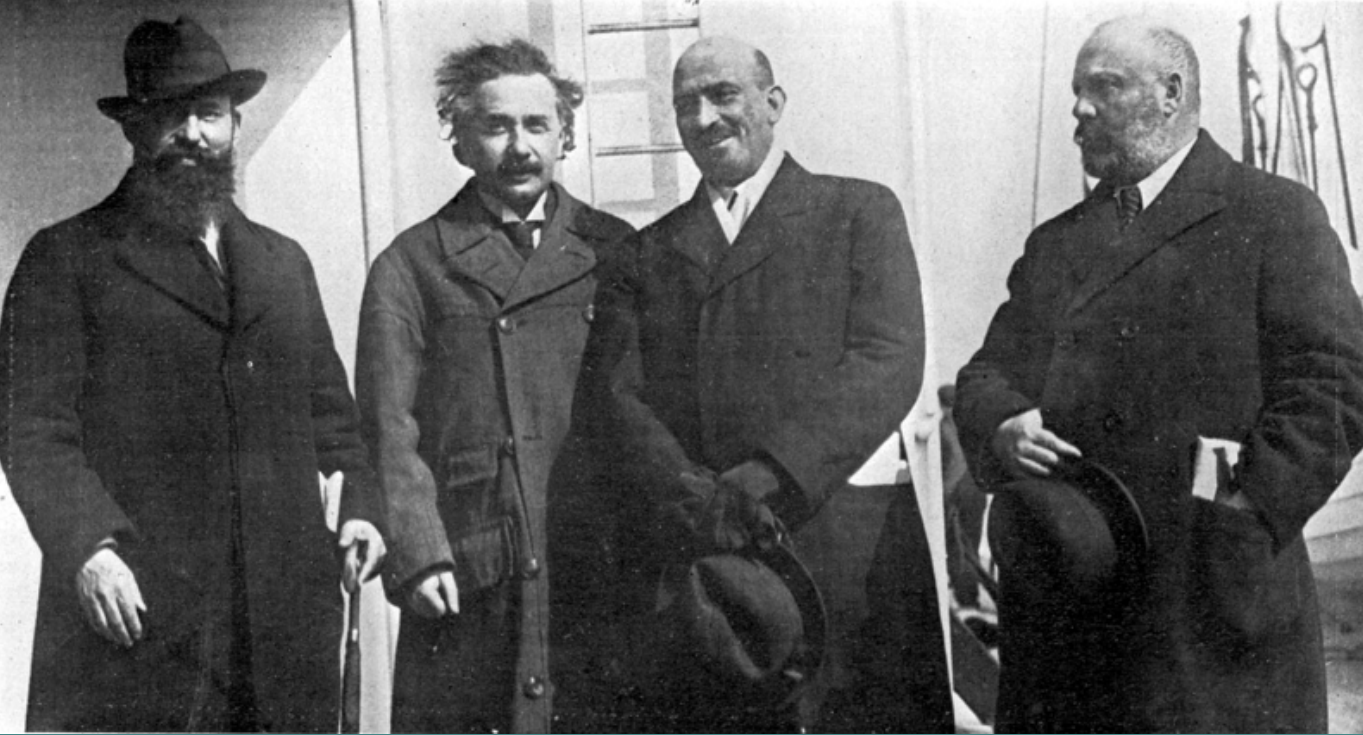


Circa 1900: Jewish migrants and go-betweens, and the spread of theoretical physics internationally (also by pre- and postdoctoral fellows)

Epstein, Pavel Sigizmundovich (Paul Sophus)
(1883, Warsaw - 1966, Pasadena, CA)

Ehrenfest, Paul (1880, Vienna - 1933, Amsterdam)

Mandelstam, Leonid Isaakovich (1879, Mogilev - 1944, Moscow)



Immigrants and WWI

Wizmann, Chaim (1874, Pinsk - 1952, Rehovot, Israel)

Polovsky, Konstantin Vasilievich (1880, Ryazan - 1958, New York)

Federiks, Vsevolod Konstantinovich (1885, Warsaw - 1944 Gorky)



Post-Revolutionary Migration:

Urykin, Vladimir Kozmich (1888, Murom - 1982, Princeton, NJ)

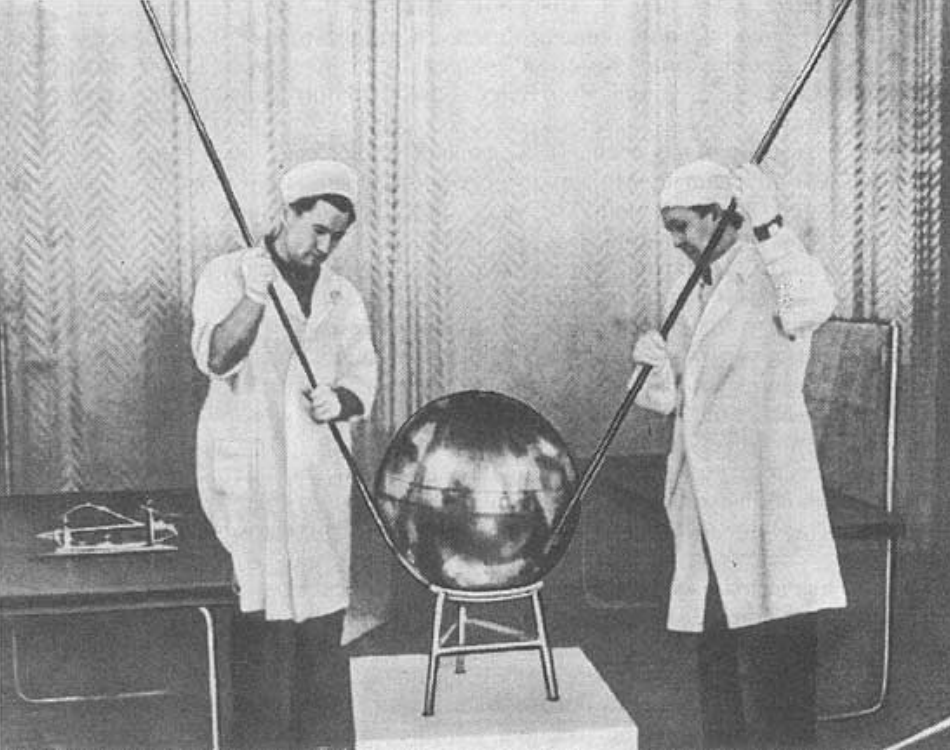
Orsky, Igor Ivanovich (1889, Kiev - 1972, Easton, CT)

tiakowsky, Georgi Bogdanovich (1900, Kiev - 1982, Boston, MA)

bitza, Piotr Leonidovich (1894, Kronstadt - 1984, Moscow)

eremin, Lev Sergeevich (1896, St. Petersburg - 1993, Moscow)

now, Georgy Alexandrovich (1904, Odessa - 1963, Boulder, CO)



The launch of Sputnik, 4 October 1957 and its effects on global science:

- Educational expansion
- Brain drain
- Affirmative action
- Decline of the ideology of pure science
- Deamericanization of American science

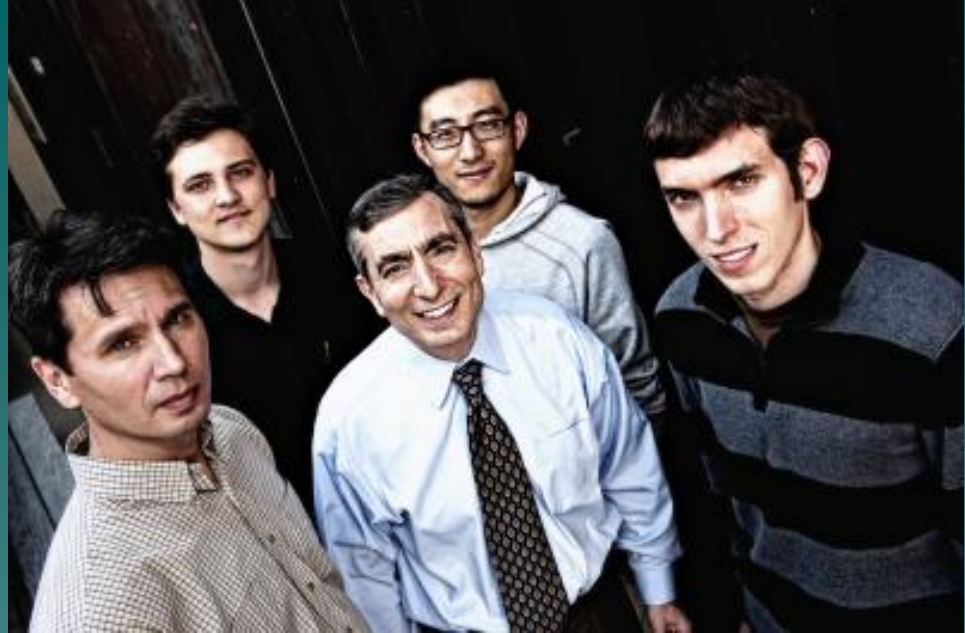
Soviet science largely isolated from international migration by Cold War barriers until 1988; foreign travel as a limited and treasured privilege



Post-Soviet migration:

Gorkov, Lev Petrovich (1929) U of Illinois; Linde, Andrei Dmitrievich (1948) Stanford U; Polyakov, Andrei Markovich (1945) Princeton U

Rough estimates: Funding for science in Russia: decreased by more than 90% during the 1990s; rebounded to some 40% of the late Soviet levels during the 2000s; Loss in scientific manpower: over 50%; possibly over 200,000 migrant scientists worldwide.



Next generations: postdoctoral researchers and graduate students

The largest scientific migration ever?
Russian, post-Soviet, or Russophone?

Transnational scientific subculture:
- entire team of researchers;
- transnational exchanges and links;

Global effects: still unknown and not studied